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# ANTENNA CATALOG

Volume IV

UNCLASSIFIED

## AIRCRAFT ANTENNAS

(Title Unclassified)

October 1960

*Prepared for*

Electronics Research Directorate  
AIR FORCE CAMBRIDGE RESEARCH  
LABORATORIES

Contract AF 19(604)-4101

*by*

GEORGIA INSTITUTE OF TECHNOLOGY  
Engineering Experiment Station

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ANTENNA CATALOG  
Volume IV  
AIRCRAFT ANTENNAS  
(Title Unclassified)

October 1960

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## INTRODUCTION

This publication is one of six catalogs produced in order to collect data on all types of military antennas in readily accessible form. The idea for such a collection originated with the Interservice Antenna Group (better known as ISAG). ISAG is an informal group from Air Force, Army, and Navy laboratories who meet periodically to discuss mutual antenna problems. With the endorsement of this group, funds were allocated by the Air Force and the Army, and the work was initiated under Air Force administration as Contract AF 19(604)-4101.

The specific responsibilities included the collection of electrical and mechanical data on all military antennas which had been assigned a Department of Defense nomenclature number. In addition, other antennas which were expected to receive a nomenclature number within a year were included along with selected industrial antennas.

The primary objective for the catalogs is to supply information which will facilitate the procurement of existing antennas and reduce duplication in antenna development. The design of duplicate antennas appears to be more widespread than would be expected. A review of these catalogs shows quite clearly that whips and other simple antennas have been redesigned repeatedly. Even the more complex antennas frequently duplicate earlier designs. Many factors influence the design, and many of the apparent duplications are unquestionably well justified. However, at least part of the time, redesign is a result of lack of knowledge about the existence of earlier models. It is hoped that these catalogs will greatly reduce the number of antenna duplications.

No matter how much information is given in a catalog, it will always be necessary to have additional data in order to determine the suitability of a particular antenna for a specific purpose. Thus, the catalogs will serve primarily as a guide to more complete reference material and to development agencies and manufacturers of antennas which may prove suitable for a new application.

The entire set of catalogs prepared under this contract is as follows:

- Volume 1 - Missile Antennas (Secret):  
missile antennas of all types  
and all security classifications.
- Volume 2 - Ground Antennas (Confidential)\*:  
unclassified ground antennas.
- Volume 3 - Ship Antennas - (Confidential)\*:  
unclassified shipboard and buoy  
antennas.

\*The volumes of unclassified antennas are classified as "confidential" because they contain a large collection of data on defense systems. Consequently, although each page of Volumes 2, 3, and 4 (except in the indexes) is unclassified, the publications themselves are classified.

Volume 4 - Aircraft Antennas (Confidential)\*: unclassified airborne antennas.

Volume 5 - Confidential Ground, Ship, and Aircraft Antennas (Confidential): all confidential military antennas except those intended specifically for missile use.

Volume 6 - Secret Ground, Ship, and Aircraft Antennas (Secret): all secret military antennas except those intended specifically for missile use.

Antennas are listed as "ground", "ship", etc., according to available information about their installations. Hence, many antennas are listed in more than one volume. No attempt was made to make extra listings or cross references.

Antennas are identified by numbers or names. The most common identification number is the Joint Nomenclature System ("AN System"). It is explained in JANAP-196, and on the Communication-Electronic Nomenclature Subpanel's summary sheet A 56190. Many Navy antennas were assigned Navy numbers such as Mark 25, Mod 6A; 66010; 69001; and 66ABL. Navy Model designation is described in the Navy Stock List of the Electronics Supply Office, Bureau of Ships Section - Part III. The catalogs omit manufacturer identification letters which precede Navy numbers. A third major type of identification consists of manufacturers' designations. As a group, the manufacturers' identifications can be considered arbitrary. Manufacturers' antennas are grouped together at the back of the text.

Each catalog consists of a collection of data arranged in order of nomenclature number, and an appendix with five separate indexes. Indexes are provided for stock number, antenna type, associated equipment, function or associated equipment, and frequency. The antenna types and the functions of associated equipment are defined in the sections immediately following this introduction.

In both the text and the indexes the identifying numbers are arranged first of all in alphabetical order and secondly in numerical order. Thus, 66AWG precedes 66010, but both numbers are preceded by AS-307. The indexes were prepared by machine. Because of complications in programming the computer, ordering in the index is accomplished with the characters justified from the left. Thus, in the index the AS-3 is followed by the AS-355 before the AS-4 is given.

In the Department of Defense nomenclature system, many antennas are given a number as a simple antenna, but they are part of a more complex system. In most such cases, the antenna is cross-referenced from its basic number to the nomenclature number for the system with which it is associated, e.g., antenna AT-178/APS-42 is cross-referenced to the AS-428(\*)/APS-42.

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Several types of equipment have antenna-type nomenclature numbers even though they do not fit our definition of antennas. Most notably, sonar transducers and antenna simulators used in training devices have such numbers. Equipment of these types are not included in the catalogs.

Originally, it was planned to eliminate all "obsolete" antennas from these catalogs. However, as the work progressed it was found that some antennas which are declared obsolete in a publication from one military service are still in use in other services. In fact, some cases were observed in which it appeared that antennas were still being procured by one military service even though they were declared obsolete by another. Consequently, very little consideration was given to a statement that an antenna is obsolete. An additional reason for including such antennas is the fact that although an antenna may be obsolete for one purpose, all or part of it may be useful in another application.

The information recorded in these catalogs has come largely from Department of Defense publications. In some cases, reports or other authoritative information were unavailable on certain antennas and the Department of Defense nomenclature cards were used. Other information sources include military antenna catalogs, personal interviews with employees of the Department of Defense and correspondence with antenna manufacturers. Each of these sources have contributed substantially to the information recorded. The references cited at the end of each antenna section generally give sources of additional information about the antenna. An attempt was made to list the most authoritative sources of information used in compiling the data, as well as any documents which present conflicting data. If conflicting data could be resolved by logical considerations, no comment was made in the catalogs. When no reason for preference of one choice was obvious, the fact was noted.

No specific date can be set as the cut-off date for data included in these catalogs. In August 1960, a final survey was made of nomenclature cards which had been issued in the categories AS, AT, and OA. At the same time a review was also made of applications for nomenclature numbers in these same categories. Unfortunately, 100 confidential and 25 secret nomenclature cards were identified, but copies have not yet been forwarded to this project. Most information which was collected directly from manufacturers was supplied during the spring of 1960. A considerable portion of the missile information was obtained directly from development people concerned with the electronic equipment for the missiles. Much of this information was collected late in the summer of 1960.

The Department of Defense nomenclature cards have proved very helpful in the preparation of these catalogs. However, they have also proved to be the most frequent source of unclear

descriptions and incorrect data. It seems extremely desirable for project officers who are responsible for the submission of the nomenclature applications to go to greater lengths to assure the correctness of the information. In many cases, it seems that the antenna nomenclature cards were written by individuals who were not familiar with antennas.

It should be noted that frequency, range, and some of the other data given for individual antennas actually represent characteristics of the associated equipment rather than characteristics of the antennas.

The information compiled on missile antennas is considerably less complete than that given in the other volumes. There are four main reasons. In the first place, because missile work is generally fluid and developmental in nature, there frequently is no assurance that the antenna cited is a production item rather than a development item. A further consequence of the fluid state of missile work is that documentation is often incomplete or nonexistent. In addition, missile antennas are usually an integral part of the missile itself. The performance of an antenna in one missile will be quite different from its performance in another missile. Finally, missile people are extremely reluctant to release information about their equipment.

A very large proportion of the information desired for review during the preparation of these catalogs was not available. Also, it is noted that a fairly large number of antennas -- probably about 200 -- are developed or modified each year. Thus, it would seem desirable for some organization to undertake the compilation of a catalog of antennas annually, while the information is still accessible. Such a compilation probably should show both antennas which have been developed and antennas which have gone into production. Apparently, there is little interest in military circles for such a compilation at the present time. However, the authors of these catalogs believe that such reports would reduce the time required for the acquisition of critical equipment, and they would provide current information regarding antennas under development.

Many individuals have made substantial contributions to the preparation of these catalogs. However, Mr. J. L. Allen and Mr. D. F. Eagle deserve to be singled out for their efforts in the preparation of this information. Other people who have made major contributions are P. T. Hutchison, S. T. Alford, E. N. Bone, A. P. Jensen, S. G. Baxter, D. T. Paris, J. G. Holey, T. A. Lewis, C. C. Boykin, J. J. Curtis, R. E. Moseley, M. E. Blair, F. W. Woodside, and J. T. Dawson. Also, Mr. R. L. Passow of H. R. B. Singer provided many illustrations and data. Finally, it is appropriate to extend special thanks to Mr. C. E. Ellis, CRRDM, Air Force Cambridge Development Division, who has been project officer for this project.

## EQUIPMENT FUNCTION

Most antennas can be used with equipments which perform many different functions. Often, however, an antenna is best known in terms of the equipment with which it is associated. The functions of equipments used with the antennas listed in this catalog can be described by one or more of the terms defined below. These terms are used throughout the catalog and an equipment function index will be found in the appendices.

The coverage of this catalog is restricted to electronic equipment. Sonic, infrared, and optical devices are not included, even those with "antenna" nomenclature numbers.

**Altimeter:** A term for electronic devices that determine altitude by measuring the time required for radio energy to travel from an aircraft or space vehicle to the earth and back; both pulse techniques and frequency modulation are used.

**Approach Control:** This term includes the following types of landing systems:

- A. Beam approach systems that usually consist of localizer and glidepath beams, and marker beacons, all of which operate independently of the aircraft. Approach information is analyzed on the aircraft. Pulse and CW techniques are used.
- B. Surface-controlled approach systems that usually consist of a search radar system, a precision radar system (azimuth and elevation), and a communication system, all located on the surface. Approach data is analyzed on the surface and directions are relayed to the aircraft.
- C. Beacon approach systems that usually consist of localizer and glide-path beams which operate only when interrogated by an aircraft.

**Beacon:** A generic term used when the term "IFF" or "Radar, Beacon" is not applicable and the device in question is not a part of a navigation system. The term, when used, refers to devices that radiate signals, which can be used to identify and/or locate the point from which the signal originated; e.g., a device aboard a pilotless carrier that transmits a signal to a remote installation to aid in tracking the pilotless carrier.

**Bombing:** A term for equipments used for locating targets, determining an appropriate course for the bomb run, and determining the bomb-release point.

**Carrier Control Approach (CCA):** See "Approach Control".

**Combat Information Center (CIC):** See "Search, Air", or "Search, Surface".

**Communications:** Self-descriptive.

**Countermeasures:** A generic term used only when one of the more specific terms for countermeasures

functions cannot be used. The term refers to devices that in some manner deal with enemy signals.

**Countermeasures, Deception:** A term for devices used to mislead the enemy; e.g., a device that produces a spurious response in an enemy radar system.

**Countermeasures, Direction Finding:** A term for devices that determine the directions of arrival of enemy signals.

**Countermeasures, Homing:** See "Countermeasures, Direction Finding".

**Countermeasures, Jamming:** A term for devices used to jam enemy electronic equipment.

**Countermeasures, Monitoring:** A term for devices whose function is passive detection and/or intelligence monitoring of enemy signals.

**Countermeasures, Search:** A term for devices used to detect enemy signals, but not make bearing determination.

**Direction Finding:** A generic term used only when a more specific term ("Countermeasures, Direction Finding" or "Navigation, Direction Finding") cannot be used.

**Dummy Load:** Not included in the catalog. The term refers to circuit elements that are used to simulate the loading effect of an antenna.

**Early Warning:** See "Search, Air".

**Fire Control:** A term for devices used for gun laying and associated functions, including aircraft interception (AI).

**Ground Control Approach (GCA):** See "Approach Control".

**Ground Control Intercept (GCI):** See "Search, Surface" or "Search, Air" and "Height Finding".

**Guidance:** A generic term used only when a more specific term ("Guidance, Command" or "Guidance, Passive Homing", for instance) cannot be used. The term refers to devices that direct and regulate pilotless carriers.

**Guidance, Active Homing:** A term for the devices that comprise pilotless carrier homing systems for which the equipment for illuminating and perceiving targets and for computing the control signals are all located on the pilotless carrier.

**Guidance, Beamrider:** A term for the devices that comprise pilotless carrier guidance systems for which the equipment for illuminating, perceiving and tracking the target are externally located; i.e., surface installations or "mother" vehicles. The pilotless carrier detects its position relative to the radar beam tracking the target and computes control signals to keep itself centered in the beam.

## EQUIPMENT FUNCTION (Continued)

**Guidance, Command:** A term for devices that comprise pilotless carrier guidance systems in which externally derived control signals are relayed to the pilotless carrier. See also "Guidance, Quasi-Active Homing".

**Guidance, Passive Homing:** A term for the devices that comprise homing systems for pilotless carriers that home on a source of energy originating at the target. The detection equipment and the control-signal computing equipment are located on the pilotless carrier.

**Guidance, Quasi-Active Homing:** A term for the devices that comprise pilotless carrier homing systems for which the equipment for illuminating the target is located on the pilotless carrier, and the equipment for perceiving the target and for computing control signals is externally located; i.e., surface installations or "mother" vehicles. The computed control signals are relayed to the pilotless carrier.

**Guidance, Semi-Active Homing:** A term for the devices that comprise pilotless carrier homing systems for which the equipment for illuminating the target is externally located; i.e., surface installations or "mother" vehicles, and the equipment for perceiving the target and computing the control signals is located on the pilotless carrier.

**Guidance, Surface Reference:** A term for the devices that comprise pilotless carrier guidance systems which utilize the technique of comparing the relative position of the pilotless carrier to a number of fixed surface transmitters; e.g., Loran guidance.

**Gun Laying:** See "Fire Control".

**Height Finding:** A term for radar systems that are used to determine the relative height of an airborne object with respect to the antenna for the system. If the height finder is a part of a surface-controlled approach system, see "Approach Control".

**IFF ("Identification, friend or foe"):** A term for systems utilizing coded-beacon techniques to distinguish between friendly and unfriendly units.

**Meteorological Measurement:** A term for devices used to measure meteorological parameters; e.g., wind velocity or temperature.

**Navigation:** A generic term used only when a more specific term ("Navigation, Direction Finding" or "Navigation, Surface Reference") cannot be used.

**Navigation, Direction Finding:** A term for direction finding devices that are used to determine the relative bearing of a transmitter from the vehicle on which the device is located.

**Navigation, Glide Path:** See "Approach Control".

**Navigation, Homing:** See "Navigation, Direction Finding" if the device is for use by a piloted

carrier. If the device is for use by a pilotless carrier, see the guidance term which is applicable; e.g., "Guidance, Active Homing".

**Navigation, Localizer:** See "Approach Control".

**Navigation, Loran:** See "Navigation, Surface Reference" if the device is used by a piloted carrier. See "Guidance, Surface Reference" if the device is used by a pilotless carrier.

**Navigation, Marker Beacon:** See "Approach Control" if the device is a part of a landing-control system; otherwise, see "Navigation, Surface Reference".

**Navigation, Radio Range:** See "Navigation, Surface Reference".

**Navigation, Shoran:** See "Navigation, Surface Reference" if the device is for use by a piloted carrier. See "Guidance, Surface Reference" if the device is for use by a pilotless carrier.

**Navigation, Surface Reference:** A term for the devices comprising navigational-aid systems in which reference signals are broadcast from surface installations to be utilized by properly equipped vehicles. Examples of this type of system are Loran, Shoran, VOR, TACAN, and marker beacons, when they are not used in "Approach Control" systems or in pilotless carrier guidance systems.

**Navigation, TACAN:** See "Navigation, Surface Reference".

**Navigation, VOR:** See "Navigation, Surface Reference".

**Radar Beacon:** A term for devices that, upon reception of suitable interrogating signals, automatically respond with another signal.

**Radar, Fighter Intercept:** See "Fire Control".

**Radar, Final Approach:** See "Approach Control".

**Relay:** See "Telemetering".

**Remote Control:** A term for devices used in controlling remote items of equipment. See "Guidance" or a subdivision of "Guidance" for devices used in pilotless carrier guidance systems.

**Search:** A generic term used only when "Search, Air" or "Search, Surface" cannot be used.

**Search, Air:** A term for devices used for airborne-target detection and location.

**Search, Surface:** A term for devices used for surface-target detection and location.

**Sounding:** See "Meteorological Measurement".

**Speed Indicator:** Self-descriptive.

## EQUIPMENT FUNCTION (Continued)

**Tail Warning:** A term for devices used specifically to detect objects approaching an airborne vehicle from the rear.

**Telemetry:** A term for devices which involve measuring and/or processing and transmitting data to a remote point; e.g., a system that measures fuel consumption for a pilotless carrier and transmits the information to a remote installation for evaluation.

**Television:** Self-descriptive.

**Test:** Self-descriptive.

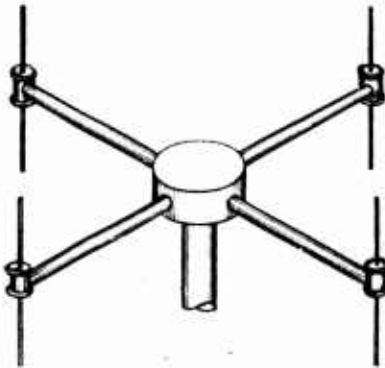
**Tracking:** A generic term used only when a more specific term; e.g., "Fire Control", cannot be used. The term, when used, refers to devices used for "continuously" determining the position of moving objects (usually missiles or satellites).

**Training:** Self-descriptive.

## ANTENNA TYPES

The terminology used to identify various types of antennas is, to say the least, not standardized. To avoid confusion, the terms used in this catalog are listed and defined below. An index of antenna types will be found in the appendices.

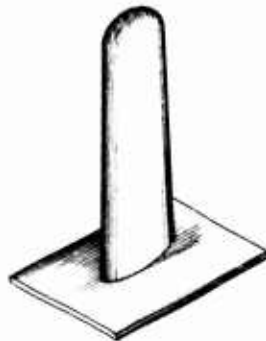
**Adcock:** The Adcock, in its simplest form, consists of a rotating assembly composed of a pair of vertical elements separated by one-half wavelength or less, and connected in phase opposition to produce a radiation pattern having the shape of a figure-of-eight. Variations of the basic Adcock technique include fixed crossed-Adcocks with goniometers and multielement Adcocks (4, 8, or even 16 vertical elements). The "sense" of the bearing may be resolved by an associated nondirectional antenna in the system.



**Amplitude Modulating:** The amplitude modulating antenna is a narrow aperture antenna configuration consisting of a stationary, vertical element about which a reflector is rotated at high speed. The reflector may be either a multielement parasitic one or a continuous sheet. The rotating reflector amplitude modulates the received signal at the rotation frequency. The resulting rotating horizontal radiation pattern is essentially cardioid in shape.

**Biconical:** See "Conical".

**Blade:** A streamlined stub. See also "Stub".

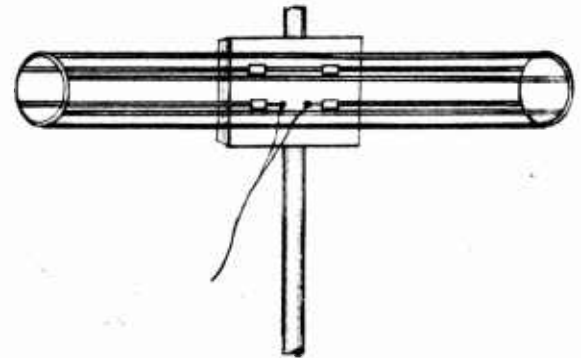


**Bow Tie (or butterfly antenna):** A dipole antenna having flat triangular-shaped radiating elements.

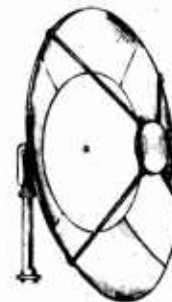


**Broadside Array:** An antenna array whose maximum radiation is approximately perpendicular to the axis or plane of the array.

**Cage Dipole:** A broadband dipole in which the radiating elements are arranged in a cylindrical fashion and connected at their ends (i.e., an extension of the folded dipole principle) with one of the elements fed at its center.



**Cassegrainian:** An antenna consisting of a small convex hyperboloidal reflector mounted in front of a large concave paraboloidal reflector with the primary feed located behind the paraboloidal reflector. This arrangement effectively increases the focal length of the paraboloidal reflector.

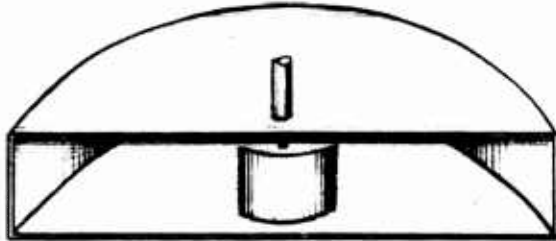




## ANTENNA TYPES (Continued)

**Cavity:** Refers to a cavity-backed slot. See "Slot".

**Cheese:** A parabolic-cylinder reflector enclosed by two parallel plates mounted perpendicular to the cylinder and spaced so that propagation in more than one mode is possible in the desired direction of polarization. See also "Pillbox" antenna.



**Circular Array:** An antenna array composed of vertical radiators arranged in concentric circles. Directivity can be controlled by space phasing of the elements or by adjusting the phase of the excitation currents.

**Coaxial Dipole:** See dipole.

**Collinear Array:** An antenna array in which the elements of the array are arranged end-to-end along the same line.

**Conical:** A broadband antenna in which the driven element(s) is conical in shape. Many varieties of conical antennas exist; examples are discone, collinear biconical, and "V" biconical antennas.

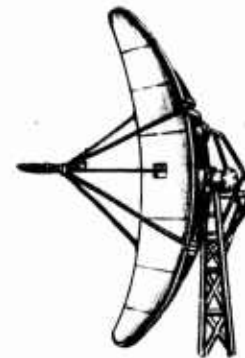


**Corner Reflector:** A reflector consisting of flat conducting sheets (or grids of parallel conductors) intersecting at an angle or corner. Dihedral corners are commonly used for transmitting and receiving; trihedral and tetrahedral corners are frequently used to increase radar cross sections.



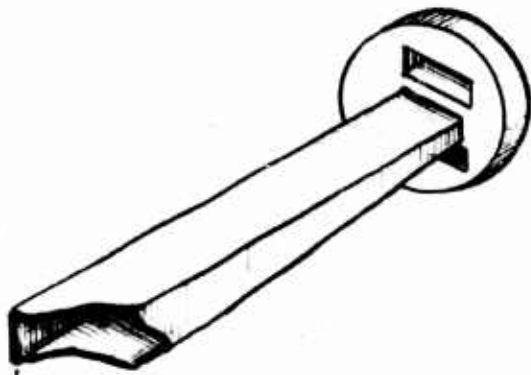
**Counterpoise:** A network of wires extending outward from the base of an antenna and suspended above and usually insulated from the earth. The antenna is "grounded" to the counterpoise (artificial ground) instead of the earth (used especially when the antenna is located over ground of poor conductivity). When soil of relatively good conductivity is available, a similar arrangement of wires is sometimes buried beneath the antenna to improve the ground connection.

**Cut Paraboloidal Reflector:** A reflector formed in the shape of a section cut from a paraboloid of revolution. The term "orange peel" is often applied to this type of reflector.

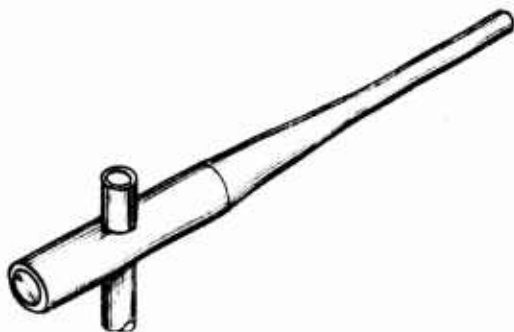


## ANTENNA TYPES (Continued)

**Cutler:** The Cutler feed is a waveguide dual-aperture rear feed which essentially splits the energy in the waveguide into two branches that are folded back on themselves so that the energy is radiated towards the reflector from two slots.

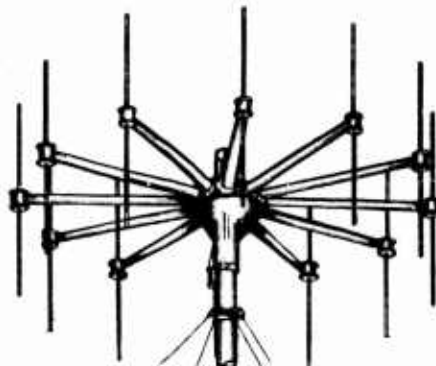


**Dielectric Rod:** An end-fire directional dielectric antenna consisting of a dielectric rod (usually tapered) fed from a section of waveguide.



**Dipole (or doublet):** A linear radiator, usually fed at the center, producing a maximum of radiation in a plane normal to its axis.

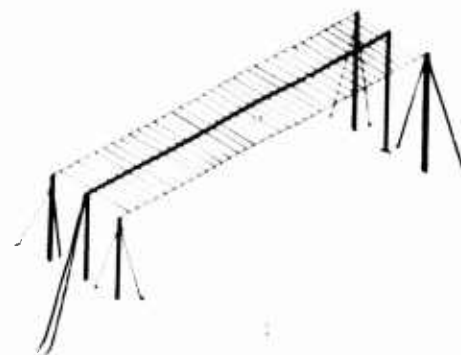
**Doppler:** An antenna which possesses the equivalent of a moving antenna of some form of simu-



lation of this antenna motion by the rapid sequential switching of fixed antenna elements. The Doppler is usually a medium aperture antenna (1 to  $5\lambda$ ).

**End-Fire Array:** An antenna array whose maximum radiation is approximately along the axis of the array.

**Fishbone:** An antenna composed of a series of coplanar elements arranged in collinear pairs and loosely coupled to a balanced transmission line.



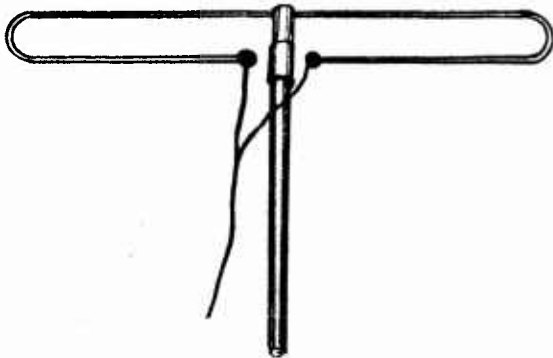
**Flat-Screen Reflector:** A flat reflecting surface; the surface may be of the continuous, slotted, or mesh type.

**Flat Top:** The flat-top antenna is a low-frequency antenna utilizing a folded top to increase the effective length of the vertical radiator from which the principle radiation occurs.



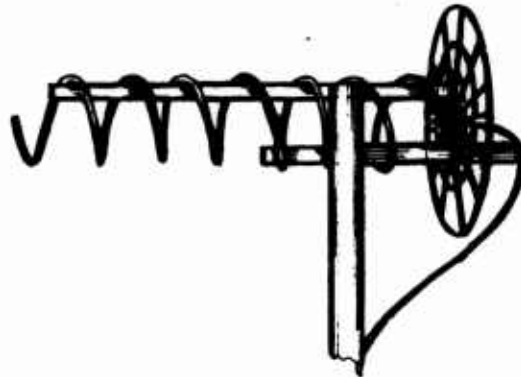
## ANTENNA TYPES (Continued)

**Folded Dipole:** An arrangement of two or more parallel, closely spaced, radiating elements connected at their ends with one of the elements fed at its center. It gives an increased bandwidth and a higher impedance than a single dipole element.

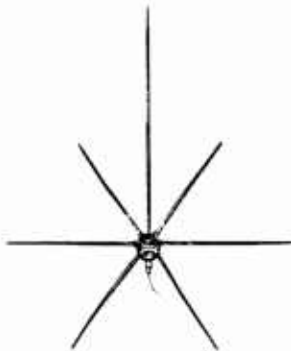


terminated (nonresonant and unidirectional) or unterminated (resonant and bidirectional).

**Helical:** An antenna that has a helix as a driven element. The parameters of the radiating element may be varied (e.g., diameter of the conductor, and diameter and pitch of the helix).



**Ground Plane:** An antenna (e.g., a stub) with a self-contained ground plane. The ground plane may take many forms; e.g., a number of radial rods or a flat disk (stub perpendicular to the disk), or the ground plane may be modified to a skirt or cone shape.



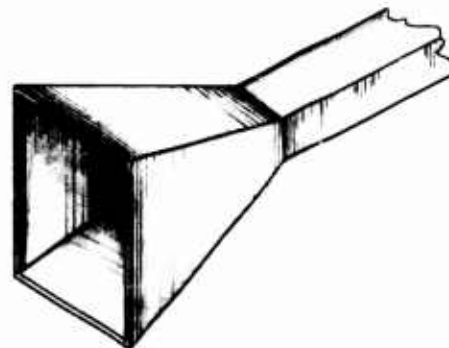
**Hoghorn:** A portion of a pillbox fed by a waveguide horn. See "Pillbox".



**Half Rhombic (or inverted "V"):** The half rhombic or inverted "V" antenna is a long-wire type antenna with the radiating elements comprising the sides of an inverted "V" mounted over a ground plane. The half rhombic may be properly



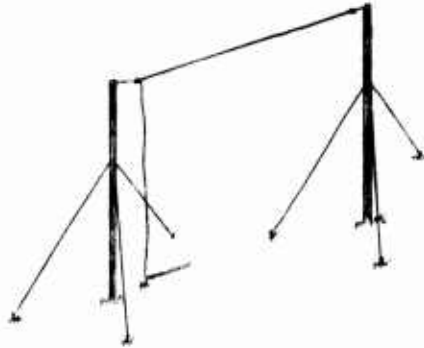
**Horn:** A relatively broadband antenna that usually takes the form of an open, flared extension of a waveguide which may be proportioned to provide directional characteristics and an impedance transition between the waveguide and



## ANTENNA TYPES (Continued)

free space. The horn may be of a number of types; e.g., sectorial horn-flared in one plane, pyramidal horn-flared in both planes.

**Inverted "L":** An antenna, used primarily at low frequencies, that utilizes the technique of bending a portion of the radiating element into a horizontal position to keep the current maximum on the vertical portion as high as possible, which increases the radiation efficiency.

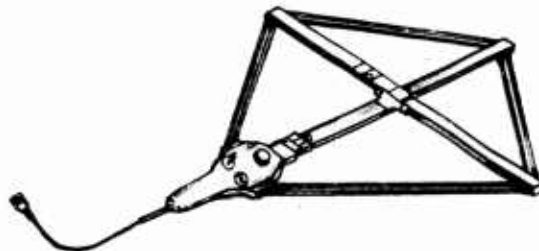


**Inverted "U":** A type of doublet antenna used primarily at low frequencies. The ends are folded down to increase the radiation efficiency. Primary radiation is from the horizontal portion of the doublet.

**Lens:** A microwave device that focuses electromagnetic energy by controlling the electrical path length of the energy through the lens. Lenses may take several forms; e.g., dielectric, artificial dielectric, metal plate, and geodesic lens.

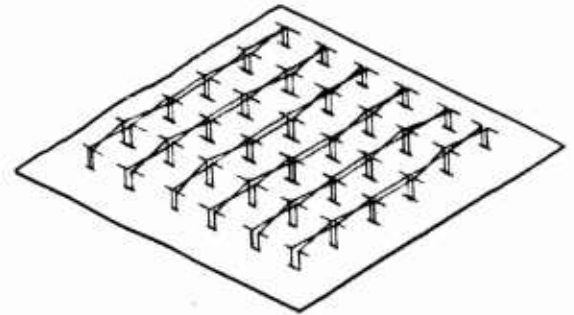
**Long Wire:** A linear antenna of considerable length in comparison with the operating wavelength (e.g., fixed wire or trailing wire).

**Loop:** An antenna consisting of one or more complete turns of conductor that form a closed circuit in which a circulatory current flows. The loop may be wound in several shapes (e.g., circular, square, triangular) and may be shielded.



**Mattress:** A planar array of dipoles backed by a flat reflecting surface. The reflecting surface may be continuous or made up of discrete elements (e.g., slats, rods, or mesh). This

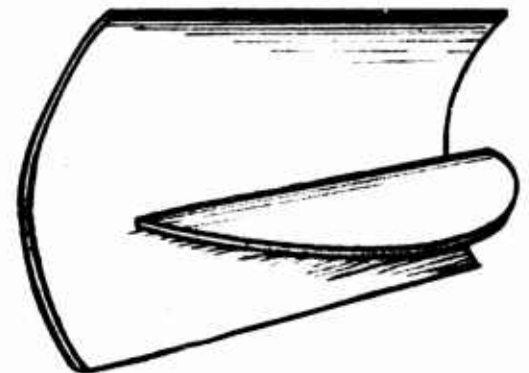
type of antenna is sometimes called a billboard antenna or a bedspring array.



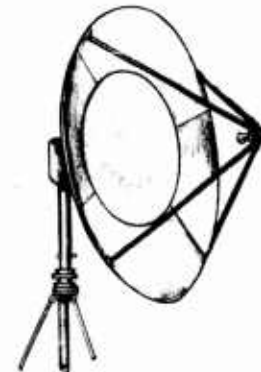
**Monopole:** A ground-plane analogy of a dipole. This term is assigned only when more specific identification (e.g., "Tower", "Whip", or "Rod") cannot be determined.

**Orange Peel:** See "Cut Paraboloidal".

**Parabolic-Cylinder Reflector:** A reflector whose reflecting surface is in the form of a portion of a surface generated by moving a parabola perpendicular to the plane in which it lies. The reflecting surface may be solid, perforated, mesh, or slatted.



**Paraboloidal Reflector:** A reflector whose reflecting surface is in the form of a surface of revolution.



## ANTENNA TYPES (Continued)

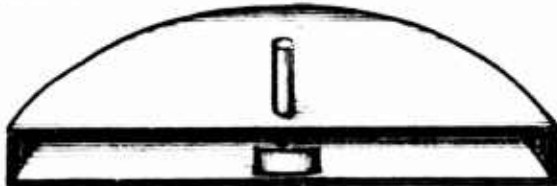
tion generated by the rotation of a parabola around its axis. The reflecting surface may be solid, perforated, mesh, or slatted.

**Parasitic Array:** An array consisting of a driven element(s) and an element(s) that, though not directly connected to the antenna feed line, affects the radiation pattern of the antenna.

**Periodic Structure:** Broadband (frequency range about 10 to 1 or greater) antenna structures for which the input impedance and radiation patterns vary periodically with frequency, and the variation of electrical characteristics is negligible over a single period. An example of this type is the logarithmic periodic antenna.



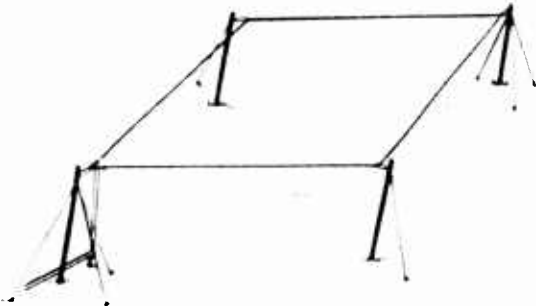
**Pillbox:** A parabolic-cylinder reflector enclosed by two parallel plates mounted perpendicular to the cylinder and spaced so that only one mode of propagation is possible in the desired direction of polarization. See also "Cheese" antenna.



**Probe:** An electrically small antenna used to explore radiation fields.

**Rectangular Array:** A directive array of vertical elements arranged in rectangular fashion.

**Rhombic:** A long wire type antenna in which the radiating elements comprise the sides of a

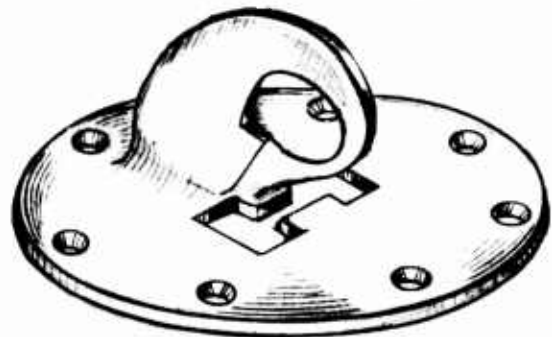


rhombus. The rhombic antenna may be properly terminated (nonresonant and unidirectional) or unterminated (resonant and bidirectional).

**Rhombic, Multiwire:** A rhombic antenna which instead of having a single conductor for each leg has several to improve impedance characteristics.

**Rod:** An electrically short radiating element (often  $1/4 \lambda$  long), having a relatively large length-to-circumference ratio, that is designed to mount on an external ground plane.

**Scimitar:** A broadband antenna that looks like the blade of a scimitar.

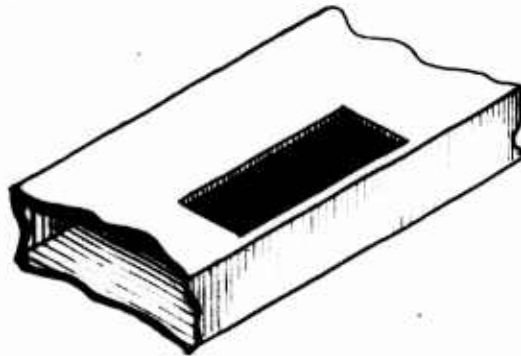


**Sleeve Dipole:** The sleeve dipole antenna is a balanced form of the stub sleeve antenna (i.e., the image of the antenna is replaced by a real antenna of identical configuration and the ground plane is removed). See also Stub Sleeve.



## ANTENNA TYPES (Continued)

**Slot:** A radiating element formed by cutting a slot in a conducting surface.



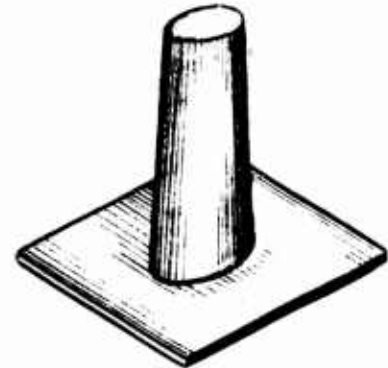
**Spiral:** A broadband (frequency range about 10 to 1 or greater) antenna named for its geometrical configuration.



**Stacked Array:** The term, stacked array, refers to the general category of antenna arrays where the radiating elements (e.g., slots, dipoles, turnstile, etc.) are stacked on or near but not collinearly along the axis of the array. The stacked array, in general, produces a beam that is omnidirectional in the plane perpendicular to the axis of the array.

**Structural:** An antenna which is an integral part of the structure of an aircraft; e.g., a section of the vertical stabilizer of an aircraft that is insulated from the remaining portion and fed by a coaxial cable.

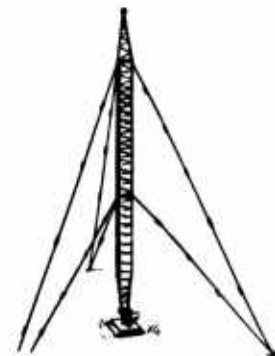
**Stub:** An electrically short radiating element (often  $1/4 \lambda$  long), having a relatively small length to circumference ratio, that is designed to mount on an external ground plane (e.g.,  $1/4 \lambda$  stub mounted on an aircraft, using the skin of the aircraft as a ground plane).



**Stub Sleeve:** The stub sleeve antenna is a type of unbalanced antenna which mounts over a ground plane and incorporates a conducting collar on tube (i.e., the sleeve), the exterior of which is utilized as a radiating element and the interior as the outer conductor of the coaxial feed line. The length of the sleeve may be any portion of the total length of the antenna.

**Tail Cap:** See "Structural".

**Tower:** A low-frequency antenna constructed in the form of a tower. The tower itself is the radiating element.



**Turnstile:** An antenna consisting of two dipoles mounted perpendicular to each other with their axes intersecting at their mid-points. The dipoles are usually fed by currents that are equal in magnitude and in phase quadrature.

**"V":** An arrangement of conductors in the shape of a V with the two legs of the V being fed equal amounts of power of opposite phase. The "V" antenna may be properly terminated (non-resonant and unidirectional) or unterminated (resonant and bidirectional).

## ANTENNA TYPES (Continued)

**Whip:** A simple (usually vertical) antenna consisting of a slender whip-like conductor, often made adjustable and/or retractable, mounted on an insulator and usually fed at or near its base.

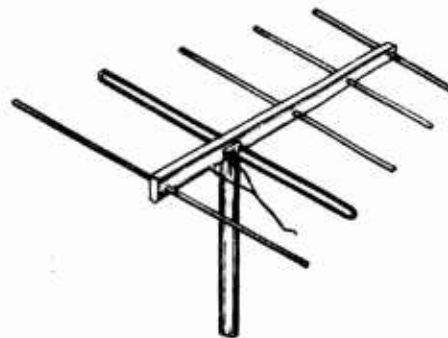


**Wing Cap:** See "Structural".

**Wullenweber Array:** A multipurpose antenna in which the equivalent pattern of a mechanically rotating planar array of elements is obtained by means of properly phasing and switching a num-

ber of fixed antenna elements symmetrically arranged in a circle. The array includes a circle of discrete reflectors or a continuous reflector placed within the antenna ring. The Wullenweber array is usually a wide aperture (greater than  $5 \lambda$ ) antenna.

**Yagi:** A parasitic array consisting of a driven element and a number of parallel parasitic elements; normally the Yagi antenna consists of one reflector, one driven element, and one or more directors.



# UNCLASSIFIED

## ANTENNA for Automatic Direction Finder Models ADF-12(\*)

**FREQUENCY:** LF and MF bands, 0.200 - 1.750 mc  
in three bands:  
Band 1 ... 0.200 - 0.440 mc.  
Band 2 ... 0.475 - 1.050 mc.  
Band 3 ... 1.000 - 1.750 mc.

**TYPE:** Loop.

**DESCRIPTION:** The antenna consists of a loop which can be rotated and which mounts on the top surface of the aircraft with the loop coil outside of the skin of the fuselage. A quadrantal error-correction device in the form of an arched metal strip mounts directly over the loop. A streamlined plastic housing protects the loop and reduces airstream resistance. A separate sense antenna is used to resolve the 180° ambiguity associated with a loop antenna.

**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** Automatic Direction Finder Models ADF-12, ADF-12B. Equipment function - navigation, surface reference.

**COGNIZANT AGENCY:** U. S. Air Force and Bureau of Aeronautics.

### REFERENCE:

U. S. Air Force and the Bureau of Aeronautics, Automatic Direction Finder Models ADF-12 and ADF-12B, Handbook Service Instructions, AN-16-45-201, (Sept. 30, 1953). UNCLASSIFIED.

## ANTENNA ASSEMBLY AN/APA-24(\*)

**MAJOR COMPONENTS:** AN/APA-24: AS-84/APA-24, AS-88/APA-24, AS-101/APA-24, and AS-158/APA-24 antennas.

AN/APA-24A: AS-302/APA-24A, AS-303/APA-24A, AS-304/APA-24A, and AS-305/APA-24A antennas.

**FREQUENCY:** VHF and UHF bands; AS-84/APA-24 and AS-302/APA-24A, 100 - 165 mc; AS-88/APA-24 and AS-303/APA-24A, 165 - 270 mc; AS-101/APA-24 and AS-304/APA-24A, 275 - 480 mc; AS-158/APA-24 and AS-305/APA-24A, 450 - 750 mc.

**TYPE:** Adcock with dipole.

**DESCRIPTION:** The antennas each consists of an Adcock antenna with a horizontal dipole mounted in the center of, and at right angles to, the Adcock. The Adcock and dipole are electrically independent and the system is designed for reception of signals in any plane of polarization. Since the dipole is positioned 90° to the Adcock supporting mast, the respective null axes coincide. The dipole sections are constructed of silver-plated steel tubing. Each antenna has two balanced outputs, using RG-22/U twin-conductor shielded cables. Dimensions of the antennas are as follows:

ANTENNA	DIPOLE LENGTH (inches)	
	Adcock	Horizontal
AS-84/APA-24	37-3/4	44-1/2
AS-88/APA-24	26-1/2	25-7/8
AS-101/APA-24	16	15
AS-158/APA-24	10	10

ANTENNA	WEIGHT (pounds)
AS-84/APA-24	9-3/4
AS-88/APA-24	7-3/4
AS-101/APA-24	6-1/4
AS-158/APA-24	5
AS-302/APA-24A	6-3/4
AS-303/APA-24A	5-1/2
AS-304/APA-24A	3
AS-305/APA-24A	2-3/4

The AN/APA-24A antennas differ from the AN/APA-24 antennas in that they plug into motor drive shafts, and the dipoles screw into and out of their supporting arms. The AN/APA-24 antennas rotate a maximum of 200° in the azimuth plane, and the AN/APA-24A antennas rotate a maximum of 220° in the azimuth plane.

### BEAM DATA:

**Beam type** - Figure of eight in horizontal plane.

**Polarization** - Vertical or horizontal.

**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** Equipment function - navigation, direction finding, and counter-measures, direction finding.

**MISCELLANEOUS:** AN/APA-24(\*) indicates 2 models, AN/APA-24 and AN/APA-24A, with differences as shown.

**COGNIZANT AGENCY:** U. S. Navy and ARL-45-R631 through R634.



# UNCLASSIFIED

**MANUFACTURERS:** Hoyer Products Company, procurement contract KXsa-49677 for AN/APA-24 antennas and R. L. Drake Company, procurement contract 1128-DAY 45-SP.

**STOCK NUMBERS:** AS-84/APA-24 - Signal Corps 2A264-84; AS-88/APA-24 probably Signal Corps 2A264-88; AS-101/APA-24 Federal Stock Number N5985-324-1850; AS-158/APA-24 - Signal Corps 2A264-158; AS-302/APA-24A - Signal Corps 2A264-302; AS-303/APA-24A - Signal Corps 2A264-303; AS-304/APA-24A - Signal Corps 2A264-304; and AS-305/APA-24A - Signal Corps 2A264-305.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Navy, Handbook of Maintenance Instructions for Model AN/APA-24 Direction Finder Antenna System, AN 16-30APA24-2, (August 1, 1945). UNCLASSIFIED.

## ANTENNA GROUP AN/ARA-31&()

**MAJOR COMPONENTS:** 4 Antenna Elements AT-624/AR- &(), 2 Impedance Matching Networks CU-459()/AR, 1 Keyer KY-149()/AR, and 1 Mounting MT-1620()/AR.

**FREQUENCY:** HF and VHF bands, 24 - 51.9 mc.

**TYPE:** Two dipoles for phase-sensitive operation.

**DESCRIPTION:** The antenna group consists of seven separate units: a keyer with its mounting, two "bullets" and four antenna elements. The keyer contains an antenna switching relay, a lobe-switching relay, and a lobe-switching motor. Each "bullet" contains the impedance-matching circuitry for its associated dipole antenna. Each homing antenna consists of a "bullet" and two antenna elements. The homing signals received by both homing antennas are sampled by the keyer at a coded rate and then fed to the antenna input circuit of the receiver. The antenna elements AT-624/AR are fiberglass ships with imbedded conductors of copper-plated steel. They screw into the "bullets".

Each dipole is 51 inches from tip to tip. The antenna group AN/ARA-31 weighs 4.125 pounds. Dimensions are as follows:

Part	Size (inches)	Weight (Ounces)
Antenna Element AT-624/AR	24.10 long	1
Impedance Matching Network CU-459/AR	3.40h x 2.75d x 4.36w	9
Keyer KY-149/AR	2.26h x 7.67d x 4.92w	38
Mounting MT-1620/AR	1.1h x 7.78d x 4.64w	6

Shipping data on AN/ARA-31: 1 box 25 x 7 x 6 inches; volume, 0.61 cubic feet; weight, 9 pounds.

## BEAM DATA:

Polarization - Linear, with plane depending on the orientation of the dipole.

**MATCHING DEVICES:** The group includes Impedance Matching Network CU-459()/AR.

**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** Radio Set AN/ARC-44. Equipment function - navigation, direction finding.

**MISCELLANEOUS:** The system uses D-U sector coding to provide for receiving signals used in indicating whether an aircraft is flying toward, away from, to the left, or to the right of the transmitting station. It operates through the principle of phase-sensitive detection.

**COGNIZANT AGENCY:** USAF and USA, SCLC-10486, project group SCEL.

**MANUFACTURER:** Bendix Radio Division of Bendix Aviation Corporation, contract 13611-PHILA-53-93.

**STOCK NUMBER:** Federal Stock Number F5985-296-2470, Signal Corps: 2A289A-31.

## REFERENCES:

- 1) Department of the Army, Radio Set AN/ARC-44, TM 11-517, (Dec. 4, 1956). UNCLASSIFIED.
- 2) Department of the Army, Directory of U. S. Army Signal Equipments Radio Direction Finding Equipment, TM 11-487D, (March, 1958). UNCLASSIFIED.
- 3) Military Specification MIL-R-12483.

## ANTENNA AN-40-B

See 66AAU.

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ANTENNA AN-50-A

TYPE: Dipole.

STOCK NUMBER: Probably Signal Corps 2A250A.

DESCRIPTION: The antenna is an azimuth array consisting of a streamlined phenolic case, having a dipole in the nose, and a rod passing through and extending from each side in a hairpin form. It includes a pedestal.

REFERENCES:

- 1) Government drawing: SC-D-3552.
- 2) U. S. Department of Defense Nomenclature Card.

ASSOCIATED EQUIPMENT: Radio Set SCR-540-A.

MANUFACTURER: Western Electric Co., contract 2901-NY-42.

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ANTENNA AN-65-()

TYPE: Stub antenna.

INSTALLATION: Airborne.

DESCRIPTION: This antenna is a quarter-wave stub mounted with the tip pointing backward so that it is parallel to the fuselage. The stub is held in place by a molded phenolic insulator which in turn is supported away from the fuselage by a length of streamlined tubing having a circular flange at its base. The parallel distance between the stub and the fuselage is approximately 8-1/2 inches. The length of the stub which protrudes from the insulator housing is 9-1/4 inches. The impedance of this stub is about 35 ohms. The connecting coaxial cable is type WC-549-F.

ASSOCIATED EQUIPMENT: Radio Set SCR-521-(). Equipment function - navigation, direction, finding.

MISCELLANEOUS: Two antennas are required for each installation.

COGNIZANT AGENCY: AAF, T/O 43.5, AFDMA-2F/1.

STOCK NUMBER: Probably Signal Corps 2A265().

REFERENCES:

- 1) Military Specification ARL-85-13.
- 2) U. S. Department of Defense Nomenclature Card.

BEAM DATA: The azimuth beam pattern of this stub is such that maximum gain is obtained at an angle of about 35° from the line of flight, but sensing may be had at an angle as great as 75° from the forward line of flight.

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ANTENNA AN-66-()

TYPE: Stub antenna.

ASSOCIATED EQUIPMENT: Radio Set SCR-521-(). Equipment function - navigation, direction finding.

DESCRIPTION: The antenna is an end-fed quarter-wave Marconi stub. The stub is supported by a three-inch circular molded phenolic insulator mounted directly on the skin of the fuselage in such a way that the stub extends from the nose of the aircraft in a direction parallel to the leading edge of the wing. The stub is 17-3/4 inches long and weighs 1-1/2 pounds. The impedance of the stub is approximately 35 ohms. The stubs are used in pairs, one on each side of the aircraft.

MISCELLANEOUS: Two antennas are required for each installation.

COGNIZANT AGENCY: AAF, T/O 43.5.

STOCK NUMBER: Probably Signal Corps 2A266(). Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

- 1) Government Drawing ARL-85-12.
- 2) U. S. Department of Defense Nomenclature Card.

BEAM DATA: The back radiation is attenuated to a very high degree due to the shielding effect of the aircraft fuselage, wing, and motor nacelles.

INSTALLATION: Airborne.

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ANTENNA AN-69-()

MAJOR COMPONENTS: One dipole radiator and its pedestal.

TYPE: Dipole.

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DESCRIPTION: The dipole section, 1 inch in diameter and 8-5/32 inches long, is divided in the center by an insulator. The base is constructed in such a manner that Cord CD-645 is connected to it by means of Connector M-266.

INSTALLATION: Airborne.

MISCELLANEOUS: Two AN-69-() antennas are required for each Antenna Equipment RC-128-().

STOCK NUMBER: Probably Signal Corps 2A269(). Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

- 1) Specification RCA AS-56400.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AN-80-A

See 66AAT.

ANTENNA AN-95-(\* )

TYPE: Rod.

DESCRIPTION: The antenna is a streamlined rod 16 inches long mounted on a circular baseplate 3-1/2 inches in diameter. The baseplate is bolted to the inner side of the skin of the aircraft. The streamlined rod projects through an opening cut in the skin. The rod may be rotated 360° at installation and locked in the desired position. The bolted baseplate serves to ground the outer conductor of the coaxial feed line to the aircraft. The antenna weighs approximately 2 pounds.

INSTALLATION: Aircraft.

ASSOCIATED EQUIPMENT: Radio Set SCR-695-().

MISCELLANEOUS: AN-95-(\* ) indicates models through AN-95-C.

COGNIZANT AGENCY: ARL.

MANUFACTURER: Stewart-Warner, order 163-DAY-45-RA.

STOCK NUMBER: AN-95A ... Federal Stock Number 5895-263-0963A. AN-95B, AN-95C ... Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

U. S. Department of Defense Nomenclature Card.

ANTENNA AN-97-A

See Navy Model 66ACA.

ANTENNA AN-100

FREQUENCY: VHF band, 108.3 - 110.3 mc.

TYPE: Loop.

DESCRIPTION: The antenna is a loop 20 inches high by 10 inches long by 9 inches deep.

INSTALLATION: Aircraft.

ASSOCIATED EQUIPMENT: Localizer Receiver RC-193 and Radio Receiving Equipment RC-103-A and RC-103-AZ. Equipment function - approach control.

MISCELLANEOUS: Antenna AN-100 is obsolete

according to Reference 1) below.

STOCK NUMBER: Federal Stock Number 5821-538-0651.

REFERENCES:

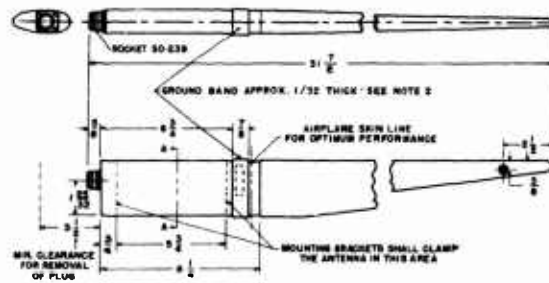
- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.
- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Radio Receiving Equipment RC-103-A or RC-103-AZ, AN 16-10-187, (July 16, 1943). UNCLASSIFIED.

ANTENNA AN-104-(\* )

FREQUENCY: VHF band, 100 - 156 mc.

TYPE: Stub antenna.

UNCLASSIFIED



AN-104-(\*)

**DESCRIPTION:** The antenna is a streamlined stub made of impregnated laminated maple covered with a copper or an iron radiating surface. It has a socket SO-239 for the connecting coaxial feed. The weight of the antenna is 2 pounds 6 ounces. Overall dimensions are 29-1/2 inches long, 1-1/4 inches wide, and 3-1/2 inches deep. The radiating element is 21 inches long, 1-1/4 inches wide, and 3-1/2 inches deep. The antenna has a drag of 10 pounds at 347 knots.

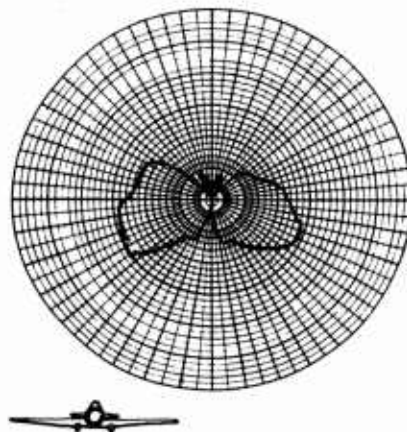
**BEAM DATA:**

Beam type - Omnidirectional in the horizontal plane.  
Polarization - Vertical.

**TUNING/MATCHING DEVICES:** The antenna has a quarter-wave, shorted, 25-ohm concentric line on the inside.

**INSTALLATION:** Aircraft (prior to the F-80 series equipment).

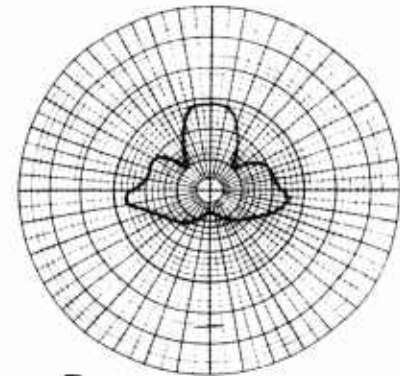
**ASSOCIATED EQUIPMENT:** Radio Sets AN/ARC-3(), AN/ARC-7(), AN/ARW-10A, SCR-522(), and SCR-542-A. Equipment function - communications.



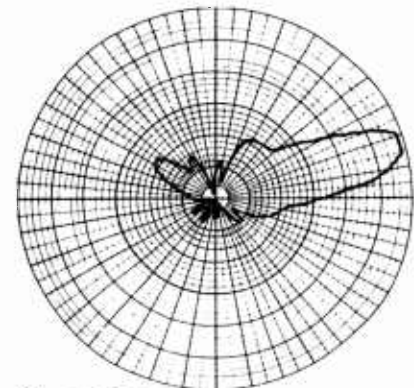
AN-104-(\*) Side Elevation Radiation Pattern

**MISCELLANEOUS:** AN-104-(\*) represents models AN-104, AN-104-A, and AN-104-B. AN-104-B replaces AN-104, AN-104-A, and AN-74-() and is electrically superior to them. It is completely interchangeable with AN-104-A, but has

a different input connector from the one on AN-74-() and AN-104.



AN-104-(\*) Azimuth Radiation Pattern



AN-104-(\*) Forward Elevation Radiation Pattern

**COGNIZANT AGENCY:** Communication Branch, Communication and Navigation Laboratory, Weapons Components Division, Wright Air Development Center.

**MANUFACTURER:** Camfield Mfg. Co., order PR-44-4632.

**STOCK NUMBERS:** AN-104...Federal Stock Number 5821-507-7854; AN-104-A...Federal Stock Number 5821-156-6651; AN-104-B...Federal Stock Number 5821-149-0878.

**REFERENCES:**

- 1) U. S. Air Force, Handbook of Operating Instructions for Radio Sets SCR-522-A and SCR-542-A, TO 12R2-3SCR522-1, (Dec. 30, 1944). UNCLASSIFIED.

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- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Radio Set AN/ARW-10A, TO 12R3-2ARW10-1, (Aug. 23, 1951). UNCLASSIFIED.
- 3) U. S. Air Force, USAF Aircraft Antenna Design Summary, 51S-191544, (Mar. 18, 1952). SECRET.
- 4) Signal Corps Specification 71-5084.
- 5) U. S. Air Force Specification X-7172.
- 6) U. S. Department of Defense Nomenclature Card.

## ANTENNA AN-116-0

Antenna AN-116-() is part of RC-196, Navy type ZB-1. RC-196 is replaced by AN/ARR-1 which uses antennas AS-1/ARR-1, AT-5/ARR-1, and AT-37/APT. Antenna AN-116-() was cancelled 18 March 1943.

## ANTENNA AN-117-A

FREQUENCY: VHF band, 35 - 40 mc.

TYPE: Whip.

DESCRIPTION: The antenna is a tapered vanadium steel rod with a threaded base. It is approximately 6 feet long and weighs 0.88 pound. The copper tubing, antenna clip, and insulator used to mount the antenna are not furnished as part of the antenna.

INSTALLATION: Aircraft (airborne targets).

ASSOCIATED EQUIPMENT: AN/ARW-40, AN/ARW-1(), AN/ARW-10, AN/ARW-18, AN/ARW-19, RC-64-(), and RC-65-(). Equipment function - remote control.

MISCELLANEOUS: Antenna AN-117-A is obsolete according to Reference 1).

STOCK NUMBER: Signal Corps 2A275-117A. Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

### REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.

- 2) War and Navy Departments, Target Control Receiving Equipment RC-64-T5, Handbook of Maintenance Instructions, AN 08-10-229, (Nov. 13, 1943). UNCLASSIFIED.

- 3) U. S. Air Force, Radio Control Receiving Equipments AN/ARW-1, AN/ARW-1A, AN/ARW-1B and Target-Control Receiving Equipments RC-64-Z, RC-64-AZ, Spare Parts List, TO 16-55-223, (Mar. 30, 1948 - revised Dec. 16, 1949).

- 4) U. S. Air Force, Bureau of Aeronautics, Radio Receiving Set AN/ARW-40, Handbook Maintenance Instructions, AN 16-30ARW-40-3, (June 27, 1950 - revised June 30, 1953). UNCLASSIFIED.

- 5) U. S. Air Force, Bureau of Aeronautics, Radio Transmitting Set AN/ARW-18, Handbook of Maintenance Instructions, AN 16-30ARW18-3, (April 12, 1946 - revised Oct. 1, 1953). UNCLASSIFIED.

- 6) War and Navy Departments, Target Control Transmitting Equipments RC-65 and RC-65-Z, Handbook of Operating Instructions, AN 08-40RC65-2, (Mar. 24, 1944). UNCLASSIFIED.

## ANTENNA AN-132

TYPE: Stub antenna.

DESCRIPTION: The antenna consists of a stub antenna, a matching section with a flange for mounting on the skin of the aircraft, two insulators, and a receptacle on the matching section for connection to a coaxial cable.

INSTALLATION: Aircraft.

ASSOCIATED EQUIPMENT: Radio Transmitting Equipment RC-156.

MISCELLANEOUS: AS-33/APT-2 is similar to AN-132-A but has a type N receptacle instead of SO-239.

STOCK NUMBER: Signal Corps 2A275-132.

### REFERENCE:

U. S. Department of Defense Nomenclature Card.

UNCLASSIFIED

ANTENNA AN-133-A

Antenna AN-133-A is identical to Antenna 66ADT but has a ferrule connection instead of a plug. Current stock number lists indicate that AN-133-A is not stocked by the U. S. Air Force. See Antenna 66ADT.

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ANTENNA AN-142-()

ASSOCIATED EQUIPMENT: Radio Set SCR-549-A and SCR-550-(). Equipment function - television.

MISCELLANEOUS: Antenna AN-142-() is identical to Antenna 66AED except for a ferrule cable connection instead of a plug. See Antenna 66AED.

STOCK NUMBER: AN-142-A....Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

- 1) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions for Radio Sets SCR-549-A, SCR-550-A, and SCR-550-B, TO CO 08-40SCR550-2, (Sept. 20, 1944). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AN-143-()

ASSOCIATED EQUIPMENT: Radio Set SCR-549-A and SCR-550-(). Equipment function - television.

MISCELLANEOUS: Antenna AN-143-() is identical to Antenna 66AEE except for a ferrule connection instead of a plug. See Antenna 66AEE.

STOCK NUMBER: AN-143-A...Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

- 1) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions for Radio Sets SCR-549-A, SCR-550-A, and SCR-550-B, TO CO 08-40SCR550-2, (Sept. 20, 1944). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AN-144-()

ASSOCIATED EQUIPMENT: Radio Set SCR-549-A and SCR-550-(). Equipment function - television.

MISCELLANEOUS: Antenna AN-144-() is identical to Antenna 66AEF except for a ferrule connection instead of a plug. See Antenna 66AEF.

STOCK NUMBER: AN-144-A...Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

- 1) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions for Radio Sets SCR-549-A, SCR-550 A, and SCR-550-B, TO CO 08-40SCR550-2, (Sept. 20, 1944). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AN-145-()

ASSOCIATED EQUIPMENT: Radio Set SCR-549-A and SCR-550-(). Equipment function - television.

MISCELLANEOUS: Antenna AN-145-() is identical to Antenna 66AEG except for a ferrule connection instead of a plug. See Antenna 66AEG.

STOCK NUMBER: AN-145-A...Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

- 1) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions for Radio Sets SCR-549-A, SCR-550-A, and SCR-550-B, TO CO 08-40SCR550-2, (Sept. 20, 1944). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

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UNCLASSIFIED

# UNCLASSIFIED

## ANTENNA AN-146(-)

ASSOCIATED EQUIPMENT: Radio Set SCR-549-A and SCR-550-(). Equipment function - television.

MISCELLANEOUS: Antenna AN-146-() is identical to Antenna 66AEH except for a ferrule connection instead of a plug. See Antenna 66AEH.

STOCK NUMBER: AN-146-A...Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

### REFERENCES:

- 1) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions for Radio Sets SCR-549-A, SCR-550-A, and SCR-550-B, TO CO 08-40SCR550-2, (Sept. 20, 1944). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

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## ANTENNA AN-147-(\* )

FREQUENCY: VHF band, 157 - 187 mc.

TYPE: Rod.

DESCRIPTION: The antenna consists of a cadmium-plated steel rod, 3 inches in diameter and 15-1/4 inches long; it has a base plate with eight 0.149-inch-diameter holes equally spaced on a 1-5/16-inch radius for mounting on the skin of the aircraft. It terminates in a PL-259 plug and has an input impedance of 52 ohms.

### BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Ground and airborne.

ASSOCIATED EQUIPMENT: Radio Set SCR-729. Equipment function - navigation, direction finding; and IFF; Interrogator-Responder AN/GPX-2. Equipment function - test.

MISCELLANEOUS: AN-147-(\* ) denotes AN-147 and AN-147-A. Reference 1) below states that this

antenna is obsolete. However, it is listed in Reference 2) which has a later date. AN-147-(\* ) is sometimes part of Antenna AS-253/GPX-1.

COGNIZANT AGENCY: U. S. Air Force, ARL-48-R298 and U. S. Navy, BuShips.

MANUFACTURER: Vendo Corp., order 12049-WF-43 and Philco Corp., order 5759-WF-43.

STOCK NUMBER: Probably Signal Corps 2A275-147-().

### REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.
- 2) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.
- 3) Signal Corps Drawing SC-F-6103-D.
- 4) Signal Corps Specification 71-1739.

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## ANTENNA AN-148-(\* )

FREQUENCY: VHF band, 157 - 187 mc.

TYPE: Two-element Yagi antenna.

DESCRIPTION: The antenna consists of a driven dipole, 30-1/2 inches long, and a director, 27-1/4 inches long, made of cadmium-plated steel. The elements are spaced 10 inches from the skin of the aircraft. The dipole and the support are partially enclosed by a streamlined, phenolic case. A flat steel base plate is attached to the aircraft by nine 8-32 screws on 6-9/32-inch by 3-17/32-inch mounting centers. The input impedance is 50 ohms.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set SCR-729. Equipment function - navigation, direction finding; and IFF.

MISCELLANEOUS: AN-148-(\* ) denotes AN-148-A and AN-148-B. Antenna AN-148-B is the same as

AN-148-A except for two L-shaped pieces of plastic bracing added to reduce the likelihood of antenna fracture due to vibration. Reference 1) below indicates that Antenna AN-148-(\* ) is obsolete. However, the antenna is listed in Reference 2), which is a list of current stock numbers (1957). Some AN-148-A antennas have been modified for various uses. See AS-253/GPX-1 in Volume II of this catalog series and the modified AN-148-A described in this volume for two of these modifications.

COGNIZANT AGENCY: U. S. Air Force, ARL-48-R299.

MANUFACTURERS: Vendo Corp., order 5759-WF-43, and Philco Corporation, order 12049-WF-43 and 388-DAY-44.

STOCK NUMBER: Signal Corps 2A275-148-().

### REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.

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- 2) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.
- 3) Signal Corps drawing SC-F-10200-H.

- 4) Signal Corps Specification 71-1739.
- 5) U. S. Department of Defense Nomenclature Card.

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ANTENNA AN-148-A (modified)

FREQUENCY: VHF band, 170 - 230 mc.

TYPE: V-shaped dipole.

DESCRIPTION: The antenna is made by removing the director from the 2-element Yagi antenna AN-148-A and bending the dipole elements back so that each element makes an angle of 50° with the center line of the antenna and parallel to the plane of the base plate. The ends of the dipole elements are then cut to the proper length for the desired frequency in the range above.

BEAM DATA:

Beam type - Distorted figure of eight with equal maxima for and aft and with minima about half the maximum power toward the sides of the aircraft.

Polarization - Horizontal.

TUNING/MATCHING DEVICES: A balun which consists of a length of RG-8/U cable centered in the one-inch tube of the antenna support is added for impedance matching.

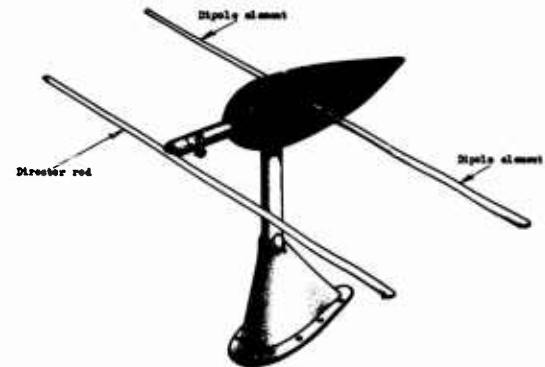
INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Various radio transmitters. Equipment function - countermeasures, jamming.

MANUFACTURER: The modification is accomplished in the field.

REFERENCE:

J. Morgolin, Modifications of the AN-148-A Antenna for RCM Use in the 200 MC Region, Report No. 411-203. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (July 2, 1945). UNCLASSIFIED.



AN-148-A Before Modification

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ANTENNA AN-150

FREQUENCY: HF band.

DESCRIPTION: The antenna assembly consists of the antenna proper, a base assembly, a blister, and a coaxial receptacle.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Equipment RC-160.

COGNIZANT AGENCY: ARL.

STOCK NUMBER: Probably Signal Corps 2A275-150.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

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ANTENNA AN-151-(\*)

FREQUENCY: VHF band, 90 - 180 mc.

DESCRIPTION: The antenna assembly includes a band-pass filter and a detector stage. It mounts on the skin of the aircraft.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Detecting Equipment RC-164.

MISCELLANEOUS: AN-151-(\*) denotes AN-151-A and AN-151-B.

COGNIZANT AGENCY: AAF, ARL-2320 and ARL-2551.

MANUFACTURERS: Galvin Mfg. Co., order 9013-WF-43, and Collins Bros. Tool and Die Co., order 3819-ARL-43.

UNCLASSIFIED



UNCLASSIFIED

STOCK NUMBER: Probably Signal Corps 2A275-151-().

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

ANTENNA AN-152(\*)

FREQUENCY: UHF band, 350 - 700 mc.

COGNIZANT AGENCY: AAF, ARL-2321 and ARL-2552.

DESCRIPTION: The antenna assembly includes a band-pass filter and a detector stage. It mounts on the skin of the aircraft.

MANUFACTURER: Collins Bros. Tool and Die Co., order 3819-ARL-43, and Galvin Mfg. Co., order 9013-WF-43.

INSTALLATION: Airborne.

STOCK NUMBER: Probably Signal Corps 2A275-152-().

ASSOCIATED EQUIPMENT: Detecting Equipment RC-164.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

MISCELLANEOUS: AN-152-(\*) denotes AN-152-A and AN-152-B.

ANTENNA AN-153(\*)

FREQUENCY: UHF band, 1000 mc.

COGNIZANT AGENCY: ARL-2322.

DESCRIPTION: The antenna assembly includes a high-pass filter and a detecting crystal. It is mounted on the skin of the aircraft.

MANUFACTURER: Collins Bros. Tool and Die Co., order 3819-ARL-43.

INSTALLATION: Airborne.

STOCK NUMBER: Probably Signal Corps 2A275-153-().

ASSOCIATED EQUIPMENT: Detecting Equipment RC-164.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

MISCELLANEOUS: AN-153-(\*) denotes AN-153 and AN-153-A.

ANTENNA AN-155

FREQUENCY: VHF and UHF bands, 70 - 400 mc.

STOCK NUMBER: Probably Signal Corps 2A275-155.

TYPE: Stub.

REFERENCES:  
1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.

DESCRIPTION: The antenna is a copper-clad, impregnated maple stub. The radiating element is approximately 30 inches long.

2) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.

INSTALLATION: Airborne.

3) RRL Design M313.

ASSOCIATED EQUIPMENT: Radio Transmitting Equipment RC-183-A, AN/APT-3 and SCR-587.

4) U. S. Department of Defense Nomenclature Card.

MISCELLANEOUS: References 1) and 2) state that Antenna AN-155 is obsolete.

COGNIZANT AGENCY: ARL-2451.

ANTENNA AN-162

FREQUENCY: VHF and UHF bands, 264 - 312 mc.

disk is 5 inches, and the antenna assembly has an overall length of 13.5 inches. Socket SO-239 is provided to connect a 50-ohm cable, WC-549, by means of Plug PL-259-A.

DESCRIPTION: The antenna is a vertical, wide-band receiving antenna operating against the skin of the aircraft. The diameter of the

UNCLASSIFIED

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set SCR-550-B.  
Equipment function - television.

MISCELLANEOUS: Reference 1) below states that  
this antenna is obsolete.

COGNIZANT AGENCY: ARL-2596.

MANUFACTURER: Radio Corporation of America,  
order 3749-ARL-42.

STOCK NUMBER: Probably Signal Corps 2A275-162.

REFERENCES:

- 1) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions for Radio Sets SCR-549-A, SCR-550-A, and SCR-550-B, TO CO 08-40SCR550-2, (Sept. 20, 1944). UNCLASSIFIED.
- 2) RCA drawing P-255349-503.
- 3) Government drawing SC-D-10371.
- 4) U. S. Department of Defense Nomenclature Card.

ANTENNA AN-163

FREQUENCY: UHF band, 324 - 372 mc.

DESCRIPTION: The antenna is a vertical, wide-band receiving antenna operating against the skin of the aircraft. The diameter of the disk is 13.5 inches, and the antenna assembly has an overall length of 12.5 inches. Socket SO-239 is provided to connect a 50-ohm cable, WC-549, by means of Plug PL-259-A.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set SCR-550-B.  
Equipment function - television.

MISCELLANEOUS: Reference 1) below states that  
Antenna AN-163 is obsolete.

COGNIZANT AGENCY: ARL-2597.

MANUFACTURER: Radio Corporation of America,  
order 3749-ARL-42.

STOCK NUMBER: Probably Signal Corps 2A275-163.

REFERENCES:

- 1) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions for Radio Sets SCR-549-A, SCR-550-A, and SCR-550-B, TO CO 08-40SCR550-2, (Sept. 20, 1944). UNCLASSIFIED.
- 2) RCA drawing P-255349-504.
- 3) Government drawing SC-D-10371.
- 4) U. S. Department of Defense Nomenclature Card.

ANTENNA AN-164

FREQUENCY: VHF and UHF bands, 264 - 312 mc.

TYPE: Ground-plane antenna.

DESCRIPTION: The antenna is a vertical, wide-band receiving antenna operating against a ground plane which is part of the antenna assembly. The overall antenna is 13 inches long and 10-1/4 inches wide at the ground plane. Socket SO-239 connects the antenna to a 50-ohm transmission line.

INSTALLATION: Probably ground and airborne.

ASSOCIATED EQUIPMENT: Radio Set SCR-550-B.  
Equipment function - television.

MISCELLANEOUS: The description of this antenna given in Reference 4) below indicates that it is probably a modification of AN-162 for use on ground installations and under conditions where the skin of the aircraft cannot be used as a ground plane. Reference 1) below states that Antenna AN-164 is obsolete.

COGNIZANT AGENCY: ARL-2598.

MANUFACTURER: Radio Corporation of America,  
order 3749-ARL-42.

STOCK NUMBER: Federal Stock Number 5821-155-8281.

REFERENCES:

- 1) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions for Radio Sets SCR-549-A, SCR-550-A, and SCR-550-B, TO CO 08-40SCR550-2, (Sept. 20, 1944). UNCLASSIFIED.
- 2) RCA drawing P-255340-502.
- 3) Government Drawing SC-D-10373.
- 4) U. S. Department of Defense Nomenclature Card.

UNCLASSIFIED

UNCLASSIFIED

ANTENNA AN-165

FREQUENCY: UHF band, 324 - 372 mc.

TYPE: Ground-plane antenna.

DESCRIPTION: The antenna is a vertical, wide-band receiving antenna operating against a ground plane which is part of the antenna assembly. The overall antenna is 12 inches long and 8-1/2 inches wide at the ground plane. Socket SO-239 connects the antenna to a 50-ohm transmission line.

INSTALLATION: Probably ground and airborne.

ASSOCIATED EQUIPMENT: Radio Set SCR-550-B.  
Equipment function - television.

MISCELLANEOUS: The description of this antenna given in Reference 4) below indicates that it is probably a modification of AN-163 for use on ground installations and under conditions where the skin of the aircraft cannot be used as a ground plane. Reference 1) below states that Antenna AN-165 is obsolete.

COGNIZANT AGENCY: ARL-2599.

MANUFACTURER: Radio Corporation of America,  
order 3749-ARL-42.

STOCK NUMBER: Probably Signal Corps 2A275-165.

REFERENCES:

- 1) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions for Radio Sets SCR-549-A, SCR-550-A, and SCR-550-B, TO CO 08-40SCR550-2, (Sept. 20, 1944). UNCLASSIFIED.
- 2) RCA Drawing P-255340-504.
- 3) Government Drawing SC-D-10373.
- 4) U. S. Department of Defense Nomenclature Card.

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ANTENNA AN-166

TYPE: Stub.

DESCRIPTION: The antenna is a copper-clad, impregnated maple mast with an overall length of 35-3/4 inches.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Detecting Equipment  
RC-164-B.

MISCELLANEOUS: Antenna AN-166 is a modified

AN-155. The tip of the radiating section has been cut off and a type-N receptacle has been attached to the base.

COGNIZANT AGENCY: ARL-2717.

MANUFACTURER: Galvin Mfg. Co., order 9013-WF-43.

STOCK NUMBER: Probably Signal Corps 2A275-166.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

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ANTENNA ASSEMBLY AN-167

FREQUENCY: UHF band, 350 - 700 mc.

TYPE: Rod.

DESCRIPTION: The antenna consists of a rod, approximately 7 inches long and 1/4 inch in diameter, which is an integral part of the band-pass filter, detector, and output circuits.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Detecting Equipment  
RC-164-B.

COGNIZANT AGENCY: ARL-2718.

STOCK NUMBER: Probably Signal Corps 2A275-167.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

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ANTENNA AN-171, AN-172, AN-173, AN-174, AN-175, AN-176, AN-177, AN-178, AN-179, and AN-180

FREQUENCY: VHF band...probably 264 mc (AN-171),  
276 mc (AN-172), probably 288 mc (AN-173),  
300 mc (AN-174); UHF band...312 mc (AN-175),  
324 mc (AN-176), probably 336 mc (AN-177),  
348 mc (AN-178), probably 360 mc (AN-179),  
probably 372 mc (AN-180).

DESCRIPTION: These antennas are a group of ten antennas of similar construction but different operating frequencies. They are designed for use with BC-1212-B. The antenna, reflector, and ground rods are made of streamlined tubing. The antennas mount by Socket SO-239.

# UNCLASSIFIED

No other descriptive information on these antennas is available.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Transmitting Set AN/AXT-3. Equipment function - television. Radio Set SCR-549-B.

COGNIZANT AGENCY: ARL.

MANUFACTURER: Farnsworth Electronics Co. and Radio Corporation of America, order 662-DAY-44, plan 3023.

STOCK NUMBERS: AN-171...Signal Corps 2A275-171;

AN-172...Signal Corps 2A275-172, Federal Stock Number N5821-156-6644; AN-173...Signal Corps 2A275-173; AN-174...Signal Corps 2A275-174, Federal Stock Number N5821-155-8271; AN-175...Signal Corps 2A275-175, Federal Stock Number N5821-155-8270; AN-176...Signal Corps 2A275-176, Federal Stock Number N5821-155-8273; AN-177...2A275-177; AN-178...Signal Corps 2A275-178, Federal Stock Number N5925-155-8278; AN-179...Signal Corps 2A278-179; AN-180...Signal Corps 2A278-180. Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

## REFERENCES:

U. S. Department of Defense Nomenclature Cards.

## ANTENNA AN-181

FREQUENCY: VHF band, 80 - 90 mc.

TYPE: Dipole.

DESCRIPTION: The antenna is a dipole consisting of two rods mounted on and at right angles to a bazooka. A Compreg mast is used to support each rod near its free end. The bazooka is 36 inches long, and each rod is 30 inches long. The antenna has an SO-239 connector.

## BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne (large aircraft).

ASSOCIATED EQUIPMENT: Radio Transmitting Equipment RC-186. Equipment function - remote control.

MISCELLANEOUS: Reference 1) below states that Antenna AN-181 is obsolete.

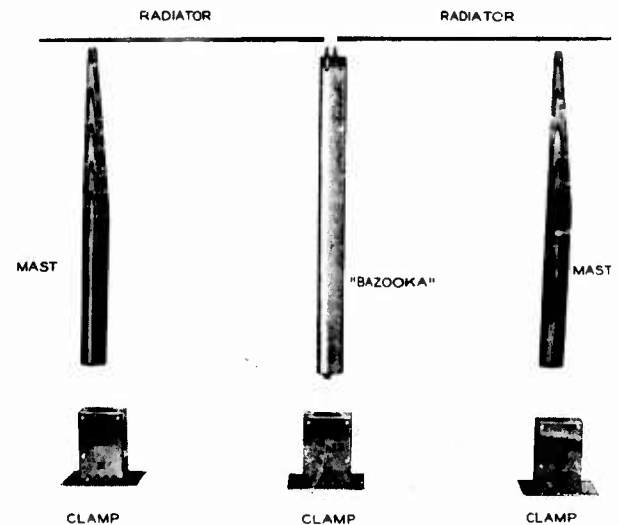
COGNIZANT AGENCY: ARL.

STOCK NUMBER: Signal Corps 2A275-181. Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

## REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.

- 2) War and Navy Departments, Handbook of Maintenance Instructions for Radio Transmitting Equipment RC-186, TO 31R2-3RC186-2 (Sept. 7, 1944). UNCLASSIFIED.



AN-181 and AN-182 Components

## ANTENNA AN-182

FREQUENCY: VHF band, 50 - 60 mc.

TYPE: Dipole.

DESCRIPTION: The antenna is a dipole consisting of two rods mounted on and at right angles to a bazooka. A Compreg mast is used to support each rod near its free end. The bazooka is 54 inches long, and each rod is 48 inches long. The antenna has an SO-239 connector.

## BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne (large aircraft).

ASSOCIATED EQUIPMENT: Radio Transmitting Equipment RC-186. Equipment function - remote control.

MISCELLANEOUS: Reference 1) below states that Antenna AN-182 is obsolete.

See illustrations of AN-181, which is similar to AN-182.

COGNIZANT AGENCY: ARL.

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# UNCLASSIFIED

STOCK NUMBER: Signal Corps 2A275-182. Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

## REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6,

(Mar. 14, 1957). UNCLASSIFIED.

- 2) War and Navy Departments, Handbook of Maintenance Instructions for Radio Transmitting Equipment RC-186, TO 31R2-3RC186-2, (Sept. 7, 1944). UNCLASSIFIED.

## ANTENNA AN-183

FREQUENCY: VHF band, 60 - 70 mc.

TYPE: Dipole.

DESCRIPTION: The antenna is a dipole consisting of two rods mounted on and at right angles to a bazooka. A Compreg mast is used to support each rod near its free end. The bazooka is 46 inches long, and each rod is 40-1/2 inches long. The antenna is designed to connect to a 50-ohm line by an SO-239 connector.

## BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne (large aircraft).

ASSOCIATED EQUIPMENT: Radio Transmitting Equip-

ment RC-186. Equipment function - remote control.

MISCELLANEOUS: Antenna AN-183 is of the same type of construction as AN-181. See illustrations of AN-181.

COGNIZANT AGENCY: ARL-3671.

STOCK NUMBER: Probably Signal Corps 2A275-183.

## REFERENCE:

War and Navy Departments, Handbook of Maintenance Instructions for Radio Transmitting Equipment RC-186, TO 31R2-3RC186-2, (Sept. 7, 1944). UNCLASSIFIED.

## ANTENNA AN-184

FREQUENCY: VHF band, 70 - 80 mc.

TYPE: Dipole.

DESCRIPTION: The antenna is a dipole consisting of two rods mounted on and at right angles to a bazooka. A Compreg mast is used to support each rod near its free end. The bazooka is 40 inches long, and each rod is 35 inches long. The antenna is designed for connection to a 50-ohm line by an SO-239 connector.

## BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne (large aircraft).

ASSOCIATED EQUIPMENT: Radio Transmitting Equip-

ment RC-186. Equipment function - remote control.

MISCELLANEOUS: Antenna AN-184 is of the same type of construction as AN-181. See illustrations of AN-181.

COGNIZANT AGENCY: ARL-3672.

STOCK NUMBER: Probably Signal Corps 2A275-184.

## REFERENCE:

War and Navy Departments, Handbook of Maintenance Instructions for Radio Transmitting Equipment RC-186, TO 31R2-3RC186-2, (Sept. 7, 1944). UNCLASSIFIED.

## ANTENNA AN-185

FREQUENCY: VHF band, 90 - 100 mc.

TYPE: Dipole.

DESCRIPTION: The antenna is a dipole consisting of two rods mounted on and at right angles to a bazooka. A Compreg mast is used to support each rod near its free end. The bazooka is 31.4 inches long, and each rod is 27.6 inches long. The antenna is designed to connect to a 50-ohm line by an SO-239 connector.

## BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne (large aircraft).

ASSOCIATED EQUIPMENT: Radio Transmitting Equipment RC-186. Equipment function - remote control.

MISCELLANEOUS: Antenna AN-185 is of the same type of construction as AN-181. See illustrations of AN-181.

COGNIZANT AGENCY: ARL-3673.

UNCLASSIFIED

STOCK NUMBER: Probably Signal Corps 2A275-185.

REFERENCE:  
War and Navy Departments, Handbook of

Maintenance Instructions for Radio Trans-  
mitting Equipment RC-186, TO 31R2-3RC186-2,  
(Sept. 7, 1944). UNCLASSIFIED.

ANTENNA AS-(XA-17)/ART

FREQUENCY: HF and VHF bands, 27 - 34 mc.

DESCRIPTION: The reference given below lists  
this antenna as "Fan Antenna for B-17, B-24,  
B-26 used with AN/ART-3, Type-N Connector."  
The antenna is obsolete since the reference  
is a listing of obsolete equipment.

ASSOCIATED EQUIPMENT: Radio Set AN/ART-3.  
Equipment function - probably communications.

REFERENCE:  
Partial List of Obsolete Antennas, Wright  
Air Development Division, WCLRS-6, (March 14,  
1957). UNCLASSIFIED.

ANTENNA AS-(XA-18)/ART

FREQUENCY: VHF band, 36 - 46 mc

TYPE: Whip

DESCRIPTION: The antenna is a whip which is  
terminated in a type-N connector. It is  
obsolete according to the reference given  
below.

ASSOCIATED EQUIPMENT: Radio Set AN/ART-3.  
Equipment function - probably communications.

REFERENCE:  
Partial List of Obsolete Antennas, Wright  
Air Development Division, WCLRS-6, (March 14,  
1957). UNCLASSIFIED.

ANTENNA AS-(XA-95)/APQ

FREQUENCY: EHF band, 33,000 - 36,000 mc  
(K<sub>a</sub>-band)

DESCRIPTION: The reference given below lists  
this antenna as a British linear array which  
is obsolete.

REFERENCE:  
Partial List of Obsolete Antennas, Wright  
Air Development Division, WCLRS-6, (March 14,  
1957). UNCLASSIFIED.

ANTENNA AS-(XA-103)/APQ

FREQUENCY: SHF band, 15,350 - 17,250 (K<sub>u</sub>-band).

DESCRIPTION: The reference given below lists  
this antenna as obsolete.

REFERENCE:  
Partial List of Obsolete Antennas, Wright  
Air Development Division, WCLRS-6, (March 14,  
1957). UNCLASSIFIED.

ANTENNA AS-(XA-125)/AP

FREQUENCY: UHF band, 2600 - 3000 mc.

DESCRIPTION: The reference given below lists  
this antenna as obsolete.

REFERENCE:  
Partial List of Obsolete Antennas, Wright Air  
Development Division, WCLRS-6, (March 14,  
1957). UNCLASSIFIED.

ANTENNA ASSEMBLY AS-1/APR-1

FREQUENCY: VHF band, 230 - 250 mc.

TYPE: Stub.

DESCRIPTION: This antenna assembly consists  
of a rod 12 inches long and a mounting base

with a type SO-239 coaxial connector.

INSTALLATION: Airborne.

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MISCELLANEOUS: AS-1/APR-1 was cancelled and replaced by AT-5/ARR-1.

COGNIZANT AGENCY: U. S. Navy.

REFERENCE:

Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953).  
CONFIDENTIAL.

ANTENNA ASSEMBLY AS-5/APS-2

FREQUENCY: SHF band, 3267 - 3333 mc on search, 3256 mc on beacon; VSWR < 1.4 from 3256 to 3330 mc on 46-ohm coaxial line.

TYPE: Cut-paraboloid reflector fed by a dipole and auxiliary reflector.

DESCRIPTION: The assembly consists of a half-wave dipole antenna (located at the focal point of a cut paraboloidal reflector) and a small, circular, auxiliary reflecting plate (mounted one quarter-wavelength in front of the dipole) to reflect energy back into the cut paraboloidal reflector. The dipole and reflecting plate are enclosed in a plastic shell which can be pressurized. The antenna assembly includes the selsyn to transmit the angular position of the antenna to the PPI unit. The overall assembly is 39-3/16 inches high, 29 inches deep, and 29 inches long. The approximate weight of the assembly is 65 pounds.

In an AN/APS-2 installation, Antenna Assembly AS-5/APS-2 is mounted on Mounting Base MT-15/APS-2; and in an AN/APS-2A or AN/APS-2D installation, the assembly is mounted on Mounting Base MT-46/APS-2A, which also includes mounting space for the transmitter, converter, and junction box. An AN/APS-2B installation incorporates a special mounting assembly for the transmitter, converter, and antenna assembly and can be lowered into the nacelle in the belly of the aircraft by means of a specially designed lift.

BEAM DATA:

Half-power beamwidths -  
Vertical - approximately 9°.  
Horizontal - approximately 9°.  
Beam type - Single symmetrical lobe.  
Polarization - Horizontal.

SCAN DATA: The antenna has azimuth rotation through 360° at 12 or 24 revolutions per minute. Permissible tilt in elevation is ±20°.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APS-2, AN/APS-2A, AN/APS-2B, and AN/APS-2D. Equipment function - search and navigation.



AS-5/APS-2

MISCELLANEOUS: AS-5/APS-2 is similar to Antenna Assemblies AS-17/APS and AS-17A/APS.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBERS: U. S. Navy R16AN-AS5APS2, Signal Corps 2A264-5.

REFERENCE:

Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953).  
CONFIDENTIAL.

ANTENNA AS-7/APG-1

FREQUENCY: S-band.

TYPE: Paraboloidal reflector fed by a rotating dipole.

DESCRIPTION: This is an oscillating, paraboloidal reflector for scanning or tracking in azimuth and elevation. Energy is supplied by a motor-driven, rotating dipole

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offset from the focal point of the reflector.  
The approximate weight is 100 pounds.

BEAM DATA:

Gain - Additional information is available in the secret document listed below as Reference 2.

Half-power beamwidths - See Reference 2.

Beam type - Pencil.

Polarization - Linear, rotating.

SCAN DATA: A conical scan is used for tracking, and the conical scan is combined with azimuth rotation (i.e. a Palmer scan) for search. See Reference 2.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APG-1. Equipment function - fire control.

MISCELLANEOUS: AS-7/APG-1 is similar to AS-13/APG.

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ANTENNA ASSEMBLY AS-12/APS-3

MAJOR COMPONENTS: AT-62/APS-3 antenna reflector, a feed element, and an antenna pedestal.

FREQUENCY: SHF band, 9375 + 30 mc on search, 9310 mc on beacon; VSWR < 2 from 9310 to 9405 mc on X-band waveguide.

TYPE: Paraboloidal reflector fed by a waveguide, double-dipole feed.

DESCRIPTION: This is a paraboloidal reflector fed by a waveguide, double-dipole feed. The reflector has a diameter of 18-1/2 inches and a focal length of 5.66 inches. It is constructed of magnesium. Overall dimensions of the assembly are 18-1/2 inches wide, 19-1/6 inches high, and 19-3/8 inches deep. The approximate weight is 21 pounds.

BEAM DATA:

Gain - Additional information is available in the secret document listed below as Reference 3.

Half-power beamwidths - See Reference 3.

Polarization - Horizontal.

SCAN DATA: The azimuth scan will cover a 160° sector at 35 scans per minute. Elevation coverage of a 24° sector is accomplished by tilting the reflector with respect to the feed.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-3. Equipment function - search, surface; and navigation.

MISCELLANEOUS: The nomenclature card and Reference 2 indicate that this assembly produces a csc<sup>2</sup> beam. Unless the available photograph is in error, the reflector produces very little if any csc<sup>2</sup> beam shaping. AS-22/APS-3 is similar to but slightly larger than

COGNIZANT AGENCY: U. S. Air Force.

STOCK NUMBERS: Signal Corps 2AK264-7.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD-150674. SECRET.
- 3) U. S. Air Force Specification 471-1722.
- 4) U. S. Department of Defense Nomenclature Card.

AS-12/APS-3. In most installations they are interchangeable.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Philco Corporation contract NOas-285.

STOCK NUMBERS: U. S. Navy R16AN-AS12APS3, Signal Corps 2A264-12.

REFERENCES:

- 1) U. S. War and Navy Departments, Handbook of Operating Instructions for AN/APS-3 Aircraft Radar Equipment, AN 08-10-196, (July 22, 1943 - revised Dec. 30, 1944). UNCLASSIFIED.



AS-12/APS-3

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- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) E. B. Soltwedel, A Radar Directory, Pro-

ject RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD-150674. SECRET.

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ANTENNA ASSEMBLY AS-13/APG-2

FREQUENCY: SHF band, 3264 - 3330 mc; VSWR < 2.

ASSOCIATED EQUIPMENT: AN/APG-2. Equipment function - fire control.

TYPE: Paraboloidal reflector fed by a rotating dipole.

MISCELLANEOUS: AS-13/APG-2 is similar to AS-7/APG-1.

DESCRIPTION: This assembly consists of a paraboloidal reflector which is fed by a motor-driven, rotating dipole. The dipole is rotated about the axis of the paraboloid at approximately 4000 revolutions per minute. The electrical center of the dipole is offset from the axis of the paraboloid. Spinning the feed produces a conical scan. The diameter of the reflector is 27 inches, and the approximate weight of the assembly is 104 pounds.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: General Electric Company, procurement order 1553-WF-43.

STOCK NUMBERS: 2AK299-GP13.

REFERENCES:

BEAM DATA:

Gain - Additional information is available in the secret document listed below as Reference 2.

Half-power beamwidths - See Reference 2.

Beam type - Pencil.

Polarization - Linear, rotating.

1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

2) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD-150674. SECRET.

3) U. S. Air Force Specification 471-1762.

4) U. S. Department of Defense Nomenclature Card.

SCAN DATA: The antenna assembly can be moved 90° in azimuth and from +70° to -12° in elevation.

INSTALLATION: Airborne.

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ANTENNA ASSEMBLY AS-14(\*)/AP

MAJOR COMPONENTS: Dipole, coaxial cable, r-f connector, and a mounting bracket.

FREQUENCY: UHF and SHF bands, 2700 - 3400 mc.

TYPE: Dipole.

DESCRIPTION: The 3-3/4-inch-long dipole is permanently attached, with a waterproof seal, to 10 feet of coaxial cable. For each particular installation, the attached cable is cut to a suitable length and terminated with an r-f connector.

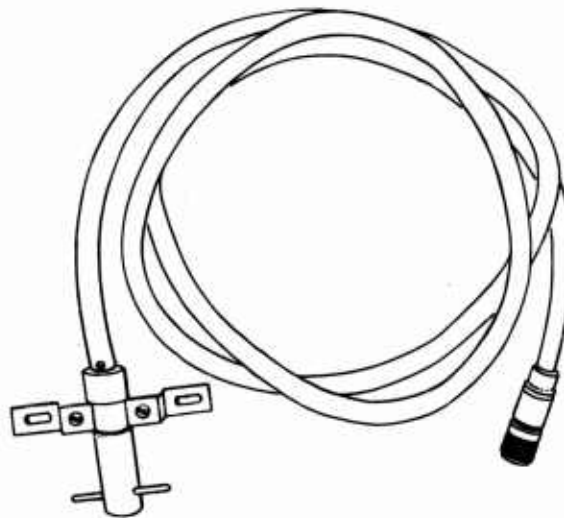
BEAM DATA:

Polarization - The dipole is positioned so that its polarization is the same as that of the radar set under test.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Phantom Target RF-4/AP. Equipment function - test.

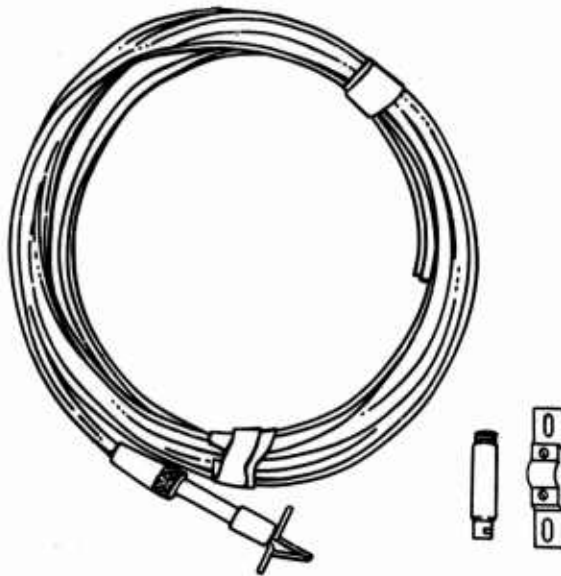
MISCELLANEOUS: AS-14(\*)/AP represents AS-14/AP and AS-14A/AP. The only differences between



AS-14A/AP

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AS-14/AP

the two are cable size and r-f termination. AS-14A/AP replaces AS-35()/AP, which was cancelled 13 September 1943.

COGNIZANT AGENCY: U. S. Air Force, ARL.

MANUFACTURER: Western Electric Company, (AS-14/AP) contract 3646-ARL-43.

STOCK NUMBERS:

AS-14/AP . . . Signal Corps 3F4043-14  
AS-14A/AP . . . Signal Corps 2AK264-14A  
Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Air Force Specification 471-1752.

ANTENNA ASSEMBLY AS-15/AP

MAJOR COMPONENTS: Dipole, coaxial cable, type N connector, and a mounting bracket.

FREQUENCY: SHF band, 9300 mc.

TYPE: Dipole.

DESCRIPTION: The dipole is permanently attached, with a waterproof seal, to 50 inches of 50-ohm, RG-8/U or RG-31/U r-f cable. The attached cable is cut to the proper length for each particular installation and is terminated with a type N connector.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Phantom Target RF-3/AP.  
Equipment function - test.

COGNIZANT AGENCY: U. S. Air Force, ARL.

MANUFACTURER: Western Electric Company.

STOCK NUMBER: Signal Corps 2A264-15. Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Air Force Specification 471-1781.

ANTENNA AS-17(\*)/APS

FREQUENCY: SHF band, 3267 - 3333 mc search, and 3256 mc on beacon, VSWR < 1.4 at 3300 mc on 46-ohm coaxial cable.

TYPE: Cut-off paraboloidal reflector fed by a dipole antenna.

DESCRIPTION: The reflector is a paraboloidal reflector 29 inches in diameter with a small amount of its upper surface cut away. It is fed by a half-wave dipole mounted at the focal point. (The focal length is 10.6 inches.) A circular plate is mounted 1/4 wavelength from the dipole and reflects the dipole forward radiation back to the parabo-

loidal reflector. The dipole and reflecting plate are enclosed in a small plastic shell which can be pressurized. The antenna mounts on Mounting Base MT-87/APS-2C. Six 5/16-24 tapped holes are provided for mounting the assembly. It is 29-3/16 inches high, 29 inches wide, and 29 inches deep and weighs 72-1/2 pounds.

BEAM DATA:

Half-power beamwidth - E- and H-planes - 9°.  
Beam type - pencil.  
Polarization - horizontal.

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SCAN DATA: The antenna rotates through 360° in azimuth and can be raised or lowered 20° in elevation. AS-17/APS rotates at 10 or 20 revolutions per minute. AS-17A/APS rotates at 12 or 24 revolutions per minute.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Sets AN/APS-2C, AN/APS-2E, AN/APS-2F, and AN/APS-2G. Equipment function - search; and navigation, surface reference.

MISCELLANEOUS: AS-17(\*)/APS denotes two models AS-17/APS and AS-17A/APS. The two models differ in speed of rotation as noted in Scan Data. These antennas are similar to Antenna AS-5/APS-2.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Philco Corporation, Navy contract NXsa-26589.

STOCK NUMBERS: U. S. Navy-ASO R16AN-AS17APS, U. S. Navy-ASO R16AN-AS17AAPS.

REFERENCES:

- 1) War and Navy Departments, Handbook of Maintenance Instructions for Models AN/APS-2F and AN/APS-2G Aircraft Radar Equipment, CO-AN 08-30APS2-2, (Oct. 12, 1944). CONFIDENTIAL.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) Military Specification 348-1376. CPR-510-25

- 4) U. S. Department of Defense Nomenclature Card.



AS-17/APS

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ANTENNA SYSTEM AS-21/APQ-10

FREQUENCY: SHF band, 9335 - 9415 mc; VSWR < 2.

TYPE: Paraboloidal reflector.

DESCRIPTION: The antenna includes a stabilized X-band spinner which provides 360° azimuth scanning for navigation and search, and sector scanning during the bombing run.

BEAM DATA: Additional information is available in the secret document listed below as Reference 2.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APQ-10. Equipment function - search; navigation; and bombing.

COGNIZANT AGENCY: ARL-2509.

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MANUFACTURERS: Unknown, procurement order 12148-AF-43.

STOCK NUMBER: Signal Corps 2A249-21.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD-150674. SECRET.
- 3) U. S. Department of Defense Nomenclature Card.

# UNCLASSIFIED

## ANTENNA ASSEMBLY AS-22/APS-3

FREQUENCY: SHF band, 9345 - 9405 mc on search and 9310 mc on beacon; VSWR < 2 from 9310 to 9405 mc.

TYPE: Paraboloidal reflector fed by a waveguide double-dipole.

DESCRIPTION: The reflector is a paraboloid with a focal length of 5.66 inches. It is fed by a tapered waveguide section which terminates in a double-dipole at the focal point of the paraboloid. The antenna is similar to but slightly larger than the AS-12/APS-3. In most installations they are interchangeable.

BEAM DATA: Additional information is available in the secret document listed below as Reference 2.  
Polarization - Horizontal.

SCAN DATA: The antenna will provide rectangular scanning through 160° in azimuth at 35 cycles per minute; the tilt may be varied + 8° in elevation.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-3.  
Equipment function - search and navigation.

MISCELLANEOUS: According to Reference 1, this antenna is obsolete.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBERS: U. S. Navy-ASO R16AN-AS22APS3.

### REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD-150674. SECRET.
- 3) U. S. Department of Defense Nomenclature Card

## ANTENNA ASSEMBLY AS-23/AP

MAJOR COMPONENTS: Dipole, parasitic reflector, connector, and mounting bracket.

FREQUENCY: UHF, SHF bands, 1550 - 5200 mc; VSWR < 5 from 2400 to 3400 mc on 51-ohm coaxial cable.

TYPE: Dipole, parasitic array.

DESCRIPTION: The array consists of a dipole, parasitic reflector, connector, and mounting bracket. The connector fits Navy Type 49268 r-f plug. The dipole is 1/2 wavelength long and has an input impedance of 51 ohms. Overall dimensions are approximately 3-13/16 inches by 2-3/16 inches by 1-1/8 inches.

BEAM DATA:  
Polarization - Same as that of radar set under test (linear).

ASSOCIATED EQUIPMENT: Phantom Target TS-48/AP, Detector Amplifier Assembly AN/UPA-1A, Wave-

meter Test Set TS-117/6P. Equipment function - test.

MISCELLANEOUS: Status - obsolete.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Marathon Co., procurement contract NXsa-2589; Hazeltine Electronics Corp., procurement contract N0sr-39332.

STOCK NUMBER: Federal Stock Number 5985-093-5619.

### REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Hazeltine Drawing A-4369.
- 3) MIT Specification and Drawing B-2657A.

## ANTENNA ASSEMBLY AS-24/APS-6

FREQUENCY: SHF band, 9335 - 9415 mc on search and 9307 - 9313 mc on beacon; VSWR < 2.0.

TYPE: Paraboloidal reflector probably fed by a Cutler feed.

DESCRIPTION: The antenna is a 17-inch paraboloid with a tapered waveguide feed, having mica windows and terminating in a reflecting disk (probably a Cutler feed). The waveguide

system is pressurized. The antenna is 25-1/2 inches long, 17 inches wide, and 19-3/4 inches high; it weighs about 50 pounds and is enclosed in a radome.

BEAM DATA: Additional information is available in the secret document listed below as Reference 2.

Half-power beamwidth - 5.5°.  
Polarization - Horizontal.

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SCAN DATA: The antenna scans in either of two ways. A spiral scan is used for search and a conical scan for gun aiming. The spiral scan is produced by rotating the reflector and feed (as a unit) at 1200 revolutions per minute while simultaneously varying the angle between the axis of rotation and the geometric axis of the antenna. This angle is varied between  $0^{\circ}$  and  $60^{\circ}$  at the rate of 15 cycles per minute. The resultant of these two motions produces a spiral scan. The scan has a maximum deflection of  $60^{\circ}$  from center so that the maximum width of the spiral is  $120^{\circ}$ . Conical scanning is produced by rotating the antenna as before but with the angle between the rotational and geometric axes locked at  $9^{\circ}$ . This produces a cone  $25^{\circ}$  wide.

INSTALLATION: Airborne, installed in either wing or nose nacelle. An unobstructed view, parallel to the axis of gunfire and for  $60^{\circ}$  from center in all directions, must be provided.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-6.  
Equipment function - fire control.

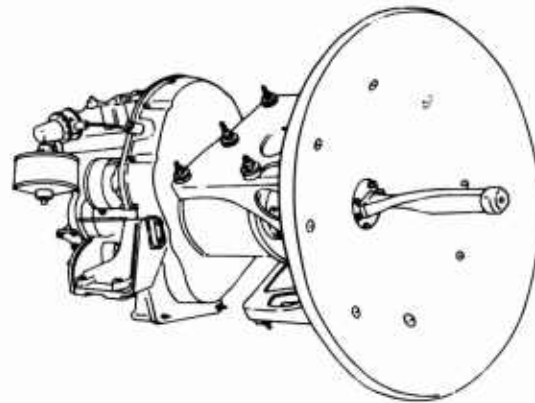
COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Westinghouse Electric Corporation,  
U. S. Navy contracts NXsa 29650 and NXsa 38495.

STOCK NUMBERS: U. S. Navy-ASO R16AN-AS24APS6.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD-150674. SECRET.
- 3) U. S. Department of Defense Nomenclature Card.



AS-24/APS-6

## ANTENNA AS-25/APR-2

FREQUENCY: VHF and UHF bands, 90 - 420 mc;  
VSWR < 5 on 50-ohm coaxial cable.

TYPE: Stub.

DESCRIPTION: This antenna is a  $1/4$ -wavelength stub. The stub is a copper-plated, impregnated-maple "mast." The length of the stub in its mounting base is 30 inches, and the weight of the combination is 5.2 pounds. The length of the radiating portion is  $21\frac{3}{4}$  inches.

### BEAM DATA:

Beam type - The free-space pattern is omnidirectional in a plane perpendicular to the axis of the stub.

Polarization - Linear (dependent on mode of mounting), usually mounted at an angle of 45 degrees to horizontal to receive both horizontal and vertical polarization.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APR-2. Equipment function - countermeasures, search.

MISCELLANEOUS: This antenna is designated as obsolete by Reference 2 and Reference 3.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBERS: U. S. Navy R16AN-AS25APR2, Signal Corps 2AK264-25. Current stock number lists indicate that this item is not stocked by the U. S. Air Force.



AS-25/APR-2

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REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Air-

borne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

- 3) Private Correspondence.

ANTENNA AS-26/APR-2

FREQUENCY: UHF band, 300 - 3000 mc; VSWR < 5 on 50-ohm coaxial cable.

TYPE: Conical antenna.

DESCRIPTION: The antenna is of the discone-type with the center radiator actually formed of two cones with their bases joined. An inverted cone with a 60-degree apex is joined to an upright cone which has a 90-degree apex, and the resulting radiating element is mounted on a disc with the cone-assembly axis perpendicular to the mounting disc. The assembly is 10 inches high by 6-1/2 inches in diameter and weighs 2-1/2 pounds. The antenna is covered with a CW-3/APR-2, streamlined, plastic nacelle.

BEAM DATA:

Beam type - Omnidirectional in the plane perpendicular to the axis of the cone assembly.  
Polarization - Linear, dependent upon mounting position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APR-1 and AN/APR-2.  
Equipment function - countermeasures, search.

MISCELLANEOUS: This antenna is designated as obsolete by Reference 1 and Reference 3.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBER: U. S. Navy R16AN-AS26APR-2.

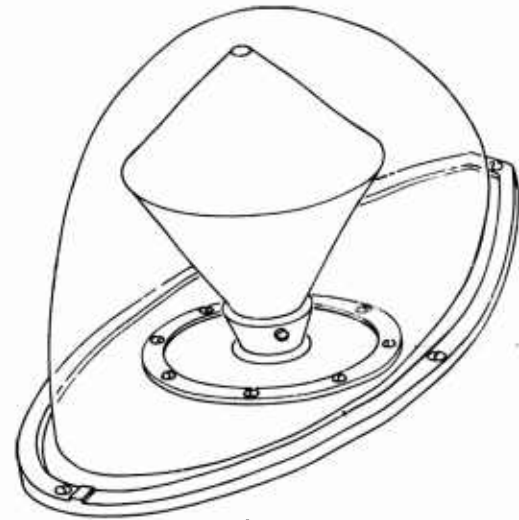
REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.

- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

- 3) Private Correspondence.

- 4) U. S. Department of Defense Nomenclature Card.



AS-26/APR-2

ANTENNA SYSTEM AS-27(\*)/ARN-5

FREQUENCY: VHF and UHF bands, 108 - 111 mc and 329 - 335 mc.

TYPE: Dipole array.

DESCRIPTION: The system consists of two separate dipole antennas having a common mast and mounting. It is for use with Instrument Landing Systems (ILS). The mast and base are of cast aluminum with a lacquer finish. The glide-path antenna, a conventional dipole, is mounted in the same horizontal plane as the localizer antenna, a U-shaped, folded dipole. (See illustration.)

The antennas are fed by RG-22/U, 95-ohm, Twinax cable.

BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Receiving Equipment AN/ARN-5( ) and RC-103( ). Equipment function - navigation, surface reference.

MISCELLANEOUS: AS-27(\*)/ARN-5 denotes two models, AS-27/ARN-5 and AS-27A/ARN-5. The



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tion, U. S. Navy contracts NXss-27923 and NXss-31230.

STOCK NUMBER: Signal Corps 2A264-29.

## REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6,

(March 14, 1957). UNCLASSIFIED.

- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO-16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

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## ANTENNA ASSEMBLY AS-31(\*)/APN-7

FREQUENCY: UHF and SHF bands, 2750 - 2950 mc, 3220 - 3320 mc, and 3380 - 3470 mc; VSWR < 2 on 50-ohm coaxial cable.

TYPE: Dipole array.

DESCRIPTION: The radiating portion of the antenna consists of three dipoles enclosed in a spherical cover of transparent plastic and mounted 1/4 wavelength from the end of a short, rigid section of concentric line. The three dipoles are mounted 120° apart on the periphery of a circle to form a tripole. The height of the dipoles above the fuselage is 20 inches for AS-31/APN-7 and is 4 inches for AS-31A/APN-7. Antenna AS-31/APN-7 is 24-5/8 inches high, 3-1/4 inches wide, 3-1/4 inches deep; antenna AS-31A/APN-7 is 9 inches high, 2-1/2 inches wide and 7 inches deep.

## BEAM DATA:

Beam type - Omnidirectional in the horizontal plane. The signal strength is maximum in the horizontal plane containing the tripole.  
Polarization - Horizontal.

INSTALLATION: Airborne. The antenna should be mounted on the narrowest and most rounded part of fuselage to reduce interference due to image reflection.

ASSOCIATED EQUIPMENT: Radar Beacon AN/APN-7.  
Equipment function - radar beacon.

MISCELLANEOUS: AS-31(\*)/APN-7 denotes two models, AS-31/APN-7 and AS-31A/APN-7. The two models are interchangeable and differ mechanically only in height and shape. The first and last bands of frequencies above pertain to the A-model while the middle band pertains to the undesignated model.

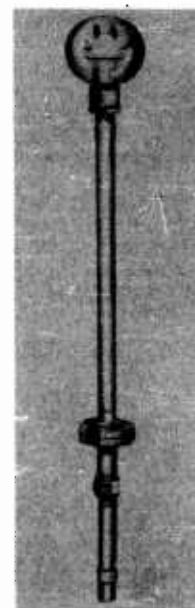
COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Philco Corporation and Telephones Corporation, contract N383s-7169.

STOCK NUMBERS: U. S. Navy-ASO R16AN-AS31APN-7, Federal Stock Number F 5985-090-2649.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.



AS-31/APN-7

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## ANTENNA ASSEMBLY AS-32(\*)/APX-1

FREQUENCY: VHF band, 157 - 212 mc; VSWR < 3 on 50-ohm line as a transponder antenna, VSWR < 1.5 on 50-ohm line as an interrogator-responder antenna.

TYPE: Whip.

DESCRIPTION: The assembly consists of a tapered, quarter-wavelength whip antenna, mounting base, r-f fittings and adapters,

and two extenders (E-702 and E-703) for use when the antenna is used in a different range of frequencies. The antenna consists of a steel rod with a button end. The assembly is approximately 18-1/2 inches high, 3 inches long, and 3-1/2 inches deep. It weighs about one pound and has an input impedance of 50 ohms.

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## BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne, mounted vertically to the skin of the aircraft.

ASSOCIATED EQUIPMENT: Radar Equipment AN/APX-1, AN/APX-2, and AN/APX-8. Equipment function - IFF.

MISCELLANEOUS: AS-32(\*)/APX-1 denotes two models, AS-32/APX-1 and AS-32A/APX-1. The two antennas are similar and are electrically interchangeable. Antenna Assembly Navy Type 66AAN was superseded by AS-32/APX-1.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Hazeltine Electronics Corporation, U. S. Navy contracts NXsa-27630, -27631, -46070, -46071, -59080, and -59081.

STOCK NUMBERS: Signal Corps 2A264-32, U. S. Navy-ASO R16A4989, Federal Stock Number N 5985-254-7176.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA ASSEMBLY AS-33/APT-2

FREQUENCY: UHF band, 475 - 585 mc; VSWR < 2 on coaxial cable.

TYPE: Stub.

DESCRIPTION: The assembly consists of a quarter-wavelength stub antenna, a plastic housing, a matching section with a flange for mounting to the skin of the aircraft, two insulators, and a coaxial transmission line. The stub is 4 inches long and 1 inch in diameter. The cylindrical plastic housing is 4 inches long, 5 inches high and 1-3/4 inches in diameter. The overall antenna is 12-3/8 inches long and 3-1/16 inches in diameter; it weighs 2.2 pounds. The flanged matching section is equipped with a type N connector. The antenna requires a metal ground plane and should be mounted on the lower part of the aircraft in an area free from obstructing objects for a radius of 10 feet.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Equipment AN/APQ-9, Radar Set AN/APT-2, and Radar Set AN/APQ-1. Equipment function - countermeasures, deception.

MISCELLANEOUS: This antenna is listed as obsolete by Reference 1. It is identical to antenna AN-132-A but has a type N receptacle instead of SO-239.

COGNIZANT AGENCY: ARL.

MANUFACTURERS: Delco Radio Division, U. S. Navy contract NXs-28022.

STOCK NUMBER: U. S. Navy-ASC R16AN-AS33APT.

## REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 2) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.
- 3) Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Dec. 3, 1945). UNCLASSIFIED.
- 4) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.



AS-33/APT-2

## ANTENNA ASSEMBLY AS-34/APT-3

This antenna was cancelled, 27 January 1944, (per nomenclature card) and replaced by Antennas AT-36/APT, AT-37/APT, and AT-38/APT.

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ANTENNA ASSEMBLY AS-35()/AP

This nomenclature was cancelled, 13 September 1943, (per nomenclature card) and reassigned as Antenna Assembly AS-14A/AP.

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ANTENNA ASSEMBLY AS-36/APQ-2

FREQUENCY: VHF and UHF bands, 250 - 550 mc;  
VSWR < 2.0 on 50-ohm coaxial cable.

TYPE: Stub.

DESCRIPTION: The assembly consists of a demountable antenna stub 15 inches long, a matching section with a flange for mounting to the skin of the aircraft, and a receptacle on the matching section for connection to a coaxial transmission line. Two spare stubs are included and may be cut to the desired length to provide maximum performance over the frequency band.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Transmitting Equipment AN/APQ-2. Equipment function - countermeasures, deception.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURERS: Delco Radio Division, U. S. Navy contract NXsa-28261.

STOCK NUMBER: U. S. Navy-ASO R16A4432-500.

REFERENCE:  
Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953).  
CONFIDENTIAL.

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ANTENNA ASSEMBLY AS-44/APR-5

FREQUENCY: UHF band, 1000 - 3000 mc; VSWR < 3 on a 50-ohm line.

TYPE: Conical.

DESCRIPTION: The antenna assembly consists of a circular mounting plate, an inverted cone surmounted by an upright cone, and a high-pass filter with a cutoff frequency of 1000 mc. The axis of the cone assembly is perpendicular to the mounting plate. The assembly is 7-3/8 inches long, has a diameter of 6 inches, and weighs about two pounds.

BEAM DATA:  
Radiation pattern - A null exists along the axis of the cone assembly.  
Polarization - Linear.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APR-5.  
Equipment function - countermeasures, search.

MISCELLANEOUS: This antenna is mechanically interchangeable and identical in construction with Antenna Assembly AS-125/APR, but the AS-125/APR has the axis of its cone assembly inclined 55° to the mounting plate. AS-44/APR-5 is listed as obsolete in Reference 1.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Galvin Manufacturing Company,  
U. S. Navy contract NXss-27558.

STOCK NUMBER: U. S. Navy-ASO R16AN-AS44APR5.

- REFERENCES:
- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
  - 2) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.
  - 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
  - 4) U. S. Department of Defense Nomenclature Card.



AS-44/APR-5

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## ANTENNA ASSEMBLY AS-46(\*)/APG-4

FREQUENCY: UHF band, 405 - 415 mc; VSWR < 1.2 between 409.5 and 410.5 mc on a 50-ohm line.

TYPE: Yagi.

DESCRIPTION: The assembly is a Yagi array consisting of a driven element, a reflector, and 3 directors. The elements are silver plated and are mounted horizontal to a mounting base. The mounting base is attached to the bottom of a vertical, streamlined strut. The driven element incorporates two adjustable tuning caps and is insulated from the other elements. The input impedance is 50 ohms.

An installation requires two antennas, one on each wing. One antenna is for receiving; the other, for transmitting. They may be mounted either above or below the wings. Care must be taken to install the arrays in such a fashion as to have minimum downward radiation and minimum "feed through" or interaction between antennas. They should be spaced to half-wavelength from a reflecting mounting surface.

ASSOCIATED EQUIPMENT: Radio Set AN/APG-4.  
Equipment function - bombing.

BEAM DATA:  
Polarization - Horizontal.

SCAN DATA: The array is rotatable within an arc of  $\pm 25^\circ$ .

TUNING/MATCHING DEVICES: The driven element has tuning caps.

INSTALLATION: Airborne.

MISCELLANEOUS: AS-46(\*)/APG-4 denotes two models, AS-46/APG-4 and AS-46A/APG-4. The two antennas differ slightly in dimensions, and the two mounting bases are made from different materials. The mounting base of AS-46/APG-4 is made of laminated plastic; the antenna is 24-11/16 inches high, 14-5/16 inches wide, and 28-9/16 inches deep; it

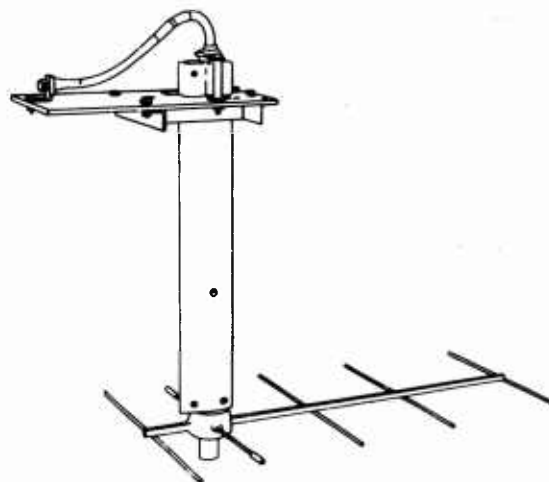
weighs 7.8 pounds. The mounting base of AS-46A/APG-4 is made of aluminum; the antenna is 25-11/32 inches high, 14-5/16 inches wide, and 23-23/32 inches deep; it weighs 7.5 pounds.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: RCA Victor, U. S. Navy contract NXsp-32195.

STOCK NUMBERS:  
AS-46/APG-4 ... Navy-ASO R16AN-AS46APG4,  
AS-46A/APG-4 ... Navy-ASO R16A4932-502,  
Signal Corps 2A264-46A.

- REFERENCES:
- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
  - 2) U. S. Department of Defense Nomenclature Card.



AS-46/APG-4

## ANTENNA ASSEMBLY AS-47/ARW-8

FREQUENCY: VHF band, 50 - 60 mc; VSWR < 2.0.

TYPE: Whip.

DESCRIPTION: The antenna is a 52-inch whip made from a tapered, solid steel shaft. The antenna tapers from 5/16 inch at the base to 1/8 inch at the tip. It mounts to a triangular sheet-steel base whose sides are 9, 9, and 12 inches. The base is 1/8 inch thick. Mounted upon the base are insulator IN-79, an adjustable capacitor, and a boss for holding the base of the antenna shaft.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARW-8X.  
Equipment function - remote control.

MISCELLANEOUS: This antenna is listed as obsolete by Reference 1.

COGNIZANT AGENCY: ARL-2675.

MANUFACTURERS: Doolittle Company, procurement order 464-DAY-44.

STOCK NUMBER: Signal Corps 2A264-47.

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## REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA SYSTEM AS-53/APQ-13 and AS-54(\*)/APQ-13

FREQUENCY: SHF band, 9307 - 9415 mc; VSWR < 2 on X-band waveguide.

TYPE: Modified paraboloidal reflector fed by Cutler feed.

DESCRIPTION: The antenna is a paraboloidal reflector modified to produce a csc<sup>2</sup>-type beam in elevation. The reflector is fed by a Cutler feed located near the focal point of the reflector. The antenna weighs 77 pounds and is 40 inches high, 29 inches wide, and 29 inches deep.

### BEAM DATA:

Half-power beamwidth - Horizontal - 3°.  
Beam type - Csc<sup>2</sup> in elevation.  
Polarization - Horizontal.

SCAN DATA: The antenna scans 360° in azimuth at 20 revolutions per minute, or it can be made to scan a selected forward area. The antenna aim can be moved +10° or -30° in elevation.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Sets AN/APQ-13 and AN/APQ-23 for AS-53/APQ-13 and AS-54/APQ-13; AN/APQ-13, AN/APQ-23, and AN/APQ-23A for AS-54A/APQ-13. Equipment function - bombing.

MISCELLANEOUS: The three antennas listed are similar and are interchangeable. AS-54/APQ-13 differs from AS-53/APQ-13 in the mechanical construction of the rotating head and the provision for mounting a gyroscope for tilt stabilization. AS-54(\*)/APQ-13 stands for AS-54/APQ-13 and AS-54A/APQ-13. AS-54A/APQ-13 is interchangeable as a unit with AS-54/APQ-13, and most of the replacement parts are interchangeable. AS-54A/APQ-13 has a flexible waveguide section while AS-53/APQ-13 has a rigid waveguide. AS-54A/APQ-13 differs from AS-53/APQ-13 only in the addition of a heated rotary joint. AS-54/APQ-13 is an extensively modified version of Antenna Equipment RC-224B, part of Radio Set SCR-717-B. Modifications include the addition of horizontal stabilization components and a heated rotary joint. Reference 2 lists AS-53/APQ-13 as obsolete.

### COGNIZANT AGENCY:

AS-53/APQ-13 . . . ARL-2779  
 AS-54/APQ-13 . . . ATSC  
 AS-54A/APQ-13 . . . ARL



AS-53/APQ-13

MANUFACTURERS: Western Electric Company, procurement order 85-DAY-44, (AS-54/APQ-13 and AS-54A/APQ-13 subcontracted to Philco Corporation).

### STOCK NUMBERS:

AS-53/APQ-13 . . . Signal Corps 2A249-53,  
 AS-54/APQ-13 . . . Signal Corps 2AK264-54,  
 AS-54A/APQ-13 . . . Signal Corps 2A249-54A.

### REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Partial List of Obsolete Antenna, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

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ANTENNA SYSTEM AS-55(\*)/APQ-13

FREQUENCY: SHF band, 9307 - 9415 mc; VSWR < 2 on X-band waveguide.

TYPE: Paraboloidal reflector (probably a modified paraboloidal reflector fed by a Cutler-type feed).

DESCRIPTION: The antenna consists of a waveguide radiating horn mounted in a paraboloidal reflector that is approximately 29 inches in diameter. The reflector is probably modified to produce a csc<sup>2</sup> beam in elevation.

BEAM DATA:  
Polarization - Horizontal.

SCAN DATA: The antenna scans through 360° in azimuth at approximately 20 revolutions per minute. A tilt motor and mechanism permit raising and lowering the antenna. A stabilization mechanism partially compensates for aircraft pitch and roll.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APQ-13.  
Equipment function - bombing.

MISCELLANEOUS: AS-55(\*)/APQ-13 denotes AS-55/APQ-13 and AS-55A/APQ-13. The two antennas are interchangeable except for replacement parts. The antennas are similar to the antenna system used with AN/APQ-15 but are modified to operate with AN/APQ-13 control circuits.

COGNIZANT AGENCY:  
AS-55/APQ-13 . . . ARL-2781,  
AS-55A/APQ-13 . . . ARL-3200.

MANUFACTURERS: Western Electric Company, procurement contract 85-DAY-44, (subcontracted to Philco Corporation).

STOCK NUMBERS:  
AS-55/APQ-13 . . . Signal Corps 2AR264-55,  
AS-55A/APQ-13 . . . Signal Corps 2A249-55A.

REFERENCE:  
Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953).  
CONFIDENTIAL.

ANTENNA ASSEMBLY AS-58/APT-1

This nomenclature was cancelled 29 November 1943. It formerly consisted of Antennas AT-36/APT, AT-37/APT, and AT-38/APT, which are now treated as individual units.

ANTENNA ASSEMBLY AS-59/APT-3

This nomenclature was cancelled 29 November 1943. It formerly consisted of Antennas AT-37/APT and AT-38/APT mounted on a single-mast base. The antennas are now treated as individual units.

ANTENNA ASSEMBLY AS-60/APN-1

FREQUENCY: UHF band, 420 - 460 mc; VSWR < 2.0 on 50-ohm coaxial cable.

TYPE: Slot antenna.

DESCRIPTION: This is a surface-current antenna with two slots along the entire length of the antenna assembly. The assembly is 16-1/2 inches wide, 28-1/2 inches long, and 1.08 inches thick. It is furnished with a Navy Type 49194, 50-ohm, female receptacle attached to a flat surface on the underside of aircraft.

BEAM DATA:  
Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/APN-1.  
Equipment function - altimeter.

COGNIZANT AGENCY: U. S. Navy.

REFERENCES:  
1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.  
2) U. S. Department of Defense Nomenclature Card.

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## ANTENNA ASSEMBLY AS-61/ARN-5

FREQUENCY: UHF band, 332 - 335 mc; VSWR < 5  
on 95-ohm coaxial cable.

TYPE: Dipole.

DESCRIPTION: The antenna is a horizontal half-wave dipole mounted on a streamlined 7-inch mounting strut, which should be located as far forward on the aircraft as possible. Each half of the dipole is about 9-1/2 inches long. The assembly weighs 2-1/2 pounds.

### BEAM DATA:

Polarization - Horizontal.

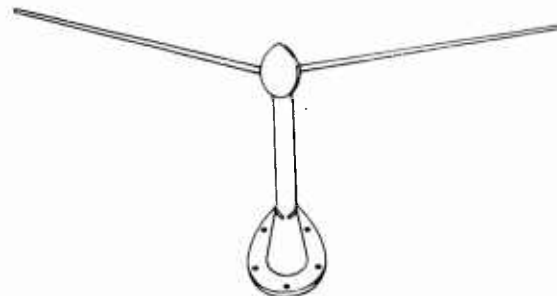
INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Receiving Equipment AN/ARN-5(). Equipment function - navigation, surface reference.

MISCELLANEOUS: This antenna can be used in place of the glide-path half of Antenna AS-27/ARN-5. This antenna is listed as obsolete in Reference 1.

COGNIZANT AGENCY: ARL.

STOCK NUMBERS: U. S. Navy-ASO R16AN-AS61ARN5,  
Signal Corps 2A264-61.



AS-61/ARN-5

### REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA ASSEMBLY AS-62/APS-13

FREQUENCY: UHF band, 413 - 417 mc.

TYPE: Yagi.

DESCRIPTION: The antenna is a Yagi and is used as the antenna for a tail warning system. The Yagi is formed from sectionalized elements and consists of a driven folded dipole and a parasitic reflector and director. The antenna is installed on the tail assembly so that half of the antenna is on each side of the tail fin or vertical stabilizer. The antenna lies in a horizontal plane. The feed point of the two sections which form the folded dipole are connected through a tie cable which is in length an odd number of quarter wavelengths. All of the elements are replaceable. The antenna is 7-3/4 inches from front to rear and extends 7-5/8 inches on each side of the vertical stabilizer.

### BEAM DATA:

Half-power beamwidth - Horizontal - 60°.  
Vertical - 90°.

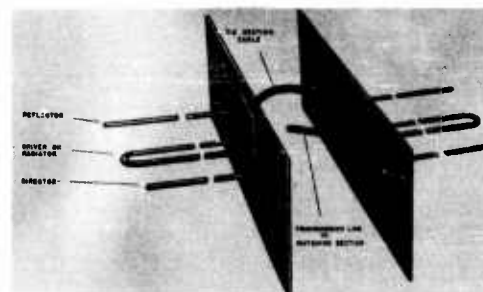
Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/APS-13.  
Equipment function - tail warning.

MISCELLANEOUS: Two of these antennas should be used for medium- or long-range use (1000-

12,000 yards). Reference 3 lists this antenna as obsolete.



AS-62/APS-13

COGNIZANT AGENCY: ARL-2813.

MANUFACTURER: H. L. Yoh Company, procurement plan 44-2395.

STOCK NUMBERS: U. S. Navy-ASO R16A4930-300 and  
Signal Corps 2A249-62.

### REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

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2) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Radio Set AN/APS-13, AN 16-30APSI3-2, (July 8, 1944 - revised Sept. 5, 1945). UN-CLASSIFIED.

3) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

## ANTENNA ASSEMBLY AS-63/APS-16

FREQUENCY: UHF band, 524 - 526 mc; VSWR < 1.35 on 50-ohm coaxial cable.

TYPE: Yagi.

DESCRIPTION: The antenna is a Yagi with 1 driven element, 1 reflector, and 1 director. The elements are mounted near the end of a tube 3/4 inch in diameter and about 5 feet long. The 50-ohm coaxial cable feed runs through the tube. The driven element of the array is a folded dipole, and the reflector and director are ordinary dipoles. The assembly weighs 4 pounds and is 62-3/8 inches long, 10-3/4 inches wide, and 1-1/2 inches thick. It is installed in the vertical fin of the tail assembly of the aircraft and mounted so that the radiating elements extend backward from the tail.

### BEAM DATA:

Half-power beamwidth - Horizontal - 60°. Vertical - 60°.

Beam type - The pattern is a 60°-wide cone directed backward from along the flight axis. The coverage below the line of flight is greater than the coverage above the line of flight.

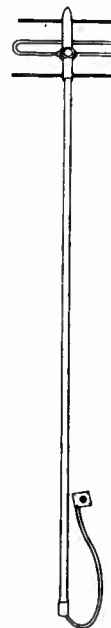
Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/APS-16. Equipment function - tail warning.

COGNIZANT AGENCY: ARL-2852.

MANUFACTURER: Unknown, procurement order 117-DAY-44.



AS-63/APS-16

STOCK NUMBER: Signal Corps 2AK264-63.

### REFERENCE:

Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

## ANTENNA ASSEMBLY AS-65/APQ-2(\*)

FREQUENCY: VHF and UHF bands, 200 - 700 mc; VSWR < 2.

TYPE: Rod.

DESCRIPTION: The antenna consists of a series of aluminum alloy rods of 1/2-inch diameter and of several lengths, any one of which may be screwed into a tapered base supported by a formica disk. The rod used depends on the frequency of operation. The rod lengths and corresponding frequencies are as follows: 12 inches for 200- to 250-mc range, 10 inches for 250- to 325-mc range, 8 inches for 325- to 400-mc range, 6-3/8 inches for 400- to 540-mc range, and 4-3/4 inches for 540- to

700-mc range. The weight of the antenna depends on the rod length and varies between 12 and 16 ounces. The antenna base has eight holes for mounting. The plane of mounting depends on polarization desired. The area around the antenna should be free of obstructing surfaces.

### BEAM DATA:

Polarization - Linear, depending on mounting position.

TUNING/MATCHING DEVICES: The rod lengths are variable.

INSTALLATION: Airborne.

UNCLASSIFIED

ASSOCIATED EQUIPMENT: Transmitting Equipment AN/APQ-2 and AN/APQ-2A. Equipment function - countermeasures, jamming.

MISCELLANEOUS: AS-65/APQ-2(\*) denotes AS-65/APQ-2 and -2A. The antennas are very similar if not identical. References 1 and 2 differ somewhat in the frequency range associated with the individual rods. The frequency data here are from Reference 1 as it is believed to be correct. Reference 3 lists AS-65/APQ-2A as obsolete.

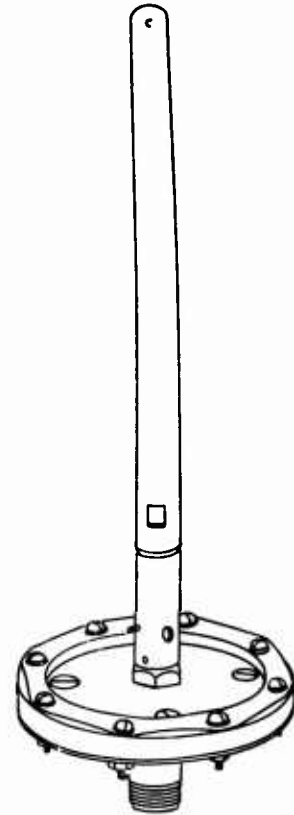
COGNIZANT AGENCY: SPSAR-4.

MANUFACTURERS: Delco Radio Division, purchase plan 44-138.

STOCK NUMBERS: U. S. Navy-ASO R16AN-AS65APQ-2A and Signal Corps 2AK264-65.

REFERENCES:

- 1) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.



AS-65/APQ-2A

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ANTENNA ASSEMBLY AS-66/APA-9

FREQUENCY: SHF band, 3300 mc.

TYPE: Dipole array.

DESCRIPTION: The assembly consists of five dipoles mounted on a reflector plate and fed from a coaxial line. It is enclosed in a pressurized, cylindrical plastic housing. The coaxial line mounts to a pressurized rotating joint. An electric motor rotates the antenna assembly through 360 degrees, and a selsyn transmitter conveys this motion to a suitable indicator. The rotating joint, motor, and selsyn mount on a metal plate, which has a power plug for 28 volts d.c. and 115 volts, 800 cycles a.c. The assembly weighs 10 pounds and is 18 inches in height by 3-3/4 inches in diameter.

SCAN DATA: The antenna rotates through 360° in azimuth.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Assembly AN/APA-9.

COGNIZANT AGENCY: ARL-2858.

MANUFACTURERS: Harvey Radio Laboratories, Inc., contract 1383-ARL-44.

STOCK NUMBER: Signal Corps 2A264-66.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.



UNCLASSIFIED

ANTENNA ASSEMBLY AS-67/APQ-2B

FREQUENCY: VHF and UHF bands, 190 - 375 mc;  
VSWR < 2 on 50-ohm coaxial cable.

TYPE: Stub.

DESCRIPTION: The antenna is a cylindrical radiator, cone-shaped at one end and rounded at the other. The cone-shaped end is attached to a disc-shaped mounting plate. An internal matching section matches the antenna to the 50-ohm coaxial-cable feed, which joins the antenna through a type N connector. The antenna weighs 4-1/2 pounds and is 12 inches long by 5 inches in diameter. The plane of mounting depends on the polarization desired. The area around the antenna should be free of obstructing surfaces.

BEAM DATA:

Beam type - Omnidirectional in the plane perpendicular to the axis of the antenna.

Polarization - Linear, depending on mounting position.

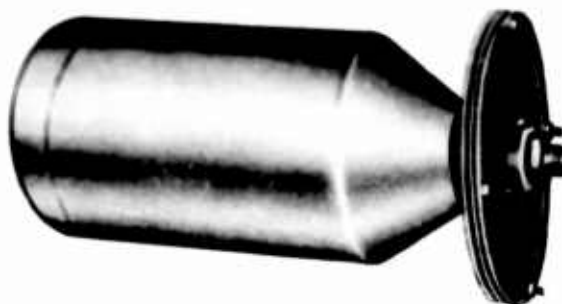
TUNING/MATCHING DEVICES: The antenna has an internal matching section.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Transmitting Equipment AN/APQ-2B. Equipment function - countermeasures, jamming.

MISCELLANEOUS: Antenna Cover CW-18/AP is used to reduce drag. Reference 3 lists this antenna as obsolete.

COGNIZANT AGENCY: U. S. Navy.



AS-67/APQ-2B

MANUFACTURERS: Delco Radio Division, U. S. Navy contract NXss-23261.

STOCK NUMBERS: U. S. Navy-ASO R16AN-AS67APQ2B and Federal Stock Number N5985-249-4396.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.
- 3) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

ANTENNA ASSEMBLY AS-68/APG-5

FREQUENCY: UHF band, 2500 - 2600 mc; VSWR < 2.

TYPE: End-fire array of ring-type double dipoles.

DESCRIPTION: The antenna consists of an array of 18 ring-type double dipoles spaced a quarter wavelength apart on a rigid coaxial line. The dipoles are fed by probes whose depth of penetration was designed to produce a directional beam. The array is enclosed in a pressurized housing. The assembly weighs 5.5 pounds and is 24 inches in length by 3 inches in diameter.

BEAM DATA:

Gain - 15.4 db.

Half-power beamwidth - Horizontal - 28°.  
Vertical - 28°.

Beam type - Conical, with the axis of the cone identical to axis of the antenna.

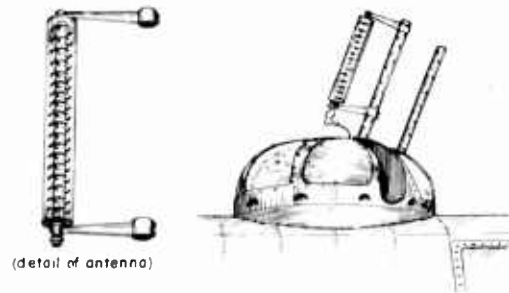
INSTALLATION: Airborne.

SCAN DATA: The antenna is mounted to the barrel of a machine gun for airborne gun-

laying systems. The axes of the antenna and machine gun are parallel. Thus the antenna scans in unison with the gun.

ASSOCIATED EQUIPMENT: Radar Sets AN/APG-5, AN/APG-13A, and AN/APG-14. Equipment function - fire control, gun-laying.

SCANNER USED FOR "RANGE ONLY"



(detail of antenna)

AS-68/APG-5

UNCLASSIFIED

# UNCLASSIFIED

COGNIZANT AGENCY: ARL-2912.

MANUFACTURERS: Galvin Manufacturing Company, order 198-DAY-44, and General Electric Company, order 12077-WF-43.

STOCK NUMBER: U. S. Navy-ASO R16AN-AS68APG-5.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Air-

borne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

- 2) Antenna Catalog, Report No. 133C. Cambridge, Massachusetts: Radiation Laboratory, Massachusetts Institute of Technology, (Oct. 8, 1945). MIT 45-10. UNCLASSIFIED.

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## ANTENNA ASSEMBLY AS-69/APT

FREQUENCY: UHF band, 490 - 640 mc; VSWR < 2 on 50-ohm coaxial cable.

TYPE: Modified turnstile.

DESCRIPTION: The antenna is of the turnstile type, but the angle between the arms of the turnstile and the vertical support is fixed at less than 90 degrees. The antenna may be fed by either one or two transmitters. When fed by a single transmitter, the two bent-dipole sections are fed 90 degrees out of phase. When fed by two transmitters, the phasing is random. The dipole elements are attached to a circular mounting plate. The overall antenna is 9 inches in height and 9-1/2 inches in diameter. The antenna mounts on the underside of the aircraft, and the radiating elements extend 5-3/8 inches (maximum) from the mounting plate.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Equipment AN/APT-2, AN/APQ-1, AN/APQ-9, and AN/APT-5. Equipment function - countermeasures, jamming.

MISCELLANEOUS: Reference 1 lists this antenna as obsolete.

COGNIZANT AGENCY: U. S. Air Force, ATSC.

MANUFACTURERS: Delco Radio Division, part number 7251947.

STOCK NUMBERS: U. S. Navy-ASO R16AN-AS69APT and Signal Corps 2A264-69.

REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

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## ANTENNA SYSTEM AS-70/APR-4

FREQUENCY: VHF, UHF, and SHF bands, 40 - 3300 mc.

TYPE: Conical and rod antennas.

DESCRIPTION: The system consists of two identical cone antennas and two identical rod antennas. The rod antennas are used in the range from 40 to 300 megacycles and the cone

antennas are used in the range from 300 to 3300 megacycles. The correct antenna is selected by means of an r-f switch.

BEAM DATA:

Polarization - Vertical and horizontal.

INSTALLATION: Airborne.



AS-69/APT

# UNCLASSIFIED

ASSOCIATED EQUIPMENT: Receiving Equipment  
AN/APR-4. Equipment function - countermeasures, search.

MISCELLANEOUS: The nomenclature AS-70/APR-4 was cancelled 29 January 1944. The antenna was remodeled and assigned the nomenclature Antenna AT-49()/APR-4.

REFERENCE:  
Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953).  
CONFIDENTIAL.

## ANTENNA ASSEMBLY AS-82(\*)/APQ-7

FREQUENCY: SHF band, 9280 - 9470 mc; VSWR < 2.0 on X-band waveguide.

TYPE: Collinear array of probe-fed dipoles.

DESCRIPTION: The antenna is a collinear array consisting of 250 dipoles which are probe-fed from the waveguide on which they are mounted. The waveguide is constructed so that its width can be periodically varied to produce electromechanical scanning of the beam. The beam is shifted due to the change in relative phase at the dipoles as the waveguide width is varied. By varying the waveguide width and by feeding the array at alternate ends, the beam can be made to sweep a 30-degree arc on each side of its center. The antenna is used on aircraft and on ships. The antenna is placed in a streamlined vane, Antenna Housing CW-23/APQ-7, and mounted below and transverse to the fuselage of heavy bombers when used with bombing equipment. The array is also used as a line feed for parabolic-cylinder reflectors in a CCA system in its shipboard use. The array is about 16 feet wide, 6 inches deep, and 3 inches high and weighs about 150 pounds.

### BEAM DATA: (AS-82/APQ-7)

Gain - 32.5 db as a collinear array antenna, 38.0 db when used with a parabolic-cylinder reflector.

Half-power beamwidth - Horizontal - 0.4°.

Vertical - about 20° with the reflector.

Polarization - Horizontal.

SCAN DATA: The antenna has electromechanical scanning through an arc 30° on each side of the mechanical aim of the antenna at a rate of about 45° per second.

INSTALLATION: Shipboard or airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/APQ-7.  
Equipment function - bombing.

Radar Set AN/SPN-3. Equipment function - approach control.

MISCELLANEOUS: AS-82(\*)/APQ-7 denotes two models, AS-82/APQ-7, and AS-82A/APQ-7. The two models are mechanically and electrically interchangeable, but the A model has improvements in the r-f switch-block assembly, antenna drive-motor circuit, etc. The A model is also higher than the other; it is about 11 inches high instead of 3 inches for AS-82/APQ-7. The other dimensions are about the same.

COGNIZANT AGENCY: AS-82/APQ-7 ... ARL-3119,  
AS-82A/APQ-7 ... ARL-47-211.

MANUFACTURERS: Western Electric Company, PR 44-104, PR 44-2932, and PR 44-3046, 2034 DAY-45-RA.

STOCK NUMBER: Signal Corps 2A264-82 and 2A264-82A.

### REFERENCES:

- 1) H. T. Friis, W. D. Lewis, Radar Antennas, Bell System Technical Journal, Vol. 26, No. 2. New York, N.Y.: American Telephone and Telegraph Co. (Apr. 1947). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.
- 4) Air Force Specification 471-5017.
- 5) Western Electric Specification X-66173B.

## ANTENNA ASSEMBLY AS-86/ARD-3

FREQUENCY: UHF band, 350 - 400 mc; VSWR < 5 on 95-ohm coaxial cable.

TYPE: Adcock, dipole.

DESCRIPTION: The assembly consists of one horizontal dipole and two, phased, vertical dipoles spaced one-half wavelength apart and

mounted on a rotatable shaft. Both dipole systems are mounted symmetrically about the mounting shaft, and the supporting member for the vertical dipoles is placed at 90 degrees to the horizontal dipole. The vertical dipoles and the horizontal dipoles are each fed by RG-22/U twin-conductor, shielded cable. Each of the two cables

terminates in a PL-284 plug. The assembly weighs 5.3 pounds and is 44-1/2 inches high, 15 inches long, and 19 inches wide.

2) Military Specification RE 13A 860A

BEAM DATA:

Beam type - The horizontal dipole and the vertical dipole array have figure-8 patterns which are broadside to the elements. The horizontal dipole responds to signals in all planes from the horizontal to within 60° of the horizontal. The vertical array responds to signals in all planes from the vertical to within 45° of the vertical.

Polarization - Horizontal and vertical.

SCAN DATA: The antenna can be rotated through 100° on either side of the longitudinal axis of the aircraft.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARD-3.

Equipment function - navigation, direction finding.

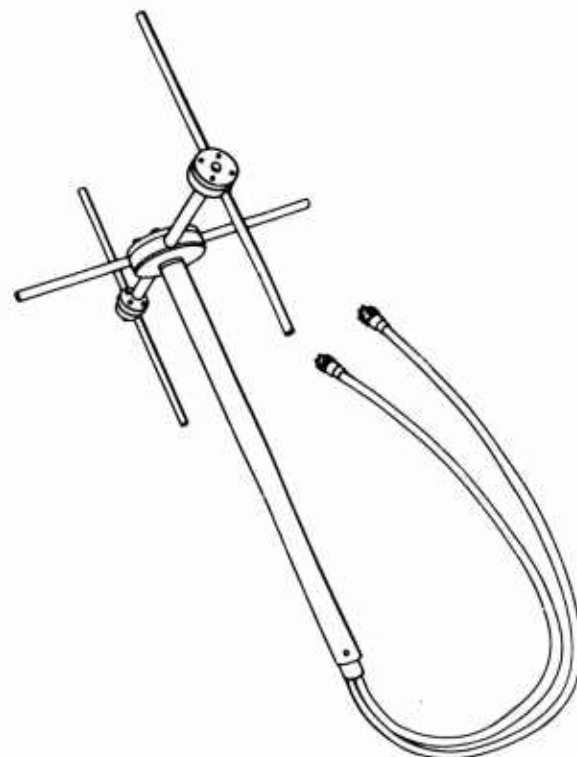
MISCELLANEOUS: AS-86/ARD-3 is similar to AS-84/APA-24 but covers a different frequency range.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Heyer Products Company, U. S. Navy contract NXsa-44532.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.



AS-86/ARD-3

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ANTENNA SYSTEM AS-89/ART

FREQUENCY: VHF band, 36 - 50 mc; VSWR < 2 on 50-ohm coaxial cable.

TYPE: Whip.

DESCRIPTION: The antenna is a 72-inch, quarter-wavelength whip with a matching section at its base. The antenna and matching section are retractable. The matching section is contained in a cylindrical case 5 inches long and 3-1/2 inches in diameter. The antenna terminates in a SO-239 connector and is fed by RG-8/U coaxial cable and fits in Antenna Base AB-29/ART.

BEAM DATA:

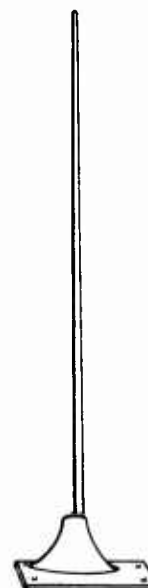
Beam type - Omnidirectional, typical of a quarter-wavelength stub.

Polarization - Linear, depends on mounting position.

TUNING/MATCHING DEVICES: The antenna has a built-in matching section.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Equipment AN/ARQ-1, AN/ARQ-8, AN/ART-9, and AN/ART-10. Equip-



AS-89/ART

ment function - countermeasures, deception.  
Radio Transmitting Sets AN/ARW-18() and  
AN/ARW-41. Equipment function - remote control.

MISCELLANEOUS: AS-89/ART is the same as AS-97/ART and AS-98/ART except for antenna length and frequency. This antenna also replaces Antenna System AS-90()/ART.

COGNIZANT AGENCY: U. S. Air Force, ARL-3244.

MANUFACTURER: Aircraft Accessories, orders 897-DAY-44, and 177-DAY-45RC.

REFERENCE:

Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953).  
CONFIDENTIAL.

ANTENNA SYSTEM AS-90()/ART

Cancelled 27 March 1944; Antenna System AS-89/ART is to be used instead.

ANTENNA SYSTEM AS-97/ART

FREQUENCY: VHF band, 48 - 85 mc; VSWR < 2 on 50-ohm coaxial cable.

TYPE: Whip.

DESCRIPTION: The antenna is a 54-inch, quarter-wavelength whip with a matching section at its base. The antenna and matching section are retractable. The matching section is contained in a cylindrical case 5 inches long and 3-1/2 inches in diameter. The antenna fits in Antenna Base AB-29/ART.

BEAM DATA:

Beam type - Omnidirectional, typical of a quarter-wavelength stub.  
Polarization - Linear, depends on mounting position.

TUNING/MATCHING DEVICES: The antenna has a built-in matching section.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARQ-8.

Equipment function - countermeasures, deception.

MISCELLANEOUS: AS-97/ART is the same as AS-89/ART and AS-98/ART except for antenna length and frequency.

COGNIZANT AGENCY: U. S. Air Force, ARL.

MANUFACTURERS: Hallicrafters, order 696-DAY-44; Aircraft Accessories, orders 177-DAY-45-RC and 753-DAY-45-RC.

STOCK NUMBERS: U. S. Navy-ASO R16AN-AS97ART, and Federal Stock Number N5820-296-1777.

REFERENCES:

1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

2) U. S. Department of Defense Nomenclature Card.

ANTENNA SYSTEM AS-98/ART

FREQUENCY: VHF band, 50 - 85 mc.

TYPE: Whip.

DESCRIPTION: The antenna is a 57-inch, quarter-wavelength whip with a matching section at its base. The antenna and matching section are retractable. The matching section is contained in a cylindrical case 5 inches long and 3-1/2 inches in diameter.

BEAM DATA:

Beam type - Omnidirectional, typical of a quarter-wavelength stub.  
Polarization - Linear, depends on mounting position.

TUNING/MATCHING DEVICES: The antenna has a built-in matching section.

INSTALLATION: Airborne.

MISCELLANEOUS: This nomenclature was cancelled on 27 March 1944. It is the same as AS-97/ART except for antenna length and is the same as AS-89/ART except for length and frequency.

COGNIZANT AGENCY: ARL.

MANUFACTURER: Probably Hallicrafters, order 696-DAY-44.

REFERENCE:

Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953).  
CONFIDENTIAL.

# UNCLASSIFIED

## ANTENNA ASSEMBLY AS-100/APX

FREQUENCY: UHF band, 515 - 520 mc; VSWR < 5.

TYPE: Loop.

DESCRIPTION: The antenna is a half-loop antenna mounted on a modified ZB-type fitting. The radiating sections consist of two 1/4-inch diameter steel rods bent to form open loops. The assembly is approximately 12 by 6 inches exclusive of fittings. Two of these antennas are used for each installation.

### BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Equipment AN/APX-1

and Radio Set AN/APX-2. Equipment function - IFF.

MISCELLANEOUS: The antenna is used with Tuning Unit TN-35()/APX.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Hazeltine Electronics Corporation, Navy contract NXsa-43402.

STOCK NUMBER: Signal Corps 2A264-100.

### REFERENCE:

Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953).  
CONFIDENTIAL.

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## ANTENNA ASSEMBLY AS-108(\*)/APA-17

FREQUENCY: VHF and UHF bands, 250 - 1000 mc; VSWR < 5.

TYPE: Vertical monopole and a V-type sleeve dipole.

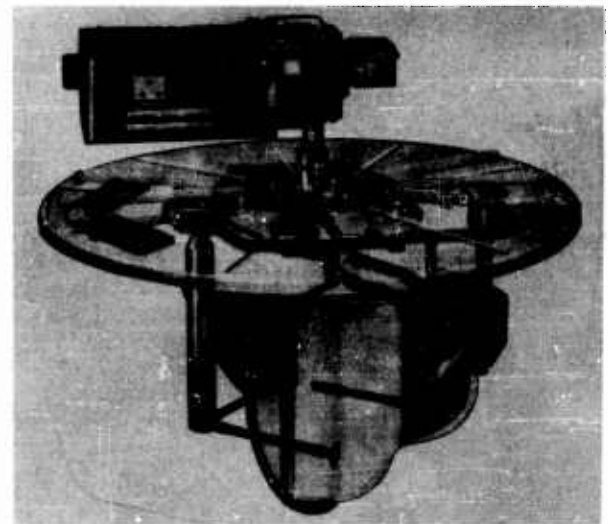
DESCRIPTION: The antenna consists of a vertical, cylindrical monopole and a horizontal, V-shaped sleeve dipole. The two antennas are mounted on a circular plate and are separated by a sheet-metal reflector. The reflector is approximately a vertical parabolic cylinder. The vertical monopole is mounted in front of the open side of the "parabolic cylinder" and the horizontal antenna is mounted directly opposite the vertical antenna at the back side of the cylinder. Both antennas are fed by 50-ohm coaxial cable through an antenna selector relay, but between the 50-ohm line and the horizontal antenna a length of 90-ohm cable is inserted for impedance matching. The vertical antenna is fed at its base, and the horizontal antenna is fed at its center. The antenna assembly weighs 11.6 pounds and is 20 inches in diameter and 16-5/8 inches in height. The antenna is installed in a streamlined nacelle as far forward as possible on the lower side of the aircraft.

### BEAM DATA:

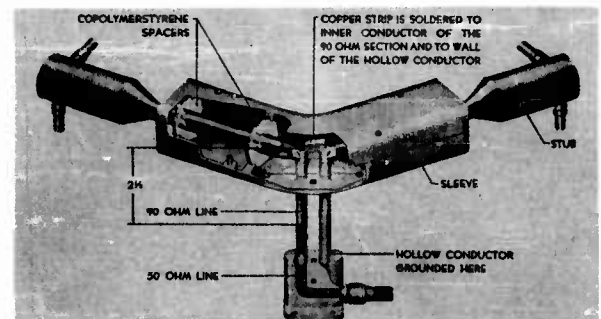
Beam type - The antenna has a beam pattern which changes with frequency and which is different for the vertical and horizontal antennas. In this way, the CRT display of the associated equipment, which is similar to the radiation pattern, characterizes the type of signal being received. A large number of these CRT displays are shown on pages 3-4 and 3-5 of reference 1).

Polarization - Horizontal and vertical.

SCAN DATA: The assembly rotates at a speed which is variable up to a maximum of about 150 revolutions per minute.



AS-108/APA-17 Phantom View



AS-108(\*)/APA-17 Horizontal Antenna

UNCLASSIFIED

TUNING/MATCHING DEVICES: A length of 90-ohm coaxial cable acts as a matching transformer between the 50-ohm feed cable and the horizontal antenna.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Direction Finding Assemblies AN/APA-17 and AN/APA-17A. Equipment function - countermeasures, direction finding.

MISCELLANEOUS: Reference 2) lists this antenna as obsolete. AS-108(\*)/APA-17 denotes AS-108/APA-17 and AS-108A/APA-17. The two models are electrically and mechanically interchangeable; they differ only in component parts.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: AS-108/APA-17 ... Aviola Radio Corporation, Navy contract NXsa-42135, AS-108A/APA-17 ... Hoffman Radio Corporation, Navy contract NXsa-49695.

STOCK NUMBERS: AS-108/APA-17 ... Federal Stock Number 1660 5826-145-6734, AS-108A/APA-17 ... Navy-ASO R16A4933.

REFERENCES:

- 1) U. S. Air Force, Bureau of Aeronautics, Radar Direction Finding Assembly AN/APA-17, AN 16-30APA17-3, (April 19, 1950). UNCLASSIFIED.
- 2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.

- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.



AS-108/APA-17 Electrical Assembly

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ANTENNA ASSEMBLY AS-108B/APA-17

FREQUENCY: VHF and UHF bands, 140 - 1800 mc; VSWR < 5 from 150 to 1500 mc on 50-ohm coaxial cable.

TYPE: Stub sleeve and end-fed, V-type dipole.

DESCRIPTION: The assembly consists of a vertical stub-sleeve radiator placed in front of a reflecting aluminum sheet of approximately parabolic cross section, a horizontal antenna made up of two horizontal elements arranged in a 100-degree "V" (which is also backed up by reflecting sheets), and an antenna-selecting relay all mounted on a circular plate. The vertical and horizontal antennas are mounted back-to-back with the reflectors between them. The vertical antenna is enclosed in and supported by a phenolic tube. The horizontal antenna consists of two hollow brass elements supported by three phenolic brackets. The elements are insulated at the center and fed at the outer ends by two coaxial cables which connect to a balun. Both the vertical and horizontal antennas are fed by 50-ohm coaxial cable through the antenna selecting relay. The antenna weighs 14-3/4 pounds and is

16-1/16 inches in diameter by 15-9/16 inches high. The antenna is installed in a streamlined nacelle as far forward as possible on the underside of the aircraft.

BEAM DATA:

Beam type - The antenna has a beam pattern which changes with frequency and which is different for the vertical and horizontal antennas. In this way, the associated equipment gives a CRT display which is similar to the radiation pattern and characterizes the type of signal being received. A large number of these CRT displays are shown on pages 3-3 and 3-4 of Reference 1).

Polarization - Horizontal and vertical.

SCAN DATA: The assembly rotates at a speed which is variable up to a maximum of 150 revolutions per minute.

TUNING/MATCHING DEVICES: A balun is included for use with the horizontal antenna.

INSTALLATION: Airborne.

UNCLASSIFIED

ASSOCIATED EQUIPMENT: Radar Direction Finding Assemblies AN/APA-17, AN/APA-17A, and AN/APA-17B. Equipment function - countermeasures, direction finding.

MISCELLANEOUS: Reference 2) lists this antenna as obsolete. This antenna is similar to, interchangeable with, and replaces AS-108/APA-17 and AS-108A/APA-17.

COGNIZANT AGENCY: AEL-49-R661.

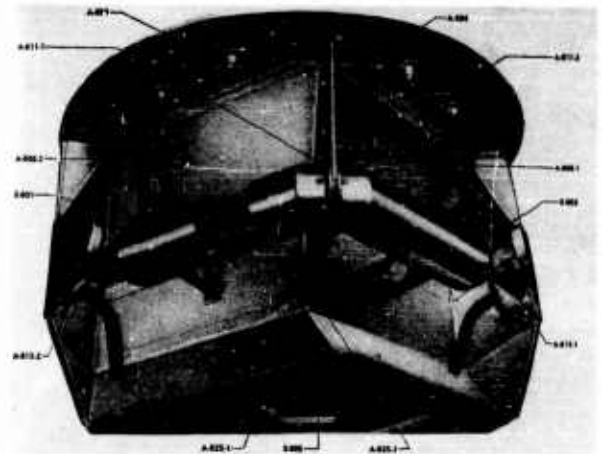
MANUFACTURER: Hoffman Radio Corporation, part number 36-OAOA352-5, contract AF-33(038)-8228.

STOCK NUMBER: Federal Stock Number 1660 5826-149-0881.

REFERENCES:

- 1) U. S. War and Navy Departments, Models AS-108B/APA-17 and AS-186/APA-17 Antenna Assemblies, Handbook of Maintenance Instructions, AN 16-35AS108-3, (Dec. 1, 1945). UNCLASSIFIED.
- 2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.

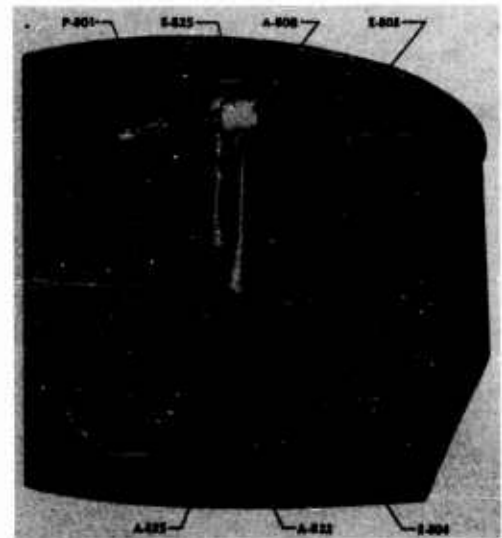
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.



AS-108B/APA-17 Horizontal Antenna



AS-108B/APA-17 Antenna Assembly



AS-108B/APA-17 Vertical Antenna

ANTENNA ASSEMBLY AS-114/APT

FREQUENCY: VHF band, 160 - 225 mc; VSWR < 2 on 50-ohm line.

TYPE: Stub.

DESCRIPTION: The antenna is a quarter-wave stub consisting of a streamlined, phenolic-impregnated maple mast covered with a suitable conductive material. It is similar in shape to

the base portion of Antenna AN-155-A. The mounting assembly consists of four fitted blocks, 2 side plates, a plate for riveting to the aircraft, and a grommet for weather-proofing. The antenna weighs 5-3/4 pounds and is about 16-1/2 inches tall.

INSTALLATION: Airborne.



UNCLASSIFIED

ASSOCIATED EQUIPMENT: Receiving Equipment AN/APR-4, Transmitting Equipment AN/APT-1, and Radar Set AN/APT-4. Equipment function - countermeasures, deception; and countermeasures, search.

MISCELLANEOUS: The antenna is similar to AT-36A/APT but uses a larger connector (UG-101/U). Reference 3) lists this antenna as obsolete.

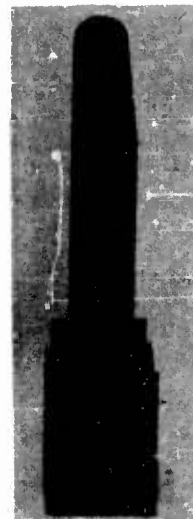
COGNIZANT AGENCY: ARL-3532.

MANUFACTURERS: Stromberg-Carlson Company, contract 1060-DAY-44; and Camfield Manufacturing Company, contract 458-DAY-45.

STOCK NUMBER: Federal Stock Number 5895-166-4292A.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). UNCLASSIFIED.
- 2) Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Mass: Radio Research Laboratory, Harvard University, (Nov. 3, 1945). UNCLASSIFIED.
- 3) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.



AS-114/APT

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ANTENNA AS-115/APT&O

FREQUENCY: UHF band, 300 - 3000 mc; VSWR < 2.

TYPE: Conical.

DESCRIPTION: The antenna is a 60° metallic, inverted cone, 8 inches in diameter at the top, supported by an upright truncated fiberglass cone above a mounting plate 8 inches in diameter. (See illustration). A UG-101/U connector is attached to the base for use with coaxial cable. The antenna is designed to mount directly to the aircraft skin, which serves as a ground plane. Overall length when mounted is 7-1/4 inches. The antenna is usually covered with a streamlined, plexiglass nacelle.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APT-4. Equipment function - countermeasures, jamming.

MISCELLANEOUS: AS-115/APT is similar to AT-49/APR-4 antenna except for the connector. It is obsolete according to Reference 2).

COGNIZANT AGENCY: ARL-48-R98 and USAF.

MANUFACTURER: Stromberg-Carlson Co., procurement contract 1060-DAY-44.

STOCK NUMBER: Federal Stock Number 5895-166-4286.

REFERENCES:

- 1) Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Mass: Radio Research Laboratory, Harvard University, (Dec. 3, 1945). UNCLASSIFIED
- 2) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.



AS-115/APT

UNCLASSIFIED

ANTENNA ASSEMBLY AS-116/APR-3

MAJOR COMPONENTS: Antenna Stub AT-79/AP and Antenna Base AB-80/AP.

FREQUENCY: UHF band, 450 - 600 mc.

TYPE: Rod.

DESCRIPTION: The assembly consists of an Antenna Stub AT-79/AP mounted on Antenna Base AB-80/AP. Antenna Stub AT-79/AP is a rod of silver-plated aluminum alloy 5-15/64 inches in length by 1/2 inch in diameter with a 45° bend 1-27/32 inches from the base end.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APR-3. Equipment function - countermeasures, search.

MISCELLANEOUS: Reference 1) and Reference 2) indicate that AS-116/APR-3 is obsolete.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Modco Manufacturing Co., procurement order 1005-DAY-44.

STOCK NUMBERS: AS-116/APR-3 ... Signal Corps 2A264-116, AT-79/AP ... Signal Corps 2A3391-79.

REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

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ANTENNA ASSEMBLY AS-117/APR-3

MAJOR COMPONENTS: Antenna Stub AT-80/AP and Antenna Base AB-80/AP.

FREQUENCY: UHF band, 450 - 600 mc.

TYPE: Rod.

DESCRIPTION: The assembly consists of an Antenna Stub AT-80/AP mounted on Antenna Base AB-80/AP. Antenna Stub AT-80/AP is a rod of silver-plated aluminum alloy 4-7/16 inches in length by 1/2 inch in diameter.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APR-3. Equipment function - countermeasures, search.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Modco Manufacturing Co., procurement order 1005-DAY-44.

STOCK NUMBERS: AS-117/APR-3 ... Signal Corps 2A264-117, AT-80/AP ... Signal Corps 2A3391-80.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AS-121A/APT

FREQUENCY: VHF band, 80 - 300 mc.

TYPE: Swept-back stub sleeve antenna.

DESCRIPTION: The antenna consists of a grounded sleeve and a streamlined, hollow stub which are joined mechanically by a fiberglass collar. The stub is 34-7/8 inches long, 5-13/16 inches wide, and 1-9/16 inches thick (maximum). The antenna weighs 2 pounds and is 24-1/4 inches high. Its input impedance is 50 ohms.

BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Linear.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Receiving Equipment AN/APR-4. Equipment function - countermeasures, search; and countermeasures, deception.

MISCELLANEOUS: AS-121A/APT is interchangeable with AT-121/AP.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Transco Products, Incorporated, contract NOas 52-763.

REFERENCES:

- 1) Albert F. Lopez, Robert C. Moore, Directory of Signal Corps Equipment - Radio Communication Equipment, Technical Manual, TM 11-487A, TO 16-1A-2, (Aug. 1950). CONFIDENTIAL, MODIFIED HANDLING.
- 2) U. S. Department of Defense Nomenclature Card.

UNCLASSIFIED

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ANTENNA AS-125/APR

FREQUENCY: UHF band, 1000 - 3000 mc; VSWR < 3.

Harvard University, (Dec. 3, 1945). UNCLASSIFIED.

TYPE: Tilted cone with a ground plane.

DESCRIPTION: The antenna consists of a 70° cone whose axis is tilted at an angle of 55° with respect to a mounting plate. The mounting plate, which is 6 inches in diameter, functions as a ground plane. A 700-mc high-pass filter is included in the base. The overall height of the antenna is 7-3/8 inches, and the height above the mounting plate is 2-1/2 inches.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APR-5.  
Equipment function - countermeasures, search.

MISCELLANEOUS: The AS-125/APR antenna is Harvard Radio Research Laboratories type A26-08.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBER: Federal Stock Number 5895-341-7720A.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A.  
Cambridge, Mass: Radio Research Laboratory,



AS-125/APR

ANTENNA ASSEMBLY AS-132/APG-13

FREQUENCY: UHF band, 2500 - 2600 mc; VSWR < 2.

COGNIZANT AGENCY: ARL-3582.

TYPE: End-fire array of ring-type, double dipoles.

MANUFACTURER: NDRC procurement plan 44-4347.

DESCRIPTION: The assembly is a pressurized, 18-dipole, end-fire array. It weighs 2.5 pounds, is 24 inches long, and is 3 by 2 inches in cross section. The assembly uses Antenna Brackets MT-267/APG-13 and MT-268/APG-13 for mounting on the nose of B-25H aircraft.

STOCK NUMBERS: Signal Corps 2A264-132, and Air Force 1660-202152402.

REFERENCES:

- 1) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD-150674. SECRET.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) H. J. Riblet and B. L. Birchard, S-Band End Fire Array Antenna, Report No. 577. Cambridge, Massachusetts: Radiation Laboratory Massachusetts Institute of Technology. (July 11, 1944). ASTIA Report No. A.T.I. 25473. UNCLASSIFIED.

BEAM DATA: Additional information is available in the secret document listed below as Reference 1 and in Volume VI of this catalog series.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APG-13.  
Equipment function - fire control.

MISCELLANEOUS: The antenna is similar to, but not interchangeable with, Antenna Assembly AS-68/APG-5.

ANTENNA ASSEMBLY AS-133/APX

FREQUENCY: UHF band, 950 - 1150 mc; VSWR < 1.3  
on 50-ohm coaxial cable.

TYPE: Stub.

UNCLASSIFIED

DESCRIPTION: The antenna is a flat, diamond-shaped metal plate enclosed in a streamlined plastic housing. A bezel holds the housing to its mounting plate, and the whole assembly is bolted to the skin of the aircraft. The antenna's r-f line section, which connects to the receiver-transmitter cable, projects into the aircraft through a cutout in the aircraft skin. The antenna weighs one pound and is (overall) 9-13/32 inches long, 3-11/64 inches wide, and 7-3/16 inches high. It is mounted vertically on the center line at the lowest point on the aircraft. It should be positioned at least 36 inches from surrounding objects.

BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Sets AN/APX-6, AN/APX-7, AN/APX-25. Equipment function - IFF.  
Radio Set AN/ARN-21. Equipment function - navigation, direction finding.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Hazeltine Electronics Corporation, Navy contracts NOa(s)-10226 and NOa(s)-51-064, and Stewart-Warner Corporation, Navy contract NOa(s)-10984.

STOCK NUMBERS: Federal Stock Numbers F5985-296-0643 and 5895-263-0962A.

REFERENCES:

- 1) U. S. Air Force, Radar Identification Set AN/APX-6, Manual Operating Instructions, T.O. 12P4-2APX6-1, (April 15, 1959). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) Bureau of Aeronautics, Radar Identification Set AN/APX-6, Handbook Operating Instructions, AN 16-30APX6-21, (Oct. 15, 1958). UNCLASSIFIED.



AS-133/APX

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ANTENNA ASSEMBLY AS-135/APN-13

FREQUENCY: UHF and SHF bands, 2999 - 3066 mc;  
VSWR < 2.

TYPE: Dipole array.

DESCRIPTION: The radiating portion of the antenna consists of three dipoles enclosed in a spherical cover of transparent plastic and mounted 1/4-wavelength from the end of a short, rigid section of concentric line. The three dipoles (tri-dipole construction) are mounted 120° apart on the periphery of a circle. The height of the dipoles above the fuselage is about 20 inches.

BEAM DATA:

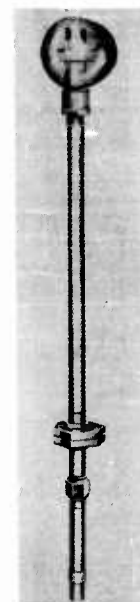
Beam type - Omnidirectional in the horizontal plane.  
Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Beacon AN/APN-13, Equipment function - radar beacon.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Philco Corporation, Navy contract NXsa 27824.



AS-135/APN-13

UNCLASSIFIED

UNCLASSIFIED

STOCK NUMBER: Signal Corps 2A264-135.

1953). CONFIDENTIAL.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1,

- 2) U. S. Department of Defense Nomenclature Card.

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LOOP ANTENNA AS-137/ARN

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc.

MISCELLANEOUS: The antenna is electrically, but not mechanically, interchangeable with Bendix Type MN-20-D loop antenna. Reference 3) lists this antenna as obsolete.

TYPE: Loop.

COGNIZANT AGENCY: ARL-3641.

DESCRIPTION: The antenna consists of an iron-core, manually rotatable loop, enclosed in a streamlined housing, and electrostatically shielded so that precipitation static interference will be reduced to a minimum. The loop has an inductance of 18.53 ( $\pm 1\%$ ) microhenries. It has an adjustable zero-positioning detent. The overall dimensions are 17 inches long, 6 inches wide and 7 inches high.

MANUFACTURER: Unknown, procurement plan 44-4807.

STOCK NUMBER: Signal Corps 2A1991-137.

REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

BEAM DATA:

Polarization - Horizontal.

SCAN DATA: The antenna does not scan but can be manually rotated.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compass, Bendix Type MN-26. Equipment function - navigation, direction finding.

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ANTENNA ASSEMBLY AS-138/ARN

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc;  
VSWR < 5.

MISCELLANEOUS: The antenna is electrically interchangeable with Bendix Commercial Loop MN-20-D. It is mechanically interchangeable with MN-20-D when used with Adaptor Plate MI-303/ARN. Reference 2) lists this antenna as obsolete.

TYPE: Loop.

COGNIZANT AGENCY: U. S. Air Force, ARL.

MANUFACTURER: Unknown, procurement plan 44-4807.

STOCK NUMBER: Federal Stock Number 5826-155-8293.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 3) U. S. Department of Defense Nomenclature Card.

BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compass, Bendix type MN-26. Equipment function - navigation, direction finding.

UNCLASSIFIED

ANTENNA ASSEMBLY AS-139/ART

FREQUENCY: VHF band, 37 - 50 mc; VSWR < 2 on 50-ohm coaxial cable.

TYPE: Whip.

DESCRIPTION: The antenna is a modified version of the 72-inch whip Antenna System AS-89/ART adapted for use with Radio Transmitting Equipment AN/ART-3. See AS-89/ART for further description. The primary differences between the two antennas include an RG-14/U coaxial cable used in the matching section of AS-139/ART in place of the RG-8/U which is used for AS-89/ART, and RF Receptacle UG-98/U of AS-139/ART used instead of the Socket SO-239 used in AS-89/ART.

BEAM DATA:

Beam type - Omnidirectional, typical of a quarter-wave stub.

Polarization - Linear, depends on mounting position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Transmitting Equipment AN/ART-3. Equipment function - communications.

COGNIZANT AGENCY: U. S. Air Force, ARL-3645.

STOCK NUMBER: Signal Corps 2A264-139.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Broad Band Whip Antennas for Aircraft Use from 36 - 110 mc, Report No. 373. Dayton, Ohio: Aircraft Radio Laboratory, Wright Field. (Sept. 18, 1944). ASTIA Report No. A.T.I. 73262. UNCLASSIFIED.

LOOP ANTENNA AS-140(\*)/ARN-6

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc.

TYPE: Loop.

DESCRIPTION: The assembly consists of a motor-driven, electrostatically shielded, iron-core loop, a loop drive motor with gear train, an autosyn transmitter, a radio-compass deviation corrector, an r-f circuit receptacle, and a control circuit receptacle. The assembly weighs 15 pounds and is 9-1/2 inches by 5 inches by 10-1/2 inches. The antenna mounts inside the blister on an aircraft, or if Loop Housing CW-145/ARN-6 is used, it can be mounted outside the aircraft.

BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compass AN/ARN-6. Equipment function - navigation, direction finding.

MISCELLANEOUS: AS-140(\*)/ARN-6 denotes two models, AS-140/ARN-6 and AS-140A/ARN-6. The latter was cancelled (22 May 1945) because it was not mechanically interchangeable with AS-140/ARN-6; Loop Assembly AS-313/ARN-6 replaces this antenna.

COGNIZANT AGENCY: ARL-45-R82.

MANUFACTURER: Fairchild Camera and Instruments Corporation, Air Force 920-DAY-45SE.

STOCK NUMBERS: Signal Corps 2A1991-140 (for AS-140/ARN-6), and Signal Corps 2A264-140A (for AS-140A/ARN-6).

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

LOOP AS-141/ARN-6

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc; VSWR < 5.

TYPE: Loop.

DESCRIPTION: The antenna is a rotatable, electrostatically shielded, iron-core loop enclosed in a blister-type housing. The effective height of the iron-core loop is approximately that of an electrostatically-shielded air-core loop having a diameter of 15 inches and an inductance of 23.4 microhenries. The loop, drive motor, and other associated

items are enclosed in a hermetically sealed enclosure whose overall dimensions are approximately 11 inches by 6 inches by 12 inches. The antenna is designed for mounting inside the blister on an aircraft, but it may be mounted outside when Loop Housing CW-146/ARN-6 is used.

BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

UNCLASSIFIED

# UNCLASSIFIED

ASSOCIATED EQUIPMENT: Radio Compass AN/ARN-6.  
Equipment function - navigation, direction finding.

COGNIZANT AGENCY: ATSC.

MANUFACTURERS: Fairchild Camera and Instrument Corporation, Air Force order 920-DAY-455E.

STOCK NUMBER: Signal Corps 2A1991-141.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA ASSEMBLY AS-143/ARW-8X

FREQUENCY: VHF band, 50 - 60 mc; VSWR < 2.

Equipment function - probably remote control.

TYPE: Whip.

MISCELLANEOUS: This antenna is the same as AS-47/ARW-8 except for the omission of the mounting plate and relocation of parts of the matching network. The two antennas are interchangeable.

DESCRIPTION: The antenna is a solid, steel shaft 52 inches long. It is 5/16 inch in diameter at the base and tapers to 1/8 inch in diameter at the tip. The base assembly includes an insulator, a capacitor, a bracket, and an SO-239 connector. A mounting plate is required but not furnished. A matching network is associated with the antenna, but no details as to type or location are available.

COGNIZANT AGENCY: U. S. Air Force, ARL-3674.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Electronic Equipment Electromagnetic Radiation Data, Report No. TR-EL-20-1. State College, Pennsylvania: Haller, Raymond & Brown, Inc. (Jan. 15, 1952). ASTIA Report No. A.T.I. 136466. SECRET.

## BEAM DATA:

Polarization - Vertical.

TUNING/MATCHING DEVICES: A matching network is used.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARW-8X.

## ANTENNA ASSEMBLY AS-146/AXR-3

FREQUENCY: VHF and UHF bands, 264 - 372 mc.  
(See Miscellaneous).

TYPE: Coaxial dipole.

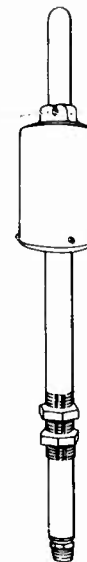
DESCRIPTION: The antenna is a vertical, coaxial dipole attached to a length of pipe for mounting. The upper dipole element is a stubby rod rounded at its upper end; the lower element is a short, fat cylinder which acts as a balun and is coaxial with the upper element and the supporting pipe. The antenna is fed at the point between the lower and upper elements by a coaxial cable which runs through the supporting pipe. Each of the dipole elements appears to be approximately a quarter wavelength long at the listed frequency. (See illustration). The overall dimensions are 16-1/4 inches high by 2 inches in diameter. The antenna should be mounted so that the clearance between the cylindrical dipole element and the aircraft skin is  $5 \pm 1/8$  inches.

## BEAM DATA:

Beam type - Omnidirectional.

Polarization - Vertical.

INSTALLATION: Airborne.



AS-146/AXR-3

# UNCLASSIFIED

ASSOCIATED EQUIPMENT: Radio Set AN/AXR-3(XN-2).  
Equipment function - television.

NXsa-59131.

STOCK NUMBER: Signal Corps 2A264-126.

MISCELLANEOUS: Reference 1) lists the frequency range of this antenna as 780 to 900 mc with a VSWR less than 1.25. The frequency range listed by Reference 2), 264 to 372 mc, seems more accurate in view of dimensions of the antenna.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Philco Corporation, Navy contract

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## ANTENNA ASSEMBLY AS-148/ARA-8

FREQUENCY: VHF band, 120 - 140 mc; VSWR < 5 on 50-ohm coaxial cable.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Air Force, USAF Aircraft Antenna Design Summary, 51S-191544, (March 18, 1952). SECRET.
- 3) U. S. Air Force and the Bureau of Aeronautics, Homing Adapter AN/ARA-8 and AN/ARA-8A, Handbook Operating Instructions, T.O. 12R5-2ARA8-1, (Jan. 15, 1953). UNCLASSIFIED.

TYPE: Stub.

DESCRIPTION: The antenna consists of a quarter-wave stub, terminated at the base in a short, rigid coaxial section, and housed in a streamlined, impregnated wood mast. Ground connections are provided in the form of radial tabs designed to be attached to the skin of the aircraft. The assembly weighs 2-3/5 pounds and is 29-3/8 inches long, 3-7/8 inches wide, and 7/8 inch thick. Two of these antennas are used for each installation. The antennas are mounted (broadside to each other) vertically either on the top or bottom of the fuselage. They are usually located symmetrically about the center line of the fuselage and should be at least 6 feet from all protruding metal objects and are connected by a phasing line; each antenna is alternately connected to the receiver.

## BEAM DATA:

Beam type - Cardioid pattern in the horizontal plane.  
Polarization - Vertical.

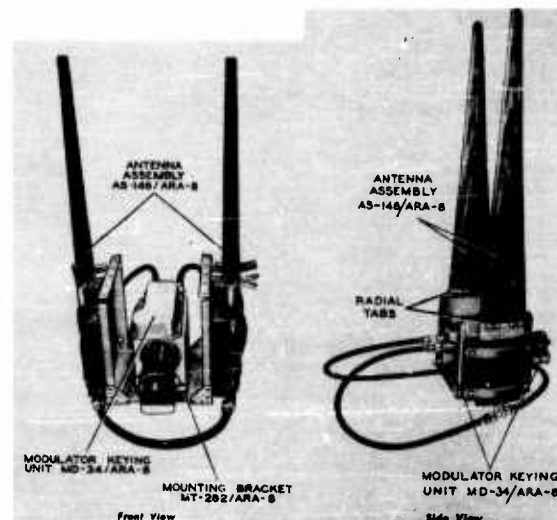
INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Homing Adapter AN/ARA-8.  
Equipment function - navigation, direction finding.

COGNIZANT AGENCY: ARL-3721.

MANUFACTURER: Camfield Manufacturing Company.

STOCK NUMBER: Federal Stock Number 5826-284-8311.



AS-148/ARA-8

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## ANTENNA ASSEMBLY AS-149/TRT-1

MAJOR COMPONENTS: 1 Antenna Mast Section MS-49, 1 Antenna Mast Section MS-50, 1 Antenna Mast Section MS-51, 1 Antenna Mast Section MS-52, 1 Mast Base MP-37, and 1 Mast Bracket MP-50.

DESCRIPTION: The antenna is a four-section whip 13-1/2 feet long and weighs 16 pounds.

## BEAM DATA:

Beam type - Omnidirectional in the azimuth plane.  
Polarization - Vertical.

FREQUENCY: HF and VHF bands, 29.5 - 32 mc.

TYPE: Whip.

# UNCLASSIFIED



UNCLASSIFIED

INSTALLATION: Ground, vehicular; airborne; or shipboard.

STOCK NUMBER: Signal Corps 2A264-149.

ASSOCIATED EQUIPMENT: Radio Set AN/TRT-1. Equipment function - remote control of AN/TRR-2 for detonating mines. Range when used with AN/TRR-2 - Up to 8 miles for ground location, 12 to 20 miles for shipboard location, up to 40 miles for airborne location (5,000 feet altitude).

REFERENCES:

- 1) Department of the Army, Radio Sets AN/TRT-1 and AN/TRR-2, TM 11-269, (Oct. 1949). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

COGNIZANT AGENCY: CESL.

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ANTENNA ASSEMBLY AS-150/ART

FREQUENCY: VHF band, 82 - 105 mc; VSWR < 2.

- 2) U. S. War and Navy Departments and the Air Council of the United Kingdom, Radio Set AN/ARW-9, Handbook of Operating Instructions, AN 08-30ARW9-2, (Dec. 11, 1944). UNCLASSIFIED.

TYPE: Whip.

DESCRIPTION: The antenna is a quarter-wave, retractable whip 30-1/2 inches long. It contains a matching section at its base. The antenna fits into Antenna Base AB-29/ART. The type of installation depends upon the use, the required polarization, and the type of aircraft.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Sets AN/ARQ-8 and AN/ARQ-7. Equipment function - countermeasures, deception.  
Radio Set AN/ARW-9. Equipment function - remote control.

MISCELLANEOUS: AS-161/ART is similar to AS-89/ART, AS-97/ART, and AS-150/ART except for frequency range and length.

COGNIZANT AGENCY: ATSC, and ARL-3752.

MANUFACTURER: Aireon Manufacturing Company, procurement orders 309-DAY-45-RC and 435-DAY-45-RC.

STOCK NUMBERS: Navy-ASO R16AN-AS150ART, Signal Corps 2A264-150, and Federal Stock Number N5985-112-9062.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

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ANTENNA ASSEMBLY AS-151/APS-13

FREQUENCY: UHF band, 410 - 420 mc; VSWR < 2 on 50-ohm coaxial cable.

ASSOCIATED EQUIPMENT: Radio Set AN/APS-13. Equipment function - tail warning.

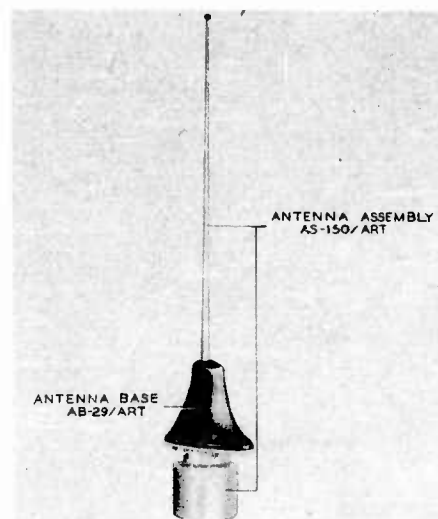
TYPE: Yagi.

COGNIZANT AGENCY: ARL-3731.

DESCRIPTION: This antenna is the same as AS-62/APS-13 except that the tie cable is three half-wavelengths long instead of one half-wavelength.

MANUFACTURERS: Radio Corporation of America, order 458-DAY-44; and General Electric Company, order 456-DAY-44.

INSTALLATION: Airborne.



AS-150/ART

# UNCLASSIFIED

STOCK NUMBERS: Navy, ASO R16AN-AS151APS13 and Signal Corps 2A264-151.  
Current stock number lists indicate that this is not stocked by the U. S. Air Force.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## LOOP AS-153/ARN

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc; VSWR < 5.

TYPE: Loop.

DESCRIPTION: The assembly consists of a motor-driven, electrically-shielded loop, enclosed in a zeppelin-type housing with a loop driving motor, a fixed, camera-type compensator, and an autosyn transmitter located in its base. The improved streamlining of this antenna assembly reduces aerodynamic drag by about 15 per cent from earlier loops. The antenna weighs about 25 pounds and measures 30 inches by 15 inches by 7 inches.

BEAM DATA:  
Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compass AN/ARN-7 and SCR-269-G. Equipment function - navigation, direction finding.

MISCELLANEOUS: This antenna is completely interchangeable with Loops LP-21-A, LP-21-AM, and LP-21-IM.

COGNIZANT AGENCY: ARL-3765.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA ASSEMBLY AS-154(\*)/APS-10

FREQUENCY: SHF band, 9345 - 9405 mc; VSWR < 2 on X-band waveguide.

TYPE: Paraboloidal reflector fed by a dipole.

DESCRIPTION: The assembly consists of a lightweight, 18-inch paraboloidal reflector fed by a dipole enclosed in a plastic cup. The dipole is mounted at or near the focal point of the reflector on the end of a section of waveguide which protrudes through the center of the reflector. The plastic cup enclosing the dipole allows pressurization of the waveguide. A narrow strip of metal is affixed to the surface of the reflector to produce a csc<sup>2</sup> beam in elevation. The antenna weighs 19 pounds and is 18 inches wide, 18 inches deep, and 25 inches high.

BEAM DATA:  
Half-power beamwidth - Horizontal - 6°.  
Beam type - Csc<sup>2</sup> pattern in elevation.  
Polarization - Horizontal.

SCAN DATA: The assembly rotates through 360° in azimuth at about 30 revolutions per minute.

INSTALLATION: Airborne, mounts on underside of the fuselage.

ASSOCIATED EQUIPMENT: Radio Set AN/APS-10. Equipment function - search, air; and radar beacon.

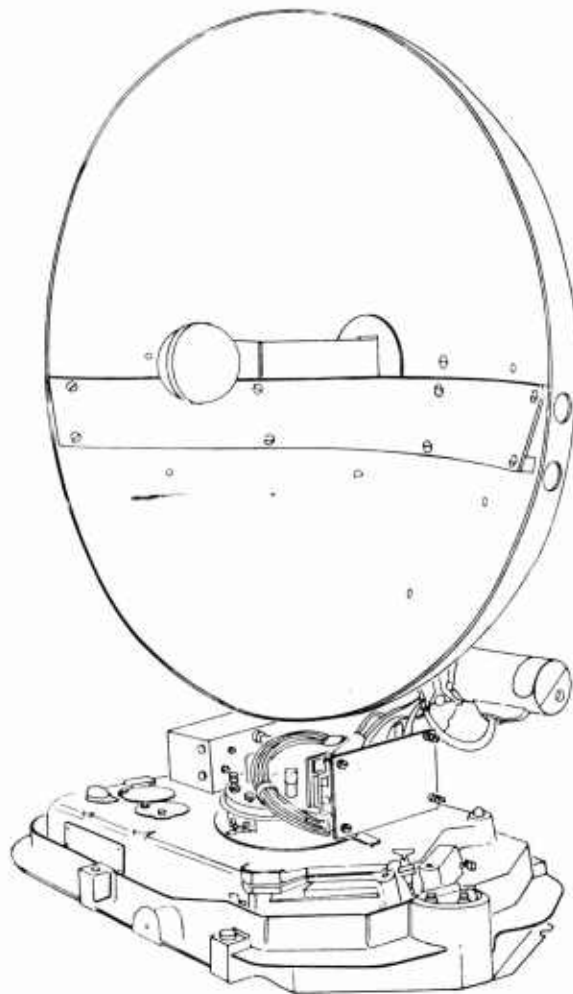
MISCELLANEOUS: AS-154(\*)/APS-10 denotes two models, AS-154/APS-10 and AS-154A/APS-10. AS-154/APS-10 and Synchronizer SN-17/APS-10 are interchangeable with AS-154A/APS-10 and Synchronizer SN-17A/APS-10 as pairs only. AS-154/APS-10 is used with Radio Sets AN/APS-10 whose serial number is 50 or below. AS-154A/APS-10 is used with Radio Sets AN/APS-10 whose serial number is between 50 and 5000.

COGNIZANT AGENCY: ATSC ARL-4601.

MANUFACTURERS: AS-154/APS-10 ... General Electric Company, orders 972-DAY-44 and 2139-DAY-44, AS-154A/APS-10 ... order 1239-DAY-44.

STOCK NUMBERS: AS-154/APS-10 ... Federal Stock Number 1660 5841-155-8265, AS-154A/APS-10 ... Federal Stock Number 1660 5841-149-0884.

UNCLASSIFIED



AS-154/APS-10

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AS-161/ART&()

FREQUENCY: VHF band, 65 - 85 mc; VSWR < 2.2.

TYPE: Whip.

DESCRIPTION: The antenna consists of a steel whip 40 inches long and a matching section designed for 50-ohm coaxial cable. The base is equipped with a type-N coaxial connector. The antenna uses, but does not include, AB-29/ART antenna base, and CU-64/APT balun. See References 2) and 3) for information regarding modifying the antenna for horizontal polarization.

BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARQ-8.

Equipment function - countermeasures, jamming.  
Transmitting Set AN/URW-3. Equipment function - guidance, command.

MISCELLANEOUS: AS-161/ART is similar to AS-89/ART, AS-97/ART, and AS-150/ART except for frequency range and length.

COGNIZANT AGENCY: ATSC.

MANUFACTURER: Aireon Manufacturing Corporation, procurement contracts 309-DAY-45-RC, 435-DAY-45-RC, and 753-DAY-45-RC.

STOCK NUMBER: Federal Stock Number 5895-149-0869A.

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REFERENCES:

- 1) U. S. Air Force, Radio Transmitting Set AN/URW-3, Handbook Maintenance Instructions, T.O. No. 16-30URW3-3, (Dec. 1, 1952). UNCLASSIFIED.
- 2) D. Lazarus, Adaptation of AS-161/ART and

AS-97/ART Whip Antennas as Horizontally-Polarized Radiators in the 75 mc. Region, Report No. 411-212. Cambridge, Mass.: Radio Research Laboratory, Harvard University. (June 28, 1945). ASTIA Report No. A.T.I. 27280. UNCLASSIFIED.

ANTENNA ASSEMBLY AS-162/AP

FREQUENCY: VHF band, 157 - 187 mc; VSWR < 2.

TYPE: Yagi.

DESCRIPTION: The assembly is an array consisting of a half-wave antenna, a director, a mounting, and connections.

BEAM DATA:

Polarization - Horizontal or vertical depending on mounting position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/APX-2.  
Equipment function - IFF.

MISCELLANEOUS: The antenna is similar to Antenna AN-148-A but is improved mechanically.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBER: Signal Corps 2A264-162.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA ASSEMBLY AS-163/APS-3A

FREQUENCY: SHF band, 9310 - 9430 mc; VSWR < 2 on X-band waveguide.

TYPE: Paraboloidal reflector.

DESCRIPTION: The assembly consists of a parabolic dish with a 5.66-inch focal length, a radiator, a pressurized rotating joint and heater, and drive mechanisms.

BEAM DATA:

Beam type - The beam covers a vertical range of 24°.  
Polarization - Horizontal.

SCAN DATA: The antenna scans 160° in azimuth at 35 cycles per minute and tilts through 8°.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/APS-3A.  
Equipment function - search; navigation; and radar beacon.

MISCELLANEOUS: The antenna is similar to Antenna AS-12/APS-3 but it has a different waveguide connection; it has a rotary joint heater and other modifications. AS-179/APS-3A is similar to AS-163/APS-3A except for replacement parts.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Philco Corporation, Navy contract NXsa 44608.

STOCK NUMBER: Signal Corps 2A264-163.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA ASSEMBLY AS-164/AP

FREQUENCY: X-band; VSWR < 2.

TYPE: Dipole array.

DESCRIPTION: Reference 1) lists the following information: "This is an X-band, toothpick type, high resolution antenna for use with Radio Sets AN/APQ-7 and AN/APQ-13 and Radar Equipment AN/APS-15. The antenna rotates through 360° in azimuth, has sector scan, is

operable to altitudes of 40,000 feet, and consists of waveguide fed dipoles similar to those of the eagle antenna." Reference 2), though not explicit, seems to indicate that the above description pertains to the feed assembly for a modified paraboloidal reflector. The data available are insufficient to determine if the nomenclature AS-164/AP applies to the reflector and feed or to the feed alone.

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INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Sets AN/APQ-7 and AN/APQ-13 and Radar Equipment AN/APS-15. Equipment function - probably search and navigation.

COGNIZANT AGENCY: SPSRB-3/C.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

- 2) A. S. Dunbar, Antenna for High Altitude Bombing (H<sub>2</sub>X), Report No. 411. Cambridge, Mass.: Radiation Laboratory, Massachusetts Institute of Technology. (Aug. 3, 1943). ASTIA Report No. A.T.I. 5751. UNCLASSIFIED.

- 3) U. S. Department of Defense Nomenclature Card.

ANTENNA ASSEMBLY AS-166/AP

FREQUENCY: VHF band, 160 - 184 mc; VSWR < 2 on 50-ohm coaxial cable.

TYPE: Rod.

DESCRIPTION: This antenna is the same as Antenna Assembly AS-32/APX-1 except that "extenders" are used to obtain the correct physical dimensions required by the frequency. See AS-32/APX-1 for further description.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APX-10. Equipment function - IFF.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBER: Signal Corps 2A264-166.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AIRFOIL ASSEMBLY AS-167(\*)/APQ-7

FREQUENCY: SHF band, 9280 - 9470 mc; VSWR < 2.

TYPE: Dipole array.

DESCRIPTION: The assembly consists of Antenna Assembly AS-82/APQ-7 or AS-311/APQ (see Miscellaneous) enclosed in an airfoil which is mounted to the aircraft perpendicular to the longitudinal axis of the fuselage. The airfoil is approximately 18 inches long with a 31-inch chord and 8 inches thick. Temperature and pressure are maintained within a range which ensures correct operation.

BEAM DATA:

Half-power beamwidth - Horizontal - 4°.

Beam type - csc<sup>2</sup> pattern in elevation.

Polarization - Horizontal.

SCAN DATA: The antenna does not move mechanically, but scans electronically in azimuth through a 60° sector (30° to the left and 30° to the right of the aircraft heading). The antenna can also be made to scan only the left or only the right half of the 60° sector. Scanning is accomplished by electrically varying the wide dimension of the waveguide and by switching the feed from one end of the array to the other.

INSTALLATION: Airborne, supported by struts beneath the fuselage.

ASSOCIATED EQUIPMENT: Radio Set AN/APQ-7 and Radar Set AN/APS-24. Equipment function - bombing.

MISCELLANEOUS: AS-167(\*)/APQ-7 denotes AS-167/APQ-7 and AS-167A/APQ-7. The two models are electrically and mechanically interchangeable but differ in component parts. AS-167/APQ-7 consists of Antenna Assembly AS-82/APQ-7 and Antenna Housing CW-23/APQ-7. AS-167A/APQ-7 consists of Antenna Assembly AS-311/APQ and Antenna Housing CW-23A/APQ-7.

COGNIZANT AGENCY: ARL.

MANUFACTURER: Western Electric Company, order 214-DAY-44.

STOCK NUMBERS: AS-167/APQ-7 ... Signal Corps 2A264-167, Current stock number lists indicate that this item is not stocked by the U. S. Air Force. AS-167A/APQ-7 ... Signal Corps 2A264-167A.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA ASSEMBLY AS-168/AP

FREQUENCY: VHF and UHF bands, 90 - 710 mc.

TYPE: Rod.

DESCRIPTION: The antenna assembly consists of a short copper rod covered with a polystyrene jacket and a metal housing which contains a crystal rectifier and a choke. The assembly is permanently installed on an aircraft and used to test the power output of radio equipment.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Test Meter TS-60/U.  
Equipment function - test.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Camfield Manufacturing Company.

STOCK NUMBER: Navy R16AN-AS168AP.

REFERENCES:

- 1) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

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ANTENNA ASSEMBLY AS-172/AP

FREQUENCY: UHF band, 2700 - 2900 mc; VSWR < 2.

TYPE: Dipole array.

DESCRIPTION: The antenna consists of a two-section, nondirectional, airborne antenna in a streamlined housing. Both transmitting and receiving antennas are broadband antennas for operation in any part of the SG band. The assembly contains two r-f sockets for antenna cables. The assembly weighs 5 pounds and measures 3-1/2 inches by 7 inches by 14 inches. The antenna is contained in a teardrop housing which mounts on the skin of the aircraft.

BEAM DATA:

Beam type - Omnidirectional in the horizontal plane.

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Beacons AN/APN-16 and AN/APN-26. Equipment function - radar beacon.

COGNIZANT AGENCY: ARL-3891.

MANUFACTURER: Hallicrafters Company, order number 1242-DAY-44.

STOCK NUMBER: Signal Corps 2A264-172. Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA ASSEMBLY AS-174/APX

FREQUENCY: VHF band, 157 - 212 mc; VSWR < 2 on 50-ohm coaxial cable.

TYPE: Turnstile.

DESCRIPTION: The assembly is a dual antenna consisting of a turnstile antenna similar to Antenna Assembly AS-31/APN-7, and a G-band antenna. Both antennas may be operated simultaneously. The assembly weighs about 4 pounds.

BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APX-1.

Equipment function - IFF.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Development by Radiation Laboratory.

STOCK NUMBER: Navy-ASO R16A4933-50.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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## ANTENNA ASSEMBLY AS-179/APS-3A

FREQUENCY: SHF band, 9310 - 9420 mc; VSWR < 2.

TYPE: Paraboloidal reflector fed by a dipole assembly.

DESCRIPTION: The antenna consists of a paraboloidal reflector fed by a parasitic array. The array consists of a dipole and parasitic reflector and is mounted at or near the focal point of the paraboloidal reflector. A plastic covering encloses the dipole array and permits pressurization of the waveguide to which the array is attached. The assembly weighs 221 pounds and is 19-3/8 inches high, 18-3/8 inches wide, and 21 inches deep. The focal length of the parabolic reflector is 5.66 inches.

### BEAM DATA:

Polarization - Horizontal.

Additional information is available in the secret document listed below as Reference 1 and in Volume VI of this catalog series.

SCAN DATA: The antenna has a rectangular scan and scans at 35 cycles per minute. The rectangular scan is such that the peak of the beam moves along the perimeter of a rectangle which covers 160° in azimuth and 2° in elevation. The antenna can be manually tilted 8° from the horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-3A.  
Equipment function - search, air; and radar beacon.

MISCELLANEOUS: The antenna is similar to AS-22/APS-3 except for the waveguide connection and other modifications. It is also similar to AS-163/APS-3 except for replacement parts.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBERS: Federal Stock Number F5985-321-6843, Navy-ASO R16AN-AS179APS3A.

### REFERENCES:

- 1) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD-150674. SECRET.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-180/APT

FREQUENCY: UHF band, 550 - 1400 mc; VSWR < 2.

TYPE: Slot antenna.

DESCRIPTION: The antenna consists of a hollow truncated cone, in which a long slot has been cut longitudinally. The slot is fed at the top by a coaxial cable and has an adjustable shorting bar for varying the length of the slot. The bandwidth of the antenna for the above VSWR is 5 to 10 percent for any given position of the shorting bar. The antenna is 14 inches high, and the diameter is 8 inches at the base and 3-1/2 inches at the top. A UG-23/U connector is mounted at the base of the antenna for use with RG-8/U coaxial cable. The antenna is primarily designed for installation on the underside of an aircraft, using the skin as a ground plane.

### BEAM DATA:

Half-power beamwidth -

Vertical - 70° to 90°.

Horizontal - Approximately omnidirectional at lower frequencies; 150° near the highest frequency.

Polarization - Horizontal.

TUNING/MATCHING DEVICES: The antenna has an

adjustable shorting bar on the lower portion of the slot for varying the slot length.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APT-5.  
Equipment function - countermeasures, deception.

COGNIZANT AGENCY: ARL-3976, AFDRE-2F/1.

MANUFACTURERS: Rowe Industries.

### REFERENCES:

- 1) Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Dec. 3, 1945). UNCLASSIFIED.
- 2) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

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## ANTENNA ASSEMBLY AS-181/AP

MAJOR COMPONENTS: Antenna AT-89/AP, Antenna AT-90/AP, Antenna AT-91/AP, and Antenna Base AB-87/AP.

**FREQUENCY:** VHF and UHF bands, 195 - 675 mc:  
AS-181/AP ... VHF and UHF bands, 195 - 675 mc;  
VSWR < 2 on 50-ohm coaxial line.  
AT-89/AP ... VHF band, 195 - 295 mc,  
AT-90/AP ... VHF and UHF bands, 280 - 470 mc,  
AT-91/AP ... UHF band, 460 - 675 mc.

TYPE: Swept-back V-type dipole.

**DESCRIPTION:** The AS-181/AP antenna assembly consists of mount M3203 and the 3 interchangeable antennas which are similar but cover different frequency ranges. The antennas provide horizontally polarized radiation predominantly forward and to the sides of the aircraft. The metal mount has a streamlined cross section (about 6 by 2-1/2 inches) and is about 13 inches long. The mount is permanently installed on the fuselage of the aircraft and has a locking device at the outer end for attaching the antenna. Any one of the antennas may be plugged into and locked on the mount. The antenna can handle 50 watts of r-f power (limited by the type N connectors). The weight of the mount is about 5-1/4 pounds.

A) Antenna AT-89/AP - The antenna is a dipole with the straight arms swept back so that the angle between the arms is 100 degrees. A quarter-wave balun which is enclosed in a right circular cylinder is used so that the balanced antenna can be fed by a coaxial cable. When mounted, the right circular cylinder is inside the streamlined mount, and the arms of the dipole are at right angles to the axis of the mount. The length of each arm is 14-1/2 inches, and the weight of the antenna and balun assembly is about 4-1/2 pounds.

B) Antenna AT-90/AP - This dipole antenna is identical to the AT-89/AP but is shorter to operate at a higher frequency. The approximate weight of the antenna is 3-1/2 pounds. The length of each arm is 11 inches.

C) Antenna AT-91/AP - This dipole antenna is identical to the AT-89/AP but is shorter to operate at a higher frequency. The approximate weight of the antenna is 3 pounds. The length of each arm is 8 inches.

BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APT-5.  
Equipment function - countermeasures, jamming.

COGNIZANT AGENCY: U. S. Air Force, ARL.

MANUFACTURER: Rowe Industries, procurement order  
1016-DAY-45-SP.

STOCK NUMBERS:

AS-181/AP ... Signal Corps 2A264-181  
AT-89/AP ... Signal Corps 2A203-89  
AT-90/AP ... Navy R16A4934-40  
AΓ-91/AP ... Navy R16A4934-80

REFERENCES:

- 1) C. Driscoll, Preliminary Operating Instructions for the M3203 V Dipole Antennas, Report No. 411-1B-47. Cambridge, Mass.: Radio Research Laboratory, Harvard University. (Nov. 13, 1944). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.



AS-181/AP

# ANTENNA ASSEMBLY AS-182/APG-3

FREQUENCY: X-band.

TYPE: Paraboloidal reflector.

**DESCRIPTION:** The assembly consists of an X-band feed and a paraboloidal reflector used for scanning and tracking. Power and data circuits are connected through AN-type connectors; r-f

energy is coupled through flexible waveguide and rotating seals. The assembly weighs 50 pounds and has the dimensions 12 by 25-1/2 inches.

Additional information is available in the confidential and secret documents listed below as References 2 and 3 and in Volumes V and VI of this catalog series.



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SCAN DATA: The antenna rotates through plus or minus 60° in azimuth and from plus 45° to minus 50° in elevation.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/APG-3.  
Equipment function - probably fire control.

COGNIZANT AGENCY: ATSC.

MANUFACTURER: General Electric Company, order 798-DAY-45-RA.

STOCK NUMBERS: Federal Stock Number 1270-524-5292.

REFERENCES:

- 1) U. S. Air Force, Radio Set AN/APG-3, Spare

Parts List, T.O. No. 16-55-397, (July 5, 1951 - revised Dec. 3, 1951). UNCLASSIFIED.

- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD-150674. SECRET.
- 4) U. S. Department of Defense Nomenclature Card.

ANTENNA ASSEMBLY AS-183/APD-1

FREQUENCY: VHF band, 140 - 180 mc; VSWR < 5 on 50-ohm coaxial cable.

TYPE: Yagi.

DESCRIPTION: AS-183/APD-1 is a Yagi antenna and consists of a driven element and a reflector. A combination matching unit and balun is incorporated into the frame of the antenna. Two of these antennas are used for each installation. The antennas, one under each wing, are installed with the radiating elements projecting at an angle in front of and somewhat below the leading edge of the wing. Special mounting brackets (MT-391/APD-1 and MT-392/APD-1) are provided for mounting the antennas on the Navy Type TBF or TBM aircraft.

BEAM DATA:

Beam type - The horizontal pattern consists of two lobes, one from each antenna, which intersect on the line of flight at the half-power points of the lobes.

Polarization - Horizontal.

TUNING/MATCHING DEVICES: A combination matching unit and balun is incorporated into the frame of the antenna.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APD-1.  
Equipment function - navigation, direction finding.

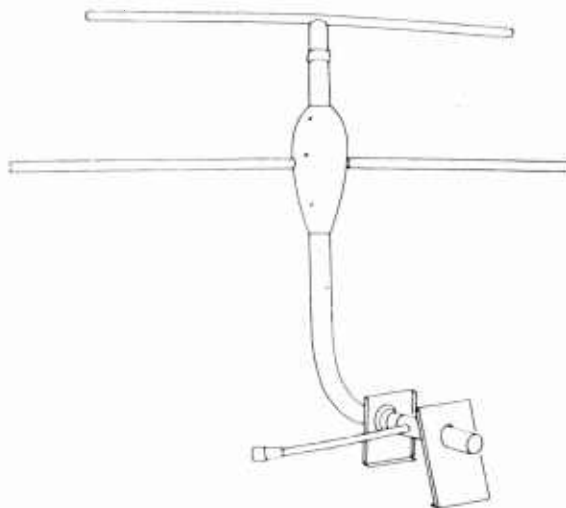
COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Wilmotte Laboratories, Navy contract NOas-4148.

STOCK NUMBER: Navy-ASO R16AN-AS183APD-1.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.



AS-183/APD-1

ANTENNA ASSEMBLY AS-185/APS-4

This antenna assembly was cancelled 21 March 1945; Antenna Assembly AS-205/APS-4 is used instead.

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## ANTENNA ASSEMBLY AS-186/APA-17

**FREQUENCY:** UHF and SHF bands, 1000 - 5000 mc; VSWR < 5 on 50-ohm coaxial cable.

**TYPE:** Two paraboloidal reflectors fed by dipoles.

**DESCRIPTION:** The assembly consists of two paraboloidal reflectors mounted back-to-back below a flat, circular plate 20 inches in diameter. Each of the paraboloidal reflectors is fed by a balanced sleeve dipole placed at or near its focal point. The axis of one dipole is vertical and the axis of the other is horizontal. The coaxial cable from the receiver is connected to an antenna selector relay so that either antenna can be selected according to the polarization desired. A reflector element is mounted a short distance in front of and parallel to each dipole. The reflectors insure that the received signal comes primarily from the paraboloidal reflector rather than from direct radiation. Two small stubs are affixed to each dipole element for suppression of side lobes above 3500 mc. A balun which is housed in each dipole support connects the balanced sleeve dipoles to the unbalanced coaxial cable. The entire assembly weighs about 10 pounds, is 20 inches in diameter, and is about 17 inches tall.

### BEAM DATA:

Polarization - Horizontal or vertical.

**SCAN DATA:** The assembly rotates in azimuth through 360° at a speed variable between 0 and 150 revolutions per minute.

**TUNING/MATCHING DEVICES:** Each antenna has a balun built into the dipole support.

**INSTALLATION:** Airborne, installed in a streamlined nacelle aboard PB4X-2 aircraft.

**ASSOCIATED EQUIPMENT:** Radar Direction Finder Assemblies AN/APA-17, AN/APA-17A and AN/APA-17B. Equipment function - countermeasures, direction finding.

**MISCELLANEOUS:** This antenna is also known as the REL M-4500 r-f rotating antenna head.

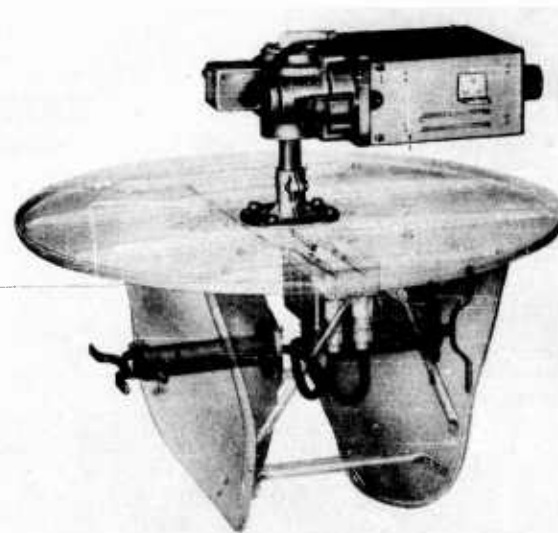
**COGNIZANT AGENCY:** AEL-49-R666.

**MANUFACTURER:** Hoffman Radio Corporation, contract AF 33(038)8228.

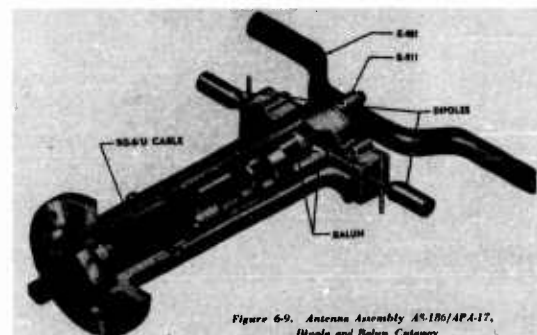
**STOCK NUMBER:** Federal Stock Number 1660-5826-548-3905.

### REFERENCES:

- 1) U. S. War and Navy Departments, Models AS-108B/APA-17 and AN-186/APA-17 Antenna Assemblies, Handbook of Maintenance Instructions, AN 16-35AS108-3, (Dec. 1, 1945). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.



AS-186/APA-17 Antenna Assembly



AS-186/APA-17 Dipole and Balun Cutaway

## ANTENNA ASSEMBLY AS-187/ARQ-11

**FREQUENCY:** HF and VHF bands, 18 - 40 mc; VSWR < 5 on 50-ohm coaxial cable.

**TYPE:** Wire.

**DESCRIPTION:** The assembly consists of a stream-

lined mast 3 inches by 7-1/2 inches by 34 inches, a 7-foot length of wire, 2 insulators, and a tension spring. The mast mounts on the wing, and the wire is stretched between the mast and the fuselage. The antenna terminates

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in a UG-58/U r-f connector and is fed by RG-8/U coaxial cable.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARQ-11.  
Equipment function - communications.

COGNIZANT AGENCY: ARL-4037.

MANUFACTURER: Airborne Instruments Laboratory,

order 224-DAY-45.

STOCK NUMBER: Signal Corps 2A264-187.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA ASSEMBLY AS-188/ARQ-11

FREQUENCY: VHF band, 40 - 70 mc; VSWR < 5 on 50-ohm coaxial cable.

TYPE: Whip.

DESCRIPTION: The assembly consists of a 3-foot whip mounted on a streamlined stub with dimensions 2 by 11 inches. The antenna terminates in a UG-58/U r-f connector and is fed by RG-8/U coaxial cable.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARQ-11.  
Equipment function - communications.

COGNIZANT AGENCY: ARL-4038.

MANUFACTURER: Airborne Instruments Laboratory,  
order 224-DAY-45.

STOCK NUMBER: Signal Corps 2A264-188.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA ASSEMBLY AS-189/ARQ-11

FREQUENCY: HF and VHF bands, 18 - 40 mc. VSWR < 2 on 52-ohm coaxial cable.

TYPE: Wire.

DESCRIPTION: The assembly consists of a streamlined mast 3 inches by 7-1/2 inches by 34 inches, a 7-foot length of wire, 2 insulators, and a tension spring. The mast mounts on the wing, and the wire is stretched between the mast and the fuselage. The antenna terminates in a Navy Type 49551 connector and is fed by RG-17/U coaxial cable.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARQ-11.

Equipment function - communications.

COGNIZANT AGENCY: ARL-4036.

MANUFACTURER: Airborne Instruments Laboratory,  
order 224-DAY-45.

STOCK NUMBER: Signal Corps 2A264-189.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA ASSEMBLY AS-190/ARQ-11

FREQUENCY: VHF band, 40 - 70 mc; VSWR < 2 on 52-ohm coaxial cable.

TYPE: Whip.

DESCRIPTION: The antenna consists of a 3-foot whip mounted on top of a streamlined stub; it is used for transmitting. The antenna terminates in a Navy Type 49551 connector and is fed by RG-17/U coaxial cable.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARQ-11.  
Equipment function - communications.

COGNIZANT AGENCY: ARL-4039.

MANUFACTURER: Airborne Instruments Laboratory,  
Order 225-DAY-45.

STOCK NUMBER: Signal Corps 2A264-190.

# UNCLASSIFIED

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA ASSEMBLIES AS-191/AX through AS-200/AX

ANTENNA ASSEMBLIES:	FREQUENCY:	TYPE:	Antenna	Weight (pounds)	Height (inches)	Width (inches)
AS-191/AX	VHF band, 258-270 mc	Parasitic array	AS-191/AX	2.2	22-3/8	5-5/8
AS-192/AX	VHF band, 270-282 mc	Parasitic array	AS-192/AX	2.1	21-7/16	5-3/8
AS-193/AX	VHF band, 282-294 mc	Parasitic array	AS-193/AX	2.1	20-1/2	5-1/8
AS-194/AX	UHF and VHF bands 294-306 mc	Parasitic array	AS-194/AX	2.0	19-11/16	4-15/16
AS-195/AX	UHF band, 306-318 mc	Parasitic array	AS-195/AX	2.0	18-15/16	4-3/4
AS-196/AX	UHF band, 318-330 mc	Parasitic array	AS-196/AX	1.9	18-1/4	4-9/16
AS-197/AX	UHF band, 330-342 mc	Parasitic array	AS-197/AX	1.8	17-9/16	4-3/8
AS-198/AX	UHF band, 342-354 mc	Parasitic array	AS-198/AX	1.8	17	4-1/4
AS-199/AX	UHF band, 354-366 mc	Parasitic array	AS-199/AX	1.8	16-13/32	4-1/8
AS-200/AX	UHF band, 366-378 mc	Parasitic array	AS-200/AX	1.8	15-7/8	4

VSWR < 2 for each antenna on 50-ohm coaxial cable.

**DESCRIPTION:** Each of the antennas is a three-element directional array supported by a steel pipe 1-1/2 inches in diameter. Each antenna consists of two vertical, elliptical, rod-type elements (a radiator and a reflector), and a horizontal ground rod. The support pipe for each antenna is 14 inches long and is equipped with an SO-239 socket. The weight and dimensions of each antenna are listed below.

## BEAM DATA:

Beam type - Directional in the horizontal plane.

**INSTALLATION:** Airborne. The antennas mount on the upper surface of aircraft. The location should provide the shortest practical length of transmission line between the antenna and the equipment.

**ASSOCIATED EQUIPMENT:** Radio Transmitting Set AN/AXT-2 and Radio Receiving Set AN/AXR-1. Equipment function - television.

**COGNIZANT AGENCY:** ARL-4050 through ARL-4059 for Antenna Assemblies AS-191/AX through AS-200/AX respectively.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA ASSEMBLY AS-205(\*)-APS-4

**FREQUENCY:** SHF band, 9320 - 9430 mc; VSWR < 2.

**TYPE:** Paraboloidal reflector fed by a Cutler feed.

**DESCRIPTION:** The antenna is a paraboloidal reflector (14-1/2 inches in diameter) with a focal length of 6.3 inches. The reflector is fed by a Cutler feed. It weighs about 19 pounds. The assembly also includes a rotating joint, gear box, motor, and azimuth and tilt potentiometers. The entire radar set is enclosed in a streamlined, pressurized, bomb-shaped container and mounted to a bomb rack underneath the wing of the aircraft.

## BEAM DATA:

Gain - 28 db.

Half-power beamwidth - Horizontal and Vertical - 6°

Polarization - Horizontal.

**SCAN DATA:** The antenna scans through 150° in azimuth at either 30 or 60 cycles per minute. At a scan rate of 30 cycles per minute, a two line, 12-degree, vertical scan is provided. At 70 cycles per minute, a four-line, 24-degree, vertical scan is provided. A manual tilt control permits adjustment of the antenna axis from plus 10° to minus 30° with respect to the horizontal.

# UNCLASSIFIED

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INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/APS-4 and AN/APS-4A. Equipment function - search, air; search, surface; navigation; and fire control.

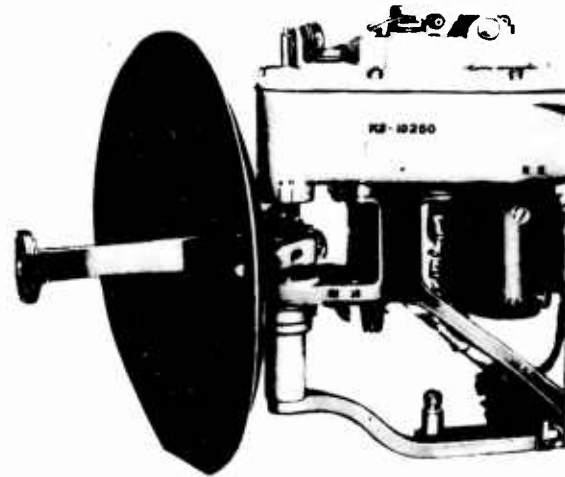
MISCELLANEOUS: AS-205(\*)/APS-4 denotes AS-205/APS-4 and AS-205A/APS-4. The antennas are similar but AS-205A/APS-4 incorporates improved design features. AS-205/APS-4 is similar to and replaces AS-185/APS-4.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Western Electric Company, Navy contract NXsa-23502.

REFERENCES:

- 1) H. T. Friis and W. D. Lewis, Radar Antennas, The Bell System Technical Journal, Volume 26, No. 2. New York, N. Y.: American Telephone and Telegraph Company. (April 1, 1947). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CLASSIFIED.
- 3) U. S. Department of Defense Nomenclature Card.



AS-205A/APS-4

ANTENNA ASSEMBLY AS-206/ART-19

FREQUENCY: MF and HF bands, 1 - 6 mc.

TYPE: Trailing wire.

DESCRIPTION: The assembly consists of 400 feet of W-106 wire wound on a reel.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ART-19.

COGNIZANT AGENCY: ARL-4124.

MANUFACTURER: John Meck Industries, procurement order 279-DAY-45-SD.

STOCK NUMBER: Signal Corps 2A264-206.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA ASSEMBLY AS-209/SPR

Cancelled, 18 July 1946 per nomenclature card.  
The antenna was never used.

ANTENNA ASSEMBLY KIT AS-211/AR

FREQUENCY: HF band, 6 - 25 mc.

TYPE: Wire.

DESCRIPTION: The kit consists of 250 feet of Antenna Wire WS-5/U, four Antenna Strain Insulators MX-273/AR, two Antenna Tension Units MX-274/AR, twelve Static Dischargers AN/311/AR, four Antenna Guy Fittings MX-311/AR and the necessary hardware. An extra cap to fit the insulator for an L-splice is also included.

The kit weighs about 7 pounds and measures 20 inches by 20 inches by 5 inches.

ASSOCIATED EQUIPMENT: General communications equipment. Equipment function - communications.

COGNIZANT AGENCY: ATSC and ARL-4132.

MANUFACTURER: Magnavox Company, procurement order 674-DAY-45-SD.

UNCLASSIFIED

STOCK NUMBERS: Navy-ASO, R16AN-AS211AR and Signal Corps 2A1575-211. Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCE:

- 1) U. S. Department of Defense Nomenclature Card.

ANTENNA ASSEMBLY AS-215/ARN

FREQUENCY: VHF band, 75 mc; VSWR < 1.6 from 74.95 to 75.035 mc on 52-ohm coaxial cable.

TYPE: Rod-type antenna backed by a half-cylinder reflector.

DESCRIPTION: The antenna consists of a rod-type radiator backed by an aluminum half-cylinder reflector. The rod is physically shorter than a half wavelength but is tuned to 75 mc by a fixed and a variable capacitor attached to its ends. The antenna is designed for zero drag, flush mounting on the underside of the fuselage near the centerline. The antenna weighs 3-8/10 pounds and has the following dimensions; 20-1/2 inches in length, 13 inches in width, and six inches in depth.

BEAM DATA:

Polarization - Horizontal.

TUNING/MATCHING DEVICES: A variable capacitor is provided for frequency tuning.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Marker Beacon Receiving Set AN.ARN-12, RC-39-(), RC-43-(), RC-193-(). Equipment function - navigation, surface reference (Marker Beacon).

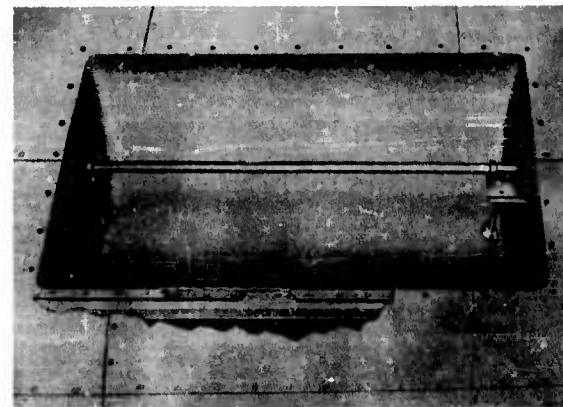
COGNIZANT AGENCY: ARL-46-76.

MANUFACTURER: Communications and Engineering Equipment Company, Air Force order 46-3273.

STOCK NUMBER: Federal Stock Number 5826-112-9047.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CLASSIFIED.
- 2) DAY, Maintenance Instruction Antenna Assembly for AT-134A/ARN, TD 23R5-2ARN-102 (Sept. 15, 1946). UNCLASSIFIED.
- 3) Wright Air Division Center, United States Air Force A/C Antenna Design Summary, 51S-191544 (Feb. 1959). UNCLASSIFIED.



AS-215/ARN Aircraft Installation

ANTENNA ASSEMBLY AS-217(\*)/APG-15

FREQUENCY: UHF band, 2500 - 2600 mc; VSWR < 2 on coaxial cable.

TYPE: Paraboloidal reflector fed by a dipole.

DESCRIPTION: The antenna consists of a paraboloidal reflector fed by a dipole with a disc reflector. The paraboloidal reflector is eccentrically mounted with respect to the stationary dipole and is motor driven to produce conical scanning. The paraboloidal reflector is about 13 inches in diameter and has a 4-inch focal length. The assembly weighs about 26 pounds and (overall) is 16 inches wide, 19 inches high, and 26 inches long. The entire assembly is placed in a pressurized spherical housing and bolted to the cradle of the 20-mm tail guns of the B-29.

BEAM DATA:

Half-power beamwidth - Horizontal and Vertical - 25°.

Additional information is available in the secret document listed below as Reference 1 and in Volume VI of this catalog series.

SCAN DATA: Conical scanning is produced by spinning the paraboloidal reflector at 2400 revolutions per minute.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APG-15. Equipment function - fire control and tail warning.

Radar Set AN/APX-15. Equipment function - IFF.

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MISCELLANEOUS: AS-217(\*)/APG-15 denotes three models, AS-217/APG-15, AS-217A/APG-15, and AS-217B/APG-15. The models differ in the type of governor used to control the rotational speed of the reflector. The models are interchangeable in descending order; i.e., Model B for Model A or the undesignated model, etc., but not in the reverse order.

COGNIZANT AGENCY: AS-217/APG-15 ... ARL-4156; AS-217A/APG-15 ... ARL-45-R529; AS-217B/APG-15 ... ARL-45-520.

MANUFACTURERS: General Electric Company, contract numbers 866-DAY-44, 889-DAY-44, 1306-DAY-44, 2103-DAY-45-RA, and 2030-DAY-45-RA (for AS-217/APG-15); 866-DAY-44 and 1306-DAY-44 (for AS-217A/APG-15); and 46-26-AR (for AS-217B/APG-15).

STOCK NUMBERS: AS-217/APG-15 ... Federal Stock Number 1270-180-3129; AS-217A/APG-15 ... Federal Stock Number 1270-180-3129.

## REFERENCES:

- 1) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD-150674. SECRET.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-222/APA-17B

See Antenna AS-370/APA-17B

## ANTENNA ASSEMBLIES AS-224/AXT-7 through AS-233/AXT-7

### ANTENNA ASSEMBLIES:

AS-224/AXT-7  
AS-225/AXT-7  
AS-226/AXT-7  
AS-227/AXT-7  
  
AS-228/AXT-7  
AS-229/AXT-7  
AS-230/AXT-7  
AS-231/AXT-7  
AS-232/AXT-7  
AS-233/AXT-7

### FREQUENCY:

VHF band, 258 - 270 mc.  
VHF band, 270 - 282 mc.  
VHF band, 282 - 294 mc.  
VHF and UHF bands, 294-306 mc.  
UHF band, 306 - 318 mc.  
UHF band, 318 - 330 mc.  
UHF band, 330 - 342 mc.  
UHF band, 342 - 354 mc.  
UHF band, 354 - 366 mc.  
UHF band, 366 - 378 mc.

Beam type - At least two thirds of the pattern is above the horizontal plane.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/AXT-7.  
Equipment function - television.

COGNIZANT AGENCY: AMC and ATSC.

### REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Cards.

TYPE: Probably two-element Yagis.

DESCRIPTION: The assemblies consist of a quarter-wavelength antenna with a reflector.

### BEAM DATA:

Half-power beamwidth - Horizontal - 110°.  
Vertical - 60°.

## ANTENNA ASSEMBLY AS-234/ARW-26

FREQUENCY: VHF band, 60 - 74 mc; VSWR < 5 on 50-ohm coaxial cable.

TYPE: Rod.

DESCRIPTION: The antenna is a tapered aluminum alloy rod which is detachable from a fixed mounting bracket. The assembly has an overall length of 11-1/16 inches; the diameter is 19/64 inch at the base and tapers to a spherical radius of 3/64 inch at the tip. The assembly weighs about 0.3 pound. It is used on target or pilotless aircraft.

### BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne and missile.

ASSOCIATED EQUIPMENT: Radio Receiving Set AN/ARW-26(). Equipment function - remote control.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Bendix Aviation Corporation, Pacific Division; Setchell-Carlson; Electronic Specialty; Air Force contracts 914-DAY-45 and 926-DAY-45; and Navy contract NOa(s)-9183.

# UNCLASSIFIED

STOCK NUMBER: Federal Stock Number 5821-155-8300.

Radio Receiving Set AN/ARW-26(XA-2)Y, AN-16-30ARW-26A, (15 March, 1946). UNCLASSIFIED.

## REFERENCES:

1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

2) Army Air Forces, and Bureau of Aeronautics, Handbook of Maintenance Instructions,

3) Army Air Forces and Bureau of Aeronautics, Handbook of Maintenance Instructions, Radio Receiving Set AN/ARW-26(XA-2)Y, AN-16-30ARW-26A, (14 July, 1950). UNCLASSIFIED.

## ANTENNA ASSEMBLY AS-237/APS-20

FREQUENCY: S band; VSWR < 1.4.

INSTALLATION: Airborne.

TYPE: Cut paraboloidal reflector fed by a waveguide horn.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-20. Equipment function - search, air. (AEW).

DESCRIPTION: The assembly consists of a cut paraboloidal reflector and waveguide horn mounted beneath a support member. The reflector is 8 feet wide and 3 feet high. The feed horn is a flared extension of the waveguide feed. The mouth of the horn is enclosed by a plastic cup which maintains the pressurization of the waveguide. The antenna is installed in a radome on the underside of the fuselage, and the horn is tilted down toward the reflector at an angle of 25° below the horizontal. The antenna weighs 211 pounds and is (overall) 94-13/20 inches wide, 57-5/8 inches high and 43-3/8 inches deep.

MISCELLANEOUS: Additional information is available in the secret document listed below as Reference 1 and in Volume VI of this catalog series.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBER: Navy - ASO R16AN-AS237APS20.

## REFERENCES:

1) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957). ASTIA Report No. AD-150674. SECRET.

2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

3) Department of Defense Nomenclature Cards.

## BEAM DATA:

Half-power beamwidth - Horizontal - 3-1/2°. Vertical - 8°.

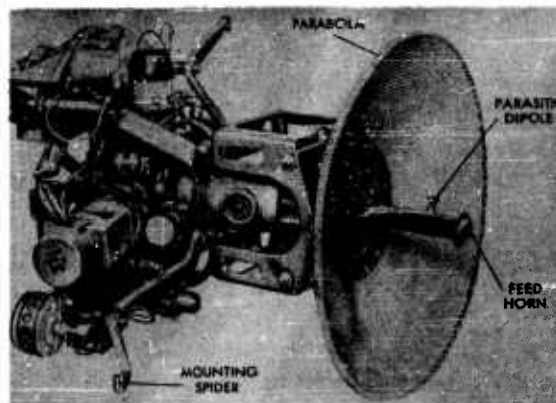
Polarization - Horizontal.

SCAN DATA: The antenna will rotate in either direction through 360° in azimuth at 6 revolutions per minute.

## ANTENNA ASSEMBLY AS-238/APS-19

FREQUENCY: SHF band, 9345 - 9405 mc.

TYPE: Paraboloidal reflector fed by a Cutler feed.



DESCRIPTION: The antenna is a paraboloidal reflector fed by a Cutler feed. A parasitic dipole is mounted on the waveguide between the reflector and the feed. The reflector is approximately 18 inches in diameter, and the entire antenna is approximately 2 feet in diameter and 2 feet long. It weighs 43 pounds.

## BEAM DATA:

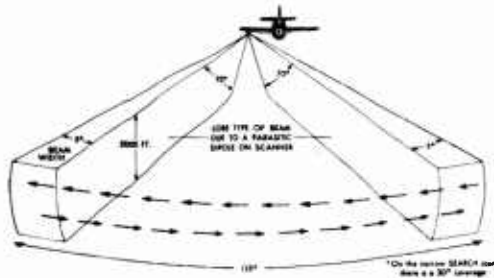
Half-power beamwidth - Vertical - 6° for spiral scan and csc² for sector scan.

Horizontal - 6° for spiral scan and 5° for sector scan.

AS-238/APS-19



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AS-238/APS-19 Search Scan Pattern

Beam type - Pencil beam on spiral scan; csc<sup>2</sup> beam on sector scan.  
Polarization - Horizontal.

SCAN DATA: The antenna has a rotating spiral scan at 1200 revolutions per minute and nodding arcs of 130° at 15 nods per minute or 30° at 60 nods per minute. The antenna also produces a sector scan of 130° at 15 horizontal oscillations per minute or of 30° at 60

oscillations per minute. Provisions for manual tilt permit control from +15° to -20° from the horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-19.  
 Equipment function - search and navigation.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Dalmo Victor, Inc., contract N5sa-5956.

STOCK NUMBER: (Navy-ASO) R16AN-AS238APS19.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Air Force and Bureau of Aeronautics, Handbook of Operation Instructions for Radar Set AN/APS-19A. (Sept. 1, 1951). CONFIDENTIAL.

## AIRBORNE DIRECTION FINDER ANTENNA AS-242/A

FREQUENCY: VHF band, 100 - 275 mc; VSWR < 5 on 52-ohm coaxial cable.

TYPE: Dipole.

DESCRIPTION: The antenna is a dipole attached to a disc-shaped plate for mounting to a retractable mast. The dipole elements can be extended to maintain the proper element length for the corresponding frequency of operation. The assembly is fed by RG-8/U coaxial cable. It weighs 8 pounds and is 71-1/8 inches high, 54-3/4 inches wide, and 4-1/2 inches deep. These dimensions are probably applicable for the mast extended and the dipole retracted to its minimum length. The antenna mounts either on the upper or lower surface of aircraft in such a way that the aircraft structure is radially symmetrical about the antenna mast.

## BEAM DATA:

Beam type - Figure eight.  
Polarization - Horizontal.

SCAN DATA: The antenna can be rotated through 210° in azimuth by means of a wheel attached to the retractable mast.

TUNING/MATCHING DEVICES: The antenna has extendable dipole elements and a balun.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Receiving Equipment AN/APR-1. Equipment function - countermeasures, direction finding; and navigation, direction finding.

MISCELLANEOUS: This antenna is similar to AS-101/APA-24 except for vertical dipoles, hydraulic drive, and frequency range.



AS-242/A

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Heyer Products Company, part number 16549.

STOCK NUMBER: Navy-ASO R16A5055-2.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Cards.

# UNCLASSIFIED

## ANTENNA ASSEMBLY AS-245/AP

**MAJOR COMPONENTS:** Antenna AT-92/AP, Antenna AT-93/AP, Antenna AT-94/AP, Antenna AT-95/AP, and Antenna Base AB-88/AP.

**FREQUENCY:** AS-245/AP...UHF band, 500-1500 mc;  
VSWR < 2;  
AT-92/AP...UHF band, 500-675 mc,  
AT-93/AP...UHF band, 675-900 mc,  
AT-94/AP...UHF band, 900-1175 mc,  
AT-95/AP...UHF band, 1175-1500 mc.

**TYPE:** Dipole.

**DESCRIPTION:** The AS-245/AP consists of Antenna Base AB-88/AP and four interchangeable antennas for use in the 500- to 1500-mc range.

- A) Antenna AT-92/AP - This antenna consists of a V-shaped dipole which plugs into a single twist-and-catch mounting. The approximate overall length is 7-1/2 inches.
- B) Antenna AT-93/AP - This is a dipole similar to AT-92/AP but is smaller for use with a higher frequency range. The approximate overall length is 6-1/2 inches.
- C) Antenna AT-94/AP - This is a dipole similar to AT-92/AP but is smaller for use with a higher frequency range. The approximate overall length is 5-1/2 inches.
- D) Antenna AT-95/AP - This is a dipole similar to AT-92/AP but is smaller for use with a higher frequency range. The approximate overall length is 5 inches.

### BEAM DATA:

Polarization - Horizontal.

**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** Radar Set AN/APT-5.  
Equipment function - countermeasures, jamming.

**MISCELLANEOUS:** This group of antennas is apparently very similar to the AS-181/AP.

**COGNIZANT AGENCY:** U. S. Air Force, ARL.

**MANUFACTURER:** Dayton Acme Co., procurement orders 1017-DAY-45-SP and 1033-DAY-45-SP.

### STOCK NUMBERS:

AT-92/AP .. Signal Corps 2A203-92,  
AT-93/AP .. Federal Stock Number 5895-296-2322,  
AT-94/AP .. Federal Stock Number 5895-296-2324,  
AT-95/AP .. Federal Stock Number 5895-296-2323.

### REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Handbook Operating Instructions for Radar Sets AN/APT-5 and AN/APT-5A, (June 1, 1945). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA ASSEMBLY AS-246/AP

**FREQUENCY:** UHF and SHF bands, 1000 - 4000 mc;  
VSWR < 5 from 1000 to 4000 mc on 50-ohm coaxial cable; VSWR < 2 from 1400 to 3750 mc on 50-ohm coaxial cable.

**TYPE:** Inclined conical antenna mounted above a ground plane.

**DESCRIPTION:** The antenna consists of an inverted cone surmounted by an upright cone. The axes of the cones are inclined 45 degrees with the horizontal ground plane. The ground plane, which is circular, also serves as a mounting plate and has eight mounting holes equally spaced around the plate. The overall dimensions are 5-1/2 inches in height and 6 inches in diameter. The top cone extends 2-1/2 inches above the mounting plate.

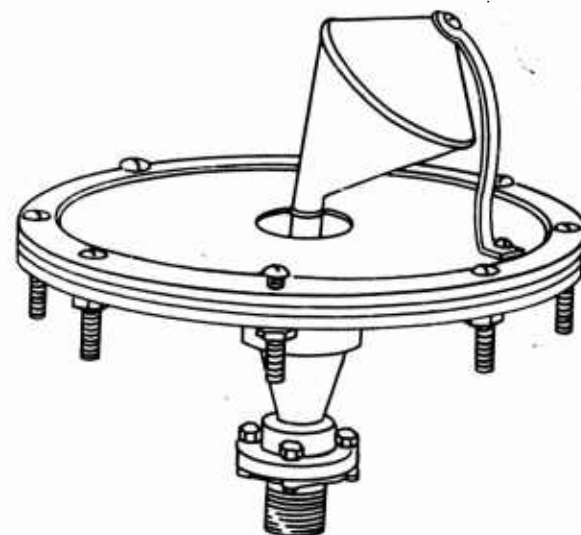
### BEAM DATA:

Polarization - Vertical, horizontal, or oblique.

**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** Receiving Equipment AN/APR-4 and Radar Set AN/APR-9 series.

Equipment function - countermeasures, search; and countermeasures, deception.



AS-246/AP

# UNCLASSIFIED

UNCLASSIFIED

MISCELLANEOUS: This antenna is identical in construction with AS-125/APR, but the filter section has been omitted.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Airborne Instruments Laboratory, contract NOa(s)-10323.

STOCK NUMBER: Signal Corps 2A264-246 and Navy-ASO R16AN-AS246AP.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.
- 3) U. S. Department of Defense Nomenclature Card.

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ANTENNA ASSEMBLY AS-247/APA-17B

FREQUENCY: SHF band, 5000 - 10,750 mc; VSWR < 3 from 5000 to 10,750 mc on 50-ohm coaxial cable.

TYPE: Cut paraboloidal reflector fed by an open ended waveguide section.

DESCRIPTION: The antenna is a spade-shaped reflector which is fed by an open-ended waveguide section. The reflector has its axis of revolution inclined at an estimated 45-degree angle above the horizontal, and the feed directs the r-f energy vertically downward towards it. The waveguide section terminates in a type N connector and is fed by 50-ohm coaxial cable. The assembly is made of aluminum, weighs 20 pounds, and is 15 inches in diameter and 14 inches in height. It is installed in a streamlined nacelle used for Antenna Assemblies AS-108/APA-17, AS-186/APA-17, or AS-22/APA-17.

BEAM DATA:

Gain - 25 db at mid-frequency.  
Front-to-back ratio - 30 db.  
Half-power beamwidth -  
Horizontal - 30° at mid-frequency.  
Vertical - 7° at mid-frequency.  
Polarization - Horizontal, vertical, or circular.

SCAN DATA: The reflector rotates at a speed variable between 0 and 140 revolutions per minute.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Direction Finding Assembly AN/APA-17 and AN/APA-17A. Equipment function - countermeasures, direction finding.

COGNIZANT AGENCY: AEL-49-R664.

MANUFACTURER: Hoffman Radio Corporation, contract AF 33(038)-8228.

STOCK NUMBER: Federal Stock Number 1660 5826-263-0959.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Private Correspondence.
- 3) U. S. Department of Defense Nomenclature Card.

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ANTENNA AS-251/AP

FREQUENCY: UHF band, 440 - 660 mc; VSWR < 1.25.

TYPE: Modified turnstile.

DESCRIPTION: The antenna consists of two crossed, bent, sleeve dipoles fed by a coaxial cable through two type III baluns. The dipoles are crossed at a 90° angle, and each half of each dipole is inclined downward at an angle of 23-1/2°. Each sleeve has a rectangular cross section. The antenna is equipped with a UG-98/U coaxial connector for use with RG-14/U cable. A circular mounting plate is provided.

BEAM DATA:

Gain - 6 db.  
Half-power beamwidth (axis of antenna vertical)  
Vertical - 85° to 110°.  
Beam type - Omnidirectional.  
Polarization - Circular.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APT-5 (Carpet II) jamming transmitter. Equipment function - countermeasures, jamming.

UNCLASSIFIED



AS-251/AP

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBER: Federal Stock Number 1660 5985-144-7994.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Mass: Radio Research Laboratory, Harvard University, (Dec. 3, 1945). UNCLASSIFIED.

ANTENNA ASSEMBLY AS-254/ARW-38

FREQUENCY: VHF band, 53 - 95 mc; VSWR < 2 on 50-ohm coaxial cable.

TYPE: Dipole.

DESCRIPTION: The antenna is an adjustable dipole used for transmitting. The antenna uses three AB-150/ARW-38 antenna bases, one at the center and one near the outer end of each dipole element. The adjustable dipole elements are scribed to indicate the correct length for a given frequency. A balun is used to match the antenna to a transmission line. The maximum length of the antenna is about 82-1/8 inches. When being mounted, the axis of the dipole is aligned with the longitudinal axis of the fuselage.

BEAM DATA:

Beam type - Downwardly directed.  
Polarization - Horizontal.

TUNING/MATCHING DEVICES: The antenna has adjustable dipole elements and a balun matching transformer.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Transmitting Set AN/ARW-38. Equipment function - remote control.

COGNIZANT AGENCY: ARL-48-R123.

MANUFACTURER: Rowe Industries, contract 1061-DAY-45SP.

STOCK NUMBER: Signal Corps 2A264-254. Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA ASSEMBLY AS-256/APW-2

FREQUENCY: SHF band, 3256 - 3333 mc; VSWR < 2.

TYPE: Dipole array.

DESCRIPTION: The antenna is a double, two-element antenna system enclosed in a radome. The assembly is composed of both transmitting and receiving antennas for use with the modified Receiver-Transmitter RT-73/UPN-2. The antenna, enclosed in the radome, is 20 inches high by 5 inches in diameter.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Receiver-Transmitter RT-73/UPN-2. Equipment function - probably communications.  
Radar Set AN/APW-2. Equipment function - remote control.

COGNIZANT AGENCY: ARL-4485.

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# UNCLASSIFIED

STOCK NUMBER: Signal Corps 2A264-256.

1953). CONFIDENTIAL.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1,

- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-259/AP

FREQUENCY: UHF and SHF bands, 2070 - 4140 mc;  
VSWR < 2.

STOCK NUMBER: Federal Stock Number 1660 5985-548-8782.

TYPE: Horn.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Mass: Radio Research Laboratory, Harvard University, (Dec. 3, 1945). UNCLASSIFIED.

DESCRIPTION: The antenna consists of a circular horn with a 130-degree flare. The horn is fed by a section of rectangular waveguide, a transition section, and a phasing section. The rectangular waveguide is probe excited from a coaxial cable. The diameter of the horn is 9-1/2 inches, and overall length of the antenna is 13-1/8 inches. The antenna is equipped with a pickup probe for monitoring the output and includes a modified UG-101/U connector for use with RG-14/U cable.



AS-259/AP

BEAM DATA:

Gain - 10 db.  
Half-power beamwidth - 52° to 76°.  
Beam type - Unidirectional.  
Polarization - Circular (circularity ratio - 1.4 maximum).

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APQ-20 and AN/APQ-27 airborne jamming equipment. Equipment function - probably countermeasures, jamming.

## ANTENNA ASSEMBLIES AS-269/APA-42 through AS-272/APA-42

ANTENNA ASSEMBLIES:

FREQUENCY:

ANTENNA

DIMENSIONS  
(inches)

WEIGHT  
(pounds)

AS-269/APA-42 VHF band, 100 - 165 mc,  
AS-270/APA-42 VHF band, 165 - 275 mc,  
AS-271/APA-42 VHF and UHF bands, 275-450 mc,  
AS-272/APA-42 UHF band, 450 - 750 mc.

AS-269/APA-42	40 by 44-1/2 by 34	6-3/4
AS-270/APA-42	28 by 28-1/2 by 26-3/4	5-1/2
AS-271/APA-42	19-1/4 by 19-3/4 by 19-1/4	3
AS-272/APA-42	8-1/4 by 8-1/4 by 7-1/2	2-3/4

VSWR < 5 for each antenna in its frequency band on 52-ohm coaxial cable.

TYPE: Vertical "H" Adcock and horizontal dipole.

BEAM DATA:

Beam type - Figure eight whose null axis coincides with the axis of the horizontal dipole.  
Polarization - Horizontal or vertical, depending upon which antenna is used.

INSTALLATION: Airborne.

DESCRIPTION: Each assembly consists of a vertical "H" Adcock array; i.e. a horizontal support rod with a vertical dipole at each end and a horizontal dipole which is perpendicular to both the vertical dipoles and their support rod. The horizontal dipole and the support rod attached to a disc-shaped base plate (AB-92/APA-42) for mounting to a streamlined strut. The assemblies are rotated by a 24-volt to 28-volt dc motor in Antenna Drive Unit PU-89/APA-42. The overall dimensions and weights of the antennas are listed below:

ASSOCIATED EQUIPMENT: Receiving Equipment AN/APR-4. Equipment function - countermeasures, direction finding.  
Radar Equipment AN/APA-42. Equipment function - direction finding.

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MISCELLANEOUS: AS-270/APA-42, AS-271/APA-42, AS-272/APA-42 are listed as obsolete by reference 4). The horizontal dipole of AS-269/APA-42 has a mechanical extension to expand the frequency range down to 60 mc. The vertical dipoles of AS-269/APA-42 and AS-270/APA-42 are removable.

COGNIZANT AGENCY: ARL-46-R116, ARL-46-R117, ARL-46-R118, ARL-46-R115.

MANUFACTURER: Lavoie Laboratories, Inc., order 1098-DAY-45.

## STOCK NUMBERS:

AS-269/APA-42 Federal Stock Number 1660 5826-149-1002  
AS-270/APA-42 Federal Stock Number 1660 5826-144-3586  
AS-271/APA-42 Federal Stock Number 1660 5826-149-1000  
AS-272/APA-42 Federal Stock Number 1660 5826-147-5652

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) War and Navy Departments and Air Council of the United Kingdom, Handbook of Operating Instructions for Direction Finding Assembly AN/APA-42, AN 16-30APA42-2, (July 10, 1945). UNCLASSIFIED.
- 3) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.
- 4) Private Correspondence.
- 5) U. S. Department of Defense Nomenclature Card.

## ANTENNA ASSEMBLY AS-273/ARN

FREQUENCY: VHF band, 75 mc; VSWR < 2.

TYPE: Dipole.

DESCRIPTION: The antenna is a half-wave dipole whose elements are supported, by a streamlined, elliptical shaped insulator which is fastened to a mast. The antenna terminates in an SO-239 socket. The overall dimensions are approximately 9 inches in height and 48 inches in length.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Marker Beacon Receiving Set AN/ARN-12. Equipment function - radar beacon.

MISCELLANEOUS: This antenna was cancelled 21 October 1949. It was never procured, stocked, or issued.

COGNIZANT AGENCY: AEI-49-C603.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA ASSEMBLY AS-278/APS-10A

FREQUENCY: SHF band, 9375 - 9405 mc.

TYPE: Paraboloidal reflector.

INSTALLATION: Airborne.

MISCELLANEOUS: This antenna was cancelled on 21 November 1945. It was never used and not acquired.

COGNIZANT AGENCY: ARL-45-C750.

STOCK NUMBER: Signal Corps 2A264-278.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517 (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA ASSEMBLY AS-279/APG-17

FREQUENCY: UHF band, 1475 - 1525 mc; VSWR < 1.2 at 1500 mc on 50-ohm coaxial cable.

TYPE: Double parabolic-cylinder reflector fed by a pair of dipoles.

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**DESCRIPTION:** The antenna consists of two parabolic cylinders joined together and each fed by a horizontal dipole located near the focal point. The two feed lines (one to each section of the antenna) join in a T-junction and are connected to the main feed line through a matching section with two tuning stubs. An installation uses two of these assemblies, one for receiving and one for transmitting. The assembly weighs 3-1/2 pounds and is 21-1/2 inches wide, 7-7/8 inches high, and 8-1/8 inches deep. The antenna mounts in the leading edge of the wing, preferably a receiving antenna in one wing and a transmitting antenna in the other wing. The aperture in the wing should be covered with low-loss plastic to restore the airfoil. The antenna should be clear of metal objects in its field and the horizontal and vertical axes of the antenna should correspond with the same axes of the aircraft.

## BEAM DATA:

Half-power beamwidth - Horizontal - 66°.  
Vertical - 74°. Polarization - Horizontal.

**TUNING/MATCHING DEVICES:** The assembly has a matching section with tuning stubs.

**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** Radar Set AN/APG-17.  
Equipment function - bombing.

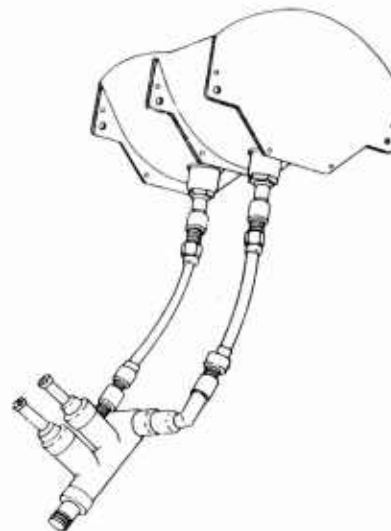
**COGNIZANT AGENCY:** U. S. Navy.

**MANUFACTURER:** Admiral Corporation.

**STOCK NUMBER:** Navy-ASO R16AN-AS279APG17.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Navy Specification G-2184.



AS-279/APG-17

## ANTENNA AS-281/ARN

**FREQUENCY:** LF and MF bands, 0.1 - 1.7 mc; VSWR < 5.

**TYPE:** Loop.

**DESCRIPTION:** AS-281/ARN is a radio-compass loop assembly consisting of a motor-driven electrostatically shielded iron-core loop; an auto-syn transmitter; a deviation corrector; a radio compass; and sockets SO-88 and SO-92. The assembly is mounted in a hermetically sealed enclosure. Overall dimensions are 8-1/2 inches by 11 inches by 4-1/2 inches, and the weight is 15 pounds. The antenna is designed for mounting inside the blister on the aircraft, but it may be mounted on the outside of the aircraft if Antenna Cover CW-141/ARN is used.

## BEAM DATA:

Polarization - Horizontal.

**SCAN DATA:** The antenna rotates in azimuth.

**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** Radio Compass SCR-269-G and AN/ARN-7. Equipment function - navigation, direction finding.

**MISCELLANEOUS:** The nomenclature card indicates that AS-281/ARN has been cancelled.

**COGNIZANT AGENCY:** WADC.

**MANUFACTURER:** Manufacturer unknown, purchase plan 45-5249.

**STOCK NUMBER:** Signal Corps 2A1991-281.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA ASSEMBLY AS-282/AP

FREQUENCY: UHF and SHF bands, 1000 - 4500 mc;  
VSWR < 2 on 52-ohm coaxial cable.

TYPE: Conical.

DESCRIPTION: The antenna is a tilted cone similar to AS-125/APR but differs in size and some other respects. The antenna terminates in a UG-98/U r-f receptacle and is fed by RG-14/U coaxial cable. The antenna weighs 2 pounds and is approximately 7-3/8 inches long, 5 inches in diameter and extends outside the aircraft about 3 inches. The antenna can be used for either transmitting or receiving.

BEAM DATA:

Beam type - similar to that of antenna Assembly AS-125/APR.

Polarization - Vertical, horizontal, or oblique.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APT-10.  
Equipment function - countermeasures, deception.

MISCELLANEOUS: The antenna is similar to Antenna Assembly AS-125/APR, but it is scaled down, incorporates an indicator device and has no filter.

COGNIZANT AGENCY: ARL-9550.

MANUFACTURER: Belmont Radio Corporation, procurement order 1066-DAY-45.

STOCK NUMBER: Signal Corps 2A264-282.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.
- 3) U. S. Department of Defense Nomenclature Card.

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ANTENNA ASSEMBLY AS-283/APS-13

FREQUENCY: UHF band, 413 - 417 mc; VSWR < 2 on 50-ohm coaxial cable.

TYPE: Yagi.

DESCRIPTION: The antenna is a streamlined Yagi used for transmitting and receiving. It is constructed in two sections, each consisting of a quarter-wavelength folded element, a reflector, and a director. The elements are made of cadmium-finished steel. The complete Yagi is formed by mounting the two sections in a horizontal plane with one section on each side of the vertical stabilizer of fighter aircraft. The two halves of the driven, folded dipole are connected by a coaxial cable that is an integral number of half-wavelengths long.

BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APS-13. Equipment function - tail warning.

MISCELLANEOUS: AS-283/APS-13 is similar to AS-62/APS-13.

COGNIZANT AGENCY: U. S. Air Force, ARL-45-20.

MANUFACTURER: Vendo Co., AAF order 33-042sc-2911.

STOCK NUMBER: Signal Corps 2A264-283. Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA ASSEMBLY AS-284/APS-19

FREQUENCY: SHF band, 9345 - 9405 mc; VSWR < 2 at 9375 mc on waveguide.

TYPE: Paraboloidal reflector.

DESCRIPTION: The antenna consists of an 18-inch paraboloidal reflector. The r-f portion of the antenna is pressurized. The antenna weighs 45 pounds and is 20 inches in diameter and 16 inches long. It is designed for

mounting in F7F and F8F aircraft.

BEAM DATA:

Half-power beamwidth - Horizontal - 5.2°.  
Polarization - Horizontal.

SCAN DATA: The antenna rotates at 1200 revolutions per minute and has provisions for spiral or line scanning.

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INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-19.  
Equipment function - search; navigation; and bombing.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBER: Navy-ASO R16AN-AS284APS19.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Air-

borne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

- 2) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (August 13, 1957). ASTIA Report No. AD-150674. SECRET.

- 3) Bureau of Aeronautics, Descriptive Nomenclature Titles, (July 1, 1958). UNCLASSIFIED.

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## ANTENNA ASSEMBLY AS-285/UR

FREQUENCY: VHF band, 74 - 100 mc; VSWR < 2 on 50-ohm coaxial cable.

TYPE: Stub.

DESCRIPTION: The antenna is a quarter-wave-length stub that uses the skin of the aircraft as a ground plane. It includes a matching section for 50-ohm input impedance. The overall antenna is approximately 31 inches long, 3 inches wide, and 1 inch thick, and weighs approximately 5 pounds.

BEAM DATA:

Beam type - Approximately omnidirectional in the horizontal plane.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ART-23.  
Equipment function - remote control.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBER: Signal Corps 2A264-285.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO-16-1-517, (July 1, 1953). CONFIDENTIAL.

- 2) U. S. Department of Defense Nomenclature Card.

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## ANTENNA ASSEMBLY AS-287(\*)/APS-31

FREQUENCY: SHF band, 9307.5 - 9430 mc; VSWR < 2.

TYPE: Modified cut paraboloidal reflector fed by a waveguide horn.

DESCRIPTION: The antenna consists of a cut-paraboloidal reflector which is modified by placing a narrow metal strip horizontally across the inside surface of the reflector, and a waveguide horn. The waveguide feeding the horn extends through the reflector and lies along its axis of revolution. The radiating end of the waveguide bends almost 180 degrees and flares into the horn which radiates the energy toward the reflector. The horizontal strip, which is placed approximately at the same height from the bottom of the reflector as the waveguide, modifies the beam so that the beam has a csc<sup>2</sup> pattern in elevation. The assembly also contains a gearbox, rotary joint drive motors, etc., which are necessary for operation of the antenna. The assembly weighs between 77 and 84 pounds (weight varies with models) and is (overall) 22-1/8 inches high, 23-1/2 inches wide, and 24-7/16 inches deep. The antenna mounts in a 23-1/2 inch shock-mounting ring which also holds Transmitter-Receiver RT-101/APS-13.

BEAM DATA:

Half-power beamwidth - Horizontal - 6°.

Beam type - Csc<sup>2</sup> in elevation from -5° to -25°.  
Polarization - Horizontal.

SCAN DATA: The antenna has two azimuth-sector scan modes and two scanning speeds in each mode. The antenna will scan a 150° sector at either 8 to 10 or 20 to 25 cycles per minute and will scan a 60° sector at either 22.5 to 27.5 or 45 to 50 cycles per minute. The antenna can be manually tilted 10° up or 20° down from the horizontal plane. A tilt stabilization mechanism keeps the angle constant for aircraft attitude variations in pitch and roll in the range from plus 24° to minus 30°. The 150° sector scan covers 75° on either side of the aircraft heading and the center of the 60° sector scan can be set at any azimuth position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-31().  
Equipment function - search; navigation; and bombing.

MISCELLANEOUS: AS-287(\*)/APS-31 denotes five models: AS-287/APS-31, AS-287A/APS-31, AS-287B/APS-31, AS-287C/APS-31, and AS-287D/APS-31. AS-287A/APS-31 is similar to and interchangeable with AS-287/APS-31, but is lighter in weight and is made by a different manufacturer. AS-287B/APS-31 is interchangeable

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with AS-287/APS-31 but is modified to reduce conducted and radiated noises. AS-287C/APS-31 is interchangeable with the A or B model except for reflector and waveguide. The D model is similar to the C model except for the elimination of mechanical stops and the addition of slip rings in place of a spiral connector.

COGNIZANT AGENCY: U. S. Navy.

## MANUFACTURERS:

AS-287/APS-31 . . . Philco Corporation, contracts NXsa-55641 and NXsa-71339  
AS-287A/APS-31 . . . Melpar, Incorporated, contract NObsa-29004  
AS-287B/APS-31 . . . Philco Corporation, contract NOa(s)-9233  
AS-287C/APS-31 . . . Geophysical Service, Inc., contract NOa(s)-10748  
AS-287D/APS-31 . . . Geophysical Service, Inc., contract NOas-51-131.

## STOCK NUMBERS:

AS-287/APS-31 . . . Navy-ASO R16AN-AS287APS81

AS-287B/APS-31. . . Federal Stock Number 1660 5341-248-9100  
AS-287C/APS-31. . . Federal Stock Number 1660 5841-284-6848  
AS-287D/APS-31. . . Federal Stock Number 1660 5341-698-9831.

## REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Handbook Service Instructions for Radar Sets AN/APS-31, AN/APS-31A, AN/APS-31B, AN/APS-31C, AN 16-30APS31-12 and T.O. 12P6-2APS31-2, (Sept. 1, 1953). UNCLASSIFIED.
- 2) U. S. Air Force and Bureau of Aeronautics, Operation Instructions (Handbook) for Radar Sets AN/APS-31, AN/APS-31A, AN/APS-31B, AN/APS-31C, AN-16-30APS-31-31, (March 15, 1954). UNCLASSIFIED.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

## ANTENNA ASSEMBLY AS-288/APS-32

FREQUENCY: SHF band, 23,684 - 24,284 mc; VSWR < 2.

TYPE: Parabolic-cylinder reflector fed by a pillbox.

DESCRIPTION: The assembly consists of a parabolic cylinder fed by a pillbox mounted above the axis of the reflector and at an angle with the horizontal. The resulting beam is narrow in azimuth and csc<sup>2</sup> in elevation. The assembly has provisions for a low-altitude-bombing synchro and also includes a servo amplifier, pressurizing kit, azimuth motor, azimuth motor control, and interconnecting waveguide. The assembly weighs 73 pounds and is approximately 22-1/8 inches high, 23-1/2 inches wide, and 24-7/16 inches deep. It mounts in a 23-1/2 inch shock-mounting ring and is installed in front of Transmitter-Receiver RI-99/APS-32 in a nacelle on the bottom of the airplane.

## BEAM DATA:

Half-power beamwidth - Horizontal - 2°.  
Vertical - Csc<sup>2</sup> downward between 4° and 40°.  
Polarization - Vertical.

SCAN DATA: The assembly can sector-scan sectors of 60° or 150° at slow or fast speeds. The 150° sector scan (75° on either side of the longitudinal axis of the aircraft) is scanned at 8 to 10 cycles per minute (slow) or 20 to 25 cycles per minute (fast speed). The 60° sector scan is variable over an azimuth area of 360°, but the scan should be set so that the antenna does not sweep more than 90° to either side of the direction of

travel. Sweep speeds for 60° sector scan are 22-1/2 to 27-1/2 cycles per minute at slow speed and 45 to 50 cycles per minute at fast speed. The antenna can be manually tilted up 10° or down 20° from the horizontal plane, and the automatic tilt stabilization mechanism automatically holds the antenna at the manual tilt setting within a range of plus 24° to minus 30°.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-32. Equipment function - search; navigation; and bombing.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Philco Corporation, contracts NXsa-55641 and NXsa-62348.

STOCK NUMBER: Navy-ASO R16AN-AS288APS32.



AS-288/APS-32

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## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517 (July 1, 1953). CONFIDENTIAL.

- 2) U. S. War and Navy Departments, Handbook of Maintenance Instructions for Radar Set AN/APS-32, AN 16-30APS32-3, (March 15, 1946). UNCLASSIFIED.

## ANTENNA ASSEMBLY AS-289(\*)/APS-33

FREQUENCY: SHF band, 9307 - 9430 mc; VSWR < 2.

TYPE: Modified paraboloidal reflector fed by a waveguide horn.

DESCRIPTION: The assembly consists of a modified paraboloidal reflector, a waveguide horn, and the drive motors, servos, servo amplifiers, etc., necessary for operation. The feed assembly consists of a length of rectangular waveguide which passes through a hole in the reflector. The waveguide bends almost 180 degrees and flares into a horn which opens toward the reflector. The upper portion of the reflector is modified to produce a csc<sup>2</sup> beam pattern in elevation. The assembly has provisions for a low-altitude-bombing synchro. The assembly weighs from 71 to 75 pounds, depending on the model and is 35-9/16 inches high, 28-3/8 inches wide, and 28-1/4 inches deep.

### BEAM DATA:

Gain - 31 db.  
Front-to-back ratio - 15 db.  
Half-power beamwidth - Horizontal - 3.6°. Vertical - csc<sup>2</sup> downward between 5° and 30°.

Polarization - Horizontal.

SCAN DATA: The antenna scans in azimuth through a full 360° or scans a sector 60° wide. The scan rates are 6 to 10 or 20 to 28 revolutions per minute for the 360° scan, and 40 to 50 scans per minute for the 60° scan. The antenna can be manually tilted from plus 10° to minus 20° with respect to the horizontal plane. The antenna is tilt-stabilized for variations in the attitude of the aircraft between plus and minus 30°.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Sets AN/APS-33 and AN/APS-33C. Equipment function - search; navigation; and bombing.

MISCELLANEOUS: AS-289(\*)/APS-33 denotes three models: AS-289/APS-33, AS-289A/APS-33, and AS-289B/APS-33. AS-289A/APS-33 is the same as AS-289/APS-33 but has wider beam characteristics. (The data listed under BEAM DATA applies to the A and B models. No conclusive information is available on the beam of AS-289/APS-33, but the beams are obviously similar due to the physical similarities of the antennas). The B model is interchangeable with the A model but is modified to reduce conducted and radiated noise and has the addition of an external antenna relay box.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Philco Corporation, contracts NXsa-71339 and NOa(s)-9233.

### STOCK NUMBERS:

AS-289/APS-33 ... Navy ASO R16AN-AS289APS33  
AS-289A/APS-33... Navy ASO R16AN-AS289AAPS33  
AS-289B/APS-33... Navy ASO R16AN-AS289BAPS33.

### REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Handbook Service Instructions for Radar Sets AN/APS-33, AN/APS-33A, AN/APS-33C, AN/APS-33D, and AN/APS-33F, AN 16-30APS33-12, (Oct. 1, 1953). UNCLASSIFIED.
- 2) U. S. Air Force and Bureau of Aeronautics, Handbook Operation Instructions for Radar Sets AN/APS-33, AN/APS-33A, AN/APS-33C, AN/APS-33D, and AN/APS-33F, AN 16-30APS33-21, (May 1, 1955). UNCLASSIFIED.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

## ANTENNA ASSEMBLY AS-290/APS-34

FREQUENCY: SHF band, 23,684 - 24,224 mc; VSWR < 2.

TYPE: Parabolic cylinder reflector fed by a pillbox.

DESCRIPTION: The assembly consists of a parabolic cylinder fed by a pillbox mounted above the axis of the reflector and at an angle with the horizontal. The resulting beam is narrow in azimuth and csc<sup>2</sup> in elevation.

The assembly has provisions for a low-altitude bombing synchro and also includes a servo amplifier, pressurizing unit, azimuth motor, azimuth take-off assembly, and interconnecting waveguide. The assembly weighs 75 pounds and is 22-1/8 inches high, 28-13/32 inches wide and 28-17/64 inches deep. The antenna is mounted with the reflector axis horizontal. The antenna assembly and Transmitter-Receiver RT-99/APS-32 are mounted together on the same support.

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## BEAM DATA:

Half-power beamwidth - Horizontal -  $1.2^\circ$ .  
Vertical -  $\text{csc}^2$  downward between  $4^\circ$  and  $40^\circ$ .

Polarization - Vertical.

SCAN DATA: The antenna has two azimuth scanning modes and two scanning speeds in each mode. The antenna will scan a full  $360^\circ$  at 6 to 10 or 20 to 28 revolutions per minute, or it will scan a  $60^\circ$  sector in front of the aircraft at 40 to 50 or 90 to 100 scans per minute. The antenna can be manually tilted  $10^\circ$  up or  $20^\circ$  down from the horizontal plane. A tilt stabilization mechanism keeps the angle constant for aircraft attitude variations in pitch and roll in the range of plus or minus  $30^\circ$ .

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-34.  
Equipment function - search; navigation; and bombing.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Philco Corporation, contracts NXsa-55641 and NXsa-62348.

STOCK NUMBER: Navy-ASO R16A4933-100.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Departments of War and Navy, Handbook of Maintenance Instructions for Radar Set AN/APS-34, AN 16-30APS34-3, (April 15, 1946). UNCLASSIFIED.
- 3) U. S. Department of Defense Nomenclature Card.



AS-290/APS-34

## ANTENNA ASSEMBLY AS-291/APQ

MAJOR COMPONENTS: Reflector AT-116/APQ, a pillbox feed, and a pedestal.

FREQUENCY: SHF band, 9307 - 9415 mc; VSWR < 2.

TYPE: Modified parabolic-cylinder reflector fed by a pillbox feed.

DESCRIPTION: The antenna consists of a shaped cylindrical reflector 12 inches high and 60 inches long fed by a horizontally polarized pillbox-type, line-source feed. This feed-reflector combination creates a  $\text{csc}^2$  beam. The pillbox feed is fed by a pressurized horn. The beam is tilted by tilting the reflector while holding the feed fixed, so that no elevation rotary joint is required. The entire assembly is housed in a radome. The overall assembly is approximately 20 inches by 60 inches by 26-1/2 inches. The approximate weight is 83 pounds.

## BEAM DATA:

Gain - The maximum gain is 30.5 db within  $\pm 0.5$  db as the nose of the beam is tilted from  $0^\circ$  to  $-14^\circ$ .

Half-power beamwidth - Azimuth -  $1.4^\circ$

Beam Type - With the antenna in the design position the elevation beam pattern is  $\text{csc}^2$  from  $-4^\circ$  to  $-40^\circ$  and roughly  $\text{csc}^2$  from  $-40^\circ$  to  $-70^\circ$ .

Side-lobe attenuation - Greater than 11 db in the azimuth plane.

Polarization - Horizontal.

SCAN DATA: The antenna is capable of a  $360^\circ$  azimuth scan at 20 revolutions per minute. The antenna can be positioned in elevation from  $+10^\circ$  to  $-30^\circ$ . It is also capable of scanning a selected forward sector.

INSTALLATION: Airborne (B-29 aircraft).

ASSOCIATED EQUIPMENT: Radar Sets AN/APQ-13, AN/APQ-13A, and AN/APQ-23, and AN/APQ-23A. Equipment function - bombing and navigation.

MISCELLANEOUS: This antenna actually is comprised of the old base of Antenna Assembly AS-54A/APQ-13 and a new scanner.

COGNIZANT AGENCY: U. S. Air Force, AEL.

MANUFACTURER: Western Electric Co.

STOCK NUMBER: Federal Stock Numt - 1280-155-8286.

## REFERENCES:

- 1) Radiation Laboratory, Antenna for High Altitude Bombing (H<sub>2</sub>X), Report III, (Aug. 3, 1943). UNCLASSIFIED.
- 2) Radiation Laboratory, The AN/APQ-13 (60") Scanner in B-29 Airplanes, ASTIA, (Sept. 1945). UNCLASSIFIED.
- 3) Radiation Laboratory (MIT) Report No. 751.

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## ANTENNA ASSEMBLY AS-292/APS-35

FREQUENCY: SHF band, 9307.5 - 9430 mc; VSWR < 2 on waveguide.

TYPE: Parabolic cylinder reflector fed by a pillbox.

DESCRIPTION: The assembly consists of a one-piece magnesium parabolic-cylinder reflector and a pillbox feed. The reflector, which is 8 feet wide and 3 feet high, and the pillbox feed are mounted beneath an assembly that houses the waveguide feeding the pillbox, a rotating joint, azimuth and sweep take-off assemblies, a pressurizing unit, and a drive mechanism. The antenna weighs 400 pounds and, due to its large mass, is stopped by dynamic braking; i.e., by using the drive motor as a generator.

### BEAM DATA:

Half-power beamwidth - Horizontal -  $1^\circ$   
Vertical -  $\text{csc}^2$  pattern  
from  $-20^\circ$  to  $-50^\circ$ .  
Polarization - Horizontal.

SCAN DATA: The antenna has three azimuth scanning modes:

- a) a continuous  $360^\circ$  scan in either direction at 6 revolutions per minute,

- b) a  $60^\circ$  sector scan (at any bearing) at a minimum speed of 16 sweeps per minute,
- c) a sector scan with a maximum width of  $9.5^\circ$  and a minimum speed of 30 sweeps per minute.

INSTALLATION: Airborne, installed in a TBM-2W aircraft. The axis of the reflector must be set level during installation.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-35(XN).  
Equipment function - search, surface; navigation, surface reference; and bombing.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Unknown, contract NOa(s)-8811.

STOCK NUMBER: Signal Corps 2A264-292.

### REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953).  
UNCLASSIFIED.

- 2) U. S. Department of Defense Nomenclature Card.

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## ANTENNA ASSEMBLY AS-298(\*)/APS-20

FREQUENCY: UHF band, 2850 - 2910 mc; VSWR < 1.25 at 2880 mc on waveguide.

TYPE: Modified paraboloidal reflector fed by a waveguide horn.

DESCRIPTION: The assembly consists of a modified paraboloidal reflector, a waveguide horn, a rotary joint, and the drive motors, selsyn etc., necessary for operation. The reflector and the horn are beneath a rotating support, the horn opening is covered by a plastic cup to permit pressurization of the waveguide. The assembly is constructed of steel and magnesium or aluminum and weighs 165 pounds. The overall assembly is approximately 5 feet high, 8 feet wide, and 3-1/2 feet deep. It mounts in a radome beneath the fuselage.

### BEAM DATA:

Half-power beamwidth - Horizontal -  $3.5^\circ$ .  
Vertical -  $8.0^\circ$ .  
Polarization - Horizontal.

SCAN DATA: The antenna scans a full  $360^\circ$  in azimuth at a speed of 6 or 10 revolutions per minute and can scan a sector whose width is variable from  $20^\circ$  to  $120^\circ$ . The center of the sector scan can be set to any radial position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-20().  
Equipment function - search, air; and navigation.



AS-298/APS-20A

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MISCELLANEOUS: AS-298(\*)/APS-20 denotes two models, AS-298/APS-20 and AS-298A/APS-20. The two models differ slightly in minor ways but are interchangeable.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: General Electric Company, contract NOa(s)-9197; and Hazeltine Electronics Corporation, contract NOa(s)-9884.

STOCK NUMBER: Navy-ASO R16AN-AS298APS20A.

REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Handbook Service Instructions, Radar Set AN/APS-20A and AN/APS-20C, AN 16-30APS20-12, (OCT. 22, 1944). UNCLASSIFIED.
- 2) U. S. Air Force and Bureau of Aeronautics, Handbook Operation Instructions, Radar Set AN/APS-20A and AN/APS-20C, (Navy) AN 16-30APS20-21, (USAF) TO 12P6-2APS20-61, (April 9, 1959). UNCLASSIFIED.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

ANTENNA ASSEMBLY AS-301()/APS-30

DESCRIPTION: The antenna is an X-band assembly designed to mount in a 23-1/2-inch shock-mounting ring along with Transmitter-Receiver RT-101/APS-31. The assembly consists of a base, reflector, a feed, waveguide plumbing, an azimuth drive motor, a tilt motor, and azimuth take-off assemblies. Also included are a pressurizing unit, motor controls and interconnecting waveguide.

SCAN DATA: The antenna scans a 160° or 60° sector at high and low speeds.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-30(). Radar Set AN/APS-30(). Equipment function - search.

MISCELLANEOUS: For additional information on type, frequency, beam data, and scan data see the secret document listed below as Reference 1) and in Volume VI of this catalog series.

COGNIZANT AGENCY: U. S. Navy.

REFERENCES:

- 1) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD-150674. SECRET.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA ASSEMBLY AS-306/APN-11

FREQUENCY: SHF band, 9270 - 9350 mc. (transmitting section); VSWR < 1.5 at 9310 mc; 9320 - 9430 mc (receiving section); VSWR < 3.

TYPE: Slot array.

DESCRIPTION: The antenna assembly consists of a double coaxial line, one within the other. The outer line is used as the transmitting antenna, and is the upper part of the assembly. The inner line proceeds to a tapered transition section which brings the line to the same dimensions as the transmitting antenna. The outer coaxial line terminates at the tapered section. The radiating portion of the receiving antenna forms the lower part of the antenna assembly. The inner rod of each coaxial line serves as the inner conductor. The outer conductor of each of the two antennas contains three rows of slots, six slots in each row. The successive rows are staggered to provide mechanical strength and to make the field pattern more nearly uniform. The slots are a half-wavelength long placed along an equipotential surface. A probe is placed beside each slot and connects the inner conductor to the outer conductor. Current through the probe sets up a voltage

across the slot causing it to radiate with a polarization transverse to its length. The receiving antenna is tuned by means of a screw plug at the extreme end. The transmitting antenna is tuned to 9310 mc with a 40 mc bandwidth to allow for temperature changes and magnetron-frequency drift. The antenna assembly is 16-3/4 inches high, 1-5/8 inches wide and 3-3/8 inches deep and weighs 2 pounds. The assembly is normally housed in a radome which is 10-15/16 inches high, 2-1/16 inches wide and 4-15/16 inches deep and weighs 1 pound.

BEAM DATA:

Half-power beamwidth - Horizontal - Omnidirectional within 5 db. Vertical - approximately 35°.

TUNING/MATCHING DEVICES: The receiving antenna is tuned by a screw plug in the extreme end of the assembly.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Beacon AN/APN-11. Equipment function - radar beacon.

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COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Radio Corporation of America, contract NXsa-69176.

STOCK NUMBER: Federal Stock Number 1660 5826-538-0652.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA ASSEMBLY AS-3110/APQ

FREQUENCY: SHF band, 9281 - 9469 mc; VSWR < 2 on waveguide.

TYPE: Collinear array of dipoles.

DESCRIPTION: The antenna consists of a collinear end-fed array of 250 dipoles fed by a waveguide of variable width. The assembly includes a drive motor and gear-box assembly, waveguide feed lines, and r-f switch, and an r-f load. A d-c motor varies the wide dimension of the waveguide, and the assembly is fed alternately at each end, causing the beam to scan a 60° arc in azimuth, 30° on each side of the course bearing. The assembly is 16 feet by 3 inches by 5-1/2 inches and weighs approximately 150 pounds.

### BEAM DATA:

Gain - 32.5 db.  
Half-power beamwidth - Horizontal - 0.4°.  
Beam type - Modified csc<sup>2</sup> in elevation.  
Polarization - Horizontal.

SCAN DATA: The antenna scans 60° in azimuth (30° on each side of the heading) at 45° per second.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/APQ-7.  
Equipment function - bombing.

MISCELLANEOUS: AS-3110/APQ is similar to AS-32A/APQ except for additional selsyn and associated wiring. It is electrically interchangeable with AS-32A/APQ but not mechanically interchangeable due to the addition of the selsyn.

COGNIZANT AGENCY: ARL-45-R154.

MANUFACTURER: Western Electric Company, contract W 33-038-ac-17012.

### REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

- 2) H. T. Friis and W. D. Lewis, Radar Antennas, The Bell System Technical Journal, Volume 26, No. 2. New York, N. Y.: American Telephone and Telegraph Company, (April, 1947). UNCLASSIFIED.
- 3) U. S. Department of Defense Nomenclature Card.



AN/APQ-7 Antenna  
Left - Contracted Wave Guide Assembly  
Right - Expanded Wave Guide Assembly



AN/APQ-7 Antenna Mounted on B-24 Bomber

## ANTENNA ASSEMBLY AS-3120/APA-48

FREQUENCY: VHF band, 120 - 185 mc.

TYPE: Dipole.

DESCRIPTION: The assembly consists of a silver-plated copper dipole, a support tube, and a

balun. The dipole is 26 inches long and 1/4 inch in diameter. The support tube houses the balun and coaxial feed line. The antenna is designed for mounting on the wing of an F6F-type aircraft. Two antennas are

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supplied, one for each wing. Weight of one assembly is 2-3/4 pounds.

BEAM DATA:  
Polarization - horizontal.

TUNING/MATCHING DEVICES: A balun is used to match the unbalanced coaxial feed to the balanced dipole.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Homing Equipment AN/APA-48. Equipment function - countermeasures, direction finding.

MISCELLANEOUS: AS-312()/APA-48 is also known as the Harvard C-1954 "Eightball" antenna.

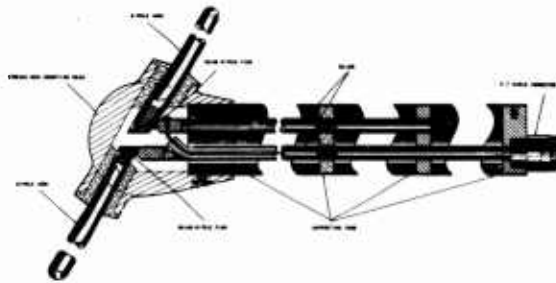
COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Radio Research Laboratory, Harvard University.

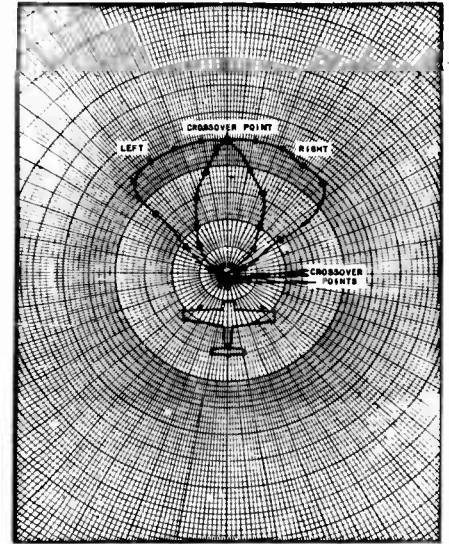
STOCK NUMBER: Navy Stock Number - ASO R 16 AN-AS312APA48.

REFERENCES:

- 1) Preliminary Handbook of Maintenance Instructions for C1906 Azimuth Finding System (AN/APA-48), Report No. 411-1B-91. Cambridge, Mass.: Radio Research Laboratory, Harvard University (June 25, 1945). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.



AS-312/APA-4 Eightball Antenna Assembly



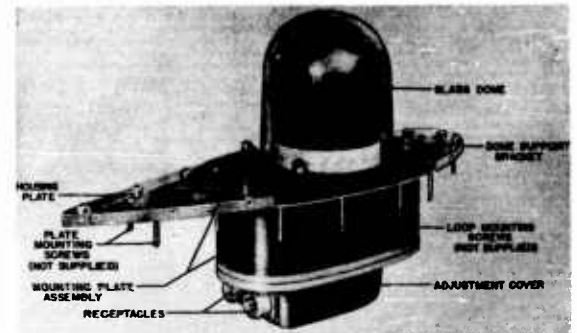
AS-312/APA-4 Eightball Antenna Patterns at 150 mc

ANTENNA ASSEMBLY AS-313(\*)/ARN-6

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc.

TYPE: Loop.

DESCRIPTION: The antenna is an automatic radio-compass loop consisting of an electrostatically-shielded, iron-core loop, a driving motor and gear train, and an antosyn transmitter. The loop consists of nine turns, electrically center tapped by a shunt coil of 12 turns. The loop is covered by a glass dome, and the assembly is hermetically sealed and filled with dry nitrogen. The antenna is 17 inches by 5-1/2 inches by 6-1/8 inches and weighs 15 pounds. When mounted on the external surface of the aircraft, the loop is housed in Housing CW-141/ARN-6, and the drag is 2-1/2 pounds at 250 knots.



AS-313(\*)/ARN-6 With Housing Removed



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## BEAM DATA:

Polarization - Horizontal.

SCAN DATA: The loop is rotated in azimuth through 360° by an electromechanical drive unit.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compass AN/ARN-6. Equipment function - navigation, direction finding.

MISCELLANEOUS: AS-313A/ARN-6 is similar to AS-313/ARN-6, but the sockets are rotated to reduce interference of plugs with each other and with the loop enclosure. Also an adjustment screw is added. AS-313B/ARN-6 uses a different drive motor, Kearfott type R-104 (modified) in place of a Kollsman number 927-0240 motor, and a different autosyn transmitter, Pioneer number AY-202-8-AL in place of Pioneer number 2322-0. Also, the gear train ratio is increased to provide better loop-speed control. All three models are electrically and mechanically interchangeable as units, and the parts of AS-313/ARN-6 and AS-313A/ARN-6 are electrically and mechanically interchangeable. Reference 1) states that the loop may be mounted external to the aircraft if Loop Housing CW-152/ARN-6 is

used; however, it gives aerodynamic data for the loop when used with Loop Housing CW-141/ARN-6.

COGNIZANT AGENCY: AS-313/ARN-6 ... ARL-45-8; AS-313A/ARN-6 ... ARL-46-12; AS-313B/ARN-6 ... AEL-51-R152.

MANUFACTURER: Kearfott Engineering Company, and Bendix Radio, procurement order 4066-DAY-45.

STOCK NUMBERS: AS-313/ARN-6 ... U. S. Air Force 1600-203924710, U. S. Navy - ASO R16L5426; AS-313A/ARN-6 ... Federal Stock Number 5826-149-1452; AS-313B/ARN-6 ... U. S. Navy - ASO R16L5426-500.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Air Force, Handbook Operating Instructions, Radio Compass AN/ARN-6, T. O. 12R5-2ARN6-1 (Aug. 6, 1948, Revised Sept. 28, 1956). UNCLASSIFIED.
- 3) U. S. Department of Defense Nomenclature Card.

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## ANTENNA ASSEMBLY AS-314()/APG-13B

FREQUENCY: UHF band, 2500 - 2600 mc; VSWR < 2 in S-band.

TYPE: Paraboloidal reflector fed by a dipole.

DESCRIPTION: The antenna consists of a fixed dipole and an eccentrically mounted paraboloidal reflector which is motor-driven to give a conical scan. A flexible shaft feeds range information to the mount. This range information is converted to the tilt of the antenna by means of a ballistic cam. The antenna is 12 inches by 12 inches by 15 inches.

SCAN DATA: The antenna has a motor-driven conical scan.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APG-13B and Radar Set AN/APG-5. Equipment function - fire control.

MISCELLANEOUS: AS-314()/APG-13B is similar to but not interchangeable with Antenna Assembly AS-217A/APG-15.

COGNIZANT AGENCY: ARL-45-56.

MANUFACTURER: National Defense Radiation Council.

## REFERENCE:

U. S. Department of Defense Nomenclature Card.

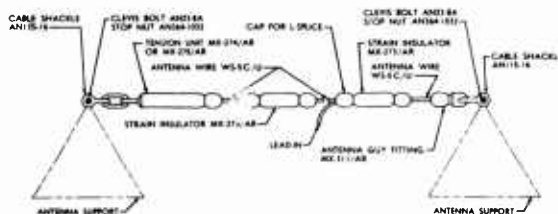
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## ANTENNA ASSEMBLY AS-315()/A

MAJOR COMPONENTS: Antenna Wire WS-5/U, Antenna Strain Insulator MX-311/AR, Corona Shield MX-276/AR, Insulator IL-5/U.

FREQUENCY: LF, MF, and HF bands; 0.1 - 25 mc.

TYPE: Long-wire antenna.



AS-315()/A

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DESCRIPTION: AS-315()/A is a fixed-wire antenna designed to replace various straight wire antennas on aircraft. The antenna wire is covered with polyethylene insulation to prevent corona discharge in precipitation static weather. Corona shields are provided to cover splices to reduce corona discharge.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Various communications sets. Equipment function - communications.

COGNIZANT AGENCY: ARL-45-88.

REFERENCES:

- 1) U. S. Air Force, Handbook Maintenance and Installation Instructions, Fixed Wire Antenna Assembly AS-315/A, T. O. 12R-2-122, (Oct. 15, 1958).
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AS-316/AP

FREQUENCY: UHF band, 550 - 980 mc; VSWR < 2.

TYPE: T-fed slot antenna.

DESCRIPTION: The antenna consists of a cavity-backed slot fed by a stub. A compensating bar is placed across the wide dimension of the cavity. The stub and compensating bar are connected to form a "T". The antenna is designed for flush mounting, and it is equipped with a UG-101/U connector for use with RG-14/U cable. The slot is 4-3/8 by 14-1/2 inches, and overall dimensions are 15-3/4 inches long, 4-5/8 inches deep, and 8-1/8 inches high (including the connector).

BEAM DATA:

Gain - 6 db.  
Half-power beamwidth - E-plane - 160°. H-plane - 50° to 80°. Polarization - Vertical or horizontal, depending on antenna orientation.

INSTALLATION: Airborne.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A, Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Dec. 3, 1945). UNCLASSIFIED.

ANTENNA ASSEMBLY AS-318()/APT

FREQUENCY: VHF band, 60 - 85 mc.

TYPE: Whip (retractable).

DESCRIPTION: The antenna is 40-1/2 inches long and is made of SAE 6150 heat-treated alloy steel.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APT-13. Equipment function - countermeasures, deception.

COGNIZANT AGENCY: ARL-46-R306.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

ANTENNA ASSEMBLY AS-319/APT

FREQUENCY: VHF band, 80 - 115 mc; VSWR < 2 on coaxial cable.

TYPE: Whip.

DESCRIPTION: AS-319/APT is a 30-1/2-inch whip antenna for transmitting. The whip is made in one piece from SAE 6150 heat treated alloy steel and mounts to Antenna Base AB-29/ART. The antenna terminates in a UG-98/U r-f connector.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APT-13. Equipment function - countermeasures, deception.

MISCELLANEOUS: The antenna is similar to

AS-150/ART except for connector and size of antenna. The two antennas are not interchangeable.

COGNIZANT AGENCY: ARL-46-R307, ARL-46-R265, ARL-45-113.

MANUFACTURER: Unknown, procurement plan 45-4011.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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## ANTENNA ASSEMBLY AS-320()/APT

FREQUENCY: VHF band, 113 - 150 mc.

TYPE: Stub.

DESCRIPTION: The antenna is a 30-inch stub, constructed of copper-plated impregnated wood, and mounts on Antenna Base AB-29/ART.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APT-13.  
Equipment function - countermeasures, deception.

MISCELLANEOUS: AS-320()/APT is similar to but not interchangeable with Antenna Stub AT-37A/APT and Antenna Assembly AS-114/APT.

COGNIZANT AGENCY: ARL-45-114.

MANUFACTURER: Probably Gibbs Manufacturing and Research Corporation, AAF procurement plan 45-4011.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

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## ANTENNA ASSEMBLY AS-321()/APT-13

FREQUENCY: VHF band, 130 - 220 mc.

TYPE: Blade.

DESCRIPTION: The antenna is a 19-inch, streamlined aluminum stub which fits into Antenna Base AB-109/AP. It has an input impedance of 50 ohms.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APT-13.  
Equipment function - countermeasures, deception.

MISCELLANEOUS: The nomenclature card gives the frequency range as 70 to 250 mc, but

Reference 1) gives it as 130 to 220 mc.

COGNIZANT AGENCY: AEL-53-277.

MANUFACTURER: Gibbs Manufacturing and Research Corporation, procurement plan 45-4011.

STOCK NUMBER: Federal Stock Number 5895-284-7428A.

REFERENCES:  
1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953).. CONFIDENTIAL.  
2) U. S. Department of Defense Nomenclature Card.

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## ANTENNA ASSEMBLY AS-322()/APT

FREQUENCY: VHF and UHF bands, 190 - 360 mc.

TYPE: Blade.

DESCRIPTION: The antenna is a streamlined, aluminum stub 12-1/2 inches long. It mounts in Antenna Base AB-109/AP.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APT-13.  
Equipment function - countermeasures, deception.

COGNIZANT AGENCY: ARL-45-R718.

MANUFACTURER: Probably Gibbs Manufacturing and Research Corporation, AAF procurement plan 45-4011.

REFERENCES:  
1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953).. CONFIDENTIAL.  
2) U. S. Department of Defense Nomenclature Card.

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## ANTENNA AS-323/APG-16

FREQUENCY: SHF band, 9190 - 9300 mc; VSWR < 2.

TYPE: Paraboloidal reflector.

DESCRIPTION: The antenna assembly consists of an aluminum reflector, radome, and mounting facilities. Overall dimensions are 21-3/4 by 16-3/4 by 14 inches. The weight is approximately 20 pounds.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar set AN/APG-16.  
Equipment function - fire control.

COGNIZANT AGENCY: WADC (ARL-45-143).

MANUFACTURER: Probably Sperry Gyroscope Co., procurement contract 2024-DAY-45RA.

STOCK NUMBER: Signal Corps 2A264-323.

UNCLASSIFIED

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AS-328/ARW

FREQUENCY: VHF band, 67 mc; VSWR < 2.

INSTALLATION: Airborne.

TYPE: Whip.

ASSOCIATED EQUIPMENT: Radio Set AN/ARW-35.  
Equipment function - remote control.

DESCRIPTION: The antenna is a whip made of cadmium-plated steel. Parts included are a Link Radio Corp. RA3-SR-42 antenna mounted on a type ABM mounting base, a type 9510A neoprene washer, and Navy types 49194, 49192A, and 49195 plugs. Overall length is 44 inches. The antenna whip is 42 inches long by 1/2 inch in diameter.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Link Radio Corp.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

BEAM DATA:

Polarization - Vertical.

ANTENNA AS-331/APG-15C

FREQUENCY: UHF band, 2500 - 2600 mc.

INSTALLATION: Airborne.

TYPE: Paraboloidal reflector fed by a dipole.

ASSOCIATED EQUIPMENT: Radar set AN/APG-15C.  
Equipment function - fire control.

DESCRIPTION: The antenna consists of a 12-inch aluminum paraboloidal reflector fed by a dipole. A spin motor, azimuth and elevation off-set motors, and provisions for linkage to the turret drive are included. The dimensions are 13 inches by 13 inches by 10 inches. It mounts rigidly on the tail of P4M aircraft.

COGNIZANT AGENCY: U. S. Navy.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

SCAN DATA: The reflector is eccentrically mounted with respect to the stationary dipole, and is motor-driven at 2400 revolutions per minute to give conical scanning.

ANTENNA AS-333(\*)/AP

FREQUENCY: UHF band, 420 - 460 mc; VSWR < 2  
on 50-ohm coaxial cable.

BEAM DATA:

Polarization - Horizontal.

TYPE: Cavity-backed slot.

INSTALLATION: Airborne.

DESCRIPTION: The antenna assembly consists of a feed element, a tuning stub, and condenser plates which are attached to the cover plate to load the cavity so that a smaller case may be used. The radiating element is a rod, 3/8 inch in diameter and approximately 2-1/2 inches long, installed perpendicular to the length of the box. The overall dimensions are 13 inches by 4 inches by 2-3/4 inches. The weight is about 1-1/2 pounds. The assembly mounts flush with the aircraft fuselage or wing. Each installation requires two antennas, one for transmitting and the other for receiving.

ASSOCIATED EQUIPMENT: Radio Sets SCR-718 and AN/APN-1 series. Equipment function - altimeter.

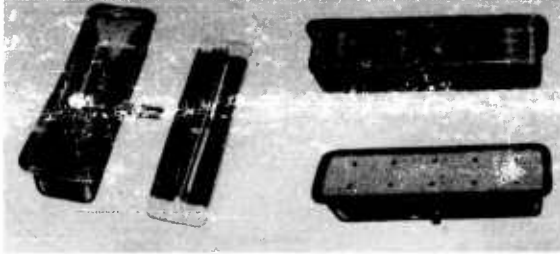
MISCELLANEOUS: Antenna AS-333(\*)/AF denotes three models: AS-333/AP, AS-333A/AP, AS-333B/AP. Model A is electrically and mechanically interchangeable with AS-333/AP, but the cavity is hermetically sealed and the cover is constructed of a different material. The B-model measures 13-1/16 by 4-1/16 by 3-1/16 inches and weighs 2 pounds.

Antenna AS-333(\*)/AP replaces Antenna AT-4/ARN-1.

UNCLASSIFIED

COGNIZANT AGENCY: U. S. Navy, WADC (AEL-50-R11), development contracts NOas-7840 (Radio Corporation of America) and NOas-7615 and NOas-8725 (Rowe Industries).

MANUFACTURERS: AS-333/AP, Glen L. Martin Co., NOas-10495 (U. S. Navy); AS-333/AP, Z & W Machine Products, Inc., NOas-9109 (U. S. Navy); AS-333A/AP, Radio Corporation of America, NOas-8607 (U. S. Navy); AS-333B/AP, Mercury Electric Corp., 33(038)-3147 (U. S. Air Force).



AS-333/AP

STOCK NUMBERS: AS-333/AP ... Federal Stock Number 1660 5985-285-0774; AS-333B/AP ... Federal Stock Number 1660 5985-254-7122.

REFERENCES:

- 1) U. S. Army Air Forces and Bureau of Aeronautics, Instruction Sheet for AS-333/AP Antenna Assembly, NAVAER 16-35AS333-501, (Oct. 15, 1947). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL
- 3) U. S. Department of Defense Nomenclature Card.

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ANTENNA AS-335/ARD-4

FREQUENCY: VHF band, 100 - 160 mc; VSWR < 5.

TYPE: Rectangular array.

DESCRIPTION: The antenna consists of an array of four anodized aluminum monopoles each consisting of two inseparable sections. The monopoles are covered by a streamlining plastic to produce a tear-drop cross section measuring about 1 inch by 2 inches (maximum). Each monopole is 18-1/2 inches long. The monopoles are spaced at the corners of a square 18-1/2 inches on a side. Total weight is approximately 9 pounds.

BEAM DATA:

Beam type - Figure eight pattern in the horizontal plane.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARD-4.

Equipment function - navigation, direction finding.

MISCELLANEOUS: AS-335/ARD-4 is similar to Antenna AT-132/ARD-4.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Federal Telephone and Radio Corporation, procurement contract NXsr-64184.

STOCK NUMBER: U. S. Navy - ASO R16FDR-NL49033-12.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AS-336/AP

FREQUENCY: VHF and UHF bands, 130 - 680 mc; VSWR < 2.

TYPE: Three stubs.

DESCRIPTION: The antenna assembly consists of an elliptical base and three detachable quarter-wave stubs. One stub is 8-1/4 inches long and transmits in the 330-to 680-mc range; the second stub is 12-7/8 inches long and transmits in the 190- to 350-mc range; and the third stub is 19-1/4 inches long and

transmits in the 130- to 210-mc range.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Transmitting Equipment AN/APQ-2A. Equipment function - counter-measures, deception.

MISCELLANEOUS: AS-336/AP is electrically and mechanically interchangeable with Antenna AS-65/APQ-2A.

# UNCLASSIFIED

COGNIZANT AGENCY: WADC (ARL-45-305).

borne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

MANUFACTURER: Rowe Industries, Inc.

2) U. S. Department of Defense Nomenclature Card.

REFERENCES:

1) Bureau of Aeronautics, Handbook of Air-

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## ANTENNA AS-337/AP

Cancelled, March 14, 1946. The antenna was never procured, and future requirements are not contemplated.

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## ANTENNA AS-339/APX-11

FREQUENCY: Probably UHF band, 1000 mc; SHF band, 10,000 mc; VSWR < 2.

INSTALLATION: Airborne.

TYPE: Stub, rod.

ASSOCIATED EQUIPMENT: Radar Set AN/APX-11. Equipment function - IFF.

DESCRIPTION: The antenna assembly consists of two radiators combined into a single unit. The system is designed to receive in either of the two frequencies, but transmits only in the lower frequency. The assembly mounts on the tail or nose of bombers.

COGNIZANT AGENCY: WADC (ARL-45-509).

REFERENCES:

1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

BEAM DATA:

Polarization - Vertical.

2) U. S. Department of Defense Nomenclature Card.

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## ANTENNA AS-340/APX-16

FREQUENCY: UHF band, 1000 mc; SHF band, 10,000 mc; VSWR < 2.

ASSOCIATED EQUIPMENT: Radar Set AN/APX-16. Equipment function - IFF.

TYPE: Stub, rod.

MISCELLANEOUS: AS-340/APX-16 is similar to Antenna AS-339/APX-11 but is smaller and lighter in weight.

DESCRIPTION: The antenna assembly consists of two radiators combined into a single unit. The system is designed to receive in either of the two frequencies, but transmits only in the lower frequency. The assembly mounts flush with fighter aircraft fuselage.

COGNIZANT AGENCY: WADC (ARL-45-510).

REFERENCES:

1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

BEAM DATA:

Polarization - Vertical.

2) U. S. Department of Defense Nomenclature Card.

INSTALLATION: Airborne.

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## ANTENNA AS-366(\*)/AR

FREQUENCY: UHF band, 460 - 515 mc; VSWR < 2.

BEAM DATA:

Gain - 2.5 db.

TYPE: Dipole.

Beam type - Omnidirectional pattern in the horizontal plane; 75% of the radiation in the vertical plane is in a zone  $\pm 20^\circ$  from the horizon.

DESCRIPTION: The antenna is a full-wave dipole with an impedance-matching device at the center. It is fed by a 50-ohm coaxial cable and is overall approximately 39 inches long by 2-1/4 inches in diameter. It mounts in a vertical plane on top of the tail section of aircraft.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio sets AN/ART-26 and AN/ART-27. Equipment function - remote control.

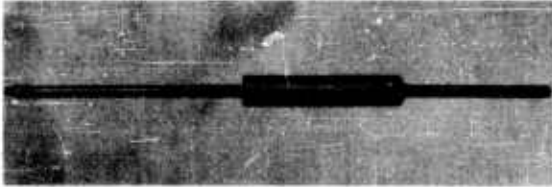
UNCLASSIFIED

# UNCLASSIFIED

MISCELLANEOUS: Antenna AS-366(\*)/AR denotes three models: AS-366/AR, AS-366A/AR, AS-366B/AR. The three models are electrically and mechanically interchangeable but have structural differences.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: AS-366/AR ... L. X. Brock Manufacturing Co; AS-366A/AR ... Douglas Aircraft Corp.; AS-366B/AR ... Aviation Supply Office.



AS-366(\*)/AR

Procurement contract orders - AS-366/AR ... TED NAM project EL-815, EL-816; AS-366A/AR ... NOas-9722, NOas-10485; AS-366B/AR ... NAM-EL-818.

STOCK NUMBERS: Federal Stock Number 5985-212-7090 (for AS-366/AR).

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Air Force and Bureau of Aeronautics, Handbook of Maintenance Instructions for Radio Transmitting Set AN/ART-26, AN 16-30ART26-3, (May 1, 1949 - revised April 1, 1950). UNCLASSIFIED.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-368/APN-57

FREQUENCY: SHF band, 9345 - 9405 mc; VSWR < 2.

TYPE: Paraboloidal reflector fed by a horn.

DESCRIPTION: The antenna is composed of an aluminum paraboloidal reflector with a silver-plated brass waveguide feed and a horn with a quarter wave window. A flange is provided on the reflector for mounting. The waveguide feed is pressurized. The overall antenna is 62-7/16 inches in diameter, and 21-27/32 inches deep.

### BEAM DATA:

Half-power beamwidth - Vertical - 1.2°.  
Horizontal - 1.2°.

Beam type - Pencil.

SCAN DATA: The antenna feed is adjustable to compensate for changes in aircraft altitude not exceeding  $\pm 6^\circ$ .

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-57.  
Equipment function - altimeter.

COGNIZANT AGENCY: WADC (ARL-47-155).

MANUFACTURER: Radio Corporation of America, procurement contract W-33-038-ac-15029.

### REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-369/APA-17B

FREQUENCY: VHF band, 60 - 250 mc; VSWR < 5.

TYPE: Loop.

DESCRIPTION: The antenna consists of two horizontal loops mounted on a vertical T-type support which mounts on PU-29/APA-17 antenna drive unit. The frequency range is covered in four tunable bands; the selection is made remotely through Remote Tuning Control C-324/APA-17. The approximate overall dimensions are 12 inches by 16 inches.

### BEAM DATA:

Polarization - Horizontal.

SCAN DATA: The antenna rotates continuously at any rate from 0 to 120 revolutions per minute.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APA-17B.  
Equipment function - countermeasures, direction finding.

MISCELLANEOUS: The nomenclature card states that the antenna was cancelled October 29, 1947. It was never used, and not required.

COGNIZANT AGENCY: WADC (ARL-47-C264).

# UNCLASSIFIED

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA ASSEMBLY AS-370/APA-17B

**MAJOR COMPONENTS:** 1 Antenna AS-222/APA-17B, 1 Remote Tuning Control C-324/APA-17B, 1 Power Supply PP-197/APA-17B, 1 Mounting Plate MT-551/APA-17B.

**COGNIZANT AGENCY:** AEL-49-R657.

**MANUFACTURER:** L. S. Brach Company, contract W33-038-2c-21560.

**FREQUENCY:** VHF band, 60 - 280 mc; VSWR < 5 on 50-ohm coaxial cable.

**STOCK NUMBER:** AS-222/APA-17B ... Federal Stock Number 5895-093-5673A; AS-370/APA-17B Federal Stock Number 1660 5826-536-4268.

**TYPE:** Loop.

## REFERENCES:

- 1) Army Air Forces and Bureau of Aeronautics, Handbook of Maintenance Instructions for Models AN/APA-17 and AN/APA-17A Aircraft Radar Equipment, AN 16-30APAL7-3. (Apr. 1, 1945 - revised Apr. 19, 1950). UNCLASSIFIED
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

**DESCRIPTION:** The antenna is an aluminum-cased, motor-driven loop which mounts directly to Antenna Drive TG-10/APA-17B. It is designed to receive horizontally polarized signals from 60 to 280 mc. This range is covered in four tuning bands, two bands corresponding to each of two frequency-range relay positions. The aluminum casing supports the flanged antenna-element tubes, and contains a tuned-circuit chassis, selsyn motor, gearbox, slip-fitting assembly, and slip ring and brush assemblies. The assembly is approximately 13 inches high and 16 inches wide; it weighs about 11-1/2 pounds. The antenna should be installed as far forward as possible on the lower side of the aircraft.

## BEAM DATA:

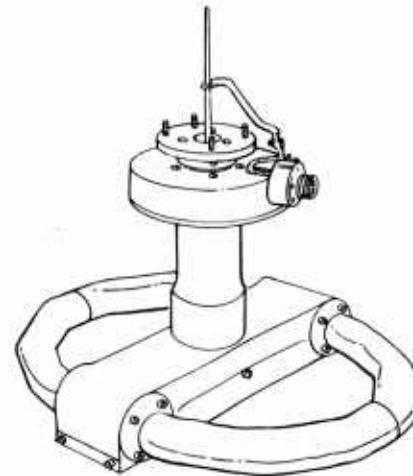
**Beam type** - The radiation pattern shows bi-symmetrical lobes of figure-eight shape. A line bisecting the figure-eight pattern through each lobe indicates the direction of the signal. The sense of the signal is determined by the intersection of consecutive cuts on the same signal taken from different positions as the plane flies a direct course.

**Polarization** - Horizontal.

**SCAN DATA:** The assembly probably rotates through 360° in azimuth at a variable rate between 0 and 150 revolutions per minute.

**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** Radar Direction Finding Assembly AN/APA-17B. Equipment function - countermeasures, direction finding.



AS-222/APA-17B

## ANTENNA AS-373(\*)/APG-3

**FREQUENCY:** SHF band, 9190 - 9300 mc; VSWR < 2.

**TYPE:** Horn.

**DESCRIPTION:** The antenna consists of a modified horn Antenna AT-39/AP inserted in a rectangular parallax target. Two 2-1/16-inch square mirrors, mounted on each end of

the rectangular target, are scribed into 16 smaller squares for sighting purposes. The antenna is 18-1/4 inches long, 6-3/8 inches wide, and 6 inches high; its weight is approximately 4 pounds.

**INSTALLATION:** Airborne.

# UNCLASSIFIED



# UNCLASSIFIED

ASSOCIATED EQUIPMENT: Part of Boreighting Accessory Kit MX-799/APG-3 for the AN/APG-3 system. Equipment function - test.

MISCELLANEOUS: Antenna AS-373(\*)/APG-3 designates antennas AS-373/APG-3 and AS-373A/APG-3, the latter incorporating improved design features.

COGNIZANT AGENCY: WADC (ARL-46-R417, AEL-51-157).

MANUFACTURERS: General Electric Company,

procurement contracts W-33-038-ac-14739 and AF 33(038)-5067.

STOCK NUMBER: Federal Stock Number 6625-332-4010 (for AS-373/APG-3).

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-378/APS-33A

FREQUENCY: SHF band, 9320 - 9430 mc; VSWR < 2.

TYPE: Modified cut paraboloidal reflector fed by a horn.

DESCRIPTION: The antenna consists of a reflector fed by a horn, a stabilization system, Pressurizing Unit HD-16/AP, and Directional Coupler CU-106/APS-33. The overall antenna is 36 3/4 inches high, 45 inches wide, and 28 17/32 inches deep.

## BEAM DATA:

Half-power beamwidth - Horizontal - 2.4°.

Beam type - Csc<sup>2</sup> from 3° to 30° below the horizontal.

Polarization - Horizontal.

SCAN DATA: The antenna can be rotated continuously of speeds of 6 to 10 revolutions per minute or 20 to 28 revolutions per minute. It can also be set to scan a 60° sector either at 20 to 25 cycles per minute or at 40 to 50 cycles per minute. The antenna can be manually tilted to 10° above or 20° below the horizon and is automatically held at this setting by the tilt stabilization system.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-33A. Equipment function - search; and navigation.

MISCELLANEOUS: AS-378/APS-33A is similar to but not interchangeable with antennas AS-289/APS-33 and AS-289A/APS-33.

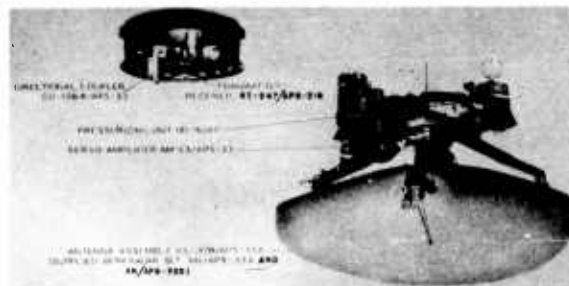
COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Philco Corporation, procurement contract NOas 9233.

STOCK NUMBER: U. S. Navy - ASO R16A5152-260.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Air Force and Bureau of Aeronautics, Handbook Service Instructions for Radar Sets AN/APS-33, AN/APS-33A, AN/APS-33C, AN/APS-33D and AN/APS-33F, AN 16-30APS33-12, (Dec. 1, 1956).
- 3) U. S. Department of Defense Nomenclature Card.



AS-378/APS-33A

## ANTENNA AS-384/APG-18

FREQUENCY: SHF band, 9335 - 9415 mc; VSWR < 1.5.

TYPE: Modified horn.

DESCRIPTION: The antenna is a horn of elliptical cross section with a polystyrene lens at the mouth. A circular-to-rectangular conversion section is included at the base. The overall antenna is 4 1/2 inches high, 5 1/4 inches wide, 8 5/8 inches deep.

## BEAM DATA:

Beam type - 18° to 20° conical beam.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APG-18. Equipment function - fire control.

COGNIZANT AGENCY: U. S. Navy, development contract NXsa-62346.

UNCLASSIFIED

MANUFACTURERS: General Electric Co., procurement contract NOas-9129.

borne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

REFERENCES:

1) Bureau of Aeronautics, Handbook of Air -

2) U. S. Department of Defense Nomenclature Card.

ANTENNA AS-387/APG-28

FREQUENCY: SHF band, 3253 - 3330 mc; VSWR < 2.

reflector moves so as to describe a rectangle from  $\pm 65^\circ$  in azimuth and  $\pm 12\text{-}1/2^\circ$  to  $\pm 17\text{-}1/2^\circ$  in elevation.

TYPE: Paraboloidal reflector fed by a dipole.

DESCRIPTION: The antenna consists of a center-fed dipole feeding a 27-inch parabolic reflector. The dipole is located at the focus of the paraboloid, and a reflecting disc is placed approximately a quarter wavelength in front of the dipole; a decoupling choke is placed about a quarter wavelength behind the dipole. The dipole is fed by a 50-ohm coaxial cable. The antenna is a modified AS-7/APG-1 antenna assembly. The overall assembly is  $34\text{-}5/8$  inches high, 36 inches long, and 30 inches wide and weighs approximately 103 pounds.

INSTALLATION: Airborne, especially suitable for F-82F aircraft.

ASSOCIATED EQUIPMENT: Radar Set AN/APG-28. Equipment function - fire control.

MISCELLANEOUS: AS-387/APG-28 is similar to but not interchangeable with Antenna AS-7/APG-1.

COGNIZANT AGENCY: WADC (ARL-47-89).

MANUFACTURER: North American Aviation, Inc., procurement contract W33-038-ac-15649.

STOCK NUMBER: Federal Stock Number 1270-501-0594.

REFERENCES:

1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953), CONFIDENTIAL.

2) U. S. Department of Defense Nomenclature Card.

BEAM DATA:

Half-power beamwidth -  $9.5^\circ$  in the plane parallel to the dipole.  $8.5^\circ$  in the plane perpendicular to the dipole.  
Beam type - Pencil.  
Polarization - Circular.

SCAN DATA: The dipole rotates on the axis of the reflector at 4000 revolutions per minute. This causes the beam axis to be off-set  $3^\circ$  from the axis of the reflector, thus generating a conical-shaped scan. In addition, the

ANTENNA AS-388/APQ-7

MAJOR COMPONENTS: 1 Antenna AS-82A/APQ-7, 1 Antenna Housing CW-23A/APQ-7.

MISCELLANEOUS: See Antenna AS-82(\*)/APQ-7 for descriptive details.

ANTENNA AS-391/APG-5C

FREQUENCY: UHF band, 2500-2600 mc; VSWR < 2.

ASSOCIATED EQUIPMENT: Radio Set AN/APG-5C. Equipment function - fire control.

TYPE: Modified Yagi antenna.

MISCELLANEOUS: Reference 2) states that this antenna is obsolete.

DESCRIPTION: The antenna is a four-section, modified Yagi array fed by a 52-ohm coaxial cable. It uses, but does not include, a V-shaped antenna cover constructed in accordance with AAF drawing 47G2044. The antenna is  $13\text{-}1/2$  inches by 6 inches by 4 inches. It is installed in the nose section of F-84 aircraft.

COGNIZANT AGENCY: WADC (ARL 47-R202).

MANUFACTURERS: Philco Corporation, procurement contract (33-036)-47-1961B.

STOCK NUMBER: Federal Stock Number 1270-166-4284.

BEAM TYPE:

Half-power beamwidth - Vertical -  $19^\circ$ .  
Horizontal -  $31^\circ$ .

REFERENCES:

1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

INSTALLATION: Airborne.

UNCLASSIFIED

# UNCLASSIFIED

2) Partial List of Obsolete Antennas, Wright Air Development Division, WCIRS-6, (March 14, 1957). UNCLASSIFIED.

3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-392/APG-5C

FREQUENCY: UHF band, 2500 - 2600 mc; VSWR < 2.

COGNIZANT AGENCY: WADC (ARL-47-160).

TYPE: Paraboloidal reflector fed by a dipole.

STOCK NUMBER: Air Force Stock Number 1660-206081768.

DESCRIPTION: The antenna is an aluminum paraboloidal reflector fed by a silver-plated brass dipole. The diameter of the reflector is 12 inches. It mounts in the nose section of F-86 aircraft.

### REFERENCES:

1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

### BEAM DATA:

Half-power beamwidth - Vertical - 23°. Horizontal - 27°.

2) Partial List of Obsolete Antennas, Wright Air Development Division, WCIRS-6, (Mar. 14, 1957). UNCLASSIFIED.

INSTALLATION: Airborne.

3) U. S. Department of Defense Nomenclature Card.

ASSOCIATED EQUIPMENT: Radio Set AN/APG-5C. Equipment function - fire control.

MISCELLANEOUS: Reference 2) states that this is obsolete.

## ANTENNA ASSEMBLY AS-401/A

FREQUENCY: LF, MF, and HF bands, 0.19 - 25 mc.

ASSOCIATED EQUIPMENT: Antenna Equipment AN/ARA-4. Equipment function - communications

TYPE: Wire antenna.

COGNIZANT AGENCY: ARL-47-262.

DESCRIPTION: The antenna consists of 300 feet of copper-clad steel wire on a remote-controlled, motor-driven reel. The antenna is a trailing-wire antenna. The length of wire trailed out is dependent upon the frequency of operation. The assembly includes parts of Antenna Equipment AN/ARA-4.

### REFERENCES:

1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

2) U. S. Department of Defense Nomenclature Card.

INSTALLATION: Airborne.

## ANTENNA ASSEMBLY AS-409/APG-27

FREQUENCY: SHF band, 9190 - 9300 mc.

fire control and a conical scan combined with azimuth rotation for search.

TYPE: Paraboloidal reflector with a Cutler feed.

INSTALLATION: Airborne.

DESCRIPTION: The antenna consists of a paraboloidal reflector with a Cutler feed. A conical scan is generated by spinning the reflector. The assembly contains motors and autosyns used in positioning the antenna and a motor with a reference generator geared to the paraboloid.

ASSOCIATED EQUIPMENT: Radar Set AN/APG-27. Equipment function - fire control; and search.

COGNIZANT AGENCY: U. S. Air Force (ARL-48-94).

### BEAM DATA:

Beam type - Pencil.

MANUFACTURER: Emerson Electric Mfg. Co.

STOCK NUMBER: U. S. Air Force 5920-8525600.

SCAN DATA: The antenna has a conical scan for

### REFERENCE:

U. S. Department of Defense Nomenclature Card.

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## ANTENNAS AS-416/U through AS-425/U

ANTENNAS	FREQUENCY	EXPERIMENTAL NOMENCLATURE
AS-416/U	VHF band, 255 - 270 mc	AT-(XA-82)/U
AS-417/U	VHF band, 268 - 285 mc	AT-(XA-87)/U
AS-418/U	VHF band, 278 - 298 mc	AT-(XA-88)/U
AS-419/U	VHF and UHF band, 290 - 315 mc	AT-(XA-84)/U
AS-420/U	UHF band, 300 - 335 mc	AT-(XA-77)/U
AS-421/U	UHF band, 312 - 347 mc	AT-(XA-85)/U
AS-422/U	UHF band, 314 - 361 mc	AT-(XA-81)/U
AS-423/U	UHF band, 325 - 370 mc	AT-(XA-80)/U
AS-424/U	UHF band, 340 - 382 mc	AT-(XA-86)/U
AS-425/U	UHF band, 335 - 392 mc	AT-(XA-79)/U

TYPE: Yagi Antennas.

DESCRIPTION: Reference 1) lists all of these antennas as obsolete and has the following remarks:  
AS-416/U through AS-425/U... "Block 3 TV Yagi, Drawing 48D14602, UHF plug." Additional information is available in the secret document listed below as Reference 2 and in Volume V of this catalog series.

REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.
- 2) U. S. Air Force, USAF Aircraft Antenna Design Summary, 51S-191544, (Mar. 18, 1952). SECRET.

## ANTENNA AS-426/U

FREQUENCY: VHF band, 212 - 232 mc; VSWR < 2 on 50-ohm coaxial cable.

TYPE: Yagi.

DESCRIPTION: AS-426/U is a Yagi antenna composed of a driven sleeve dipole, one parasitic reflector, and two parasitic directors.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-56().

MISCELLANEOUS: Reference 1) indicates this

antenna is obsolete. It is similar to AS-427/U.

COGNIZANT AGENCY: U. S. Air Force (ARL-48-124).

MANUFACTURER: General Motors.

REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-427/U

FREQUENCY: VHF band, 229 - 250 mc; VSWR < 2 on 50-ohm coaxial cable.

TYPE: Yagi.

DESCRIPTION: AS-427/U is a Yagi antenna composed of a driven sleeve dipole, one parasitic reflector, and two parasitic directors.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-56().

MISCELLANEOUS: Reference 1) indicates this

antenna is obsolete. It is similar to AS-426/U.

COGNIZANT AGENCY: U. S. Air Force (ARL-48-125).

MANUFACTURER: General Motors.

REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

## AS-428(\*)/APS-42

MAJOR COMPONENTS: AT-178/APS-42 antenna reflector, azimuth and roll stabilization drive, azimuth synchro, roll-stabilization amplifier, antenna feed, waveguide and associated hardware.

FREQUENCY: SHF band, 9309 - 9430 mc; VSWR < 2 on X-band waveguide.

TYPE: Modified paraboloidal reflector with a waveguide feed.

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**DESCRIPTION:** The antenna consists of a modified paraboloidal reflector with a waveguide feed (see illustration) and associated equipment for scanning and stabilizing the beam. The basic reflector is a paraboloid 18 inches in diameter with a smooth reflecting surface. A strip of wire grid is attached to the paraboloid so that with proper polarization of the feed with respect to the grid the effective reflecting surface produces a csc<sup>2</sup>-type beam. When the relative polarization of the feed is shifted 90°, the grid is effectively transparent to the r-f energy and only the paraboloidal surface is effective and produces a pencil beam. The relative shifts in polarization to change the beam shape are produced by rotating the reflector while holding the feed fixed. The overall assembly is approximately 28 inches high, 17-1/4 inches deep, and 27-3/4 inches wide.

## BEAM DATA:

Half-power beamwidth - Pencil beam - Approximately 6° (horizontal and vertical).  
Csc<sup>2</sup>-type beam - Approximately 6° in azimuth, csc<sup>2</sup> from -6° to -34°.  
Beam type - Pencil or csc<sup>2</sup> from -6° to -34°.

**SCAN DATA:** For either beam the antenna scans 360° in azimuth at 15 to 40 revolutions per minute, or it scans a 120° or 240° sector at 18 to 50 or 35 to 90 looks per minute. The permissible beam tilt is from 5° to 40°. The antenna is stabilized in roll and tilt.

**INSTALLATION:** Airborne, may be mounted either base up or base down.

**ASSOCIATED EQUIPMENT:** AN/APS-42, AN/APS-42A, and AN/APS-42B. Equipment function - search; navigation; and radar beacon.

**MISCELLANEOUS:** AS-428(\*)/APS-42 represents AS-428/APS-42, AS-428B/APS-42, and AS-428C/APS-42. The models are electrically and mechanically interchangeable. At least one document indicates that AT-178/APS-42 is used with but not a part of AS-428(\*)/APS-42; other references indicate that AT-178/APS-42 is a part of AS-428(\*)/APS-42.

**COGNIZANT AGENCY:** U. S. Navy.

**MANUFACTURER:** Houston Corp., contracts NOa(s)-9029 and NOas-55-626.

**STOCK NUMBERS:** AS-428/APS-42...Federal Stock Number 1660 5841-538-5161; AS-428A/APS-42...Federal Stock Number 1660 5841-217-0472; AT-178/APS-42...Navy-ASO R16R3590.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1955). CONFIDENTIAL.
- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Operation Instructions, Radar Set AN/APS-42B, AN 16-30APS42-11, (Mar. 15, 1953 - revised May 15, 1956). UNCLASSIFIED.
- 3) U. S. Air Force, Radar Set AN/APS-42, Supplement, TO 12P6-2APS42-22C, (Aug. 25, 1959). UNCLASSIFIED.



AS-428(\*)/APS-42

## ANTENNA AS-448(\*)/APG-32

**FREQUENCY:** SHF band, 9200 - 9290 mc.

**TYPE:** Paraboloidal reflector fed by a dipole.

**DESCRIPTION:** The antenna is a paraboloidal reflector fed by a dipole mounted at the end of a length of waveguide. The dipole is enclosed in a plastic housing to permit pressurization of the waveguide. The reflector rotates on its axis and tilts with respect to the dipole to produce conical scanning. The drive motors, gear trains, selsyns, etc., which are necessary for operation are included as part of the antenna. The assembly weighs about 65 pounds and is 20-3/4 inches in di-

ameter by 25 inches in length.

## BEAM DATA:

Half-power beamwidth - Horizontal - 7°.  
Vertical - 7°.  
Polarization - Vertical.

**SCAN DATA:** The antenna scans in three modes, automatic search, track, and hand control. In each of the three modes conical scanning of the beam is used as the beam is moved through the scanned area. In automatic search, the conical scan pattern is 51° in diameter and the motion of the center of the cone

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describes a rectangle 75° wide and 44° high. A complete cycle around the rectangle requires approximately three seconds. In track operation, the antenna will automatically follow the target within the limits of 57° to the right or left of the aircraft center line and within 38° above or below the center line. During hand control, the movement of the antenna is under the control of the operator, and the movement is restricted to 54° to the right or left and 35° up or down. In either the hand control or track modes, the scanning cone is 12.4° wide.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APG-32.  
Equipment function - fire control; and tail warning.

MISCELLANEOUS: AS-448(\*)/APG-32 denotes two models, AS-448/APG-32 and AS-448A/APG-32. The two antennas are electrically and mechanically interchangeable, but the A model is structurally stronger. These antennas are similar to but not interchangeable with AS-182/APG-3.

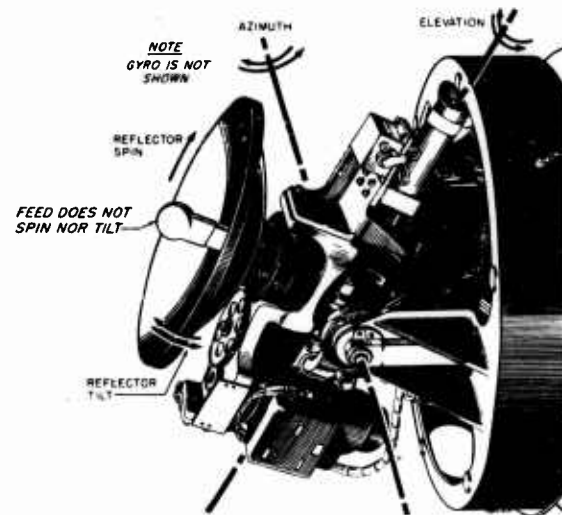
COGNIZANT AGENCY: ARL-48-438 and AEL-50-776.

MANUFACTURERS: General Electric Company.

STOCK NUMBERS: AS-448/APG-32...Federal Stock Number 1270-569-6767; AS-448A/APG-32...Federal Stock Number 1270-523-3917.

## REFERENCE:

U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Radar Set AN/APG-32 and AN/APG-32A, TO 11F35-2-12-1, (Mar. 1, 1954 - revised Sept. 1, 1956). UNCLASSIFIED.



AS-448(\*)/APG-32

## ANTENNA AS-456/APN-63

FREQUENCY: UHF band, 2700 - 2900 mc for receiving, 968 for transmitting; VSWR < 5 on 50-ohm coaxial cable from 2700 - 2900 mc, VSWR < 2 on 50-ohm coaxial cable at 968 mc.

TYPE: Rod antenna.

DESCRIPTION: The antenna is a one-piece, silver-plated, tubular-brass rod antenna with a mounting plate and a plastic housing. The bottom plate has 12 holes for mounting to the skin of the aircraft. The assembly has two connectors for connecting to 50-ohm coaxial cable.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-63.  
Equipment function - radar beacon.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Andrew Alford; Melpar, Incorporated, Navy NObsr-42171.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-482/APR

FREQUENCY: SHF band, 4150 - 10,750 mc; VSWR < 5 on 52-ohm coaxial cable.

TYPE: Conical.

DESCRIPTION: The antenna consists of an inverted cone surmounted by an upright cone. The axes of the two cones are coincident and are inclined at an angle of 55 degrees to the base plate of the antenna. The base is circular, 2-1/2 inches in diameter, and has six mounting holes spaced 60 degrees apart on a 1-inch radius. A flanged, hemispherical, plexiglass cover encloses the radiating element (the double cone). The antenna weighs 4-1/2 ounces and has a maximum height of 7/8 inch above the base plate. The antenna terminates in a UG-58/U connector and is fed by 52-ohm coaxial cable.

cular, 2-1/2 inches in diameter, and has six mounting holes spaced 60 degrees apart on a 1-inch radius. A flanged, hemispherical, plexiglass cover encloses the radiating element (the double cone). The antenna weighs 4-1/2 ounces and has a maximum height of 7/8 inch above the base plate. The antenna terminates in a UG-58/U connector and is fed by 52-ohm coaxial cable.

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## BEAM DATA:

Beam type - The antenna is approximately omnidirectional in the plane of the base plate but the pattern is greatly influenced by its location on the aircraft. A radiation pattern for one mounting is illustrated and more detailed information is given in Reference 1).  
Polarization - Linear, depends on mounting position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Sets AN/APR-9 and AN/APR-9A. Equipment function - counter-measures, search.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBER: U. S. Navy-ASO R16AN-AS482APR.

## REFERENCES:

- 1) Bureau of Aeronautics, Instruction Sheet for Antenna AS-482/APR, NAVAER 16-35AS482-501, (April 1, 1953). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.



AS-482/APR

## ANTENNA AS-485/APG-5C

FREQUENCY: UHF band, 2500 - 2600 mc; VSWR < 2 on 52-ohm coaxial cable.

TYPE: Paraboloidal reflector fed by a dipole.

DESCRIPTION: The antenna consists of a paraboloidal reflector fed by a dipole located at or near the focal point of the reflector. The rod supporting the dipole is guyed to the reflector for increased structural rigidity. An oval mounting plate is welded to the rear of the reflector. The antenna terminates in a type N connector and is fed by a 52-ohm coaxial cable. The antenna weighs about 2 pounds and is 12 inches in diameter and 7.5 inches in depth.

## BEAM DATA:

Half-power beamwidth - Horizontal - 27°. Vertical - 23°. Polarization - Linear, depends on mounting position, but vertical polarization is recommended.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/APG-5C. Equipment function - fire control.

MISCELLANEOUS: This antenna is listed as obsolete by Reference 1). It is electrically but not mechanically interchangeable with AS-392/APG-5C; it is greatly strengthened to resist gun-fire shock.

COGNIZANT AGENCY: AEL-49-582.

MANUFACTURERS: Stewart Warner Corporation, Air Force contract AF 33(038)-8089 (amended).

STOCK NUMBER: U. S. Air Force 1660-202162010.

## REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-487/APG-33

FREQUENCY: SHF band, 9200 - 9290 mc.

TYPE: Paraboloidal reflector fed by a Cutler Feed.

**DESCRIPTION:** The antenna consists of an 18-inch paraboloidal reflector fed by a Cutler feed. The reflector rotates on its axis and tilts with respect to the feed so that conical scanning is produced. The antenna weighs about 65 pounds, and the overall dimensions are 21-1/2 inches in diameter and 20-1/2 inches in length.

**BEAM DATA:**

Half-power beamwidth - Horizontal - 5°.  
Vertical - 5°.

**SCAN DATA:** The antenna scans in three modes: search, hand tracking, and attack operation. In each of the three modes conical scanning of the beam is employed as the beam is moved through the scanned area. During search operation, the operator may select three scans: high scan, center scan, and narrow scan. These three scans are graphically described by the illustrations. During hand tracking, the movement of the antenna is under the control of the operator and the antenna can be pointed in any direction within the range of  $\pm 55^\circ$  in azimuth and  $\pm 40^\circ$  in elevation with respect to the aircraft heading. During the attack operation the antenna is controlled by the radar set and follows the target under attack.

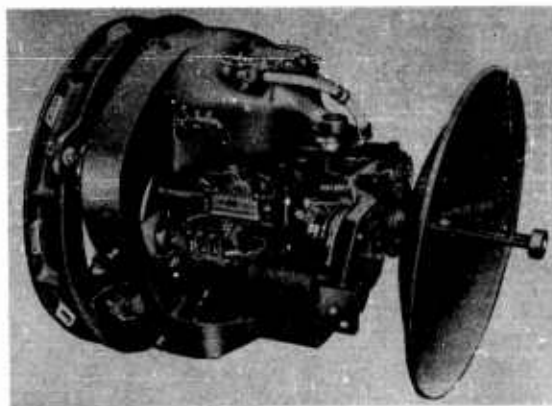
**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** Radar Set AN/APG-33.  
Equipment function - fire control.

**COGNIZANT AGENCY:** AEL-49-608.

**MANUFACTURERS:** Hughes Aircraft Company;  
Northrop Airplane Company, contract AF 33(038)-1817; Lockheed Aircraft Company, contract AF 33(038)-1847.

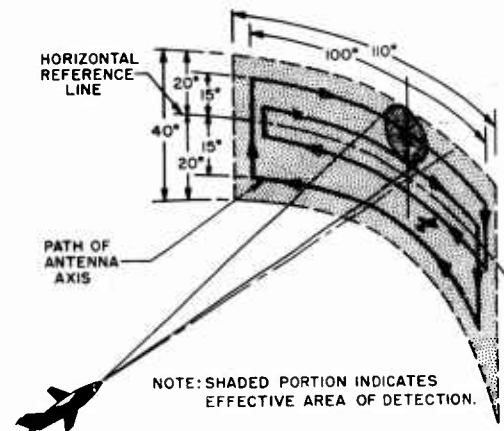
**STOCK NUMBER:** Current stock number lists indicate that this item is not stocked by the U. S. Air Force.



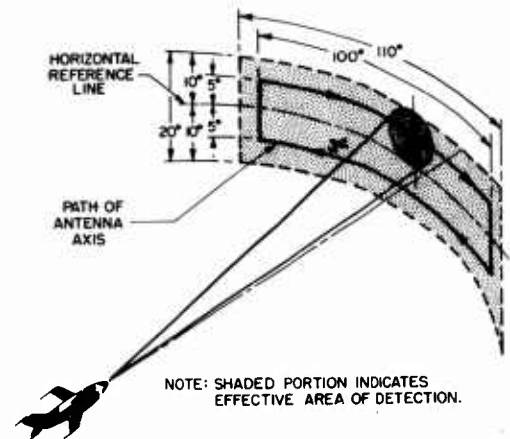
AS-487/APG-33

**REFERENCES:**

- 1) U. S. Air Force, Handbook Operating Instructions for Fire Control System Modified Type E-1 for Installation in TB-25K Aircraft, TO 11F1-E1-1A, (June 1, 1953 - revised Aug. 15, 1957). UNCLASSIFIED.
- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Radar Set AN/APG-33, CO AN 16-30APG33-2, (Sept. 1, 1950 - revised Oct. 15, 1950). UNCLASSIFIED.
- 3) U. S. Air Force, Replace the Main Antenna Harness, AN/APG-33, P/O E-1 Fire Control System, TO 11F5-2-503, (April 15, 1955). UNCLASSIFIED.



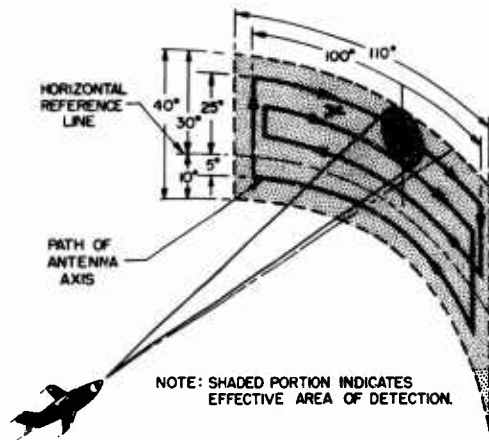
AS-487/APG-33 Center Scan Search Pattern



AS-487/APG-33 Narrow Scan Search Pattern



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AS-487/APG-33 High Scan Search Pattern

- 4) U. S. Air Force, Illustrated Parts Break-down for Antenna AS-487/APG-33, TO 11F5-2-4, (May 1, 1957). UNCLASSIFIED.
- 5) U. S. Air Force, Bureau of Aeronautics, Handbook Overhaul Instructions for Antenna AS-487/APG-33, AN 11-70AB-40, (Aug. 20, 1954). UNCLASSIFIED.

ANTENNA AS-521(\*)/APN-69

FREQUENCY: SHF band, 9310 - 9415 mc, VSWR<2.

TYPE: Slot antenna.

DESCRIPTION: The antenna is a slotted circular waveguide with approximate overall dimensions of 12 inches in length and 2 inches in diameter. Mounting facilities and associated radome are included.

BEAM DATA:

Half-power beamwidth - Horizontal - essentially uniform.  
Vertical - 15°.

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-69.  
Equipment function - radar beacon.

MISCELLANEOUS: Antenna AS-521(\*)/APN-69 designates antennas AS-521/APN-69 and AS-521A/APN-69, which are electrically and mechanically interchangeable.

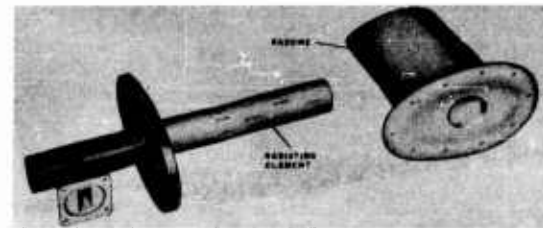
COGNIZANT AGENCY: WADC (AEL-52-383, AEL-50-339, AEL-57-972).

MANUFACTURER: Gyroscope Co., procurement contract AF 33(039)-6854.

STOCK NUMBER: Federal Stock Number 1660-5826-538-5160 (for AS-521/APN-69).

REFERENCES:

- 1) U. S. Air Force, Handbook Operating Instructions for Radio Beacon AN/APN-69, TO 12P5-2APN69-1, (Jan. 15, 1957). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.



AS-521(\*)/APN-69

ANTENNA AS-539/APS-20

See Antenna OA-493/APS-20

ANTENNA AS-545/APA-17B

FREQUENCY: VHF and UHF bands, 140 - 1200 mc.

DESCRIPTION: Antenna AS-545/APA-17B is a combination of a horizontal dipole and a vertical

stub with a suitable parabolic reflector. The horizontal dipole or the vertical stub may be selected by means of a relay in the antenna assembly.

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BEAM DATA:

Polarization - Vertical or horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APA-17B. Equipment function - direction finding.

COGNIZANT AGENCY: WADC (AEL-50-676).

MANUFACTURER: Hoffman Radio Corp.

STOCK NUMBER: Federal Stock Number 1660 5826  
026-8670.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

ANTENNA AS-549/APS-21B

FREQUENCY: SHF Band, 9310 - 9405 mc.

TYPE: Paraboloidal reflector fed by a type J waveguide feed.

DESCRIPTION: The antenna consists of a 30-inch paraboloidal reflector fed by a J-shaped waveguide section which protrudes through the lower surface of the reflector. The antenna operates in the 9335 to 9415-mc frequency range for search and beacon interrogation operations. The beacon response is received at 9310 mc. The assembly is 46 inches long, 30 inches wide and 30 inches high.

BEAM DATA:

Gain - Approximately 35 db.

Half-power beamwidth - Horizontal -  $2.9^\circ$ .  
Vertical -  $2.9^\circ$  for air search and beacon operation, csc<sup>2</sup> for surface search operation.

Polarization - Horizontal.

SCAN DATA: The antenna scans a forward rectangular area whose width is variable between  $30^\circ$  and  $70^\circ$ . The tilt rate is fixed at  $10^\circ$  per second. The tilt-angle limits are  $60^\circ$  above and  $30^\circ$  below the horizontal. Tilt may be limited to any  $30^\circ$  sector within this  $90^\circ$  sector or to any  $15^\circ$  sector between  $+52-1/2^\circ$  and  $-22-1/2^\circ$ . The air search scan rate is 3.75 cycles per second and surface search scan rate is 0.5 cycles per second.

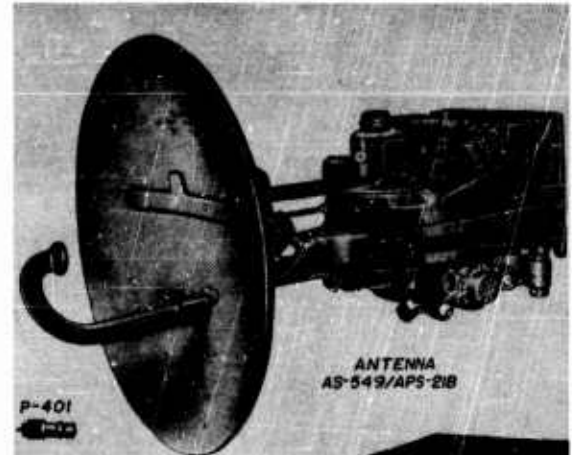
INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-21B.  
Equipment function - search, air; search, surface; and radar beacon.

MISCELLANEOUS: The antenna is similar to AS-518/APS-21 but the tilt is limited to a constant instead of variable rate. Different connectors are also used on the two antennas.

REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Handbook of Operating Instructions for Radar Set AN/APQ-35B, CO-AN 16-30APQ35-11, (May 15, 1951). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.



AS-549/APS-21B

ANTENNA AS-553/APS-31B

FREQUENCY: SHF band, 9320 - 9430 mc.

TYPE: Modified cut paraboloidal reflector fed by a horn.

DESCRIPTION: The radiating system consists of a modified cut paraboloidal reflector fed by a horn that is fixed with respect to its reflector and is mounted on the transmitter-receiver system associated with the antenna.

The antenna is line-of-sight stabilized. Connection to the stationary section of the waveguide is made through a tilt joint and a rotary joint.

BEAM DATA:

Half-power beamwidth - Vertical -  $4^\circ$ .  
Horizontal -  $3^\circ$ .

Beam type - pencil.

Polarization - Horizontal.

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SCAN DATA: Four possible scan modes are as follows:

- A. 50° to 60° sector scan at 45 to 55 scans per minute;
- B. 50° to 60° sector scan at 90 to 100 scans per minute;
- C. 120° sector scan at 26 to 33 scans per minute;
- D. 120° sector scan at 52 to 65 scans per minute.

The antenna may be manually tilted in elevation from +10° to -20°, and it is beam-tilt (line-of-sight) stabilized from +24° to -30° with a manual elevation setting of 0°.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-31B.  
Equipment function - search, surface.

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## ANTENNA AS-560/APN-22

FREQUENCY: UHF band, 1600 - 1660 mc.

DESCRIPTION: The nomenclature card indicates that the antenna consists of a recessed dish and an array consisting of two dipoles.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-22.  
Equipment function - altimeter.

MISCELLANEOUS: Reference 1) indicates that Set AN/APN-22 operates in the 4200 to 4400 mc frequency range and that the antenna used with that set is a dual horn.

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## ANTENNA AS-561/APS-44

FREQUENCY: SHF band, 5250 - 5310 mc and 9330 - 9420 mc.

TYPE: Cut paraboloidal reflector fed by a pair of horns.

DESCRIPTION: The antenna is a cut paraboloidal reflector fed by a horn (one horn for each of the two frequency ranges). The general shape of the reflector is elliptical. The horn and waveguide assemblies extend over the top of the reflector. The waveguide is bent so that the horn opening is near the focal point and facing the reflector. The antenna mounts beneath a support structure which also contains the antenna positioning equipment. The antenna weighs 361 pounds and is 72-1/2 inches high, 113-3/4 inches wide, and 36 inches deep.

### BEAM DATA:

Gain - 40 db at 9375 mc; 34.3 db at 5280 mc.  
Half-power beamwidth - Horizontal - 1° at 9375 mc; 1.8° at 5280 mc.  
Vertical - 2.6° at

MISCELLANEOUS: AS-553/APS-31B is similar to but not interchangeable with Antenna AS-287B/APS-31. For illustration see Antenna AS-628/APS-31C.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Philco Corporation, procurement contract NOas-12228.

### REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Handbook Service Instructions for Radar Sets AN/APS-31, AN/APS-31A, AN/APS-31B, AN/APS-31C, TO 12P6-2APS31-2, (Sept. 1, 1953 - revised Feb. 1, 1956). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

COGNIZANT AGENCY: U. S. Navy.

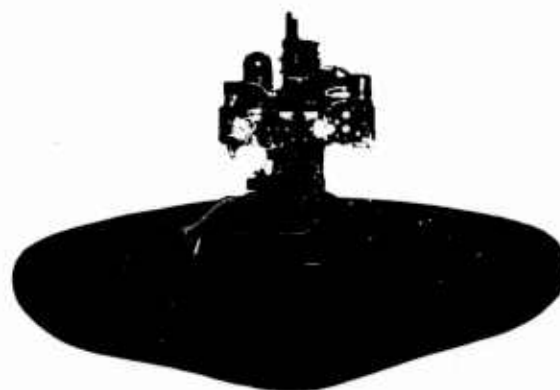
MANUFACTURER: Radio Corporation of America, procurement contract NOas-9713.

### REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Handbook Service Instructions for Radar Set AN/APN-22, TO 12P5-2APN22-2, (Aug. 15, 1956). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

9375 mc; 4.8° at 5280 mc.

Side-lobe attenuation - 23-3/4 db.  
Polarization - Horizontal.



AS-561/APS-44

SCAN DATA: The antenna has five types of azimuth scan: continuous  $360^\circ$  scan at 3, 6, or 12 revolutions per minute; a  $30^\circ$  sector scan; and a searchlight scan. The searchlight scan or the center of the  $30^\circ$  sector scan can be set at any azimuth position. The antenna can be tilted in elevation between  $\pm 5^\circ$ . The scan rate for sector scanning is 40 looks per minute.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-44.

Equipment function - search, surface (submarine detection).

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Unknown, contract NOa(s)-11082.

REFERENCE:

U. S. Air Force and Bureau of Aeronautics, Handbook Maintenance Instructions for Radar Sets AN/APS-44 and AN/APS-44A, AN 16-30APS44-3, (Mar. 1, 1955). UNCLASSIFIED.

ANTENNA AS-562/APS-44A

FREQUENCY: SHF band, 5250 - 5310 mc and 9330 - 9420 mc.

TYPE: Paraboloidal reflector fed by a cylindrical horn.

DESCRIPTION: The antenna is a paraboloidal reflector fed by a cylindrical horn (a different horn for each of the two frequency ranges). The horn and waveguide assemblies extend over the top of the reflector. The waveguide is bent so that the horn opening is near the focal point and facing the reflector. A quartz phase shifter is located inside each of the horns and can be remotely adjusted to produce either linear or circular polarization. The antenna weighs 231 pounds and is 65-5/16 inches deep and 65-5/32 inches in diameter.

BEAM DATA:

Half-power beamwidth - E and H planes -  $1.8^\circ$  at 9375 mc;  $3.2^\circ$  at 5280 mc.

Beam Type - pencil.

Polarization - Horizontal, left circular, or right circular.

SCAN DATA: The antenna scans either a  $170^\circ$  sector or a  $30^\circ$  sector. For the  $170^\circ$  sector, the scan rate is 6, 12, or 24 scans per minute. The scan rate for the  $30^\circ$  sector is 40 scans per minute. The antenna can be tilted between  $\pm 5^\circ$  with respect to the horizontal. It can also be stopped in azimuth for searchlight scanning.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-44A.

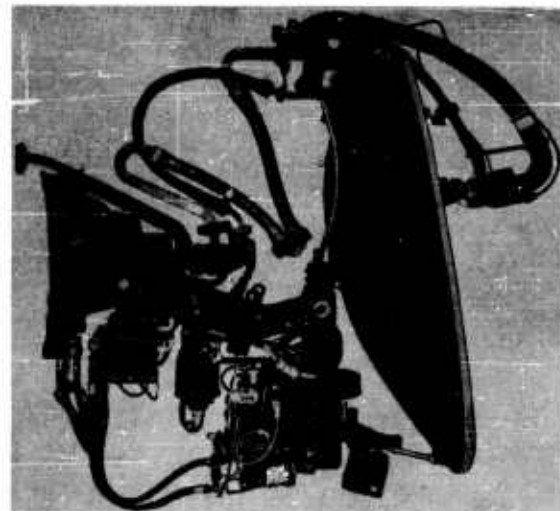
Equipment function - search, surface (submarine detection).

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Unknown, Navy contract NOa(s)-11082.

REFERENCE:

U. S. Air Force and Bureau of Aeronautics, Handbook Maintenance Instructions for Radar Sets AN/APS-44 and AN/APS-44A, AN 16-30APS44-3, (Mar. 1, 1955). UNCLASSIFIED.



AS-562/APS-44A

ANTENNA AS-567/APS-33B

FREQUENCY: SHF band, 9310 - 9430 mc.

TYPE: Cut paraboloidal reflector fed by a waveguide horn.

DESCRIPTION: The antenna consists of a cut paraboloidal reflector fed by a J-type wave-

guide horn. The reflector is approximately elliptical in shape and can be fitted with a spoiler to produce a csc<sup>2</sup> beam. The antenna is mounted beneath a support which houses the antenna positioning mechanisms and other equipment. The antenna weighs 105 pounds and is 45-1/2 inches wide, 45-1/2 inches high,

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and 29 inches deep. The antenna operates between 9320 and 9430 mc for search and beacon interrogation; it receives beacon responses at 9310 mc.

## BEAM DATA:

Half-power beamwidth - Horizontal -  $2.4^{\circ}$ .  
Vertical -  $3.6^{\circ}$  without spoiler ( $\text{csc}^2$  beam with spoiler).  
Polarization - Horizontal.

SCAN DATA: The antenna has three azimuth scans and two scanning speeds. A full  $360^{\circ}$  scan may be scanned at either 8 or 24 revolutions per minute. A  $60^{\circ}$  sector may be scanned at 80 to 105 looks per minute, and a  $45^{\circ}$  sector may be scanned at 50 to 70 looks per minute. The antenna has a manual beam-tilt range of from  $+10^{\circ}$  to  $-20^{\circ}$ .

ASSOCIATED EQUIPMENT: Radar Sets AN/APS-33B, AN/APS-38, and AN/APS-38A. Equipment function search, surface (submarine detection); and radar beacon.

MISCELLANEOUS: AS-567(\*)/APS-33B denotes two models, AS-567/APS-33B and AS-567A/APS-33B. No data are available on difference between the models.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Philco Corporation.

## REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Handbook Service Instructions for Radar Sets AN/APS-38 and AN/APS-38A, AN 16-30-APS38-2, (Jan. 15, 1955). UNCLASSIFIED.

- 2) U. S. Air Force and Bureau of Aeronautics, Handbook Operation Instructions for Radar Sets AN/APS-38 and AN/APS-38A, AN 16-30-APS38-1, (Nov. 1, 1956). UNCLASSIFIED.

- 3) U. S. Air Force and Bureau of Aeronautics, Illustrated Parts Breakdown for Radar Sets AN/APS-38 and AN/APS-38A, AN 16-30APS38-4A, (Dec. 1, 1956 - revised Nov. 15, 1957). UNCLASSIFIED.

- 4) U. S. Department of Defense Nomenclature Card.



AS-567(\*)/APS-33B

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## ANTENNA AS-568/APG-41

FREQUENCY: SHF band, 9200 - 9290 mc.

TYPE: Paraboloidal reflector fed by a dipole.

DESCRIPTION: The reflector is 21 inches in diameter.

## BEAM DATA:

Beam type - Pencil.

SCAN DATA: The antenna reflector spins about an offset axis and is gimballed to allow movement in azimuth and elevation during search and track operation.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APG-41.  
Equipment function - fire control.

COGNIZANT AGENCY: WADC (AEL-51-706).

MANUFACTURER: General Electric Company.

STOCK NUMBER: Federal Stock Number 1270-338-0444.

## REFERENCE:

U. S. Department of Defense Nomenclature Card.

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## ANTENNA AS-573/APG-32A

FREQUENCY: SHF band, 9200 - 9290 mc.

TYPE: Paraboloidal reflector fed by a dipole or a cutler-type feed.

DESCRIPTION: The antenna consists of a 12-inch reflector, the feed element, a flexible wave-

guide, and the motors, selsyns, gears, and related mechanical parts required to move the radiating elements, to control their motion, and to supply azimuth and elevation reference data to other parts of the radar set. A boresight support and provisions for mounting a gyroscope are also included. The unit is

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designed for use with a protective radome. The antenna is involved in three types of functions:

- (a) automatic search for aircraft targets;
- (b) hand control, using Antenna Control C-636/APG-32, to enable an operator to select and lock on a particular target;
- (c) automatic track.

A spin motor working through spur gearing rotates the reflector in the plane of the dish at 2100 revolutions per minute. The reflector can also be tilted by a tilt motor which effectively widens the basic antenna beam-width.

## BEAM DATA:

Half-power beamwidth - Vertical -  $7^{\circ}$ .  
Horizontal -  $7^{\circ}$ .

Tilting the reflector causes the beam to sweep a cone,  $12.4^{\circ}$  at the apex during hand search and automatic track, or  $51^{\circ}$  at the apex during automatic search.

Beam type - Pencil.

Polarization - Vertical.

SCAN DATA: The antenna has electrical limit switches at  $\pm 57^{\circ}$  in azimuth, and  $\pm 38^{\circ}$  in elevation. Mechanical safety stops are provided at  $\pm 60^{\circ}$  in azimuth, and  $\pm 41^{\circ}$  in elevation. During hand controlled operation the antenna can be made to travel  $\pm 54^{\circ}$  in azimuth and  $\pm 35^{\circ}$  in elevation.

INSTALLATION: Airborne, for use with tail-turret guns.

ASSOCIATED EQUIPMENT: Radar Set AN/APG-32A.  
Equipment function - fire control.

MISCELLANEOUS: AS-573/APG-32A is similar to but not interchangeable with antennas AS-448/APG-32 and AS-448A/APG-32. Installation and mounting clearances are the same for all three antennas. Antennas AS-448/APG-32 and AS-448A/APG-32 are directly interchangeable and should be used only in an AN/APG-32 system. The AS-573/APG-32A should be used only in an AN/APG-32A system.

COGNIZANT AGENCY: WADC (AEL-51-209).

MANUFACTURER: General Electric Company, part number W-9019868 Group 2.

STOCK NUMBER: Federal Stock Number 1270-347-1353.

## REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Handbook Operating Instructions for Radar Set AN/APG 32 and AN/APG-32A, TO 11F35-2-12-1, (Mar. 1, 1954 - revised Sept. 1, 1956). UNCLASSIFIED.
- 2) U. S. Air Force Specification MIL-R-5893
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-578(\*)/ARA-25

FREQUENCY: VHF and UHF bands, 225 - 400 mc.

COGNIZANT AGENCY: U. S. Navy.

TYPE: Cavity-backed rhombic slot.

DESCRIPTION: Antenna AS-578/ARA-25 consists of a rhombic-shaped, slot-type element backed by a cavity. The antenna, together with a drive motor and related equipment, is enclosed in an aluminum case with a plastic cover. The approximate overall antenna assembly is 16 inches long,  $14\frac{1}{2}$  inches wide, and 6 inches deep.

## BEAM DATA:

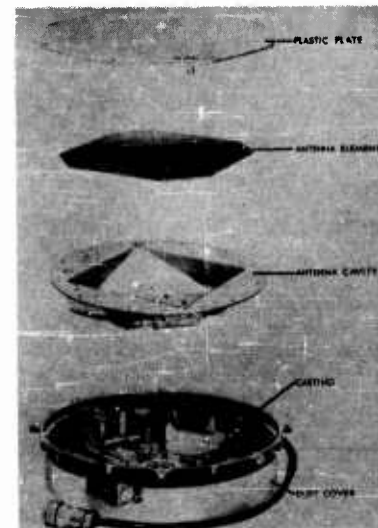
Beam type - Cardioid.

SCAN DATA: The antenna has  $360^{\circ}$  mechanical rotation.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Direction-Finding Set AN/ARA-25. Equipment function-direction finding.

MISCELLANEOUS: Antenna AS-578(\*)/ARA-25 designates antennas AS-578/ARA-25 and AS-578A/ARA-25, which are electrically and mechanically interchangeable. Antenna AS-578A/ARA-25 is only 4 inches deep and differs from AS-578/ARA-25 in arrangement and design.



AS-578(\*)/ARA-25

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MANUFACTURER: Webster-Chicago Corp., procurement contracts NOas-53-263 and NOas-56-401.

STOCK NUMBERS:

AS-578/ARA-25...Federal Stock Number 5826-285-0772.  
AS-578A/ARA-25...Federal Stock Number 5826-524-4363.

REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Handbook Service Instructions for Direction Finder Group AN/ARA-25, TO 12R1-2ARA25-2, (Dec. 1, 1952 - revised April 30, 1958). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AS-579/APG

FREQUENCY: SHF band, 8500 - 9600 mc.

TYPE: Paraboloidal reflector.

DESCRIPTION: The antenna is a 14-inch paraboloidal reflector.

BEAM DATA:

Beam type - Pencil.

SCAN DATA: Conical scan is produced by rotating the reflector at 2100 revolutions per minute. Palmer scan is used for search and covers  $\pm 80^\circ$  in azimuth and  $\pm 45^\circ$  in elevation in 3-1/2 seconds. The antenna axis can be servo-positioned between the limits of  $\pm 60^\circ$  in azimuth and  $\pm 45^\circ$  in elevation during tracking operations.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Sets AN/APG-41A and AN/APG-42. Equipment function - fire control.

COGNIZANT AGENCY: WADC (AEL-51-297).

MANUFACTURERS: Dalmo-Victor Co.; General Electric Co.

STOCK NUMBER: Federal Stock Number 1270-347-1354.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

ANTENNA AS-580(\*)/ARN-30

FREQUENCY: VHF band, 108 - 135 mc.

TYPE: Dipole.

DESCRIPTION: This antenna system consists of a swept-back dipole and a straight dipole that are set in a common, V-type streamlined rubber block, which in turn is fastened to an aluminum pedestal. The straight dipole antenna is for use with glide-slope receivers when such equipment is installed in the aircraft. The swept-back V-dipole antenna is used for VOR, VAR, and localized signal reception. Both antennas terminate in individual UG-291/U connectors, located in the antenna base. The signal from the antenna is transferred through an RG-58/U cable of 53 ohms nominal impedance to the input circuit of the receiver. The antenna is installed in a forward position on the aircraft fuselage.

BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Receiving Set AN/ARN-30. Equipment function - navigation, surface reference.

MISCELLANEOUS: The AS-580(\*)/ARN-30 antenna represents the AS-580/ARN-30 and the AS-580A/ARN-30. The dipole of the AS-580/ARN-30 has

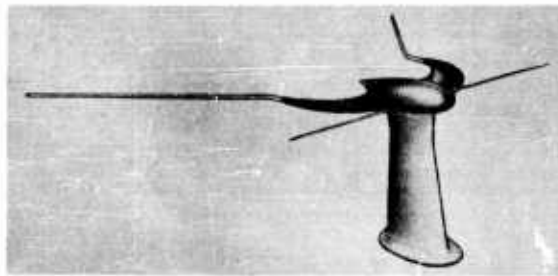
a slightly different length to produce broadband reception over the glide path band.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Aircraft Radio Corp., type A-13A, part drawing 15512, procurement contract NOas-12281 (BuAer).

STOCK NUMBERS:

AS-580/ARN-30...Federal Stock Number 5826-692-2754.  
AS-580A/ARN-30...Federal Stock Number 5826-296-2318.



AS-580(\*)/ARN-30

## REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Handbook Operation Instructions for Radio Receiving Set AN/ARN-30, TO 12R5-2ARN30-1, (June 15, 1953). UNCLASSIFIED.
- 2) U. S. Air Force and Bureau of Aeronautics, Handbook Service Instructions for Radio Receiving Set AN/ARN-30A, AN/ARN-30B, and AN/ARN-30C, TO 12R5-2ARN30-22, (Nov. 15, 1958). UNCLASSIFIED.
- 3) U. S. Air Force and Bureau of Aeronautics, Handbook Operation Instructions for Radio Receiving Set AN/ARN-30A, AN/ARN-30B, and AN/ARN-30C, AN 16-30ARN30-1, (Nov. 1, 1958). UNCLASSIFIED.
- 4) U. S. Department of Defense Nomenclature Card.

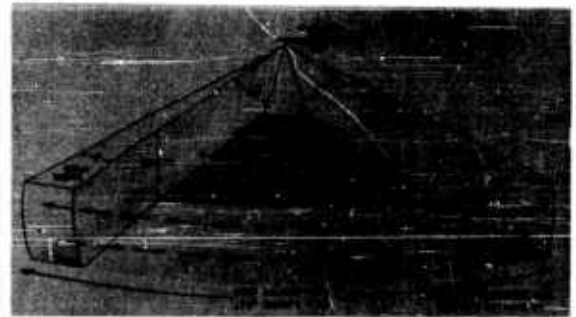
## ANTENNA AS-602/APS-19B

FREQUENCY: SHF band, 9310 - 9415 mc.

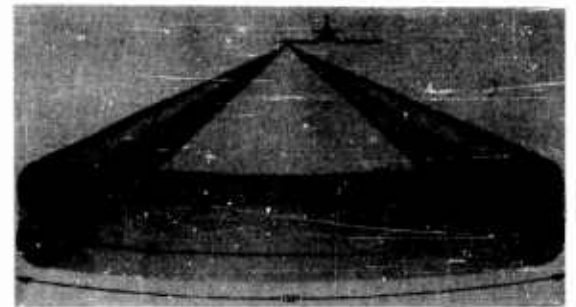
TYPE: Paraboloidal reflector with waveguide horn feed.

DESCRIPTION: The antenna consists of a paraboloidal reflector, a waveguide horn feed, and drive motor and assembly. The antenna is designed to operate in 5 separate modes: search, intercept, acquisition, aim, and beacon. In the search mode, the beam is distorted by a beam deflector to give a csc<sup>2</sup> type of beam for 70° in the vertical plane; the beam can be tilted from +15° to -20° and scans either 135° or 30° sectors in the azimuth plane at 15 cycles per minute. In the intercept mode of operation, the feed horn revolves around the center axis at 1200 revolutions per minute under the control of the nod motion, which deflects the horn at a steadily increasing angle, so that the beam traces out a spiral; for this operation, the reflector is locked at zero tilt. The beam is a pencil type, 5° in diameter. The antenna will scan either 30° or 135° in this mode, traversing any object in the field of view 60 times per minute. In the acquisition mode, the feed horn moves from side to side as in search, except that a double-line scan

is produced. The 5° pencil beam is displaced 10° vertically at the end of each horizontal sweep, and gives 10° vertical coverage and either 30° or 135° coverage in azimuth. In the aim operation, the antenna scans spirally with a field of only 30°.



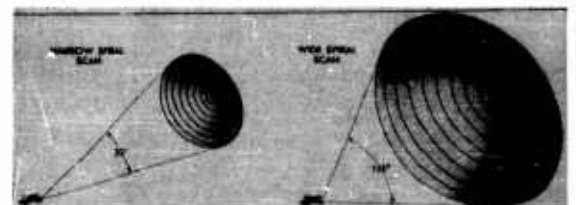
AS-602/APS-19B Search Scan Space Diagram



AS-602/APS-19B Acquisition Scan Space Diagram



AS-602/APS-19B Antenna Assembly



AS-602/APS-19B Spiral Scan Space Diagram



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INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-19B.  
Equipment function - search, air; search, surface; and radar beacon.

MISCELLANEOUS: The antenna for the AN/APS-19C (AS-630/APS-19C) is similar to the AS-602/APS-19B.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Procurement contract NOa(S)51-486.

REFERENCE:  
U. S. Air Force, Bureau of Aeronautics, Handbook Service Instructions for Radar Set AN/APS-19B and Radar Set AN/APS-19C, AN 16-30APS19-42, (Oct. 15, 1955). UNCLASSIFIED.

ANTENNA AS-617/APS-33F

FREQUENCY: SHF band, 9310 - 9430 mc.

TYPE: Modified cut paraboloidal reflector fed by a horn.

DESCRIPTION: The antenna assembly houses, in addition to the radiating system and azimuth drive motor and its control circuits, the azimuth-sweep synchro, the azimuth follow-up synchro, the azimuth torque motor, the azimuth-marker synchro, the resolver synchro, Servo Amplifier AM-113/APS-33 or AM-113A/APS-33, the tilt servo unit, scanner relays, carbon-pile voltage regulator, and Pressurizing Unit HD-16/AP.

The radiating system consists of a modified paraboloidal reflector fed by a horn. The horn assembly is rigidly attached to the reflector. Connection between the waveguide termination and the stationary section of waveguide is made through a tilt joint and a rotary joint. These joints are designed to transmit energy with low losses while the scanner is operating, and are made airtight to permit pressurizing the waveguide system. The antenna is tilt stabilized,  $\pm 30^\circ$  in pitch or roll, to keep the beam properly oriented with respect to the horizon.

BEAM DATA:

Half-power beamwidth - Horizontal -  $1.6^\circ$ .  
Beam type - Csc<sup>2</sup>.  
Polarization - Horizontal.

SCAN DATA: The antenna may rotate continuously at either 6 to 10 revolutions per minute or 20 to 28 revolutions per minute, or it may scan a sector through an arc  $60^\circ$  wide, at either 40 to 50 scans per minute or 90 to 100 scans per minute.

INSTALLATION: Airborne.

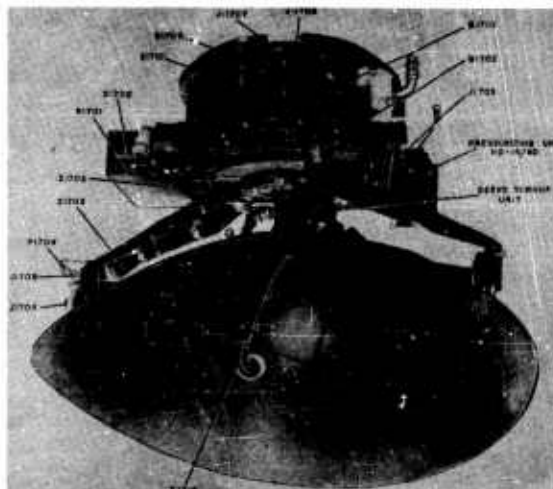
ASSOCIATED EQUIPMENT: Radar Set AN/APS-33F.  
Equipment function - navigation.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Philco Corporation, procurement contract BuAer NOas 52-616.

REFERENCES:

- 1) U. S. Air Force, Bureau of Aeronautics, Handbook Service Instructions for Radar Sets AN/APS-33, AN/APS-33A, AN/APS-33C, AN/APS-33D and AN/APS-33F, AN 16-30APS33-12, (Dec. 1, 1956). UNCLASSIFIED.
- 2) U. S. Navy, BuAer, Specification MIL-R-7724 (AER).
- 3) U. S. Department of Defense Nomenclature Card.



AS-617/APS-33F

ANTENNA AS-619/APS-58

FREQUENCY: SHF band, 9335 - 9405 mc.

TYPE: Paraboloidal reflector fed by a horn.

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DESCRIPTION: Antenna AS-619/APS-58 consists of a paraboloidal reflector, approximately 29 inches in diameter and 40 inches high, fed by a horn.

BEAM DATA:

Half-power beamwidth - Vertical -  $< 3^{\circ}$ .  
Horizontal -  $< 6^{\circ}$ .

Beam type - Pencil.  
Polarization - Horizontal.

SCAN DATA: The antenna may be rotated and tilted.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-58.  
Equipment function - search.

COGNIZANT AGENCY: WADC (AEL-52-79).

REFERENCE:

U. S. Department of Defense Nomenclature Card.

ANTENNA AS-624/APX

FREQUENCY: UHF band, 1020 - 1040 and 1080 - 1100 mc.

TYPE: Two stubs mounted in front of a flat-screen reflector.

DESCRIPTION: The antenna consists of two vertical, in-phase, quarter-wavelength radiating elements placed approximately a quarter wavelength in front of a flat-screen reflector. The stubs and reflector are mounted over a ground plane. The two stubs are fed by a permanently affixed, rigid, coaxial line which includes the necessary impedance transformer. The antenna is housed in a thin-walled, streamlined radome. A test probe is located symmetrically between the two dipoles for testing purposes.

BEAM DATA:

Gain - 3 db.  
Side-lobe attenuation -  $< 20$  db.  
Beam type - Pencil.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Interrogator Set AN/APX-28. Equipment function - IFF.

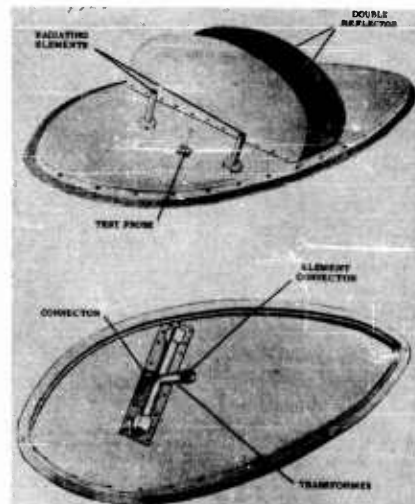
MISCELLANEOUS: Antenna AS-624/APX is used in conjunction with AS-625/APX and together they are mounted symmetrically about the airplane centerline and use a common flat-screen reflector. These antennas, which are mirror images of each other, are used alternately in the lobe-switched interrogator set.

COGNIZANT AGENCY: WADC (AEL-52-353).

STOCK NUMBER: Federal Stock Number 5895-307-3761A.

REFERENCES:

- 1) U. S. Air Force, Handbook Service Instructions for Interrogator Set AN/APX-28, TO 12P4-2APX28-2, (May 15, 1955 - revised Feb. 15, 1959). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.



AS-624/APX and AS-625/APX with Housing Removed

ANTENNA AS-625/APX

FREQUENCY: UHF band, 1020 - 1040 and 1080 - 1100 mc.

TYPE: Two stubs mounted in front of a flat-screen reflector.

DESCRIPTION: The antenna consists of two vertical, in-phase, quarter-wavelength radiating

elements placed approximately a quarter wavelength in front of a flat-screen reflector. The stubs and reflector are mounted over a ground plane. The two elements are fed by a permanently affixed, rigid, coaxial line which includes the necessary transformer. The antenna is housed in a thin-walled, streamlined radome. A test probe is located

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symmetrically between the two dipoles for testing purposes. See illustration given under antenna AS-624/APX.

BEAM DATA:

Gain - 3 db.  
Side-lobe attenuation - > 20-db.  
Beam type: Pencil.  
Polarization: Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Interrogator Set AN/APX-28. Equipment function - IFF.

MISCELLANEOUS: Antenna AS-625/APX is used in conjunction with AS-624/APX, and together they are mounted symmetrically about the airplane centerline and use a common flat-screen reflector. These antennas, which are

mirror images of each other, are used alternately in the lobe-switched interrogator set.

COGNIZANT AGENCY: WADC (AEL-52-354).

STOCK NUMBER: Federal Stock Number 5895-307-3764A.

REFERENCES:

- 1) U. S. Air Force, Handbook Service Instructions for Interrogator Set AN/APX-28, TO 12P4-2APX28-2, (May 15, 1955 - revised Feb. 15, 1959). UN-CLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AS-628/APS-31C

FREQUENCY: SHF band, 9320 - 9430 mc.

TYPE: Modified cut paraboloidal reflector fed by a horn.

DESCRIPTION: The radiating system consists of a modified cut paraboloidal reflector fed by a horn-type radiator that is fixed with respect to its reflector and is mounted on the transmitter-receiver system associated with the antenna. The antenna is line-of-sight stabilized. Connection to the stationary section of the waveguide is made through a tilt joint and a rotary joint.

BEAM DATA:

Half-power beamwidth - Vertical -  $3.4^\circ$ .  
Horizontal -  $4^\circ$ .  
Beam type - Pencil.  
Polarization - Horizontal.

SCAN DATA: Four possible azimuth scan modes are as follows:

- (1)  $50^\circ$  to  $60^\circ$  sector scan at 45 to 55 scans per minute;
- (2)  $50^\circ$  to  $60^\circ$  sector scan at 90 to 100 scans per minute;
- (3)  $120^\circ$  sector scan at 26 to 33 scans per minute;
- (4)  $120^\circ$  sector scan at 52 to 65 scans per minute.

The antenna may be manually tilted in elevation from  $+10^\circ$  to  $-20^\circ$ , and it is beam-tilt (line-of-sight) stabilized from  $+24^\circ$  to  $-30^\circ$  with a manual elevation setting of  $0^\circ$ .

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-31C. Equipment function - search, surface.

MISCELLANEOUS: Antenna AS-628/APS-31C is similar to AS-287C/APS-31 in construction and is electrically interchangeable with AS-553/APS-31B. There are three major

differences in the AS-628/APS-31C and AS-287C/APS-31. The AS-628/APS-31C has a larger dish, a different horn, and the mechanical stops are set to limit the antenna to an arc of  $120^\circ$ .

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: The Dalmo Victor Company, part number 18OR17600, procurement contract NOA(s)52-467.

REFERENCES:

- 1) U. S. Air Force, Bureau of Aeronautics, Handbook Service Instructions for Radar Sets AN/APS-31, AN/APS-31A, AN/APS-31B, AN/APS-31C, TO 12P6-2APS31-2, (Sept. 1, 1953 - revised Feb. 1, 1956). UN-CLASSIFIED.



AS-628/APS-31C

2) U. S. Air Force, Bureau of Aeronautics, Handbook Operation Instructions for Radar Sets AN/APS-31, AN/APS-31A, AN/APS-31B, AN/APS-31C, TO 12P6-2APS31-11, (Mar. 15, 1954 - revised Nov. 1, 1958). UNCLASSIFIED.

3) U. S. Department of Defense Nomenclature Card.

ANTENNA AS-630/APS-19C

FREQUENCY: SHF band, 9310 - 9415 mc.

TYPE: Modified paraboloidal reflector with waveguide horn feed.

DESCRIPTION: The antenna consists of a modified paraboloidal reflector, a waveguide horn feed, and drive motor and assembly. The antenna is designed to operate in 2 separate modes: search and beacon. The reflector is shaped to give a  $csc^2$  type of beam, probably about  $70^\circ$  in elevation. The beam may be tilted between  $3^\circ$  above and  $5^\circ$  below the horizon. The antenna scans sectors of either  $30^\circ$  or  $110^\circ$ . In the wide scan mode, the antenna oscillates at 15 complete cycles per minute; in the narrow scan mode, 60 complete cycles per minute. The radar set is encased in a nacelle which mounts beneath the wing of an aircraft.

INSTALLATION: Airborne.

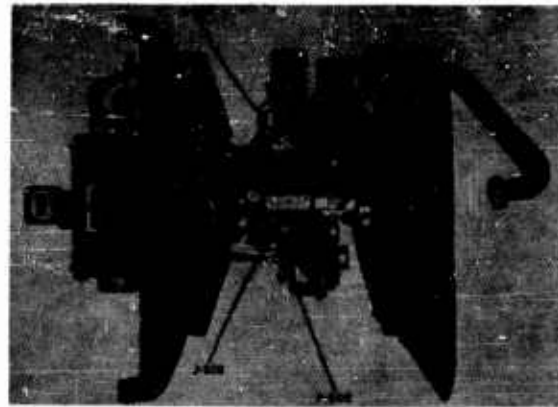
ASSOCIATED EQUIPMENT: Radar Set AN/APS-19C. Equipment function - search, air; search, surface; and radar beacon.

MISCELLANEOUS: The AS-630/APS-19C antenna is similar to the AS-602/APS-19B antenna.

COGNIZANT AGENCY: U. S. Navy and U. S. Air Force.

REFERENCE:

U. S. Air Force, Bureau of Aeronautics, Handbook Service Instructions for Radar Sets AN/APS-19B and AN/APS-19C, AN 16-30APS19-42, (Oct. 15, 1955). UNCLASSIFIED.



AS-630/APS-19C

ANTENNA AS-638/A

FREQUENCY: VHF and UHF bands, 225 - 515 mc; VSWR < 1.0; 950 - 1215 mc, VSWR < 1.3.

TYPE: Composite blade.

DESCRIPTION: This is a 52-ohm composite blade antenna with two separate inputs for coaxial feed: the input for the 225- to 515-mc section is a UG-58/U receptacle; the input for 950- to 1215-mc section is a UG-570/U receptacle. A filter system (required but not included) provides interference-free operation of associated equipments. The antenna is  $8\frac{1}{4}$  inches long,  $2\frac{5}{8}$  inches wide, and  $18\frac{25}{32}$  inches high.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Sets AN/ARC-27 and AN/ART-28. Equipment function - communications. Radar Set AN/AFX-6. Equipment function - IFF.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Airborne Instruments Laboratory, Inc., procurement contract NOa(s)-10612.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-652/APN-59

MAJOR COMPONENTS: 1 Antenna Reflector AT-559/APN-59, 1 feed horn, 1 Antenna Pedestal AB-410/APN-59.

FREQUENCY: SHF band, 9305 - 9385 mc.

TYPE: Paraboloidal reflector fed by a horn, or modified paraboloidal reflector fed by a horn.

DESCRIPTION: Antenna AS-652/APN-59 is a horn-fed reflector. The reflector is made up of two sections and has overall dimensions of 18 inches by 18 inches. The upper section of the reflector is the upper half of a paraboloid. The lower portion of the assembly (designated AT-559/APN-59) consists of two differently shaped sections either of which can be selected to complete the reflector. One of the sections is the lower half of the paraboloid mentioned above, and the other is a spade-shaped section. The two sections are so mounted that the desired lower section may be rotated into position below the upper section. When a pencil beam is desired, the lower paraboloidal half is selected. When a  $csc^2$  type beam is desired, the paraboloidal lower section is rotated away and the spade-shaped section is rotated into position. Connections from the antenna pedestal to the reflector assembly are made through a circular waveguide and slip rings on the antenna baseplate.

BEAM DATA:

Beam Type	Half-power Beamwidth	
	Vertical	Horizontal
$csc^2$	-	5°
pencil	5°	5°

SCAN DATA: The antenna can be rotated contin-

uously either clockwise or counterclockwise at the rate of 12 to 45 revolutions per minute. It can also be set to sector-scan through a horizontal angle whose magnitude can be selected in 30° steps from 21° to 291°. The antenna reflectors are gyrostabilized to offset changes in aircraft attitude ranging up to 15° in pitch and 30° in roll. An electromechanical tilt mechanism makes it possible to raise or depress the beam from 10° above to 15° below the horizon.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar set AN/APN-59. Equipment function - search, surface; navigation; and radar, beacon.

MISCELLANEOUS: AS-652/APN-59 is similar to but not interchangeable with antenna AS-653/APN-59.

COGNIZANT AGENCY: WADC (AEL-52-765).

MANUFACTURER: Sperry Gyroscope Company.

STOCK NUMBER: Federal Stock Number 1660 5841-536-0229 (for AS-652/APN-59).

REFERENCES:

- 1) U. S. Air Force, Handbook Operating Instructions for Radar Set AN/APN-59, TO 12P5-2APN59-1, (June 30, 1956 - revised Mar. 15, 1957). UNCLASSIFIED.
- 2) U. S. Air Force, Handbook Service Instructions for Radar Set AN/APN-59, TO 12P5-2APN59-2, (Aug. 31, 1956 - revised June 15, 1958). UNCLASSIFIED.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-653/APN-59

MAJOR COMPONENTS: 1 Antenna Reflector AT-560/APN-59, 1 feed horn, 1 Antenna Pedestal AB-410/APN-59.

FREQUENCY: SHF band, 9305 - 9385 mc.

TYPE: Cut paraboloidal reflector fed by a horn or modified cut paraboloidal reflector fed by a horn.

DESCRIPTION: Antenna AS-653/APN-59 is a horn-fed reflector. The reflector, which has a perforated surface, is made up of two sections and has overall dimensions of 30 inches by 18 inches. The upper section is the upper half of a symmetrically cut paraboloid. The lower portion of the assembly (designated as AT-560/APN-59) consists of two differently shaped sections either of which can be selected to complete the reflector. One of the sections is the lower half of the symmetrically cut paraboloid mentioned above, and the

other section is a spade-shaped section. The two sections are so mounted that the desired lower section may be rotated into position below the upper section. When a pencil beam is desired, the paraboloidal section is selected. When a  $csc^2$  type beam is desired, the spade-shaped section is substituted for the paraboloidal section. Connections from the antenna pedestal to the reflector assembly are made through a circular waveguide and slip rings on the antenna base plate.

BEAM DATA:

Beam Type	Half-power Beamwidth	
	Vertical	Horizontal
$csc^2$	-	5°
pencil	3°	3°

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SCAN DATA: The antenna can be rotated continuously either clockwise or counterclockwise at the rate of 12 to 45 revolutions per minute. It can also be set to sector-scan through a horizontal angle whose magnitude can be selected in 30° steps from 21° to 291°. The antenna reflectors are gyrostabilized to offset changes in aircraft attitude ranging up to 15° in pitch and 30° in roll. An electromechanical tilt mechanism makes it possible to raise or depress the beam from 10° above to 15° below the horizon.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-59.  
Equipment function - search, surface; navigation; and radar, beacon.

MISCELLANEOUS: AS-653/APN-59 is similar to but not interchangeable with Antenna AS-652/APN-59.

COGNIZANT AGENCY: WADC (AEL-52-766).

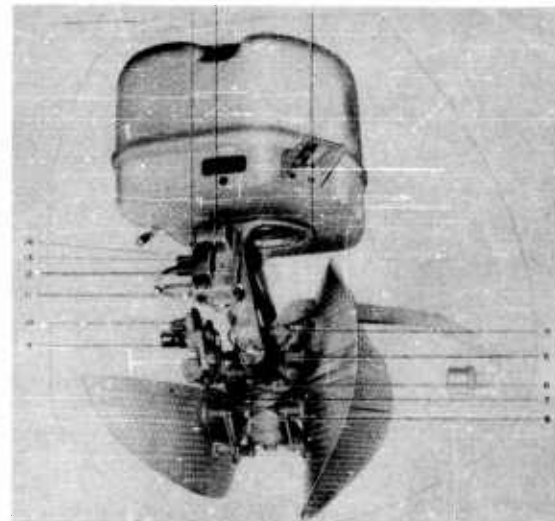
MANUFACTURER: Sperry Gyroscope Company.

STOCK NUMBERS:  
AS-653/APN-59...Federal Stock Number 1660  
5841-332-3872,  
AT-560/APN-59...Federal Stock Number 5841-  
674-6520.

REFERENCES:

- 1) U. S. Air Force, Handbook Operating Instructions for Radar Set AN/APN-59, TO 12P5-2APN59-1, (June 30, 1956 - revised Mar. 15, 1957). UNCLASSIFIED.

- 2) U. S. Air Force, Handbook Service Instructions for Radar Set AN/APN-59, TO 12P5-2APN59-2, (Aug. 31, 1956 - revised June 15, 1958). UNCLASSIFIED.
- 3) U. S. Department of Defense Nomenclature Card.



AS-653/APN-59

ANTENNA AS-654(\*)/ALA-6

FREQUENCY: VHF band, 65 - 250 mc; VSWR < 5.

TYPE: Double-loop antenna.

DESCRIPTION: AS-654(\*)/ALA-6 is an aluminum-cased motor-driven double-loop antenna which mounts directly to Antenna Drive TG-23/ALA-6. It is designed to receive horizontally polarized signals from 65 to 250 mc. It is remotely tuned by Antenna Control C-1246/ALA-6. The antenna weighs 12.5 pounds and is 16 by 13-1/2 by 12 inches. The assembly is housed in a radome.

BEAM DATA:

Beam type - Figure eight.  
Polarization - Horizontal.

SCAN DATA: The assembly can be rotated in azimuth at 150 or 300 revolutions per minute.

TUNING/MATCHING DEVICES: A variable capacitor for tuning the loop is housed in the center element of the loop structure. The tuning is remotely controlled.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Direction Finder Group AN/ALA-6. Equipment function - countermeasures, direction finding.

MISCELLANEOUS: This antenna is very similar in appearance to Antenna Assembly AS-222/APA-17B and is probably a slightly modified version of this antenna. AS-654(\*)/ALA-6 denotes two models, AS-654/ALA-6 and AS-654A/ALA-6. They differ in minor respects but are completely interchangeable.

COGNIZANT AGENCY: AEL-52-836, and AEL-56-716.

MANUFACTURER: Hoffman Laboratories, Inc., contracts AF 33(600)-19767 and AF 33(600)-31638.

STOCK NUMBERS:

AS-654/ALA-6 . . . Federal Stock Number 1660  
5826-284-7432,  
AS-654A/ALA-6 . . . Federal Stock Number 1660  
5826-547-3543.

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AS-654(\*)/AIA-6

## REFERENCES:

- 1) U. S. Air Force, Handbook Service Instructions for Direction Finder Group AN/AIA-6, TO 12P3-2AIA6-2, (Nov. 15, 1954 - revised Sept. 15, 1957). UNCLASSIFIED.
- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Direction Finder Group AN/AIA-6, TO 12P3-2AIA6-1, (May 1, 1954). UNCLASSIFIED.
- 3) Department of the Army, Directory of U. S. Army Signal Equipments Radio Direction Finding Equipment, TM 11-487D, (Mar. 1958). UNCLASSIFIED.

## ANTENNA AS-655/AIA-6

FREQUENCY: VHF and UHF bands, 140 - 1200 mc.

TYPE: Probably a vertical sleeve dipole and a V-type dipole.

DESCRIPTION: The antenna consists of a vertical sleeve-dipole radiator placed in front of a reflecting sheet of approximately parabolic cross section and a horizontal antenna made up of two horizontal elements arranged in a 100-degree "V" which is also backed up by reflecting sheets. The two antennas are mounted back-to-back beneath a circular mounting plate with the reflectors between them. The antennas are fed by 50-ohm coaxial cable through an antenna selection relay which allows either antenna to be connected according to the desired polarization. The assembly is rotated by Antenna Drive TG-23/AIA-6. The unit weighs 13-1/2 pounds and is 16-1/8 by 12-3/4 inches.

### BEAM DATA:

Gain - 2 db at 140 mc,  
4 db at 275 mc,  
15 db at 500 mc,  
20 db at 1000 mc.

Front-to-back ratio - 20 db.

Half-power beamwidth - at 500 mc at 1000 mc

Horizontal -	30°	15°
Vertical -	15°	25°

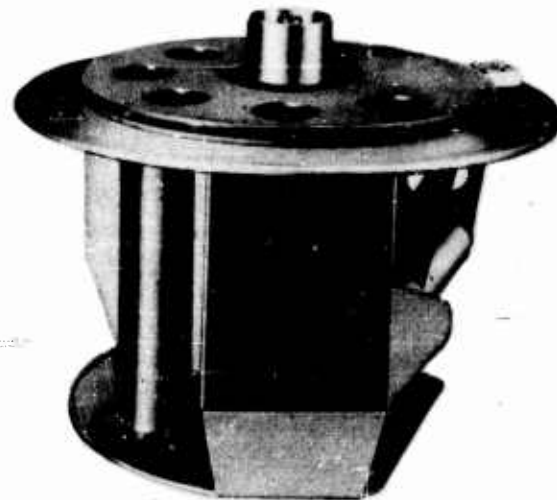
Polarization - Horizontal or Vertical.

SCAN DATA: The antenna can be rotated in azimuth at 150 or 300 revolutions per minute.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Direction Finder Group AN/AIA-6. Equipment function - countermeasures, direction finding.

MISCELLANEOUS: AS-655/AIA-6 is similar to AS-108B/AFA-17 and AS-545/AFA-17B.



AS-655/AIA-6

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COGNIZANT AGENCY: AEL-52-837.

MANUFACTURER: Hoffman Laboratories, Inc.,  
contract AF 33(600)-19767.

STOCK NUMBER: Federal Stock Number 1660 5826-217-1583.

## REFERENCES:

- 1) U. S. Air Force, Handbook Service Instructions for Direction Finder Group AN/ALA-6, TO 12P3-2ALA6-2, (Nov. 15, 1954 - revised Sept. 15, 1957). UNCLASSIFIED.

- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Direction Finder Group AN/ALA-6, TO 12P3-2ALA6-1, (May 1, 1954). UNCLASSIFIED.

- 3) Department of the Army, Directory of U. S. Army Signal Equipments Radio Direction Finding Equipment, TM 11-487D, (Mar. 1958). UNCLASSIFIED.

## ANTENNA AS-656/ALA-6

FREQUENCY: UHF and SHF bands, 1000 - 5000 mc;  
VSWR < 5.

MANUFACTURER: Hoffman Laboratories, Inc.,  
contract AF 33(600)-19767.

TYPE: Two paraboloidal reflectors fed by dipoles.

STOCK NUMBER: Federal Stock Number 1660 5826-217-1582.

DESCRIPTION: The assembly consists of two paraboloidal reflectors mounted back-to-back below a flat circular plate. Each of the paraboloidal reflectors is fed by a dipole placed at or near its focal point. The axis of one dipole is horizontal, and the axis of the other is vertical. A reflecting element is mounted in front of and parallel to each of the dipoles. The antennas are fed by 50-ohm coaxial cable through an antenna selection relay so that either antenna may be connected depending upon the polarization desired. The assembly is rotated by Antenna Drive TG-23/ALA-6. The unit weighs 9-1/2 pounds and is 20 by 20 by 13-1/2 inches.

## REFERENCES:

- 1) U. S. Air Force, Handbook Service Instructions for Direction Finder Group AN/ALA-6, TO 12P3-2ALA6-2, (Nov. 15, 1954 - revised Sept. 15, 1957). UNCLASSIFIED.
- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Direction Finder Group AN/ALA-6, TO 12P3-2ALA6-1, (May 1, 1954). UNCLASSIFIED.
- 3) Department of the Army, Directory of U. S. Army Signal Equipments Radio Direction Finding Equipment, TM 11-487D, (Mar. 1958). UNCLASSIFIED.

## BEAM DATA:

Gain - 19 db at 2000 mc.  
Front-to-back ratio - 20 db.  
Half-power beamwidth -  
Horizontal - 10° at 2500 mc.  
Vertical - 10° at 2500 mc.  
Polarization - Horizontal or Vertical.

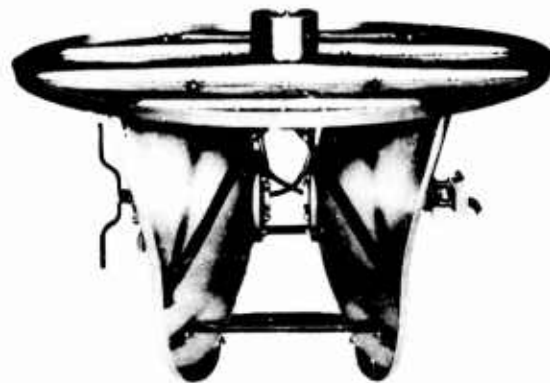
SCAN DATA: The antenna can be rotated in azimuth at 150 or 300 revolutions per minute.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Direction Finder Group AN/ALA-6. Equipment function - countermeasures, direction finding.

MISCELLANEOUS: AS-656/ALA-6 is similar to AS-186/APA-17.

COGNIZANT AGENCY: AEL-52-838.



AS-656/ALA-6

## ANTENNA AS-657/ALA-6

FREQUENCY: SHF band, 5000 - 10,750 mc.

TYPE: Cut paraboloidal reflector fed by an open-ended waveguide section.

DESCRIPTION: The antenna is a spade-shaped reflector fed by an open-ended waveguide section. The reflector has its axis of revolution inclined at an estimated 45-degree angle

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above the horizontal, and the feed directs the r-f energy vertically downward towards it. The waveguide section terminates in a type N connector and is fed by 50-ohm coaxial cable. The antenna is rotated by Antenna Drive TG-23/ALA-6. The antenna weighs 2.5 pounds (sic) and is 12-1/8 by 11 by 13-3/8 inches.

## BEAM DATA:

Gain - 20 db at 6000 mc.  
Front-to-back ratio - 20 db.  
Half-power beamwidth -  
     Horizontal - 10° at 6000 mc.  
     Vertical - 10° at 6000 mc.  
Polarization - Vertical, horizontal, or circular.

SCAN DATA: The antenna can be rotated in azimuth at 150 or 300 revolutions per minute.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Direction Finder Group AN/ALA-6. Equipment function - countermeasures, direction finding.

MISCELLANEOUS: AS-657/ALA-6 is similar to AS-247/ALA-17.

COGNIZANT AGENCY: AEL-52-839.

MANUFACTURER: Hoffman Laboratories, Inc., contract AF 33(600)-19767.

STOCK NUMBER: Federal Stock Number 1660 5826-284-6777.

## REFERENCES:

- 1) U. S. Air Force, Handbook Service Instructions for Direction Finder Group AN/ALA-6, TO 12P3-2ALA6-2, (Nov. 15, 1954 - revised Sept. 15, 1957). UNCLASSIFIED.

- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Direction Finder Group AN/ALA-6, TO 12P3-2ALA6-1, (May 1, 1954). UNCLASSIFIED.
- 3) Department of the Army, Directory of U. S. Army Signal Equipments Radio Direction Finding Equipment, TM 11-487D, (Mar. 1958). UNCLASSIFIED.



AS-657/ALA-6

## ANTENNA AS-665/APN-42

FREQUENCY: UHF band, 1600 - 1660 mc.

TYPE: Dipole.

DESCRIPTION: Little information is available on this antenna. Reference 1 indicates that it is a flush-mounted, dual dipole with one dipole for transmitting and one for receiving. This may mean it is of the cavity-backed slot type. The antenna has an input impedance of 50 ohms and is fed by coaxial cable. The peak power limitation is about one kilowatt. The overall assembly is 14 inches long, 10 inches wide, and 1.5 inches deep.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-42. Equipment function - navigation.

COGNIZANT AGENCY: AEL-52-935.

## REFERENCES:

- 1) Military Specification MIL-R-8224.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AS-669/ARN-34

MAJOR COMPONENTS: 1 Antenna AT-382/ARC,  
     1 Antenna AT-452/AR.

FREQUENCY: Antenna AT-382/ARC . . . LF and MF bands, 0.19 - 1.5 mc.

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TYPE: Antenna AT-382/ARC . . . Loop,  
Antenna AT-452/AR . . . Long wire.

DESCRIPTION: Antenna AT-382/ARC is an enclosed loop, 9 inches in diameter designed for coaxial leadin. It is designed to withstand wind velocities up to 200 miles per hour. Its relative position can be changed by using Antenna Control C-1113/ARC. Antenna AT-452/AR is a single wire designed for general airborne use.

INSTALLATION: Airborne (light aircraft).

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-3 $\frac{1}{4}$ .  
Equipment function - navigation, direction finding.

COGNIZANT AGENCY: U. S. Army (SCLC-5974).

MANUFACTURER: Aircraft Radio Corporation.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

ANTENNA AS-670/ARA-22

FREQUENCY: VHF and UHF bands, 225 - 400 mc.

TYPE: Frame.

DESCRIPTION: The nomenclature card states that this is a frame type antenna mounted flush with the skin of the aircraft. It is fed by a coaxial cable and measures 12 inches by 12 inches by 2-1/2 inches. The same reference states that antenna AS-670/ARA-22 is designed to have alternate directive radio frequency sense when the elements are properly switched and terminated by Lobe Switch SA-348/ARA-22.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Homing Group AN/ARA-22.

MISCELLANEOUS: AS-670/ARA-22 is similar to but not interchangeable with antenna AS-578/ARA-25.

COGNIZANT AGENCY: WADC (AEL-53-23).

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

ANTENNA AS-698/ARN-27

FREQUENCY: LF band, 0.095 - 0.105 mc.

TYPE: Loop.

DESCRIPTION: The antenna consists of two eight-inch loops mounted vertically and mutually perpendicular. The loops are non-rotating and cover the listed frequency range in ten 1-kc bands. The loops are housed in a fiberglass dome which is approximately 10 by 10 by 10 inches. The antenna weighs about 10 pounds.

BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Receiving Set AN/ARN-27. Equipment function - navigation.

COGNIZANT AGENCY: AEL-53-706.

MANUFACTURER: Federal Telecommunications Laboratories, contract AF 33(038)-22002.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

ANTENNA AS-724/APG-41B

FREQUENCY: SHF band, 8900 - 9600 mc.

TYPE: Paraboloidal reflector.

DESCRIPTION: The antenna is a paraboloidal reflector which is tilted and rotated about its feed point to produce conical scanning. No data are available on the feed. The overall antenna is 25 inches in length and 20-3/4 inches in diameter; it weighs 79 pounds.

SCAN DATA: The antenna produces conical scanning.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APG-41B.  
Equipment function - fire control.

MISCELLANEOUS: AS-724/APG-41B is similar to and mechanically but not electrically interchangeable with AS-579/APG.

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COGNIZANT AGENCY: AEL-54-275.

MANUFACTURERS: General Electric Company  
(A 7504852P1), contract AF 33(600)-23043.

REFERENCE:

U. S. Department of Defense Nomenclature  
Card.

ANTENNA AS-739/APX

FREQUENCY: UHF band, 1010 - 1110 mc; VSWR < 1.5 on a 52-ohm coaxial cable.

TYPE: Modified corner reflector fed by a stub.

DESCRIPTION: The radiating element is a quarter-wave stub protruding through a base plate intersecting the corner reflector plates at right angles. A second plate at the top intersects the reflector sides at some angle other than 90° so as to form a four-sided corner reflector. (See illustration). The antenna is mounted on AB-380/APX Antenna pedestal on the bottom of an aircraft fuselage.

BEAM DATA:

Half-power beamwidth - Vertical - 35°.  
Beam type - Fan.

SCAN DATA: The antenna is mechanically rotated at 30 revolutions per minute.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Mark 10 Transponder.  
Equipment function - air to air navigation of aircraft.

COGNIZANT AGENCY: USA AEL-54-324.

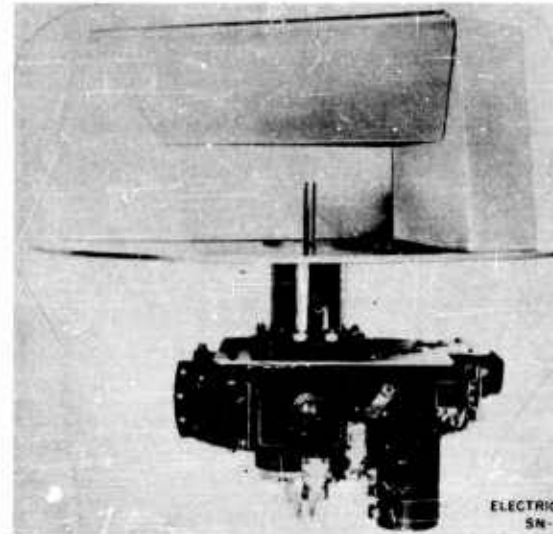
STOCK NUMBER: Federal Stock Number 5895-536-4206A.

REFERENCES:

- 1) U. S. Air Force, Bureau of Aeronautics, Handbook Service Instructions for Interrogator Set AN/APX-29, TO 12P4-2APX29-2, (May 1, 1955). UNCLASSIFIED.

- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Interrogator Set AN/APX-29, TO 12P4-2APX29-1, (Dec. 1, 1954). UNCLASSIFIED.

- 3) U. S. Department of Defense Nomenclature Card.



AS-739/APX

ANTENNA AS-786/A

FREQUENCY: VHF and UHF bands, 225 - 400 mc and 950 - 1215 mc; VSWR < 2.

TYPE: Dipole and stub.

DESCRIPTION: The AS-786/A is a dual antenna enclosed in a fiberglass envelope and filled with plastic foam for moisture proofing. The high frequency antenna is a dipole whose upper half is a top-loaded stub and whose lower half is a wide, flat blade. This blade is much larger than the stub and can be considered a ground plane for the stub antenna. The blade also functions as the top half of a vertically mounted dipole used in the lower band of frequencies. The two antenna elements are fed by individual

coaxial connectors. The characteristic impedance of the high frequency coaxial cable is 50 ohms. To excite the low-frequency antenna uniformly, two symmetrical feed points are provided. These feed points and their respective matching elements are fed from a T-junction located in the center of the antenna. (See illustration.) The antenna mounts inside a nonconducting vertical stabilizer tip of aircraft.

BEAM DATA: See radiation patterns.

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT:

Low frequency band - Airborne communications set AN/ARC-27. Equipment function - communications.

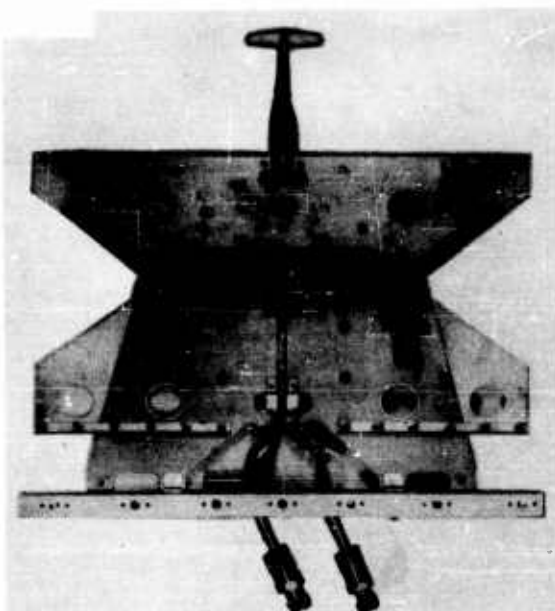
High frequency band - Airborne navigation aid AN/ARN-21. Equipment function - navigation, surface reference (TACAN). Radar AN/APX-6. Equipment function - IFF.

COGNIZANT AGENCY: U. S. Navy, SR-635

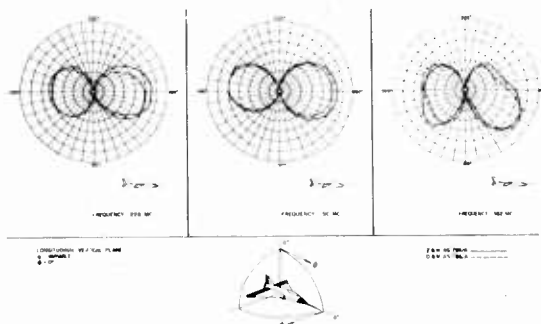
MANUFACTURERS: Dorn and Margolin, Inc., Westbury, Long Island, N. Y., part number 312 or CNI-1; Z. & W. Machine Products, Inc., Wickliffe, Ohio.

REFERENCES:

- 1) Airborne Antennas, Dorne and Margolin, Inc. UNCLASSIFIED.

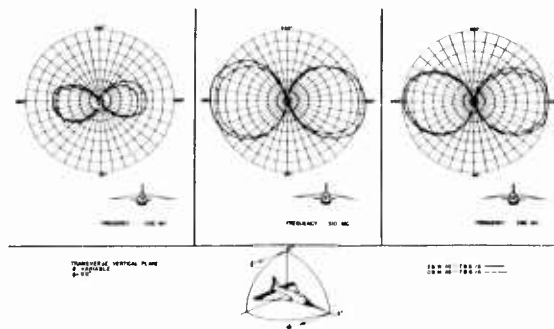


AS-786/A

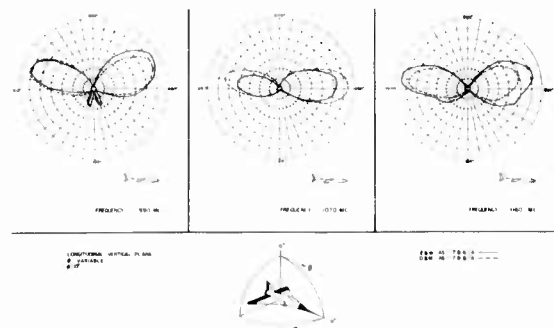


AS-786/A UHF Longitudinal Vertical Radiation Patterns

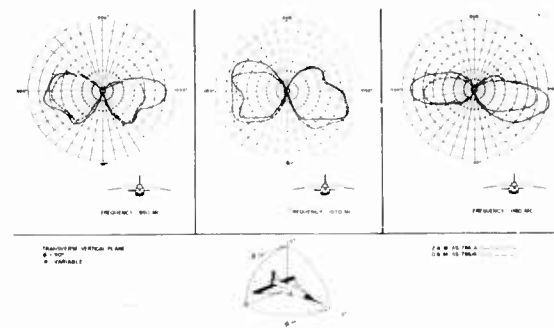
- 2) Evaluation of the AS-786/A Tail Cap Dual Antenna Manufactured by Z&W Machine Products, Report No. 1. Patuxent River, Maryland: Naval Air Test Center, U. S. Naval Air Station, (Jan. 16, 1957), ASTIA Report No. AD 122035. UNCLASSIFIED
- 3) U. S. Department of Defense Nomenclature Card.



AS-786/A UHF Transverse Vertical Radiation Patterns



AS-786/A L-Band Longitudinal Vertical Radiation Patterns



AS-786/A L-Band Transverse Vertical Radiation Patterns

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## ANTENNA AS-850/APN-107

FREQUENCY: SHF band, 9307 - 9313 mc, 9335 - 9415 mc.

TYPE: Modified paraboloidal reflector; i.e., "snow-shovel" type.

DESCRIPTION: The antenna is fed by a 50-ohm coaxial cable and bolts directly to the aircraft fuselage. The overall reflector is approximately 18 x 45 inches and is 37 inches high. It is stabilized in both roll and pitch.

BEAM DATA:  
Beam type - Csc<sup>2</sup>-type pattern.

SCAN DATA: The antenna is rotated by an electric motor.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar. Equipment function - search in high frequency, and beacon in low frequency.

MISCELLANEOUS: This antenna is similar to but not interchangeable with Antenna AS-653/APN-59.

COGNIZANT AGENCY: WADC (AEL-56-828).

MANUFACTURER: Sperry Gyroscope Company; Glenn L. Martin Company, contractor.

REFERENCES:  
1) Glenn L. Martin Company - N/N PB852000001, Specification No. 837.  
2) U. S. Department of Defense Nomenclature Card.

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## ANTENNA AS-851/APX

FREQUENCY: UHF band, 1020 - 1040 mc, 1080 - 1100 mc.

TYPE: Array.

DESCRIPTION: This antenna is constructed as an array and is fed by a 52-ohm coaxial cable. It is designed to mount on the top or the bottom of the fuselage.

BEAM DATA:  
Gain - > 6 db.  
Half-power beamwidth - 30°.

SCAN DATA: The antenna has 360° mechanical rotation at 24 to 30 revolutions per minute.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar AN/APX-29A. Equipment function - probably IFF.

COGNIZANT AGENCY: WADC (AEL-56-848).

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

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## ANTENNA AS-868/APS-76

Cancelled; never procured, stocked or issued.

## ANTENNA AS-869/APS-77

Cancelled; never procured, stocked, or issued.

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## ANTENNA AS-872/APA-137

FREQUENCY: UHF band, 435 mc.

TYPE: Horn.

DESCRIPTION: The reference indicates that the antenna is a horn with special provisions for mounting Antenna Assembly AS-295B/UF.

SCAN DATA: The reference indicates that the horn is moveable so that it produces a rotating pattern.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APA-137.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Goodyear Aircraft Corporation, procurement contract NOas 54-900.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

UNCLASSIFIED

ANTENNA AS-874/APX

FREQUENCY: UHF band, 1020 - 1040 mc, 1080 - 1100 mc.

TYPE: Probably paraboloidal reflector.

DESCRIPTION: The reflector is 20 inches in diameter and 8 inches deep.

SCAN DATA: The antenna rotates.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APX-29A.  
Equipment function - IFF.

MISCELLANEOUS: This antenna is electrically,

but not mechanically, interchangeable with Antenna Group OA-1105/APX.

COGNIZANT AGENCY: WADC (AEL-56-1320).

MANUFACTURERS: Stewart Warner Corporation,  
procurement contract AF 33(600)-31685.

STOCK NUMBER: Federal Stock Number 5895-566-9256A

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

ANTENNA AS-875/ARN-6

FREQUENCY: LF and MF, 0.100 - 1.750 mc.

TYPE: Loop.

DESCRIPTION: Loop Antenna Assembly AS-875/ARN-6 consists of an electrostatically shielded loop antenna, a loop drive motor, a self-synchronous electric transmitter, and a quadrantal error deviation compensator. This entire assembly is mounted in a shallow housing, 10 inches in diameter and 5-5/16 inches deep, and is hermetically sealed against moisture and fungus penetration to altitudes in excess of 70,000 feet. The assembly is terminated for coaxial lead-in. It can be mounted either externally or recessed beneath the skin of the airframe.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compass AN/ARN-6.  
Equipment function - navigation, direction finding.

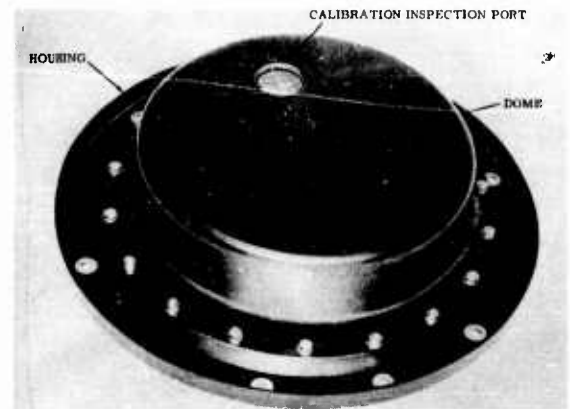
MISCELLANEOUS: This antenna is designated by U. S. Air Force as a replacement standard for AS-313B/ARN-6.

COGNIZANT AGENCY: WADC (AEL-56-1356).

MANUFACTURER: The Magnavox Company, part number 708107-3, procurement contract AF 33(600)-30860.

REFERENCES:

- 1) Private Correspondence.
- 2) U. S. Department of Defense Nomenclature Card.



AS-875/ARN-6  
(Courtesy of the Magnavox Company)

ANTENNA AS-885/ARA-45

Cancelled on 26 June 1957. This item was never procured, stocked, or issued.

ANTENNA AS-901/ARN-60

Cancelled 2 January 1958; never used.

UNCLASSIFIED

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ANTENNA AS-909/ARA-48

FREQUENCY: VHF and UHF bands, 225-400 mc.

TYPE: Cavity-backed slot.

DESCRIPTION: The antenna assembly consists of a directional receiving element, an antenna drive motor rate generator, a synchro generator, a lobing switch and the associated gear assembly for proper operation of these components. The antenna is a cavity-backed complementary slot radiator which is formed by the position of a rhombic-shaped metal plate located inside a conducting plane. The antenna element is terminated alternately at either end by the use of the antenna lobing switch thus reversing the radiation pattern in space ten times each second, and, effectively, square-wave modulating the incoming signal. The degree of modulation is proportional to the angle at which the incoming signal is received by the antenna element. The complete assembly is contained in a 10-1/2 x 10-1/2 x 3-5/8 inch housing. Weight is 9-1/2 pounds.

BEAM DATA:

Beam type - Cardioid.

INSTALLATION: Airborne, flush-mounted on aircraft surface.

ASSOCIATED EQUIPMENT: Radio set AN/ARA-48.  
Equipment function - direction finding.

COGNIZANT AGENCY: WADC (AEL-57-615).

MANUFACTURERS: Collins Radio Company, part number 137D-1.

REFERENCES:

- 1) Direction Finder Group DF-301, CDS-318B. Cedar Rapids, Iowa: Collins Radio Company (1958). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.



AS-909/ARA-48 Partially Disassembled

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ANTENNA AS-919/ARA-49

Cancelled 2 January 1958, never used.

ANTENNA AS-924/ARA-50

Cancelled 10 January 1958.

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ANTENNA AS-959/ASQ-29

FREQUENCY: SHF band, 8800 mc.

TYPE: Probably a mattress antenna.

DESCRIPTION: Little information is available on this antenna. The reference gives the following information: "...Linear array type, style 26 (closest shape) Reference Drawing Group 11; ...moveable: rotating and tilting movement pattern; ... flange mounted; stabilized, only waveguide pressurized, weight 46 pounds. ..."

INSTALLATION: Airborne.

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ASSOCIATED EQUIPMENT: AN/ASQ-29 and AN/ASQ-29A.

COGNIZANT AGENCY: N-58-Q-1254.

MANUFACTURER: General Precision Laboratory, code 84347, contracts NOa(s)57-161 and NOa(s)55-535.

REFERENCES:

- 1) Request for Nomenclature Sheet.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AS-960/ASQ-29

TYPE: Paraboloidal reflector.

DESCRIPTION: This is a pedestal-mounted anten-

UNCLASSIFIED

na which is electromechanically stabilized in roll, pitch, and azimuth. It can be automatically set to full pitch for radar altitude measurements.

SCAN DATA: AS-960/ASQ-29 provides 150° sector scan and 25° slow or rapid scan; it is equipped with a pattern control drive for high- and low-altitude operation.

INSTALLATION: Airborne (radome).

ASSOCIATED EQUIPMENT: Minelaying Navigational Set AN/ASQ-29 and 29A. Equipment Function - navigation.

MISCELLANEOUS: This antenna is similar to but not interchangeable with antenna AS-473B/ASB-1; the roll and pitch servos are modified to accept 1:1 speed ratio, and the synchros use 26 volts instead of 27 volts.

COGNIZANT AGENCY: U. S. Navy (N-58-Q-1266).

MANUFACTURER: Philco Corporation, procurement contract NOas 57-161 & 55-535.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

ANTENNA AS-963/ARD-13

FREQUENCY: LF and MF bands, 0.090 - 1.800 mc.

TYPE: Loop.

DESCRIPTION: The AS-963/ARD-13 antenna is a moveable loop enclosed in an air-tight dome. It is mounted either flush or semi-flush with the aircraft fuselage. When mounted semi-flush the antenna is covered by an epoxy-glass fairing which is impregnated with a conducting material to provide static drain.

SCAN DATA: The antenna has 360° mechanical rotation in azimuth.

INSTALLATION: Airborne.

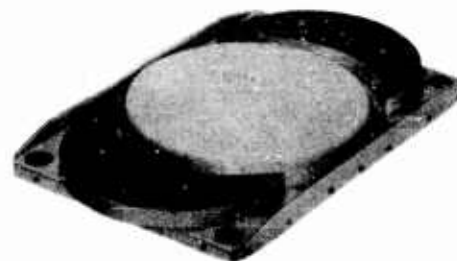
ASSOCIATED EQUIPMENT: Direction Finder Set AN/ARD-13. Equipment function - direction finding.

COGNIZANT AGENCY: U. S. Navy (USN-58-Q-1353).

MANUFACTURER: Collins Radio Company, type number 137A-2.

REFERENCES:

- 1) Collins DF-202 Automatic Direction Finder System, Part No. 056-0585-00. Cedar Rapids, Iowa: Collins Radio Company (Jan. 1960). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.



AS-963/ARD-13

ANTENNA AS-972/ASQ-19

FREQUENCY: VHF and UHF bands, 225 - 400 mc.

TYPE: Slot, U-shaped, slot-type cavity.

DESCRIPTION: AS-972/ASQ-19 is a fixed, flange, mounted antenna.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Special purpose transmitting-receiving system AN/ASQ-19.

MISCELLANEOUS: This antenna is electrically

identical with AS-947/ASQ-19 and uses the same servo amplifier and servo tuning assembly. They differ only in the parts mating with the airplane contour.

COGNIZANT AGENCY: U. S. Navy (N-58-Q-1513).

MANUFACTURER: McDonnell Aircraft Corporation, procurement contract NOas 55-272.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

ANTENNA AS-985/APS-88

FREQUENCY: SHF band, 9400 - 9500 mc; VSWR < 1.7.

TYPE: Cut paraboloidal reflector fed by a horn.

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DESCRIPTION: The antenna consists of a cut-paraboloidal reflector that may be modified in shape by the attachment of an additional curved metal plate (called a spoiler) to its lower surface. The antenna produces a pencil beam when used without the spoiler; it produces a csc<sup>2</sup> beam with the spoiler. The reflector is fed by a pyramidal horn attached to the end of a waveguide section. The waveguide section protrudes through the surface of the reflector and is bent so that the horn opening faces the reflector. The antenna weighs 57 pounds and is 41-3/4 inches wide by 31-1/4 inches high. It mounts on a pedestal which contains the equipment for stabilization of the antenna.

BEAM DATA:

Gain - 33.5 db for pencil beam.

31.5 db for csc<sup>2</sup> beam.

Half-power beamwidth - Vertical - 5° for pencil beam.  
Horizontal - 2.6° for pencil beam. 3.2° for csc<sup>2</sup> beam.

Side-lobe attenuation - 20 db.

Beam type - Pencil (without spoiler).  
Csc<sup>2</sup> from 1.5° to 18° (with spoiler).

Polarization - Horizontal.

SCAN DATA: The antenna will scan through 360° in azimuth at speeds of 6 ± 1 revolutions per minute. It also has provisions for a sector scan whose width is operator-adjustable from 40° to 140°. The center of the sector is adjustable through 360°. The sector scan speed is 6 cycles per minute only. In addition to the sector scan described, provisions are made for a fixed sector width, adjustable in 30° increments to a maximum of 261°, for nose-mounted installations. The antenna can be stopped within ±1/2° of any position for search operation. The beam may be tilted, with respect to its horizontal reference axis, from -15° to +10°.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar set AN/APS-88.  
Equipment function - search.

MISCELLANEOUS: The antenna is stabilized through ±25° in the roll axis and ±15° in the pitch axis. Maximum error at any combination is ±1°.

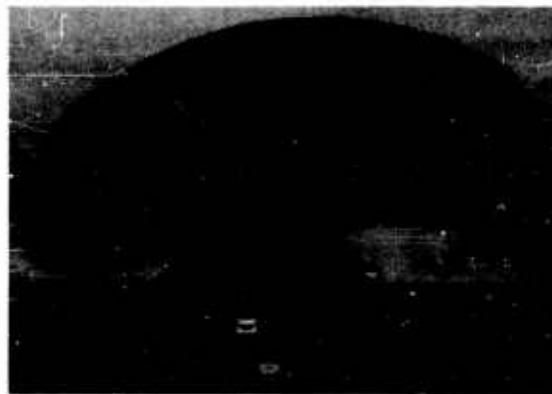
COGNIZANT AGENCY: N-58-Q-2046.

MANUFACTURERS: Bendix Aviation Corporation,  
Navy contract NOas-58-692.

STOCK NUMBERS: Federal Stock Number 5841-716-3983.

REFERENCES:

- 1) Navy Specification MIL-R-21119(Aer).
- 2) Navy Publications NAVAER 16-30-APS-88-3.
- 3) Navy Publications NAVAER 16-30-APS-88-2.
- 4) U. S. Department of Defense Nomenclature Card.



AS-985/APS-88

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ANTENNA AS-1058/APW-23

FREQUENCY: X-band.

TYPE: Paraboloidal reflector with horn feed.

DESCRIPTION: Antenna AS-1058/APW-23 consists of a 24-inch paraboloidal reflector fed by a horn that nutates at 30 cycles per second. The overall assembly is 30 inches by 48 inches and weighs 230 pounds.

SCAN DATA: The antenna will track the drone transponder through 360° in azimuth and approximately 120° in elevation.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Command-Guidance Interrogator Set AN/APW-23. Equipment function - guidance, command.

COGNIZANT AGENCY: WADC (AEL-59-608).

MANUFACTURER: Sperry Gyroscope Company, contract AF 33(600)-37918.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

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# UNCLASSIFIED

## ANTENNA AS-1059/ASQ-19

FREQUENCY: VHF and UHF bands, 225 - 400 mc.

INSTALLATION: Airborne.

TYPE: Cavity-backed slot.

ASSOCIATED EQUIPMENT: AN/ASQ-19. Equipment function - direction finding.

DESCRIPTION: Antenna AS-1059/ASQ-19 differs from the AS-909/ARA-18 antenna only in the addition of a potentiometer to provide another read-out feature. See AS-909/ARA-18 for a complete description.

COGNIZANT AGENCY: N-59-Q-2200.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

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## ANTENNA AS-1064/APX-39

FREQUENCY: SHF band, 9260 - 9340 mc; VSWR < 1.35.

circularly polarized signals; it transmits counterclockwise circularly polarized signals.

DESCRIPTION: The reference listed below indicates that the antenna is of one-piece construction, occupies 0.03 cubic feet of space, and weighs 1.25 pounds. The antenna is mounted in the vertical stabilizer of aircraft.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Transponder Set AN/APX-59. Equipment function - probably IFF.

### BEAM DATA:

Half-power beamwidth - Vertical - 60°.

Beam type - Approximately omnidirectional in azimuth.

Polarization - The antenna will receive horizontally, vertically, or counterclockwise

COGNIZANT AGENCY: WADC (AEL-59-1021).

MANUFACTURER: Hazeltine Electronic Division, contract AF 33(600)-2033.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

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## ANTENNA AS-1072()/DPN

FREQUENCY: SHF band, 8500 - 9600 mc; VSWR 1.5 on 50-ohm coaxial cable.

INSTALLATION: Airborne, pilotless aircraft.

TYPE: Conical antenna (discone).

ASSOCIATED EQUIPMENT: Radio Beacon AN/DPN-32(). Equipment function - beacon.

DESCRIPTION: The AS-1072()/DPN system is made up of two discone radiators, two Teflon radomes, a power divider, and associated transmission lines.

COGNIZANT AGENCY: SEL-59-326.

### BEAM DATA:

Beam type - The two discones can be arranged to give a radiation pattern that gives excellent coverage in all directions with the exception of a small cone directly above and below the aircraft.

### REFERENCES:

- 1) Signal Corps Technical Requirements SCL-5471.
- 2) U. S. Department of Defense Nomenclature Card.

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## ANTENNA ASSEMBLY AS-1101/APN-89A

FREQUENCY: SHF band, 8700 - 8900 mc.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-89A.

TYPE: Slot array.

COGNIZANT AGENCY: AEL-60-474 (WADC).

DESCRIPTION: Antenna AS-1101/APN-89A is described as an assembly composed of 2 compound slotted antenna arrays with mounts that are stabilized in three axes. The waveguide is pressurized for operation up to 70,000 feet.

MANUFACTURER: General Precision Laboratory, Inc., contract AF 33(600)-40518.

REFERENCE:  
Request for Nomenclature Sheet.

INSTALLATION: Airborne.

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ANTENNA ASSEMBLY AS-1104/ASR-5

FREQUENCY: Band 15 (AN/ASR-5).

TYPE: Horn.

DESCRIPTION: Antenna Assembly AS-1104/ASR-5 is a pair of horn antennas. The assembly weighs 0.5 pounds. It is a part of Antenna Group OA-2503(V)/ASR-5.

BEAM DATA:

Polarization - circular.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment

function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. Information given here is unclassified.

COGNIZANT AGENCY: AEL-60-662 (WADC).

MANUFACTURER: Airborne Instruments Laboratory, Inc., contract AF 33(600)-37829.

REFERENCE:

Request for Nomenclature Sheet.

ANTENNA ASSEMBLY AS-1105/ASR-5

FREQUENCY: Band 2 (AN/ASR-5).

TYPE: Dipole.

DESCRIPTION: Antenna Assembly AS-1105/ASR-5 is described as a short dipole-pair antenna. The assembly weighs 38 pounds. It is a part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. Information given here is unclassified.

COGNIZANT AGENCY: AEL-60-663 (WADC).

MANUFACTURER: Airborne Instruments Laboratory, Inc., contract AF 33(600)-37829.

REFERENCE:

Request for Nomenclature Sheet.

ANTENNA ASSEMBLY AS-1106/ASR-5

FREQUENCY: Band 6 (AN/ASR-5).

TYPE: Helical array.

DESCRIPTION: Antenna Assembly AS-1106/ASR-5 is described as a helical-array antenna. The assembly weighs 6 pounds. It is a part of Antenna Group OA-2503(V)/ASR-5.

BEAM DATA:

Polarization - Circular.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment

function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. Information given here is unclassified.

COGNIZANT AGENCY: AEL-60-664 (WADC).

MANUFACTURER: Airborne Instruments Laboratory, Inc., contract AF 33(600)-37829.

REFERENCE:

Request for Nomenclature Sheet.

ANTENNA ASSEMBLY AS-1107/ASR-5

FREQUENCY: Band 7 (AN/ASR-5).

TYPE: Helical array.

DESCRIPTION: Antenna Assembly AS-1107/ASR-5 is described as a helical-array antenna. The assembly is a part of Antenna Group OA-2503(V)/ASR-5.

BEAM DATA:

Polarization - Circular.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. Information given here is unclassified.

COGNIZANT AGENCY: AEL-60-665 (WADC).

UNCLASSIFIED

MANUFACTURER: Airborne Instruments Laboratory,  
Inc., contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Sheet.

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ANTENNA ASSEMBLY AS-1108/ASR-5

FREQUENCY: Band 7 (AN/ASR-5).

TYPE: Luneberg lens.

DESCRIPTION: Antenna Assembly AS-1108/ASR-5 is described as a Luneberg lens antenna. The assembly weighs 20 pounds. It is a part of Antenna Group OA-2053(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. Information given here is unclassified.

COGNIZANT AGENCY: AEL-60-666 (WADC).

MANUFACTURER: Airborne Instruments Laboratory, Inc., contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Sheet.

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ANTENNA ASSEMBLY AS-1118/ASR-5(V)

FREQUENCY: Band 11 (AN/ASR-5).

TYPE: Luneberg Lens.

DESCRIPTION: Antenna Assembly AS-1118/ASR-5(V) is described as a Luneberg lens antenna. The assembly weighs 1 pound. It is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. Information given here is unclassified.

COGNIZANT AGENCY: AEL-60-638 (WADC).

MANUFACTURER: Airborne Instruments Laboratory, Inc., contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Sheet.

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ANTENNA ASSEMBLY AS-1119/ASR-5(V)

FREQUENCY: Band 3 (AN/ASR-5).

TYPE: Spiral.

DESCRIPTION: Antenna Assembly AS-1119/ASR-5(V) is described as a pair of square spiral antennas. The assembly weighs 28 pounds. It is a part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. Information given here is unclassified.

COGNIZANT AGENCY: AEL-60-647 (WADC).

MANUFACTURER: Airborne Instruments Laboratory, Inc., contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Sheet.

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ANTENNA ASSEMBLY AS-1120/ASR-5(V)

FREQUENCY: Band 4 (AN/ASR-5).

TYPE: Spiral.

DESCRIPTION: Antenna Assembly AS-1120/ASR-5(V) is described as a pair of square spiral antennas. The assembly weighs 19 pounds. It is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-648.

UNCLASSIFIED

UNCLASSIFIED

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

ANTENNA ASSEMBLY AS-1121/ASR-5(V)

FREQUENCY: Band 5 (AN/ASR-5).

TYPE: Spiral.

DESCRIPTION: Antenna Assembly AS-1121/ASR-5(V)  
is described as an array of four spiral anten-  
nas. The assembly weighs 10.1 pounds. It is  
part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

COGNIZANT AGENCY: AEL-60-649.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

ANTENNA ASSEMBLY AS-1122/ASR-5(V)

FREQUENCY: Band 5 (AN/ASR-5).

TYPE: Spiral.

DESCRIPTION: Antenna Assembly AS-1122/ASR-5(V)  
is described as a pair of square spiral anten-  
nas. The assembly weighs 5 pounds. It is  
part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

COGNIZANT AGENCY: AEL-60-650.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

ANTENNA ASSEMBLY AS-1123/ASR-5(V)

FREQUENCY: Band 6 (AN/ASR-5).

TYPE: Spiral.

DESCRIPTION: Antenna Assembly AS-1123/ASR-5(V)  
is described as a pair of square spiral anten-  
nas. The assembly weighs 1.7 pounds. It is  
part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

COGNIZANT AGENCY: AEL-60-651.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCES:  
Request for Nomenclature Card.

ANTENNA ASSEMBLY AS-1124/ASR-5(V)

FREQUENCY: Band 8 (AN/ASR-5).

TYPE: Helical.

DESCRIPTION: Antenna Assembly AS-1124/ASR-5(V)  
is described as a helical array antenna. The  
assembly weighs 4 pounds. It is part of An-  
tenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

COGNIZANT AGENCY: AEL-60-652.

UNCLASSIFIED

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCES:  
Request for Nomenclature Card.

ANTENNA ASSEMBLY AS-1125/ASR-5(V)

FREQUENCY: Band 8 (AN/ASR-5).

TYPE: Luneberg lens.

DESCRIPTION: Antenna Assembly AS-1125/ASR 5(V)  
is described as a Luneberg lens antenna. The  
assembly weighs 6 pounds. It is part of  
Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

COGNIZANT AGENCY: AEL-60-653.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

ANTENNA ASSEMBLY AS-1126/ASR-5(V)

FREQUENCY: Band 9 (AN/ASR-5).

TYPE: Helical.

DESCRIPTION: Antenna Assembly AS-1126/ASR-5(V)  
is described as a helical array antenna. The  
assembly weighs 3 pounds. It is part of  
Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

COGNIZANT AGENCY: AEL-60-654.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

ANTENNA ASSEMBLY AS-1127/ASR-5(V)

FREQUENCY: Band 9 (AN/ASR-5).

TYPE: Luneberg lens.

DESCRIPTION: Antenna Assembly AS-1127/ASR-5(V)  
is described as a Luneberg lens antenna. The  
assembly weighs 3 pounds. It is part of  
Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

COGNIZANT AGENCY: AEL-60-655.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

ANTENNA ASSEMBLY AS-1128/ASR-5(V)

FREQUENCY: Band 10 (AN/ASR-5).

TYPE: Helical.

DESCRIPTION: Antenna Assembly AS-1128/ASR-5(V)  
is described as a helical array antenna. The  
assembly weighs 2 pounds. It is part of  
Antenna Group OA 2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

COGNIZANT AGENCY: AEL-60-656.

UNCLASSIFIED

# UNCLASSIFIED

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

## ANTENNA ASSEMBLY AS-1129/ASR-5(V)

FREQUENCY: Band 10 (AN/ASR-5).

TYPE: Luneberg lens.

DESCRIPTION: Antenna Assembly AS-1129/ASR-5(V)  
is described as a Luneberg lens antenna. The  
assembly weighs 1 pound. It is part of  
Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

COGNIZANT AGENCY: AEL-60-657.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

## ANTENNA ASSEMBLY AS-1130/ASR-5(V)

FREQUENCY: Band 12 (AN/ASR-5).

TYPE: Luneberg lens.

DESCRIPTION: Antenna Assembly AS-1130/ASR-5(V)  
is described as a Luneberg lens antenna. The  
assembly weighs 3 pounds. It is a part of  
Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

COGNIZANT AGENCY: AEL-60-658.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

## ANTENNA ASSEMBLY AS-1131/ASR-5(V)

FREQUENCY: Band 13 (AN/ASR-5).

TYPE: Horn.

DESCRIPTION: Antenna Assembly AS-1131/ASR-5(V)  
is described as a pair of horn antennas. The  
assembly weighs 1 pound. It is part of  
Antenna Group OA-2503(V)/ASR-5.

BEAM DATA:  
Polarization - Circular.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment

function - countermeasures.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

COGNIZANT AGENCY: --AEL-60-659.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

## ANTENNA ASSEMBLY AS-1132/ASR-5(V)

FREQUENCY: Band 14 (AN/ASR-5).

TYPE: Horn.

DESCRIPTION: Antenna Assembly AS-1132/ASR-5(V)  
is described as a pair of horn antennas. The  
assembly weighs 0.5 pound. It is part of  
Antenna Group OA-2503(V)/ASR-5.

BEAM DATA:  
Polarization - Circular.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

UNCLASSIFIED

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

COGNIZANT AGENCY: AEL-60-660.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA ASSEMBLY AS-1133/ASR-5(V)

FREQUENCY: Band 15 (AN/ASR-5).

function - countermeasures.

TYPE: Horn.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

DESCRIPTION: Antenna Assembly AS-1133/ASR-5(V) is described as a pair of horn antennas. The assembly weighs 0.1 pound. It is part of Antenna Group OA-2503(V)/ASR-5.

COGNIZANT AGENCY: AEL-60-661.

BEAM DATA:  
Polarization - Circular.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

INSTALLATION: Airborne.

REFERENCE:  
Request for Nomenclature Card.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment

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UNCLASSIFIED



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ANTENNAS AT-(XA-75)/U, AT-(XA-76)/U, and AT-(XA-77)/U

AT-(XA-75)/U . . . See AS-426/U.  
AT-(XA-76)/U . . . See AS-427/U.  
AT-(XA-77)/U . . . See AS-420/U.

ANTENNAS AT-(XA-79)/U, AT-(XA-80)/U, AT-(XA-81)/U, and AT-(XA-82)/U

AT-(XA-79)/U . . . See AS-425/U.  
AT-(XA-80)/U . . . See AS-423/U.  
AT-(XA-81)/U . . . See AS-422/U.  
AT-(XA-82)/U . . . See AS-416/U.

ANTENNAS AT-(XA-84)/U, AT-(XA-85)/U, AT-(XA-86)/U, AT-(XA-87)/U, and AT-(XA-88)/U

AT-(XA-84)/U . . . See AS-419/U.  
AT-(XA-85)/U . . . See AS-421/U.  
AT-(XA-86)/U . . . See AS-424/U.  
AT-(XA-87)/U . . . See AS-417/U.  
AT-(XA-88)/U . . . See AS-418/U.

ANTENNAS AT-(XA-97)/A and AT-(XA-98)/A

FREQUENCY: UHF band, 2600 - 3000 mc.

DESCRIPTION: The reference lists these antennas as obsolete and gives only the following additional information: "Right and left homing antenna, Cones in cavity."

REFERENCE:

Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

ANTENNA AT-(XA-102)/U

FREQUENCY: UHF band, 306 - 318 mc.

TYPE: Yagi.

DESCRIPTION: The reference lists this antenna as obsolete and gives the following additional information: "Yagi for AN/APS-20. Similar to AT-(XA-77)/U."

ASSOCIATED EQUIPMENT: Radar Set AN/APS-20.

REFERENCE:

Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

ANTENNA AT-(XA-106)/ARN-5A

FREQUENCY: UHF band, 329 - 335 mc; VSWR < 5.

TYPE: Cavity-backed slot.

DESCRIPTION: The antenna consists of a type of cavity excited by a loop and tuned by a variable capacitor. The input impedance is 52 ohms, and the antenna is fed by RG-8/U coaxial cable. The antenna is flush mounted on an aircraft in a position which gives good forward illumination. It weighs 8 ounces and is (overall) 6-3/4 inches long, 4-1/4 inches wide, and 2-1/4 inches deep. The radiating portion is 4-29/32 inches long and 1-1/4 inches wide. The drag is zero for a flush-mounting installation.

BEAM DATA:

Half-power beamwidth -

Horizontal - Approximately 130° (installed in the nose of F-80).

Vertical - Approximately 170° (installed in the nose of F-80).

Polarization - Horizontal.

TUNING/MATCHING DEVICES: A capacitor which is part of the excitation loop tunes the antenna in frequency. A balun is required when this antenna is used with Receiver R-89()/ARN-5A.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Receiver R-89()/ARN-5A and R-322/ARN-18. Equipment function - navigation, surface reference (glide path).

MISCELLANEOUS: The antenna is intended for use on high-speed aircraft requiring dragless antennas.

UNCLASSIFIED

**MANUFACTURERS:** Developed by the Communication and Navigation Laboratory, Weapons Components Division, Wright Air Development Center.

**REFERENCES:**

- 1) U. S. Air Force, Aircraft Antenna Design Summary, Report No. 515-191544. (March 18, 1952). SECRET.

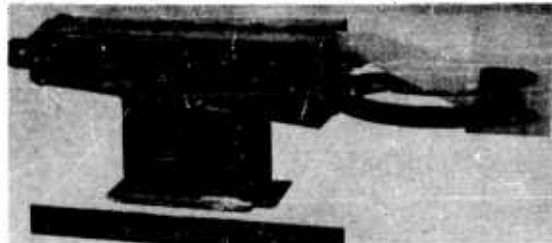
- 2) U. S. Air Force, An Evaluation of Five Types of Experimental Glide-Path Antennas, Engineering Memorandum Report, MCREE-50-19, (April 24, 1950). UNCLASSIFIED.

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**ANTENNA AT-(XA-107)/ARN**

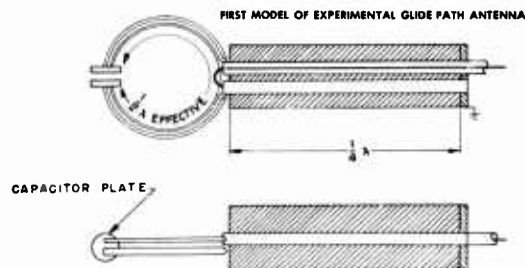
**FREQUENCY:** UHF band, 329 - 335 mc; VSWR < 3.

**TYPE:** Modified loop.



AT-(XA-107)/ARN Antenna Assembly

**DESCRIPTION:** The antenna consists of a balun-fed dual loop. The loops, 3-1/4 inches in diameter, are mounted in close-spaced parallel planes. The upper loop is fed from the balun and joins the lower loop 180 degrees from the feed at the plates of a capacitor. (See illustration.) Thus, the two loops are coupled conductively, inductively, and capacitively. The antenna is fed by 52-ohm RG-8/U coaxial cable. It weighs 1-1/4 pounds. The overall dimensions are 10-1/4 inches in length, 3-1/4 inches in width, 3-1/2 inches in depth.



AT-(XA-107)/ARN-5 Electrical Diagram

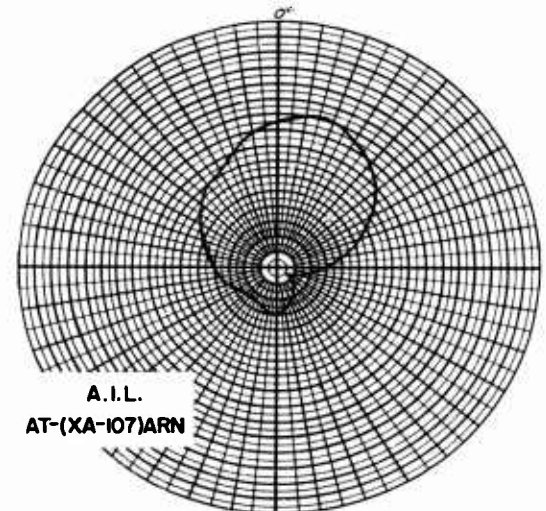
**BEAM DATA:**

**Polarization** - Horizontal.

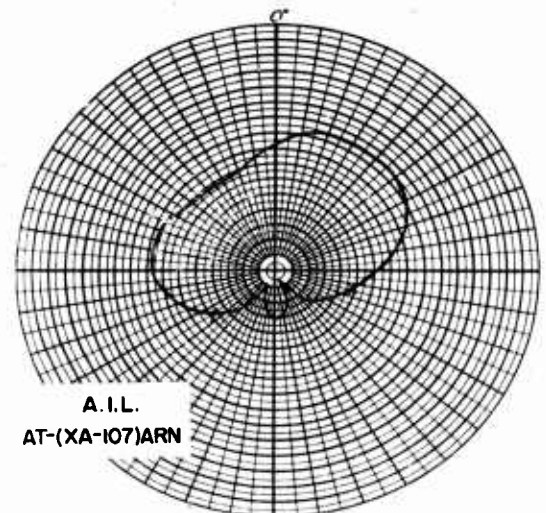
**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** Designed for use with Receivers R-89()/ARN-5 and R-322/ARN-18. Equipment function - navigation, surface reference (glide path).

**MANUFACTURER:** Developed by Airborne Instruments Laboratory, Incorporated for use on the P-90 aircraft.



Radiation Pattern of Antenna AT-(XA-107)/ARN  
Vertical, Fore and Aft Plane, 335 mc



Radiation Pattern of Antenna AT-(XA-107)/ARN  
Horizontal Plane 335 mc

UNCLASSIFIED

# UNCLASSIFIED

## REFERENCES:

- 1) U. S. Air Force, Aircraft Antenna Design Summary, Report No. 515-191544. (March 18, 1952). SECRET.

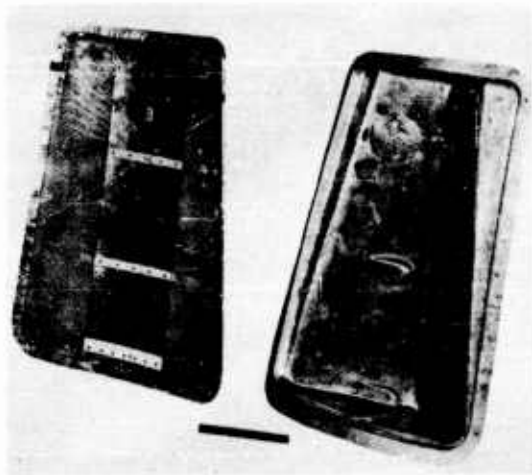
- 2) U. S. Air Force, An Evaluation of Five Types of Experimental Glide-Path Antennas, Engineering Memorandum Report, MCREE-50-19, (April 24, 1950). UNCLASSIFIED.

## ANTENNA AT-(XA-109)/ARN-14

**FREQUENCY:** VHF band, 108 - 122 mc; VSWR < 5.

**TYPE:** Cavity-backed slot.

**DESCRIPTION:** The slot antenna is flush mounted and backed by a type of cavity 26 inches long, 18 inches wide, and 7 inches deep. The antenna was designed as a VOR antenna for the XP-90, which was to use two of these antennas, one on each side of the fuselage. The antenna is fed by 52-ohm RG-8/U (or similar) coaxial cable. The cable feeds a tuned excitation loop which excites the cavity. The two antennas of the XP-90 were located on each side of the nose and were fed in phase opposition through baluns to obtain 360° azimuth coverage. The antenna weighs 8 pounds and has zero drag. The excitation element is 23 inches long and 7 inches wide.



AT-(XA-109)/ARN-14 Interior View

## BEAM DATA:

**Polarization** - Horizontal.

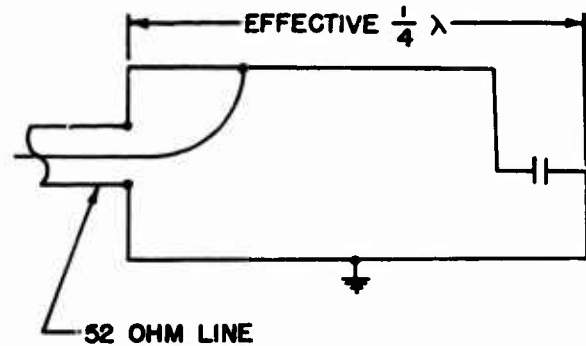
**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** Designed for use with Radio Set AN/ARN-14. Equipment function - navigation, surface reference.

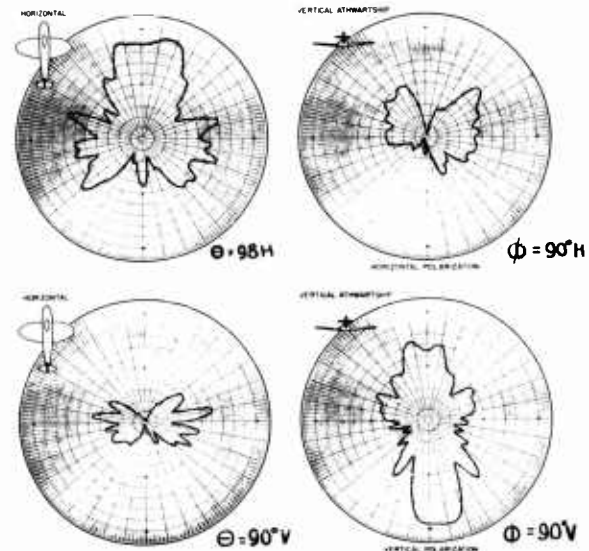
**MANUFACTURER:** Developed by Airborne Instruments Laboratory.

## REFERENCES:

- 1) U. S. Air Force, Aircraft Antenna Design Summary, Report No. 515-191544. (March 18, 1952). SECRET.



AT-(XA-109)/ARN-14 Electrical Diagram



AT-(XA-109)/ARN-14 Typical Radiation Patterns

- 2) TM 346-TM-1, Preliminary Study of Antennas for XP-90 Aircraft.
- 3) Airborne Instruments Laboratory Report 708-I-3, Interim Report on Antennas for XP-90 Aircraft.
- 4) Airborne Instruments Laboratory Final Report 708-3, Navigation Antenna for XF-90 Aircraft.

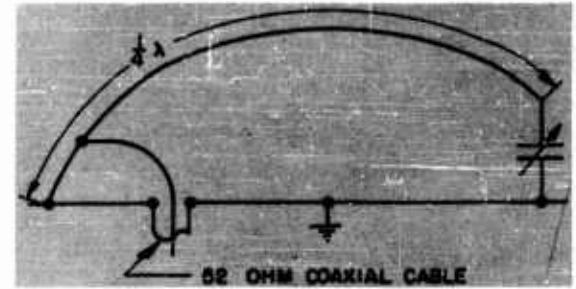
UNCLASSIFIED

ANTENNA AT-(XA-113)/ARN

FREQUENCY: UHF band, 329 - 335 mc; VSWR < 5.5.

TYPE: Modified cavity-backed slot.

DESCRIPTION: The overall shape of the antenna is that of the exterior portion of a circular disk which is divided along a chord. In the vertical plane, its cross section is rectangular; in the horizontal plane, its cross section is the portion of a circle removed by cutting along a chord. The cavity is excited by a rectangular loop which lies along the curved surface or radiating portion of the antenna. The loop is tuned by a variable capacitor. RG-8/U or similar 52-ohm cable is used to connect the antenna to the AN/ARN-5 receiver through a balun. The antenna is designed for dragless, flush mounting. It weighs 12 ounces and is (overall) 7-3/4 inches long, 4 inches wide, and 4 inches deep. The exciting element is 8.24 inches long (along the perimeter) and 1.75 inches wide.



AT-(XA-113)/ARN Electrical Diagram

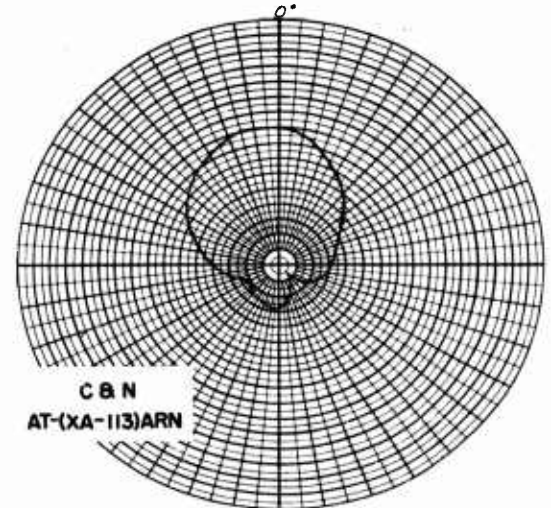


AT-(XA-113)/ARN Antenna Assembly

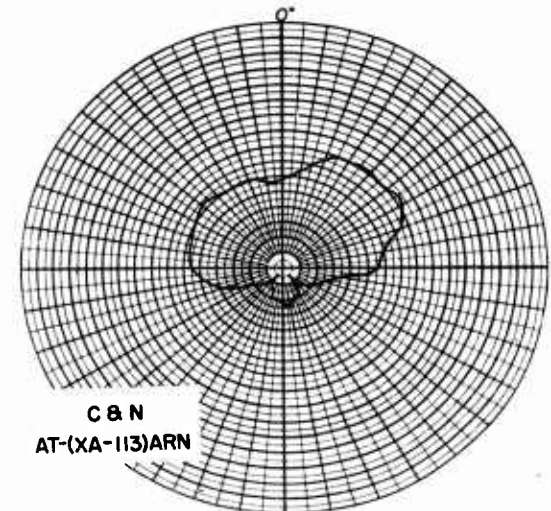
BEAM DATA:  
Polarization - Horizontal.

TUNING/MATCHING DEVICES: The antenna is tuned by a variable capacitor in the excitation loop.

INSTALLATION: Airborne.



Radiation Pattern of Antenna AT-(XA-113)/ARN  
Vertical, Fore and Aft Plane, 335 mc



Radiation Pattern of Antenna AT-(XA-113)/ARN  
Horizontal Plane 335 mc

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ASSOCIATED EQUIPMENT: Designed for use with Receivers AN/ARN-5 and R-322/ARN-18. Equipment function - navigation, surface reference (glide path).

MISCELLANEOUS: The antenna is for use on the F-80 but could be modified for use on other aircraft.

MANUFACTURER: Developed by the Communication and Navigation Laboratory, Weapons Components Division, Wright Air Development Center.

REFERENCES:

- 1) U. S. Air Force, Aircraft Antenna Design Summary, Report No. 515-191544. (March 18, 1952). SECRET.
- 2) Air Force Specification X-1796.
- 3) U. S. Air Force, An Evaluation of Five Types of Experimental Glide-Path Antennas, Engineering Memorandum Report, MCREE-50-19, (April 24, 1950). UNCLASSIFIED.

ANTENNA AT-(XA-114)/ARN

FREQUENCY: VHF band, 108 - 122 mc; VSWR < 5.

TYPE: Bent sleeve dipole.

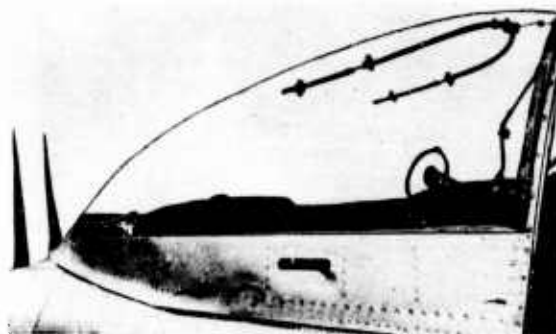
DESCRIPTION: The antenna is a U-shaped, bent sleeve dipole designed for installation in the canopy of aircraft. It is fed by RG-8/U or similar 52-ohm coaxial cable. A balun is used when the antenna is used with the RC-103 receiver. The antenna weighs 1 pound and is 47.5 inches long.

BEAM DATA:

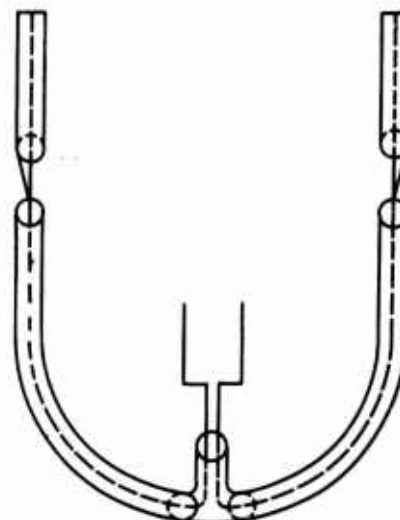
Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Designed for use with Radio Set AN/ARN-14 and Radio Receiving Equipment RC-103. Equipment function - navigation, surface reference (VOR).



AT-(XA-114)/ARN Aircraft Canopy Installation



AT-(XA-114)/ARN Electrical Diagram

MANUFACTURER: Developed by Communication and Navigation Laboratory, Weapons Components Division, Wright Air Development Center.

REFERENCE:

U. S. Air Force, Aircraft Antenna Design Summary, Report No. 515-191544. (March 18, 1952). SECRET.

ANTENNA AT-(XA-115)/ARW

TYPE: Whip.

DESCRIPTION: The reference lists this antenna as obsolete and gives the following information: "84 inch whip antenna, UHF connector."

REFERENCE:

Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

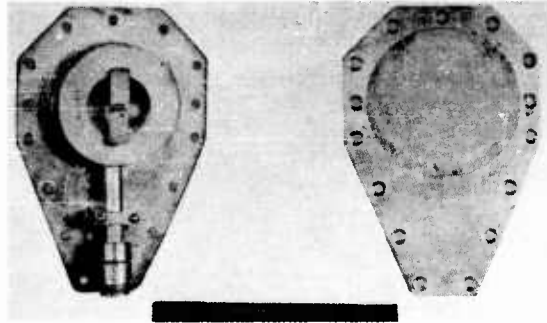
UNCLASSIFIED

ANTENNA AT-(XA-118)/APN

FREQUENCY: UHF and SHF bands, 2750 - 3050 mc;  
VSWR < 2.

TYPE: Annular slot.

DESCRIPTION: The antenna is a flush-mounting annular slot fed by a 52-ohm (RG-8U or similar) coaxial cable. It mounts flush with the skin on the underside of the aircraft fuselage. The antenna weighs 10 ounces and is 5-5/8 inches long, 3-3/4 inches wide, and 1 inch deep.



AT-(XA-118)/APN

BEAM DATA:

Beam type - The beam shape varies in the horizontal plane from essentially omnidirectional at the lower end of the frequency band to an elliptical pattern at the upper end. The ellipse has its major axis transverse to the axis of the fuselage.

In the vertical plane the pattern is essentially two lobes which are canted below the horizontal at an angle which varies with frequency. The angle varies between 20 and 40 degrees.

INSTALLATION: Airborne.

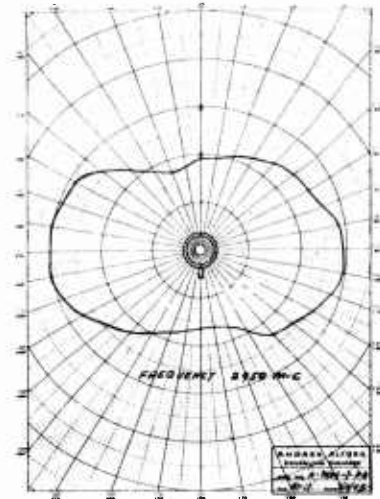
ASSOCIATED EQUIPMENT: Radar Set AN/APN-19, Radar Set AN/APN-60, and Radar Set AN/APN-65.  
Equipment function - radar beacon.

MISCELLANEOUS: The drag caused by this antenna is nominally zero when flush mounted. The antenna could be used, after mechanical improvement, on almost all high-speed aircraft which require no-drag antenna characteristics.

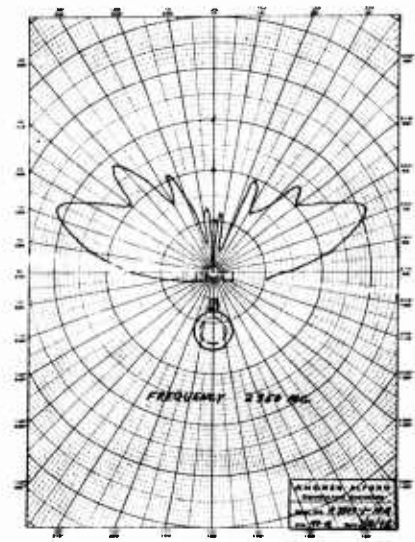
MANUFACTURER: Developed by Andrew Alford, model 3504, on an Air Force contract.

REFERENCES:

- 1) U. S. Air Force, Aircraft Antenna Design Summary, Report No. 515-191544. (March 18, 1952). SECRET.



AT-(XA-118)/APN Horizontal Radiation Pattern at 2950 mc



AT-(XA-118)/APN Vertical Radiation Pattern at 2950 mc

- 2) Andrew Alford, Report on the 3504 Pancake Antenna with a Single Feeder, Boston, Massachusetts: Andrew Alford Consulting Engineers. (March 19, 1948). ASTIA Report No. A.T.I. 33629. UNCLASSIFIED.

ANTENNA AT-(XA-119)/APN-34

FREQUENCY: UHF band, 950 - 1250 mc.

TYPE: Stub.

UNCLASSIFIED

**DESCRIPTION:** The antenna is a quarter-wave stub mounted perpendicular to a small disk-type ground plane. The input impedance is 52 ohms, and the antenna is fed by RG-8/U or similar coaxial cable. The antenna mounts on the under side of the fuselage by means of screws through four holes spaced 90 degrees apart through the ground plane. The ground plane is not insulated from the fuselage so that the effective ground plane is much larger than the small ground plane which is an integral part of the antenna. The antenna weighs 8 ounces and has the following dimensions: external element length, 4 inches; overall length, 6-3/4 inches; element housing, 1 inch in diameter; and mounting diameter, 2-1/2 inches.

**BEAM DATA:**

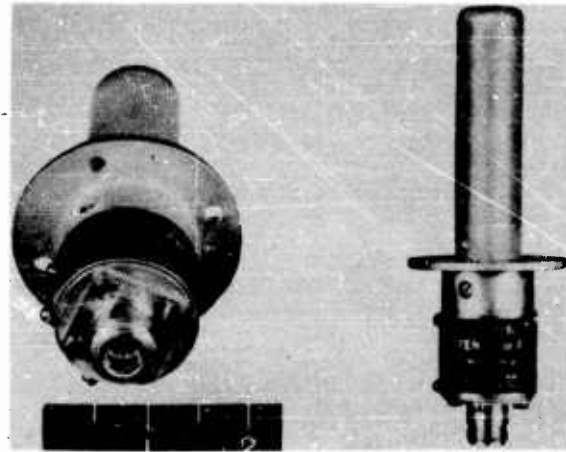
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Designed for use with Radar Set AN/APN-34 (distance-measuring equipment). Equipment function - navigation, surface reference.

MISCELLANEOUS: The antenna was designed for use on all types of aircraft which can tolerate the drag of the antenna.

MANUFACTURER: Developed by the Federal Tele-



AT-(XA-119)/APN-34

communication Laboratory on a U. S. Air Force contract.

**REFERENCE:**

U. S. Air Force, Aircraft Antenna Design Summary, Report No. 515-191544. (March 18, 1952).  
SECRET.

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**ANTENNA AT-(XA-120)/APN-34**

FREQUENCY: UHF band, 960 - 1215 mc.

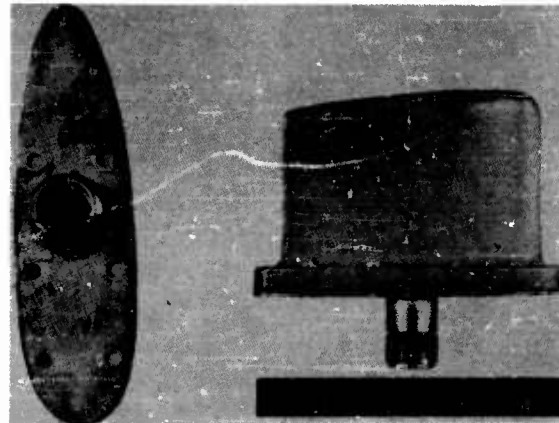
TYPE: Stub.

**DESCRIPTION:** The antenna is a quarter-wave stub antenna which is streamlined to minimize drag. The antenna mounts on the underside of the fuselage by means of screws through holes in the mounting base. The mounting base is not insulated from the fuselage so that the fuselage forms a ground plane for the stub. The input impedance of the antenna is 52 ohms, and it is fed by RG-8/U or similar coaxial cable. The antenna weighs 7 ounces and has the following overall dimensions: length, 4.75 inches; width, 1.375 inches; and height, 4.5 inches. The drag is about 1.5 pounds at 350 knots.

**BEAM DATA:**

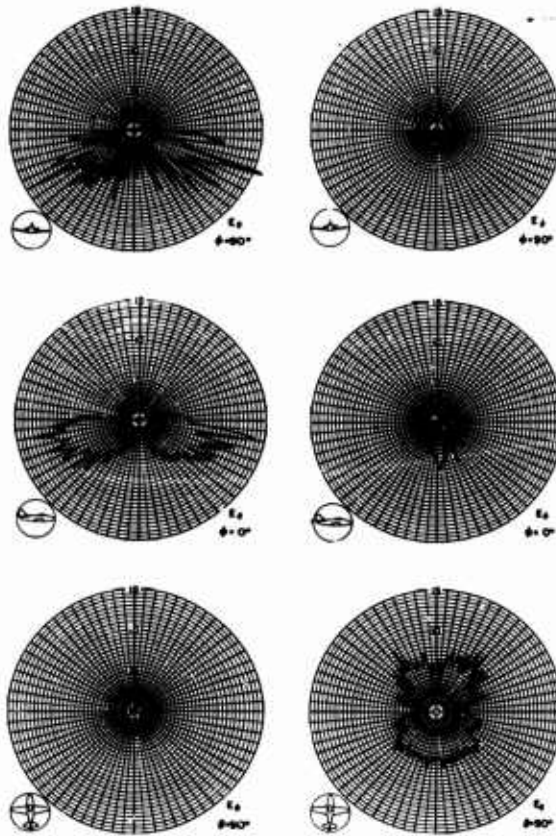
Polarization - Vertical.

INSTALLATION: Airborne.



AT-(XA-120)/APN-34 Antenna Assembly

UNCLASSIFIED



**ASSOCIATED EQUIPMENT:** Designed for use with Radar Set AN/APN-34 (distance-measuring equipment). Equipment function - navigation, surface reference.

**MANUFACTURER:** Developed by Hazeltine Electronics Corporation on a U. S. Air Force contract.

**REFERENCES:**  
U. S. Air Force, Aircraft Antenna Design Summary, Report No. 515-191544, (March 18, 1952), SECRET.

AT-(XA-120)/APN-34 Radiation Patterns at 1150 mc

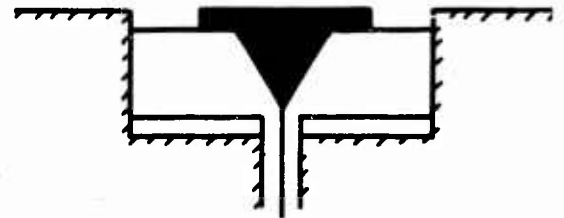
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#### ANTENNA AT-(XA-121)/AP

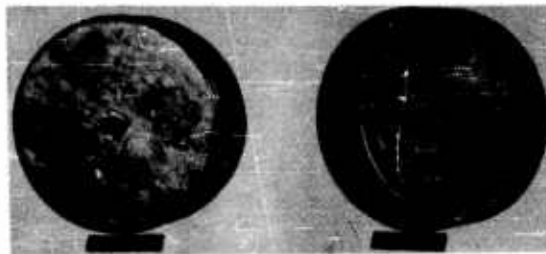
**FREQUENCY:** UHF band, 950 - 1250 mc.

**TYPE:** Circular slot.

**DESCRIPTION:** The antenna was designed for below-the-surface mounting in aircraft. The antenna is in the form of a short, wide cylinder with the nonradiating end closed. At the center of the open end is a disk which is attached to the center conductor of the RG-8/U coaxial cable feed. The cylinder is connected to the outer conductor of the coaxial



AT-(XA-121)/AP Electrical Diagram



AT-(XA-121)/AP Interior and Exterior Views

cable and to the skin of the aircraft. The input impedance is 52 ohms. The antenna weighs 2-1/2 pounds and is 8-1/8 inches in diameter by 3-1/4 inches in depth. It has zero drag when mounted submerged.

**BEAM DATA:**  
Polarization - Vertical.

INSTALLATION: Airborne.

UNCLASSIFIED



UNCLASSIFIED

ASSOCIATED EQUIPMENT: Developed for use with Radar Set AN/APN-34 and similar sets (distance-measuring equipment). Equipment function - navigation, surface reference.

Wright Air Development Center.

MANUFACTURER: Developed by Aircraft Radiation Laboratory, Weapons Components Division.

REFERENCE:

U. S. Air Force, Aircraft Antenna Design Summary, Report No. 515-191544. (March 18, 1952). SECRET.

ANTENNA AT-(XA-125)/AP

FREQUENCY: UHF band, 2600 - 3000 mc.

REFERENCE:

Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

TYPE: Helical.

DESCRIPTION: The reference lists the antenna as obsolete and gives only the following information: "5 inch Radome Helix HN Connector DWG No. X50C13740."

ANTENNA AT-(XA-132)/ARC-22

FREQUENCY: HF and VHF bands, 24 - 52 mc; VSWR < 3.

TUNING/MATCHING DEVICES: There is an L-C matching network between the antenna and the feed.

TYPE: Whip.

INSTALLATION: Airborne.

DESCRIPTION: The antenna is of the whip type and was designed as a communications antenna for small, slow aircraft such as the L-19. Mounted on the top surface of the aircraft, it has an input impedance of 53 ohms and is fed by coaxial cable. Between the antenna proper and the coaxial input is a matching section consisting of 28 inches of 125-ohm cable with a series resonant circuit shunted on its input. The resonant frequency of the circuit is just below the frequency band. The matching network is necessary to obtain a reasonable VSWR across the band. The whip is 87-3/32 inches long and mounts to a base whose diameter tapers from 7/8-inch at the bottom to 3/16-inch at the top.

MISCELLANEOUS: The antenna has a wind load of 17.6 pounds at 150 miles per hour. When covered with 1/4-inch of ice, the wind load is 34 pounds at 150 miles per hour.

MANUFACTURERS: Developed by the Antenna Research Laboratory under contract AF 33(038)-14477.

REFERENCE:

Final Engineering Report on Antenna AT-(XA-132)/ARC-22. Columbus, Ohio: The Antenna Research Laboratory, Electronic Division of Thompson Products, Inc. (Dec. 22, 1952). ASTIA Report No. AD 9541. UNCLASSIFIED.

BEAM DATA:

Beam type - Omnidirectional in azimuth.

Polarization - Vertical.

ANTENNA AT-(XA-138)/UKR-1

FREQUENCY: UHF band, 1600 - 3000 mc.

tion: "3-1/2 inch Radome Helix."

TYPE: Helical.

REFERENCE:

Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

DESCRIPTION: The reference lists this antenna as obsolete and gives the following informa-

ANTENNA AT-(XA-157)/APT

FREQUENCY: UHF band, 350 - 675 mc.

REFERENCE:

Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

DESCRIPTION: The reference lists the antenna as obsolete and gives no other data.

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## ANTENNA AT-(XA-158)/APT

FREQUENCY: UHF band, 475 - 1000 mc.

### REFERENCE:

Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

DESCRIPTION: The reference lists the antenna as obsolete and gives no other data.

## ANTENNA AT-(XA-163)/UKR-1

FREQUENCY: UHF band, 2200 - 2300 mc.

### REFERENCE:

Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

DESCRIPTION: The reference lists this antenna as obsolete and gives the following information: "Telemetry antenna to be modified to become AS-(XA-116)/UKR-1."

## ANTENNA AT-(XA-166)/APT

FREQUENCY: UHF and SHF bands, 1900 - 4100 mc.

### REFERENCE:

Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

TYPE: Helical antenna.

DESCRIPTION: The reference lists this antenna as obsolete and gives only the following information: "2-inch Radome Helix with crystal probe."

## ANTENNA AT-1/APN-2

FREQUENCY: VHF band, 214 - 234 mc; VSWR < 2 on 50-ohm coaxial line.

that this antenna is obsolete.

TYPE: Rod.

COGNIZANT AGENCY: U. S. Air Force.

DESCRIPTION: This is a rod-type transmitting antenna, approximately 11 inches long. The weight is 1 pound. The antenna mounts under the nose of the aircraft fuselage. The approximate power-handling capability is 800 watts.

STOCK NUMBERS: U. S. Navy R16AN-AT1APN2, Signal Corps 2A203-1. Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

### REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Maintenance Instructions for Radio Sets AN/APN-2, AN/APN-2Y, AN/APN-2B, TO 12P5-2APN2-2, (Sept. 25, 1945 - revised June 16, 1954). UNCLASSIFIED.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

### BEAM DATA:

Beam type - Omnidirectional in the horizontal plane.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APN-2. Equipment function - navigation, homing.

MISCELLANEOUS: This antenna was formerly designated AT-1/APB-1. Reference 1 indicates

## ANTENNA AT-2(\*)/APN-2

FREQUENCY: VHF band, 214 - 234 mc; VSWR < 5 on 50-ohm coaxial cable.

phenolic case and mounted on a pedestal. The AT-2A/APN-2 has the added feature of two L-shaped plastic braces which are used to reduce the possibility of fracture of the antenna due to vibration. Approximate weight of the unit is 4-3/4 pounds. The approximate power-handling ability is 800 watts. Two of these antennas, one on each side of the

TYPE: Two-element Yagi array.

DESCRIPTION: The antenna (a two-element Yagi) is a parasitic array consisting of a dipole and a director attached to a streamlined

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fuselage, are used for each installation. They are mounted with the director toward the front of the aircraft.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APN-2. Equipment function - navigation, homing.

MISCELLANEOUS: AT-2(\*)/APN-2 represents the AT-2/APN-2 and the AT-2A/APN-2. The AT-2A/APN-2 is the same as the AT-2/APN-2 except for the addition of supporting braces. (See Description). Reference 1 indicates that AT-2/APN-2 is obsolete.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURERS: Cussack Machine Products, contract order 432-DAY-44.

STOCK NUMBERS:

AT-2/APN-2 ... U. S. Navy R16AN-AT2APN2,  
AT-2A/APN-2 ... Signal Corps 2A203-2A.

REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Maintenance Instructions for Radio Sets AN/APN-2, AN/APN-2Y, AN/APN-2B TO 12P5-2APN2-2, (Sept, 25, 1945 - revised June 15, 1954). UNCLASSIFIED.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 4) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-3(\*)/ARR-3

FREQUENCY: VHF band, 62 - 72 mc; VSWR < 5 on 70-ohm coaxial cable.

TYPE: Whip.

DESCRIPTION: Antenna AT-3A/ARR-3 is a 39-inch retractable whip. The mounting base is rigidly mounted to the aircraft and consists of a round plate, 4-1/2 inches in diameter, which supports the antenna socket and the coaxial cable connector. The antenna is a quarter wavelength long, has a 70-ohm impedance, and uses the skin of the aircraft as a ground plane. The antenna is installed or removed from its base by a locking handle which is attached to the base.

BEAM DATA:

Polarization: Vertical or horizontal, depending on mounting position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ARR-3. Equipment function - communications.

MISCELLANEOUS: The AT-3(\*)/ARR-3 represents the AT-3/ARR-3 and the AT-3A/ARR-3. The

AT-3/ARR-3 is the same as AT-3A/ARR-3 but cannot be retracted. Reference 1 indicates that AT-3/ARR-3 is obsolete.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURERS: Freed Radio Corporation and Aircraft Accessories Corporation, procurement plan No. 1201.

STOCK NUMBERS:

AT-3/ARR-3 ... U. S. Navy R16A5060-6,  
Signal Corps 2A203-2.  
AT-3A/ARR-3 ... U. S. Navy R16AN-AT3AARR3.

REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-4(\*)/ARN-1

FREQUENCY: UHF band, 420 - 460 mc; VSWR < 2 on 50-ohm coaxial line.

TYPE: Dipole.

DESCRIPTION: This is a half-wave dipole with quarter-wave stub supports which are an integral part of the antenna. The overall antenna is 11-9/16 inches wide, 7-9/16 inches high, and 1 inch in diameter and weighs

0.7 pound. Two of these dipoles are used in a normal installation: one for transmission, one for reception. The antennas are installed on the underside of the wing or fuselage and use the skin of the aircraft as a ground plane.

BEAM DATA:

Polarization - Horizontal.

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INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APN-1. Equipment function - altimeter.

MISCELLANEOUS: AT-4(\*)/ARN-1 represents AT-4/ARN-1, AT-4A/ARN-1, and AT-4B/ARN-1. AT-4A/ARN-1 differs from AT-4/ARN-1 only in use of Teflon for the insulator ring. AT-4B/ARN-1 differs from AT-4A/ARN-1 in the use of supporting stubs of a larger diameter to comply with vibration requirements. Reference 1 indicates that AT-4/ARN-1 is obsolete.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS:

Belmont Radio Corp., contract NXe-6722,  
Radio Corporation of America, contract NXe-2424,  
American Phenolic Corp., contract AF 33(600)-21103.

STOCK NUMBERS:

AT-4/ARN-1 ... U. S. Navy R16A5056,  
Signal Corps 2AK203-4.  
Federal Stock Number 5841-112-9044.

REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) Military Specification MIL-A-6592.
- 4) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-5/ARR-1

FREQUENCY: VHF band, 230 - 250 mc; VSWR < 2 on 50-ohm coaxial line.

TYPE: Stub.

DESCRIPTION: The antenna is a 12-inch rod (approximately 1/4-wavelength long) with a mounting base which has provisions for a PL-259 plug (Navy type 49195).

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ARR-1 and AN/ARR-2. Equipment function - navigation, homing.

MISCELLANEOUS: Reference 1 indicates that

AT-5/ARR-1 is obsolete. It was previously designated as AS-1/ARR-1.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBERS: U. S. Navy R16A5060, Signal Corps 2A203-5.

REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-8/AR

FREQUENCY: VHF band, 120 - 145 mc; VSWR < 2 on 50-ohm coaxial line.

TYPE: Stub.

DESCRIPTION: This antenna is a tapered rod, 21-7/8 inches long, having a receptacle for use with Navy type 49195 plug and type CASSF-50-1 cable.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Western Electric Type WE-233A. Equipment function - communications.

MISCELLANEOUS: AT-8/AR is similar to AT-5/AR. It differs in length.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBERS: U. S. Navy R16A5053-75.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-9/APN-2

FREQUENCY: VHF band, 214 - 234 mc.

INSTALLATION: Airborne.

TYPE: Parasitic stub.

ASSOCIATED EQUIPMENT: AN/APN-2. Equipment function - navigation, homing.

DESCRIPTION: This antenna consists of a rod approximately 11 inches long, slightly shorter than a quarter wavelength. The rod is attached to a flange approximately 3 inches in diameter. The flange, in turn, is attached and grounded to the aircraft. This element is used in conjunction with AT-1/APN-2 as a director.

COGNIZANT AGENCY: U. S. Air Force.

STOCK NUMBERS: Signal Corps 2A203-9.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

BEAM DATA:

Polarization - Vertical.

ANTENNA AT-13/APN-3

FREQUENCY: VHF and UHF bands, 210 - 325 mc;  
VSWR < 2.

function - navigation, surface reference.

TYPE: Stub.

MISCELLANEOUS: AT-13/APN-3 is similar to AT-14/APN-3 but differs in length.

DESCRIPTION: This is a quarter-wave, stub-type transmitting antenna approximately 13 inches long. It includes mounting flanges for mounting to the aircraft or to Antenna Base AB-28/CPN-2.

COGNIZANT AGENCY: U. S. Air Force.

STOCK NUMBERS: Federal Stock Number 1670 5826-145-6728.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APN-3. Equipment

ANTENNA AT-14/APN-3

FREQUENCY: VHF and UHF bands, 210 - 325 mc;  
VSWR < 2.

function - navigation, surface reference.

TYPE: Stub.

MISCELLANEOUS: AT-14/APN-3 is similar to AT-13/APN-3 but differs in length.

DESCRIPTION: This is a quarter-wave, stub-type receiving antenna approximately 10 inches long. It includes a mounting flange for attaching to the aircraft or to Antenna Base AB-28/CPN-2.

COGNIZANT AGENCY: U. S. Air Force.

STOCK NUMBERS: Federal Stock Number 1670 5826-285-0301.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL
- 2) U. S. Department of Defense Nomenclature Card.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APN-3. Equipment

ANTENNA AT-23/ARA-1

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc;  
VSWR < 5.

DESCRIPTION: This is an iron-core loop in a zeppelin-type housing approximately 17 inches long, 6 inches wide, and 7-1/2 inches high. The weight is less than 10 pounds.

TYPE: Loop.

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BEAM DATA:

Polarization - Horizontal.

SCAN DATA: The loop is mechanically rotatable through 360 degrees.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compass Adapter AN/ARA-1. Equipment function - navigation, direction finding.

MISCELLANEOUS: AT-23/ARA-1 is electrically identical with loop LP-19-A but is smaller in size.

COGNIZANT AGENCY: U. S. Air Force, ARL.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) ARL Specification 172.
- 3) ARL Drawing 172.
- 4) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-24/APQ-1

FREQUENCY: UHF band, 475 - 585 mc.

TYPE: Stub.

DESCRIPTION: This antenna consists of a stub, a matching section with a flange for mounting to the skin of the aircraft, two insulators, and a type N connector.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APQ-1. Equipment function - countermeasures.

MISCELLANEOUS: Identical with Antenna AN-132-A but has a type N connector instead of a Signal Corps type SC-239. It is identical to

Antenna AS-33/APT-2.

COGNIZANT AGENCY: U. S. Air Force, ARL.

MANUFACTURER: Delco Radio Division of General Motors, contract 9246-WF-43, plans 1084 and 44-199.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-36(\*)/APT

ANTENNA AT-36(\*)/APT

FREQUENCY: VHF band, 150 - 220 mc; VSWR < 2 from 148 to 217 mc on 50-ohm coaxial line.

TYPE: Blade.

DESCRIPTION: This antenna consists of the AT-52/APT stub antenna with a mount. The mounts for the AT-36/APT and AT-36A/APT are similar. The mount for the unlettered model may have either a UG-21/U connector at the bottom or a UG-58/U connector on the side. The mount for the A-model has an additional large reinforcing plate, and the UG-58/U connector is on the side of the mount. Overall length of mount and stub is 25 inches; length outside the skin of the aircraft is 17 inches; weight is 5-1/2 pounds. The mounting position of the antenna depends upon the type of polarization desired and the type of aircraft involved. A 50-ohm coaxial cable is used for connection to the transmitter.

BEAM DATA:

Polarization - Linear, polarization depends upon the mounting position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APT-1. Equipment function - countermeasures, jamming. AN/APR-1. Equipment function - countermeasures, search.

MISCELLANEOUS: AT-36(\*)/APT represents AT-36/APT and AT-36A/APT. The AT-36A/APT differs from the AT-36-36/APT in the addition of a large reinforcing plate. (See Description.) References 1 and 2 indicate that AT-36/APT is obsolete.

COGNIZANT AGENCY: U. S. Air Force, ARL.

MANUFACTURER: Camfield Manufacturing Company, procurement orders 2AK203-36 and 1006-DAY-44.

STOCK NUMBERS:

AT-36/APT ... Federal Stock Number 5895-156-6640A,  
AT-36A/APT... U. S. Navy RL6A5050-300.

REFERENCES:

- 1) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.

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- 2) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 3) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.
- 4) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 5) U. S. Army Specification 7251694.
- 6) U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-37(\*)/APT

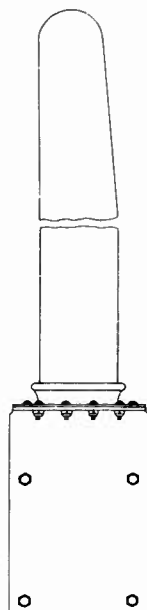
FREQUENCY: VHF band, 113 - 150 mc; VSWR < 2 from 113 to 145 mc on 50-ohm coaxial line.

TYPE: Blade.

DESCRIPTION: This antenna is similar to the AT-36(\*)/APT. The AT-37(\*)/APT consists of Antenna Stub AT-53/APT with a mount. The mount has the same type of model variations as the mount for the AT-36(\*)/APT. The overall length of the mount and mast is 31 inches; length outside the skin of the aircraft is 23 inches. Approximate weight is 5-1/2 pounds.

### BEAM DATA:

Polarization - Linear, polarization depends upon the mounting position.



AT-37/APT

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## ANTENNA AT-38(\*)/APT

FREQUENCY: VHF band, 93 - 113 mc; VSWR < 2 from 93 to 113 mc on 50-ohm coaxial line, VSWR < 5 from 70 to 400 mc on 50-ohm coaxial line.

TYPE: Blade.

DESCRIPTION: This antenna is similar to the AT-36(\*)/APT. The AT-38(\*)/APT consists of

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APT-1. Equipment function - countermeasures, jamming.  
AN/APR-1. Equipment function - countermeasures, search.

MISCELLANEOUS: AT-37(\*)/APT represents AT-37/APT and AT-37A/APT. The AT-37A/APT differs from the AT-37/APT in the addition of a large reinforcing plate. References 1 and 2 indicate that AT-37/APT is obsolete.

COGNIZANT AGENCY: U. S. Air Force, ARL.

MANUFACTURER: Camfield Manufacturing Company.

### STOCK NUMBERS:

AT-37/APT ... U. S. Navy R16AN-AT37APT  
Signal Corps 2A3391-37  
Air Force 1660-205292020  
AT-37A/APT ... Federal Stock Number 5895-296-2304.

### REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.
- 3) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Transmitting Equipment AN/APT-1, AN 16-30APT1-2, (April 4, 1944 - revised Jan. 19, 1949). UNCLASSIFIED.
- 4) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 5) U. S. Department of Defense Nomenclature Card.

# UNCLASSIFIED

Antenna Stub AT-54/APT with a mount. The mount has the same type of model variations as the mount for the AT-36(\*)/APT. The overall length of mount and mast is 37-1/2 inches; length outside the skin of the aircraft is 29-1/2 inches. Approximate weight is 6-1/4 pounds.

## BEAM DATA:

Polarization - Linear; polarization depends upon the mounting position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APT-1, AN/APR-3, AN/APR-4, and AN/ARR-5. Equipment function - countermeasures, jamming; and countermeasures, search.

MISCELLANEOUS: AT-38(\*)/APT represents AT-38/APT and AT-38A/APT. The AT-38A/APT differs from the AT-38/APT in the addition of a large reinforcing plate. References 1 and 2 indicate that AT-38/APT is obsolete.

COGNIZANT AGENCY: U. S. Air Force, ARL.

MANUFACTURERS: Camfield Manufacturing Company,

contract 1006-DAY-44; Haskelite Company, contract 513-DAY-45-RC.

STOCK NUMBERS: AT-38/APT ... U. S. Navy R16AN-AT38APT, Signal Corps 2A3391-38. Current stock number lists indicate that this item is not stocked by the U. S. Air Force. AT-38A/APT ... Federal Stock Number 5895-155-8264.

## REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.
- 3) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.
- 4) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-40/ARR-5

Cancelled 25 March 1944.

## ANTENNA AT-41/APT

FREQUENCY: VHF band, 150 - 220 mc; VSWR < 2 on 50-ohm coaxial line.

TYPE: Blade.

DESCRIPTION: AT-41/APT is the same as the AT-36/APT stub antenna but has the top plate of the mounting base at 45 degrees to the stub for angular mounting. It is electrically but not mechanically interchangeable with the AT-36/APT.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APT-1. Equipment function - countermeasures, jamming.

MISCELLANEOUS: Reference 1 indicates AT-41/APT is obsolete.

COGNIZANT AGENCY: U. S. Air Force, ARL.

STOCK NUMBER: Federal Stock Number 5895-284-8309.

## REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 2) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-42/APT

FREQUENCY: VHF band, 113 - 150 mc; VSWR < 2 on 50-ohm coaxial line.

TYPE: Blade.

DESCRIPTION: AT-42/APT is the same as the AT-37/APT but has the top plate of the mounting base at 45 degrees to the stub for

angular mounting. It is electrically but not mechanically interchangeable with the AT-37/APT.

INSTALLATION: Airborne.

# UNCLASSIFIED



# UNCLASSIFIED

ASSOCIATED EQUIPMENT: AN/APT-1 and AN/APT-3.  
Equipment function - countermeasures, jamming.

MISCELLANEOUS: References 1 and 2 indicate that AT-42/APT is obsolete.

COGNIZANT AGENCY: U. S. Air Force, ARL.

STOCK NUMBER: Federal Stock Number 5895-285-0314.

## REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

- 2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.

- 3) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.

- 4) U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-43/APT

FREQUENCY: VHF band, 93 - 113 mc; VSWR < 2 on 50-ohm coaxial line.

TYPE: Blade.

DESCRIPTION: AT-43/APT is the same as the AT-38/APT but has the top plate of the mounting base at 45 degrees to the stub for angular mounting. It is electrically but not mechanically interchangeable with the AT-38/APT.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APT-1 and AN/APT-3.  
Equipment function - countermeasures, jamming.

MISCELLANEOUS: References 1 and 2 indicate that AT-43/APT is obsolete.

COGNIZANT AGENCY: U. S. Air Force, ARL.

STOCK NUMBERS: Federal Stock Number 5895-538-0949.

## REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

- 2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.

- 3) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.

- 4) U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-49(\*)/APR-4

FREQUENCY: VHF, UHF, and SHF bands, 200 - 3300 mc; VSWR < 5 from 200 to 3000 mc on 50-ohm coaxial cable.

TYPE: Conical.

DESCRIPTION: The cone of this conical antenna is the flared extension of the inner conductor of a tapered section of coaxial line. The outer conductor of the tapered section becomes the base plate upon which the antenna is mounted. The cone is current-fed; it has a curved top plate and is fitted with a type UG-58/U chassis connector. The mounting flange attaches to the skin of the aircraft. A UG-21/U r-f plug and RG-8/U r-f cable are required. The cone is 6 inches high and 7 inches in diameter; it extends 7-1/2 inches outside the skin of the aircraft. The overall antenna is 10-1/2 inches high and 8 inches in diameter with the mounting flange. The apex angle is 60 degrees, and the weight is 2.3 pounds. The antenna should be mounted on the underside

of the aircraft so that the axis of the cone makes an angle of 45 degrees with and below the horizontal. When two of these antennas are used, they are mounted as described on opposite sides of the aircraft. Antenna Cover CW-46/APR-4 or CW-33/APR-4 is used with the antenna.

## BEAM DATA:

Half-power beamwidth - The radiation pattern is typical of a quarter-wavelength stub against a ground plane.

Polarization - Linear, mounted at 45° angle and will receive either vertically horizontally waves.

TUNING/MATCHING DEVICES: A matching section is built into the base and terminates in a connector assembly as shown on drawing number SC-C-10691-A.

INSTALLATION: Airborne and ground.

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ASSOCIATED EQUIPMENT: Receiving Equipment AN/APR-4. Equipment function - countermeasures, search; Transmitter AN/APT-5() and AN/APT-9. Equipment function - countermeasures, jamming; Radio Interference Measuring Set AN/URM-42. Equipment function - countermeasures, monitoring.

MISCELLANEOUS: AT-49(\*)/APR-4 denotes the unlettered, the A, and the B models of this antenna. The A model differs from the unlettered model in that it has a 6-inch instead of 8-inch diameter. The B model is identical to the A model but is moisture proofed per Technical Order 01-1-391. The three models are electrically interchangeable and are also interchangeable with Antenna AS-115/APR.

## COGNIZANT AGENCY:

AT-49/APR-4 and ()...ARL-48-R203, AFMRD-5A/3;

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## ANTENNA AT-52/AP

FREQUENCY: VHF band, 150 - 220 mc, VSWR < 2 on 50-ohm coaxial line.

TYPE: Blade.

DESCRIPTION: AT-52/AP is a phenolic-impregnated maple mast with heavy copper plating. The radiating part consists of the copper plating which is connected to the antenna connector by a wide, tapered strip of copper called a dog ear. The shape and mounting of the dog ear are important factors in obtaining the widest possible bandwidth. Overall length is 23-3/4 inches; length of the copper-plated portion is 16-1/2 inches; width is 2-7/8 inches; thickness is 1-3/16 inches. AT-52/AP does not include mounting provisions. See AT-36/APT and AT-41/APT.

## BEAM DATA:

Polarization - Linear, dependent upon position of mounting.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Several airborne countermeasures equipments. Equipment function - countermeasures, search; and countermeasures, jamming.

MISCELLANEOUS: Reference 2 indicates that

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## ANTENNA AT-53/AP

FREQUENCY: VHF band, 113 - 150 mc; VSWR < 2.

TYPE: Blade.

DESCRIPTION: AT-53/AP is a phenolic-impregnated maple mast with a heavy layer of copper plating. The radiating part, consisting of the copper plating, is connected to the antenna connector by means of a tapered

AT-49A/APR-4 ...ARL-43-R232, AFMRD-5A/3;  
AT-49B/APR-4 ...AEL-50-630, AFDRD-EL-4.

MANUFACTURERS: Crosley Radio Corporation, type CAGW, procurement contract 344-DAY-44.

## STOCK NUMBER:

AT-49A/APR-4...Federal Stock Number 5895-180-3131A,  
AT-49B/APR-4...Federal Stock Number 5895-030-2436A.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

AT-52/AP has been replaced by AT-130/AP.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBERS: U. S. Navy RL6AN/AT52AP(L), RL6AN-AT52AP(R).

## REFERENCES:

- 1) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.
- 2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (October 31, 1956). SECRET.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 4) Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Dec. 3, 1945). UNCLASSIFIED.
- 5) U. S. Department of Defense Nomenclature Card.

strip of copper called a dog ear. The shape and mounting of the dog ear are important in obtaining the widest possible bandwidth. Overall length is 30-3/4 inches; length of the radiating portion is 22-1/2 inches; overall width is 2-7/8 inches; overall thickness is 1-3/16 inches. AT-53/AP does not include mounting provisions. See AT-37/APT and AT-42/APT.

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BEAM DATA:

Polarization - Linear, dependent upon position of mounting.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Several airborne countermeasures equipments. Equipment function - countermeasures, search; countermeasures, jamming.

MISCELLANEOUS: Reference 4 indicates that AT-53/AP has been replaced by AT-121/AP.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBERS: U. S. Navy RL6AN-AT53AP(L), RL6AN-AT53AP(R).

REFERENCES:

- 1) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.

- 2) Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Dec. 3, 1945). UNCLASSIFIED.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 4) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (October 31, 1956). SECRET.
- 5) U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-54/AP

FREQUENCY: VHF band, 93 - 113 mc; VSWR < 2.

TYPE: Blade.

DESCRIPTION: AT-54/AP is a phenolic-impregnated maple mast with a heavy layer of copper plating. The radiating part, consisting of the copper plating, is connected to the antenna connector by means of a wide, tapered strip of copper called a dog ear. The shape and mounting of the dog ear are important factors in obtaining the widest possible bandwidth. Overall length is 37-1/4 inches, length of the radiating or copper-plated portion is 29 inches; overall width is 2-7/8 inches; overall thickness is 1-3/16 inches. AT-54/AP does not include mounting provisions. See AT-38/APT and AT-43/APT.

BEAM DATA:

Polarization - Linear, dependent upon position of mounting.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Several airborne countermeasures equipments. Equipment function - countermeasures, search; and countermeasures, jamming.

MISCELLANEOUS: Reference 4 indicates that

AT-54/AP has been replaced by AT-138/AP.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBERS: U. S. Navy RL6AN-AT54AP(L), RL6AN-AT54AP(R).

REFERENCES:

- 1) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.
- 2) Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Dec. 3, 1945). UNCLASSIFIED.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 4) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (October 31, 1956). SECRET.
- 5) U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-61/AXT-5

FREQUENCY: VHF band, 84 - 108 mc; VSWR < 2 on 50-ohm coaxial line.

TYPE: Stub.

DESCRIPTION: The available information on this antenna is incomplete. The following de-

scription is taken directly from Reference 1. "Consists of a sleeve antenna, one quarter-wavelength long. The lower 21 inches of the element has a 1-3/8-inch diameter; the remainder of the element consists of a 1/8-inch-diameter spring-steel rod. Overall length is 38-1/2 inches, of which 33-3/8

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inches extends above the ground plane and functions as the radiator. The 1-3/8-inch diameter section contains an impedance matching section. The approximate weight of the antenna is 6.7 pounds."

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/AXT-5. Equipment function - television.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Radio Corporation of America, contract NXss-2059b.

STOCK NUMBER: Signal Corps 2A203-61. Current stock number lists indicate that this item is not stocked by the U. S. Air Force.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA REFLECTOR AT-62/APS-3

FREQUENCY: SHF band, 9310 - 9405 mc.

TYPE: Paraboloidal reflector.

DESCRIPTION: This is a magnesium paraboloidal reflector approximately 18-1/2 inches in diameter. The focal length of the dish is 5.66 inches. It was designed as a part of Antenna Assembly AS-12/APS-3.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APS-3. Equipment function - search, surface; and IFF.

MISCELLANEOUS: The nomenclature card and Reference 1 indicate that this reflector, as

used in the AN/APS-3 system, is designed to give a  $csc^2$  beam. Unless the available photograph (See AS-12/APS-3) is in error, the reflector produces very little if any  $csc^2$  beam shaping.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBERS: U. S. Navy R16AN-AT62APS3.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-67/AP

FREQUENCY: UHF and SHF bands, 2400 - 3335 mc; VSWR < 5 on 51-ohm coaxial line.

TYPE: Horn.

DESCRIPTION: This is a horn-type, broadband antenna, with a diameter of approximately 3-1/2 inches. It is equipped with a fitting to connect to a UG-18/U r-f plug. The horn is fed by coaxial cable.

BEAM DATA:

Polarization - Vertical or horizontal.

ASSOCIATED EQUIPMENT: Power Meter TS-125/AP and Wavemeter TS-117/GP. Equipment function - test.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Cover-Dual Signal System, Inc., procurement order 1109-DAY-44.

STOCK NUMBER: Federal Stock Number 6625-224-4385.

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AT-67/AP

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA STUB AT-79/AP

See AS-116/APR-3.

ANTENNA STUB AT-80/AP

See AS-117/APR-3.

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ANTENNA AT-81/APX

FREQUENCY: VHF band, 123 - 150 mc; VSWR < 2.

COGNIZANT AGENCY: U. S. Navy.

TYPE: Stub.

MANUFACTURER: Harvey Radio Laboratories, Inc., contract NXss31096.

DESCRIPTION: This is a quarter-wavelength stub antenna which uses the skin of the aircraft for the ground plane.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

BEAM DATA:

Beam type - Omnidirectional in the horizontal plane.

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APX-3. Equipment function - IFF.

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ANTENNA AT-83/AP

FREQUENCY: VHF band, 157 - 187 mc.

TYPE: Loop.

DESCRIPTION: This is a cadmium-plated bronze loop with a diameter of 1-1/2 inches. The connector used is an SO-239 socket. The overall antenna is 2-1/16 inches long, 1 inch wide, and 2 inches high. The weight is approximately 4 ounces.

ASSOCIATED EQUIPMENT: Monitor Unit TS-256/AP.  
Equipment function - test.

COGNIZANT AGENCY: U. S. Air Force.

STOCK NUMBER: Signal Corps 2A203-83.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-86/ART-22

FREQUENCY: HF, VHF, and UHF bands, 27 - 325 mc; VSWR < 2 on 50-ohm coaxial line.

TYPE: Dipole.

DESCRIPTION: This is a coaxial type, broad-band, dipole which is weatherproofed and gold plated to withstand corrosion. It uses a type N connector. The overall dimensions are 32 inches in length by 2-1/4 inches in diameter. The weight is 2 pounds. The antenna mounts on top of the vertical stabilizer when used on the TBM-3 aircraft.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ART-21. Equipment function - telemetering (AEW radar relay).

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Work Shop Associates.

STOCK NUMBER: U. S. Navy R16A5049.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-87(\*)/APX-13

FREQUENCY: VHF band, 175 - 215 mc; VSWR < 1.5 on 50-ohm coaxial line.

TYPE: Stub-sleeve dipole.

DESCRIPTION: This is a stub-sleeve antenna formed of a rod 8 inches long and 1/4 inch in diameter, a sleeve 9 inches long and 1 inch in diameter, and a steatite insulator. The top of the sleeve is connected to the outer conductor of the coaxial feed line, and the rod is connected to the center conductor. The steatite insulator mounts on top of the sleeve and holds the rod in a vertical position on the axis of the sleeve. (See illustration.) The overall length of the AT-87/APX-13 including its connector is 18-1/2 inches, and its approximate weight is 3 pounds. The overall length of the AT-87A/APX-13 including its connector is 19-1/8 inches, and its approximate weight is 1-3/4 pounds.

BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APX-13. Equipment function - IFF.

MISCELLANEOUS: AT-87(\*)/APX-13 represents AT-87/APX-13 and AT-87A/APX-13. AT-87A/APX-13 is a redesigned AT-87/APX-13 for improved performance.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER:

AT-87/APX-13 ...Hallcrafters, Inc., contract NOA(s)10040,  
AT-87A/APX-13 ...Work Shop Associates

STOCK NUMBERS:

AT-87/APX-13 ... U. S. Navy R16A4989-25,  
AT-87A/APX-13 ... U. S. Navy R16A4934-219.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-89/AP

See AS-181/AP.

ANTENNA AT-90/AP

See AS-181/AP.

ANTENNA AT-91/AP

See AS-181/AP.

ANTENNA AT-92/AP

See AS-245/AP.

ANTENNA AT-93/AP

See AS-245/AP.

ANTENNA AT-94/AP

See AS-245/AP.

ANTENNA AT-95/AP

See AS-245/AP.

ANTENNA AT-96(\*)/APN-12

FREQUENCY: VHF band, 160 - 240 mc; VSWR < 2  
on 52-ohm coaxial line.

TYPE: Blade.

DESCRIPTION: This is a streamlined, broadband antenna fed by a coaxial cable. The skin of the aircraft is used as a ground plane. (See photo.) Two of these antennas are used in conjunction with two AT-97/APN-12 parasitic reflectors. One antenna is used for receiving, and one is used for transmitting in interrogator-responder operation. The approximate overall antenna is 15 inches by 6 inches by 10 inches. The approximate weight is 1-1/2 pounds.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Sets AN/APN-28 and AN/APN-12. Equipment function - navigation.

MISCELLANEOUS: AT-96(\*)/APN-12 represents the AT-96/APN-12 and the AT-96A/APN-12. The AT-96A/APN-12 is similar to AT-96/APN-12 except for improved internal construction of the antenna shell to obtain better resistance to corrosion and water damage. The construction of the center pin of the plug was

changed to a threaded connection instead of a spring connection.

COGNIZANT AGENCY: U. S. Air Force, ARL.

MANUFACTURERS:

AT-96/APN-12 ... Vendo Company, contract 670-DAY-45RA,  
AT-96A/APN-12 ... Wilcox Electric Company, contract AF 33(038)-1500.

STOCK NUMBER: AT-96/APN-12 ... Signal Corps 2A203-96.

REFERENCES:

- 1) Pattern Measurements of Antennas, Report No. Data Set 147. Columbus, Ohio: The Antenna Laboratory, Department of Electrical Engineering, Ohio State University Research Foundation, (Aug. 15, 1950), ASTIA Report No. ATI 94920. UNCLASSIFIED.
- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Radar Set AN/APN-12, AN 16-30APN12-2, (Jan. 10, 1946). UNCLASSIFIED.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 4) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-97/APN-12

FREQUENCY: VHF band, 160 - 240 mc.

TYPE: Parasitic blade.

DESCRIPTION: This is a streamlined parasitic reflector element for use with AT-96(\*)/APN-12. The approximate overall dimensions are 18 inches by 6 inches by 10 inches. The approximate weight is 1-1/2 pounds. A mounting space of about 10-1/4 inches by 6 inches is required.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-12.  
Equipment function - navigation.

COGNIZANT AGENCY: U. S. Air Force, ARL.

MANUFACTURERS: Vendo Company, contract 670-DAY-45-RA.

STOCK NUMBER: Federal Stock Number 5895-166-4270A.

REFERENCES:

- 1) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Radar Set AN/APN-12, AN 16-30APN12-2, (Jan. 10, 1946). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-103/APS-15

FREQUENCY: SHF band, 9335 - 9415 mc for search, 9307 - 9313 mc for beacon; VSWR<2 from 9307 to 9415 mc on X-band waveguide.

TYPE: Waveguide multidipole feed which serves the purpose of a horn.

DESCRIPTION: This antenna is intended for use only as a feed for a paraboloidal reflector. This feed is a straight length of X-band waveguide with a choke flange and a mounting flange on one end and four parasitic dipole radiators mounted on a plate at the other end. The feed extends through a hole in the reflector near the vertex. The dipoles are enclosed in a plastic housing and are oriented to direct the energy from the waveguide into the paraboloid. The length of the feed is 14-1/2 inches.

BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APS-15. Equipment function - search, surface; and navigation.

MISCELLANEOUS: The AT-103/APS-15 is used as a feed for the reflector of the AS-18A/APS-15 antenna assembly. Feeds other than the AT-103/APS-15 are, however, often used with the reflector in the AN/APS-15 system.

COGNIZANT AGENCY: U. S. Navy.

STOCK NUMBER: Navy R16A4955-60

REFERENCES:

- 1) A. S. Dunbar, Antenna for High Altitude Bombing (H<sub>2</sub>X), Report No. 411. Cambridge, Mass.: Massachusetts Institute of Technology, Radiation Laboratory. (Aug. 3, 1943). ASTIA Report No. ATI 5751. UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-104/APN-19

FREQUENCY: UHF band, 2750 - 2950 mc; VSWR<2 on 52-ohm coaxial cable.

TYPE: Stub.

DESCRIPTION: This antenna is a quarter-wave stub. The radiating element is constructed of one piece of 5/8-inch brass tubing with a gold finish and is mounted on a plate 3 inches in diameter. The approximate weight is 4 ounces. The antenna is installed on the under side of the fuselage of aircraft.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Sets AN/APN-19, AN/APN-60, and AN/APN-65. Equipment function - navigation; IFF; and guidance.

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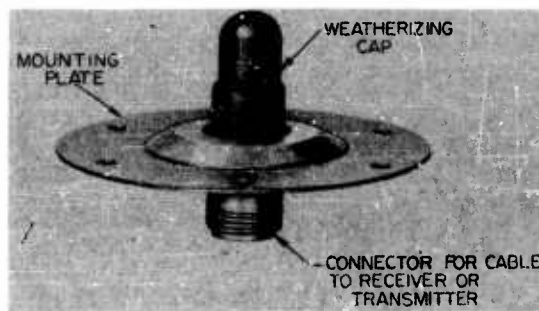
COGNIZANT AGENCY: United States Air Force, ARL.

MANUFACTURER: Gilfillan Bros., Inc., USAF contract 2046-DAY-45RA.

STOCK NUMBER: Federal Stock Number 1660 5826-145-6730.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. War and Navy Departments, Handbook of Operating Instructions for Radar Beacon AN/APN-19, AN 16-30APN19-2, (June 20, 1945). UNCLASSIFIED.



AT-104/APN-19

ANTENNA AT-111/AP

FREQUENCY: UHF band, 2700 - 2900 mc; VSWR<2 on 50-ohm coaxial line.

TYPE: Stub.

DESCRIPTION: This is a silver-plated brass antenna of one-piece construction. It consists of a stub and an r-f connector on a circular mounting flange. The diameter of the mounting flange is 3 inches, and the length of the stub including the r-f connector is 2-1/4 inches. On the mounting flange are six 1/8-inch-diameter holes spaced 60° apart on a 1-1/4-inch radius. Weight does not exceed 1/2 pound.

BEAM DATA:  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Sets AN/APW-11 and AN/APW-1. Equipment function - beacon.

COGNIZANT AGENCY: United States Air Force, AEL.

MANUFACTURER: Aircraft Radio Corp., USAF contract 3002-DAY-45SP.

STOCK NUMBER: Signal Corps 2A3391-111.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-115/AP

FREQUENCY: UHF and SHF bands, 2700 - 3350 mc; VSWR<2 on 50-ohm coaxial line.

TYPE: Dielectric rod.

DESCRIPTION: The antenna consists of a section of probe-excited cylindrical waveguide which is terminated in a tapered polystyrene rod. A quarter-wave matching transformer matches the impedance of the probe to the coaxial feed line. Overall dimensions are 8 inches long by 2 inches in diameter. The weight is less than 2 pounds. The antenna was designed for installation on the JB-2 jet-propelled missile. Two antennas are used in the JB-2 installation; one is mounted on each tip of the horizontal stabilizer.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APN-33 and similar equipments. Equipment function - beacon.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Majestic Radio Television Corp., contract NOas-4516.

STOCK NUMBER: Signal Corps 2A203-115.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA REFLECTOR AT-116/APQ

FREQUENCY: SHF band, 9307 - 9415 mc.

TYPE: Modified parabolic-cylinder reflector.

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DESCRIPTION: This is a shaped cylindrical reflector, 60 inches wide by 12 inches high, designed as a part of AS-291/APQ. The reflector is constructed of clear-finish sheet aluminum and weighs approximately 25 pounds.

## BEAM DATA:

Gain - 32 db.  
Half-power beamwidth - Horizontal -  $1.5^\circ$ .  
 Vertical -  $6^\circ$  to  $20^\circ$   
 downward from the horizontal plane.  
Polarization - Horizontal.

SCAN DATA: See AS-291/APQ.

INSTALLATION: Airborne, B-29 aircraft.

ASSOCIATED EQUIPMENT: Radar Sets AN/APQ-13,

AN/APQ-13A, AN/APQ-23, AN/APQ-23A. Equipment function - bombing and navigation.

COGNIZANT AGENCY: United States Air Force, AEL.

MANUFACTURER: Boeing Aircraft Co., Los Angeles, California, contract W-535-AC-19673, change N-21900.

## REFERENCES:

- 1) The AN/APQ-13 (60") Scanner in B-29 Airplanes, Report No. 848. Cambridge, Mass.: Massachusetts Institute of Technology, Radiation Laboratory. ASTIA Report No. ATI 24466. (Oct. 29, 1945). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-119/ARW

FREQUENCY: VHF band, 30 - 42 mc.

TYPE: Dipole.

DESCRIPTION: This dipole-type antenna is formed by installing a length of seven-strand phosphor-bronze wire 106 inches long from each wing of the JB-2 radio-controlled missile to the fuselage.

## BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ARW-17. Equipment function - guidance, control.

COGNIZANT AGENCY: U. S. Navy.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-120/ART-24

FREQUENCY: VHF and UHF bands, 264-372 mc; VSWR<2 on 50-ohm coaxial.

TYPE: Stub-sleeve dipole.

DESCRIPTION: The overall stub-sleeve dipole is  $32\frac{1}{2}$  inches long by  $2\frac{1}{4}$  inches in circumference. The upper quarter-wavelength section of the antenna is covered by a specially constructed radome. Peak power handling capability is 4 kw. The input impedance is 50 ohms.

## BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ART-24. Equipment function - guidance, control.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Contract NavAer 00376.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517 (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-121(\*)/AP

FREQUENCY: VHF band, 90 - 155 mc; VSWR<1.6.

TYPE: Blade.

DESCRIPTION: The antenna consists of a grounded sleeve and a streamlined, hollow stub which are joined mechanically by a fiberglass

collar. The stub is  $34\frac{7}{8}$  inches long,  $5\frac{13}{16}$  inches wide, and  $1\frac{9}{16}$  inches thick (maximum). The antenna weight is 3.3 pounds. The blade is mounted at an angle of  $45^\circ$  with respect to the horizontal and is fed by RG-14/U coaxial cable. The mounting base is AB-117/AP.

# UNCLASSIFIED

# UNCLASSIFIED

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: This blade antenna is used with various countermeasures equipments.

MISCELLANEOUS: The AT-121(\*)/AP represents the AT-121/AP and the AT-121A/AP. The AT-121A/AP is structurally superior to the AT-121/AP. The AT-121(\*)/AP is similar to Antennas AT-130/AP and AT-138/AP.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Airborne Instruments Lab., Inc., procurement contract NOas 52-763.

STOCK NUMBER: Navy R16AN-AT121AP.

## REFERENCES:

- 1) Bureau of Aeronautics, Instruction Sheet for Antennas AT-121/AP, AT-130/AP, AT-

138/AP and Antenna Base AB-117/AP, NAVAER 16-35ATI21-501, (Jan. 4, 1949). UNCLASSIFIED.

- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.
- 4) Private Correspondence.
- 5) BuAer Specification 16A43(Aer).
- 6) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-123/AP

FREQUENCY: UHF band, 300 - 1000 mc; VSWR < 5.

TYPE: Conical antenna.

DESCRIPTION: The antenna consists of an inverted cone 7 inches in diameter and a mounting flange 6 inches in diameter. The antenna is normally mounted on the aircraft with the cone at an angle of about 45° with respect to the skin of the aircraft.

## BEAM DATA:

Polarization - Linear (dependent on mounting position).

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APR-4. Equipment function - countermeasures.

MISCELLANEOUS: AT-123/AP is similar to AT-49A/APR-4, but it operates over a narrower frequency range and the cone is tilted.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Camfield Mfg. Co.

STOCK NUMBER: Navy R16A4934-207.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-125(\*)/AP

FREQUENCY: UHF band, 330 - 680 mc; VSWR<2 on 50-ohm coaxial cable.

TYPE: Blade.

DESCRIPTION: The antenna consists of a streamlined aluminum stub, and mounts on AB-109/AP antenna base. The overall length of the antenna is 8-1/4 inches.

## BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Transmitting Equipment AN/APQ-2A. Equipment function - countermeasures, deception.

MISCELLANEOUS: Antenna AT-125(\*)/AP designates antennas AT-125/AP and AT-125A/AP

which are electrically and mechanically interchangeable. Antenna AT-125A/AP is mechanically stronger and less affected by corrosion.

References 2) and 3) below state that Antenna AT-125/AP is part of Antenna Assembly AS-336/AP.

COGNIZANT AGENCY: WADC;

AT-125/AP . . . ARL-45-498

AT-125A/AP. . . AEL-50-653

MANUFACTURERS: AT-125/AP. . . Rowe Industries, procurement contract 44-5526.

AT-125A/AP. . . American Electronic Laboratories, Inc.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

# UNCLASSIFIED

2) Private Correspondence.

3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-126(\*)/AP

FREQUENCY: VHF and UHF bands, 190 - 350 mc;  
VSWR<2 on 50-ohm coaxial cable.

TYPE: Blade.

DESCRIPTION: The antenna consists of a stream-lined aluminum stub and mounts on AB-109/AP antenna base. The overall length of the antenna is 12-7/8 inches.

### BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Transmitting Equipment AN/APQ-2A. Equipment function - counter-measures, deception.

MISCELLANEOUS: Antenna AT-126(\*)/AP designates antennas AT-126/AP and AT-126A/AP which are electrically and mechanically interchangeable-

able. Antenna AT-126A/AP is mechanically stronger and less affected by corrosion. The references below state that Antenna AT-126/AP is part of Antenna Assembly AS-336/AP.

### COGNIZANT AGENCY: WADC;

AT-126/AP . . . ARL-45-499

AT-126A/AP. . . AEL-50-655

### MANUFACTURERS:

AT-126/AP . . . Rowe Industries, procurement contract 44-5526.

AT-126A/AP. . . Aircraft Radiation Laboratory (development model)

### REFERENCES:

1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-127(\*)/AP

FREQUENCY: VHF band, 130 - 210 mc; VSWR<2 on 50-ohm coaxial cable.

TYPE: Blade.

DESCRIPTION: The antenna consists of a stream-lined aluminum stub and mounts on AB-109/AP antenna base. The overall length of the antenna is 19-1/4 inches.

### BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Transmitting Equipment AN/APQ-2A. Equipment function - counter-measures, deception.

MISCELLANEOUS: Antenna AT-127(\*)/AP designates antennas AT-127/AP and AT-127A/AP which are electrically and mechanically interchangeable. Antenna AT-127A/AP is mechanically stronger and less affected by corrosion.

The references below state that Antenna AT-127/AP is part of Antenna Assembly AS-336/AP.

### COGNIZANT AGENCY: WADC;

AT-127/AP. . . ARL-45-500

AT-127A/AP . . . AEL-50-656

### MANUFACTURERS:

AT-127/AP. . . Rowe Industries, procurement contract 44-5526

AT-127A/AP . . . Aircraft Radiation Laboratory (development model)

STOCK NUMBER: Federal Stock Number 1660 5985-217-0469

### REFERENCES:

1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-128/AP

FREQUENCY: VHF band, 170-235 mc; VSWR<2.

TYPE: Dipole (swept-back V type).

DESCRIPTION: The antenna is a balanced-sleeve dipole with the straight arms swept back into a "V" shape having an included angle of 80 degrees. The antenna weighs 7 pounds and measures 22-1/2 inches by 28 inches overall.

### BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APQ-2A. Equipment function - countermeasures, deception.

# UNCLASSIFIED

UNCLASSIFIED

COGNIZANT AGENCY: United States Air Force.

2) Specification TMR-3205 from RRL.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

3) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-130/AP

FREQUENCY: VHF band, 135 - 255 mc; VSWR<1.6.

MANUFACTURER: Airborne Instruments Laboratory, Inc.

TYPE: Blade.

STOCK NUMBER: Navy R16A4934-214.

DESCRIPTION: The antenna consists of a grounded sleeve and a streamlined, hollow stub which are joined mechanically by a fiberglass collar. The stub is 24-1/2 inches long, 5-13/16 inches wide, and 1-9/16 inches thick (maximum). The antenna weighs 2.6 pounds. The blade is mounted at an angle of 45° to the horizontal, and is fed by RG-14/U coaxial cable. The mounting base is AB-117/AP.

REFERENCES:

- 1) Bureau of Aeronautics, Instruction Sheet for Antennas AT-121/AP, AT-130/AP, AT-138/AP and Antenna Base AB-117/AP, NAVAER 16-35AT121-501, (Jan. 4, 1949). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) BuAer Specification 16A43(Aer).
- 4) U. S. Department of Defense Nomenclature Card.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: This blade antenna is used with various countermeasures equipments.

MISCELLANEOUS: The AT-130/AP is similar to the AT-121(\*)/AP and the AT-138/AP.

COGNIZANT AGENCY: U. S. Navy.

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ANTENNA AT-131/AP

FREQUENCY: VHF band, 170 - 235 mc; VSWR<2.

ASSOCIATED EQUIPMENT: The antenna is used with various countermeasures receivers and transmitters.

TYPE: Dipole (swept-back V type).

COGNIZANT AGENCY: U. S. Navy.

DESCRIPTION: This is a swept-back V-dipole having an included angle of 80 degrees. Each leg is 21-3/4 inches long and has a 9-inch fiberglass tip. The antenna mounts by means of a 12-inch support to the fuselage of aircraft.

MANUFACTURER: Transco Products, Inc.

STOCK NUMBER: Navy R16A4934-215.

BEAM DATA:

Polarization - Horizontal.

REFERENCES:

- 1) Private Correspondence.
- 2) U. S. Department of Defense Nomenclature Card.

INSTALLATION: Airborne.

.....  
ANTENNA AT-132/ARD-4

FREQUENCY: VHF band, 100 - 160 mc; VSWR<5 on 95-ohm coaxial line.

plastic sheathing of tear-drop cross section. Each stub weighs about 3 pounds. The four stubs are installed either on the top side or the belly of an aircraft fuselage. The center of the rectangular array should be centered laterally on the top or bottom of the fuselage.

TYPE: Stub (normally used as an element in an Adcock antenna).

DESCRIPTION: This component is a stub antenna 22-3/4 inches in length. Four of these stubs are normally used in a rectangular array spaced 17-inches diagonally and connected, through a goniometer, as a crossed-U Adcock antenna. Each stub is enclosed by a

BEAM DATA:

Polarization - Vertical.

SCAN DATA: Simulated 360° azimuth rotation.

INSTALLATION: Airborne.

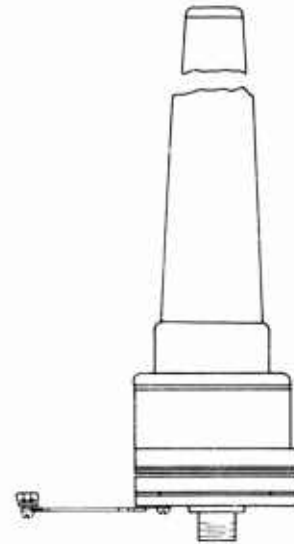
ASSOCIATED EQUIPMENT: Radio Set AN/ARD-4().  
Equipment function - navigation, direction finding.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Federal Telephone and Radio Company, contract NXse-64184.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.



AT-132/ARD-4

ANTENNA AT-134(\*)/ARN

FREQUENCY: VHF band, 72 - 78 mc, normally used at 75 mc; VSWR<1.2 at 75 mc.

TYPE: Cavity-backed slot.

DESCRIPTION: The antenna is a bathtub-shaped, cavity-backed slot. (See illustration.) It is a receiving antenna used with marker beacon equipment and is normally operated at 75 mc. It can be used over the listed bandwidth if a comparatively high VSWR can be tolerated. The antenna is flush mounted. It weighs 1 pound and is 12 inches long, 7-3/4 inches wide, and 3-1/2 inches deep. The input impedance is 50 ohms, and the antenna terminates in a UG-58/U or Navy type 49194 connector, depending on the model. The antenna should be mounted with the long axis of the antenna parallel to the line of flight and the cross axis parallel to the ground.

BEAM DATA:

Polarization - Horizontal.

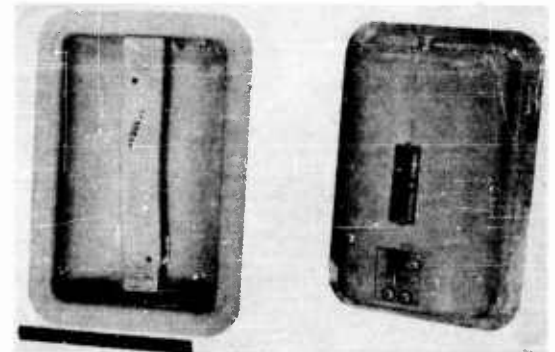
TUNING/MATCHING DEVICES: The antenna can be tuned by a variable capacitor in the range  $75 \pm 0.1$  mc.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Marker Beacon Receiver RC-193, Radio Receiving Equipment AN/ARN-8, and Marker Beacon Receiving Set AN/ARN-12. Equipment function-radar beacon.

MISCELLANEOUS: AT-134(\*)/ARN denotes two models, AT-134/ARN and AT-134A/ARN. AT-134/ARN terminates in a Navy type 49194 connector; AT-134A/ARN terminates in a UG-58/U connector

and is supplied with Adapter UG-146/U so that either a type N or UHF connector may be used on the lead-in. The antennas are identical otherwise.



Antenna AT-134/ARN Top and Bottom Views

COGNIZANT AGENCY: U. S. Navy, and Air Force AER-EL-411.

MANUFACTURERS:

Aldon Products Company. . . Navy Contract NOa(s)-12271,  
Telectro Industries Corporation...Navy Contract NOa(s)-51-1273,  
Electro Craft, Incorporated...Navy Contract NOa(s)-51-1274,  
Ken Standard Corporation...Contract N6005-a-36754,  
Technical Appliance Corporation.

# UNCLASSIFIED

## STOCK NUMBERS:

AT-134/ARN... Navy-ASO R16AN-AT134ARN and Air Force 1600-205975170.  
AT-134A/ARN... Federal Stock Number 5826-284-8314.

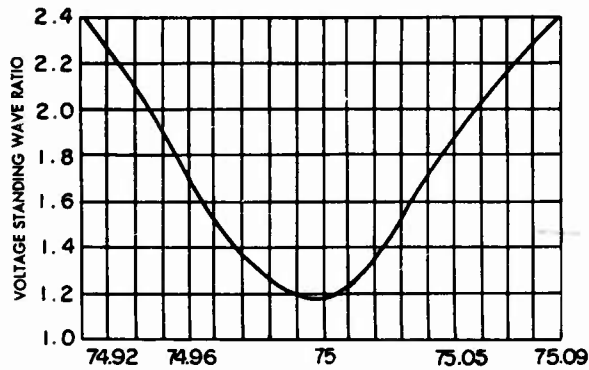
## REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Instruction Sheet for Antenna Assembly AT-134A/ARN, NAVAER 16-35AT134-502, TO 16-35AT134-6, (Mar. 15, 1954). UNCLASSIFIED.

- 2) Army Air Forces and Bureau of Aeronautics, Instruction Sheet for AT-134/ARN Antenna Assembly, NAVAER 16-35AT134-501, (Nov. 15, 1947). UNCLASSIFIED.

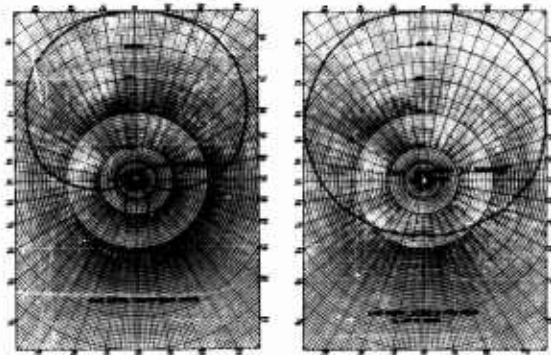
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

- 4) U. S. Air Force, USAF Aircraft Antenna Design Summary, 518-191544, (Mar. 18, 1952) SECRET.



FREQUENCY IN MEGACYCLES PER SECOND

AT-134/ARN VSWR Pattern



AT-134/ARN Radiation Patterns

## ANTENNA AT-138/AP

FREQUENCY: VHF and UHF bands, 250 - 500 mc;  
VSWR<1.6.

TYPE: Blade.

DESCRIPTION: The antenna consists of a grounded sleeve and a streamlined, hollow stub which are joined mechanically, by a fiberglass collar. The stub is 12-13/16 inches long, 3-1/4 inches wide, and 13/32 inch thick (maximum). The weight of the antenna is 1.5 pounds. The blade is mounted at an angle of 45° with respect to the horizontal, and is fed by RG-14/U coaxial cable. The mounting base is AB-117/AP.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Various countermeasures equipments.

MISCELLANEOUS: The AT-138/AP is similar to the AT-121(\*)/AP and the AT-130/AP.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Airborne Instruments Laboratory, Inc.

STOCK NUMBER: Navy R16A5050-900.

## REFERENCES:

- 1) Bureau of Aeronautics, Instruction Sheet

for Antennas AT-121/AP, AT-130/AP, AT-138/AP and Antenna Base AB-117/AP, NAVAER 16-35AT121-501, (Jan. 4, 1949). UNCLASSIFIED.

- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.



AT-121/AP, AT-130/AP, and AT-138/AP

# UNCLASSIFIED

## ANTENNA AT-139/AP

FREQUENCY: UHF band, 500 - 935 mc; VSWR<2 on 50-ohm coaxial cable.

TYPE: Stub sleeve (streamlined).

DESCRIPTION: The antenna is made of cast aluminum and mounts on Antenna Base AB-117/AP. The antenna is 6-1/2 inches long and has an outside diameter of about 2 inches.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Various airborne countermeasures transmitting-receiving equipment. Equipment function - countermeasures, search; and countermeasures, deception.

COGNIZANT AGENCY: U. S. Navy.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-141(\*)/ARC

FREQUENCY: VHF and UHF bands, 225 - 400 mc; VSWR<2.

TYPE: Streamlined stub-sleeve antenna.

DESCRIPTION: The antenna is a broadband, streamlined, stub-sleeve antenna for transmitting or receiving. It is approximately one-quarter wavelength long and has a built-in matching section for 50-ohm coaxial cable. The antenna consists of three segments, a lower sleeve, an insulator, and a broad radiating stub, all securely bonded into a solid, sealed unit. The general shape of the antenna is that of a trapezoid having bases of 7.48 and 1.97 inches. The height of the antenna proper is 11.89 inches while the overall height (including mounting studs) is 14.89 inches. In cross section the antenna has the general shape of an airfoil; i.e., rounded on the leading edge and tapered to a point on the trailing edge. The maximum thickness is 1 inch. The antenna terminates in a UG-21/U receptacle.

### BEAM DATA:

Beam type - Omnidirectional in azimuth; it provides good coverage of vertical angles between  $\pm 30^\circ$  from the horizontal.

Polarization - Vertical.

TUNING/MATCHING DEVICES: The antenna has a built-in matching section.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Sets AN/ARC-12, AN/ARC-13, AN/ARC-19, AN/ARC-27, AN/ARC-30, and AN/ARC-33. Equipment function - communications.

MISCELLANEOUS: AT-141(\*)/ARC denotes two models, AT-141/ARC and AT-141A/ARC. AT-141A/ARC is the same as AT-141/ARC except for a neoprene water seal mounting gasket and reinforced construction.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Vendo Manufacturing Company, Navy contract NOa(s)-7147; and Technical Appliance Corporation, Navy contract NOa(s)-51-503.

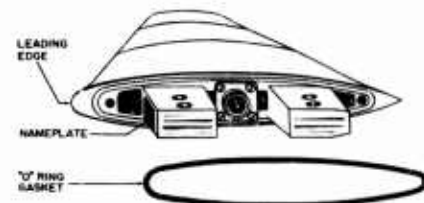
STOCK NUMBER: Navy ASO R16AN-AT141ARC.

### REFERENCES:

- 1) Bureau of Aeronautics, Instruction Sheet for Antenna AT-141/ARC, NAVAER 16-35AT141-501, (Jan. 1, 1949). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Instruction Sheet for Antenna AT-141A/ARC, NAVAER 16-35AT-141-503, (Mar. 1, 1954). UNCLASSIFIED.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.



CHARACTERISTICS ANTENNA AT-141A/ARC	
Frequency Range	225-400mc/s
Impedance	50 ohms
VSWR	less than 2.0
Connector	UG-21/U
Cable	RG-4/U
	RG-8/U
	RG-18/U
Weight	3 lb 7 oz
Will Withstand Air Speeds of 850 mph	



AT-141A/ARC



# UNCLASSIFIED

## ANTENNA AT-145(\*)/A

FREQUENCY: VHF band, 116-260 mc; VSWR < 2 from 120 to 220 mc, VSWR < 4 from 116 to 260 mc.

TYPE: Streamlined stub-sleeve antenna.

DESCRIPTION: The antenna is a broadband, streamlined, stub-sleeve antenna for transmitting or receiving. It is approximately one-quarter wavelength long and has a built in matching section for 50-ohm coaxial cable. The antenna consists of three segments, a lower sleeve, an insulator, and a broad radiating stub, all securely bonded into a solid, sealed unit. The general shape of the antenna is that of a trapezoid having bases of 9-29/64 and 3-5/32 inches. The height of the antenna proper is 19-7/8 inches while the overall height (including mounting studs) is 22-7/8 inches. In cross section the antenna has the general shape of an airfoil; i.e., rounded on the leading edge and tapered to a point on the trailing edge. The maximum thickness is 1-11/32 inches. The antenna terminates in a UG-22/U receptacle.

### BEAM DATA:

Beam Type - Omnidirectional in azimuth; it provides good coverage of vertical angles between  $\pm 30^\circ$  from the horizontal.  
Polarization - Vertical.

TUNING/MATCHING DEVICES: The antenna has a built-in matching section.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARC-1(), AN/APX-1, and AN/APX-2; and Radio Receiving Equipment AN/ARR-2. Equipment function - communications; IFF; and navigation, direction finding.

MISCELLANEOUS: AT-145(\*)/A denotes three models, AT-145/A, AT-145A/A, and AT-145B/A. The three antennas differ only in that the A and B models have fiberglass reinforcements on the external portions of the antennas. The antennas are interchangeable.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Technical Appliance Corporation, Navy contract NOas 51-020; and Bird Electronic Corporation, Navy contracts NOa(s)-10028 and N383s-40284.

### STOCK NUMBERS:

AT-145/A ... Navy-ASO R16A5047-750  
AT-145 A/A... Navy ASO R16A5047-800  
AT-145B/A .. Federal Stock Numbers N5821-519-7198 and F5985-309-4212.

### REFERENCES:

- 1) Bureau of Aeronautics, Instruction Sheet for Antenna AT-145/A, NAVAER 16-35ATI45-501, (Mar. 15, 1948). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Instruction Sheet for Antenna AT-145B/A, NAVAER 16-35ATI45-502, (July 15, 1951). UNCLASSIFIED.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.



AT-145B/A Antenna Assembly

## ANTENNA AT-147/AP

FREQUENCY: UHF and SHF bands, 2700 - 3350 mc; VSWR < 2 on 52-ohm coaxial cable.

TYPE: Dielectric rod.

DESCRIPTION: The antenna is a waveguide, polycone-type antenna used for transmitting or receiving. It consists of a circular, silver-plated, brass waveguide filled with polystyrene which extends 1-3/4 inches beyond the waveguide in the form of a truncated cone. The antenna terminates in a BNC

connector and is fed by 52-ohm coaxial cable. The overall antenna is 10-1/4 inches long and 2 inches in diameter.

### BEAM DATA:

Beam type - A  $45^\circ$  lobe with some minor lobes.

ASSOCIATED EQUIPMENT: Radar Beacon AN/APN-41. Equipment function - radar beacon.

MISCELLANEOUS: AT-147/AP is similar in function to Antenna AS-115/AP except for BNC connectors and method of feed.

# UNCLASSIFIED

COGNIZANT AGENCY: U. S. Navy.

borne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

MANUFACTURERS: Airadio Incorporated, contract NXsa-9528.

2) U. S. Navy Specification CS-550.

STOCK NUMBER: Navy-ASO R16AN-AT147AP.

3) U. S. Department of Defense Nomenclature Card.

## REFERENCES:

1) Bureau of Aeronautics, Handbook of Air-

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## ANTENNA AT-149(\*)/UPN

FREQUENCY: UHF band, 2680 - 2940 mc, VSWR < 2 on 52-ohm cable.

AN/APN-55(). Equipment function - beacon.

TYPE: Turnstile.

DESCRIPTION: The antenna assembly consists of a single turnstile supported above a 2-1/2-inch-diameter plate by two quarter-wave shorted balun sections. Phase quadrature is obtained by feeding one of the baluns through a quarter-wave phasing section. The assembly is constructed of silver-plated brass, and is 2-1/2 inches in diameter by 1-1/2 inches high, with a 6-foot length of 52-ohm coaxial cable permanently attached.

MISCELLANEOUS: Nomenclature AT-149(\*)/UPN denotes two models, AT-149(XE-1)/UPN and AT-149(XE-2)/UPN. Antenna AT-169(XE-1)/UPN is similar but will withstand temperatures to 1000° F, using 52-ohm RG-81/U (Pyrotex) coaxial cable. Nomenclature AT-149/UPN was cancelled in September 1947 and was redesignated AT-149(XE-1)/UPN.

COGNIZANT AGENCY: ESL-3504-A.

## REFERENCES:

1) Leonard E. Moore, Supplement to an S-Band Circularly Polarized Antenna. Belmar, New Jersey: Evans Signal Laboratory. (April 8, 1946). ASTIA Report No. ATI-3865. UNCLASSIFIED.

2) U. S. Department of Defense Nomenclature Card.

## BEAM DATA:

Half-power beamwidth - 70° to 90°.

Beam type - Conical.

Polarization - Circular.

INSTALLATION: Airborne, fixed.

ASSOCIATED EQUIPMENT: Transponder Beacon -

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## ANTENNA AT-171/AP

FREQUENCY: UHF and SHF bands, 2000 - 4000 mc.

INSTALLATION: Airborne.

TYPE: Slot.

ASSOCIATED EQUIPMENT: Radar Set AN/APW-11. Equipment function - radar beacon.

DESCRIPTION: The antenna is a flush-mounting slot antenna for transmitting or receiving. It is constructed in one piece from cadmium-plated aluminum and has a cover made of dielectric material. The antenna terminates in a type N connector and has an input impedance of 50 ohms. The antenna is 4-1/4 inches in diameter, and 1-3/4 inches deep including the cable connector. The antenna is mounted by means of four 1/8-inch holes on a 1-7/8 inch radius around the antenna. A mounting hole 3-1/4 inches in diameter is required. Two of these antennas, one for transmitting and one for receiving, are required for each installation for Radar Set AN/APW-11.

MISCELLANEOUS: The antenna has a similar beam pattern to those of AT-111/AP and AT-104/APN-19. It is electrically but not mechanically interchangeable with those antennas. AT-171A/AP is an improved model of this antenna.

COGNIZANT AGENCY: ARL-48-44.

STOCK NUMBER: Federal Stock Number 1660 5985-032-1710.

## REFERENCES:

1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

2) U. S. Department of Defense Nomenclature Card.

## BEAM DATA:

Beam type - Omnidirectional in azimuth.

Polarization - Vertical.

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## ANTENNA AT-171A/AP

FREQUENCY: UHF and SHF bands, 2600 - 3300 mc.

TYPE: Slot.

DESCRIPTION: The antenna is a flush-mounting slot antenna for transmitting or receiving. It is constructed in one piece from silver-plated brass and has a cover made of dielectric material. The antenna terminates in a modified RF receptacle UG-58/U and has an input impedance of 50 ohms. The antenna is 4-1/4 inches in diameter and 1-7/8 inches deep including the cable connector. The antenna is mounted by means of four 3/16-inch holes on a 1.95 inch radius around the antenna. A mounting hole 3-1/4 inches in diameter is required. Two of these antennas, one for transmitting and one for receiving, are required for each installation of Radar Set AN/APW-11.

BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APW-11.

Equipment function - radar beacon.

MISCELLANEOUS: The antenna has a similar beam pattern to those of AT-111/AP and AT-104/APN-19. It is electrically but not mechanically interchangeable with those antennas. This antenna is an improved version of AT-171/AP in that it is much lighter. It is the same as AT-92A/AP, but it uses a different r-f connector.

COGNIZANT AGENCY: AEL-48-605.

MANUFACTURER: Espey Manufacturing Company,  
Air Force contract W32-038-ac-21729.

STOCK NUMBER: Federal Stock Number 1660 5985-038-1515.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-172()/ARN-14

FREQUENCY: VHF band, 108-122 mc; VSWR < 5.

TYPE: Swept-back, U-type dipole.

DESCRIPTION: The antenna is a streamlined structure consisting of a horizontal U-shaped, swept-back dipole constructed of cast aluminum, aluminum alloy tubing, and natural rubber. The antenna is fed by RG-8/U coaxial cable. The overall antenna is 26 inches long, 17-1/4 inches wide, and 12-3/4 inches high. The antenna weighs about 5-1/2 pounds and has a drag of 2.5 pounds at 217 knots.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-14 and  
Localizer Radio Receiving Equipment RC-103.  
Equipment function - approach control.

MISCELLANEOUS: This antenna is identical to the 37J1 antenna, and probably very similar to the 37J2 and 37J3 antennas.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Collins Radio Company.

STOCK NUMBER: Federal Stock Number 5826-284-8310.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Air Force, USAF Aircraft Antenna Design Summary, 51S-191544, (Mar. 18, 1952). SECRET.
- 3) U. S. Department of Defense Nomenclature Card.



AT-172()/ARN-14

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ANTENNA AT-176(\*)/AP

FREQUENCY: VHF and UHF bands, 190 - 400 mc;  
VSWR < 2.

TYPE: Blade.

DESCRIPTION: The antenna is a streamlined aluminum stub and is used for transmitting or receiving. It mounts on Antenna Base AB-109. The antenna terminates in a type HN connector and has an impedance of 50 ohms. The elliptical base section is 2.7 inches long, 1.14 inches wide, and 4 inches tall. The antenna weighs about 2-1/4 pounds; the height of the radiating element is 9 inches. The antenna is capable of radiating 200-kilo-watt peak power (pulses) at altitudes of 50,000 feet.

BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Ground or airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/APN-3 and AN/CPN-2A. Equipment function - navigation, surface reference.

MISCELLANEOUS: This antenna is similar to but not interchangeable with AT-126/AP. They differ in the type of connector used. AT-176(\*)AP denotes two models, AT-176/AP and AT-176A/AP. AT-176A/AP is stronger and more resistant to corrosion, but the two antennas are interchangeable.

COGNIZANT AGENCY: AEL-50-408.

MANUFACTURER: Phoastron Company, contract AF 33(038)-2190.

STOCK NUMBER: Federal Stock Number N5985-249-4336.

REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Air Force, Handbook Operating Instructions for Radio Set AN/CPN-2A, TO 31P5-2CPN2-41, (Aug. 25, 1950 - revised Oct. 30, 1953). UNCLASSIFIED.
- 3) U. S. Air Force and Bureau of Aeronautics, Fixed Communication and Meteorological Equipment Directory, Navigational Aid Equipment, III, TO 31R4-1-1, (June 16, 1958). UNCLASSIFIED.



Antenna AT-176/AP

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ANTENNA AT-178/APS-42

See AS-428(\*)/APS-42.  
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## ANTENNA REFLECTOR AT-179/APS-42A

The nomenclature card indicates the antenna was cancelled 2 May 1950. It was not required and was never built.

## ANTENNA AT-180/ARW

FREQUENCY: VHF band, 36.5 - 39.5 mc; VSWR<2 on 50-ohm coaxial cable.

TYPE: Tapered rod.

DESCRIPTION: The antenna is a cadmium-plated, cold-rolled steel, tapered rod mounted in a phenolic base. Impedance Matching Network CU-172/ARW is used with the antenna. The overall radiating element is approximately 42 inches long by 1 inch in diameter. It mounts horizontally on the nose of type F-80 aircraft.

### BEAM DATA:

Polarization - Horizontal.

TUNING/MATCHING DEVICES: See Description.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ARW-41. Equipment function - remote control.

MISCELLANEOUS: AT-180/ARN is similar to AT-181/ARW.

COGNIZANT AGENCY: WADC (AEL-51-R372).

STOCK NUMBER: Federal Stock Number 5821-090-0007.

### REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-181/ARW

FREQUENCY: HF and VHF bands, 29.75 - 40.75 mc; VSWR<2 on 50-ohm coaxial cable.

TYPE: Tapered rod.

DESCRIPTION: The antenna is a cadmium-plated, cold-rolled steel, tapered rod mounted in a phenolic base. Impedance Matching Networks CU-169/ARW, CU-170/ARW, CU-171/ARW, and CU-173/ARW are used with the antenna. The overall radiating element is approximately 48 inches long by 1 inch in diameter. The phenolic base is 8 inches by 8 inches by 6 inches. The antenna mounts horizontally on the nose of type F-80 aircraft.

### BEAM DATA:

Polarization - Horizontal.

TUNING/MATCHING DEVICES: See Description.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ARW-40 and AN/ARW-41. Equipment function - remote control.

MISCELLANEOUS: AT-181/ARW is similar to AT-180/ARW.

COGNIZANT AGENCY: WADC (AEL-51-R373).

STOCK NUMBER: Federal Stock Number 5821-237-4142.

### REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNAS AT-183(\*)/AP, AT-184(\*)/AP, AT-185(\*)/AP

### ANTENNA

### FREQUENCY:

AT-183(\*)/AP VHF and UHF bands, 190-400 mc; VSWR < 2.  
 AT-184(\*)/AP UHF band, 330 - 780 mc; VSWR < 2.  
 AT-185(\*)/AP UHF and SHF bands, 410 - 4000 mc.

TYPE: Blade.

### DESCRIPTION:

The antennas are quarter-wave-length, streamlined stubs. They have an input impedance of 50 ohms each and are used for transmitting or receiving. They consist of streamlined, aluminum, radiating elements mounted to elliptical base sections (Antenna Base AB-109). The elliptical base section is 2.7 inches long, 1.14 inches wide, and 4 inches tall. The antennas each weigh about

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2 pounds; the height of the radiating elements are as follows:

AT-183(\*)/AP . . . 9-5/8 inches  
AT-184(\*)/AP . . . 5 inches  
AT-185(\*)/AP . . . 3-1/8 inches

## BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Receiving Equipment AN/APR-4 and Radar Set AN/APT-4. Equipment function - countermeasures, search; and countermeasures, deception.

MISCELLANEOUS: The asterisk in the nomenclature of these antennas denotes three models: the undesignated, the A, and the B models. The succeeding models of each of the three antennas differ from the preceding models in that they are mechanically stronger and more corrosion resistant; the various models of a particular antenna are interchangeable with the other models of the same antenna. The undesignated models are listed in some references as having a different frequency range from the A and B models. These frequencies are listed below:

AT-183/AP . . . 200 - 350 mc,  
AT-184/AP . . . 350 - 700 mc,  
AT-185/AP . . . 600 - 2000 mc.

The antennas described here are similar to the antennas indicated below and differ in that a modified UG-109/U connector is used instead of a type N connector. They are not interchangeable. AT-183/AP is similar to AT-126/AP, and AT-184/AP and AT-185/AP are similar to AT-125/AP.

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## ANTENNAS AT-189(\*)/AP, AT-190(\*)/AP, AT-191(\*)/AP

### ANTENNA

### FREQUENCY:

AT-189(\*)/AP VHF band, 88-135mc; VSWR<2.  
AT-190(\*)/AP VHF band, 88-135mc; VSWR<2.  
AT-191(\*)/AP VHF band, 130-225mc; VSWR<2.

TYPE: Blade.

DESCRIPTION: The antennas are quarter-wave-length, streamlined stubs and are used for transmitting or receiving. They consist of streamlined radiating elements made of 24ST aluminum tubing, Alcoa die number T-105, mounted to elliptical base sections, Antenna Base AB-109. The elliptical base section is 2.7 inches long, 1.14 inches wide, and 4 inches tall. The heights of radiating elements are as follows:

AS-189(\*)/AP . . . 24 inches  
AS-190(\*)/AP . . . 24 inches  
AS-191(\*)/AP . . . 15 inches.

The antennas are equipped with series-and shunt-matching sections and have an input

## COGNIZANT AGENCY:

( ) (A) (B)  
AT-183(\*)/AP ARL-48-R570 AEL-50-409 AEL-52-945  
AT-184(\*)/AP ARL-48-R571 AEL-50-410 AEL-52-943  
AT-185(\*)/AP ARL-48-R572 AEL-50-411 AEL-52-946

MANUFACTURER: Michigan Brass Company, contract AF 33(600)-21613.

## STOCK NUMBERS:

AT-183/AP ...Federal Stock Number 5895-263-0957A  
AT-183A/AP...Federal Stock Number 5895-217-0484A  
AT-183B/AP...Federal Stock Number 1660 5895-565-3161  
AT-184/AP ...Federal Stock Number 5895-263-0956A  
AT-184A/AP...Federal Stock Number 5985-217-0485  
AT-185/AP ...Federal Stock Number 5895-263-0955A  
AT-185A/AP...Federal Stock Number 5985-284-7420  
AT-184B/AP...Probably Federal Stock Number 1660 5985-284-6847

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.
- 3) U. S. Department of Defense Nomenclature Card.

impedance of 50 ohms.

## BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

TUNING/MATCHING DEVICES: The antenna has series- and shunt-matching sections.

INSTALLATION: Airborne.

## ASSOCIATED EQUIPMENT:

AS-189(\*)/AP . . Receiving Equipment AN/APR-4, Radar Set AN/APT-6, and Radio Set AN/ARQ-8;  
AS-190(\*)/AP . . Receiving Equipment AN/APR-4, Radar Set AN/APT-6, and Radio Set AN/ARQ-8;  
AS-191(\*)/AP . . Receiving Equipment AN/APR-4, Radar Set AN/APT-4, and Radar Set AN/APT-6.

Equipment function - countermeasures, search; and countermeasures, deception.

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MISCELLANEOUS: The three antennas described are very similar; AT-189(\*)/AP differs from AT-190(\*)/AP only in the type of connector used. The former uses a type N connector and the latter uses a modified UG-190/U r-f connector. AT-191(\*)/AP differs from AT-127/AP in that it uses the modified UG-109/U instead of the type N connector. The asterisk in the nomenclature of these antennas denotes three models: the undesignated, the A, and the B models. The succeeding models of each of the three antennas differ from the preceding models in that they are mechanically stronger and more corrosion resistant; the various models of a particular antenna are interchangeable with the other models of the same antenna.

## COGNIZANT AGENCY:

	( )	(A)	(B)
AT-189(*)/AP	ARL-48-314	AEL-50-654	AEL-52-469
AT-190(*)/AP	ARL-48-315	AEL-50-412	AEL-53-R617
AT-191(*)/AP	ARL-48-316	AEL-50-413	AEL-52-944

## MANUFACTURERS:

AT-189B/AP .. American Electronics Laboratories, contract AF 33(600)-21613,  
 AT-190B/AP .. Phacotron Instrument and Electronic Company, AF 33(038)-2190,  
 AT-191B/AP .. Michigan Brass Company, contract AF 33(600)-21613.

STOCK NUMBERS: Federal Stock Number 5895-296-9470A (AT-190B/AP), Federal Stock Number 5895-285-0918A (AT-191/AP).

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-192(\*)/AP

FREQUENCY: UHF and SHF bands, 2600 - 3300 mc; VSWR < 2.

TYPE: Slot.

DESCRIPTION: The antenna is a flush-mounted slot antenna for transmitting. It is constructed in one piece from cadmium-plated aluminum and has a cover made of dielectric material. The antenna terminates in a modified RF receptacle UG-98/U and has an input impedance of 50 ohms. The antenna is 4-1/4 inches in diameter and 1-3/4 inches deep including the cable connector. The antenna is mounted by means of four 3/16-inch holes on a 1-3/4 radius around the antenna. A mounting hole 3-1/4 inches in diameter is required. The antenna is used where high-power transmitting antennas are required. It can withstand 200 watts (CW) at 50,000 feet.

## BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APT-16 and similar equipment. Equipment function - countermeasures, deception.

MISCELLANEOUS: AT-192(\*)/AP denotes two models, AT-192/AP and AT-192A/AP. AT-192A/AP is an improved model of AT-192/AP and is much lighter. The antenna is similar to AT-171/AP but has a different type of r-f connector. The beam pattern of this antenna is similar to those of AT-111/AP, AT-104/APN-19, and AT-171/AP.

COGNIZANT AGENCY: AEL-48-317 and AEL-48-606.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-202/AR

FREQUENCY: VHF band, 47 - 58.4 mc; VSWR < 2 on 95-ohm coaxial cable.

TYPE: Whip.

DESCRIPTION: The antenna is a 4-1/2-foot whip of one-piece, metal construction. A mounting bracket is included. The equipment is intended to be used in Army liaison aircraft.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/PRC-16(). Equipment function - communications.

COGNIZANT AGENCY: Signal Corps.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517 (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-214/APR

FREQUENCY: SHF band, 5000 - 11,000 mc;  
VSWR < 2.

TYPE: Conical.

DESCRIPTION: The antenna consists of an inverted cone surmounted by an upright cone mounted above a circular ground-plane mounting plate. The common axis of the two cones is inclined at an angle of 45° with the mounting plate. The antenna is made from silver-plated brass. The overall dimensions are 6 inches in diameter and 3 inches in height. Eight mounting holes are spaced around the circumference of the mounting plate. The input impedance is 50 ohms. A type N connector is used.

### BEAM DATA:

Beam type - Omnidirectional in the plane of the mounting plate.  
Polarization - Linear, depends on mounting position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APR-9.

Equipment function - countermeasures, search.

MISCELLANEOUS: AT-214/APR is similar to AS-125/APR except for frequency range.

COGNIZANT AGENCY: AEL-55-R-639.

MANUFACTURER: Airborne Instruments Laboratory, Inc., contract W33-038-ac-20040.

STOCK NUMBER: Federal Stock Number 5895-296-2004B.

### REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania; Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-220/APR-9

FREQUENCY: UHF band, 1000 - 2600 mc; VSWR < 5 on 50-ohm coaxial cable.

TYPE: Cavity-backed slot, probe, and conical antenna.

DESCRIPTION: The antenna is the same as AT-219/APR-9 except for size and frequency. It is 7-1/2 by 16 by 4-1/2 inches. Reference 2) states that this antenna was cancelled (29 April 1949) and was never procured, stocked, or issued.

INSTALLATION: Airborne, flush-mounted.

ASSOCIATED EQUIPMENT: Radar Set AN/APR-9.

Equipment function - countermeasures, search.

COGNIZANT AGENCY: AEL-49-C211.

MANUFACTURER: Airborne Instruments Laboratory, Inc., Air Force contract W33-038-ac-20040.

### REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-221/APG-30

Cancelled; replaced by AT-224/APG-30.

## ANTENNA AT-223/APG-30

FREQUENCY: SHF band, 9335 - 9415 mc.

TYPE: Horn.

DESCRIPTION: This antenna is identical with AT-245/APG-30 except for mounting details.

ASSOCIATED EQUIPMENT: AN/APG-30. Equipment function - fire control.

STOCK NUMBER: Federal Stock Number 1270-347-1360.

### REFERENCE:

U. S. Air Force, Bureau of Aeronautics, Handbook Maintenance Instructions for Radar Set AN/APG-30, AN 16-30APG30-3, (Nov. 15, 1952 - revised Jan. 15, 1954). UNCLASSIFIED.

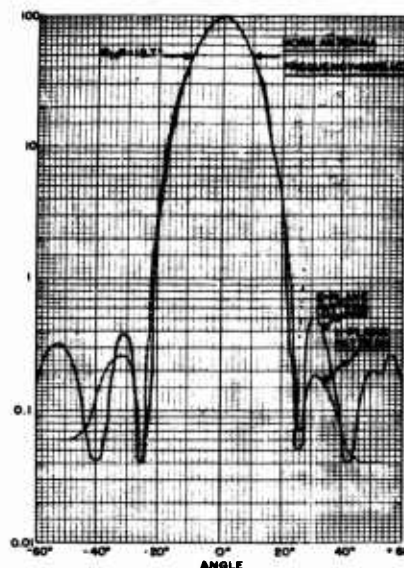
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AT-223/AFG-30



AT-223/AFG-30 Radiation Patterns at 9375 mc

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ANTENNA AT-224/AFG-30

FREQUENCY: SHF band, 9335 - 9415 mc; VSWR < 1.3.

TYPE: Dielectric rod.

DESCRIPTION: The antenna consists of a slender, tapered, polystyrene rod cemented to a piece of standard RG-67/U waveguide. The waveguide is flared to match the square dimension of the large end of the rod. The rod is capable of withstanding cold temperatures without cold flow as well as high temperatures without deformation. The antenna weighs about 7 ounces and is about 15 inches long and 0.6 inch in diameter.

BEAM DATA:

Half-power beamwidth - Horizontal - 25°.

Vertical - 25°.

Side-lobe attenuation - 13 db.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/AFG-30.

Equipment function - fire control.

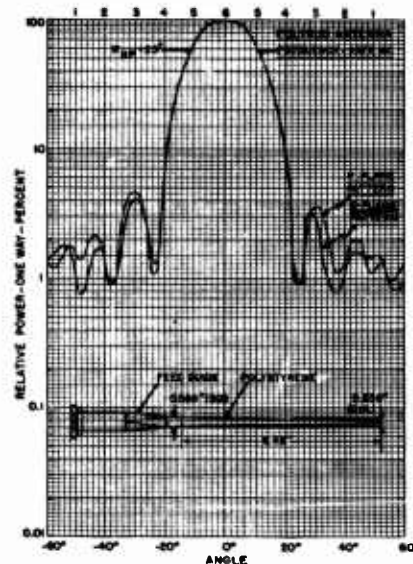
COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: General Electric Company, Navy contract NOa(s)-10174.

STOCK NUMBER: Federal Stock Number 1270-254-7120.



AT-224/AFG-30



AT-224/AFG-30 Radiation Patterns at 9375 mc

REFERENCES:

- 1) U. S. Air Force, Bureau of Aeronautics, Handbook Maintenance Instructions for Radar Set AN/AFG-30, AN 16-30APG30-3, (Nov. 15, 1952 - revised Jan. 15, 1954). UNCLASSIFIED.

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2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-225/APN

FREQUENCY: VHF band, 160 - 240 mc; VSWR < 2.

COGNIZANT AGENCY: AEL-52-R183.

TYPE: Streamlined stub sleeve.

MANUFACTURERS: Bird Electronics Corporation, and Wilcox Electric Company, Inc., contract AF 33(038)-19944.

DESCRIPTION: The antenna is a broadband, quarter-wave, stub-sleeve antenna, and consists of two elements separated by a plastic insulator. The upper element is a stub and the lower element acts as a sleeve. The two elements and the insulator are bonded together into a smooth, one-piece antenna with a diamond-shaped cross section. An internal matching section matches the antenna to a 50-ohm line. The antenna is used for both transmitting and receiving. It weighs about 2 pounds and is 14 inches high, 4-1/2 inches wide, and 7/8-inch thick. It uses holes in the faired base plate to mount to top or bottom of aircraft fuselage or wing.

STOCK NUMBERS: Federal Stock Numbers 5840-254-7119 and 1660 5826-285-0311.

REFERENCES:

- 1) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Radar Beacons AN/APN-76 and AN/APN-76A, TO 12P5-2APN76-1, (June 7, 1954). UNCLASSIFIED.
- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Radar Set AN/APN-12A, TO 12P5-2APN12-41, (Dec. 3, 1954). UNCLASSIFIED.
- 3) U. S. Air Force, USAF Aircraft Antenna Design Summary, 51S-191544, (Mar. 18, 1952). SECRET.
- 4) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 5) U. S. Department of Defense Nomenclature Card.

BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

TUNING/MATCHING DEVICES: The antenna has a built-in matching section.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-12.  
Equipment function - radar, beacon.

## ANTENNA AT-230/APR-9

FREQUENCY: UHF band, 1000 - 2600 mc; VSWR < 2 on 50-ohm coaxial cable.

Additional information is available in the secret document listed below as Reference 1 and in Volume V of this catalog series.

TYPE: Cavity-recessed helix.

INSTALLATION: Airborne.

DESCRIPTION: The antenna is a single-turn helix mounted in a cylindrical cavity. It is made of aluminum and beryllium copper with a silver-plated element. The antenna is 8 inches in diameter with a 1-inch mounting flange and is 2-1/2 inches deep. An eight-inch mounting hole is required in the skin of the aircraft. The antenna is mounted by means of 24 holes spaced equally around the mounting flange. It is sealed by a circular dielectric plate. The input impedance is 50 ohms.

ASSOCIATED EQUIPMENT: Radar Set AN/APT-9.  
Equipment function - countermeasures, deception.

COGNIZANT AGENCY: AEL-50-96.

REFERENCES:

- 1) U. S. Air Force, USAF Aircraft Antenna Design Summary, 51S-191544, (Mar. 18, 1952). SECRET.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-234/APX

FREQUENCY: UHF band, 950 - 1250 mc; VSWR < 2 on 52-ohm coaxial cable.

TYPE: Annular slot.

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DESCRIPTION: The antenna is a flush-mounting annular slot antenna used with distance-measuring equipment. It is used for both transmitting and receiving. It has an input impedance of 52 ohms and is fed by RG-8/U coaxial cable. The antenna weighs approximately 2-1/4 pounds, is 7-13/16 inches in diameter, and is 1-1/4 inches deep.

## BEAM DATA:

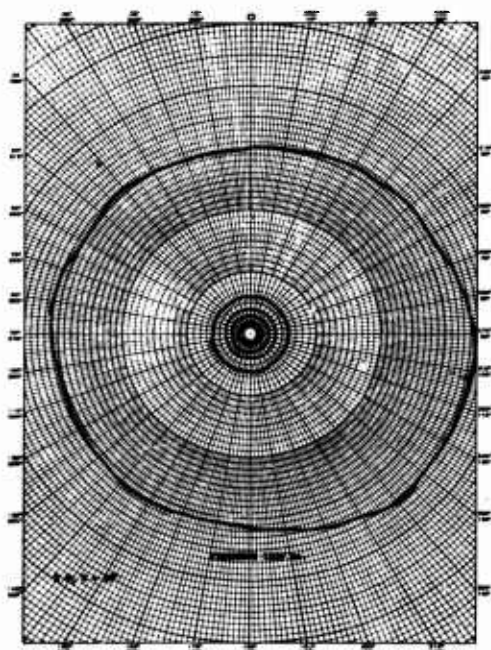
Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-34.  
Equipment function - navigation, surface reference (DME).



AT-234/APX



AT-234/APX Horizontal Radiation Patterns  
at 1100 mc

MISCELLANEOUS: This antenna is sometimes used instead of AS-133/APX.

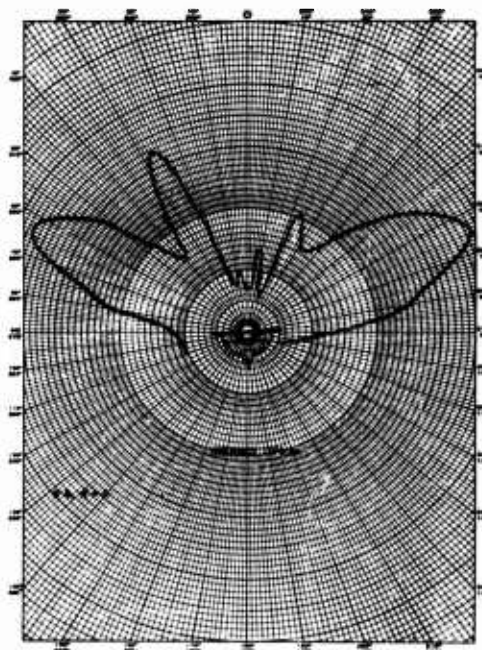
COGNIZANT AGENCY: AEL-51-R502.

MANUFACTURERS: Andrew Alford Company, Air Force contract W-33-038-ac-17549; Bird Electronics Corporation, Air Force contract AF 33(038)-8952.

STOCK NUMBER: Federal Stock Number 5895-212-7089A.

## REFERENCES:

- 1) U. S. Air Force, USAF Aircraft Antenna Design Summary, 518-191544, (Mar. 18, 1952). SECRET.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.



AT-234/APX Vertical Radiation Patterns  
at 1100 mc

## ANTENNA AT-245/APG-30

FREQUENCY: SHF band, 9335 - 9415 mc; VSWR < 1.3.

TYPE: Horn.

# UNCLASSIFIED

DESCRIPTION: The antenna consists of an aluminum horn, elliptical in cross section at the radiating end and tapering to a smaller, circular cross section at the other end. A waveguide flange is attached to the small end of the horn to join the r-f waveguide. A plastic lens is attached to the large end of the horn and is effective in reducing the side-lobe level by retarding the phase of the energy leaving through the center of the lens. The antenna weighs 3/4 pound and is (overall) 9 inches long, 4-3/4 inches wide, and 5-1/4 inches high.

## BEAM DATA:

Gain - 20 db.  
Half-power beamwidth - Horizontal - 18°. Vertical - 18°. Side-lobe attenuation - 23 db.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APG-30.  
Equipment function - fire control.

MISCELLANEOUS: AT-245/APG-30 is identical to AT-223/APG-30 except for mounting details.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: General Electric Company, Navy contracts NOa(s)-10174 and NOa(s)-10201.

STOCK NUMBER: Federal Stock Numbers 1270-296-5641 and 1270-217-0471.

## REFERENCES:

- 1) U. S. Air Force, Bureau of Aeronautics, Handbook Maintenance Instructions for Radar Set AN/APG-30, AN 16 30APG30-3, (Nov. 15, 1952 - revised Jan. 15, 1954). UNCLASSIFIED.
- 2) U. S. Air Force, Bureau of Aeronautics Handbook Operation Instructions for Radar Set AN/APG-30A, TO 11 F35-2-10-11, (Aug. 15, 1956). UNCLASSIFIED.
- 3) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.



AT-245/APG-30

## ANTENNA AT-246(\*)/U

FREQUENCY: UHF and SHF bands 2500 - 3400 mc;  
VSWR < 2.

TYPE: Slot.

DESCRIPTION: The antenna is a flush-mounting slot antenna for transmitting. It is constructed in one piece from copper and cadmium-plated cast aluminum. The antenna is fitted with a dielectric cover and hermetically sealed. The antenna terminates in a type N connector and has an input impedance of 50 ohms. It is 3-5/8 inches in diameter and 1-7/8 inches deep including the connector. The antenna mounts by means of four 3/16-inch holes in a mounting flange 4-1/4 inches in diameter. A mounting hole of about 3.7 inches in diameter is required. The power capability of the antenna at 50,000 feet and above is listed as 100 watts for AT-246/U and 200 watts for AT-246A/U.

## BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APW-11A, and other transmitters. Equipment function - guidance, command; and radar beacon.

MISCELLANEOUS: The antenna has a beam pattern similar to those of AT-104/APN-19, AT-111/AP, and AT-171A/AP. It is similar to AT-171A/AP but electrically and mechanically improved, lighter in weight, hermetically sealed and requires a larger mounting hole. It is similar to AT-247/U but uses a different connector. AT-246(\*)/U denotes two models, AT-246/U and AT-246A/U. The two models are interchangeable, but AT-246A/U has its usable temperature range extended to withstand 350°C. AT-246/U is sealed with 1 pound of dry nitrogen, and AT-246A/U is sealed with 2 pounds of dry nitrogen.

COGNIZANT AGENCY: AEL-50-178, AEL-52-733, and AEL-49-452.

MANUFACTURER: Workshop Associates, contracts AF 33(038)-1329 for AT-246/U, and AF 33(038)-29999 for AT-246A/U.

STOCK NUMBERS: AT-246/U...Federal Stock Number 1660 5985-548-4283; AT-246A/U...Federal Stock Number 1660 5985-217-0470.

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## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.

- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-247/U

FREQUENCY: UHF and SHF bands, 2500 - 3400 mc;  
VSWR < 2.

ASSOCIATED EQUIPMENT: Unknown. Equipment function - radar beacon.

TYPE: Slot.

MISCELLANEOUS: The antenna has a beam pattern similar to those of AT-104/APN-19, AT-11/AP, and AT-171/AP. It is similar to AT-171A/AP but is electrically and mechanically improved, lighter in weight, hermetically sealed, and requires a larger mounting hole. It is similar to AT-246/U but uses a different connector.

DESCRIPTION: The antenna is a flush-mounting slot antenna for transmitting. It is constructed in one piece from copper and cadmium-plated cast aluminum. The antenna is fitted with a Textolite cover and hermetically sealed with 1 pound of dry nitrogen. The antenna terminates in a type LN connector and has an input impedance of 50 ohms. It is 3-5/8 inches in diameter and 1-7/8 inches deep including the connector. The antenna mounts by means of four 3/16-inch holes in a mounting flange 4-1/2 inches in diameter. A mounting hole about 3.7 inches in diameter is required. The antenna is used where power outputs up to 200 watts at 50,000 feet and above are required.

COGNIZANT AGENCY: AEL-50-179 and AEL-49-453.

MANUFACTURER: Workshop Associates, contract AF 33(038)-1329.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

## ANTENNA AT-254/APT

See OA-163/APT.

## ANTENNA AT-256(\*)/ARC

FREQUENCY: VHF and UHF bands, 225 - 400 mc;  
VSWR < 2.

Polarization - Horizontal or vertical depending upon mounting position.

TYPE: Blade.

INSTALLATION: Ground or airborne.

DESCRIPTION: The antenna is a streamlined, cast-aluminum, anodized, quarter-wave stub which can be mounted either horizontally or vertically. It is constructed in two sections. The base section includes the mounting flange, and the upper section is the radiator. The two sections are insulated by a Teflon insulator. The input impedance of the antenna is 52 ohms; it is fed by RG-8/U or similar coaxial cable and uses a type N connector. The antenna weighs between one and two pounds and is approximately 12 inches in overall length, 2 inches thick, and 5 inches wide. The antenna is used both on aircraft and at ground installations. Drag is estimated to be satisfactory up to 640 knots at 30,000 feet.

ASSOCIATED EQUIPMENT: Radio Sets AN/ARC-33, AN/ARC-27, and AN/ARC-19. Equipment function - communications; Telemetric Data Sets AN/AKT-7 and AN/UKR-2. Equipment function - telemetering.

MISCELLANEOUS: AT-256(\*)/ARC denotes two models, AT-256/ARC and AT-256A/ARC. The two models differ slightly in weight, dimensions, and methods of manufacture but are interchangeable. The development model of this antenna was AT-(XA-124)/ARC.

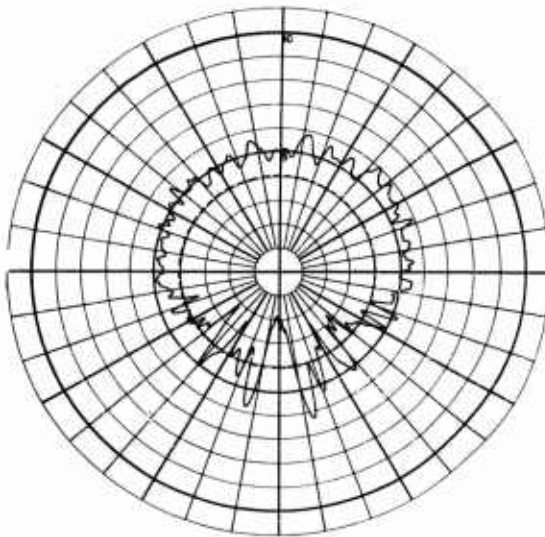
COGNIZANT AGENCY: U. S. Air Force, AEL-49-512.

MANUFACTURERS: Andrew Alford Company, Air Force contract W33-038-ac-17549; Technical Appliance Corporation.

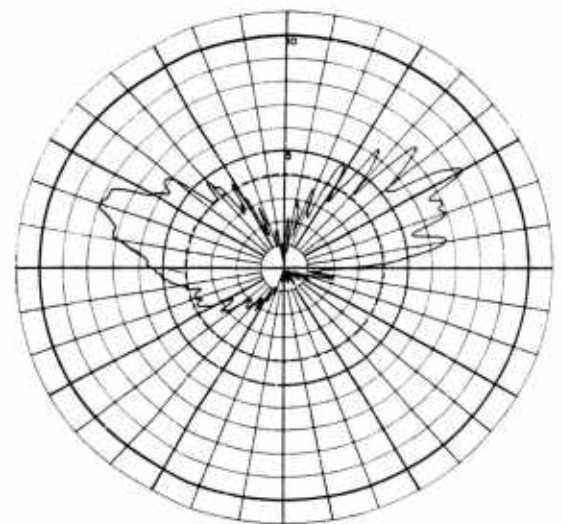
## BEAM DATA:

Beam type - Approximately omnidirectional in the plane perpendicular to the stub.

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AT-256/ARC, Horizontal Radiation Pattern through horizontal section of C130B Model

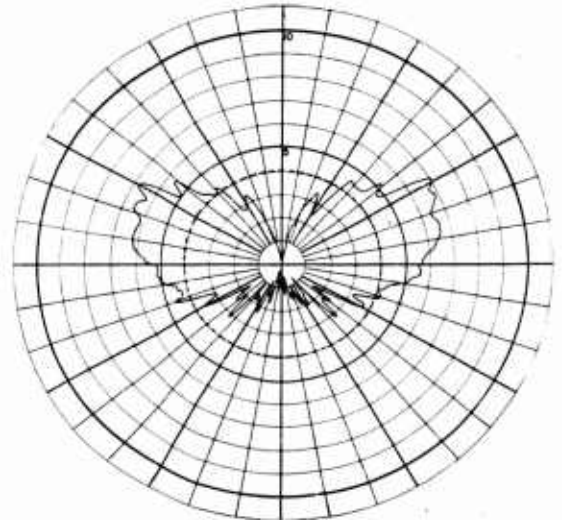


AT-256/ARC, Vertical Radiation Pattern through longitudinal section of C130B Model

STOCK NUMBERS: AT-256/ARC...Federal Stock Number 5821-253-1676; AT-256A/ARC...Federal Stock Number 5821-217-0457.

REFERENCES:

- 1) U. S. Air Force, USAF Aircraft Antenna Design Summary, 51S-191544, (Mar. 18, 1952). SECRET.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Air Force, Handbook Field Maintenance Instructions for Telemetric Data Transmitting Set AN/AKT-7, TO 12S7-2AKT7-2, (Oct. 1, 1957 - revised April 1, 1959). UNCLASSIFIED.
- 4) U. S. Air Force, Handbook Field Maintenance Instructions for Telemetric Data Receiving Set AN/UKR-2, TO 12S7-2UKR2-2, (Dec. 31, 1958). UNCLASSIFIED.
- 5) B. S. Zieg, Radiation Pattern Study of an AT-256 Blade Antenna on Top of C-130B Fuselage, Report No. ER-2774. Marietta, Georgia: Lockheed Aircraft Corporation, Georgia Division. (Oct. 9, 1957). UNCLASSIFIED.



AT-256/ARC, Vertical Radiation Pattern through transverse section of C130B Model

ANTENNA AT-269/ARN-6A

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc;  
VSWR < 5.

TYPE: Loop.

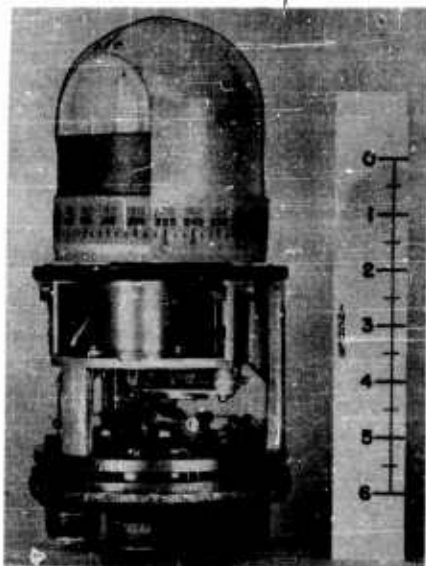
DESCRIPTION: The antenna is a rotating loop antenna with a fixed housing and is operated by a drive motor through a speed-reducing gear

train. A compensator, which can be adjusted externally, is used to correct radio-compass deviation errors. An autosyn transmitter is geared through the compensator to the rotating antenna, and supplies loop position information to the remote indicator system. The antenna is electrostatically shielded and is hermetically sealed. The antenna housing is a pyrex

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glass dome painted dull black. The loop has a ferrite core. The antenna is approximately 10-3/16 inches high and 4-7/8 inches in diameter; it weighs about 3-1/4 pounds.



AT-269/ARN-6A

## BEAM DATA:

Beam type - Figure eight pattern in azimuth.  
Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compass AN/ARN-6A.  
Equipment function - navigation, direction finding.

MISCELLANEOUS: This antenna was developed to replace AS-313/ARN-6. It is smaller, lighter, and easier to install than AS-313/ARN-6 but is electrically interchangeable with it. It is also mechanically interchangeable if an adapter plate is used for mounting.

COGNIZANT AGENCY: AEL-50-R111.

MANUFACTURER: Developed by Bendix Radio Div.,  
Air Force contract AF 33(638)-23678.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) Antenna AT-269(XA-A)/ARN-6A, Final Engineering Report, Report No. E.P. 936. Baltimore, Maryland: Bendix Radio, Division of Bendix Aviation Corporation. AD No. 106860. UNCLASSIFIED.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-300/APN

FREQUENCY: UHF band, 960-1215 mc; VSWR<2.

TYPE: Probably a cavity-backed slot.

DESCRIPTION: The antenna consists of a half-wavelength element in a streamlined plastic case. It is of one-piece construction and is approximately 6 inches long by 4 inches wide.

## BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne, flush-mounted.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-34.  
Equipment function - navigation, direction finding (VOR).

MISCELLANEOUS: Reference 2) states that the antenna was cancelled on 14 January, 1952.

## REFERENCES:

- 1) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-305/APA-70

FREQUENCY: UHF band, 1000 - 2600 mc.

TYPE: Horn.

DESCRIPTION: The horn is a one-piece casting of aluminum alloy. The horn is 9-1/4 inches wide by 6 inches high by 10-1/4 inches deep; its weight is 10 pounds.

## BEAM DATA:

Gain - 4 db at 1000 mc.  
Front-to-back ratio - 10 db.

Polarization - Horizontal or vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APA-70 and AN/APA-70A.  
Equipment function - navigation, direction finding.

MISCELLANEOUS: AT-305/APA-70 is similar to AT-306/APA-70 and AT-307/APA-70.

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COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Caldwell Casting Co., contracts NOa(s)-10382 and NOas 51-024.

## REFERENCES:

- 1) Albert F. Lopez, Robert C. Moore, Director of Intercept and Analysis Equipment, Report No. 63.6-F. State College,

Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.

- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-306/APA-79

FREQUENCY: UHF and SHF bands, 2300 - 4450 mc.

TYPE: Horn.

DESCRIPTION: The horn is a one-piece casting of aluminum alloy. The horn is 4-1/2 inches wide by 2-3/4 inches high by 5 inches deep. It weighs 5 pounds.

## BEAM DATA:

Gain - 3 db at 4000 mc.  
Front-to-back ratio - 10 db.  
Polarization - Horizontal or vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APA-70 and AN/APA-70A.  
 Equipment function - navigation, direction finding.

MISCELLANEOUS: AT-306/APA-70 is similar to AT-305/APA-70 and AT-307/APA-70.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Caldwell Casting Co., contracts NOa(s)-10382 and NOas-51-024.

## REFERENCES:

- 1) Albert F. Lopez, Robert C. Moore, Director of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.
- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-307/APA-70

FREQUENCY: SHF band; 4300 - 10,750 mc.

TYPE: Horn.

DESCRIPTION: The horn is a one-piece casting of aluminum alloy. The horn is 5 inches wide by 4 inches high by 6-3/4 inches deep. It weighs 3 pounds.

## BEAM DATA:

Gain - 8 db at 6000 mc.  
Front-to-back ratio - 10 db.  
Polarization - Horizontal or vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APA-70 and AN/APA-70A.  
 Equipment function - navigation, direction finding.

MISCELLANEOUS: AT-307/APA-70 is similar to AT-305/APA-70 and AT-306/APA-70.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Caldwell Casting Co., contracts NOa(s)-10382 and NOas-51-024.

## REFERENCES:

- 1) Albert F. Lopez, Robert C. Moore, Director of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania. Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-326/ARN

FREQUENCY: UHF band, 328-336 mc; VSWR<3.

TYPE: Half-loop.

DESCRIPTION: The antenna consists of a U-shaped rod 5-1/2 inches long and 3-3/8

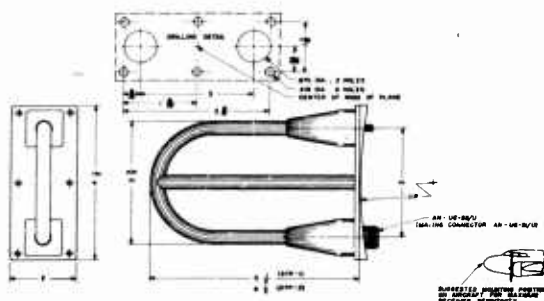
inches wide with one end attached to the center conductor of a UC-58/U connector. The other end of the antenna is insulated above ground and a shorting post is attached from the center of the "U" to the ground plate. The antenna is designed to mount

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within  $\pm 30^\circ$  of the horizontal on the nose of an aircraft with the skin functioning as a ground plane. RG-8/U coaxial cable is used. The antenna weighs 1-1/8 pounds and has a drag of 0.25 pounds at 217.5 knots.



AT-326/ARN

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Sets AN/ARN-5, AN/ARN-18 and Glide Slope Receiver 51V. Equipment function - approach control.

MISCELLANEOUS: This antenna is identical to the Collins 37P-1 and 37P-2 antennas. The 37P-3 antenna is similar except for the length which has been extended to 6-1/2 inches.

COGNIZANT AGENCY: USA AEL-55-C-321.

MANUFACTURERS: Collins Radio Company.

STOCK NUMBER: Federal Stock Number 5826-539-7458.

## REFERENCES:

- 1) Instruction Book for Model 51V-2 Glide Slope Receiver, NAVAER 16-45-580. Cedar Rapids, Iowa: Collins Radio Company, (Jan. 15, 1954). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-335/ARW

FREQUENCY: UHF band, 406-550 mc; VSWR<1.7.

TYPE: Blade.

DESCRIPTION: The antenna is a streamlined stub used for transmitting and receiving. It is constructed from cast and sheet aluminum and anodized. The antenna, which was designed for high speed aircraft, has an input impedance of 50 ohms and terminates in a UG-21B/U connector. The antenna is 9-11/16 inches high, 7-11/16 inches wide, and 3 inches thick. The antenna mounts by means of holes in a mounting flange attached to the bottom of the antenna.

## BEAM DATA:

Beam type - Omnidirectional in the plane perpendicular to the length of the antenna.

Polarization - Linear, depends on mounting position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Sets AN/ARW-55,

AN/ARW-56, and AN/ARW-59. Equipment function - remote control.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Collins Radio Company, Navy contracts NOa(s)-9687 and NOa(s)-51-1183.

STOCK NUMBER: Federal Stock Number 5821-090-0006.

## REFERENCES:

- 1) U. S. Air Force and Bureau of Aeronautics, Handbook Service Instructions for Radio Receiving Set AN/ARW-56, TO 12R3-2ARW56-2, (Oct. 1, 1955 - revised May 1, 1957). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Handbook of Airborne Antenna Data, CO 16-1-517, (July 1, 1953). CONFIDENTIAL.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-347()/UPN

FREQUENCY: UHF band, 2830-2940 mc.

TYPE: Dipole.

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DESCRIPTION: The antenna is a brass dipole 2-1/2 inches long supported by a tube 1/2 inch in diameter and 6 inches long. It mounts by means of a captive locking nut on the antenna. The antenna is fed by a 50-ohm coaxial cable.

BEAM DATA: The antenna is designed to be located on the trailing edge of a missile fin in such a position that radiation is confined to a conical lobe whose half-power beamwidth is approximately 70°.

INSTALLATION: Missile or airborne.

ASSOCIATED EQUIPMENT: Transponder-Deacon AN/APN-55( ). Equipment function - radar beacon.

COGNIZANT AGENCY: SCL-9987.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-356/APR

FREQUENCY: UHF band, 475-1250 mc; VSWR<5.

TYPE: Probably a cavity-backed slot.

DESCRIPTION: The antenna is described in each of the references as a flush-mounted, folded slot antenna. The antenna is 8 inches long, 6-3/4 inches wide, and 2-1/2 inches deep. It mounts by 22 screws. The antenna is fed by coaxial cable and has an impedance of 50 ohms.

BEAM DATA:  
Beam type - Omnidirectional.  
Polarization - Vertical.

INSTALLATION: Airborne, flush mounted.

COGNIZANT AGENCY: AEL-51-299.

MANUFACTURER: Airborne Instruments Laboratory, Inc.

REFERENCES:  
1) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania; Haller, Raymond and Brown, Inc., (Oct. 31, 1956). SECRET.  
2) Private Correspondence.  
3) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-369/APG-44

FREQUENCY: SHF band, 3267 - 3333 mc.

TYPE: Paraboloidal reflector fed by a dipole.

DESCRIPTION: The antenna is apparently a paraboloidal reflector fed by a dipole with a rod-type reflector. The antenna is probably 10 inches in diameter with dipole and reflector elements, respectively, 1-1/2 and 2 inches long. The antenna is made of brass and silver-plated aluminum and mounts to the aircraft by a flange. It is used for both transmitting and receiving.

BEAM DATA: Additional information is available in the secret document listed below as Reference 1) and in Volume VI of this catalog series.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APG-44. Equipment function - fire control.

COGNIZANT AGENCY: U. S. Navy.

REFERENCES:  
1) E. B. Goltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD 150674. SECRET.  
2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-382/ARC

See AS-669/ARN-34.

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ANTENNA AT-383/ARC

FREQUENCY: VHF band, 108-148 mc.

TYPE: Monopole.

DESCRIPTION: The reference indicates that the antenna consists of a multi-sectional radiating element, 1-1/4 inches in diameter

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and 25 inches long, designed to be fed by a 50-ohm coaxial cable and to withstand wind velocities of up to 200 miles per hour.

INSTALLATION: Airborne, light aircraft.

ASSOCIATED EQUIPMENT: Radio Set ARC Type 12.  
Equipment function - communications.

COGNIZANT AGENCY: U. S. Army (SCL-11597).

MANUFACTURER: Aircraft Radio Corp.

STOCK NUMBER: Federal Stock Number 5821-237-4128.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-401/APN

FREQUENCY: VHF band, 160-240 mc.

TYPE: Stub.

DESCRIPTION: The reference indicates that the antenna consists of a corrosion resistant steel mast with an oval-shaped base. It is constructed in one piece and is cadmium plated.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-12.

Equipment function - navigation.

MISCELLANEOUS: This antenna comprises a parasitic element in an array in which the fed element is, typically, Antenna AT-225/APN or AT-96A/APN-12.

COGNIZANT AGENCY: WADC (AEL-52-450).

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-405/A

FREQUENCY: VHF and UHF bands, 116-600 mc;  
VSWR<2.

TYPE: Structural antenna.

DESCRIPTION: The antenna is a special blade constructed of aluminum with a matching section extending below the antenna. A UG-58/U receptacle is included for terminating a 50-ohm cable. Also included is an 8 inch lightning rod. The antenna measures 20-3/32 inches in height, 12 inches in length, and 3-1/8 inches in width, inclusive

of the lightning rod. The antenna mounts as a tailcap, airborne antenna. A plastic covering or dome is required but not included

INSTALLATION: Airborne.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Airborne Instruments Laboratory, Inc., procurement contract NOas-9276.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-430/ARD-7

FREQUENCY: LF and MF bands, 0.190-1.750 mc.

TYPE: Loop.

DESCRIPTION: This antenna is a rotating, pancake-wound coil terminated for twin coaxial transmission line feeder. The coil is 5-3/4 inches long, 2-3/8 inches wide, and 3/8 inch thick.

SCAN DATA: The antenna has 360° mechanical rotation.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Direction Finder Set AN/ARD-7. Equipment function - direction finding.

COGNIZANT AGENCY: U. S. Army (SCLM-6207).

MANUFACTURER: Lear, Incorporated.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-436/APN-14

FREQUENCY: VHF band, 108-122 mc.

TYPE: Half loop.

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DESCRIPTION: The reference indicates that the antenna is a half loop fed by a coaxial cable of 50 ohms characteristic impedance. Its overall dimensions are 31 inches long by 6-1/8 inches wide by 3-1/4 inches high. Two antennas are required for each installation.

## BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-14.

MISCELLANEOUS: AT-436/APN-14 is functionally the same as AS-172/ARN-14 but is designed for mounting on the sides of an aircraft vertical stabilizer.

COGNIZANT AGENCY: U. S. Navy (BuAer).

MANUFACTURER: Glenn L. Martin Co., procurement contracts NOas-10382, NOas51-024 and NOas 51-684.

## REFERENCE:

U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-439/A

FREQUENCY: UHF and SHF bands, 2500-3400 mc; VSWR < 2.

DESCRIPTION: The reference indicates that the antenna is an aluminum bowl cast in one piece. Copper elements and a Teflon cover complete the antenna structure. The antenna is hermetically sealed and contains dry nitrogen.

INSTALLATION: Airborne, flush mounted.

MISCELLANEOUS: AT-439/A is similar to but not interchangeable with Antenna AT-246/U.

COGNIZANT AGENCY: WADC (AEL-52-877).

## REFERENCE:

U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-440(\*)/U

FREQUENCY: VHF and UHF bands, 225-400 mc; VSWR < 2.

TYPE: Streamlined stub sleeve.

DESCRIPTION: The antenna is probably a quarter-wave, broadband, stub-sleeve antenna with a diamond-shaped cross section. The antenna has an input impedance of 50 ohms and terminates in a coaxial connector. The antenna is made of aluminum and Teflon and weighs about 2 pounds. It is 10-1/2 inches tall, 3-3/4 inches wide, and 13/16 inch thick.

## BEAM DATA:

Beam type - Omnidirectional in the plane perpendicular to the length of the antenna.  
Polarization - Linear, depends on mounting position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Sets AN/ARC-27, AN/APN-3, and AN/APN-84. Equipment function - communications and navigation.

MISCELLANEOUS: AT-440(\*)/U denotes two models, AT-440/U and AT-440A/U. The latter is structurally improved, but the two are interchangeable. T-440/U is similar to but not interchangeable with AT-256/ARC.

COGNIZANT AGENCY: AEL-57-456.

STOCK NUMBER: Federal Stock Number 5985-090-0008.

## REFERENCES:

- 1) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond, and Brown, Inc., (Oct. 31, 1956). SECRET.
- 2) Private Correspondence.
- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-446/ARR

FREQUENCY: VHF band, 162-174 mc.

TYPE: Retractable stub.

DESCRIPTION: The antenna consists of a telescoping rod with Teflon cover to combat icing. The radiating element is 1/4 inch

in diameter, and, when fully extended, it is 14 inches long. The overall antenna length is 24 inches, and the housing is 2 inches in diameter. It is mounted to the bottom of the hull of seaplanes.

INSTALLATION: Airborne.

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ASSOCIATED EQUIPMENT: Radio Set AN/ARR-26.

Procurement contracts NOa(s) 52-982, NOa(s) 10382, NOa(s) 51-024, and NOa(s) 51-684.

COGNIZANT AGENCY: U. S. Navy.

REFERENCE:

MANUFACTURER: The Glenn L. Martin Co.,

U. S. Department of Defense Nomenclature Card.

ANTENNA AT-447/ARD-8

FREQUENCY: LF and MF bands, 0.200-1.750 mc.

INSTALLATION: Airborne

TYPE: Loop.

ASSOCIATED EQUIPMENT: Direction Finder Set AN/ARD-8. Equipment function - direction finding.

DESCRIPTION: The antenna consists of a multiple-turn loop enclosed in a moisture-proof polystyrene dome. The radiating element is 6 inches in diameter by 5 inches long, and is designed to be fed by a coaxial cable of 100 ohms characteristic impedance.

COGNIZANT AGENCY: U. S. Army (SCLM-6176).

MANUFACTURER: Lear, Incorporated, part number 63649.

SCAN DATA: The loop has 360° mechanical rotation.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

ANTENNA AT-448/ARN-33

MAJOR COMPONENTS: 2 Antennas AT-449/ARN-33, 1 Antenna Base AB-337/ARN-33, 1 Antenna Base AB-338/ARN-33.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-33. Equipment function - communications.

FREQUENCY: VHF band, 108-122 mc.

COGNIZANT AGENCY: U. S. Army (SCLC-5977)

TYPE: U-shaped dipole.

MANUFACTURER: Antenna Research Laboratory, Inc.

DESCRIPTION: The Antenna consists of two J-shaped elements forming a single U-shaped dipole. It is fed by a coaxial cable; is water resistant, and is designed for use in sub-zero temperatures.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

ANTENNA AT-449/ARN-33

FREQUENCY: VHF band, 108-122 mc.

Equipment function - communications.

TYPE: J-shaped dipole.

MISCELLANEOUS: This antenna is part of Antenna AT-448/ARN-33.

DESCRIPTION: The antenna consists of a one-piece, J-shaped dipole designed to be used in pairs so mounted that they form a U-shaped dipole.

COGNIZANT AGENCY: U. S. Army (SCLC-5977).

INSTALLATION: Airborne.

MANUFACTURER: Antenna Research Laboratory, Inc., drawing C-164-71.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-33.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

ANTENNA AT-450/ARC

FREQUENCY: VHF and UHF bands, 225-400 mc.

INSTALLATION: Airborne.

TYPE: Stub.

ASSOCIATED EQUIPMENT: Communications sets AN/ARC-45, AN/ARC-55. Equipment function - communications.

DESCRIPTION: The antenna is a 9-1/4 inch stub terminated at the base with a connector for use with a 52-ohm coaxial cable.

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COGNIZANT AGENCY: U. S. Army (SCLH-11469).

MANUFACTURER: JFD Manufacturing Co., Inc.

REFERENCES:

- 1) John B. Chown, James W. Schomer, Development of a Compatible Antenna System for the H-13 Helicopter, Technical Report 4. Fort Monmouth, New Jersey: U. S. Army Signal Corps, (Dec. 1956), ASTIA Report No. AD-121137. UNCLASSIFIED.

- 2) Department of the Army, Maintenance Instructions for Navigation and Communication System, U. S. Air Force Series H-21, H-21A, and H-21B and Army Series H-21C Helicopters, TM 1-1H-21-2-8, (Aug. 1957). UNCLASSIFIED.

- 3) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-451/ARC-45

Cancelled 1 November 1956; never procured, stocked, or issued.

ANTENNA AT-452/AR

See AS-669/ARN-34.

ANTENNA AT-453/AR

Cancelled 4 September 1956; never procured.

ANTENNA AT-454(\*)/ARC

MAJOR COMPONENTS: 1 Antenna AT-455(\*)/ARC, 1 Antenna Base AB-340(\*)/ARC, 1 Antenna Coupler CU-361(\*)/ARC.

and one Antenna Coupler CU-361A/ARC.

COGNIZANT AGENCY: U. S. Army (SESA-57-1615; SESA-57-1618).

FREQUENCY: HF and VHF bands, 24.0-51.9 mc.

MANUFACTURER: Bendix Radio Division, procurement contracts 13611-PHILA-53-93, 39-PHILA-56-93, and 35903-PHILA-57.

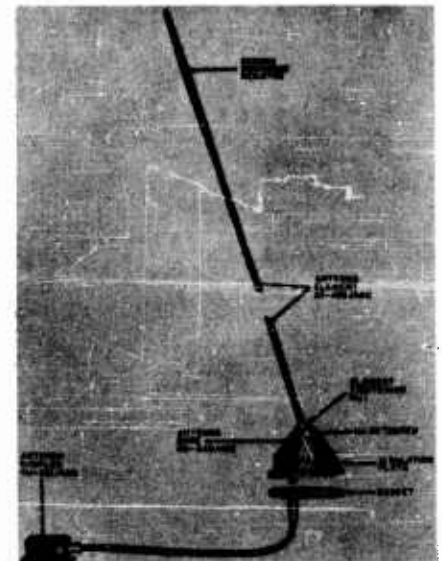
TYPE: Whip.

DESCRIPTION: Antenna 455(\*)/ARC consists of a fiberglass whip with six copper wires molded within the fiberglass whip and spaced equally around the circumference. The whip is approximately 90 inches long. The diameter tapers from 0.50 inch (measured 2 inches from the base) to 0.20 inch at the tip. A 50-megohm corona discharge resistor is built into the tip of the whip. The whip mounts rigidly on Antenna Base AB-340(\*)/ARC at a tilt angle of 15°. The entire assembly is designed to withstand stresses encountered at aircraft speeds of up to 165 miles per hour. A coaxial cable, 34-3/4 inches long, connects the antenna base to CU-361(\*)/ARC antenna coupler, which contains an inductance-capacitance network for impedance matching purposes.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARC-44.  
Equipment function - communications.

MISCELLANEOUS: Antenna AT-454(\*)/ARC designates antennas AT-454/ARC and AT-454A/ARC. Antenna AT-454/ARC consists of one Antenna AT-455/ARC, one Antenna Base AB-340/ARC, and one Antenna Coupler CU-361/ARC. Antenna AT-454A/ARC consists of one Antenna AT-455A/ARC, one Antenna Base AB-340A/ARC,



AT-454/ARC

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## REFERENCES:

- 1) Department of the Army, Radio Set AN/ARC-44, TM 11-517, (Dec. 1956). UNCLASSIFIED.
- 2) John B. Chown, James W. Schomer, Development of a Compatible Antenna System for the H-13 Helicopter, Technical

Report 4. Fort Monmouth, New Jersey: U. S. Army Signal Corps, (Dec. 1956), ASTIA Report No. AD-121137. UNCLASSIFIED.

- 3) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-455(\*)/ARC

See AT-454(\*)/ARC.

## ANTENNA AT-456/AR

MAJOR COMPONENTS: 1 Antenna AT-457/AR, 1 Antenna Base AB-341/AR.

FREQUENCY: VHF band, 118 - 152 mc.

TYPE: Stub.

DESCRIPTION: The antenna is designed for coaxial cable termination and for use in sub-zero temperatures. The stub (AT-457/AR) is a one-piece construction mounted to the base by two press-fit pins, two 0.0935-inch mounting holes, and one 1/4-28 thread center stop nut.

INSTALLATION: Airborne

ASSOCIATED EQUIPMENT: Radio Set R-575/ARN-33.

Equipment function - communications.

COGNIZANT AGENCY: U. S. Army (SCLC-5942).

MANUFACTURER: Antenna Research Laboratory, Inc.

## REFERENCES:

- 1) John B. Chown, Development of a Compatible Antenna System for the H-19 Helicopter, Technical Report 3. Fort Monmouth, New Jersey: U. S. Army Signal Corps, (June 1957), ASTIA Report No. AD-160474. UNCLASSIFIED.

- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-457/AR

See AT-456/AR.

## ANTENNA AT-461/ARW

FREQUENCY: VHF band, 36-44 mc.

TYPE: Whip.

DESCRIPTION: The antenna is a telescoping whip, 40-1/2 inches long with a base diameter of 1/2 inch tapering to 1/4 inch in diameter at the tip end. It is designed for mounting on AB-29/ART antenna base.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Sets AN/ARW-40 and AN/ARW-41.

MISCELLANEOUS: Antenna AT-461/ARW requires

Antenna Coupler CU-416/ARW for operation in the 36- to 40-mc frequency range and Antenna Coupler CU-417/ARW for operation in the 40- to 44-mc frequency range.

COGNIZANT AGENCY: WADC (AEL-54-R295).

MANUFACTURER: Rowe Industries, procurement contract AF 33(600)-25910.

STOCK NUMBER: Federal Stock Number 5821-284-6845.

## REFERENCE:

U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-479/A and AT-480/A

FREQUENCY: UHF and SHF bands; 1000-2600 mc, 2350-4450 mc.

DESCRIPTION: Antenna AT-479/A and AT-480/A are dual-cavity-type antennas, both designed for operation in either of the two frequency bands given above.

BEAM DATA:  
Gain - 3 db.  
Polarization - Horizontal.

INSTALLATION: Antenna AT-479/A mounts flush in the left nose section; and Antenna AT-480/A, in the right nose section of aircraft.

ASSOCIATED EQUIPMENT: Homing Equipment AN/APA-70, Direction Finder Set AN/ARC-9. Equipment function - navigation.

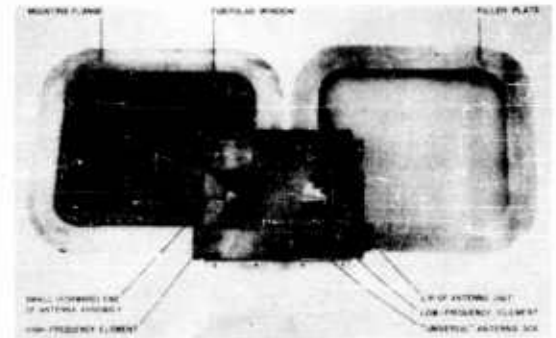
COGNIZANT AGENCY: WADC AEL-53-531 (Antenna AT-479/A); AEL-53-532 (Antenna AT-480/A).

MANUFACTURER: Airborne Instruments Laboratory, Inc., procurement contract NOas-10612.

REFERENCES:  
1) G. Bostick, Wide-Band Homing Antennas for

Use with Homing Equipment AN/APA-70A, Report No. 247-1. Mineola, New York: Airborne Instruments Laboratory, Inc., (June 1950), ASTIA Report No. ATI-80929. UNCLASSIFIED.

2) U. S. Department of Defense Nomenclature Card.



AT-479/A or AT-480/A Dual Cavity Antenna

## ANTENNA AT-481/ARC-48

FREQUENCY: VHF Band, 225-250 mc.

TYPE: Whip.

DESCRIPTION: The antenna is a non-telescoping, quarter-wavelength whip fed by a 50-ohm coaxial cable. It is 11-3/4 inches long, and mounts on the base of an AT-5/ARR-1 antenna.

INSTALLATION: Airborne, helicopter.

ASSOCIATED EQUIPMENT: Radio Set AN/ARC-48. Equipment function - communications.

MISCELLANEOUS: Two antennas are used with each AN/ARC-48 set. One antenna is used for the guard channel; and the other, for any one of the three remaining frequencies as selected by the operator.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Telephonics Corporation, procurement contract NOas 53-1019.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-491/AP

FREQUENCY: VHF band, 193 - 220 mc; VSWR < 2.

TYPE: Stub.

DESCRIPTION: This is a streamlined, aluminum alloy stub, 15 inches long, fed by a coaxial cable of 50 ohms characteristic impedance. It mounts on Antenna Base AB-109B/AP, and is designed for use on high speed aircraft.

INSTALLATION: Airborne.

COGNIZANT AGENCY: WADC (AEL-53-583).

STOCK NUMBER: Federal Stock Number 5985-285-0313.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-492/AP

FREQUENCY: VHF and UHF bands, 190 - 400 mc; VSWR < 2.

TYPE: Stub.

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DESCRIPTION: This is a streamlined stub, 9 inches long, fed by a coaxial cable of 50 ohms characteristic impedance. It mounts on Antenna Base AB-109B/AP and is designed for use on high speed aircraft.

INSTALLATION: Airborne.

COGNIZANT AGENCY: WADC (AEL-53-582).

STOCK NUMBER: Federal Stock Number 5985-284-9853.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-493/AP

FREQUENCY: UHF band, 330-780 mc; VSWR<2.

TYPE: Stub.

DESCRIPTION: This is a streamlined, aluminum alloy stub, 5 inches long, fed by a coaxial cable of 50 ohms characteristic impedance. It mounts on Antenna Base AB-109B/AP and is designed for use on high speed aircraft.

INSTALLATION: Airborne.

COGNIZANT AGENCY: WADC (AEL-53-581).

STOCK NUMBER: Federal Stock Number 1660 5985-295-9047.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-494/AP

FREQUENCY: UHF and SHF bands, 400-4000 mc.

TYPE: Stub.

DESCRIPTION: This is a streamlined, aluminum alloy stub, 3 inches long, fed by a coaxial cable of 50 ohms characteristic impedance. It mounts on Antenna Base AB-109B/AP and is designed for use on high speed aircraft.

INSTALLATION: Airborne.

COGNIZANT AGENCY: WADC (AEL-53-580).

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-495/ARN-14

FREQUENCY: VHF band, 108-122 mc.

DESCRIPTION: The reference indicates that the antenna is an aluminum cavity fed by a coaxial cable. Its overall dimensions are 12-11/16 by 34-1/16 by 3-1/16 inches.

INSTALLATION: Airborne.

COGNIZANT AGENCY: U. S. Navy.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-500/AP

FREQUENCY: UHF band, 300 - 1000 mc; VSWR < 3.

TYPE: Swept-back stub-sleeve antenna.

DESCRIPTION: The antenna is a streamlined, broadband, stub-sleeve antenna swept back to make an angle of 45 degrees with its mounting plate. The stub and sleeve sections are made from anodized aluminum castings and are separated by a Teflon insulator. The antenna mounts by means of 8 bolts through its flanged mounting plate. The antenna has an input impedance of 52 ohms and terminates in a type N connector. The antenna weighs about 2.7 pounds and is 8-7/8 inches tall, 3-1-4 inches wide and, 1 inch thick.

BEAM DATA:  
Gain - 2 db.

Beam type - Omnidirectional.  
Polarization - Horizontal or vertical.

INSTALLATION: Airborne.

MISCELLANEOUS: AT-500/AP is interchangeable with AT-138/AP.

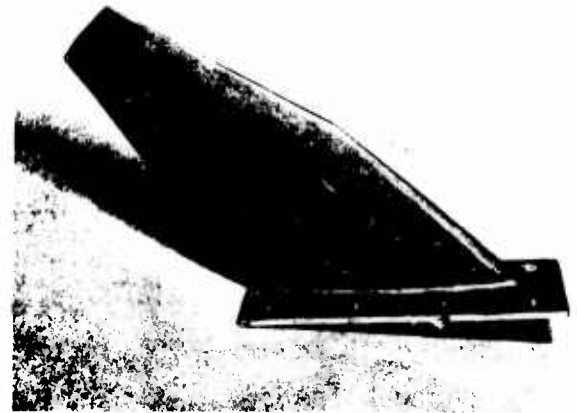
COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Technical Appliance Corporation, (G-834), Navy contracts NOas-52-763 and NOas-53-332.

REFERENCES:  
1) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown, Inc. (Oct. 31, 1956). SECRET.

UNCLASSIFIED

- 2) Private Correspondence.
- 3) U. S. Department of Defense Nomenclature Card.



AT-500/AP

ANTENNA AT-501/AP

FREQUENCY: VHF band, 88 - 137 mc; VSWR < 2.

TYPE: Blade.

DESCRIPTION: This is a streamlined stub antenna fed by a 50-ohm coaxial cable. The radiating element measures 24 by 4 by 0.50 inches.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Various ECM equipment.  
Equipment function - countermeasures.

MISCELLANEOUS: AT-501/AP is electrically but not mechanically interchangeable with Antenna AT-490/AP.

COGNIZANT AGENCY: WADC (AEL-53-822).

MANUFACTURER: Federal Telecommunications Laboratory.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

ANTENNA AT-505/AP

FREQUENCY: UHF band, 420 - 460 mc.

TYPE: Cavity-backed slot.

DESCRIPTION: This is a cavity-backed slot fed by a special coaxial cable of 50 ohms characteristic impedance. It is especially designed to maintain the air seal when mounted in the skin of a pressurized cabin. Its overall dimensions are 13 by 4 by 2-3/4 inches.

INSTALLATION: Airborne, flush mounted on aircraft fuselage.



AT-505/AP

ASSOCIATED EQUIPMENT: Radio Altimeter SCR-718-E.  
Equipment function - navigation.

MISCELLANEOUS: Reference 3) lists antenna AT-505/AP as obsolete. Antenna AT-505/AP is electrically but not mechanically interchangeable with antenna AS-333/AP.

COGNIZANT AGENCY: WADC (AEL-55-R-588).

MANUFACTURER: Z & W Manufacturing Corporation, part number 301606.

- REFERENCES:
- 1) Private Correspondence.
  - 2) U. S. Air Force, Radio Sets SCR-718-D, SCR-718-E, SCR-718-F, Handbook Operating Instructions, T.O. 12P5-3SCR718-21, (Aug. 15, 1957 - revised April 1, 1958). UNCLASSIFIED.
  - 3) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
  - 4) U. S. Air Force drawing 54D2536.
  - 5) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-520/AP

FREQUENCY: UHF and SHF bands, 1000 - 7700 mc.

but not mechanically interchangeable with antenna AT-502/AP.

TYPE: Stub.

COGNIZANT AGENCY: WADC (AEL-54-282).

DESCRIPTION: Antenna AT-520/AP is a streamlined stub antenna fed by a 50-ohm coaxial cable. It is constructed of aluminum tubing and mounts on Mounting Base AB-109B/AP. Its approximate dimensions are 8 by 3-3/4 by 2 inches.

STOCK NUMBER: Federal Stock Number 5985-284-7425.

REFERENCES:

- 1) U. S. Air Force, List of Antennas. Columbus Ohio: Lockburn Air Force Base, 376th SAC Wing. UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.

INSTALLATION: Airborne.

MISCELLANEOUS: Reference 1) lists this antenna as obsolete. Antenna AT-520/AP is similar to

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ANTENNA AT-521/URM-42

FREQUENCY: SHF band, 5200 - 11,000 mc.

MISCELLANEOUS: The antenna is an AT-48/UP modified by adding a mounting bracket.

TYPE: Horn antenna.

COGNIZANT AGENCY: U. S. Navy.

DESCRIPTION: The antenna is a flared waveguide horn. The antenna is 5-17/32 inches long, and 2 inches high without the mounting bracket. The horn is 3-29/32 inches high overall including the bracket. The horn is terminated with a type N connector for connection to a 52-ohm coaxial cable. The antenna is mounted on a mast by means of a bracket 1-7/8 inches long by 7/8 inch in diameter. The horn can be rotated.

MANUFACTURER: Stoddart Aircraft Radio Co., Inc., Hollywood, California, part number 91026-1, contract NObsr-63341.

REFERENCES:

- 1) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

INSTALLATION: Ground, shipboard, or aircraft.

ASSOCIATED EQUIPMENT: Radio Interference Monitoring Set AN/URM-42. Equipment function - test.

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ANTENNA AT-522/URM-42

FREQUENCY: UHF and SHF band, 300 - 4000 mc.

MISCELLANEOUS: The antenna is an AT-49A/APR-4 modified by adding a mounting bracket.

TYPE: Conical antenna, disccone type.

COGNIZANT AGENCY: U. S. Navy.

DESCRIPTION: The antenna is a disccone which is connected to a 52-ohm coaxial cable. The dimensions are 7-1/2 inches high without the mounting bracket and connector, 10-13/16 inches high overall, 12 inches maximum diameter, and 6-15/16 inches minimum diameter. The antenna mounts on a mast by means of a mounting bracket 1-7/8 inches long by 7/8 inch in diameter.

MANUFACTURER: Stoddart Aircraft Radio Co., Inc., Hollywood, California, order NObsr-63341.

REFERENCES:

- 1) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). CONFIDENTIAL.
- 2) U. S. Department of Defense Nomenclature Card.

INSTALLATION: Ground, shipboard, or aircraft.

ASSOCIATED EQUIPMENT: Radio Interference Measuring Set AN/URM-42. Equipment function - test.

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UNCLASSIFIED

ANTENNA AT-526/ARN-40

FREQUENCY: LF band, 0.090 - 0.110 mc.

INSTALLATION: Airborne.

DESCRIPTION: The nomenclature card states that this antenna selects a portion of the spectrum between 0.090 mc and 0.110 mc and passes the received signal to Radio Receiver R-630/ARN-40. Its approximate overall dimensions are 10 by 10 by 4 inches.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-40.  
Equipment function - navigation.

COGNIZANT AGENCY: WADC (AEL-54-194).

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

BEAM DATA:

Polarization - Horizontal, vertical, or elliptical.

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ANTENNA AT-527/APT

FREQUENCY: HF band, 3 - 6 mc.

COGNIZANT AGENCY: WADC (AEL-54-289).

TYPE: Whip.

MANUFACTURER: Convair, Fort Worth.

DESCRIPTION: This is a telescoping whip antenna 72 inches long and 1/2 inch in diameter.

REFERENCES:  
1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

INSTALLATION: Airborne, B-36 aircraft.

2) U. S. Department of Defense Nomenclature Card.

ASSOCIATED EQUIPMENT: Radio Set SCR-274. Equipment function - communications.

MISCELLANEOUS: Reference 1) lists this antenna as obsolete. AT-527/APT is similar to AS-89/ART.

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ANTENNA AT-533/ARN

FREQUENCY: LF and MF bands, 0.150 - 1.75 mc.

ASSOCIATED EQUIPMENT: Radio Set R-576/ARN-34.  
Equipment function - direction finding.

TYPE: Loop.

COGNIZANT AGENCY: U. S. Army (SCLC-8801).

DESCRIPTION: Antenna AT-533/ARN is an enclosed-loop-type antenna, 9 inches in diameter, with a special lead-in construction feature.

MANUFACTURER: Bendix Radio Division, Code 06845.

SCAN DATA: The antenna has 360° mechanical rotation.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

INSTALLATION: Airborne.

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ANTENNA AT-535/ARN

FREQUENCY: VHF band, 75 mc; VSWR < 2.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-12.  
Equipment function - navigation, surface reference.

TYPE: Cavity-backed slot.

COGNIZANT AGENCY: WADC (AEL-54-336).

DESCRIPTION: This is a plastic, aluminum-sprayed, rectangular cavity filled with Polyfoam and fed by an aluminum radiating element. Its approximate overall dimensions are 13 by 9 by 4 inches.

MANUFACTURER: Electronics Research Inc., No. 140 B.

BEAM DATA:

Polarization - Vertical.

REFERENCES:  
1) Military Specification MIL-A-7157.

INSTALLATION: Airborne, flush mounted to the belly of aircraft.

2) U. S. Department of Defense Nomenclature Card.

UNCLASSIFIED

# UNCLASSIFIED

## ANTENNA AT-536/ARN

FREQUENCY: VHF band, 75 mc; VSWR < 2.

TYPE: Flush-mounted stub.

DESCRIPTION: Antenna AT-536/ARN consists of a capacity-loaded, short monopole contained in an inverted, dish-type, directional reflector. A plastic plate covers the bottom of the reflector dish, which is filled with a plastic foam sealer to insulate the monopole from temperature variations, vibration, and humidity. The entire antenna assembly is 11-13/16 inches long, 7-3/4 inches wide, and 3-1/8 inches high.

### BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne, flush mounted to the belly of aircraft.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-32, Equipment function - navigation, surface reference.

COGNIZANT AGENCY: WADC (AEL-55-R-490).

MANUFACTURER: Electronics Research, Inc.; No. 140G.

STOCK NUMBER: Federal Stock Number 5826-538-0741.

### REFERENCES:

- 1) U. S. Air Force, Radio Receiving Set AN/ARN-32, Handbook Field Maintenance Instructions, T.O. 12R5-2ARN32-2, (Nov. 15, 1956). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.



AT-536/ARN

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## ANTENNA AT-537/ARN

FREQUENCY: VHF band, 75 mc; VSWR < 2.

TYPE: Cavity-backed slot.

DESCRIPTION: Antenna AT-537/ARN consists of a plastic, aluminum-sprayed, dome-shaped cavity filled with Polyfoam and fed by an aluminum radiating element. Its approximate overall dimensions are 13 by 9 by 4 inches.

### BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne, flush mounted to the belly of aircraft.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-12. Equipment function - navigation, surface reference.

COGNIZANT AGENCY: WADC (AEL-54-338).

MANUFACTURER: Electronics Research, Inc., No. 140 E.

### REFERENCE:

U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-556(\*)/ARN-41

FREQUENCY: LF and MF bands, 0.190 - 0.430 mc, 0.480 - 1.725 mc.

TYPE: Loop.

DESCRIPTION: Antenna AT-556(\*)/ARN-41 consists of a multiple-turn, rectangular loop wound on a powdered iron core, an antenna drive motor, and an autosyn transmitter. These items are mounted on a circular base. A clear plastic dome covers the loop antenna, the motor, and the autosyn generator and is attached to the base in such a way as to form an air-tight seal. The radiating element is approximately 6 inches long, 2-1/2 inches wide, and 3/8 inch

thick. The entire assembly is approximately 7-5/8 inches long, 6-1/2 inches wide, and 4-3/4 inches high. The antenna mounts on the external surface of aircraft beneath a streamlined, fiberglass fairing. It can also be mounted in a dielectric nose, or tail cone.

### BEAM DATA:

Beam type - The antenna has directional properties, giving maximum pickup when the axis of the loop is at right angles to the direction of the signal source, and minimum pickup when the axis of the loop coincides with that of the incoming signal.

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SCAN DATA: The loop has 360° mechanical azimuth rotation.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-41 or AN/ARN-41A. Equipment function - communications, or direction finding.

MISCELLANEOUS: Antenna AT-556( )/ARN-41 designates antennas AT-556/ARN-41, AT-556A/ARN-41, or AT-556B/ARN-41. Antenna AT-556A/ARN-41 differs from AT-556/ARN-41 in that it includes a visible-warning, silica-gel desiccant capsule to prevent moisture accumulation within the plastic dome. A different desiccant cartridge from that used in AT-556A/ARN-41 is included in AT-556B/ARN-41. Otherwise, the three antennas are identical.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Lear Incorporated, procurement contracts NOa(s)-54-216 (for AT-556/ARN-41) and NOas-55-757 (for AT-556B/ARN-41).

REFERENCES:

- 1) Bureau of Aeronautics, Radio Receiving Set AN/ARN-41A, Handbook Service Instructions, NAVAER 16-30ARN41-502, (July 15, 1956). UNCLASSIFIED.
- 2) Bureau of Aeronautics, Radio Receiving Set AN/ARN-41A, Handbook Operating Instruc-

tions, NAVAER 16-30ARN41-501, (July 15, 1956). UNCLASSIFIED.

- 3) Bureau of Aeronautics, Receiving Set Radio AN/ARN-41, Handbook Operation Instructions, NAVAER 16-45-550, (July 15, 1954). UNCLASSIFIED.
- 4) U. S. Department of Defense Nomenclature Card.



AT-556(\*)/ARN-41

ANTENNA REFLECTOR AT-559/APN-59

See AS-652/APN-59.

ANTENNA REFLECTOR AT-560/APN-59

See AS-653/APN-59.

ANTENNA AT-563/AR

FREQUENCY: LF and MF bands, 0.17 - 1.75 mc.

TYPE: Whip.

DESCRIPTION: The antenna is of the whip type and consists of a piece of wire covered with fiberglass. A 50-megohm resistor is imbedded in the tip to reduce static noise. The whip is 43-7/8 inches long with a maximum diameter of 1/2-inch and a minimum diameter of 5/32-inch. The antenna has an input impedance of 50 ohms.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Sets AN/ARC-5 and AN/ARN-6. Equipment function - communications and navigation.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Glenn L. Martin Company, Navy contract NOas-52-982.

REFERENCES:

- 1) U. S. Air Force, Aircraft Antenna Design Summary, Report No. 515-191544, (March 18, 1952). SECRET.
- 2) Private Correspondence.
- 3) U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-571/A

**FREQUENCY:** UHF band, 950 - 1215 mc; VSWR < 1.5.

2) U. S. Department of Defense Nomenclature Card.

**TYPE:** Cavity-backed slot.

**DESCRIPTION:** Antenna AT-571/A is an annular slot backed by a shallow cavity which is completely filled with dielectric foam to prevent moisture condensation. The antenna is constructed of aluminum and painted with zinc chromate primer. It is designed for coaxial feed of 52 ohms characteristic impedance. The mounting flange is approximately 10 inches in diameter, and the cavity is approximately 2-1/2 inches deep.

### BEAM DATA:

**Beam type** - Similar to that of a short stub antenna.

**INSTALLATION:** Airborne, flush mounted on aircraft fuselage.

**ASSOCIATED EQUIPMENT:** Radio Set AN/ARN-21; Radar Set AN/APX-6, and similar equipments. Equipment function - navigation and IFF.

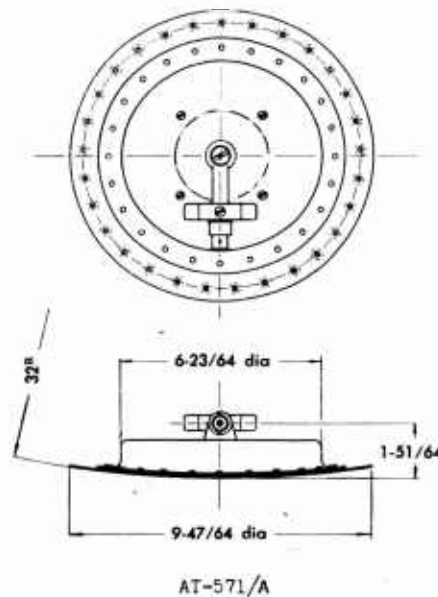
**MISCELLANEOUS:** AT-571/A is similar to but not interchangeable with antenna AT-234/APX.

**COGNIZANT AGENCY:** U. S. Navy (AER-EL-4114).

**MANUFACTURER:** Dorne & Margolin, Inc., type number 1305, procurement contract NOas 53-1013.

### REFERENCES:

- 1) U. S. Navy, Bureau of Aeronautics, Airborne Antennas. UNCLASSIFIED.



## ANTENNA AT-593(\*)/ARN-42

**FREQUENCY:** LF and MF bands, 0.190 - 0.430 mc, 0.480 - 1.725 mc.

when the axis of the loop coincides with that of the incoming signal.

**TYPE:** Loop.

**SCAN DATA:** AT-593/ARN-42 has 360° mechanical azimuth rotation.

**DESCRIPTION:** The antenna element is a multiple-turn loop wound around a flat, rectangular, ferromagnetic core. Together with a direction indicator, a synchro transmitter, and the drive motor, the antenna mounts on a circular cast-aluminum base. A clear plastic dome covers the entire assembly and attaches to the base in such a way as to form an airtight seal. Moisture condensation inside the dome is indicated by a visible, indicating, silica-gel desiccant capsule mounted on the loop-antenna base. The dimensions of the entire assembly are 6-3/8 by 7-7/16 by 7 inches. 7 inches. It mounts on aircraft fuselage beneath a streamlined, fiberglass fairing, or in the tail cone.

**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** Radio Set AN/ARN-42. Equipment function - communications, and direction finding.

**MISCELLANEOUS:** Antenna AT-593(\*)/ARN-42 designates antennas AT-593/ARN-42 and AT-593A/ARN-42 which are interchangeable except for maintenance parts. They are similar to but not interchangeable with Antenna AT-556(\*)/ARN-41. See illustration of AT-556(\*)/ARN-41.

**COGNIZANT AGENCY:** U. S. Army (SCLE-9491; SCLMAI-8666).

### BEAM DATA:

**Beam type** - The antenna has directional properties, giving maximum pickup when the axis of the loop is at right angles to the direction of the signal source, and minimum pickup

**MANUFACTURER:** Lear Incorporated, procurement contract 10395-PHILA-54 (for AT-593/ARN-42) and 21760-PHILA-56-55(51) (for AT-593A/ARN-42).

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REFERENCES:

- 1) Department of the Army, Radio Receiving Set AN/ARN-54, Technical Manual, TM 11-519, (Feb. 1957). UNCLASSIFIED.

- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-594/A

FREQUENCY: UHF band, 625 - 1250 mc.

COGNIZANT AGENCY: WADC (AEL-55-9).

TYPE: Probably a cavity-backed slot.

MANUFACTURER: Electronics Research, Inc.; drawing 2517.

DESCRIPTION: The nomenclature card suggests that Antenna AT-594/A is a slot backed by an aluminum cavity which is completely filled with dielectric foam to prevent moisture condensation.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

INSTALLATION: Airborne, flush mounted on B-36-type aircraft.

ANTENNA AT-595/A

FREQUENCY: UHF band, 640 - 1125 mc.

COGNIZANT AGENCY: WADC (AEL-55-10).

TYPE: Probably a cavity-backed slot.

MANUFACTURER: Electronics Research, Inc; drawing 2506.

DESCRIPTION: The nomenclature card suggests that Antenna AT-595/A is a slot backed by an aluminum cavity which is completely filled with dielectric foam to prevent moisture condensation.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

INSTALLATION: Airborne, flush mounted on B-36-type aircraft.

ANTENNA AT-598/APT

FREQUENCY: VHF band, 95 - 150 mc.

STOCK NUMBER: Federal Stock Number 5895-538-1007A.

TYPE: Whip.

REFERENCES:

DESCRIPTION: The antenna is a 30-1/2-inch whip, 1/2 inch in diameter, constructed of steel and mounted on AB-109B/AP antenna base. It requires an 8-1/2-inch matching balun.

- 1) U. S. Air Force, List of Antennas. Columbus, Ohio: Lockburn Air Force Base, 376th SAC Wing. UNCLASSIFIED.

INSTALLATION: Airborne.

- 2) U. S. Air Force drawing 54D2926.

COGNIZANT AGENCY: WADC (AEL-55-R-968).

- 3) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-599/APT

FREQUENCY: VHF band, 45 - 77 mc.

INSTALLATION: Airborne.

TYPE: Whip.

COGNIZANT AGENCY: WADC (AEL-55-969).

DESCRIPTION: The antenna is a 54-1/2-inch whip, 1/2 inch in diameter, constructed of steel and mounted on AB-109B/AP antenna base. It requires a 14-1/2-inch matching balun.

REFERENCES:

- 1) U. S. Air Force, List of Antennas. Colum-

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bus, Ohio: Lockburn Air Force Base,  
376th SAC Wing. UNCLASSIFIED.

3) U. S. Department of Defense Nomenclature  
Card.

2) U. S. Air Force drawing 54D2926.

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## ANTENNA AT-600/APT

FREQUENCY: VHF band, 57 - 100 mc.

STOCK NUMBER: Federal Stock Number 5895-538-  
1008A.

TYPE: Whip.

DESCRIPTION: The antenna is a 40-1/2-inch  
whip, 1/2 inch in diameter, constructed of  
steel and mounted on AB-109B/AP antenna  
base. It requires a 10-1/4-inch matching  
balun.

### REFERENCES:

- 1) U. S. Air Force, List of Antennas.  
Columbus, Ohio: Lockburn Air Force Base,  
376th SAC Wing. UNCLASSIFIED.
- 2) U. S. Air Force drawing 54D2926.
- 3) U. S. Department of Defense Nomenclature  
Card.

INSTALLATION: Airborne.

COGNIZANT AGENCY: WADC (AEL-55-R-970).

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## ANTENNA AT-620/APQ-39

FREQUENCY: EHF band, 34,512 - 35,208 mc.

ASSOCIATED EQUIPMENT: Radar Set AN/APQ-39.

TYPE: Paraboloidal reflector.

COGNIZANT AGENCY: AEL-56-609.

DESCRIPTION: The antenna is a paraboloidal  
reflector and is used for transmitting and  
receiving. It weighs 17 pounds and has a  
diameter of 41-1/2 inches. The antenna feed  
is pressurized. The antenna mounts by three  
mounting pads.

STOCK NUMBER: Federal Stock Number 1660 5841-  
553-4175.

### REFERENCE:

U. S. Department of Defense Nomenclature  
Card.

INSTALLATION: Airborne.

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## ANTENNA AT-624(\*)/AR

FREQUENCY: HF and VHF bands, 24.0 - 51.9 mc.

electrically and mechanically interchangeable.  
See Antenna Group AN/ARA-31.

TYPE: Whip.

DESCRIPTION: The antenna consists of a highly  
flexible fiberglass whip with an embedded,  
copper-plated steel conductor which is mechan-  
ically and electrically connected to a stain-  
less-steel, threaded base designed for  
mounting on CU-459/AR impedance matching  
network. The fiberglass whip has an olive  
drab finish and is 24.1 inches long. The  
diameter is 0.312 inch at the base and tapers  
to 0.12 inch at the tip.

COGNIZANT AGENCY: U. S. Army (SCIC-10173;  
SCIMAL-8690).

MANUFACTURER: Bendix Radio Division, procure-  
ment contract 13611-PHILA-53-93.

### REFERENCES:

- 1) Department of the Army, Maintenance In-  
structions Navigation and Communication  
System for U. S. Air Force Series H-21,  
H-21A, and H-21B and Army Series H-21C  
Helicopters, TM 1-1H-21-2-8, (Aug. 1957).  
UNCLASSIFIED.
- 2) Bendix drawing L221402-2.
- 3) U. S. Department of Defense Nomenclature  
Card.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARC-44.  
Equipment function - navigation.

MISCELLANEOUS: Antenna AT-624(\*)/AR designates  
antennas AT-624/AR and AT-624A/AR. They are

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ANTENNA AT-640(\*)/ARN

FREQUENCY: VHF band, 75 mc.

DESCRIPTION: The antenna is a loop of special design that is enclosed in a streamlined housing which is filled with a compound to protect the antenna from moisture and other aircraft fluids. The overall housing is 11-1/2 inches long, 1-3/16 wide, and 2-3/8 inches high.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Marker Beacon Receiving Set AN/ARN-12. Equipment function - navigation, surface reference.

MISCELLANEOUS: Antenna AT-640(\*)/ARN designates antennas AT-640/ARN and AT-640A/ARN, which are electrically and mechanically interchangeable.

COGNIZANT AGENCY: U. S. Army SCLH-11526 (AT-640/ARN) and SESA-57-203 (AT-640A/ARN).

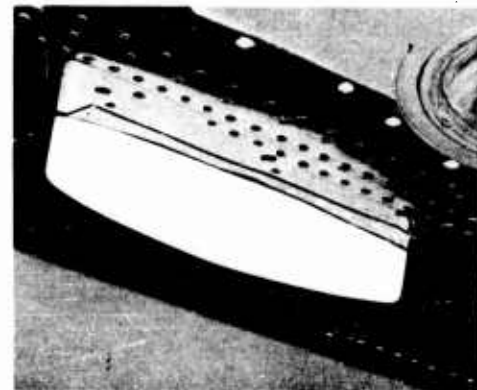
MANUFACTURER: Collins Radio Co., procurement contract AF 33(600)-34512 (for AT-640A/ARN).

REFERENCES:

- 1) Department of the Army, Maintenance In-

structions Navigation and Communication System USAF Series H-21, H-21A, and H-21B and Army Series H-21C Helicopters, Technical Manual, TM 1-1H-21-2-8, (Aug., 1957).  
UNCLASSIFIED.

- 2) U. S. Department of Defense Nomenclature Card.



AT-640(\*)/ARN

ANTENNA AT-679

FREQUENCY: UHF and SHF bands, 2600 - 11,000 mc.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APS-54.

STOCK NUMBER: Air Force 1660-035110436.

REFERENCE:

U. S. Air Force, List of Antennas. Columbus, Ohio: Lockburn Air Force Base, 376th SAC Wing. UNCLASSIFIED.

ANTENNA AT-680

FREQUENCY: UHF and SHF bands, 2600 - 11,000 mc.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APS-54.

STOCK NUMBER: Federal Stock Number 5985-304-4678A.

REFERENCE:

U. S. Air Force, List of Antennas. Columbus, Ohio: Lockburn Air Force Base, 376th SAC Wing. UNCLASSIFIED.

ANTENNA AT-700/AR

FREQUENCY: VHF band, 118 - 136 mc; VSWR < 2.

TYPE: Modified stub.

DESCRIPTION: This is a modified stub antenna provided with a base plate for mounting.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ART-34.

Equipment function - communications.

COGNIZANT AGENCY: U. S. Army (SCIM-6849).

MANUFACTURER: Collins Radio Co., procurement contract 33701-PHIA-55-55(51).

REFERENCE:

U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-701/AR

FREQUENCY: VHF band, 228-258 mc.

TYPE: Inverted "L".

DESCRIPTION: This antenna consists of a 1/4-inch-diameter, stainless-steel, L-shaped rod 6 inches long in the vertical direction and 7 inches long in the horizontal direction. The antenna is connected through a flexible rubber base to a connector for a 52-ohm coaxial cable. The rubber base and connector are mounted in a small aluminum box. The antenna may be used at aircraft speeds up to 250 miles per hour and during mild icing conditions.

INSTALLATION: Airborne, fixed to belly of aircraft.

ASSOCIATED EQUIPMENT: Radio Set AN/ARC-60.  
Equipment function - communications.

COGNIZANT AGENCY: U. S. Army (SCIMA 1-8638).

MANUFACTURER: Aircraft Radio Corp., type A-16 drawing 16960, procurement contract 32430-PHILA-56-55.

REFERENCES:

- 1) Department of the Army, Radio Set AN/ARC-60, TM 11-522, (July, 1957). UNCLASSIFIED.
- 2) U. S. Department of Defense Nomenclature Card.



AT-701/AR

ANTENNA AT-708/AR

FREQUENCY: LF, MF, and VHF bands, 0.10 - 1.7 mc, 100 - 150 mc.

TYPE: Blade.

DESCRIPTION: The antenna is primarily a sense antenna for use with navigation equipment in the LF and MF bands. It can, however, with the addition of a ground strap, be used as a VHF communications antenna. The antenna consists of a streamlined stub enclosed in a fiberglass housing. It is mounted by bolts through 4 holes in the base of the antenna. The other end of the antenna has provisions for fastening 1 or 2 wires. The wires may be insulated from the antenna (i.e., merely supported by it) or they may be connected to it to form a longer antenna. The antenna is 28-1/2 inches tall, 6-1/8 inches wide, and 3 inches deep. The input impedance is 50 ohms and a type N connector is used.

BEAM DATA:

Beam type - Omnidirectional in the plane perpendicular to the length of the antenna.  
Polarization - Linear, depends on mounting position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-6.  
Equipment function - navigation, direction finding.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Douglas Aircraft Company, Navy contract NOas-54-754.



AT-708/AR

REFERENCES:

- 1) J. C. Bailey, Evaluation of the AT-708 (XN-1)/AR Multiple Purpose Mast Developed by Douglas Aircraft Company Santa Monica, Project No. EL 9000. Patuxent River, Maryland: Naval Air Test Center, (April 23, 1958), ASTIA Report No. AD 200408. UNCLASSIFIED.

2) Albert F. Lopez, Robert C. Moore, Directory of Intercept and Analysis Equipment, Report No. 63.6-F. State College, Pennsylvania: Haller, Raymond and Brown,

Inc., (Oct. 31, 1956). SECRET.

3) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-720/A

FREQUENCY: UHF band, 960 - 1220 mc; VSWR < 1.8.

TYPE: Cavity-backed slot.

DESCRIPTION: Antenna AT-70/A is an annular slot backed by a shallow cavity with a plastic cover. A termination for a 52-ohm coaxial cable is included. The assembly is about 9 inches in diameter and is 1-1/2 inches deep. It weighs 1-1/2 pounds.

BEAM DATA:

Beam type - Omnidirectional, like that of a short stub.

Polarization - Vertical.

INSTALLATION: Airborne, mounted flush on aircraft fuselage.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-21.  
Equipment function - navigation.

MISCELLANEOUS: AT-720/A is electrically but not mechanically interchangeable with antenna AT-234/APX.

COGNIZANT AGENCY: WADC (AEL-56-701).



AT-720/A

MANUFACTURERS: Dorne and Margolin, Incorporated, part number DM Nil3.

REFERENCES:

1) Airborne Antennas, Westbury, Long Island, N. Y.: Dorne and Margolin. UNCLASSIFIED.

2) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-722/APX

FREQUENCY: UHF band, 950 - 1250 mc.

TYPE: Half-wave stub.

DESCRIPTION: This is an end-fed half-wave stub antenna with a matching section for terminating a 50-ohm coaxial cable. A built-in probe is included for preflight test and monitoring. Attenuation between the probe and the half-wave stub is 16.5 db. The antenna is constructed of aluminum with Alodine or Iridite finish. The overall dimensions are approximately 8 inches long by 3 inches wide by 6 inches high. The assembly is covered by a fiberglass enclosure with yellow painted finish.

INSTALLATION: Airborne, mounted on aircraft fuselage.

ASSOCIATED EQUIPMENT: Radar Set AN/APX-6.  
Equipment function - IFF.

COGNIZANT AGENCY: WADC (AEL-56-714).

REFERENCES:

1) U. S. Air Force drawing X56D12668.

2) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-728/A

FREQUENCY: MF band, 0.530 - 1.72 mc.

DESCRIPTION: The reference indicates that this antenna is a fixed, single-element section approximately 7 inches in diameter and 2 inches deep. It is sealed against moisture and dust, and a resistance type coating reduces precipitation static effect.

BEAM DATA:

Beam type - Approximately omnidirectional in the horizontal plane.

Polarization - Vertical.

INSTALLATION: Airborne, mounted flush with the skin of high-speed (in excess of 0.8 mach) aircraft.

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ASSOCIATED EQUIPMENT: Radio Set AN/ARR-47.

COGNIZANT AGENCY: WADC (AEL-56-705).

REFERENCE:

U. S. Department of Defense Nomenclature Card.

ANTENNA AT-734/ARA-36

FREQUENCY: HF band, 4-10 mc.

TYPE: Dipole.

DESCRIPTION: The reference indicates that this antenna consists of an aluminum-tubing element 7 feet long by 3 inches wide by 1 inch thick. A rubber de-icing boot and fiberglass mounting boots are included. An installation requires two of these antennas, one through each wing. They are mounted vertically, approximately 35 feet apart. Each dipole element projects approximately 29 inches beyond the mounting boot.

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARA-36.  
Equipment function - navigation.

COGNIZANT AGENCY: WADC (AEL-56-968),  
development contract AF 33(600)-26796.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

BEAM DATA:

Beam type - Cardioid, when used in properly-fed pairs.

ANTENNA AT-740/A

FREQUENCY: UHF band, 960 - 1220 mc.

TYPE: Cavity-backed slot.

DESCRIPTION: Antenna AT-740/A is an annular slot backed by a shallow cavity constructed of aluminum and plastic. Termination facility for a 52-ohm coaxial cable is included. The assembly measures 9 inches in diameter and is 1-1/2 inches deep.

INSTALLATION - Airborne, mounted flush on the aircraft fuselage.

ASSOCIATED EQUIPMENT - Radio Set AN/ARN-21.  
Equipment function - navigation.

COGNIZANT AGENCY: WADC (AEL-57-R-311).

MANUFACTURER: TBS.

REFERENCES:

- 1) U. S. Air Force drawing 56C13244.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-741/A

FREQUENCY: UHF band, 960 - 1220 mc.

TYPE: Stub sleeve.

DESCRIPTION: The antenna is a stub sleeve constructed of aluminum and plastic. It measures 5-1/2 by 2 by 4 inches.

INSTALLATION: Airborne; mounted externally on the aircraft fuselage.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-21.  
Equipment function - navigation.

COGNIZANT AGENCY: WADC (AEL-57-R-312).

REFERENCES:

- 1) U. S. Air Force drawing 56C13200.
- 2) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-743/APW-16

FREQUENCY: SHF band, 9295 - 9340 mc.

TYPE: Slot.

DESCRIPTION: The antenna consists of a slotted circular waveguide and includes a protective radome. It is approximately

(overall) 6-13/64 inches long, 3-3/4 inches wide and 11-1/4 inches high. It weighs 1.25 pounds.

BEAM DATA:

Half-power beamwidth - Vertical -  $40^{\circ} \pm 10^{\circ}$ .

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Beam type - Omnidirectional within 3-1/2 db  
in the horizontal plane.

MANUFACTURER: Sperry Gyroscope Co., procure-  
ment contract AF 33(038)-21921.

INSTALLATION: Airborne.

REFERENCE:

U. S. Department of Defense Nomenclature  
Card.

ASSOCIATED EQUIPMENT: Radar Set AN/APW-16.

COGNIZANT AGENCY: AEL-56-1305.

ANTENNA AT-748/VRC

FREQUENCY: VHF and UHF bands, 220 - 400 mc.

COGNIZANT AGENCY: U. S. Navy - 57-122.

TYPE: Stub.

MANUFACTURER: Kings Electronics Company,  
Tuckahoe, New York, procurement contract  
NObsr-71603.

DESCRIPTION: The antenna is a broadband stub  
designed for connection to coaxial transmis-  
sion cable. It is constructed of zinc  
chromate and is 9-5/8 inches long and 2-1/4  
inches in diameter.

STOCK NUMBER: Federal Stock Number F 5985-546-  
0906.

INSTALLATION: Airborne and ground, vehicular.

REFERENCES:

1) BuShips drawings RE 66F5858, and RE 66  
F585F.

ASSOCIATED EQUIPMENT: Radio Set AN/ARC-27.  
Equipment function - communications.

2) U. S. Department of Defense Nomenclature  
Card.

MISCELLANEOUS: AT-748/VRC is the same as  
AS-390A/ERC less the counterpoise element.

ANTENNA AT-755/ARC

FREQUENCY: VHF and UHF bands, 225 - 400 mc.

ASSOCIATED EQUIPMENT: Radio Set AN/ARC-34.  
Equipment function - communications.

TYPE: Stub sleeve.

MISCELLANEOUS: AT-755/ARC is similar to but  
not interchangeable with AT-256A/ARC. Anten-  
na AT-755/ARC is designed to produce less  
aerodynamic drag.

DESCRIPTION: The antenna is a quarter-wave  
stub sleeve fed by a 50-ohm coaxial cable.  
Its approximate overall dimensions are 11-  
1/8 by 5-5/8 by 2-3/16 inches.

COGNIZANT AGENCY: WADC (AEL-57-230).

BEAM DATA:

Beam type - Omnidirectional, radiation  
pattern characteristics of a quarter wave  
stub.

Polarization - Vertical.

REFERENCE:

U. S. Department of Defense Nomenclature  
Card.

INSTALLATION: Airborne.

ANTENNA AT-764/AR

FREQUENCY: VHF band, 30 - 69.95 mc.

ASSOCIATED EQUIPMENT: Radio Set AN/ARC-54.  
Equipment function - navigation.

TYPE: Dipole.

COGNIZANT AGENCY: U. S. Army (SCEL-57-199).

DESCRIPTION: The reference indicates that the  
antenna consists of two antenna elements,  
a base, an antenna support, and an impedance  
matching network.

REFERENCE:

U. S. Department of Defense Nomenclature  
Card.

INSTALLATION: Airborne.

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UNCLASSIFIED

ANTENNA AT-765/ARC

FREQUENCY: VHF band, 30 - 69.95 mc.

TYPE: Whip.

DESCRIPTION: The reference indicates that the antenna consists of one antenna element, a base, an antenna support, and an impedance matching network.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Sets AN/ARC-54 and AN/ARR-49. Equipment function - communications.

COGNIZANT AGENCY: U. S. Army (SCEL-57-198).

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

ANTENNA AT-780/ARN

FREQUENCY: LF and MF bands, 0.190 - 1.750 mc.

TYPE: Loop.

DESCRIPTION: The antenna consists of a coil of several widely spaced turns of wire wound on a flat, rectangular, ferrite core, a drive motor, a synchro transmitter, and an adjustable compensating mechanism which corrects for bearing errors caused by aircraft structure. A clear glass dome covers the entire assembly and attaches to the base in such a way as to form an airtight seal. The dimensions of the entire assembly are 4 by 6-9/16 by 6-9/16 inches.

SCAN DATA: The loop has 360° mechanical azimuth rotation.

INSTALLATION: Airborne, mounted on aircraft fuselage beneath an antistatic, semirigid housing.

ASSOCIATED EQUIPMENT: Radio Set AN/ARN-59. Equipment function - navigation, surface reference.

COGNIZANT AGENCY: U. S. Army (SCEL-57-1345).

MANUFACTURER: Aircraft Radio Corp., type L-11.

STOCK NUMBER: Federal Stock Number 5826-553-5924.

REFERENCES:

- 1) Department of the Army, Operator's Manual Direction Finder Set AN/ARN-59, TM 11-523-10, (April, 1958).
- 2) U. S. Department of Defense Nomenclature Card.



AT-780/ARN

ANTENNA AT-798/ALQ-23

Cancelled January 2, 1958; never used.

ANTENNA AT-799/ALQ-23

Cancelled January 2, 1958; never used.

ANTENNA AT-800/ALQ-23

Cancelled January 2, 1958; never used.

ANTENNA AT-801/ALQ-23

Cancelled January 8, 1958; never used.

UNCLASSIFIED

ANTENNA AT-805/ARN

FREQUENCY: VHF band, 118 - 148 mc.

TYPE: Inverted "L".

DESCRIPTION: The antenna consists of a 1/4-inch-diameter, stainless-steel, L-shaped rod attached to a coupling box through a flexible rubber base to permit its use at aircraft speeds up to 250 miles per hour and during mild icing conditions.

INSTALLATION: Airborne, light aircraft.

COGNIZANT AGENCY: U. S. Army (SESA-57-1637).

MANUFACTURER: Aircraft Radio Corp., type A-15, drawing 16630, procurement contract 53303-PHILA-57-43(B).

REFERENCE:

U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-811/AP

FREQUENCY: UHF band, 565-2350 mc; VSWR < 1.25.

TYPE: Scimitar.

DESCRIPTION: The antenna is capable of handling 500 watts of CW power. Approximate overall dimensions are 6 inches by 6 inches by 9 inches, and the approximate weight is 5 pounds.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: The antenna is used primarily with countermeasures, jamming, equipment.

COGNIZANT AGENCY: AEL.

REFERENCE:

U. S. Air Force Specification MIL-A-26327.

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ANTENNA AT-812/AP

FREQUENCY: UHF and SHF bands, 2350 - 5000 mc; VSWR < 1.25.

TYPE: Scimitar.

DESCRIPTION: The antenna is capable of handling 500 watts of CW power. Approximate overall dimensions are 4 inches by 4 inches by 4 inches, and the approximate weight is 3 pounds.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: The antenna is used primarily with countermeasures, jamming, equipment.

COGNIZANT AGENCY: AEL.

REFERENCE:

U. S. Air Force Specification MIL-A-26327.

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ANTENNA AT-813/AP

FREQUENCY: UHF and SHF bands, 950 - 3550 mc; VSWR < 1.25.

TYPE: Scimitar.

DESCRIPTION: The antenna is capable of handling 500 watts of CW power. The approximate overall dimensions are 6 inches by 6 inches by 6 inches, and the approximate weight is 4 pounds.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: The antenna is used primarily with countermeasures, jamming, equipment.

COGNIZANT AGENCY: AEL.

REFERENCE:

U. S. Air Force Specification MIL-A-26327.

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ANTENNA AT-814/AP

FREQUENCY: UHF band, 350 - 975 mc; VSWR < 1.25.

TYPE: Scimitar.

DESCRIPTION: The antenna is capable of handling 500 watts of CW power. The approximate

overall dimensions are 3 inches by 3 inches by 3 inches, and the approximate weight is 2 pounds.

INSTALLATION: Airborne.

UNCLASSIFIED



UNCLASSIFIED

ASSOCIATED EQUIPMENT: The antenna is used primarily with countermeasures, jamming equipment.

COGNIZANT AGENCY: AEL.

REFERENCE:  
U. S. Air Force Specification MIL-A-26327.

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ANTENNA AT-815/AP

FREQUENCY: SHF band, 4950 - 10,800 mc; VSWR < 1.25.

INSTALLATION: Airborne.

TYPE: Scimitar.

ASSOCIATED EQUIPMENT: The antenna is used primarily with countermeasures, jamming equipment.

DESCRIPTION: The antenna is capable of handling 500 watts of CW power. The approximate overall dimensions are 4 inches by 4 inches by 3 inches, and the approximate weight is 2-1/2 pounds.

COGNIZANT AGENCY: AEL.

REFERENCE:  
U. S. Air Force Specification MIL-A-26327.

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ANTENNA AT-817/ARN

FREQUENCY: VHF band, 107 - 118 mc, 136 - 144 mc.

INSTALLATION: Airborne, light aircraft.

TYPE: Inverted "L".

COGNIZANT AGENCY: U. S. Army (SESA-57-1652).

DESCRIPTION: The antenna consists of a 1/4-inch-diameter stainless-steel, L-shaped rod attached to a coupling box through a flexible rubber base to permit its use at aircraft speeds up to 250 miles per hour and during mild icing conditions.

MANUFACTURER: Aircraft Radio Corp., type A-22, drawing 21290, procurement contract 33303-PHILA-57-43(B).

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-823/AP

FREQUENCY: UHF and SHF bands, 2200 - 4000 mc; VSWR < 1.3.

primarily with countermeasures, jamming, equipment.

TYPE: Scimitar.

COGNIZANT AGENCY: AEL.

DESCRIPTION: The approximate overall dimensions are 6 inches by 3-1/2 inches by 2 inches, and the weight is 2-1/2 pounds. Power-handling ability of the antenna is 400 watts average power. The antenna uses a UG-1173A/U input connector and mounts on the AB-109B/AP antenna base.

MANUFACTURER: Hallicrafters Co.

REFERENCES:  
1) Hallicrafters drawing No. 057-300297.  
2) U. S. Air Force specification MIL-A-26327.  
3) U. S. Department of Defense Nomenclature Card.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: The antenna is used

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ANTENNA AT-824/AP

FREQUENCY: UHF and SHF bands, 2200 - 4000 mc; VSWR < 1.3.

input connector and mounts on the AB-109B/AP antenna base.

TYPE: Scimitar.

INSTALLATION: Airborne.

DESCRIPTION: The approximate overall dimensions are 6 inches by 3-1/2 inches by 2 inches, and the weight is 2-1/2 pounds. Power-handling ability of the antenna is 400 watts average power. The antenna uses a UG-1173A/U

ASSOCIATED EQUIPMENT: The antenna is used primarily with countermeasures, jamming, equipment.

COGNIZANT AGENCY: AEL.

UNCLASSIFIED

MANUFACTURER: Hallicrafters Co.

2) U. S. Air Force specification MIL-A-26327.

REFERENCES:

1) Hallicrafters drawing No. 057-300294.

3) U. S. Department of Defense Nomenclature Card.

ANTENNA AT-829/AP

AT-829/AP is identical to the AT-814/AP except in the method of mounting to the aircraft. They have different mounting plates. See AT-814/AP.

ANTENNA AT-830/AP

AT-830/AP is identical to the AT-811/AP except for the method of mounting to the aircraft. They have different mounting plates. See AT-811/AP.

ANTENNA AT-831/AP

AT-831/AP is identical to the AT-813/AP except for the method of mounting to the aircraft. They have different mounting plates. See AT-813/AP.

ANTENNA AT-832/AP

AT-832/AP is identical to the AT-812/AP except for the method of mounting to the aircraft. They have different mounting plates. See AT-812/AP.

ANTENNA AT-833/AP

AT-833/AP is identical to the AT-815/AP except for the method of mounting to the aircraft. They have different mounting plates. See AT-815/AP.

ANTENNA AT-839/ARA-44

FREQUENCY: SHF band, 9000 - 9160 mc.

ASSOCIATED EQUIPMENT: Radio set AN/ARA-44.  
Equipment function - navigation.

DESCRIPTION: The reference indicates that the antenna is 12 inches in diameter and 10 inches high.

COGNIZANT AGENCY: WADC (AEL-58-95).

BEAM DATA:

Beam type - Directional.

MANUFACTURER: Stewart Warner Corp., part number 85X202367.

INSTALLATION: Airborne, fixed to aircraft fuselage.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

ANTENNA AT-840/ARC

FREQUENCY: VHF and UHF bands, 225 - 400 mc;  
VSWR < 2.5.

TYPE: Blade.

DESCRIPTION: AT-840/ARC is a streamlined stub antenna designed for coaxial cable termina-

tion of 50 ohms characteristic impedance. Its approximate overall dimensions are 9 by 8 by 2-1/4 inches. The streamlined shape of the antenna makes possible its use at speeds in excess of Mach 2.

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BEAM DATA:

Beam type - Omnidirection in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARC-34.  
Equipment function - communications.

MISCELLANEOUS: AT-840/ARC is similar to but not interchangeable with antennas AT-256/ARC and AT-755/ARC.

COGNIZANT AGENCY: WADC (AEL-58-126).

MANUFACTURER: Dorne and Margolin; type DMC 7.

REFERENCES:

- 1) Airborne Antennas. Westbury, Long Island, N. Y.: Dorne and Margolin.
- 2) U. S. Department of Defense Nomenclature Card.



AT-840/ARC

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ANTENNA AT-845/AP

FREQUENCY: UHF and SHF bands, 2350 - 5000 mc.

TYPE: Scimitar.

DESCRIPTION: The overall dimensions are 4 inches by 3 inches by 3 inches. The approximate weight is 2 pounds. Power-handling ability of the antenna is 500 watts average power.

BEAM DATA:

Beam type - Omnidirectional in azimuth.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Designed for use with high-power countermeasures, jamming transmitter used on B/RB-47 aircraft.

MISCELLANEOUS: AT-845/AP is similar to AT-812/AP. It replaces the stub antenna on the B/RB-47 aircraft.

COGNIZANT AGENCY: AEL.

MANUFACTURER: TA-MAR Inc.

REFERENCES:

- 1) U. S. Air Force specification MIL-A-26327.
- 2) U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-871/APW

FREQUENCY: UHF band, 2600 - 3000 mc.

TYPE: Dipole.

DESCRIPTION: The antenna is a quarter-wave dipole fed by a 50-ohm coaxial cable. It is constructed of polished stainless steel and measures approximately 1-5/8 inches in diameter by 2 inches in length.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APW-11A and AN/APW-20.

MISCELLANEOUS: AT-871/APW is similar to Antenna AT-104/APN-19, but the ground-plane ring is removed and the mounting hub is changed to fit a particular mounting location.

COGNIZANT AGENCY: WADC (AEL-58-471).

REFERENCE:

- U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-878/APN

FREQUENCY: UHF band, 2680 - 2950 mc.

TYPE: Cavity-backed slot.

UNCLASSIFIED

DESCRIPTION: Antenna AT-878/APN is an annular slot backed by a shallow aluminum cavity. It is fed by a 50-ohm cable and measures 3-1/2 inches in diameter and 1-1/4 inches in depth.

BEAM DATA:  
Beam type - Omnidirectional.

INSTALLATION: Airborne, mounted flush on the bottom of aircraft fuselage.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-91 and AN/APW-11.

COGNIZANT AGENCY: WADC (AEL-58-514).

MANUFACTURER: Electronic Specialty Co.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

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ANTENNA AT-879/ARC

FREQUENCY: VHF and UHF bands, 225-400 mc.

Equipment function - communications.

TYPE: Stub sleeve.

MISCELLANEOUS: AT-879/ARC is similar to but not interchangeable with Antenna AT-256A/ARC.

DESCRIPTION: The approximate overall dimensions of the antenna are 6 inches by 7-3/4 inches by 1 inch.

COGNIZANT AGENCY: WADC (AEL-58-515).

MANUFACTURER: Microwave Radiation Corp.

INSTALLATION: Airborne, mounted externally on the skin of high-speed aircraft.

REFERENCE:  
Request for Nomenclature Card.

ASSOCIATED EQUIPMENT: Radar Set AN/ARC-34.

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ANTENNA AT-881/APN

FREQUENCY: UHF band, 2680 - 2950 mc.

MISCELLANEOUS: AT-881/APN is similar to but not interchangeable with Antenna AT-104/APN-19.

TYPE: Stub.

COGNIZANT AGENCY: WADC (AEL-58-516).

DESCRIPTION: The antenna consists of a one-piece, aluminum radiating element approximately 3-1/2 inches in diameter and 2-1/4 inches deep. It is fed by a 50-ohm cable.

MANUFACTURER: Electronic Specialty Co.

INSTALLATION: Airborne, mounted on fuselage.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-91 and AN/APW-11.

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ANTENNA AT-884/APX-44

TYPE: Blade.

ASSOCIATED EQUIPMENT: Radar Set AN/APX-44.  
Equipment function - IFF.

DESCRIPTION: The reference indicates that, in addition to the radiating element, the antenna includes the mounting plate and gasket. Also it implies that the antenna should not be painted.

COGNIZANT AGENCY: U. S. Army (SEL-58-1350).

MANUFACTURER: Wilcox Electric Co.; model 716A.

BEAM DATA:  
Polarization - Vertical.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

INSTALLATION: Airborne.

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ANTENNA AT-889/DRT

FREQUENCY: UHF band, 450 - 460 mc.

DESCRIPTION: The antenna consists of a radiating element 0.124 inches in diameter and 6-7/8 inches long. The radiating element

TYPE: Quarter-wave stub.

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is easily replaceable and, when an obstruction is encountered, is designed to collapse without damage to its insulated feed-through base.

INSTALLATION: Airborne, mounted on drone aircraft.

ASSOCIATED EQUIPMENT: Radio Set AN/DRT-1.

Equipment function - remote control.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Motorola, Inc., procurement contract NOas-58-731.

REFERENCE:  
Request for Nomenclature Card.

## ANTENNA AT-890/ARN

FREQUENCY: LF and MF bands, 0.19 - 1.75 mc.

TYPE: Wire.

DESCRIPTION: The antenna consists of a 30-foot length of WS-25/U wire and accessories which form a sense antenna when installed external to the fuselage of the aircraft.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Direction Finder Set AN/ARN-59(V). Equipment function - navigation, direction finding.

COGNIZANT AGENCY: SESA-58-1369.

MANUFACTURERS: Aircraft Radio Corporation, code number 00781 and part/drawing number FES-1297, procurement contract 19848-PP-58-A1-A1.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

## ANTENNA AT-895/A

FREQUENCY: VHF band, 215 - 235 mc; VSWR < 2.

TYPE: Blade.

DESCRIPTION: The antenna consists of a one-piece, streamlined stub with approximate overall dimensions of 9-1/2 by 2 by 5 inches. Termination facility for a 52-ohm coaxial cable is included. The antenna can operate at speeds in excess of Mach 2.

### BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne, mounted externally to aircraft fuselage.

ASSOCIATED EQUIPMENT: Telemetering Set AN/AKT-7. Equipment function - telemetering.

MISCELLANEOUS: Similar to but not interchangeable with Antenna AT-840/ARC.

COGNIZANT AGENCY: WADC (AEL-59-53).

MANUFACTURER: Dorne and Margolin, Inc., type

DMK-4, drawings D and M 261-D111.

### REFERENCES:

- 1) Airborne Antennas. Westbury, Long Island, N. Y.: Dorne and Margolin.
- 2) Request for Nomenclature Card.



AT-895/A

## ANTENNA AT-896/A

FREQUENCY: UHF band, 390 - 450 mc; VSWR < 2.

TYPE: Blade.

DESCRIPTION: The antenna consists of a one-piece, streamlined stub with approximate

overall dimensions of 7-1/2 by 2 by 5 inches. Termination facility for a 52-ohm coaxial cable is included. The antenna can operate at speeds in excess of Mach 2.

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BEAM DATA:

Gain - 1.5 db.

Beam type - Omnidirectional in azimuth.

Polarization - Vertical.

INSTALLATION: Missile or airborne.

ASSOCIATED EQUIPMENT:

Equipment function - telemetering.

MISCELLANEOUS: Similar to but not interchangeable with Antenna AT-840/ARC.

COGNIZANT AGENCY: WADC (AEL-59-54).

MANUFACTURER: Dorne and Margolin, Inc. type DM W2.

REFERENCES:

1) Airborne Antennas. Westbury, Long Island, N. Y.: Dorne and Margolin.

2) Request for Nomenclature Card.

ANTENNA AT-897/A

FREQUENCY: VHF band, 230 - 260 mc; VSWR < 2.

TYPE: Blade.

DESCRIPTION: The antenna consists of a one-piece, streamlined stub with approximate overall dimensions of 9-1/2 inches by 2 inches by 5 inches. Termination facility for a 52-ohm coaxial cable is included. The antenna can operate at speeds in excess of Mach 2.

BEAM DATA:

Beam type - Omnidirectional in azimuth.

Polarization - Vertical.

INSTALLATION: Airborne, mounted externally to aircraft fuselage.

ASSOCIATED EQUIPMENT: Telemetering Set

AN/AKT-7. Equipment function - telemetering.

MISCELLANEOUS: AT-897/A is similar to, but not interchangeable with Antenna AT-840/ARC.

COGNIZANT AGENCY: WADC (AEL-59-55).

MANUFACTURER: Dorne and Margolin, Inc., type K5-2.

REFERENCES:

1) Airborne Antennas. Westbury, Long Island, N. Y.: Dorne and Margolin.

2) Request for Nomenclature Card.

ANTENNA AT-907/USD-1

TYPE: Rod.

DESCRIPTION: The reference indicates that the antenna is an irregular-shaped rod constructed of steel and silver plated. The rod is 8 inches long and 0.08 inch in diameter.

INSTALLATION: Airborne, drone aircraft.

ASSOCIATED EQUIPMENT: OA-2343/USD-1, OA-2373/

USD-1, OA-2383/USD-1. Equipment function - telemetering.

COGNIZANT AGENCY: U. S. Army (SESA-59-2266).

MANUFACTURERS: Radioplane, part number 60817.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

ANTENNA AT-913/APN-133

FREQUENCY: UHF band, 1600 - 1660 mc.

TYPE: Collinear array.

DESCRIPTION: The antenna array consists of two dipole antennas in one housing. They are fed by a coaxial cable of 50 ohms characteristic impedance. Each dipole is approximately 13 inches long, 4 inches wide, and 2-3/4 inches high.

INSTALLATION: Airborne, mounted flush to aircraft skin.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-133. Equipment function - altimeter.

COGNIZANT AGENCY: WADC (AEL-59-394).

REFERENCE:

Request for Nomenclature Card.

ANTENNA AT-919/APW-22

FREQUENCY: X-band.

TYPE: Folded dipole.

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DESCRIPTION: Antenna AT-919/APW-22 is a folded dipole about 26 inches long and weighs about 6 pounds. The antenna is made of stainless steel.

BEAM DATA:

Beam type - Approximately omnidirectional in azimuth.

Half-power beamwidth - Vertical - 74°.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APW-22. Equipment function - telemetering.

COGNIZANT AGENCY: AEL-59-609.

MANUFACTURER: Sperry Gyroscope Co., contract AF 33(600)-37918.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-920/APN-134

FREQUENCY: SHF band, 16,278 - 16, 540 mc; VSWR < 1.5.

TYPE: Slot array.

DESCRIPTION: The antenna is a waveguide fed slot array built into a streamlined aluminum blade. It operates with K-band beacon transponders and provides an omnidirectional azimuthal radiation pattern. The elevation pattern is relatively narrow with maximum gain at the horizon. The slot apertures are sealed so that the waveguide system may be pressurized. The fineness ratio of the structure is high so that even at extremely high speeds, the drag of the antenna is low. The antenna weighs 2-3/8 pounds and is approximately 14-1/2 inches long, 4-1/2 inches high, and three inches thick.

BEAM DATA:

Half-power beamwidth - Horizontal - Omnidirectional beam.

Vertical - 17° ± 2°.

Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APN-134. Equipment function - radar beacon.

MANUFACTURERS: Dorne and Margolin, Incorporated, type DM Q 3.

REFERENCE:

Antennas, Los Angeles, California: Dorne and Margolin, Inc. UNCLASSIFIED.



AT-920/APN-134

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## ANTENNA AT-923/ARC-84

FREQUENCY: VHF band, 118 - 140 mc; VSWR < 1.5 on 52-ohm coaxial cable.

TYPE: Blade.

DESCRIPTION: Antenna AT-923/ARC-84 is a swept-back blade antenna made of cast aluminum alloy. A protective coating is applied on all exposed surfaces of the antenna and provide a tough finish which is impervious to alkalis, acids, solvents, and severe weather. Six mounting holes are provided in the base of the antenna for mounting to the aircraft. The antenna weighs 3.4 pounds, and the aerodynamic drag at 250 miles per hour is 1 pound. The blade is fed by 52-ohm coaxial cable through a UG-21/U connector.

BEAM DATA:

Beam type - Approximately omnidirectional in azimuth.

Polarization - Vertical.

TUNING/MATCHING DEVICES: A small matching network that needs no adjustment is contained in the base of the antenna.

INSTALLATION: Airborne.

COGNIZANT AGENCY: USN-60-Q-602.

MANUFACTURER: Bendix Radio Division of Bendix Aviation Corporation.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

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## ANTENNA AT-929/AP

FREQUENCY: VHF and UHF bands, 80 - 320 mc; VSWR < 5.

TYPE: Blade.

DESCRIPTION: Antenna AT-929/AP is a blade antenna swept back 45°. It is 35-1/2 by 3-1/2 by 8-1/2 inches overall and weighs 7 pounds. This antenna was formerly designated AT-121A/AP. See AT-121(\*)/AP for a complete description.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APR-9 and AN/APR-13.

COGNIZANT AGENCY: USN-59-Q-2280.

MANUFACTURER: Transco, Inc., contract NOas 68-190.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

#### ANTENNA AT-933/ARR-52

FREQUENCY: VHF band, 162 - 174 mc.

TYPE: Stub.

DESCRIPTION: Antenna AT-933/ARR-52 is a stub antenna 5.93 inches wide and 20.1 inches long overall. The antenna is fed by a coaxial cable.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ARR-52(V). Equipment function - countermeasures.

COGNIZANT AGENCY: N-59-Q-2358 (Navy).

MANUFACTURER: Stromberg-Carlson Co., contract NOas 58-382.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

#### ANTENNA AT-935/A

FREQUENCY: UHF band, 950 - 1220 mc.

TYPE: Stub sleeve.

DESCRIPTION: Antenna AT-935/A is a stub-sleeve antenna 4 inches by 4 inches by 1-3/4 inches (overall) and weighing 3/4 pound. It mounts on the skin of aircraft.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ARN-21 and AN/APX-25.

MISCELLANEOUS: AT-935/A is similar to AT-741/A.

COGNIZANT AGENCY: AEL-59-932.

MANUFACTURER: Electronic Specialty Co.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

#### ANTENNA AT-936/USD-1

FREQUENCY: SHF band, 8500 - 9600 mc; VSWR < 1.5.

TYPE: Paraboloidal reflector.

DESCRIPTION: Antenna AT-936/USD-1 is a paraboloidal reflector, and apparently a feed system is included as an integral part of the assembly. The antenna receives and transmits in conjunction with drone tracking.

INSTALLATION: Airborne (drone).

ASSOCIATED EQUIPMENT: AN/DPN-62(V).

COGNIZANT AGENCY: SESA-59-2605.

MANUFACTURER: Radioplane Co., contract 653-PM-58-93-41.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

#### ANTENNA AT-945/ARW-72

FREQUENCY: UHF band, 406 - 549 mc.

TYPE: Ground-plane antenna.

DESCRIPTION: Antenna AT-945/ARW-72 is a ground-plane antenna having a conical ground element. The antenna is pedestal mounted.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARW-72(XN-1)

COGNIZANT AGENCY: USN-59-Q-2874.

MANUFACTURER: Babcock Radio Engineering, Inc., contract NOas 59-4216.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.



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ANTENNAS AT-951/ALD-2, AT-952/ALD-2, AT-953/ALD

See OA-2663/ALD-2.

ANTENNA AT-973/APX-39

See OA-2832/APX-39.

ANTENNA AT-974/APX-39

See OA-2832/APX-39.

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ANTENNA AT-986/ASR-5(V)

FREQUENCY: Band 3 (AN/ASR-5).

TYPE: Dipole.

DESCRIPTION: Antenna AT-986/ASR-5(V) is described as a short dipole antenna. The antenna weighs 16 pounds. It is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-627.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-987/ASR-5(V)

FREQUENCY: Band 3 (AN/ASR-5).

TYPE: Dipole.

DESCRIPTION: Antenna AT-987/ASR-5(V) is described as a short dipole antenna. The antenna weighs 14 pounds. It is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-628.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-988/ASR-5(V)

FREQUENCY: Band 4 (AN/ASR-5).

TYPE: Dipole.

DESCRIPTION: Antenna AT-988/ASR-5(V) is described as a short dipole antenna. The antenna weighs 8 pounds. It is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-629.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-989/ASR-5(V)

FREQUENCY: Band 5 (AN/ASR-5).

TYPE: Spiral.

UNCLASSIFIED

DESCRIPTION: Antenna AT-989/ASR-5(V) is described as a spiral antenna. The antenna weighs 2.5 pounds. It is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the

equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-630.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-990/ASR-5(V)

FREQUENCY: Band 6 (AN/ASR-5).

TYPE: Spiral.

DESCRIPTION: Antenna AT-990/ASR-5(V) is described as a spiral antenna. The antenna weighs 0.8 pounds. It is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-631.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-991/ASR-5(V)

FREQUENCY: Band 7 (AN/ASR-5).

TYPE: Spiral.

DESCRIPTION: Antenna AT-991/ASR-5(V) is described as a spiral antenna. The antenna weighs 0.4 pound. It is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-632.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-992/ASR-5(V)

FREQUENCY: Band 8 (AN/ASR-5).

TYPE: Spiral.

DESCRIPTION: Antenna AT-992/ASR-5(V) is described as a spiral antenna. The antenna weighs 0.4 pound. It is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-633.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-993/ASR-5(V)

FREQUENCY: Band 9 (AN/ASR-5).

TYPE: Spiral.

UNCLASSIFIED

UNCLASSIFIED

DESCRIPTION: Antenna AT-993/ASR-5(V) is described as a spiral antenna. The antenna weighs 0.4 pound. It is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the

equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-634.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-994/ASR-5(V)

FREQUENCY: Band 10 (AN/ASR-5).

TYPE: Spiral.

DESCRIPTION: Antenna AT-994/ASR-5(V) is described as a spiral antenna. The antenna weighs 0.4 pound. It is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-635.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-995/A

FREQUENCY: Band 11 (AN/ASR-5).

TYPE: Helical slot.

DESCRIPTION: Antenna AT-995/A is described as a helical slot antenna. The antenna weighs 1.0 pound. It is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-636.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-996/ASR-5(V)

FREQUENCY: Band 11 (AN/ASR-5).

TYPE: Horn.

DESCRIPTION: Antenna AT-996/ASR-5(V) is described as a horn antenna. It weighs 0.2 pound. The antenna is part of Antenna Group OA-2503(V)/ASR-5.

BEAM DATA:  
Polarization - Circular.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: The security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-637.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-997/A

FREQUENCY: Band 12 (AN/ASR-5).

TYPE: Helical slot.

DESCRIPTION: Antenna AT-997/A is described as a helical slot antenna. It weighs 0.2 pound. The antenna is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-639.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-998/ASR-5(V)

FREQUENCY: Band 12 (AN/ASR-5).

TYPE: Horn.

DESCRIPTION: Antenna AT-998/ASR-5(V) is described as a horn antenna. It weighs 0.2 pound. The antenna is part of Antenna Group OA-2503(V)/ASR-5.

BEAM DATA:  
Polarization - Circular.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-640.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-999/ASR-5(V)

FREQUENCY: Band 13 (AN/ASR-5).

TYPE: Helical slot.

DESCRIPTION: Antenna AT-999/ASR-5(V) is described as a helical slot antenna. It weighs 0.5 pound. The antenna is part of Antenna Group OA-2503(V)/ASR-5.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-641.

MANUFACTURER: Airborne Instruments Laboratory, contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

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ANTENNA AT-1000/ASR-5(V)

FREQUENCY: Band 14 (AN/ASR-5).

TYPE: Horn.

DESCRIPTION: Antenna AT-1000/ASR-5(V) is described as a horn antenna. It weighs 0.2 pound. The antenna is part of Antenna Group OA-2503(V)/ASR-5.

BEAM DATA:  
Polarization - Circular.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment function - countermeasures.

MISCELLANEOUS: Security classification of the equipment described is confidential. This sheet is unclassified.

COGNIZANT AGENCY: AEL-60-642.

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MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

REFERENCE:  
Request for Nomenclature Card.

## ANTENNA AT-1001/ASR-5(V)

FREQUENCY: Band 14 (AN/ASR-5).

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

TYPE: Helical slot.

COGNIZANT AGENCY: AEL-60-643.

DESCRIPTION: Antenna AT-1001/ASR-5(V) is  
described as a helical slot antenna. It  
weighs 0.5 pound. The antenna is part of  
Antenna Group OA-2503(V)/ASR-5.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

INSTALLATION: Airborne.

REFERENCE:  
Request for Nomenclature Card.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

## ANTENNA AT-1002/ASR-5(V)

FREQUENCY: Band 14 (AN/ASR-5).

function - countermeasures.

TYPE: Horn.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

DESCRIPTION: Antenna AT-1002/ASR-5(V) is  
described as a horn antenna. It weighs 0.5  
pound. The antenna is part of Antenna Group  
OA-2503(V)/ASR-5.

COGNIZANT AGENCY: AEL-60-644.

BEAM DATA:  
Polarization - Circular.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

INSTALLATION: Airborne.

REFERENCE:  
Request for Nomenclature Card.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment

## ANTENNA AT-1003/ASR-5(V)

FREQUENCY: Band 15 (AN/ASR-5).

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

TYPE: Helical slot.

COGNIZANT AGENCY: AEL-60-645.

DESCRIPTION: Antenna AT-1003/ASR-5(V) is  
described as a helical slot antenna. It  
weighs 0.4 pound. The antenna is part of  
Antenna Group OA-2503(V)/ASR-5.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

INSTALLATION: Airborne.

REFERENCE:  
Request for Nomenclature Card.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

## ANTENNA AT-1004/ASR-5(V)

FREQUENCY: Bands 1 and 2 (AN/ASR-5).

INSTALLATION: Airborne.

TYPE: Probe.

ASSOCIATED EQUIPMENT: AN/ASR-5. Equipment  
function - countermeasures.

DESCRIPTION: Antenna AT-1004/ASR-5(V) is  
described as a probe antenna. It weighs 2.0  
pounds overall. The antenna is part of  
Antenna Group OA-2503(V)/ASR-5.

MISCELLANEOUS: Security classification of the  
equipment described is confidential. This  
sheet is unclassified.

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COGNIZANT AGENCY: AEL-60-646.

REFERENCE:

Request for Nomenclature Card.

MANUFACTURER: Airborne Instruments Laboratory,  
contract AF 33(600)-37829.

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## ANTENNA LP-21-A, LP-21-AM, LP-21-LM

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc.

TYPE: Loop.

DESCRIPTION: The antenna consists of an eight-turn, center-tapped loop 8-1/4 inches in diameter. The base includes the drive and selsyn motors. The antenna is enclosed in a streamlined radome. Overall dimensions are 25-3/8 inches long, 14-5/8 inches high, and 9 inches wide. A PL-108 connector is located on the bottom of the antenna base for use with 3-conductor cable. The antennas weigh 10.37 pounds.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compass AN/ARN-7 and SCR-269-G. Equipment function - navigation, direction finding.

MISCELLANEOUS: The three models appear to be identical except for minor mechanical differences. The LP-31-A and LP-31-AM antennas are identical to the LP-21-A, LP-21-AM, and LP-21-IM except for the antenna base and radome. These antennas are obsolete according to Reference 2.

COGNIZANT AGENCY: U. S. Air Force.

### REFERENCES:

1) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Radio Compass AN/ARN-7, TO 12R5-2ARN7-1, (May 25, 1945 - revised Sept. 30, 1955). UNCLASSIFIED.

2) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

## ANTENNA LP-21-B

FREQUENCY: LF and MF bands, 0.2 - 1.75 mc.

TYPE: Loop.

DESCRIPTION: The antenna is an 8-inch-diameter loop, and probably includes the drive and selsyn motors and a streamlined radome.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compass SCR-269-D.

Equipment function - navigation, direction finding.

MISCELLANEOUS: The antenna is obsolete according to the reference.

### REFERENCE:

Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

## ANTENNA LP-21-F

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc.

TYPE: Loop.

DESCRIPTION: The antenna is an 8-inch-diameter loop, and probably includes the drive and selsyn motors and a streamlined radome.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compasses AN/ARN-

7, SCR-269-F, and SCR-269-G. Equipment function - navigation, direction finding.

MISCELLANEOUS: This antenna is obsolete according to the reference.

### REFERENCE:

Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

## ANTENNA LP-31-A, LP-31-AM

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc.

TYPE: Loop.

DESCRIPTION: The antenna consists of an eight-turn, center-tapped loop 8-1/4 inches in diameter. The base includes the drive and selsyn motors. Overall dimensions are 14-3/8 inches high, 6-3/32 inches wide, and 11-5/16 inches long. The antenna weighs 6.8 pounds. A PL-108 connector is provided on

the bottom of the antenna base for use with 3-conductor cable.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compass AN/ARN-7 and SCR-269-G. Equipment function - navigation, direction finding.

MISCELLANEOUS: The two models appear to be identical except for minor mechanical differ-

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ences. The LP-21-A, LP-21-AM, and LP-21-IM antennas are identical to the LP-31-A and LP-31-AM except for the antenna base and the provision of a streamlined radome. The five antennas are obsolete according to Reference 2.

COGNIZANT AGENCY: U. S. Air Force.

## REFERENCES:

- 1) U. S. Air Force, Bureau of Aeronautics,

Handbook Operating Instructions for Radio Compass AN/ARN-7, TO 12R5-2ARN7-1, (May 25, 1945 - revised Sept. 30, 1955). UNCLASSIFIED.

- 2) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.

## ANTENNA GROUP OA-1630/APT

MAJOR COMPONENTS: Antenna AT-254()/APT, Control Indicator C-670()/APT, and matching sections.

FREQUENCY: VHF band, 30 - 88 mc.

TYPE: Stub antenna.

DESCRIPTION: The antenna is an elliptically shaped stub about 24 inches long. It is constructed of steel and aluminum and weighs approximately 15 pounds. It has a 50-ohm input impedance and uses LN type connectors. It mounts in Antenna Base AB-109/AP.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Set AN/APT-6. Equipment function - transmitting.

COGNIZANT AGENCY: AEL-49-477, AFMEN-2C.

## REFERENCE:

U. S. Department of Defense Nomenclature Card.

## ANTENNA GROUP OA-429/ALT-3&()

MAJOR COMPONENTS: All items necessary for a complete trailing-wire-antenna installation (i.e., reel, motor, antenna, control, etc.).

FREQUENCY: MF and HF bands, 2 - 30 mc.

TYPE: Trailing long wire.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Countermeasures Transmitting Set AN/ALT-3. Equipment function - countermeasures.

COGNIZANT AGENCY: AEL-52-274 AFRD-EL-1.

MANUFACTURER: Delco Division of General Motors Corporation, procurement contract AF 33(038)-23582.

## REFERENCE:

U. S. Department of Defense Nomenclature Card.

## ANTENNA OA-493/APS-20

MAJOR COMPONENTS: 1 Antenna AS-539/APS-20, 1 Electronics Control Amplifier AM-837/APS-20, 1 Mounting MT-1222/APS-20, 1 Relay Assembly RE-146/APS-20, 1 Tilt Indicator ID-360/APS-20.

FREQUENCY: UHF band, 2850 - 2910 mc (radar), 1010 - 1110 mc (IFF).

TYPE: Cut paraboloidal reflector.

DESCRIPTION: The antenna consists of a paraboloidal reflector with two feeds, one a 2-inch by 10-inch horn for radar use, and the other a double dipole and corner reflector integral with the radar horn. The antenna is line-of-sight stabilized.

BEAM DATA: When illuminated by the horn, the antenna assembly has the following characteristics:

Half-power beamwidth -

Vertical - not  $> 8.5^\circ$  nor  $< 7.2^\circ$ .

Horizontal - not  $> 3.7^\circ$ .

Side-lobe attenuation - 16 db.

Polarization - Horizontal.

SCAN DATA: Either continuous  $360^\circ$  azimuth scan at 2, 4, 6, or 8 revolutions per minute or adjustable sector scan is possible.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Sets AN/APX-7, AN/APS-20A, AN/APS-20B, and AN/APS-20C.

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Equipment function - IFF; search; and navigation.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURERS: Hazeltine Electronics Corporation, procurement contract NOas-51-506.

## REFERENCES:

- 1) U. S. Air Force, Bureau of Aeronautics,

Handbook Operation Instructions for Antenna Group OA-493/APS-20, AN 16-550A493-1, (Oct. 15, 1953). UNCLASSIFIED.

- 2) U. S. Department of Defense Nomenclature Card.

## ANTENNA GROUP OA-846()/ARC-44

MAJOR COMPONENTS: 2 Bendix Radio dipole assemblies, AN Homing Keyer.

FREQUENCY: HF and VHF bands, 24 - 52 mc.

TYPE: Dipole.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set AN/ARC-44(). Equipment function - navigation, direction finding; provides the pilot with an aural and visual indication as to whether the aircraft is flying toward, away from, or to the left or right of a transmitter in the 24- to 52-mc frequency range.

MISCELLANEOUS: According to its nomenclature card, OA-846()/ARC-44 is used with the AN/ARC-44(). However, the Technical Manual for Radio Set AN/ARC-44 does not mention this

antenna group. Instead, the TM lists Antenna Group AN/ARA-31 as performing the equipment function given above. Descriptions for the two antenna groups are similar: the nomenclature components are given for the AN/ARA-31 but not for the OA-846()/ARC-44. Nothing was found indicating whether or not the two groups are similar or identical or if either is apart of the other. For a further description of the system, refer to the data sheet on the AN/ARA-31.

COGNIZANT AGENCY: U. S. Army, SCLC-10124.

## REFERENCES:

- 1) U. S. Department of Defense Nomenclature Card.
- 2) Signal Corps Technical Requirements, SCL-1512.

## DIRECTION FINDER GROUP OA-2663/ALD-2

MAJOR COMPONENTS: 1 Amplifier AM-2509/ALD-2, 4 Antennas AT-951/ALD-2, 4 Antennas AT-952/ALD-2, 4 Antennas AT-953/ALD-2, 1 Relay Assembly RE-471/ALD-2.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: R-976/ALD-2. Equipment function - countermeasures, direction finding.

MISCELLANEOUS: Direction Finder Group OA-2663/ALD-2, when used with R-976/ALD-2, makes up a set which is functionally interchangeable-

able with the AN/ALD-2 direction finding set. No further information is available on antennas AT-951/ALD-2, AT-952/ALD-2, and AT-953/ALD-2.

COGNIZANT AGENCY: USN-60q-284.

MANUFACTURER: Unknown, procurement contract NOas-58-316.

## REFERENCE:

- U. S. Department of Defense Nomenclature Card.

## ANTENNA GROUP OA-2832/APX-39

MAJOR COMPONENTS: Antenna AT-973/APX-39, AT-974/APX-39, and Antenna Subassembly MX-3692/APX-39.

FREQUENCY: SHF band, 9200 - 9400 mc; VSWR < 1.5.

TYPE: Stub and a dual element array.

DESCRIPTION: Antenna Group OA-2832/APX-39 is an omnidirectional antenna group used with

air-to-air identification transponder sets.

- A) Antenna AT-973/APX-39 is a stub antenna 3-1/8 inches by 4-7/8 inches by 6-7/16 inches overall.
- B) Antenna AT-974/APX-39 is a 2-element array. It has a waveguide termination and is flush mounted in the aircraft vertical stabilizer.

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INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APX-39. Equipment function - IFF.

COGNIZANT AGENCY: AEL-60-390 (WADC).

MANUFACTURER: Hazeltine Electronics Div., development contract AF 33(600)-38987.

REFERENCES:

- 1) U. S. Department of Defense Nomenclature Card for OA-2832/APX-39.
- 2) U. S. Department of Defense Nomenclature Card for AT-973/APX-39.
- 3) U. S. Department of Defense Nomenclature Card for AT-974/APX-39.

ANTENNA QRC-76(T)

This antenna is probably the same as Hallicrafters type 001-403812.

ANTENNA EQUIPMENT RC-94(\*)

MAJOR COMPONENTS: Paraboloidal reflector, dipole feed, spinner mount.

FREQUENCY: S-band.

TYPE: Paraboloidal reflector with dipole feed.

DESCRIPTION: Antenna consists of a paraboloidal reflector, 29 inches in diameter, a dipole feed with a protective cover, and a mount which includes a mechanical spinner. The overall antenna is 29 inches by 29 inches by 40 inches high. It weighs approximately 104 pounds.

BEAM DATA:

Polarization - Horizontal or vertical. The dipole feed is oriented in the desired position when the antenna is installed in the aircraft.

SCAN DATA: The antenna has a mechanical scanning mechanism. It rotates in azimuth between  $-90^{\circ}$  and  $+90^{\circ}$ , of the ship's heading at a rate of 3 cycles per second. The elevation angle can be set at  $-10^{\circ}$ ,  $0^{\circ}$ ,  $+5^{\circ}$ ,  $+20^{\circ}$ , or  $+50^{\circ}$ . There is also provision for rotating and tilting the antenna at the same time. In this type of operation, the antenna rotates as described above and tilts at a rate of  $30^{\circ}$  per second. The elevation limits of the tilting motion can be set at  $-10^{\circ}$  to  $+5^{\circ}$ ,  $-10^{\circ}$  to  $+20^{\circ}$ ,  $-10^{\circ}$  to  $+50^{\circ}$ ,  $+5^{\circ}$  to  $+20^{\circ}$ ,  $+5^{\circ}$  to  $+50^{\circ}$ , or  $+20^{\circ}$  to  $+50^{\circ}$ .

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Sets SCR-520-() and SCR-720-(). Equipment function - search, air; navigation, direction finding; and IFF.

MISCELLANEOUS: RC-94-(\*) includes models through RC-94-E. The various models are electrically and mechanically interchangeable. However, due to difference in manufacture,

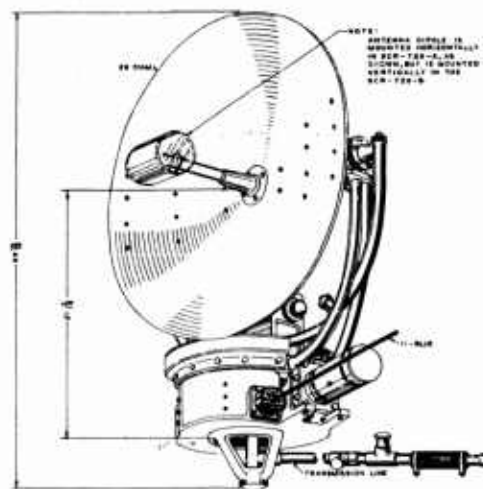
all components are not interchangeable. Models RC-94-C and RC-94-E are identical in every respect.

COGNIZANT AGENCY: ARL.

MANUFACTURERS: General Electric Company, contract 1122-PHILA-42; Western Electric Company contracts 1123-PHILA-42 and 239-WF-42.

REFERENCES:

- 1) U. S. War and Navy Departments, Handbook of Operating Instructions for Radio Sets SCR-720-A and SCR-720-B, AN 16-40SCR720-2, (July 25, 1945). UNCLASSIFIED.
- 2) Western Electric drawing D151682.
- 3) U. S. Department of Defense Nomenclature Card.



Antenna RC-94-C or RC-94-D

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## ANTENNA EQUIPMENT RC-128-()

MAJOR COMPONENTS: 2 AN-69-() antennas and 1 Cord CD-645-().

TYPE: Dipole.

DESCRIPTION: Antenna Equipment RC-128-() consists of two more dipoles, AN-69-() and a Cord CD-645-(). Each Radio Set SCR-518-() requires two of these antennas, one for transmitting and one for receiving. The antennas are mounted on the under side of the fuselage of an airplane. Overall di-

mensions of each antenna assembly are 1 by 8-1/4 by 7-1/2 inches, and the total weight is approximately 8-1/2 pounds.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set SCR-518-().

REFERENCE:

U. S. Department of Defense Nomenclature Card.

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## ANTENNA EQUIPMENT RC-129-()

MAJOR COMPONENTS: Paraboloidal reflector, dipole feed, and spinner unit.

TYPE: Paraboloidal reflector with a dipole feed.

DESCRIPTION: The antenna equipment consists of a paraboloidal reflector with a dipole feed and a mechanical scanning mechanism. It is approximately 29 inches wide, 28 inches long, and 40 inches high overall. It weighs about 106 pounds.

SCAN DATA: The antenna has a mechanical scanning mechanism. It rotates in the hori-

zontal plane at 60 revolutions per minute and, at the same time, tilts in the vertical plane from 5° above the horizontal to 30° below the horizontal.

ASSOCIATED EQUIPMENT: Radio Set SCR-517-().

MISCELLANEOUS: RC-129-() is electrically and mechanically comparable to RC-94-().

REFERENCE:

U. S. Department of Defense Nomenclature Card.

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## ANTENNA EQUIPMENT RC-187-()

MAJOR COMPONENTS: 1 paraboloidal reflector, 1 half-wave dipole with a plastic housing, and 1 rotating and tilting mechanism.

TYPE: Paraboloidal reflector with dipole feed.

DESCRIPTION: This is a steerable antenna consisting of a parabolic reflector with a dipole feed enclosed in a transparent plastic housing and mounted at one end of a rigid section of coaxial line.

BEAM DATA:

Polarization - Horizontal.

SCAN DATA: The steerable antenna may be rotated or tilted as a unit by remote control from the operator's position.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set SCR-517-() but not Radio Set SCR-517-A.

MISCELLANEOUS: RC-187(\*) includes models through RC-187-B. RC-187-(\*) is electrically and mechanically comparable with RC-129-A. RC-187-C is identical with RC-224-A and was procured as RC-224-A. RC-187-C was cancelled 21 March 1945.

COGNIZANT AGENCY: ARL-1291 group AFDRE-2F/1.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

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## ANTENNA EQUIPMENT RC-224-()

MISCELLANEOUS: RC-224-() was cancelled 31 August 1943. It was replaced by Antenna Equipment RC-266-(). RC-224-() includes models through RC-224-C.

COGNIZANT AGENCY: Army Air Force ARL-2592, group AFDRE-2F/1.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

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UNCLASSIFIED

ANTENNA EQUIPMENT RC-264-()

MAJOR COMPONENTS: 1 27-inch paraboloidal reflector, 1 dipole feed, and 1 spinner unit.

FREQUENCY: X-band.

TYPE: Paraboloidal reflector with a dipole feed.

DESCRIPTION: RC-264-() is a dipole antenna with a 27-inch paraboloidal reflector mounted on a spinner unit for scanning in the X-band frequency range. The unit is so arranged that it can be continuously rotated in a horizontal plane and at the same time oscillate in a vertical plane. Overall height is approximately 36 inches.

SCAN DATA: The antenna rotates through 360° in the horizontal plane and tilts in the vertical plane.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set SCR-667-().  
Equipment function - search.

MISCELLANEOUS: This antenna is similar to Antenna Equipment RC-224-B but is modified with the necessary fittings for converting to X-band operation.

COGNIZANT AGENCY: ARL-2367, group AFDRE-2F/1.

MANUFACTURER: Western Electric Company, procurement plan 1839.

REFERENCE:  
U. S. Department of Defense Nomenclature Card.

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ANTENNA EQUIPMENT RC-266-()

MAJOR COMPONENTS: 1 cut paraboloidal reflector, 1 dipole feed, and 1 spinner unit.

FREQUENCY: S-band.

TYPE: Cut paraboloidal reflector with dipole feed.

DESCRIPTION: The reflector is constructed of 3/64-inch-thick aluminum. The overall height is 18 inches along the vertical axis, and the width is 14.5 inches along the horizontal axis. The reflector has a focal length of 10.5 inches. The dipole feed has an input impedance of 50 ohms. Weight is less than 60 pounds. Total height of equipment is 27 inches.

SCAN DATA: The antenna rotates through 360° at a rate of 23 revolutions per minute and, at the same time, tilts from 5° above to 47° below the horizontal.

TUNING/MATCHING DEVICES: The assembly includes a 72- to 50-ohm matching transformer for

connecting 72-ohm coaxial line to the 50-ohm antenna.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set SCR-717-C.

MISCELLANEOUS: RC-266-() is electrically and mechanically interchangeable with Antenna Equipment RC-224-() except where space is a limiting factor in installation.

COGNIZANT AGENCY: Army Air Force ARL-46-R308.

MANUFACTURER: Western Electric Company, procurement contract 1412-DAY-44, order 217-WF-42.

REFERENCES:  
1) Western Electric Specification KS-10204.  
2) U. S. Department of Defense Nomenclature Card.

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ANTENNA EQUIPMENT RC-284-()

MAJOR COMPONENTS: 1 paraboloidal reflector, 29 inches in diameter, 1 dipole feed, and 1 spinner unit.

FREQUENCY: S-band.

TYPE: Cut paraboloidal reflector with a dipole feed.

DESCRIPTION: The antenna equipment consists of a cut paraboloidal reflector, a radiating dipole mounted to feed the reflector, a coaxial line, and suitable motors and rotation mechanisms to permit scanning and tilting. Provi-

sions are made for the addition of a mechanism to stabilize the system and partially compensate for the pitch and roll of the aircraft. This is a modified version of RC-224-B.

SCAN DATA: The antenna rotates in the horizontal plane through 360° at a rate of 20 revolutions per minute. It also has a tilt mechanism for vertical scanning.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set SCR-717-B.

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COGNIZANT AGENCY: ARL-2794, group AFDRE-2F/1.

MANUFACTURER: Western Electric Company, order 217-WF-42.

REFERENCE:

U. S. Department of Defense Nomenclature Card.

ANTENNA EQUIPMENT RC-286

FREQUENCY: UHF and SHF bands, 2970 - 3630 mc.

air; and navigation. Maximum range - 150 miles.

TYPE: Paraboloidal reflector with a dipole feed.

COGNIZANT AGENCY: Army Air Force AMC and ARL-3693.

DESCRIPTION: The antenna consists of a reflector with a dipole feed assembly. The reflector is a paraboloid 29 inches in diameter. The feed assembly consists of a dipole fed by a section of rigid coaxial line. The forward lobe of the dipole is directed toward the paraboloidal reflector by a small auxiliary reflector mounted in front of the dipole. The dipole and auxiliary reflector are enclosed in a cylindrical plastic housing. The dipole can be mounted for vertical or horizontal polarization.

MANUFACTURER: Western Electric Company, orders 2023-DAY-45 and 3014-ARL-44.

STOCK NUMBER: Army 2Z289-286.

REFERENCES:

1) U. S. Air Force, Bureau of Aeronautics, Handbook Maintenance Instructions for Radio Sets SCR-720-C and SCR-720-D, AN 16-40SCR720-7, (Feb. 27, 1946 - revised Aug. 9, 1950). UNCLASSIFIED.

2) Western Electric Specification D-151907.

3) Western Electric Drawing Numbers B-43596 and BXX-42308.

BEAM DATA:

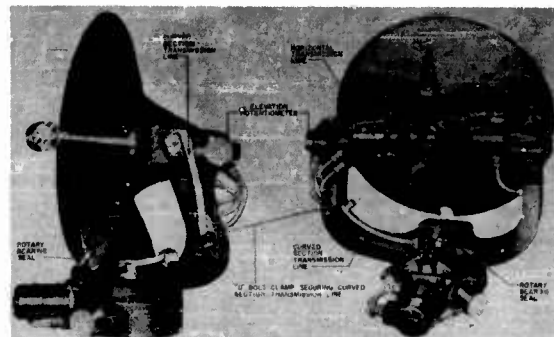
Half-power beamwidth - Horizontal - 10°. Vertical - 10°.

Polarization - Horizontal when used with SCR-720-C; vertical when used with SCR-720-D.

SCAN DATA: The antenna rotates in azimuth in a clockwise direction at a rate of either 100 or 360 revolutions per minute. The azimuth scan sector is  $\pm 90^\circ$  from the ship's heading with the remaining  $180^\circ$  of rotation blanked. The antenna tilts in elevation through a variable sector; the sector may be adjusted from a minimum of  $10^\circ$  to a maximum of  $80^\circ$ . The tilt limits are  $-30^\circ$  and  $+50^\circ$ .

INSTALLATION: Airborne, P-61, P-70, and Mosquito-type aircraft.

ASSOCIATED EQUIPMENT: Radio Sets SCR-720-C and SCR-720-D. Equipment function - search,



RC-286

ANTENNA 66AAL

INSTALLATION: Airborne.

Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

ASSOCIATED EQUIPMENT: Navy Model ABA Equipment. Equipment function - IFF.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data

ANTENNA 66AAT (Signal Corps Nomenclature AN-80-A)

FREQUENCY: UHF band, 470 - 493.5 mc.

DESCRIPTION: The antenna is a quarter-wave brass rod with gasket and mounting plate. The overall length of the antenna is  $6\frac{1}{2}$

TYPE: Probably a stub antenna.

UNCLASSIFIED

inches. It is mounted by a plate, 3-1/8 inches by 1-7/8 inches with four 0.170-inch holes on 1.687-inch by 1.375-inch mounting centers. The assembly includes a right-angle coupling plug to be connected to a 50-ohm, semiflexible coaxial cable.

INSTALLATION: Aircraft.

ASSOCIATED EQUIPMENT: Navy Aircraft Transmitting-Receiving Equipment ABA-1 and Signal Corps Radio Set SCR-515-A. Equipment function - probably communications.

MISCELLANEOUS: Reference 1) below states that

the antenna is a dipole type. However, the description does not fit a dipole.

MANUFACTURER: General Electric Co., part number M-29J796.

STOCK NUMBER: Federal Stock Number N5985-254-7179.

REFERENCES:

- 1) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.
- 2) General Electric Drawing DL-4W86A-2.

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ANTENNA 66AAU (Signal Corps Nomenclature AN-40-B)

FREQUENCY: UHF band, 470 - 493.5 mc.

TYPE: Dipole.

DESCRIPTION: The antenna is a collapsible dipole constructed of brass rods. The overall length of the antenna is 17 inches. It is mounted by a center tube with 1/2-inch-32 threads. It is designed for connection to a 50-ohm coaxial cable.

INSTALLATION: Airborne.

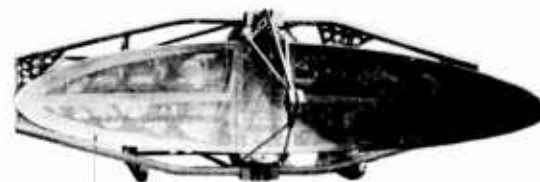
ASSOCIATED EQUIPMENT: Radio Equipment ABA-1 and Radio Set SCR-515-A. Equipment function - probably communications.

MANUFACTURER: General Electric Co.

STOCK NUMBER: Federal Stock Number N5985-369-5627.

REFERENCES:

- 1) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.
- 2) General Electric Specification BRD-90-C.



66AAU

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ANTENNA 66AAV

See AS-32/APX-1.

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ANTENNA 66AAW

FREQUENCY: VHF band, 158 - 186 mc.

TYPE: Whip.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Receiving Equipment ABK. Equipment function - probably communications.

STOCK NUMBER: Federal Stock Number N5820-254-7177.

REFERENCE:

U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.

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ANTENNA 66ABV

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model AIA Equipment.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data

Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

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## ANTENNA 66ACA (Army Model AN-97-A)

FREQUENCY: VHF band, 100 - 156 mc.

TYPE: Rod.

DESCRIPTION: The antenna is a chromium plated steel rod, 3/8 inches in diameter and 2 feet long. The antenna weighs 2 pounds and is designed for connection to a 52-ohm cable.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ARC-1 and Army Model SCR-587 Radio Receiving Equipments.

MISCELLANEOUS: References 1) and 2) below list this antenna as obsolete. However, Reference 3) lists it as currently in use as of February 1958).

MANUFACTURER: Philco Corporation, part number 358-1997.

STOCK NUMBER: Federal Stock Number N5985-369-5377.

### REFERENCES:

- 1) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (Mar. 14, 1957). UNCLASSIFIED.
- 2) Andrew W. Alford, Antennas for RCM, 411-100. Cambridge Mass.: Radio Research Laboratory, Harvard University, (Nov. 1, 1944). UNCLASSIFIED.
- 3) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.
- 4) Philco Drawing 5LO-193.

## ANTENNA 66ACH

FREQUENCY: SHF band, 3300 mc.

TYPE: Paraboloidal reflector with dipole feed.

DESCRIPTION: The antenna is a paraboloidal reflector fed by a horizontal dipole. The overall assembly is 26-23/32 inches high by 29 inches wide by 40-3/8 inches deep, and its weight is 80 pounds.

### BEAM DATA:

Half-power beamwidth - Vertical - 11°. Horizontal - 9°. Polarization - Horizontal.

SCAN DATA: The antenna can be tilted in elevation from -18° to +57°.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ASC Radar Equipment. Equipment function - search.

MISCELLANEOUS: The 66ACH is similar to and perhaps interchangeable with 66ACY.

COGNIZANT AGENCY: U. S. Navy, BuAer.

MANUFACTURER: Western Electric Co., contract NOS-97601.

### REFERENCES:

- 1) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.
- 2) AN 08-5S-58: Technical Manual for Navy Model ASC and ASC-1 Aircraft Radar Equipment.

## ANTENNA 66ACJ and 66ACK

INSTALLATION: Probably airborne.

ASSOCIATED EQUIPMENT: Navy Model X-ARD Equipment. Equipment function - probably communications.

### REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

## ANTENNA 66ACN-(\*)

FREQUENCY: Additional information in available in the secret document listed below as Reference 1) and in Volume VI of this catalog series.

BEAM DATA: See Reference 1) or Volume VI.

SCAN DATA: See Reference 1) or Volume VI.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ASD Radar Equipment. Equipment function - search.

MISCELLANEOUS: The nomenclature 66ACN-(\*) denotes 66ACN and 66ACN-1.

UNCLASSIFIED

REFERENCES:

- 1) E. B. Soltwedel, A Radar Directory, Project RAND Research Memorandum RM-2000. Santa Monica, California: The RAND Corporation, (Aug. 13, 1957), ASTIA Report No. AD-150674. SECRET.

- 2) U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

ANTENNA 66ACO

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ARE Radio Receiving Equipment. Equipment function - probably communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

ANTENNA 66ACP

FREQUENCY: VHF band, 195 - 205 mc.

TYPE: Ground-plane antenna.

DESCRIPTION: The antenna consists of a vertical 1/4-wavelength radiating element, two horizontal 1/4-wavelength ground rods, a matching section, and an NT-49194 receptacle assembly. The overall assembly is 42 inches high by 65-5/8 inches long by 4 inches wide. It is designed to be fed by a 72-ohm cable. The antenna is mounted by clamping the matching section in a split sleeve.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ARF Radio Receiving Equipment. Equipment function - probably communications.

MANUFACTURER: Radio Corporation of America.

STOCK NUMBER: Federal Stock Number N5985-470-7326.

REFERENCES:

- 1) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.
- 2) RCA Drawing T-256154-501 sub 9.

ANTENNA 66ACQ

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ARG Radio Receiving Equipment. Equipment function - probably communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

ANTENNA 66ACR

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ARH Radio Receiving Equipment. Equipment function - probably communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

ANTENNA 66ACS

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ATE Radio Transmitting Equipment. Equipment function - probably communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

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ANTENNA 66ACT

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ATF Radio Transmitting Equipment. Equipment function - probably communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

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ANTENNA 66ACU

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ATG Radio Transmitting Equipment. Equipment function - probably communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

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ANTENNA 66ACV

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ATH Radio Transmitting Equipment. Equipment function - probably communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

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ANTENNA 66ACW

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ASG-1 Radar Equipment. Equipment function - search.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

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ANTENNA 66ACY

FREQUENCY: SHF band, 3300 mc.

TYPE: Paraboloidal reflector with dipole feed.

DESCRIPTION: The antenna is a paraboloidal reflector fed by a horizontal dipole. The overall assembly is 25-5/8 inches high by 32-5/8 inches wide by 40-3/8 inches deep, and its weight is 102 pounds.

BEAM DATA:

Half-power beamwidth - Vertical - 11°. Horizontal - 9°.

Polarization - Horizontal.

SCAN DATA: The antenna can be tilted in elevation from -18° to +57°.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ASC-1 Radar Equipment. Equipment function - search.

MISCELLANEOUS: Antenna 66ACY is similar to and perhaps interchangeable with 66ACH.

COGNIZANT AGENCY: U. S. Navy, BuAer.

MANUFACTURER: Western Electric Co., contract NOS-97601.

REFERENCES:

- 1) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.
- 2) AN08-58-58: Technical Manual for Navy Model ASC and ASC-1 Aircraft Radar Equipment.



Antenna 66ACY

UNCLASSIFIED

ANTENNA 66ACZ

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radar Sets AN/APS-2B, AN/APS-2C, AN/APS-2D, and AN/APS-2E, Navy Models ASG and ASG-1 Radar Equipment, and Navy Model OAK Radar Test Equipment. Equipment function - search and test.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

ANTENNA 66ADL

FREQUENCY: SHF band, 3300 mc.

TYPE: Dipole.

DESCRIPTION: The antenna consists of a half-wave dipole enclosed in a transparent plastic cover. The overall dimensions are 2-3/4 inches high by 3-3/8 inches in diameter. The total weight is 0.19 pound.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model OAJ Phantom Target Equipment (echo box). Equipment function - test.

COGNIZANT AGENCY: U. S. Navy, BuAer.

STOCK NUMBER: Federal Stock Number N5985-369-5451.

REFERENCE:

U. S. Navy Bureau of Aeronautics, Instruction Book for Navy Models OAJ, OAJ-1, and OAK, Test Equipment, NAVAER 08-5R-1, (May 15, 1945). UNCLASSIFIED.



Antenna 66ADL

ANTENNA 66ADM

FREQUENCY: SHF band, 3300 mc.

TYPE: Dipole.

DESCRIPTION: The antenna consists of a half-wave dipole enclosed in a transparent plastic cover. The overall dimensions are 2-3/4 inches high by 3-3/8 inches in diameter. The total weight is 0.19 pound.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model OAJ-1 Phantom Target Equipment (echo box). Equipment function - test.

COGNIZANT AGENCY: U. S. Navy, BuAer.

REFERENCE:

U. S. Navy Bureau of Aeronautics, Instruction

Book for Navy Models OAJ, OAJ-1, and OAK, Test Equipment, NAVAER 08-5R-1, (May 15, 1945). UNCLASSIFIED.



Antenna 66ADM

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ANTENNA 66ADQ

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ARD-1 Radio Receiving Equipment. Equipment function - communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

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ANTENNA 66ADT

FREQUENCY: VHF and UHF bands, 264 - 312 mc.

TYPE: Ground-plane antenna.

DESCRIPTION: The antenna consists of a vertical radiator and two horizontal ground rods. Both the radiator and ground rods have circular cross sections. The radiator is 8-3/8 inches long. The antenna is 20-1/2 inches wide along the ground rods. The antenna weighs 2.5 pounds.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Models ARJ and ARK Radio Receiving Equipment. Equipment function - television.

COGNIZANT AGENCY: U. S. Navy, BuAer.

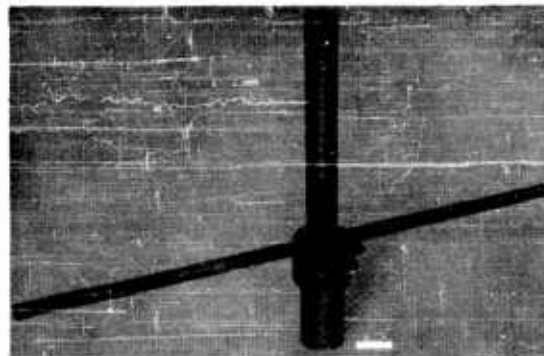
MANUFACTURER: Radio Corporation of America.

REFERENCES:

- 1) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions

for Radio Sets SCR-549-A, SCR-550-A, and SCR-550-B, TO CO 08-40SCR550-2, (Sept. 20, 1944). UNCLASSIFIED.

- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Maintenance Instructions for Navy Models ATK and ARK Aircraft Radio Equipments, AN 16-45-69, (Sept. 20, 1944). UNCLASSIFIED.



Antenna 66ADT

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ANTENNA 66ADU

FREQUENCY: UHF band, 324 - 372 mc.

TYPE: Ground-plane antenna.

DESCRIPTION: The antenna consists of a vertical radiator and two horizontal ground rods. Both the radiator and ground rods have elliptical cross sections. The overall dimensions of the antenna are 10-7/16 inches high by 17 inches wide by 2 inches deep. It is mounted by a clamp and is fed by a 50-ohm cable. The antenna weighs 1.6 pounds.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ARK Radio Receiving Equipment. Equipment function - television.

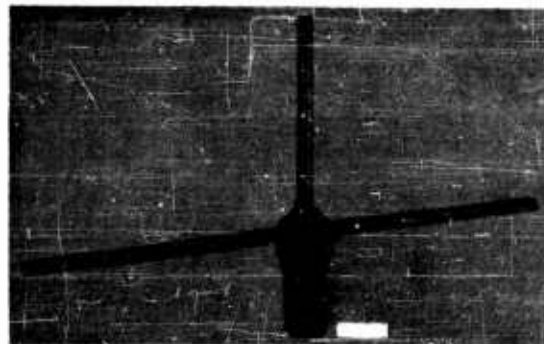
COGNIZANT AGENCY: U. S. Navy, BuAer.

MANUFACTURER: Radio Corporation of America, part number M1-17100A, and Farnsworth Electronics Co.

STOCK NUMBER: Federal Stock Number N5985-257-3210.

REFERENCES:

- 1) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.



Antenna 66ADU

UNCLASSIFIED

- 2) U. S. Air Force, Bureau of Aeronautics,  
Handbook Maintenance Instructions for Navy  
Models ATK and ARK Aircraft Radio Equip-  
ments, AN 16-45-69, (Sept. 20, 1944).  
 UNCLASSIFIED.

- 3) RCA Drawing P-255340-503 sub 3.

ANTENNA 66ADV

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ARE Radio  
 Receiving Equipment. Equipment function -  
 communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data  
Sheets, Shipboard Antenna Details, Chapter 5,  
 NAVSHIPS 900121(A), (Jan. 1, 1959). CON-  
 FIDENTIAL.

ANTENNA 66ADW

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ARF Radio  
 Receiving Equipment. Equipment function -  
 communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data  
Sheets, Shipboard Antenna Details, Chapter 5,  
 NAVSHIPS 900121(A), (Jan. 1, 1959). CON-  
 FIDENTIAL.

ANTENNA 66ADX

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ARG Radio  
 Receiving Equipment. Equipment function -  
 communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data  
Sheets, Shipboard Antenna Details, Chapter 5,  
 NAVSHIPS 900121(A), (Jan. 1, 1959). CON-  
 FIDENTIAL.

ANTENNA 66ADY

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ARH Radio  
 Receiving Equipment. Equipment function -  
 communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data  
Sheets, Shipboard Antenna Details, Chapter 5,  
 NAVSHIPS 900121(A), (Jan. 1, 1959). CON-  
 FIDENTIAL.

ANTENNA 66ADZ

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ATE Radio  
 Transmitting Equipment. Equipment function -  
 communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data  
Sheets, Shipboard Antenna Details, Chapter 5,  
 NAVSHIPS 900121(A), (Jan. 1, 1959). CON-  
 FIDENTIAL.

ANTENNA 66AEA

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ATF Radio  
 Transmitting Equipment. Equipment function -  
 communications.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data  
Sheets, Shipboard Antenna Details, Chapter 5,  
 NAVSHIPS 900121(A), (Jan. 1, 1959). CON-  
 FIDENTIAL.

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# UNCLASSIFIED

## ANTENNA 66AEB

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ATG Radio Transmitting Equipment. Equipment function - communications.

### REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

## ANTENNA 66AEC

FREQUENCY: VHF band, 114 mc.

TYPE: Ground-plane antenna with plate-type ground plane.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ATH Radio Transmitting Equipment. Equipment function - communications.

STOCK NUMBER: Federal Stock Number N5820-296-5518.

### REFERENCE:

U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.

## ANTENNA 66AED, 66AEE, 66AEF, 66AEG, and 66AEH

FREQUENCY: VHF band...66AED, 264 mc; 66AEE, 276 mc; 66AEF, 288 mc; UHF band...66AEG, 300 mc; 66AEH, 312 mc.

TYPE: Ground-plane antenna.

DESCRIPTION: Each antenna consists of a vertical rod fed by a coaxial cable, a vertical parasitic rod that acts as a reflector, and two horizontal collinear ground rods. All of the elements have a circular cross section. Each antenna weighs 1.7 pounds.

### BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Models ATJ and ATK Radio Transmitting Equipment. Equipment function - television.

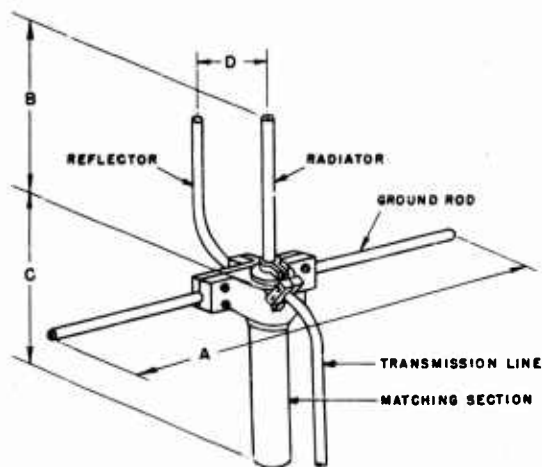
COGNIZANT AGENCY: U. S. Navy, BuAer.

MANUFACTURER: Radio Corporation of America.

STOCK NUMBERS: Federal Stock Number N5985-249-4319 (66AEE), and Federal Stock Number N5985-155-8268 (66AEG).

### REFERENCES:

- 1) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions for Radio Sets SCR-549-A, SCR-550-A, and SCR-550-B, TO GO 08-40SCR550-2, (Sept. 20, 1944). UNCLASSIFIED.
- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Maintenance Instructions for Navy Models ATK and ARK Aircraft Radio Equipments, AN 16-45-69, (Sept. 20, 1944). UNCLASSIFIED.



66AED, 66AEE, 66AEF, 66AEG, and 66AEH

ANTENNA NUMBER	DIMENSIONS IN INCHES			
	A	B	C	D
66AED	22-3/8	8-13/16	4-5/16	4-3/4
66AEE	21-3/8	8-3/16	4-3/8	4-3/4
66AEF	20-1/2	8-1/8	4-1/2	4-3/4
66AEG	19-5/8	7-3/4	4-11/16	4-3/4
66AEH	18-15/16	7-7/16	5	4-3/4

# UNCLASSIFIED

## ANTENNA 66AEJ, 66AEK, 66AEL, 66AEM, and 66AEN

FREQUENCY: UHF band...66AEJ, 324 mc; 66AEK, 336 mc; 66AEL, 348 mc; 66AEM, 360 mc; 66AEN, 372 mc.

TYPE: Ground-plane antenna.

DESCRIPTION: Each antenna consists of a vertical rod fed by a coaxial cable, a vertical parasitic rod that acts as a reflector, and two horizontal collinear ground rods. All of the elements have an elliptical cross section. Each antenna weighs approximately 2 pounds.

### BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ATK Radio Transmitting Equipment and Radio Equipment AN/AXT-2. Equipment function - television.

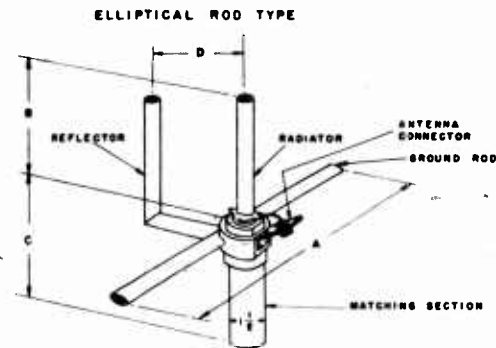
COGNIZANT AGENCY: U. S. Navy, BuAer.

MANUFACTURER: Radio Corporation of America.

STOCK NUMBERS: Federal Stock Number N5985-155-8273 (66AEJ), Federal Stock Number N5985-369-5399 (66AEK), Federal Stock Number N5985-155-8278 (66AEL), and Federal Stock Number N5985-155-8279 (66AEM).

### REFERENCES:

- 1) War and Navy Departments, Handbook of Operating Instructions for Model AN/AXT-2 Aircraft Radio Equipment, AN-08-30AXT2-2, (Oct. 18, 1944). UNCLASSIFIED.
- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Maintenance Instructions for Navy Models ATK and ARK Aircraft Radio Equipments, AN 16-45-69, (Sept. 20, 1944). UNCLASSIFIED.



66AEJ, 66AEK, 66AEL, 66AEM, and 66AEN

## ANTENNA 66AEO

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Models ABF and ABF-1 Equipment. Equipment function - IFF.

### REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data

Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

## ANTENNA 66AEV

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model ASG-3 Radar Equipment. Equipment function - search.

### REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data

Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

## ANTENNA 66AFH

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Models ARD-1 and ARD-2 Radio Receiving Equipment. Equipment function - communications.

### REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

UNCLASSIFIED

# UNCLASSIFIED

## ANTENNA 66AFW

FREQUENCY: VHF and UHF bands, 264 - 312 mc.

TYPE: Ground-plane antenna.

DESCRIPTION: The antenna consists of a vertical radiator and two horizontal ground rods. Both the radiator and ground rods have elliptical cross sections. The radiator is 8-9/32 inches long. The antenna is 20-1/2 inches wide along the ground rods and weighs 1.8 pounds.

### BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Models ARJ and ARK Radio Receiving Equipment. Equipment function - television.

COGNIZANT AGENCY: U. S. Navy, BuAer.

MANUFACTURER: Radio Corporation of America.

### REFERENCES:

- 1) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions for Radio Sets SCR-549-A, SCR-550-A, and SCR-550-B, TO CO 08-40SCR550-2, (Sept. 20, 1944). UNCLASSIFIED.

- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Maintenance Instructions for Navy Models ATK and ARK Aircraft Radio Equipments, AN 16-45-69, (Sept. 20, 1944). UNCLASSIFIED.



Antenna 66AFW

## ANTENNA 66AFX, 66AFY, 66AFZ, 66AGA, and 66AGB

FREQUENCY: VHF band...264 mc (66AFX), 276 mc (66AFY), 288 mc (66AFZ); UHF band...300 mc (66AGA), 312 mc (66AGB).

TYPE: Ground-plane antenna.

DESCRIPTION: Each antenna consists of a vertical rod fed by a coaxial cable, a vertical parasitic rod that acts as a reflector, and two horizontal collinear ground rods. All of the elements have an elliptical cross section. Each antenna weighs approximately 2 pounds.

### BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Models ATJ and ATK Radio Transmitting Equipment and Radio Equipment AN/AXT-2. Equipment function - television.

COGNIZANT AGENCY: U. S. Navy, BuAer.

MANUFACTURER: Radio Corporation of America.

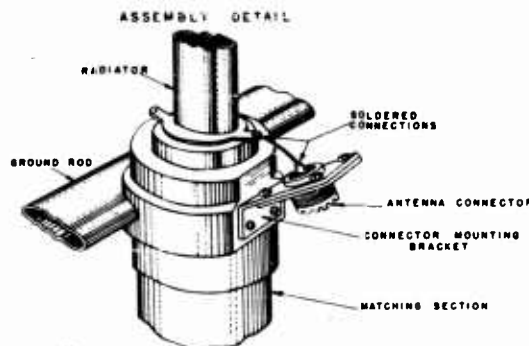
STOCK NUMBERS: Federal Stock Number N5985-156-6644 (66AFY), Federal Stock Number N5985-155-8270 (66AGB), and Federal Stock Number N5985-155-8271 (66AGA).

### REFERENCES:

- 1) War and Navy Departments, Handbook of

Operating Instructions for Model AN/AXT-2 Aircraft Radio Equipment, AN-08-30AXT2-2, (Oct. 18, 1944). UNCLASSIFIED.

- 2) U. S. Air Force, Bureau of Aeronautics, Handbook Maintenance Instructions for Navy Models ATK and ARK Aircraft Radio Equipments, AN 16-45-69, (Sept. 20, 1944). UNCLASSIFIED.
- 3) U. S. Army Air Force and U. S. Navy Bureau of Aeronautics, Interim Instructions for Radio Sets SCR-549-A, SCR-550-A, and SCR-550-B, TO CO 08-40SCR-550-2, (Sept. 20, 1944). UNCLASSIFIED.



66AFX, 66AFY, 66AFZ, 66AGA, and 66AGB

## ANTENNA 66AJ0-1

INSTALLATION: Airborne and shipboard.

ASSOCIATED EQUIPMENT: Radar Set AN/SPR-1 and AN/APR-1.

REFERENCE:

U. S. Navy Bureau of Ships, Antenna Data

Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.

## ANTENNA 66044(\*)

FREQUENCY: VHF band, 30 - 42 mc.

TYPE: Whip.

DESCRIPTION: The antenna consists of a 6-foot tapered whip, a spring mounting base, and a mounting bracket. The whip is made of cadmium-plated vanadium steel and has at its lower end a screw fitting for fastening to the spring mounting base. This base consists of a stainless steel, tapered helical spring clamped in place by two molded bakelite fittings. It is attached to the mounting bracket by six bolts. The antenna weighs 20 pounds.

INSTALLATION: Ground, shipboard, and airborne.

ASSOCIATED EQUIPMENT: Navy Models MN, MN-1, MN-2, MN-3, MN-4, and MN-5 Radio Transmitting and Receiving Equipment. Equipment function - communications.

Radio Equipments RBK-14, RBR-14 and RDC-1.

MISCELLANEOUS: Antenna 66044(\*) denotes Antenna 66044 and Antenna 66044A. Antenna 66044A

is the same as Antenna 66044, but it does not have the mounting spring at its base.

COGNIZANT AGENCY: U. S. Navy, BuShips.

MANUFACTURER: Fred M. Link, contracts NXs-3834, NXss-14291, NXss-20219, NXss-30781, NXso-32191, NXsr-41011, and NXsr-48343.

STOCK NUMBERS: 66044 ... Federal Stock Number N5985-249-4365, Navy F16-A-54466-6141, 66044A ... Federal Stock Number N5985-249-4364, Navy F16-A-54466-6121.

REFERENCES:

- 1) U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.
- 2) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.

## ANTENNA ASSEMBLY 66080

FREQUENCY: VHF band, 30 - 42 mc.

TYPE: Whip.

DESCRIPTION: The antenna is a six-section telescopic whip. Its extended length is 83 inches, and its collapsed length is 18 inches. It weighs 0.5 pound. The base of the antenna is terminated with a fitting which mates with the antenna base mounted on the case of the associated equipment.

INSTALLATION: Ground, shipboard, and airborne.

ASSOCIATED EQUIPMENT: Navy Models MN-1, MN-2 and MN-3 Radio Transmitting and Receiving Equipment. Equipment function - communications.

COGNIZANT AGENCY: U. S. Navy, BuShips.

MANUFACTURER: Fred M. Link, contracts NXss-14291, NXss-20219 and NXss-30781.

STOCK NUMBER: Federal Stock Number N5985-249-4366.

REFERENCES:

- 1) U. S. Navy Bureau of Ships, Antenna Data Sheets, Shipboard Antenna Details, Chapter 5, NAVSHIPS 900121(A), (Jan. 1, 1959). CONFIDENTIAL.
- 2) NAVSHIPS 95139, 95140 and 95141: Instruction Books for Navy Models MN-1, MN-2, and MN-3 Radio Transmitting and Receiving Equipment.

## ANTENNA 66119

FREQUENCY: VHF band, 30 - 42 mc.

TYPE: Whip.



UNCLASSIFIED

DESCRIPTION: The antenna is a 75-inch whip weighing 3 pounds.

INSTALLATION: Ground, shipboard, and airborne.

ASSOCIATED EQUIPMENT: Navy Model MN-5 Radio Transmitting and Receiving Equipment. Equipment function - communications.

COGNIZANT AGENCY: U. S. Navy, BuShips.

MANUFACTURER: Fred M. Link, contracts NXsr-41-41011 and NXsr-48343.

STOCK NUMBER: Federal Stock Number N5985-249-4363.

REFERENCES:

- 1) NAVSHIPS 95143: Preliminary Instruction Book for Navy Model MN-5 Radio Transmitting and Receiving Equipment.
- 2) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.

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ANTENNA 66120

FREQUENCY: VHF band, 30 - 40 mc.

TYPE: Whip.

DESCRIPTION: The antenna is a 78-inch whip weighing 3.3 pounds.

INSTALLATION: Ground, shipboard, and airborne.

ASSOCIATED EQUIPMENT: Navy Model MN-5 Radio Transmitting and Receiving Equipment. Equipment function - communications.

COGNIZANT AGENCY: U. S. Navy, BuShips.

MANUFACTURER: Fred M. Link, contracts NXsr-41011 and NXsr-48343.

STOCK NUMBER: Federal Stock Number N5985-249-4362.

REFERENCES:

- 1) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.
- 2) NAVSHIPS 95143: Preliminary Instruction Book for Navy Model MN-5 Radio Transmitting and Receiving Equipment.

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ANTENNA 66150

FREQUENCY: VHF band, 115 - 156 mc.

TYPE: Whip.

INSTALLATION: Ground, transportable; also airborne.

ASSOCIATED EQUIPMENT: Navy Model MAW Radio Equipment. Equipment function - communications.

COGNIZANT AGENCY: U. S. Navy, BuShips.

MANUFACTURER: Howard Radio Co., Chicago, Ill., contract NXsr-77870.

REFERENCES:

- 1) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.
- 2) NAVSHIPS 900,734: Instruction Book for Portable Radio Transmitting and Receiving Equipment Navy Model MAW.

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ANTENNA 69054

FREQUENCY: LF and MF bands, 0.2 - 1.6 mc.

TYPE: Loop.

DESCRIPTION: The antenna is a loop 12 inches in diameter and weighs 3 pounds.

INSTALLATION: Airborne, open-cockpit aircraft.

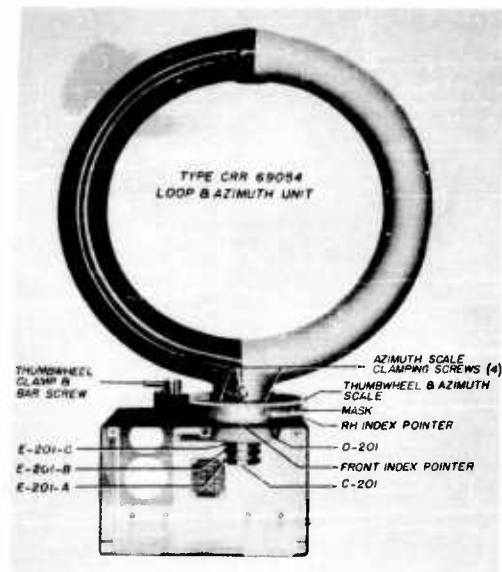
ASSOCIATED EQUIPMENT: Navy Model DU-1 Aircraft Direction Finder Equipment. Equipment function - direction finding.

COGNIZANT AGENCY: U. S. Navy, BuShips.

MANUFACTURER: Bendix Radio Division, Bendix Aviation Corp., Baltimore, Md., contract NOS-72173.

REFERENCES:

- 1) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.



Antenna 69054

- 2) Instruction Book for Model DU-1 Aircraft Radio Direction Finding Equipment, Serial No. 22777. Baltimore, Maryland: Bendix Radio Division of Bendix Aviation Corporation. (Oct. 16, 1941). UNCLASSIFIED.
- 3) BuShips Specification RE 13A546B

## ANTENNA 69065

FREQUENCY: VLF, LF, and MF bands, 0.015 - 0.070 mc and 0.1 - 1.75 mc.

TYPE: Two loops.

DESCRIPTION: The antenna consists of two center-tapped, shielded loop windings enclosed in a streamlined, waterproof housing. One loop is mounted inside the other with an angle of 90° between them to prevent intercoupling. The inner loop is used for reception of frequencies between 100 and 1750 kc; the outer loop, for reception of frequencies between 15 and 70 kc. The antenna including the loop-drive extension weighs 10 pounds.

BEAM DATA:

Beam type - Figure eight.

SCAN DATA: The two loops as a unit are rotated in azimuth by a central shaft actuated by the loop-drive assembly.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navy Model DZ-2 Aircraft Radio Direction Finder Equipment. Equipment function - direction finding.

COGNIZANT AGENCY: U. S. Navy, BuShips.

MANUFACTURER: RCA Victor Division of Radio

Corporation of America, Camden, N. J., contracts NXsa-19698 and NXsa-23437.

REFERENCES:

- 1) Instructions for Model DZ-2 Aircraft Radio Direction Finder Equipment, 24 Volt Direct-Current Operation. Camden, N. J.: RCA Victor Division of Radio Corporation of America. (Contract Date: Dec. 24, 1942). UNCLASSIFIED.
- 2) RCA drawing P-721710-501.



Antenna 69065

UNCLASSIFIED

ANTENNA Flush Mounted Homing Antenna

FREQUENCY: VHF band, 120-144 mc.

TYPE: Structural antenna.

DESCRIPTION: The antenna assembly consists of two triangular-shaped panels mounted flush on either side of the aircraft rudder. Each of the two panels measures 21-1/2 by 12 by 1/2 inches and weighs 16 ounces.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio set AN/ARA-8.  
Equipment function - navigation, direction finding.

COGNIZANT AGENCY: WADC.

MANUFACTURER: Developed by Communications and Navigation Laboratory, WADC.

REFERENCE:  
U. S. Air Force, Aircraft Antenna Design Summary, Report No. 51S-191544 (Mar. 18, 1952).  
SECRET.



Flush Mounted Homing Antenna

ANTENNA Isolated Tail Antenna

FREQUENCY: LF band, 0.180 mc.

TYPE: Structural antenna.

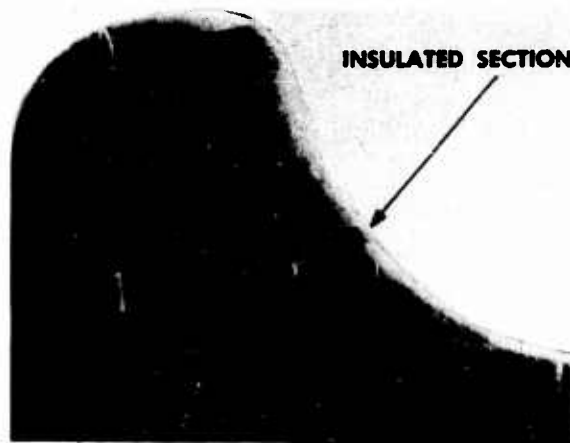
INSTALLATION: Airborne, tail section of C-54 aircraft.

ASSOCIATED EQUIPMENT: Loran equipment AN/APN-9A. Equipment function - navigation, surface reference.

COGNIZANT AGENCY: WADC.

MANUFACTURER: Developed by the Communication and Navigation Laboratory, WADC.

REFERENCE:  
U. S. Air Force, Aircraft Antenna Design Summary, Report No. 51S-191544 (Mar. 18, 1952).  
SECRET.



Isolated Tail Antenna

UNCLASSIFIED

ANTENNA Pickaxe Antenna

FREQUENCY: VHF band, 100-156 mc.

TYPE: Structural antenna.

DESCRIPTION: The radiating element has the form of a pickaxe and is incorporated into the vertical stabilizer of aircraft. The antenna is 13-1/2 inches long and 2-1/2 inches wide. It is fed by a 50-ohm coaxial cable.

INSTALLATION: Airborne.

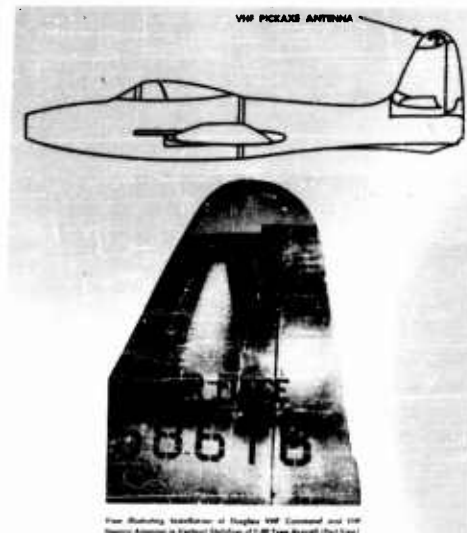
ASSOCIATED EQUIPMENT: Radio set AN/ARC-3.  
Equipment function - communications.

COGNIZANT AGENCY: WADC.

MANUFACTURER: Developed by Communication and Navigation Laboratory, WADC.

REFERENCE:

U. S. Air Force, Aircraft Antenna Design Summary, Report No. 51S-191544 (Mar. 18, 1952).  
SECRET.



Pickaxe Antenna

ANTENNA RHO Antenna

FREQUENCY: VHF band, 100 - 156 mc; VSWR < 5.

TYPE: Structural antenna.

DESCRIPTION: The antenna is characterized by a peculiar shape and has the following dimensions: length 13 inches, width 1-1/2 inches, height 18 inches. The hook-shaped radiating element is 23 inches long and 5/8 inch wide. It is fed by a 50-ohm coaxial cable.

INSTALLATION: Airborne, tail section of P-51 aircraft.

ASSOCIATED EQUIPMENT: Radio set SCR-522. Equipment function - communications.

COGNIZANT AGENCY: WADC.

MANUFACTURER: Developed by the Communications and Navigation Laboratory, WADC.

REFERENCE:

U. S. Air Force, Aircraft Antenna Design Summary, Report No. 51S-191544 (Mar. 18, 1952).  
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Rho Antenna

ANTENNA VHF/IFF Antenna for F-87 Aircraft

FREQUENCY: VHF band, 100 - 250 mc.

TYPE: Stub.

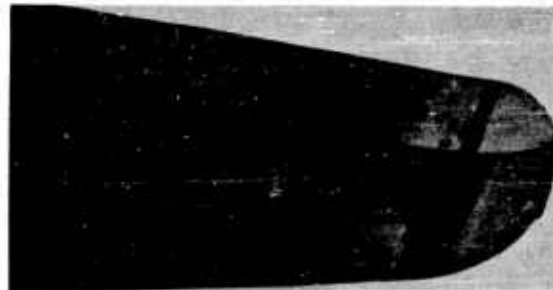
DESCRIPTION: The antenna is an odd-shaped stub (see photo) designed as a combination VHF/IFF

antenna. It was designed for mounting in the fairing of the vertical stabilizer of the F-87 aircraft. The antenna has an input impedance of 52-ohms and is fed by RG-8/U coaxial cable. It weighs 4-1/4 pounds, and is 33 inches long, 3-1/2 inches thick, and 14-1/2 inches high.

BEAM DATA:Polarization - Vertical.INSTALLATION: Airborne.ASSOCIATED EQUIPMENT: Radio set AN/ARC-3 and SCR-695. Equipment function - communications, and IFF.COGNIZANT AGENCY: U. S. Air Force.MANUFACTURER: Wright Air Development Center.REFERENCE:U. S. Air Force, Aircraft Antenna Design Summary, Report No. 51S-191544 (Mar. 18, 1952).  
SECRET.

VHF/IFF Antenna for F-87 Aircraft

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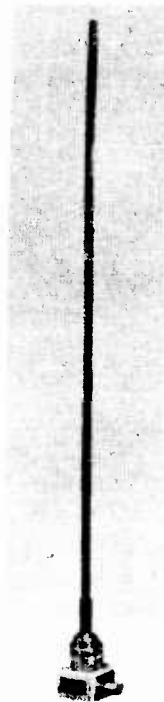
**ANTENNA Wing Cap Antenna**FREQUENCY: - MF and HF bands, 2 - 24 mc.TYPE: Structural antenna.DESCRIPTION: The antenna consists of two isolated wing caps which weigh about 10 pounds each. They were designed to replace the fixed wire antenna for communications in the 2- to 24-mc frequency band.INSTALLATION: Airborne.COGNIZANT AGENCY: WADC.MANUFACTURER: WADC in cooperation with Goodyear Aircraft Corporation.REFERENCE:U. S. Air Force, Aircraft Antenna Design Summary, Report No. 51S-191544 (Mar. 18, 1952).  
SECRET.

Wing Cap Antenna

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**ANTENNA A-12 (Aircraft Radio Corporation)**FREQUENCY: VHF band, 116 - 132 mc.TYPE: Whip.DESCRIPTION: The antenna is a quarter-wave, base-fed whip, 25 inches in length. The whip is designed for use on aircraft which have cruising speeds under 200 miles per hour and do not have deicing equipment. A UG-290/U connector is provided on the base for use with RG-58/U or similar coaxial cable.BEAM DATA:Beam type - Omnidirectional  
Polarization - Vertical.INSTALLATION: Airborne.ASSOCIATED EQUIPMENT: Radio Set ARC Type 12.  
Equipment function - communications.MANUFACTURER: Aircraft Radio Corporation.

UNCLASSIFIED



A-12, Aircraft Radio Corporation

REFERENCE:

U. S. Air Force, Bureau of Aeronautics,  
Radio Set ARC Type 12, Handbook Operating  
Instructions, TO 12R2-4-1-1, AN 16-45-121,  
(March 9, 1956 - revised August 10, 1956).  
UNCLASSIFIED.

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ANTENNA A-15 (Aircraft Radio Corporation)

FREQUENCY: VHF band, 116 - 148 mc; VSWR < 3.

TYPE: L-shaped rod.

DESCRIPTION: The antenna consists of a solid, stainless-steel, L-shaped rod, flexibly mounted in a rubber base on a small aluminum box. The rod is a quarter-wavelength long, and the distance from the base to the bend is about one-third the total length. The aluminum box contains an impedance matching network and a UG-290A/U connector for use with RG-58/U coaxial cable. The antenna is designed for mounting on the skin of an aircraft with the skin serving as a ground plane.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set ARC Type 12.  
Equipment function - communications.

MISCELLANEOUS: See antenna type A-12.

COGNIZANT AGENCY: U. S. Air Force, U. S. Navy.

MANUFACTURER: Aircraft Radio Corporation.

REFERENCE:

U. S. Air Force, Bureau of Aeronautics,  
Radio Set ARC Type 12, Handbook Operating  
Instructions, TO 12R2-4-1-1, AN 16-45-121,  
(March 9, 1956 - revised August 10, 1956).  
UNCLASSIFIED.

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ANTENNA A-16 (Aircraft Radio Corporation)

FREQUENCY: VHF band, 228 - 258 mc; VSWR < 2.

TYPE: L-shaped rod.

DESCRIPTION: The antenna consists of a solid, stainless-steel, L-shaped rod, mounted on a small aluminum box. The rod is a quarter-wavelength long, and the distance from the base to the bend is about one-half the total length. The aluminum box contains a broad-

banding circuit and a UG-290A/U connector for use with RG-58/U coaxial cable. The antenna is designed to mount on the under side of an aircraft, using the skin as a ground plane, and will withstand mild icing conditions and speeds to 500 miles per hour.

INSTALLATION: Airborne.

UNCLASSIFIED

UNCLASSIFIED

ASSOCIATED EQUIPMENT: Radio Set ARC Type 12.  
Equipment function - communications.

MISCELLANEOUS: See antenna type A-12.

COGNIZANT AGENCY: U. S. Air Force, U. S. Navy.

MANUFACTURER: Aircraft Radio Corporation.

REFERENCE:

U. S. Air Force, Bureau of Aeronautics,  
Radio Set ARC Type 12, Handbook Operating  
Instructions, TO 12R2-4-1-1, AN 16-45-121,  
(March 9, 1956 - revised August 10, 1956).  
UNCLASSIFIED.

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ANTENNA AML-10 (Lear, Incorporated)

FREQUENCY: LF, MF, and HF bands, 0.2 - 6.7 mc.

TYPE: Loop.

DESCRIPTION: The antenna is a manually rotated loop equipped with slip rings and brushes to permit free rotation in either direction. The antenna is designed to mount on the exterior of an aircraft.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set Model T-30AB-RCBBL-2. Equipment function - navigation, direction finding; and communications.

COGNIZANT AGENCY: U. S. Air Force and U. S. Navy.

MANUFACTURER: Lear, Incorporated.

REFERENCE:

U. S. Air Force, Bureau of Aeronautics,  
Radio Set Model T-30AB-RCBBL-2, Handbook  
Operation Instructions, AN 16-45-126,  
(August 1, 1950). UNCLASSIFIED.



AML-10, Lear, Incorporated

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ANTENNA DM C10-2 (Dorne and Margolin, Inc.)

FREQUENCY: VHF and UHF bands, 225 - 400 mc;  
VSWR < 2.

INSTALLATION: Airborne.

TYPE: Balanced dipole.

DESCRIPTION: The antenna is a balanced dipole designed for installation within a dielectric cap at the top of an aircraft vertical fin. It is a thin sheet-metal structure enclosed in a fiberglass boot filled with dielectric foam to prevent the inclusion of moisture. The balanced feed prevents strong current coupling to the fin structure, which degrades the radiation pattern of some tailcap antennas. The thin cross section of the antenna allows it to be mounted within the contours of fin structures with extremely high fineness ratios. It is presently in use on operational aircraft. The antenna weighs 3-1/16 pounds and is 13.16 inches tall, 13.12 inches wide, and 1.12 inches thick.

BEAM DATA:

Beam type - Omnidirectional, typical of a vertical dipole.

Polarization - Vertical.



DM C10-2, Dorne and Margolin, Incorporated.

ASSOCIATED EQUIPMENT: UHF communications equipment. Equipment function - communications.

MISCELLANEOUS: The antenna meets requirements of Military Specification MIL-E-5272.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.

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ANTENNAS DM C3 and DM C3-2 (Dorne and Margolin Incorporated)

FREQUENCY: VHF and UHF bands, 225 - 400 mc;  
VSWR < 2.2 for DM C3 and < 2.5 for DM C3-2.

TYPE: Stub.

DESCRIPTION: The antennas are short, top-loaded stubs which differ physically only in height. They are designed for use with UHF communications equipment and their small size allows them to be used on the underside of helicopters and in other locations with little clearance. The radiating elements are sealed in a foam-filled fiberglass housing which is almost elliptical in cross section. Each antenna weighs 2-3/8 pounds, and is 17 inches long and 7-1/2 inches wide. Antenna DM C3 is 5.69 inches tall with 3-1/2 inches of its height extending above the mounting surface. Antenna DM C3-2 is 6.19 inches tall with 4 inches of its height extending above the mounting surface.

BEAM DATA:

Beam type - Omnidirectional, typical of a short stub.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: UHF communications equipment. Equipment function - communications.

MISCELLANEOUS: The antennas meet requirements of Military Specification MIL-T-5422.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM C3, Dorne and Margolin, Incorporated.

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ANTENNAS DM C4-3 and DM C4/B (Dorne and Margolin, Incorporated)

FREQUENCY: VHF and UHF bands, 225 - 400 mc;  
VSWR < 2.2.

TYPE: Annular slot.

DESCRIPTION: The antennas are flush-mounted slot antennas designed to operate with all standard UHF communications and data link equipments. The configurations and mounting provisions can be modified by the manufacturer to conform to specific fuselage contours. The antennas are completely foam filled to prevent the inclusion of moisture. Each antenna weighs approximately 13 pounds and is 24 inches long, 24 inches wide and about 4 inches deep.

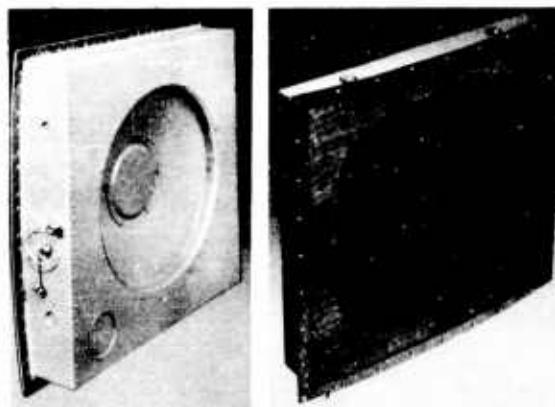
BEAM DATA:

Beam type - Omnidirectional, typical of a short stub.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: UHF communications equipment. Equipment function - communications.

MISCELLANEOUS: The antennas described have minor differences, such as the location of the r-f connectors. Antenna DM C4/B includes a test probe which can be provided



DM C4-3, Dorne and Margolin, Incorporated.



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with any degree of decoupling. The antennas meet requirements of MIL-T-5422.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.

ANTENNA DM C11 (Dorne and Margolin, Incorporated)

FREQUENCY: VHF and UHF bands, 225 - 400 mc;  
VSWR < 2.

TYPE: Vertical dipole.

DESCRIPTION: The antenna is a dipole enclosed within a streamlined fiberglass fairing. It is designed for installation in locations such as the top of an aircraft fin or atop a large radome where little or no ground-plane surface exists. To reduce the coupling of currents to the mounting structure and feed cable, the antenna includes integral r-f chokes. Since in its normal mounting locations the antenna is likely to be struck by lightning in all weather operations, a unique system of conducting paths are provided to safely guide a stroke to the ground structure without damage to the antenna or the airframe. The antenna weighs 5-5/8 pounds and is 36 inches tall, 4 inches wide, and 4 inches thick at its thickest point (the mounting bracket).

BEAM DATA:

Beam type - Omnidirectional, typical of a vertical dipole.

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: UHF communications equipment. Equipment function - communications.

MISCELLANEOUS: This antenna meets requirements of Military Specification MIL-T-5922.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM C11, Dorne and Margolin, Incorporated.

ANTENNA DM CN-1 (Dorne and Margolin, Incorporated)

FREQUENCY: VHF and UHF bands, 75 mc and 225 - 400 mc; VSWR < 2 at 75  $\pm$  0.15 mc and < 2.2 from 225 to 400 mc.

TYPE: Annular slot.

DESCRIPTION: The antenna is the same as DM C4-3 and DM C4/B, but it also operates at 75 mc as well as the range between 225 and 400 mc.

ASSOCIATED EQUIPMENT: UHF communications equipment and marker beacon equipment. Equipment function - communications and beacon.

MISCELLANEOUS: The antenna differs slightly in dimensions and location of r-f connectors from DM C4-3 and DM C4/B. The sensitivity and bandwidth of the marker beacon element exceeds that of AT-134/ARN.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated.

ANTENNA DM 12 (Dorne and Margolin, Incorporated)

FREQUENCY: L band.

TYPE: Annular slot.

DESCRIPTION: The antenna is a flush mounting annular slot radiator designed for use with L-band IFF systems. This antenna meets MIL-A-5272 requirements and has been accepted for use on operational aircraft. It weighs 1.2 pounds and can be supplied for flush installation in surfaces of widely varying radii of curvature. A number of different mounting arrangements can be provided. It is 7-1/2 inches in diameter and about 2 inches deep.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: L-band IFF systems.  
Equipment function - IFF.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM I2, Dorne and Margolin, Incorporated

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ANTENNA DM K1 (Dorne and Margolin, Incorporated)

FREQUENCY: VHF band, 215 - 260 mc; VSWR < 1.5 at the center of the frequency band and < 2.5 at the band extremities.

TYPE: Cavity-backed slot.

DESCRIPTION: The DM K1 series is a family of flush mounting cavity backed slot antennas, designed for operation in the 215 to 260 mc telemetry band. Any 4 mc band in this range can be covered. The antenna elements can be contoured to mount in conical or cylindrical surfaces of widely varying radius of curvature and can be supplied with thick molded fiberglass windows capable of carrying substantial skin loads. The antenna elements are designed for installation in pairs one element on each side of the fuselage, and are fed from a single input connector through a phasing assembly which divides the transmitted power equally and in the proper phase to provide omnidirectional radiation. Two antennas and a phasing network weigh a total of 4-1/2 pounds. The antenna is 8.84 inches long and 11.55 inches high.

BEAM DATA:

Beam type - Similar to that of a horizontal loop; two antennas provide an omnidirectional pattern.

Polarization - Horizontal.

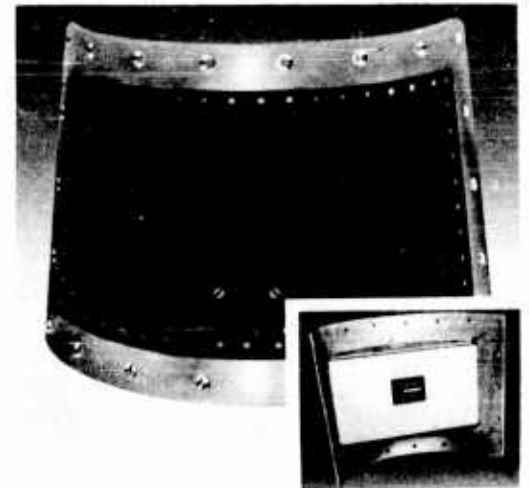
INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Telemetering equipment.  
Equipment function - telemetering.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM K1, Dorne and Margolin, Incorporated

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ANTENNA DM K3 (Dorne and Margolin, Incorporated)

FREQUENCY: VHF band, 215 - 260 mc; VSWR < 2.5.

TYPE: Blade.

DESCRIPTION: The antenna is a swept-back, streamlined stub. It may be installed on

aircraft which fly at speeds in excess of Mach 2 without causing excessive drag, and it is capable of handling 100 watts of power. The antenna weighs 13 ounces. No data are available on dimensions.



DM K3, Dorne and Margolin, Incorporated

BEAM DATA:

Beam type - Omnidirectional, typical of a short stub.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Telemetry equipment.  
 Equipment function - telemetering.

MISCELLANEOUS: This antenna is physically identical with antennas AT-895/A and AT-897/A.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.

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ANTENNA DM N1-2 (Dorne and Margolin, Incorporated)

FREQUENCY: UHF band, 329 - 335 mc; VSWR < 2.

TYPE: Curved dipole.

DESCRIPTION: The antenna is designed for use with AN/ARN-5 and similar glide slope receivers. It is a balanced dipole intended for installation in a nose radome. Its extremely light weight allows it to be mounted on and supported by the radome itself with no additional mounting brackets or supports. It is 9-1/4 inches long and 7-5/8 inches wide.

BEAM DATA:

Beam type - Single broad lobe forward of aircraft.  
Polarization - Horizontal.

INSTALLATION: Airborne.

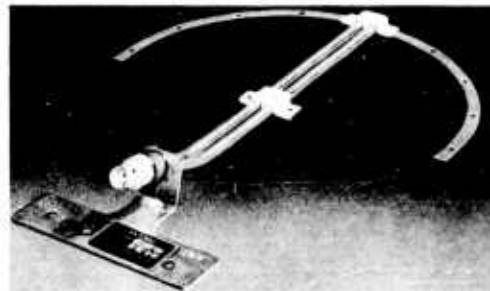
ASSOCIATED EQUIPMENT: AN/ARN-5 and similar glide-slope receivers. Equipment function - navigation, surface reference.

MISCELLANEOUS: This antenna meets requirements of military specification MIL-T-5422.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM N1-2, Dorne and Margolin, Incorporated

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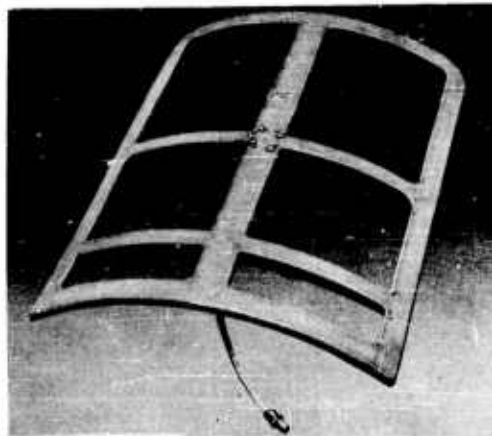
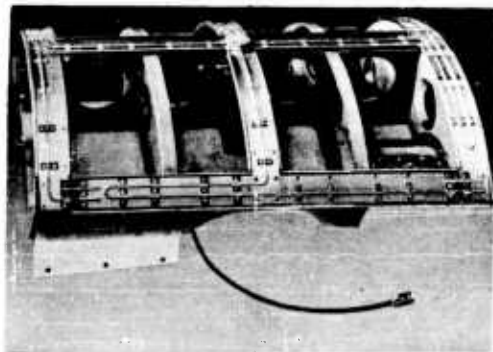
ANTENNAS DM N2 and DM N5 (Dorne and Margolin Incorporated)

FREQUENCY: VHF bands, 108 - 122 mc; VSWR approximately 5.

TYPE: Loop.

DESCRIPTION: These antennas are balanced loops designed for installation within the dielectric canopy aft of the cockpit of fighter-type aircraft for use with VOR and ILS localizer equipments. They provide sensitivity to signals arriving from any azimuthal direction with maximum sensitivity at elevation angles near the horizon. The

balanced feed system provides a high degree of discrimination against vertically polarized signals, thus assuring the reception of accurate bearing information. The radiating elements are supported on a molded fiberglass frame designed for mounting to the deck beneath the canopy. Modifications of both the mounting arrangements and configurations shown in the accompanying photographs can be made by the manufacturer to adapt these designs to widely varying canopy configurations. The antennas are 24 inches long, 12.31 inches wide, and 10.16 inches tall.



DM N2, Dorne and Margolin, Incorporated

DM N2 weighs approximately 5 pounds, and DM N5 approximately 1-1/2 pounds.

BEAM DATA:

Beam type - Omnidirectional in azimuth with maximum gain along the horizon.  
Polarization - Horizontal.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: VOR and ILS equipment.

Equipment function - navigation, direction finding; navigation, surface reference; and approach control.

MISCELLANEOUS: No data on differences between the antennas are available except for the weights. The antennas meet requirements of military specification MIL-T-5422C.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.

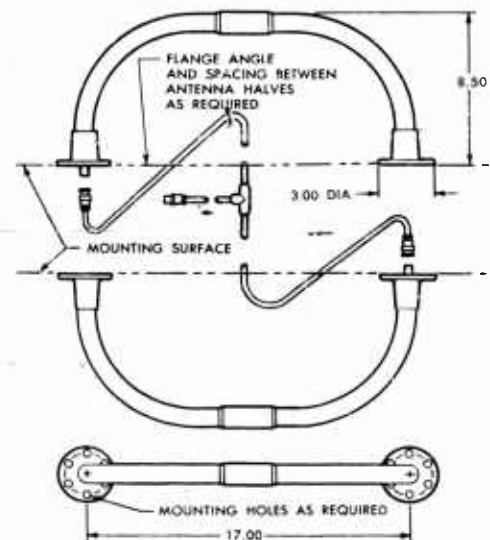
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ANTENNA DM N4-2, DM N4-4, and DM N4-5 (Dorne and Margolin, Incorporated)

FREQUENCY: VHF band, 108 - 122 mc; VSWR < 5.

TYPE: Loop.

DESCRIPTION: The three antennas form a family of loops which are electrically identical but which differ slightly in physical shape, dimensions, and weight. Antenna DM N4-2, constructed of steel and designed for interior mounting, is intended for use on all-weather aircraft where heavy icing may occur. It weighs 4-1/2 pounds and is 18-1/2 inches by 18-1/3 inches in the horizontal plane. It is 1-1/8 inches thick. Antenna DM N4-4 is a lightweight, externally-mounted loop for use on helicopters and other low-speed aircraft. It is constructed of nonstreamlined magnesium tubing and cast magnesium flanges. It weighs 2 pounds and is 17 inches by 17 inches in the horizontal plane. It is approximately 1 inch thick. The structural elements of Antenna DM N4-5 are made of molded fiberglass. The bulk of the insulators has been decreased to reduce drag and weight. The antenna is suitable for use on high-speed aircraft. It weighs 3-1/2 pounds



DM N4-4, Dorne and Margolin, Incorporated

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and is 17-1/2 inches by 20 inches in the horizontal plane. It is approximately 3/4-inch thick.

**BEAM DATA:**

Beam type - Omnidirectional with maximum gain along the horizontal plane.  
Polarization - Horizontal.

**INSTALLATION:** Airborne.

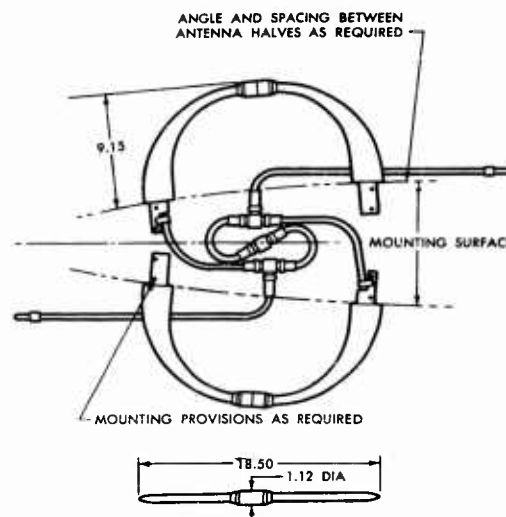
**ASSOCIATED EQUIPMENT:** VOR and ILS equipment.  
Equipment function - navigation, direction finding; navigation, surface reference; and approach control.

**MISCELLANEOUS:** The antennas were designed to meet the requirements of military specification MIL-T-5422C.

**MANUFACTURER:** Dorne and Margolin, Incorporated.

**REFERENCE:**

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM N4-2, Dorne and Margolin, Incorporated

ANTENNA DM N13, DM N13-2, DM N13-3, and DM N13-4 (Dorne and Margolin, Incorporated)

**FREQUENCY:** UHF band, 950 - 1220 mc; VSWR < 2.

**TYPE:** Blade.

**DESCRIPTION:** This series of small, light-weight streamlined stub antennas is designed for use with IFF and TACAN equipments. In each, the radiating element is a thin sheet metal member enclosed within a foam filled streamlined fiberglass housing. The mounting configuration and input connector location and type can be varied as shown in the photographs and sketches. Normally intended for installation on the underside of the fuselage or in a vertical fin to provide an omnidirectional pattern, this antenna can also be supplied with its internal matching elements adjusted so that it can be installed close to a reflecting element to provide a directional pattern. All of the antennas of this series can be supplied with a test probe terminating in a Type BNC connector on the mounting surface near the main input connector. The decoupling level can be adjusted to meet the requirements of any installation. DM N13 and DM N13-3 each weigh 10 ounces; DM N13-2 and DM N13-4 each weigh 6 ounces.

**BEAM DATA:**

Beam type - Omnidirectional in azimuth, but DM N13-3 is designed for mounting near a reflector to provide a single-lobed, directional pattern.  
Polarization - Vertical.

**INSTALLATION:** Airborne.

**ASSOCIATED EQUIPMENT:** IFF and TACAN equipment. Equipment function - IFF; navigation, direction finding; and navigation, surface reference.

**MISCELLANEOUS:** The antennas meet requirements of Military Specification MIL-T-5422.

**MANUFACTURER:** Dorne and Margolin, Incorporated.

**REFERENCE:**

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM N13, DM N13-2, DM N13-3, and DM N14, Dorne and Margolin, Incorporated

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ANTENNA DM NI6 (Dorne and Margolin, Incorporated)

FREQUENCY: UHF band, 950 - 1220 mc; VSWR < 1.8.

TYPE: Annular slot.

DESCRIPTION: The DM NI6 is a flush mounting annular slot antenna designed for use with IFF and TACAN equipments. Designed to replace the older and heavier AT-234 antenna, it is an annular aperture backed by a foam-filled aluminum alloy cavity. The antenna can be supplied either flat or curved to match the contours of any mounting surface. The orientation of the input connector (either Type HN or C) with respect to the axis of curvature can be adjusted for any installation requirement. The antenna weighs approximately 1-5/16 pounds and is 8.4 inches in diameter and 1.33 inches tall.

BEAM DATA:

Beam type - Omnidirectional, like that of a short stub.

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: IFF and TACAN equip-

ment. Equipment function - IFF; navigation, direction finding; and navigation, surface reference.

MISCELLANEOUS: The antenna meets requirements of military specification MIL-T-5422.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM NI6, Dorne and Margolin, Incorporated

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ANTENNA DM NI7 (Dorne and Margolin, Incorporated)

FREQUENCY: UHF band, 960 - 1220 mc; VSWR < 1.5.

TYPE: Annular slot.

DESCRIPTION: The DM NI7 antenna is similar to the DM NI6 but additional matching elements external to the cavity provide an improved impedance match at the 50 ohm input connector. The antenna can be supplied to fit the curvature of any mounting surface and with a variety of mounting flange arrangements. The cavities are sealed and foam-filled to prevent the inclusion of moisture. The antenna weighs about 20 ounces and is 8 inches in diameter, and 2.17 inches tall.

BEAM DATA:

Beam type - Omnidirectional, like that of a short stub.

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: IFF and TACAN equipment. Equipment function - IFF; navigation, direction finding; and navigation, surface reference.

MISCELLANEOUS: The antenna meets requirements of military specification MIL-T-5422.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated.



DM NI7, Dorne and Margolin, Incorporated

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ANTENNA DM NI12 (Dorne and Margolin, Incorporated)

FREQUENCY: UHF band, 950 - 1215 mc; VSWR < 1.5.

TYPE: Coaxial dipole.

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DESCRIPTION: The DM NI12 is a lightweight, vertical coaxial dipole intended for installation in the top of an aircraft vertical fin within a dielectric fin cap. Designed to provide omnidirectional radiation patterns with maximum gain at elevation angles near the horizon, the assembly includes an integral isolating network to prevent excessive r-f coupling to the aircraft structure. The antenna can be provided with either Type HN or C connector. The antenna weighs 8 ounces and is 18.77 inches tall and 2.63 inches in diameter.

BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Navigation and IFF equipment. Equipment function - navigation; and IFF.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM NI12, Dorne and Margolin, Incorporated

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**ANTENNA DM NI21 (Dorne and Margolin, Incorporated)**

FREQUENCY: UHF band, 960 - 1220 mc; VSWR < 1.8.

TYPE: Annular slot.

DESCRIPTION: The antenna is similar in construction and performance to Antenna AT-720/A. In this unit the input connector extends upward and outward from the center of the backing cavity and a test probe connection is provided. The test probe can be supplied with any degree of decoupling from the input signal. The antenna can be supplied in a widely varying range of curvatures and mounting flange arrangements. The antenna weighs 1.5 pounds and is 8.41 inches in diameter and 2.94 inches high.

BEAM DATA:

Beam type - Omnidirectional, like that of a short stub.  
Polarization - Vertical.

INSTALLATION: Airborne.

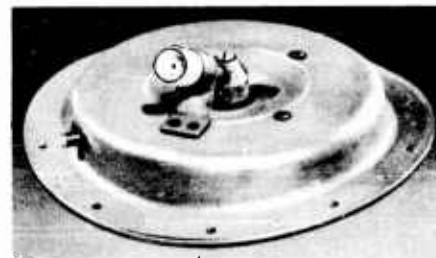
ASSOCIATED EQUIPMENT: Navigation and IFF equipment. Equipment function - navigation; and IFF.

MISCELLANEOUS: The antenna meets requirements of military specification MIL-E-5272.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM NI21, Dorne and Margolin, Incorporated

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**ANTENNA DM NI22 (Dorne and Margolin, Incorporated)**

FREQUENCY: UHF band, 960 - 1220 mc; VSWR < 1.8.

TYPE: Annular slot.

DESCRIPTION: The antenna is an annular slot

which is identical in performance to Antenna DM NI21 but is physically different. This antenna has a modified cavity shape, a different test probe location, and a rectangular mounting flange rather than a circular flange. It is a flush-mounting

antenna, and the mounting flange is curved to conform to the contours of the fuselage. It weighs 1.75 pounds and is .9 inches long, 8.31 inches wide, and approximately 2.5 inches high.

BEAM DATA:

Beam type - Omnidirectional, like that of a short stub.

Polarization - Vertical.

INSTALLATION: Airborne.

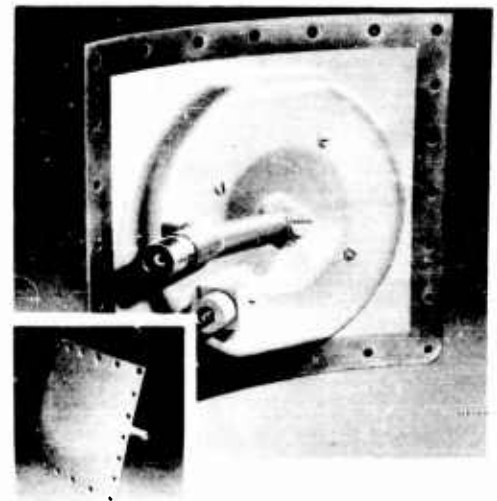
ASSOCIATED EQUIPMENT: Navigation and IFF equipment. Equipment function - navigation; and IFF.

MISCELLANEOUS: The antenna meets requirements of military specification MIL-E-5272.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM NI22, Dorne and Margolin, Incorporated

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ANTENNA DM P 1 (Dorne and Margolin, Incorporated)

FREQUENCY: SHF band, 9335-9415 mc; VSWR<1.3.

TYPE: Surface wave antenna

DESCRIPTION: The antenna is a flush mounting surface wave antenna designed for use with "range only" radars such as the AN/APG-30. It is intended for installation on the upper or lower surface of an aircraft nose, where the skin slopes approximately 20° from the horizontal. It provides a radiation pattern comparable to that obtained from a sectoral horn installed on the fuselage axis and is useful when the installation of an in-flight refueling boom or other equipment prevents the use of the simpler horn antenna. The detailed dimensions will vary with airframe configuration-- a typical example is shown. It weighs 1-1/2 pounds.

BEAM DATA:

Half-power beamwidth- Horizontal-16°  
Vertical - 180°.

Beam type - Pencil beam directed along a horizontal axis.

INSTALLATION: Airborne.

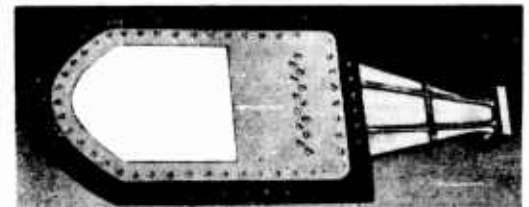
ASSOCIATED EQUIPMENT: Radars such as the AN/APG-30. Equipment function - fire control.

MISCELLANEOUS: The antenna was designed to meet requirements of military specification MIL-T-5422C.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated.



DM P 1, Dorne and Margolin, Incorporated

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ANTENNAS DM P 2, DM P 3, DM P 4, and DM P 5 (Dorne and Margolin, Incorporated)

FREQUENCY: DM P 2---UHF band, 500-1000mc,  
DM P 3---UHF band, 1000-2400mc, DM P 4---  
SHF band, 4000-8000mc, DM P 5---SHF band,  
7350-12,000mc; VSWR<5.

TYPE: Cavity-backed slot (DM P 2 and DM P 3)  
and horn (DM P 4 and DM P 5).

DESCRIPTION: These four antennas form a family of broadband, flush-mounted antennas, which can be used with electronic countermeasures receivers or which can be used for general purpose antennas. Each of the antennas is made of welded aluminum with an epoxy-fiberglass window and fitted with a type N



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connector. Other types of connectors can be provided by the manufacturer on request. The weights and dimensions of each antenna are listed below.

	Dimensions(inches)	Weight(ounces)
DM P 2	5 by 12-3/4 by 5 1/16	31
DM P 3	2-1/2 by 6 by 2-5/8	20
DM P 4	4 by 4-5/8 by 3-3/4	8
DM P 5	4-1/4 by 4-5/8 by 6-3/8	8

## BEAM DATA:

Beam type - each of the antennas produces a single broad lobe.

Polarization - Linear (all antennas).

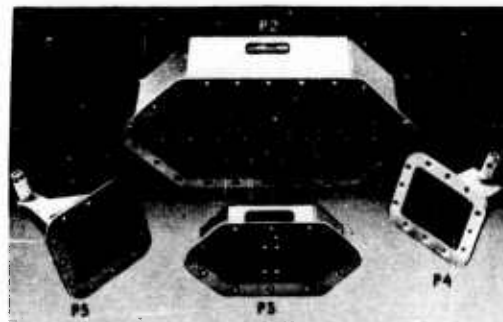
INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: ECM receiving equipment. Equipment function - countermeasures.

MANUFACTURER: Dorne and Margolin, Incorporated.

## REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated.



DM P2, DM P3, DM P4, and DM P5,  
Dorne and Margolin, Incorporated

## ANTENNA DMS 1 (Dorne and Margolin, Incorporated)

FREQUENCY: VHF band, 162.25-173.5 mc; VSWR<2.5.

TYPE: Blade.

DESCRIPTION: The antenna is a top loaded stub, enclosed in a foam-filled, streamlined fiberglass housing. Designed to operate with the AN/ARR-26 Sonobuoy receiver, the antenna can be modified by the manufacturer for operation in other bands within the VHF and UHF ranges. The fiberglass housing is 10.12 inches tall, 5 inches wide (at the base), and 1 inch thick. The rounded mounting plate is 6.62 inches long and 2.62 inches wide. The r-f connector extends 0.83 inches below the mounting plate. The antenna weighs 12 ounces.

## BEAM DATA:

Beam type-Omnidirectional in azimuth.

Polarization-Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/ARR-26 Sonobuoy receiver.

MISCELLANEOUS: The antenna meets requirements of Military Specification MIL-T-5422c.

MANUFACTURER: Dorne and Margolin, Incorporated.

## REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated.



DM S 1, Dorne and Margolin, Incorporated

## ANTENNA DM V 1 (Dorne and Margolin, Incorporated)

FREQUENCY: UHF Band, 460-510 mc; VSWR < 1.5.

TYPE: Blade.

DESCRIPTION: This antenna is designed for use with video relay systems in the 460 to 510 mc frequency range. It is a stub element enclosed within a foam-filled fiberglass housing. The stub is nearly a half wave-

length in height and gives somewhat more gain in the elevation plane than a simple quarter-wave stub. It is identical in appearance and dimensions to Antenna DM S 1, except the r-f connector is slightly longer. The dimensions are shown in the line drawing. The antenna weighs 13 ounces.



DM V 1, Dorne and Margolin, Incorporated

BEAM DATA:Gain - Approximately 2db over that of a short stub.Beam type - Omnidirectional in azimuth.Polarization - Vertical.INSTALLATION: Airborne.ASSOCIATED EQUIPMENT: Video relay systems.MISCELLANEOUS: The antenna meets requirements of Military Specification MIL-T-5422C.MANUFACTURER: Dorne and Margolin, Incorporated.REFERENCE:Antennas. Los Angeles, California: Dorne and Margolin, Incorporated.

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 ANTENNA DM V 3 (Dorne and Margolin, Incorporated)
FREQUENCY: UHF band, 460-510 mc; VSWR<1.5.TYPE: Spear-shaped blade.

DESCRIPTION: This blade antenna is electrically comparable to Antenna DM V1. It is a simple blade, nearly a half-wavelength high, with impedance matching elements enclosed in a foam-filled cylindrical housing, which mounts within the airframe. It was designed for installation on helicopters, lighter-than-air and other relatively low-speed aircraft.

BEAM DATA:Gain-Approximately 2db over that of a simple stub.Beam type-Omnidirectional in azimuth.Polarization-Vertical.INSTALLATION: AirborneASSOCIATED EQUIPMENT: Video relay systems.MISCELLANEOUS: The antenna was designed to meet the requirements of Military Specification MIL-T-5422.MANUFACTURER: Dorne and Margolin, Incorporated.

DM V 3, Dorne and Margolin, Incorporated

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 ANTENNA DM 320 (Dorne and Margolin, Incorporated)
FREQUENCY: UHF band, 960 - 1220 mc; VSWR < 1.8.TYPE: Cavity-backed annular slot.

DESCRIPTION: The antenna is an annular slot backed by a forged aluminum housing. It can be supplied by the manufacturer with a circular mounting flange or a square mounting

flange. For either type, the front face of the antenna is contoured to match contours of the hull bottom of water-based or amphibious aircraft. The front face of the antenna is covered by a thick sheet of fiberglass which seals the radiating aperture and also serves to carry the loads experienced during water landings. The cavity of the antenna is filled with dielectric

foam to further moistureproof the antenna. With a square mounting flange, the antenna is 10-15/16 inches long, 10-15/16 inches wide, and 2-1/4 inches thick. With a circular mounting flange, the antenna has a diameter of 11-9/16 inches and is 2-13/32 inches thick. The antenna weighs 5.75 pounds and can be supplied with either Type HN or Type C r-f connectors.

BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne, hull mounted.

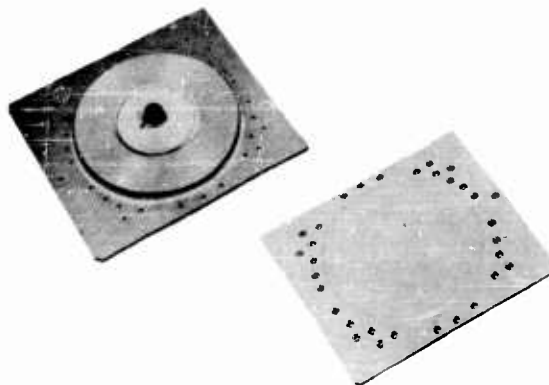
ASSOCIATED EQUIPMENT: Designed for use with AN/ARN-21 and AN/APX-6 systems. Equipment function - navigation and IFF.

MISCELLANEOUS: The antenna was designed to meet Military Specification MIL-T-5422C requirements.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM 320, Dorne and Margolin, Incorporated

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ANTENNA DM 327 (Dorne and Margolin, Incorporated)

FREQUENCY: UHF band, 960 - 1220 mc; VSWR < 1.8.

TYPE: Cavity-backed slot.

DESCRIPTION: The antenna is electrically similar to Antenna DM 320 but is designed for installation in a V-shaped keel. The angle of the "V" can be modified by the manufacturer to meet the requirements of a particular installation. The antenna weighs 3.43 pounds and is 8-1/16 inches long, 8-23/64 inches wide, and 4-13/32 inches high. It can be supplied with either Type HN or Type C r-f connectors.

BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Airborne, keel mounted.

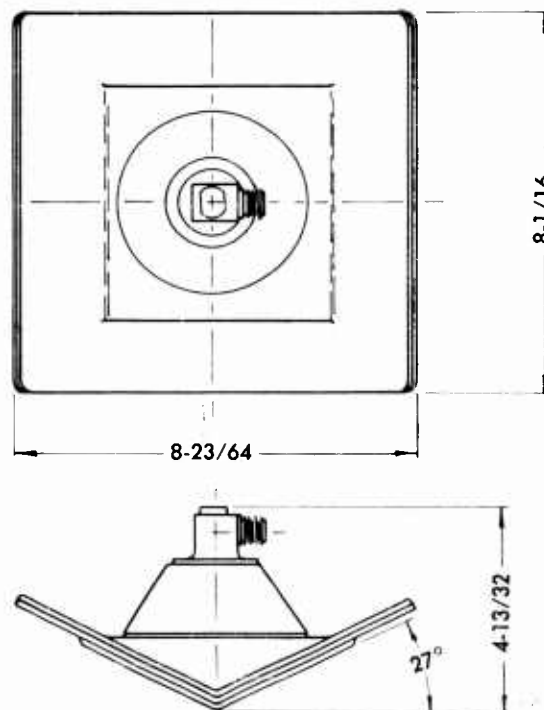
ASSOCIATED EQUIPMENT: Designed for use with AN/ARN-21 and AN/APX-6 systems. Equipment function - navigation, and IFF.

MISCELLANEOUS: The antenna was designed to meet Military Specification MIL-T-5422C requirements.

MANUFACTURER: Dorne and Margolin, Incorporated.

REFERENCE:

Antennas. Los Angeles, California: Dorne and Margolin, Incorporated. UNCLASSIFIED.



DM-327, Dorne and Margolin, Incorporated.

UNCLASSIFIED

ANTENNA L-10, L-10A (Aircraft Radio Corporation)

FREQUENCY: LF and MF bands, 0.190 - 1.5 mc.

Equipment function - navigation, direction finding.

TYPE: Loop.

MISCELLANEOUS: See Antenna A-12.

DESCRIPTION: The antenna is a 9-inch-diameter rotating loop. It is designed to mount on either the top or bottom of an aircraft. It includes the drive assembly in the base.

COGNIZANT AGENCY: U. S. Air Force, U. S. Navy.

MANUFACTURER: Aircraft Radio Corporation.

BEAM DATA:

Beam type - Figure eight.

Polarization - Vertical.

REFERENCE:

U. S. Air Force, Bureau of Aeronautics, Radio Set ARC Type 12, Handbook Operating Instructions, TO 12R2-4-1-1, AN 16-45-121, (March 9, 1956 - revised August 10, 1956). UNCLASSIFIED.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Set ARC Type 12.

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ANTENNA M2203 (Harvard Radio Research Laboratory)

FREQUENCY: UHF band, 500 - 730 mc; VSWR < 1.5.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.

TYPE: Modified turnstile.

DESCRIPTION: The antenna consists of two crossed, bent, sleeve dipoles fed by a coaxial cable through two type III baluns. The dipoles are crossed at an angle of 90°, and each half of each dipole is inclined downward at an angle of 23-1/2°. Each sleeve has a rectangular cross section. The antenna is equipped with a UG-98/U coaxial connector for use with RG-14/U cable. A circular mounting plate is provided.



BEAM DATA:

Gain - 6 db.

Half-power beamwidth (axis of antenna vertical) - Vertical - 85° to 110°.

Horizontal - Omnidirectional.

Polarization - Circular.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Equipment function - countermeasures, jamming.

M2203, Harvard Radio Research Laboratory.

COGNIZANT AGENCY: U. S. Navy.

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ANTENNA M2205 (Harvard Radio Research Laboratory)

FREQUENCY: UHF band, 310 - 455 mc; VSWR < 1.4.

with a UG-98/U coaxial connector for use with RG-14/U cable.

TYPE: Modified turnstile.

BEAM DATA:

Gain - 6 db.

Half-power beamwidth (axis of antenna vertical) - Vertical - 85° to 110°.

Horizontal - Omnidirectional.

Polarization - Circular.

DESCRIPTION: The antenna consists of two crossed, bent, sleeve dipoles fed by a coaxial cable through two type III baluns. The dipoles are crossed at an angle of 90°, and each half of each dipole is inclined downward at an angle of about 25°. In addition, the center conductor of each sleeve dipole is bent downward so that it is almost vertical at the point of exit from the sleeve. Each sleeve has a rectangular cross section. The antenna is equipped

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Equipment function - countermeasures, jamming.

UNCLASSIFIED

UNCLASSIFIED



M2205, Harvard Radio Research Laboratory.

COGNIZANT AGENCY: U. S. Navy.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.

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ANTENNA SYSTEM M3204 (Harvard Radio Research Laboratory)

MAJOR COMPONENTS: M3205, M3206, and M3207 antennas.

FREQUENCY: M3205, VHF band, 199 - 296 mc;  
M3206, VHF and UHF bands, 274 - 482 mc;  
M3207, UHF band, 460 - 695 mc; VSWR < 2.

TYPE: Swept-back sleeve dipoles.

DESCRIPTION: The antenna system consists of three interchangeable antennas which use the M3208 mounting. The three antennas are similar, except for dimensions and frequency range. Each antenna consists of a sleeve dipole with the two sections swept back with an included angle of 100°. The sleeve dipoles are fed by a coaxial cable through a type III balun. Overall height of each antenna, including balun, is 17 inches. Each dipole element of the M3205 is 15-1/2 inches long; the M3206, 11 inches long; and the M3207, 8 inches long. A UG-98/U coaxial connector is provided on the bottom of each antenna for use with RG-14/U cable. The antennas were designed primarily for installation on the underside of an aircraft where the skin may be used as a ground plane.

BEAM DATA:

Polarization - Horizontal.

INSTALLATION: Airborne.

MISCELLANEOUS: These antennas are identical to those of the M3203 system except for the cable connectors.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.



M3204, Harvard Radio Research Laboratory

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ANTENNA M3205 (Harvard Radio Research Laboratory)

See M3204 antenna system.

UNCLASSIFIED

UNCLASSIFIED

ANTENNA M3206 (Harvard Radio Research Laboratory)

See M3204 antenna system.

ANTENNA M3207 (Harvard Radio Research Laboratory)

See M3204 antenna system.

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ANTENNA M3211 (Harvard Radio Research Laboratory)

FREQUENCY: VHF band, 160 - 235 mc; VSWR < 2.

TYPE: Swept-back sleeve dipole.

DESCRIPTION: The antenna consists of a sleeve dipole with the two sections swept back to form a V-shaped angle of  $80^{\circ}$ . The antenna is fed by coaxial cable through a type III balun. The supporting balun and the dipole halves are streamlined to reduce wind drag. The antenna is 16-1/2 inches high, and each dipole element is 22-1/2 inches long. A UG-98/U female coaxial connector is provided on the bottom of the antenna for use with RG-14/U cable. The antenna was designed primarily for installation on the underside of an aircraft, where the skin can be used as a ground plane to direct the radiation downward.

BEAM DATA:

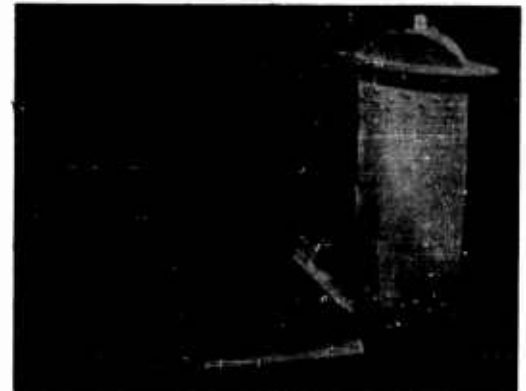
Beam type - Approximately omnidirectional in azimuth, unidirectional in elevation.

Polarization - Horizontal.

INSTALLATION: Airborne.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.



M3211, Harvard Radio Research Laboratory

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ANTENNA M3212 (Harvard Radio Research Laboratory)

FREQUENCY: VHF band, 176 - 245 mc; VSWR < 2.

TYPE: Swept-back sleeve dipole.

DESCRIPTION: The antenna consists of a sleeve dipole with the two sections swept back to form a V-shaped angle of  $80^{\circ}$ . The antenna is fed by coaxial cable through a type III balun. Overall height of the antenna, including the balun, is 12-3/4 inches, and each dipole element is 20-1/2 inches long. The antenna was designed primarily for installation on the underside of an aircraft where the skin can be used as a ground plane to direct the radiation downward. The surfaces are streamlined with a fineness ratio of 0.25. The antenna is equipped with a UG-98/U connector for use with RG-14/U cable.

BEAM DATA:

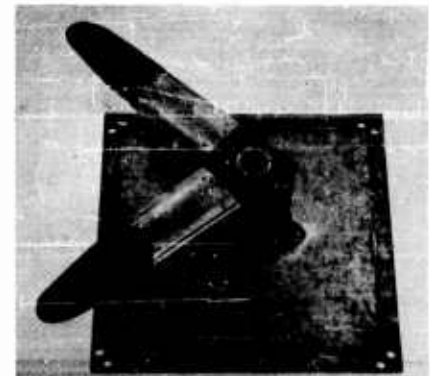
Polarization - Horizontal.

INSTALLATION: Airborne.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-

100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.



M3212, Harvard Radio Research Laboratory

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UNCLASSIFIED

UNCLASSIFIED

ANTENNA M3302 (Harvard Radio Research Laboratory)

FREQUENCY: UHF band, 650 - 1850 mc; VSWR < 2.

TYPE: Slot antenna.

DESCRIPTION: The antenna consists of a hollow truncated cone, in which a long slot has been cut longitudinally. The slot is fed at the top by coaxial cable, and has an adjustable shorting bar for varying the length of the slot. The bandwidth of the antenna for the above VSWR is five to ten percent for any given position of the shorting bar. The antenna is 11 inches high, 6 inches in diameter at the base, and 3-1/8 inches in diameter at the top. A modified UG-101/U connector is mounted at the base of the antenna for use with RG-14/U coaxial cable. The antenna is primarily designed for installation on the underside of an aircraft where the skin can be used as a ground plane.

BEAM DATA:

Half-power beamwidth - Vertical - 70° to 90°.  
Horizontal - Approximately omnidirectional at lower frequencies, 150° near the highest frequency.

Polarization - Horizontal.

TUNING/MATCHING DEVICES: The length of the

slot may be varied by an adjustable shorting bar on the lower portion of the slot.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: AN/APT-4 and AN/APT-5 airborne radar sets. Equipment function - countermeasures, deception.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED



M3302, Harvard Radio Research Laboratory

ANTENNA M4008 (Harvard Radio Research Laboratory)

FREQUENCY: VHF band, 88 - 175 mc; VSWR < 2.1.

TYPE: Blade antenna.

DESCRIPTION: The antenna consists of a grounded sleeve and a tapered stub joined by a section of fiberglass to form a streamlined structure. The antenna stub is elliptical in cross section, and is fed by coaxial cable through a balun. The overall length of the antenna is 40 inches, and the cross section is 2-5/16 by 9-1/16 inches. A UG-101/U connector is mounted on the bottom of the antenna for use with RG-14/U cable.

INSTALLATION: Airborne.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.



M4008, Harvard Radio Research Laboratory

ANTENNA M4011 (Harvard Radio Research Laboratory)

FREQUENCY: VHF band, 134 - 257 mc; VSWR < 2.

TYPE: Blade antenna.

DESCRIPTION: The antenna consists of a grounded sleeve and a tapered stub joined

by a section of fiberglass to form a streamlined structure. The antenna stub is elliptical in cross section and is fed by coaxial cable through a balun. The overall length of the antenna is 26-1/8 inches, and the cross section is 1-7/16 by 5-3/4 inches.

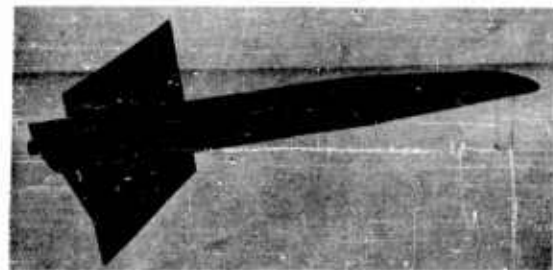
A UG-101/U connector is mounted on the bottom of the antenna for use with RG-14/U cable.

INSTALLATION: Airborne.

MISCELLANEOUS: M4011, M4012, M4013, and M4015 antennas are similar except for frequency range and dimensions.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.



M4011, Harvard Radio Research Laboratory

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**ANTENNA M4012 (Harvard Radio Research Laboratory)**

FREQUENCY: VHF and UHF bands, 250 - 500 mc;  
VSWR < 2.1.

TYPE: Blade antenna.

DESCRIPTION: The antenna consists of a grounded sleeve and a tapered stub joined by a section of fiberglass to form a streamlined structure. The antenna stub is elliptical in cross section and is fed by coaxial cable through a balun. The overall length of the antenna is 15 inches, and the cross section is 13/16 by 3-1/8 inches. A UG-101/U connector is mounted on the bottom of the antenna for use with RG-14/U cable.

INSTALLATION: Airborne.

MISCELLANEOUS: M4011, M4012, M4013, and M4015 antennas are similar except for frequency range and dimensions.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.



M4012, Harvard Radio Research Laboratory

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**ANTENNA M4013 (Harvard Radio Research Laboratory)**

FREQUENCY: UHF band, 500 - 935 mc; VSWR < 2.2.

TYPE: Blade antenna.

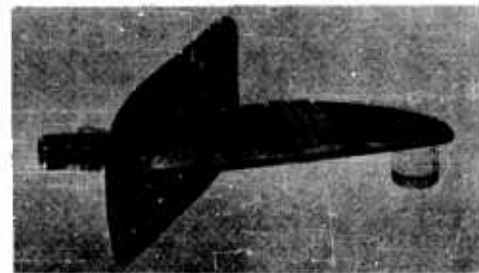
DESCRIPTION: The antenna consists of a grounded sleeve and a tapered stub joined by a section of fiberglass to form a streamlined structure. The antenna stub is elliptical in cross section and is fed by coaxial cable through a balun. The overall length of the antenna is 8-1/2 inches, and the cross section is 1/2 by 2 inches. UG-101/U connector is mounted on the bottom of the antenna for use with RG-14/U cable.

INSTALLATION: Airborne.

MISCELLANEOUS: M4011, M4012, M4013, and M4015 antennas are similar except for frequency range and dimensions.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.



M4013, Harvard Radio Research Laboratory



UNCLASSIFIED

ANTENNA M4015 (Harvard Radio Research Laboratory)

FREQUENCY: VHF band, 90 - 147 mc; VSWR < 2.1.

TYPE: Blade antenna.

DESCRIPTION: The antenna consists of a grounded sleeve and a tapered stub joined by a section of fiberglass to form a streamlined structure. The antenna stub is elliptical in cross section and is fed by coaxial cable through a balun. The overall length of the antenna is 38 inches, and the cross section is 1-1/2 by 6 inches. A UG-101/U connector is mounted on the bottom of the antenna for use with RG-14/U cable.

INSTALLATION: Airborne.

MISCELLANEOUS: M4011, M4012, M4013, and M4015 antennas are similar except for frequency range and dimensions.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.



M4015, Harvard Radio Research Laboratory

ANTENNA M4905 (Harvard Radio Research Laboratory)

FREQUENCY: UHF and SHF bands, 2140 - 4350 mc; VSWR < 3.

TYPE: Horn.

DESCRIPTION: The antenna is a sectoral horn with a section attached to the rear opening to produce circularly polarized radiation. The mouth of the horn is mounted flush with the skin of the aircraft, and the axis of the horn is tilted at 55 degrees to the mounting surface. In order to mount the horn in this way, it was necessary to cut the horn at an angle with its axis. A piece of polystyrene is mounted inside the horn to compensate for the removed portion of the horn. The antenna is made of brass and weighs 7-1/4 pounds. It has an overall length of 16-3/4 inches, a perpendicular height above the mounting surface of 13-1/2 inches, an overall width (excluding the flange) of 5-3/4 inches, and an overall depth (excluding the flange) of 8-1/2 inches.

BEAM DATA:

Half-power beamwidth - Horizontal - 30° - 32°.  
Vertical - 56° - 63°.

Beam type - The beam is tilted 17-1/2° to 38° with respect to a line perpendicular to the mounting surface.

Polarization - Circular with less than 3-1/4 db deviation from 2140 mc to 4350 mc.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Unknown. Equipment function - countermeasures, jamming.

MANUFACTURER: Developed by Radio Research Laboratory, Harvard University.

REFERENCE:

P. Keeler, S-Band Airborne Circularly Polarized Radiator, 411-294. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 26, 1945). UNCLASSIFIED.



M4905, Harvard Radio Research Laboratory

ANTENNA M6302 (Harvard Radio Research Laboratories)

FREQUENCY: VHF and UHF bands, 275 - 325 mc; VSWR < 2.

TYPE: Stub-sleeve antenna.

DESCRIPTION: The antenna is 19-3/4 inches long; the inner conductor expands to a diameter of 1 inch and the sleeve is 2-1/4 inches in diameter.

# UNCLASSIFIED

## BEAM DATA:

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

INSTALLATION: Shipboard and airborne.

COGNIZANT AGENCY: U. S. Navy.

## REFERENCE:

J. A. Nelson, M6302 Skirted-stub Antenna, Report No. 411-120. Cambridge, Mass.: Radio Research Laboratory, Harvard University. (Sept. 28, 1945). UNCLASSIFIED.

## ANTENNA M6804 (Harvard Radio Research Laboratory)

FREQUENCY: UHF band, 850 - 1750 mc; VSWR < 2.

TYPE: Cavity-backed slot.

DESCRIPTION: The antenna consists of a T-shaped radiator mounted in a shallow cavity. The cavity is 8-1/2 inches long, 2-11/16 inches high, and 2-3/4 inches deep. The antenna is designed for flush mounting on aircraft and has a mounting flange with a fiberglass window. The antenna terminates in a modified UG-101/U connector and has an input impedance of 50 ohms.

## BEAM DATA:

Beam type - Unidirectional.  
Polarization - Linear.

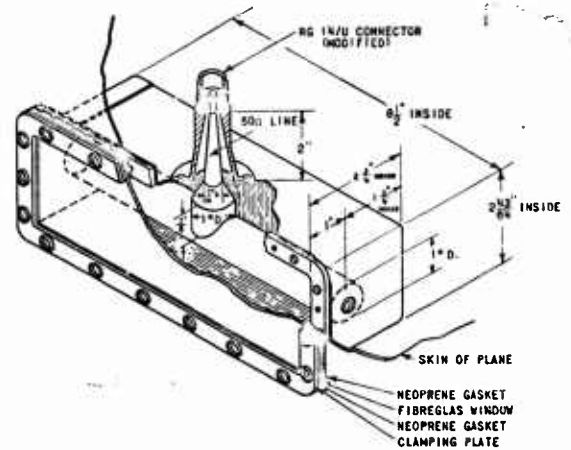
INSTALLATION: Airborne.

MANUFACTURER: Radio Research Laboratory, Harvard University.

## REFERENCES:

- 1) D. Lazarus, Preliminary Report on the M6804 Antennas, 411-166, Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Mar. 26, 1945), ASTIA Report No. ATI 63479. UNCLASSIFIED.

- 2) D. Lazarus, Slot-Antenna Development at Radio Research Laboratory, 411-263. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 17, 1945). UNCLASSIFIED.



M6804, Harvard Radio Research Laboratory

## ANTENNA M6806 (Harvard Radio Research Laboratory)

FREQUENCY: UHF band, 1050 - 2100 mc; VSWR < 2.

TYPE: T-fed slot antenna.

DESCRIPTION: The antenna consists of a cavity-backed slot fed by a stub. The slot has a compensating bar positioned across the wide dimension of the cavity. The stub and compensating bar are connected to form a "T". The antenna is designed for flush mounting on the skin of an aircraft, and it is equipped with a UG-101/U connector for use with RG-14/U cable. Dimensions of the slot are 2-1/8 by 6-7/8 inches, and the overall antenna is 7-5/8 inches long, 2-1/4 inches deep, and 5-3/8 inches high (including the connector).

## BEAM DATA:

Gain - 6 db.  
Half-power beamwidth - E-plane - 160°.  
H-plane - 50° to 80°.  
Polarization - Vertical or horizontal, depending on antenna orientation.



M6806, Harvard Radio Research Laboratory

# UNCLASSIFIED

# UNCLASSIFIED

INSTALLATION: Airborne.

MISCELLANEOUS: The M6806, M6807, M6809, and M6811 antennas are similar except for dimensions and frequency.

## REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.

### ANTENNA M6807 (Harvard Radio Research Laboratory)

FREQUENCY: UHF and SHF bands, 2030 - 4230 mc; VSWR < 2.

TYPE: T-fed slot antenna.

DESCRIPTION: The antenna consists of a cavity-backed slot fed by a stub. The slot has a compensating bar positioned across the wide dimension of the cavity. The stub and compensating bar are connected to form a "T". The antenna is designed for flush mounting on the skin of an aircraft, and it is equipped with a UG-101/U connector for use with RG-14/U cable. Dimensions of the slot are 1-1/8 by 3-5/8 inches, and the overall antenna is 4-7/8 inches long, 1-13/16 inches deep, and 3-1/2 inches high (including the connector).

## BEAM DATA:

Gain - 6 db.

Half-power beamwidth - E-plane - 160°.

H-plane - 50° to 80°.

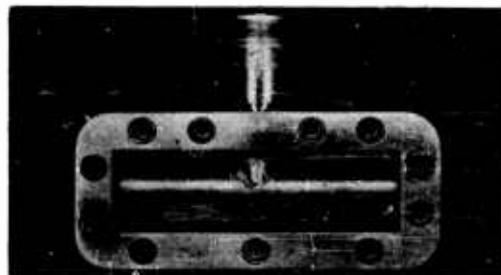
Polarization - Vertical or horizontal, depending on antenna orientation.

INSTALLATION: Airborne.

MISCELLANEOUS: The M6806, M6807, M6809, and M6811 antennas are similar except for dimensions and frequency.

## REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.



M6807, Harvard Radio Research Laboratory

### ANTENNA M6809 (Harvard Radio Research Laboratory)

FREQUENCY: UHF band, 395 - 646 mc; VSWR < 2.

TYPE: T-fed slot antenna.

DESCRIPTION: The antenna consists of a cavity-backed slot fed by a stub. The slot has a compensating bar positioned across the wide dimension of the cavity. The stub and compensating bar are connected to form a "T". The antenna is designed for flush mounting on the skin of an aircraft, and it is equipped with a UG-101/U connector for use with RG-14/U cable. Dimensions of the slot are 8-3/4 by 19-1/2 inches, and the overall antenna is 20-3/4 inches long, 5-5/8 inches deep, and 8 inches high (including the connector).

## BEAM DATA:

Gain - 6 db.

Half-power beamwidth - E-plane - 160°.

H-plane - 50° to 80°.

Polarization - Vertical or horizontal, depending on antenna orientation.

INSTALLATION: Airborne.

MISCELLANEOUS: The M6806, M6807, M6809, and M6811 antennas are similar except for dimensions and frequency.

## REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.

### ANTENNA M6811 (Harvard Radio Research Laboratory)

FREQUENCY: UHF band, 708 - 1350 mc; VSWR < 2.

TYPE: T-fed slot antenna.

UNCLASSIFIED

DESCRIPTION: The antenna consists of a cavity-backed slot fed by a stub. The slot has a compensating bar positioned across the wide dimension of the cavity. The stub and compensating bar are connected to form a "T". The antenna is designed for flush mounting on the skin of an aircraft, and it is equipped with a UG-101/U connector for use with RG-14/U cable. Dimensions of the slot are 3-3/16 by 10-1/4 inches, and the overall antenna is 11-1/2 inches long, 3-3/8 inches deep, and 6-3/4 inches high (including the connector).

BEAM DATA:

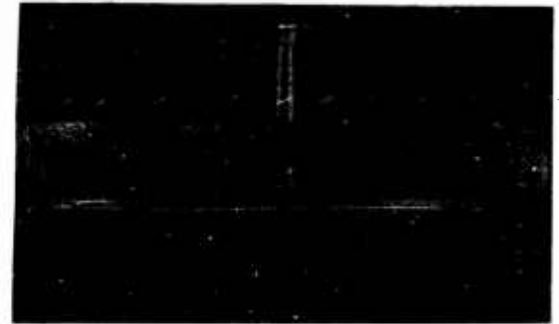
Gain - 6 db.  
Half-power beamwidth - E-plane - 160°.  
H-plane - 50° to 80°.  
Polarization - Vertical or horizontal, depending on antenna orientation.

INSTALLATION: Airborne.

MISCELLANEOUS: The M6806, M6807, M6809, and M6811 antennas are similar except for dimensions and frequency.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.



M6811, Harvard Radio Research Laboratory

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ANTENNA M6812 (Harvard Radio Research Laboratory)

FREQUENCY: UHF band, 1240 - 2430 mc; VSWR < 2.

INSTALLATION: Airborne.

TYPE: T-fed slot antenna.

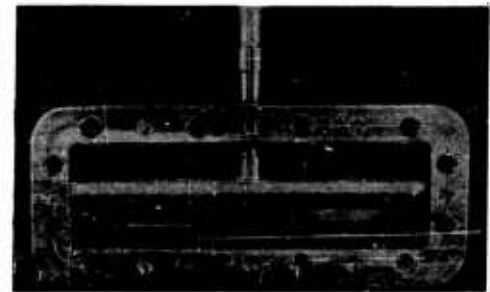
REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.

DESCRIPTION: The antenna consists of a cavity-backed slot fed by a stub. The slot has a compensating bar positioned across the wide dimension of the cavity. The stub and compensating bar are connected to form a "T". The antenna is designed for flush mounting and it is equipped with a UG-101/U connector for use with RG-14/U cable. Dimensions of the slot are 1-3/4 by 5-3/4 inches, and the overall antenna is 7 inches long, 1-7/8 inches deep and 4-1/4 inches high (including the connector).

BEAM DATA:

Gain - 6 db.  
Half-power beamwidth - E-plane - 160°.  
H-plane - 50° to 80°.  
Polarization - Vertical or horizontal, depending on antenna orientation.



M6812, Harvard Radio Research Laboratory

.....  
ANTENNA M7301 (Harvard Radio Research Laboratory)

FREQUENCY: VHF band, 195 - 260 mc; VSWR < 2.

mounting, countermeasures package. The antenna is 14 inches wide, 7 inches high, and 13 inches deep.

TYPE: Cavity-backed slot.

BEAM DATA:

Polarization - Horizontal.

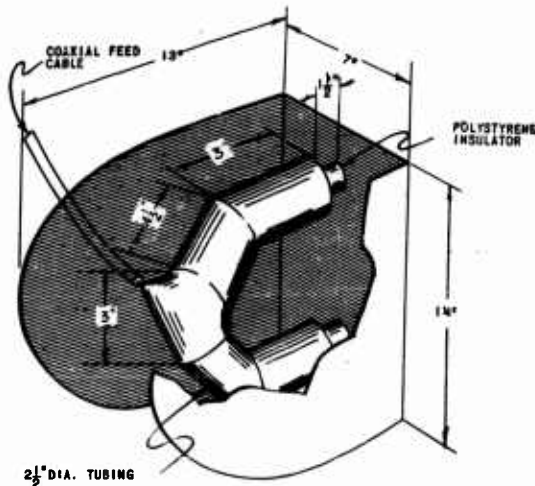
DESCRIPTION: The antenna consists of a U-shaped radiator mounted between, and parallel to, two plates which are approximately semi-circular. The U-shaped radiator is made of 2-1/2-inch-diameter tubing and is fed by coaxial cable near its center. It is a countermeasures receiving antenna and was used in the S-1200 "buzz-bomb," a wing-

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: S-1200 buzz bomb.  
Equipment function - countermeasures.

UNCLASSIFIED

UNCLASSIFIED



M7301, Harvard Radio Research Laboratory

MANUFACTURER: Radio Research Laboratory,  
Harvard University.

REFERENCE:

D. Lazarus, Slot-Antenna Development at Radio Research Laboratory, 411-263. Cambridge, Mass.: Radio Research Laboratory, Harvard University, (Nov. 17, 1945). UNCLASSIFIED.

ANTENNA M7302 (Harvard Radio Research Laboratory)

FREQUENCY: UHF band, 500 - 1000 mc; VSWR < 5.

TYPE: Curved "T"-fed slot antenna.

DESCRIPTION: The antenna consists of a cavity-backed slot fed by a stub. A compensating bar is positioned across the wide dimension of the cavity. The stub and compensating bar are connected to form a "T". Both the cavity and compensating bar are curved along the long dimension to conform to the leading edge of the wing of an aircraft, the slot forming a portion of the leading edge. The antenna is equipped with a UG-98/U connector for use with RG-14/U cable. Dimensions of the slot are 4-1/4 by 7-5/8 inches, and the overall antenna is 12-5/8 inches long, 5-3/4 inches wide, and 7-5/8 inches deep (including the connector).

BEAM DATA:

Gain - 6 db.

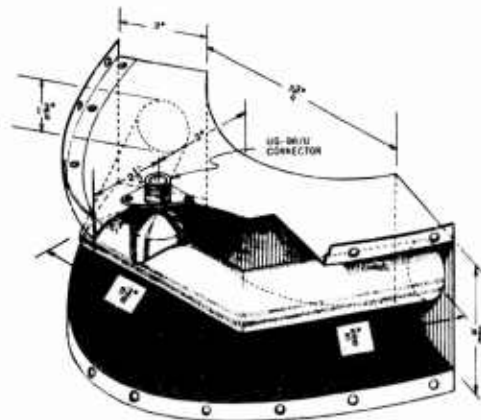
Polarization - Horizontal.

INSTALLATION: Airborne.

REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A.

Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.



M7302, Harvard Radio Research Laboratory

ANTENNA M7303 (Harvard Radio Research Laboratory)

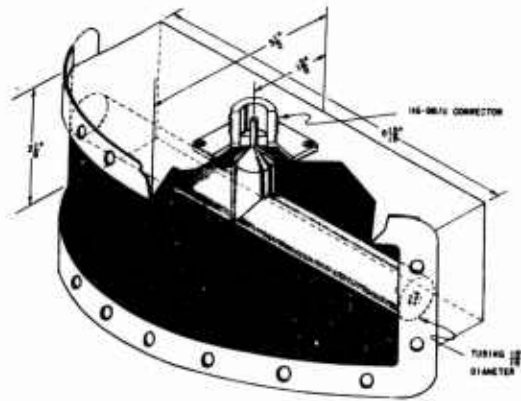
FREQUENCY: UHF band, 1000 - 2000 mc; VSWR < 5.

TYPE: Curved "T"-fed slot antenna.

DESCRIPTION: The antenna consists of a cavity-backed slot fed by a stub. A compensating bar is positioned across the wide dimension of the cavity. The stub and compensating bar are connected to form a "T". The slot

is curved along the long dimension to conform to the leading edge of the wing of an aircraft. The antenna is equipped with a modified UG-98/U coaxial connector for use with RG-14/U cable. Dimensions of the slot are 2-1/8 by 6-7/8 inches, and the overall antenna is 8-1/4 inches long, 3-1/2 inches wide, and 3-3/4 inches deep (including the connector).

UNCLASSIFIED



M7303, Harvard Radio Research Laboratory

BEAM DATA:

Gain - 6 db.

Polarization - Horizontal.

INSTALLATION: Airborne.REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A.  
Cambridge, Massachusetts: Radio Research  
Laboratory, Harvard University, (December 3,  
1945). UNCLASSIFIED.

## ANTENNA M7304 (Harvard Radio Research Laboratory)

FREQUENCY: UHF band, 500 - 1000 mc; VSWR < 5.TYPE: Curved "T"-fed slot antenna.

DESCRIPTION: The antenna consists of a cavity-backed slot fed by a stub. A compensating bar is positioned across the wide dimension of the cavity. The stub and compensating bar are connected to form a "T". The slot has a slight curve along the short dimension to conform to the leading edge of the wing of an aircraft, the slot forming a portion of the leading edge. The antenna is equipped with a modified UG-97/U connector for use with RG-14/U cable. Dimensions of the slot are 4-1/2 inches and the overall antenna is 15-3/4 inches long, 6-1/4 inches wide, and 5-1/4 inches deep (including the connector).

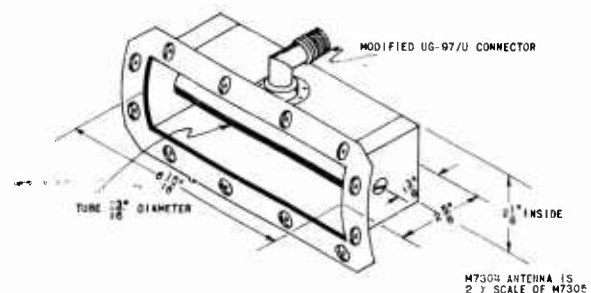
BEAM DATA:

Gain - 6db.

Polarization - Vertical.

INSTALLATION: Airborne.REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A.  
Cambridge, Massachusetts: Radio Research  
Laboratory, Harvard University, (December 3,  
1945). UNCLASSIFIED.

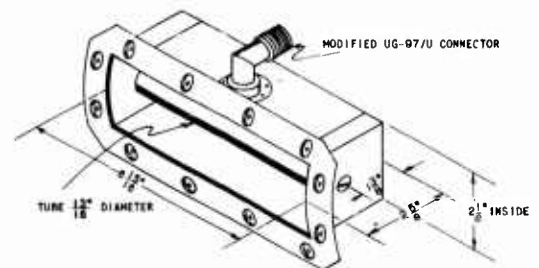


M7304, Harvard Radio Research Laboratory

## ANTENNA M7305 (Harvard Radio Research Laboratory)

FREQUENCY: UHF band, 1000 - 2000 mc; VSWR < 5.TYPE: Curved "T"-fed slot antenna.

DESCRIPTION: The antenna consists of a cavity-backed slot fed by a stub. A compensating bar is positioned across the wide dimension of the cavity. The stub and compensating bar are connected to form a "T". The slot has a slight curve along the short dimension to conform to the leading edge of the wing of an aircraft, the slot forming a portion of the leading edge. The antenna is equipped with modified UG-97/U connector for use with RG-14/U cable. Dimensions of the slot are 2-1/8 by 6-7/8 inches and the overall antenna



M7305, Harvard Radio Research Laboratory

# UNCLASSIFIED

is 8-1/8 inches long, 3-3/4 inches wide, and 3 inches deep (including the connector).

## BEAM DATA:

Gain - 6 db.

Polarization - Vertical.

INSTALLATION: Airborne.

## REFERENCE:

Andrew W. Alford, Antennas for RCM, 411-100A. Cambridge, Massachusetts: Radio Research Laboratory, Harvard University, (December 3, 1945). UNCLASSIFIED.

## ANTENNA M9001 (Harvard Radio Research Laboratories)

FREQUENCY: UHF and SHF bands, 2100 - 4000 mc.

TYPE: Horn.

DESCRIPTION: The antenna consists of a circular horn fed through a section of circular waveguide by a probe-excited rectangular waveguide. A transition section is included between the circular and rectangular sections of waveguide, and a dielectric strip within the circular waveguide is used to produce circular polarization.

## BEAM DATA:

Half-power beamwidth - 40°.

Beam type - Conical.

Polarization - Circular.

INSTALLATION: Shipboard and airborne.

## REFERENCE:

R. M. Hatch and C. C. Loomis, Circularly Polarized Search Antennas for the Band 2100 to 4000 mc, Report No. 411-283. Cambridge, Mass.: Radio Research Laboratory, Harvard University. (Oct. 31, 1945). UNCLASSIFIED.

## ANTENNA for Navy Model MN-4

FREQUENCY: VHF band, 30 - 42 mc.

DESCRIPTION: The antenna is probably a whip weighing 2 pounds.

INSTALLATION: Ground, shipboard, and airborne.

ASSOCIATED EQUIPMENT: Navy Model MN-4 FM Radio Transmitting and Receiving Equipment. Equipment function - communications.

COGNIZANT AGENCY: U. S. Navy, BuShips.

MANUFACTURER: Fred M. Link, contract NXso-32191.

## REFERENCES:

- 1) NAVSHIPS 95142: Instruction Book for Navy Model MN-4 Radio Transmitting and Receiving Equipment.
- 2) U. S. Navy, Navy Stock List of the Electronics Supply Office, (Feb. 1958). UNCLASSIFIED.

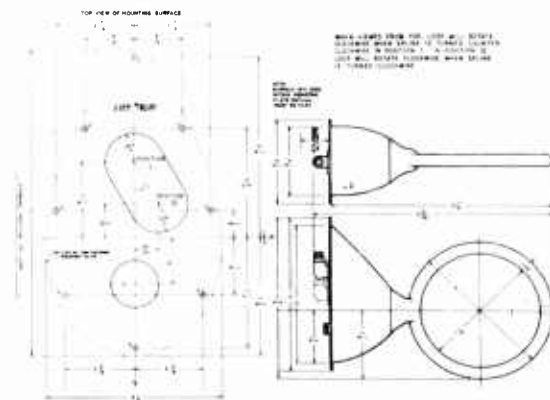
## ANTENNA MN-20(\*) (Bendix)

FREQUENCY: LF, MF, and HF bands, 0.15 - 7.0 mc.

TYPE: Loop.

DESCRIPTION: The antenna is a 9-inch-diameter loop consisting of a low-impedance coil enclosed in an electrostatic shield. The base of the MN-20A and MN-20C antennas houses the gear assembly which permits rotation by means of a hand crank on the remote azimuth control and a flexible connecting shaft. The MN-20D is the same loop with fixed mounting. The MN-20A and MN-20C antennas differ only in that the former has a 90° tuning-shaft fitting and the latter has a straight fitting. Overall dimensions are 13-7/8 inches high, 5-1/2 inches wide, and 10-5/8 inches deep. The antennas weigh approximately 5 pounds each.

INSTALLATION: Airborne.



MN-20(\*), Bendix

UNCLASSIFIED

ASSOCIATED EQUIPMENT: Radio Compass MN-26().  
Equipment function - navigation, direction finding; and communications, receiving.

MISCELLANEOUS: MN-20(\*) denotes 3 models: MN-20A, MN-20C, and MN-20D; differences are given in the description above. Reference 2 states that these antennas are obsolete. MN-20D is probably similar to AS-138/ARN.

MANUFACTURER: Bendix Radio Division of Bendix Aviation Corporation.

REFERENCES:

- 1) U. S. Air Force, Bureau of Aeronautics, Radio Compasses Type MN-26-A, MN-26-C,

MN-26-CA, MN-26-M, MN-26-W, MN-26-X, MN-26-Y, MN-26-Y, Handbook Operating Instructions, AN 16-45-36, (November 2, 1944). UNCLASSIFIED.

- 2) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 3) Instruction Book for Aircraft Radio Receiving Equipment Model RA-10CA, RA-10CB, RA-10DA, RA-10DB, IB 307C. Baltimore, Maryland: Bendix Radio, Division of Bendix Aviation Corporation, (Nov. 1941). UNCLASSIFIED.

ANTENNA MN-24(\*) (Bendix)

FREQUENCY: LF, MF, and HF bands, 0.15 - 7.0 mc.

TYPE: Loop.

DESCRIPTION: The antenna is an 18-inch-diameter loop consisting of a coil enclosed in an electrostatic shield. The base of the antenna houses a gear assembly which permits rotation by a flexible connecting shaft and a hand crank located on the remote azimuth control. Apparently the only difference between models is that the MN-24A antenna has a 90° tuning-shaft fitting and the MN-24B and MN-24D antennas have straight fittings. Overall dimensions are 23-5/16 inches high, 5-1/2 inches wide, and 10 inches deep. Each antenna weighs 7 pounds.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Compasses MN-26() and AN/ARN-11. Equipment function - navigation, direction finding; and communications, receiving.

MISCELLANEOUS: MN-24(\*) denotes three models: MN-24A, MN-24B, and MN-24D; differences are given in the description. Reference 2 states that these antennas are obsolete.

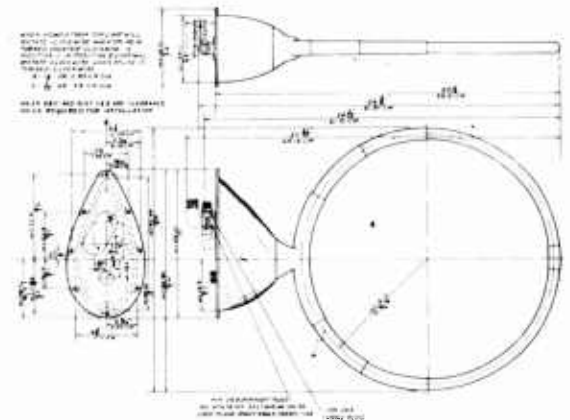
MANUFACTURER: Bendix Radio Division of Bendix Aviation Corporation.

REFERENCES:

- 1) U. S. Air Force, Bureau of Aeronautics, Radio Compasses Type MN-26-A, MN-26-C,

MN-26-CA, MN-26-M, MN-26-W, MN-26-X, MN-26-Y, Handbook Operating Instructions, AN 16-45-36, (November 2, 1944). UNCLASSIFIED.

- 2) Partial List of Obsolete Antennas, Wright Air Development Division, WCLRS-6, (March 14, 1957). UNCLASSIFIED.
- 3) U. S. Air Force, Bureau of Aeronautics, Handbook Operating Instructions for Radio Compass AN/ARN-11, TO 12R5-2ARN11-1, (Nov. 28, 1944 - revised Aug. 25, 1945). UNCLASSIFIED.



MN-24(\*), Bendix

ANTENNA MN-36() (Bendix)

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc.

TYPE: Loop.

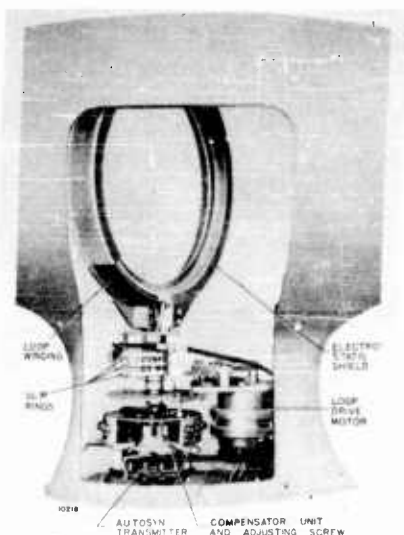
DESCRIPTION: The antenna consists of a rotating motor-driven loop enclosed in a zeppelin-type, graphite-impregnated housing. The loop consists of an eight-turn coil with a grounded center-tap in an electrostatic

shield. The housing includes a two-phase induction drive motor, associated gear train, and an autosyn transmitter. The antenna extends 14-5/8 inches above the aircraft skin and is 9 inches wide and 25-3/8 inches long.

INSTALLATION: Airborne.

UNCLASSIFIED





MN-36(), Bendix

ASSOCIATED EQUIPMENT: Bendix type NA-1 Aircraft Navigational System and Radio Compass Receiver MN-62A. Equipment function - navigation, direction finding.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Bendix Radio Division of Bendix Aircraft Corporation.

REFERENCE:

Instruction Book for Type NA-1 Aircraft Navigational System, Report No. IB 559E. Baltimore, Maryland: Bendix Radio Division of Bendix Aviation Corporation. UNCLASSIFIED.

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ANTENNA MN-60() (Bendix)

FREQUENCY: LF and MF bands, 0.1 - 1.75 mc.

TYPE: Loop.

DESCRIPTION: The antenna consists of a 9-turn, iron-core, rotatable loop center-tapped by a 12-turn shunt coil and electrostatically shielded. The loop is mounted in a glass enclosure which is hermetically sealed and filled with nitrogen. A streamlined fiberglass cover surrounds the glass housing. The antenna includes a drive motor, associated gears, and autosyn transmitter. The cover is 16-27/32 inches long, 5-1/2 inches wide, and 6-3/32 inches high. The overall height of the antenna is 10.636 inches.

INSTALLATION: Airborne.

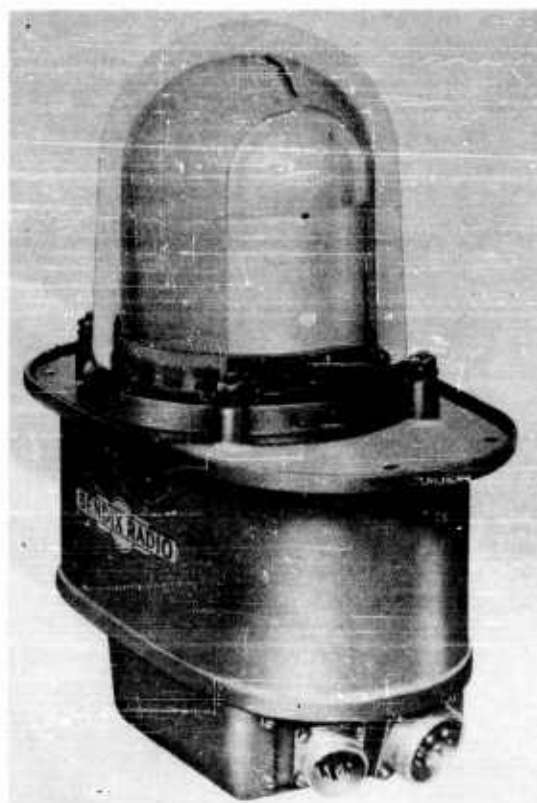
ASSOCIATED EQUIPMENT: Bendix type NA-1 Aircraft Navigational System and Radio Compass Receiver MN-62A, Equipment function - navigation, direction finding.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURERS: Bendix Radio Division of Bendix Aircraft Corporation, and Kearfott Manufacturing Corporation.

REFERENCE:

Instruction Book for Type NA-1 Aircraft Navigational System, Report No. IB 559E. Baltimore, Maryland: Bendix Radio Division Bendix Aviation Corporation. UNCLASSIFIED.



MN-60(), Bendix

UNCLASSIFIED

ANTENNA S-1 (Hallcrafters)

This antenna is probably the same as Halli-  
crafters type 057-400334.

ANTENNA S-2 and S-2(T)B (Hallcrafters)

These antennas are probably the same as the  
Hallcrafters type 057-400331 antenna.

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ANTENNA T-9-1 (Boeing)

FREQUENCY: UHF band, 400 - 600 mc.

TYPE: Helical antenna.

INSTALLATION: Airborne.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Boeing Aircraft Company.

STOCK NUMBER: Federal Stock Number 5895-694-  
8481A.

REFERENCE:  
U. S. Air Force, Radio Receiving Set, Collins  
Type 51J3, Spare Parts List, TC-31R2-4-27-4,  
(November 15, 1957). UNCLASSIFIED.

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ANTENNA T-16-1 (Boeing)

FREQUENCY: UHF band, 950 - 1500 mc.

TYPE: Helical antenna.

INSTALLATION: Airborne.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Boeing Aircraft Company.

STOCK NUMBER: Federal Stock Number 5895-557-  
9472.

REFERENCE:  
U. S. Air Force, List of Antennas. Columbus,  
Ohio: Lockburn Air Force Base, 376 SAC Wing.  
UNCLASSIFIED.

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ANTENNA T-16-2 (Boeing)

FREQUENCY: UHF band, 1500 - 2400 mc.

TYPE: Helical antenna.

INSTALLATION: Airborne.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Boeing Aircraft Company.

STOCK NUMBER: Federal Stock Number 5895-694-  
8463A.

REFERENCE:  
U. S. Air Force, List of Antennas. Columbus,  
Ohio: Lockburn Air Force Base, 376 SAC Wing.  
UNCLASSIFIED.

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ANTENNA T-16-3 (Boeing)

FREQUENCY: UHF and SHF bands, 2400 - 3150 mc.

TYPE: Helical antenna.

INSTALLATION: Airborne.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Boeing Aircraft Company.

REFERENCE:  
U. S. Air Force, List of Antennas. Columbus,  
Ohio: Lockburn Air Force Base, 376 SAC Wing.  
UNCLASSIFIED.

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ANTENNA T-16-4 (Boeing)

FREQUENCY: SHF band, 3100 - 4100 mc.

TYPE: Helical antenna.

UNCLASSIFIED

# UNCLASSIFIED

INSTALLATION: Airborne.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Boeing Aircraft Company.

REFERENCE:

U. S. Air Force, List of Antennas. Columbus,  
Ohio: Lockburn Air Force Base, 376 SAC Wing.  
UNCLASSIFIED.

## ANTENNA TX-10 (Boeing)

FREQUENCY: SHF band, 8200 - 10,500 mc.

TYPE: Horn.

DESCRIPTION: The reference states that this antenna mounts by means of a 5-1/2-inch-diameter plate. The antenna is used for airborne interception and has "complex" polarization.

INSTALLATION: Airborne.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Boeing Aircraft Company.

REFERENCE:

U. S. Air Force, List of Antennas. Columbus,  
Ohio: Lockburn Air Force Base 376 SAC Wing.  
UNCLASSIFIED.

## ANTENNA X-101(Boeing)

FREQUENCY: UHF band, 1200 - 1400 mc.

TYPE: Slot.

DESCRIPTION: The antenna mounts by means of a 5-1/2-inch-diameter plate.

INSTALLATION: Airborne.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Boeing Aircraft Company.

REFERENCE:

U. S. Air Force, List of Antennas. Columbus,  
Ohio: Lockburn Air Force Base, 376 SAC Wing.  
UNCLASSIFIED.

## ANTENNA X-102(Boeing)

FREQUENCY: UHF band, 2660 - 2950 mc.

TYPE: Slot.

DESCRIPTION: The antenna mounts by means of a 5-1/2-inch diameter plate.

INSTALLATION: Airborne.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Boeing Aircraft Company.

REFERENCE:

U. S. Air Force, List of Antennas. Columbus,  
Ohio: Lockburn Air Force Base, 376 SAC Wing.  
UNCLASSIFIED.

## ANTENNA X-103 (Boeing)

FREQUENCY: SHF band, 3000 - 3550 mc.

TYPE: Slot.

DESCRIPTION: The antenna mounts by means of a 5-1/2-inch-diameter plate.

INSTALLATION: Airborne.

COGNIZANT AGENCY: U. S. Air Force.

MANUFACTURER: Boeing Aircraft Company.

REFERENCE:

U. S. Air Force, List of Antennas. Columbus,  
Ohio: Lockburn Air Force Base, 376 SAC Wing.  
UNCLASSIFIED.

## ANTENNA 37J-2 (Collins Radio Company)

FREQUENCY: VHF band, 108 - 122 mc; VSWR < 5.

TYPE: Swept-back U-type dipole.

DESCRIPTION: The antenna is a streamlined structure consisting of a horizontal U-shaped,

swept-back dipole constructed of cast aluminum, tubular alloy and natural rubber. The antenna is fed by RG-8/U coaxial cable with provisions for mating a UG-21/U or equivalent connector. Overall dimensions of the antenna are 27 inches in length, 12 inches in height,

and 17 inches in width. The antenna weighs 5 pounds and has a drag of 2.7 pounds at 250 miles per hour.

BEAM DATA:

Polarization - Vertical.

INSTALLATION: Airborne.

ASSOCIATED EQUIPMENT: Radio Navigation Receiver 51R-3. Equipment function - approach control.

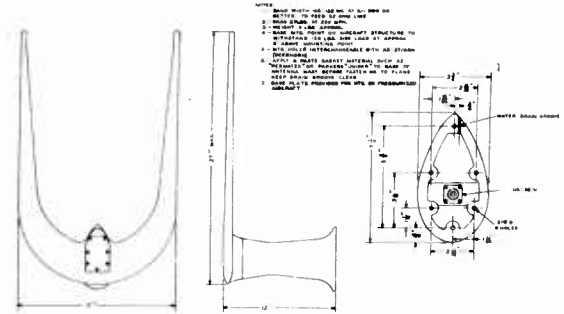
MISCELLANEOUS: This antenna is interchangeable with the AS-27/U antenna. The 37J-3 is identical to the AS-27/U except for a ground strap which has been added from the dipole to the top of the mast.

COGNIZANT AGENCY: U. S. Navy.

MANUFACTURER: Collins Radio Company.

REFERENCE:

Instruction Book for 51R-3 VHF Navigation Receiver. Cedar Rapids, Iowa: Collins Radio Company, (May 1, 1956). UNCLASSIFIED.



37J-2, Collins Radio Company

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ANTENNA 001-403631 (Hallcrafters)

FREQUENCY: Probably UHF and/or SHF bands, S-band; VSWR < 1.5.

TYPE: Paraboloidal reflector with feed.

DESCRIPTION: The antenna consists of a paraboloidal reflector 28-7/8 inches in diameter and approximately 20-3/32 inches deep overall including the feed. The antenna is designed to operate in temperatures from -30° F to +160° F and will handle average powers to 100 watts. The antenna is mounted by means of four equally spaced studs on the

rear of the reflector on a 16-1/2-inch-diameter bolt circle. The ratio of the upper operating frequency to the lower operating frequency is 1.1.

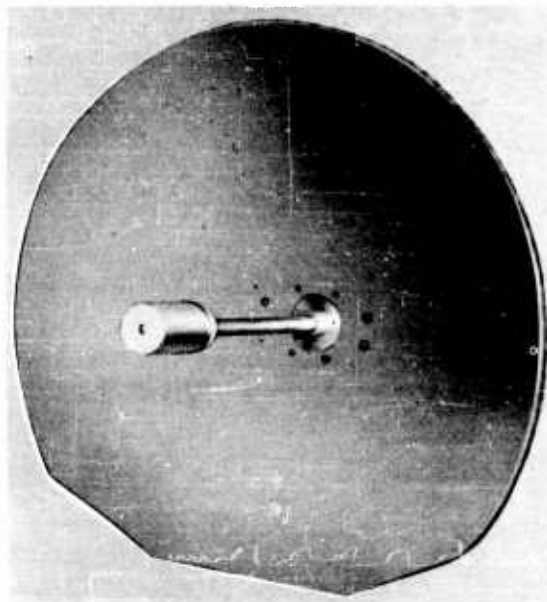
BEAM DATA:

Gain - 20 db.

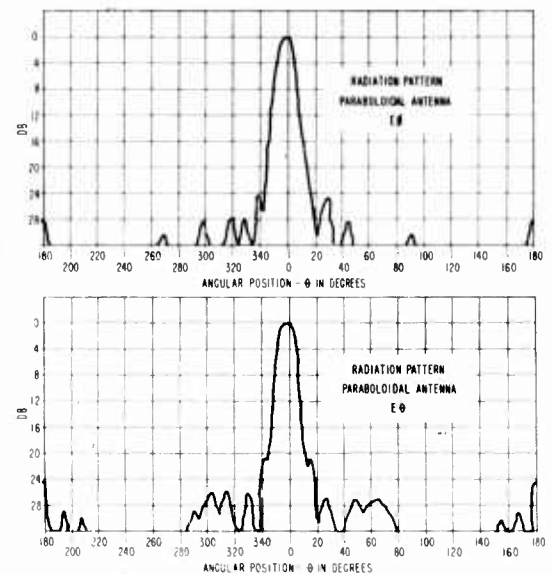
One-tenth power beamwidth - Vertical - 20°. Horizontal - 20°.

Beam type - Pencil.

Polarization - Vertical or horizontal depending on position of the antenna.



Hallcrafters No. 001-403631



Radiation Patterns for Hallcrafters NO. 001-403631

UNCLASSIFIED

INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

REFERENCE:

Antennas and Transmission Systems. Chicago,  
Illinois: The Hallicrafters Company. UN-  
CLASSIFIED.

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ANTENNA 001-403812 (Hallicrafters)

FREQUENCY: UHF band, L-band, probably 1200 -  
1400 mc; VSWR < 1.35.

TYPE: Stacked array of slots.

DESCRIPTION: The antenna is a cylinder 16-  
15/16 inches long and 5-1/2 inches in diam-  
eter at the mounting end. It has a stacked  
array of slots and is fed by a coaxial cable.  
The antenna is enclosed in a fiberglass  
laminated. The average power capacity is  
1000 watts. The antenna is designed to  
operate to an altitude of 60,000 feet and in  
temperatures from -67° F to +250° F.

BEAM DATA:

Gain - 6 to 7 db.

Beam type - Omnidirectional in azimuth, maxi-  
mum radiation in elevation approximately 15°  
below horizontal.

Polarization - Horizontal.

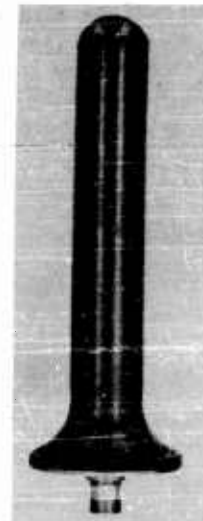
INSTALLATION: Airborne.

MISCELLANEOUS: The 001-403812 antenna is prob-  
ably the QRC-76(T) antenna.

MANUFACTURER: The Hallicrafters Company.

REFERENCE:

Antennas and Transmission Systems. Chicago,  
Illinois: The Hallicrafters Company. UN-  
CLASSIFIED.



Hallicrafters 001-403812 Antenna

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ANTENNA 041-230399 (Hallicrafters)

FREQUENCY: Probably UHF and/or SHF bands,  
S-band; VSWR < 2.

TYPE: Stub.

DESCRIPTION: The antenna is a stub with an  
overall length of 5-7/16 inches equipped  
with an airfoil 1-53/64 inches wide by  
3-19/32 inches deep. The antenna is de-  
signed for 300 watts and will operate to an  
altitude of 50,000 feet and in temperatures  
of -67° F to +250° F. The ratio of the  
upper operating frequency to the lower  
operating frequency is 1.57.

BEAM DATA:

Gain - 4 to 5 db.

Half-power beamwidth - Vertical - 20°.

Beam type - Omnidirectional in azimuth.

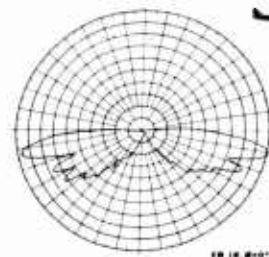
Polarization - Vertical.

INSTALLATION: Airborne.

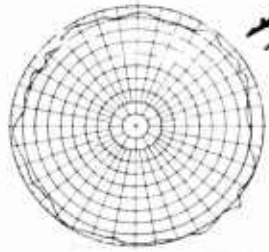
MANUFACTURER: The Hallicrafters Company.

REFERENCE:

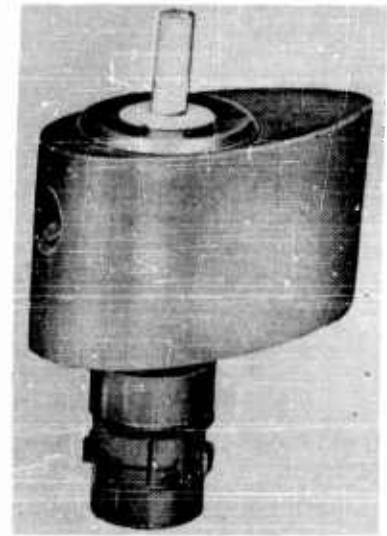
Antennas and Transmission Systems, Chicago,  
Illinois: The Hallicrafters Company. UN-  
CLASSIFIED.



EM (E, 0-10°)



EM (E, 0-10°)



Hallcrafters 041-230399 Antenna

Hallcrafters 041-230399 Radiation Patterns

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## ANTENNA 041-330660 (Hallcrafters)

FREQUENCY: SHF band, X-band; VSWR < 1.5.

TYPE: Horn.

DESCRIPTION: The antenna consists of a horn enclosed in a cylindrical structure which (overall) is 3-3/4 inches in height and 2 inches in diameter, with a 3-inch-diameter mounting flange with four holes. The average power capacity is 150 watts.

BEAM DATA:

Gain - 4 to 5 db.

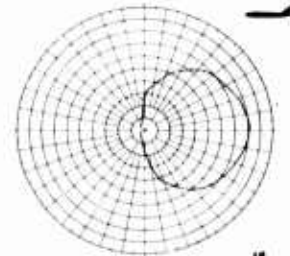
Half-power beamwidth - Vertical - 70°.  
Horizontal - 70°.

Beam type - Unidirectional.

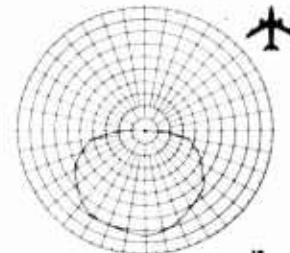
Polarization - Circular.



Hallcrafters 041-330660 Antenna



EM (E, 0-10°)



EM (E, 0-10°)

Hallcrafters 041-330660 Radiation Patterns

INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

REFERENCE:

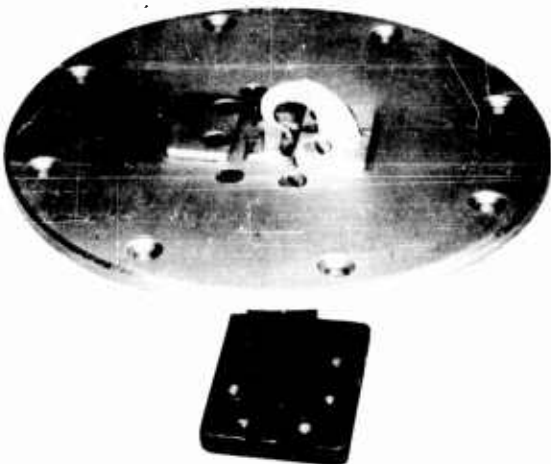
Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED

ANTENNA 041-334304 (Hallicrafters)

FREQUENCY: SHF band, X-band; VSWR < 1.3.

TYPE: Scimitar.

DESCRIPTION: The antenna is a scimitar with a height of 55/64 inches including the mounting plate which serves as the ground plane. The mounting plate is 5-1/2 inches in diameter and contains eight mounting holes equally spaced on a 4.75-inch-diameter bolt circle. The antenna is designed to use the Marlex 50 hemispherical radome. A 3-inch section of waveguide is included on the assembly. The antenna will operate to altitudes of 60,000 feet and in temperature ranges from -67° F to +180° F. The average power capacity is 500 watts. The ratio of the upper operating frequency to the lower operating frequency is 1.46.



Hallicrafters 041-334304 Antenna

BEAM DATA:

Gain - 5 to 6 db.

Beam type - Omnidirectional in azimuth.

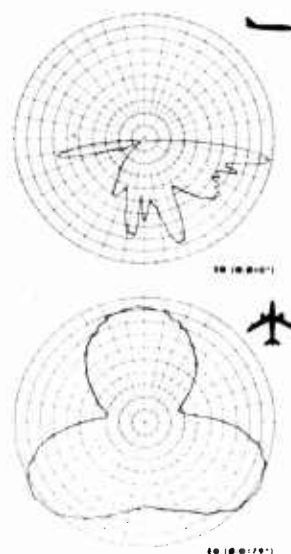
Polarization - Vertical and horizontal.

INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

REFERENCE:

Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED.



Hallicrafters 041-334304 Radiation Patterns

ANTENNA 041-337204 (Hallicrafters)

FREQUENCY: SHF band, X-band; VSWR < 2.

TYPE: Ground-plane antenna.

DESCRIPTION: The antenna is a stub, approximately 3/8 inches high, and includes a mounting plate (3 inches in diameter) which serves as the ground plane. Mounting is by means of eight holes on a 2.625-inch-diameter bolt circle. The antenna is fed by coaxial

cable which is fed by a waveguide. Power capacity is 400 watts. The ratio of the upper operating frequency to lower operating frequency is 1.33.

BEAM DATA:

Half-power beamwidth - Vertical - 30°.

Beam type - Omnidirectional in azimuth.

Polarization - Vertical.

UNCLASSIFIED

INSTALLATION: Airborne.

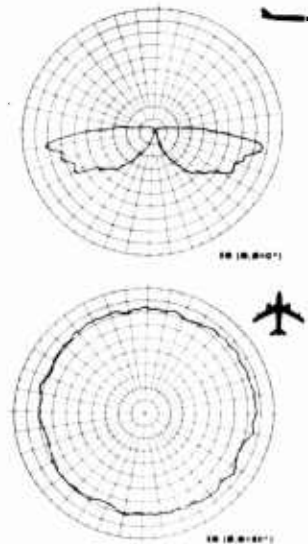
MANUFACTURER: The Hallicrafters Company.

REFERENCE:

Antennas and Transmission Systems. Chicago,  
Illinois: The Hallicrafters Company. UN-  
CLASSIFIED.



Hallicrafters 041-337204 Antenna



Hallicrafters 041-337204 Radiation Patterns

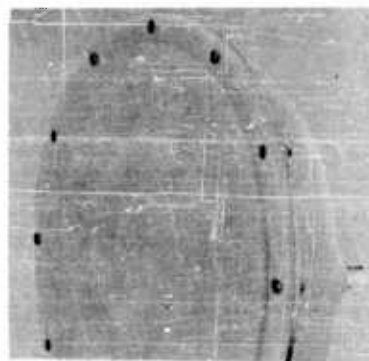
.....  
ANTENNA 041-436129 (Hallicrafters)

FREQUENCY: Probably UHF and SHF bands, S-band,  
VSWR < 2.

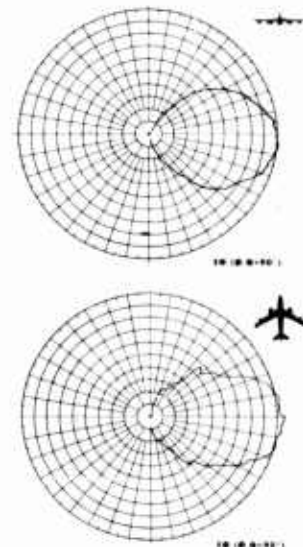
holes. The antenna is fed by coaxial cable  
and is designed to operate to altitudes of

TYPE: Spiral.

DESCRIPTION: The antenna is a spiral en-  
closed in a cylindrical housing about 12  
inches in diameter. The antenna element  
is probably formed within the Marlex 50  
(rigid polyethylene) flush-type mounting  
plate. The plate is 12-1/2 inches in diam-  
eter and includes six equally spaced mounting



Hallicrafters 041-436129 Antenna



Hallicrafters 041-436129 Radiation Patterns

UNCLASSIFIED



# UNCLASSIFIED

50,000 feet and in temperatures from  $-54^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$ . The antenna is used for receiving in fields up to 2 watts per square inch power density. The ratio of the upper operating frequency to the lower operating frequency is 2.8.

## BEAM DATA:

Gain - 6 db.  
Half-power beamwidth -  $75^{\circ}$ .  
Beam type - Unidirectional,  $\text{Cos}^3$ -type pattern.  
Polarization - Circular.

INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

## REFERENCE:

Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED.

## ANTENNA 041-437205 (Hallicrafters)

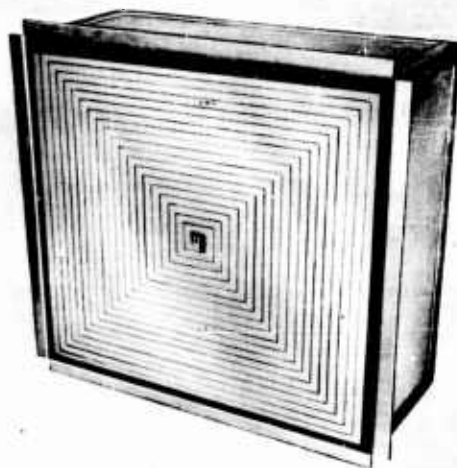
FREQUENCY: VHF and UHF bands, 65 - 320 mc.

TYPE: Modified square spiral.

DESCRIPTION: The antenna consists of a square "spiral" element flush mounted on a 30-5/8-inch-square enclosure 12-3/16 inches deep. The assembly mounts by means of 44 holes, 11 per side equally spaced. The antenna is fed by coaxial cable and is designed for receiving in fields up to 2 watts per square inch power density. A type-N female connector is provided on the rear of the enclosure.

## BEAM DATA:

Gain - 3.7 db.  
Beam type - Unidirectional.  
Polarization - Circular.



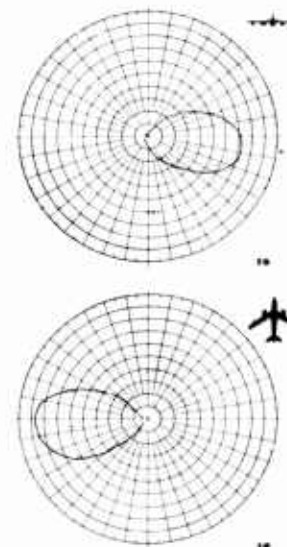
Hallicrafters 041-437205 Antenna

INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

## REFERENCE:

Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED.



Hallicrafters 041-437205 Radiation Patterns

## ANTENNA 041-536234 (Hallicrafters)

FREQUENCY: UHF band, L-band, VSWR  $< 1.45$ .

TYPE: Logarithmic periodic structure.

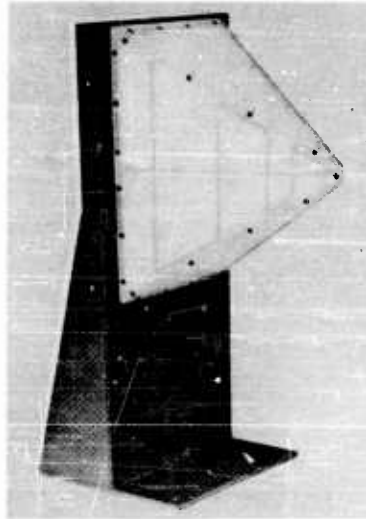
DESCRIPTION: The antenna consists of a logarithmic periodic structure probably embedded in a trapezoidally shaped dielectric.

UNCLASSIFIED

Dimensions are approximately 6 inches deep, 8-1/8 inches high, and 5-1/8 inches wide for the antenna with a support 14 inches high and 6 inches wide. The antenna is fed by coaxial cable through a type N connector and is designed to operate to an altitude of 60,000 feet and in temperatures from -67° F +180° F. The average power capacity is 150 watts.

BEAM DATA:

Gain - 4 db.  
Half-power beamwidth - Approximately 90°.  
Beam type - Unidirectional.  
Polarization - Horizontal and vertical depending on mounting position.



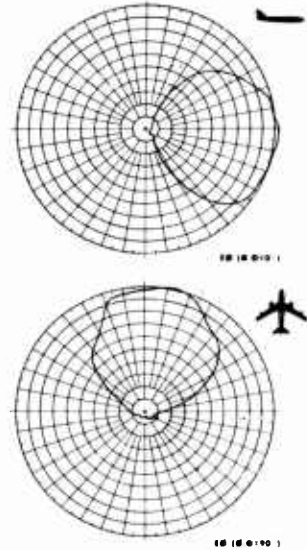
Hallicrafters 041-536234 Antenna

INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

REFERENCE:

Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED.



Hallicrafters 041-536234 Radiation Patterns

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ANTENNA 057-300246 (Hallicrafters)

FREQUENCY: Probably UHF and/or SHF bands,  
S-band; VSWR < 1.7.

TYPE: Stub.

DESCRIPTION: The antenna is a stub designed to operate to an altitude of 80,000 feet and in temperatures from -85° F to +212° F. It is capable of radiating 500 watts and has a ratio of upper operating frequency to lower operating frequency of 1.7.

BEAM DATA:

Gain - 4 to 5 db.  
Half-power beamwidth - Vertical - 20°.

Beam type - Omnidirectional in azimuth.  
Polarization - Vertical.

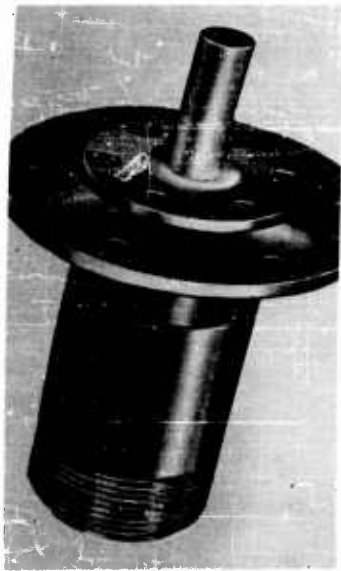
INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

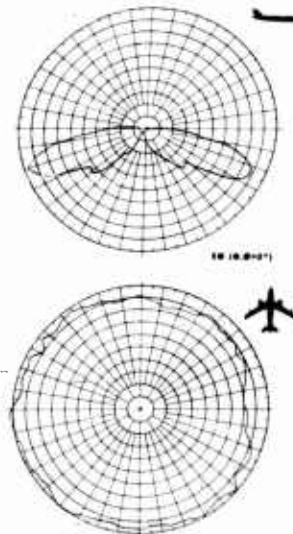
REFERENCE:

Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED.

UNCLASSIFIED



Hallicrafters 057-300246 Antenna.



Hallicrafters 057-300246 Radiation Patterns

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ANTENNA 057-300265 (Hallicrafters)

FREQUENCY: Probably UHF and/or SHF bands,  
S-band; VSWR < 1.8.

TYPE: Stub.

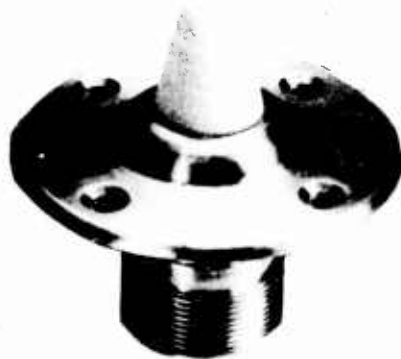
DESCRIPTION: The antenna is a conically shaped stub approximately 1.45 inches high and 0.831 inches in maximum diameter. A mounting flange 3 inches in diameter serves as the ground plane. The antenna will operate to an altitude of 80,000 feet and in temperatures from -65° C to +120° C. The ratio of the upper operating frequency to the lower operating frequency is 2.17. The average power capacity is 400 watts.

BEAM DATA:

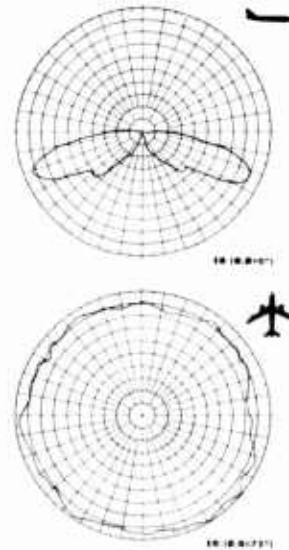
Half-power beamwidth - Vertical - 30°.

Beam type - Omnidirectional in azimuth.

Polarization - Vertical.



Hallicrafters 057-300265 Antenna



Hallicrafters 057-300265 Radiation Patterns

# UNCLASSIFIED

INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

REFERENCE:

Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED.

## ANTENNA 057-300314 (Hallicrafters)

FREQUENCY: Probably UHF and/or SHF bands, S-band; VSWR < 1.3.

TYPE: Scimitar.

DESCRIPTION: The antenna is a scimitar mounted on a streamlined support which serves, together with the aircraft skin, as the ground plane. Overall dimensions, including the coaxial connector, are 6-1/4 inches high, 1-7/8 inches wide, and 3-9/16 inches deep. The antenna will operate to altitudes of 60,000 feet and in temperatures from -67° F to +250° F. The average power capacity is 500 watts. The ratio of the upper operating frequency to the lower operating frequency is 1.74.



Hallicrafters 057-300314 Antenna

BEAM DATA:

Gain - 5 to 6 db.

Beam type - Omnidirectional in azimuth within 5 db, and almost hemispherical in elevation.

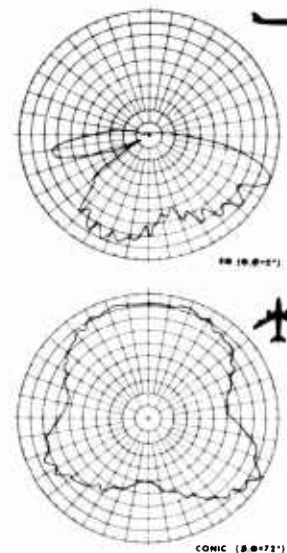
Polarization - Vertical and horizontal.

INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

REFERENCE:

Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED.



Hallicrafters 057-300314 Radiation Patterns

## ANTENNA 057-300339 (Hallicrafters)

FREQUENCY: SHF band, C-band; VSWR < 2.

TYPE: Spiral.

DESCRIPTION: The antenna is a spiral enclosed in a cylindrical housing about 6 inches in diameter. The antenna element is probably formed within the Marlex 50 (rigid polyethylene) flush-type mounting plate. The plate is 7-1/2 inches in diameter and has six holes equally spaced on a 6-7/8-inch-diameter bolt circle. The antenna is fed by coaxial cable. It is designed to operate

to altitudes of 50,000 feet and in temperatures from -54° C to +55° C. The antenna is designed for receiving and will handle a power density of 2 watts per square inch incident on the antenna. The ratio of the upper operating frequency to the lower operating frequency is 2.3.

BEAM DATA:

Gain - 6 db.

Half-power beamwidth - 75°.

Beam type - Unidirectional, Cos<sup>3</sup>-type pattern.

Polarization - Circular.

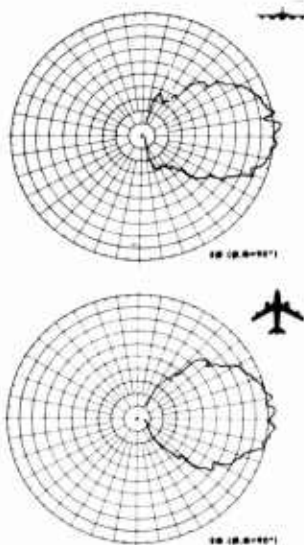
UNCLASSIFIED

INSTALLATION: Airborne.

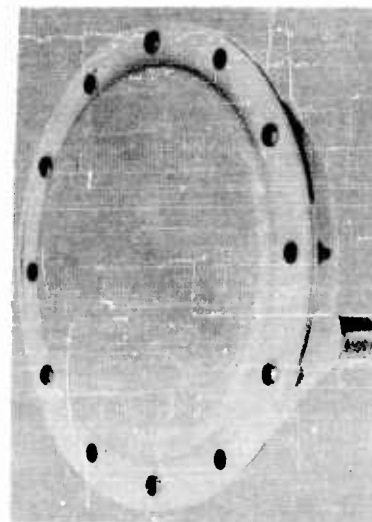
MANUFACTURER: The Hallicrafters Company.

REFERENCE:

Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED.



Hallicrafters 057-300339 Radiation Patterns



Hallicrafters 057-300339 Antenna

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ANTENNA 057-300343 (Hallicrafters)

FREQUENCY: SHF band, X-band; VSWR < 1.3.

TYPE: Stacked array of slots.

DESCRIPTION: The antenna is a waveguide having slot radiators, attached to a mounting plate 5-1/2 inches in diameter and enclosed in a radome constructed of Marlex 50 material, approximately dome shaped, with a maximum diameter of 4-11/64 inches. The height, including the mounting plate, is 3-43/64 inches. The mounting plate has eight holes equally spaced on a 4.75-inch-diameter bolt circle. The average power capacity is 500 watts. The antenna is fed with RG-52/U rectangular waveguide.

BEAM DATA:

Gain - 10 to 11 db.

Beam type - Omnidirectional in azimuth within 6 db, maximum radiation in elevation approximately 11° to 14° below horizontal.

Polarization - Horizontal.

INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

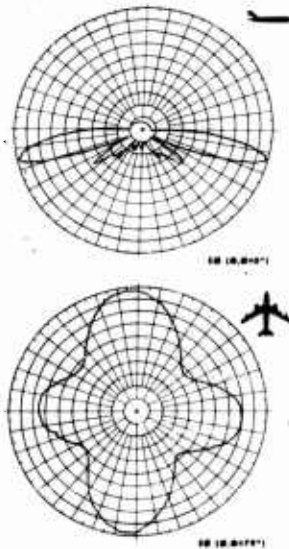


Hallicrafters 057-300343 Antenna

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REFERENCE:

Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED.



Hallicrafters 057-300343 Radiation Patterns

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ANTENNA 057-300347 (Hallicrafters)

FREQUENCY: SHF band, 8000 - 21,000 mc.

TYPE: Spiral.

DESCRIPTION: The antenna is a spiral enclosed in a cylindrical Teflon radome 2-3/8 inches in diameter and 1 inch deep. The element is probably formed within the Teflon flush-type mounting plate which has four mounting holes equally spaced on a 3.75-inch-diameter

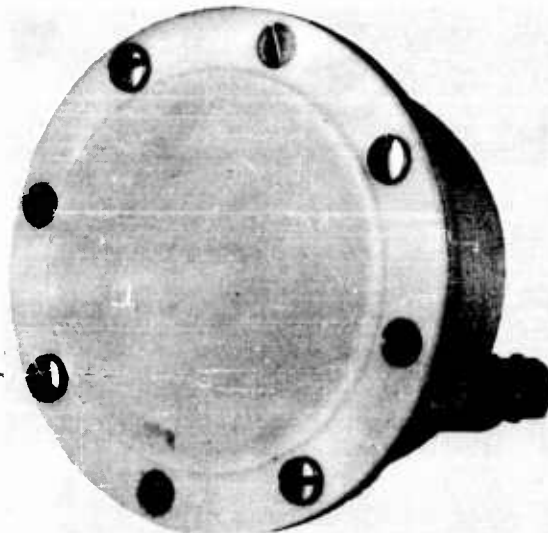
bolt circle. The antenna is fed by coaxial cable and is designed to operate to altitudes of 50,000 feet and in temperatures from -54° C to +55° C. The antenna is used for receiving only.

BEAM DATA:

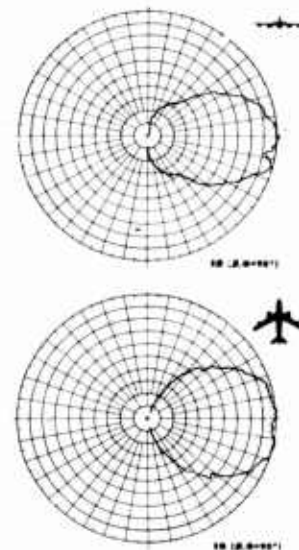
Half-power beamwidth -  $75^\circ \pm 15^\circ$ .

Beam type - Unidirectional.

Polarization - Circular.



Hallicrafters 057-300347 Antenna



Hallicrafters 057-300347 Radiation Patterns

UNCLASSIFIED

# UNCLASSIFIED

INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

REFERENCE:

Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED.

## ANTENNA 057-400309 (Hallicrafters)

FREQUENCY: Probably UHF and/or SHF bands, S-band; VSWR < 1.3.

TYPE: Scimitar.

DESCRIPTION: The antenna is a scimitar 2 inches high. It is mounted on a 5-1/2-inch-diameter mounting plate which serves as the ground plane. The average power capacity is 400 watts. The ratio of upper operating frequency to lower operating frequency is 1.8. The antenna is fed by waveguide.

### BEAM DATA:

Gain - 4 to 5 db.

Beam type - Omnidirectional in azimuth, approximately hemispherical in elevation.

Polarization - Vertical and horizontal.



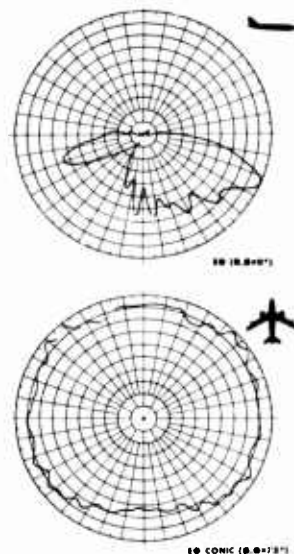
Hallicrafters 057-400309 Antenna

INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

REFERENCE:

Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED.



Hallicrafters 057-400309 Radiation Patterns

## ANTENNA 057-400331 (Hallicrafters)

FREQUENCY: Probably SHF band, S-band, probably 3050 - 3650 mc; VSWR < 1.3.

TYPE: Stacked array of slots.

DESCRIPTION: The antenna is a cylinder 9-5/32 inches long. It has a stacked array of slots and is enclosed in a fiberglass laminate. Its mounting plate is 5-1/2 inches in diameter and has eight holes equally spaced on a 4.75-inch-diameter bolt circle. The average power capacity is 500 watts. The antenna is fed by a coaxial cable and is designed to operate to an altitude of 60,000 feet and in temperatures from -67° to +250° F.

### BEAM DATA:

Gain - 6 to 7 db.

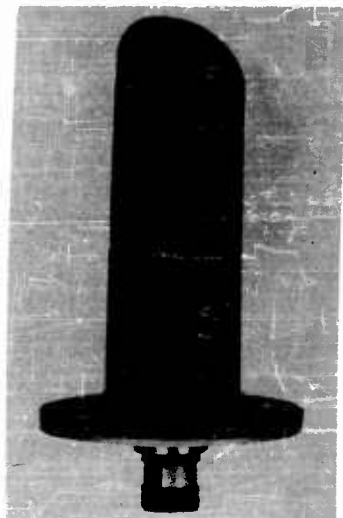
Beam type - Omnidirectional in azimuth within 3 db, maximum radiation in elevation approximately 15° below horizontal.

Polarization - Horizontal.

INSTALLATION: Airborne.

MISCELLANEOUS: The 057-400331 antenna is probably the same as the S-2 and S-2(T)B antennas.

MANUFACTURER: The Hallicrafters Company.



Hallicrafters 057-400331 Antenna

REFERENCE:

Antennas and Transmission Systems. Chicago,  
Illinois: The Hallicrafters Company. UN-  
CLASSIFIED.

## ANTENNA 057-400334 (Hallicrafters)

FREQUENCY: Probably UHF band, S-band, probably  
2660 - 2950 mc; VSWR < 1.3.

TYPE: Stacked array of slots.

DESCRIPTION: The antenna is a cylinder with  
an overall length, including coaxial connec-  
tor, of 11-7/8 inches. It has a stacked  
array of slots and is enclosed in an airfoil  
of fiberglass laminate. The average power  
capacity is 500 watts. The antenna is de-  
signed to operate to an altitude of 60,000  
feet and in temperatures from -67° F to +250° F.  
The ratio of the upper operating frequency  
to the lower operating frequency is 1.2.

BEAM DATA:

Gain - 6 to 7 db.

Beam type - Omnidirectional in azimuth, maxi-  
mum radiation in elevation approximately 15°  
below horizontal.

Polarization - Horizontal.

INSTALLATION: Airborne.

MISCELLANEOUS: The 057-400334 antenna is prob-  
ably the S-1 antenna.

MANUFACTURER: The Hallicrafters Company.

REFERENCE:

Antennas and Transmission Systems. Chicago,  
Illinois: The Hallicrafters Company. UN-  
CLASSIFIED.



Hallicrafters 057-400334 Antenna



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ANTENNA 092-204489 (Hallicrafters)

FREQUENCY: UHF band, L-band; VSWR < 2.

TYPE: Spiral.

DESCRIPTION: The antenna is a spiral enclosed in a fiberglass laminate radome 18 inches in diameter and approximately 4-1/2 inches deep. The antenna is flush-mounted by means of six holes equally spaced on a 17-1/4-inch-diameter bolt circle. The antenna is fed by coaxial cable and includes a type-N connector. It is designed to operate to an altitude of 50,000 feet and in temperatures from -54° C to +55° C. The average power-handling capacity is 2 watts per square inch, receiving. The ratio of the upper operating frequency to the lower operating frequency is 2.5.



Hallicrafters 092-204489 Antenna

BEAM DATA:

Gain - 6 db.

Half-power beamwidths - Vertical - 75°.  
Horizontal - 75°.

Beam type - Unidirectional.

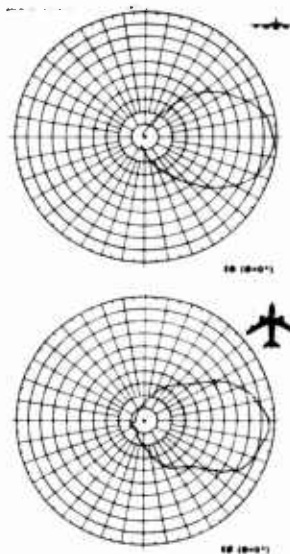
Polarization - Circular.

INSTALLATION: Airborne.

MANUFACTURER: The Hallicrafters Company.

REFERENCE:

Antennas and Transmission Systems. Chicago, Illinois: The Hallicrafters Company. UNCLASSIFIED.



Hallicrafters 092-204489 Radiation Patterns

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UNCLASSIFIED

## INDEX

Nomenclatures and stock numbers are ordered in a left-justified alpha-numeric arrangement as explained in the preface. In addition, certain keys are employed to aid identification. An asterisk preceding an antenna nomenclature denotes a manufacturer's designation. A single dot denotes an unnomencatured antenna that has been named, either by the developing agency or by one of the catalogers. Sometimes these names were too long to fit in the space allotted on the IBM cards. In these cases, the names were abbreviated and do not exactly correspond to the names appearing in the text. However, no difficulty in matching should be encountered. Two dots preceding a nomenclature indicate that it applies to the associated equipment rather than the antenna. In the indexes antenna designations containing these keys are listed ahead of the JAN antenna nomenclatures.

UNCLASSIFIED

## ANTENNA TYPE INDEX

## Adcock

AN/APA-24(\*).....VHF,UHF  
 AS-101/APA-24.....VHF,UHF  
 AS-158/APA-24.....VHF,UHF  
 AS-269/APA-42.....VHF,UHF  
 AS-270/APA-42.....VHF,UHF  
 AS-271/APA-42.....VHF,UHF  
 AS-272/APA-42.....VHF,UHF  
 AS-302/APA-24A.....VHF,UHF  
 AS-303/APA-24A.....VHF,UHF  
 AS-304/APA-24A.....VHF,UHF  
 AS-305/APA-24A.....VHF,UHF  
 AS-84/APA-24.....VHF,UHF  
 AS-86/ARD-3.....VHF,UHF  
 AS-88/APA-24.....VHF,UHF  
 AT-132/ARD-4.....VHF,UHF

## Blade

\*DM K3.....VHF,UHF  
 \*DM NI3.....VHF,UHF  
 \*DM NI3-2.....VHF,UHF  
 \*DM NI3-3.....VHF,UHF  
 \*DM NI3-4.....VHF,UHF  
 \*DM S1.....VHF,UHF  
 \*DM V1.....VHF,UHF  
 \*DM V3.....VHF,UHF  
 \*MD015.....VHF,UHF  
 \*M4008.....VHF,UHF  
 \*M4011.....VHF,UHF  
 \*M4012.....VHF,UHF  
 \*M4013.....VHF,UHF  
 AS-321()/APT-13.....VHF,UHF  
 AS-322()/APT.....VHF,UHF  
 AS-638/A.....VHF,UHF  
 AT-121(\*)/AP.....VHF,UHF  
 AT-125(\*)/AP.....VHF,UHF  
 AT-126(\*)/AP.....VHF,UHF  
 AT-127(\*)/AP.....VHF,UHF  
 AT-130/AP.....VHF,UHF  
 AT-135/AP.....VHF,UHF  
 AT-175(\*)/AP.....VHF,UHF  
 AT-193(\*)/AP.....VHF,UHF  
 AT-184(\*)/AP.....VHF,UHF  
 AT-185(\*)/AP.....VHF,UHF  
 AT-189(\*)/AP.....VHF,UHF  
 AT-190(\*)/AP.....VHF,UHF  
 AT-191(\*)/AP.....VHF,UHF  
 AT-256(\*)/ARC.....VHF,UHF  
 AT-335/ARW.....VHF,UHF  
 AT-36(\*)/APT.....VHF,UHF  
 AT-37(\*)/APT.....VHF,UHF  
 AT-39(\*)/APT.....VHF,UHF  
 AT-41/APT.....VHF,UHF  
 AT-42/APT.....VHF,UHF  
 AT-43/APT.....VHF,UHF  
 AT-501/AP.....VHF,UHF  
 AT-52/AP.....VHF,UHF  
 AT-53/AP.....VHF,UHF  
 AT-54/AP.....VHF,UHF  
 AT-708/AR.....VHF,UHF  
 AT-840/ARC.....VHF,UHF  
 AT-884/APX-44.....VHF,UHF  
 AT-895/A.....VHF,UHF  
 AT-896/A.....VHF,UHF  
 AT-897/A.....VHF,UHF  
 AT-923/ARC-84.....VHF,UHF  
 AT-929/AP.....VHF,UHF  
 AT-96(\*)/APN-12.....VHF,UHF  
 AT-97/APN-12.....VHF,UHF

## Collinear Array

AS-311()/APQ.....SHF  
 AS-82(\*)/APQ-7.....SHF  
 AT-913/APN-133.....SHF

## Conical

AS-1072()/DPN.....SHF  
 AS-115/APT+().....VHF,UHF  
 AS-124/APR.....VHF,UHF  
 AS-125/APR.....VHF,UHF  
 AS-246/AP.....VHF,UHF  
 AS-26/APR-2.....VHF,UHF  
 AS-282/AP.....VHF,UHF

## Conical (continued)

AS-29/APR-1.....VHF,UHF  
 AS-44/APR-5.....VHF,UHF  
 AS-482/APR.....VHF,UHF  
 AS-70/APR-4.....VHF,UHF  
 AT-123/AP.....VHF,UHF  
 AT-214/APR.....VHF,UHF  
 AT-220/APR-9.....VHF,UHF  
 AT-49(\*)/APR-4.....VHF,UHF  
 AT-522/URM-42.....VHF,UHF

## Corner Reflector

AS-739/APX.....VHF,UHF

## Cut Paraboloidal Reflector

AS-17(\*)/APS.....SHF  
 AS-237/APS-20.....SHF  
 AS-247/APA-17B.....SHF  
 AS-287(\*)/APS-31.....SHF  
 AS-301()/APS-30.....SHF  
 AS-378/APS-33A.....SHF  
 AS-5/APS-2.....SHF  
 AS-539/APS-20.....SHF  
 AS-553/APS-31B.....SHF  
 AS-561/APS-44.....SHF  
 AS-567(\*)/APS-33B.....SHF  
 AS-617/APS-33F.....SHF  
 AS-628/APS-31C.....SHF  
 AS-653/APN-59.....SHF  
 AS-657/ALA-6.....SHF  
 AS-985/APS-88.....SHF  
 AT-560/APN-59.....SHF  
 OA-493/APS-20.....SHF  
 RC-266-().....SHF  
 RC-284-().....SHF

## Dielectric Rod

AT-115/AP.....VHF,UHF  
 AT-147/AP.....VHF,UHF  
 AT-224/APG-30.....VHF,UHF

## Dipole

\*DM C10-2.....VHF,UHF  
 \*DM C11.....VHF,UHF  
 \*DM NI12.....VHF,UHF  
 \*DM NI-2.....VHF,UHF  
 \*37J-2.....VHF,UHF  
 AN/APA-24(\*).....VHF,UHF  
 AN/ARA-31+().....VHF,UHF  
 AN-148-A(MODIFIED).....VHF,UHF  
 AN-181.....VHF,UHF  
 AN-182.....VHF,UHF  
 AN-183.....VHF,UHF  
 AN-184.....VHF,UHF  
 AN-185.....VHF,UHF  
 AN-50-A.....VHF,UHF  
 AN-69-().....VHF,UHF  
 AS-101/APA-24.....VHF,UHF  
 AS-108B/APA-17.....VHF,UHF  
 AS-1105/ASR-5.....VHF,UHF  
 AS-135/APN-13.....VHF,UHF  
 AS-14(\*)/AP.....VHF,UHF  
 AS-146/AXR-3.....VHF,UHF  
 AS-15/AP.....VHF,UHF  
 AS-158/APA-24.....VHF,UHF  
 AS-164/AP.....VHF,UHF  
 AS-167(\*)/APQ-7.....VHF,UHF  
 AS-172/AP.....VHF,UHF  
 AS-181/AP.....VHF,UHF  
 AS-23/AP.....VHF,UHF  
 AS-242/A.....VHF,UHF  
 AS-245/AP.....VHF,UHF  
 AS-254/ARW-38.....VHF,UHF  
 AS-256/APW-2.....VHF,UHF  
 AS-269/APA-42.....VHF,UHF  
 AS-27(\*)/ARN-5.....VHF,UHF  
 AS-270/APA-42.....VHF,UHF  
 AS-271/APA-42.....VHF,UHF  
 AS-272/APA-42.....VHF,UHF  
 AS-273/ARN.....VHF,UHF  
 AS-302/APA-24A.....VHF,UHF  
 AS-303/APA-24A.....VHF,UHF

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## ANTENNA TYPE INDEX (continued)

### Dipole (continued)

AS-304/APA-24A.....VHF,UHF  
 AS-305/APA-24A.....UHF  
 AS-31(\*)/APN-7.....UHF,SHF  
 AS-312(\*)/APA-48.....VHF  
 AS-366(\*)/AR.....UHF  
 AS-580(\*)/ARN-30.....VHF  
 AS-61/ARN-5.....UHF  
 AS-655/ALA-6.....VHF,UHF  
 AS-66/APA-9.....SHF  
 AS-665/APN-42.....UHF  
 AS-786/A.....VHF,UHF  
 AS-84/APA-24.....VHF  
 AS-86/ARD-3.....UHF  
 AS-88/APA-24.....VHF  
 AT-119/ARW.....VHF  
 AT-128/AP.....VHF  
 AT-131/AP.....VHF  
 AT-172(\*)/ARN-14.....VHF  
 AT-347(\*)/UPN.....UHF  
 AT-4(\*)/ARN-1.....UHF  
 AT-448/ARN-33.....VHF  
 AT-449/ARN-33.....VHF  
 AT-734/ARA-36.....HF  
 AT-764/AR.....VHF  
 AT-86/ART-22.....HF,VHF,UHF  
 AT-871/APW.....UHF  
 AT-89/AP.....VHF  
 AT-90/AP.....VHF,UHF  
 AT-91/AP.....UHF  
 AT-92/AP.....UHF  
 AT-93/AP.....UHF  
 AT-94/AP.....UHF  
 AT-95/AP.....UHF  
 AT-986/ASR-5(V).....  
 AT-987/ASR-5(V).....  
 AT-998/ASR-5(V).....  
 OA-846(\*)/ARC-44.....HF,VHF  
 RC-128-(\*).....  
 66AAU.....UHF  
 66ADL.....SHF  
 66ADM.....SHF

### End-Fire Array

AS-132/APG-13.....UHF  
 AS-68/APG-5.....UHF

### Flat-Screen Reflector

AS-624/APX.....UHF  
 AS-625/APX.....UHF

### Folded Dipole

AT-919/APW-22.....

### Ground Plane

\*041-337204.....SHF  
 AN-164.....VHF,UHF  
 AN-165.....UHF  
 AS-246/AP.....UHF,SHF  
 AT-945/ARW-72.....UHF  
 66ACP.....VHF  
 66ADT.....VHF,UHF  
 66ADU.....UHF  
 66AEC.....VHF  
 66AED.....VHF  
 66AEE.....VHF  
 66AEF.....VHF  
 66AEG.....UHF  
 66AEH.....UHF  
 66AEJ.....UHF  
 66AEK.....UHF  
 66AEL.....UHF  
 66AEM.....UHF  
 66AEN.....UHF  
 66AFW.....VHF,UHF  
 66AFX.....VHF  
 66AFY.....VHF  
 66AFZ.....VHF  
 66AGA.....UHF  
 66AGB.....UHF

### Helical

\*T-16-1.....UHF  
 \*T-16-2.....UHF  
 \*T-16-3.....UHF,SHF  
 \*T-16-4.....SHF  
 \*T-9-1.....UHF  
 AS-1106/ASR-5.....  
 AS-1107/ASR-5.....  
 AS-1124/ASR-5(V).....  
 AS-1126/ASR-5(V).....  
 AS-1128/ASR-5(V).....  
 AT-(XA-125)/AP.....UHF  
 AT-(XA-138)/UKR-1.....UHF  
 AT-(XA-166)/APT.....UHF,SHF  
 AT-1001/ASR-5(V).....  
 AT-1003/ASR-5(V).....  
 AT-230/APR-9.....UHF  
 AT-995/A.....  
 AT-997/A.....  
 AT-999/ASR-5(V).....

### Horn

\*DM P4.....SHF  
 \*DM P5.....SHF  
 \*M4205.....UHF,SHF  
 \*M9001.....UHF  
 \*TX-10.....SHF  
 \*041-330660.....SHF  
 AS-1104/ASR-5.....  
 AS-1131/ASR-5(V).....  
 AS-1132/ASR-5(V).....  
 AS-1133/ASR-5(V).....  
 AS-259/AP.....UHF,SHF  
 AS-373(\*)/APG-3.....SHF  
 AS-384/APG-18.....SHF  
 AS-872/APA-137.....UHF  
 AT-1000/ASR-5(V).....  
 AT-1002/ASR-5(V).....  
 AT-103/APS-15.....SHF  
 AT-223/APG-30.....SHF  
 AT-245/APG-30.....SHF  
 AT-305/APA-70.....UHF  
 AT-306/APA-70.....UHF,SHF  
 AT-307/APA-70.....SHF  
 AT-521/URM-42.....SHF  
 AT-67/AP.....UHF,SHF  
 AT-996/ASR-5(V).....  
 AT-998/ASR-5(V).....

### Inverted "L"

AT-701/AR.....VHF  
 AT-805/ARN.....VHF  
 AT-817/ARN.....VHF

### Lens

AS-1108/ASR-5.....  
 AS-1118/ASR-5(V).....  
 AS-1125/ASR-5(V).....  
 AS-1127/ASR-5(V).....  
 AS-1129/ASR-5(V).....  
 AS-1130/ASR-5(V).....

### Long Wire

AS-187/ARQ-11.....HF,VHF  
 AS-189/ARQ-11.....HF,VHF  
 AS-206/ART-19.....MF,HF  
 AS-211/AR.....HF  
 AS-315(\*)/A.....LF,MF,HF  
 AS-401/A.....UHF  
 AS-669/ARN-34.....LF,MF  
 AT-452/AR.....  
 AT-890/ARN.....LF,MF  
 OA-429/ALT-3+(\*).....MF,HF

### Loop

\*ADF-12(\*).....LF,MF  
 \*AML-10.....LF,MF,HF  
 \*DM N2.....VHF  
 \*DM N4-2.....VHF

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## ANTENNA TYPE INDEX ( continued )

### Loop (continued)

\*DM N4-4.....VHF  
 \*DM N4-5.....VHF  
 \*DM N5.....VHF  
 \*L-10.....LF, MF  
 \*L-10A.....LF, MF  
 \*MN-20(\*).....LF, MF, MF  
 \*MN-24(\*).....LF, MF, MF  
 \*MN-36(\*).....LF, MF  
 \*MN-60(\*).....LF, MF  
 AN-100.....VHF  
 AN-132.....LF, MF  
 AS-100/APX.....UHF  
 AS-137/ARN.....LF, MF  
 AS-138/ARN.....LF, MF  
 AS-140(\*)/ARN-6.....LF, MF  
 AS-141/APN-6.....LF, MF  
 AS-153/ARN.....LF, MF  
 AS-222/APA-17B.....VHF  
 AS-281/ARN.....LF, MF  
 AS-313(\*)/ARN-6.....LF, MF  
 AS-369/APA-17B.....VHF  
 AS-370/APA-17B.....VHF  
 AS-654(\*)/ALA-6.....VHF  
 AS-669/ARN-34.....LF, MF  
 AS-698/ARN-27.....LF  
 AS-875/ARN-6.....LF, MF  
 AS-963/ARD-13.....LF, MF  
 AT-(XA-107)/ARN.....UHF  
 AT-23/ARA-1.....LF, MF  
 AT-269/ARN-6A.....LF, MF  
 AT-326/ARN.....UHF  
 AT-382/ARC.....LF, MF  
 AT-430/ARD-7.....LF, MF  
 AT-436/APN-14.....VHF  
 AT-447/ARD-8.....LF, MF  
 AT-533/ARN.....LF, MF  
 AT-556(\*)/ARN-41.....LF, MF  
 AT-593(\*)/ARN-42.....LF, MF  
 AT-780/ARN.....LF, MF  
 AT-83/AP.....VHF  
 LP-21-A.....LF, MF  
 LP-21-AM.....LF, MF  
 LP-21-B.....LF, MF  
 LP-21-F.....LF, MF  
 LP-21-LM.....LF, MF  
 -P-31-A.....LF, MF  
 LP-31-AM.....LF, MF  
 69054.....LF, MF  
 69065.....VLF, LF, MF

### Mastress

AS-959/ASQ-29.....SHF

### Monopole

AS-108(\*)/APA-17.....VHF, UHF  
 AT-383/ARC.....VHF

### Parabolic-Cylinder Reflector

AS-279/APG-17.....UHF  
 AS-288/APS-32.....SHF  
 AS-290/APS-34.....SHF  
 AS-291/APQ.....SHF  
 AS-292/APS-35.....SHF  
 AT-116/APQ.....SHF

### Paraboloidal Reflector

\*001-403631.....UHF, SHF  
 AS-1058/APW-23.....SHF  
 AS-12/APS-3.....SHF  
 AS-13/APG-2.....SHF  
 AS-154(\*)/APS-10.....SHF  
 AS-163/APS-3A.....SHF  
 AS-179/APS-3A.....SHF  
 AS-182/APG-3.....SHF  
 AS-186/APA-17.....UHF, SHF  
 AS-205(\*)/APS-4.....SHF  
 AS-21/APQ-10.....SHF  
 AS-217(\*)/APG-15.....UHF  
 AS-22/APS-3.....SHF  
 AS-238/APS-19.....SHF  
 AS-24/APS-6.....SHF

### Paraboloidal Reflector (continued)

AS-278/APS-10A.....SHF  
 AS-284/APS-19.....SHF  
 AS-289(\*)/APS-33.....SHF  
 AS-298(\*)/APS-20.....UHF  
 AS-314(\*)/APG-13B.....UHF  
 AS-323/APG-16.....SHF  
 AS-331/APG-15C.....UHF  
 AS-368/APN-57.....SHF  
 AS-387/APG-28.....SHF  
 AS-392/APG-5C.....UHF  
 AS-409/APG-27.....SHF  
 AS-428(\*)/APS-42.....SHF  
 AS-448(\*)/APG-32.....SHF  
 AS-485/APG-5C.....UHF  
 AS-487/APG-33.....SHF  
 AS-53/APQ-13.....SHF  
 AS-54(\*)/APQ-13.....SHF  
 AS-549/APS-21B.....SHF  
 AS-55(\*)/APQ-13.....SHF  
 AS-562/APS-44A.....SHF  
 AS-568/APG-41.....SHF  
 AS-573/APG-32A.....SHF  
 AS-579/APG.....SHF  
 AS-602/APS-19B.....SHF  
 AS-619/APS-5A.....SHF  
 AS-630/APS-19C.....SHF  
 AS-652/APN-59.....SHF  
 AS-656/ALA-6.....UHF, SHF  
 AS-7/APG-1.....SHF  
 AS-724/APG-41B.....SHF  
 AS-850/APN-107.....SHF  
 AS-874/APX.....UHF  
 AS-960/ASQ-29.....SHF  
 AT-178/APS-42.....SHF  
 AT-369/APG-44.....SHF  
 AT-559/APN-59.....SHF  
 AT-62/APS-3.....SHF  
 AT-620/APQ-39.....UHF  
 AT-936/USD-1.....SHF  
 RC-129-1.....UHF  
 RC-187-1.....UHF  
 RC-264-1.....UHF, SHF  
 RC-286.....UHF, SHF  
 RC-94-1.....SHF  
 66ACH.....SHF  
 66ACY.....SHF

### Parasitic Array

AS-191/AX.....VHF  
 AS-192/AX.....VHF  
 AS-193/AX.....VHF  
 AS-194/AX.....VHF, UHF  
 AS-195/AX.....UHF  
 AS-196/AX.....UHF  
 AS-197/AX.....UHF  
 AS-198/AX.....UHF  
 AS-199/AX.....UHF  
 AS-200/AX.....UHF  
 AS-23/AP.....UHF, SHF

### Periodic Structure

\*041-536234.....UHF

### Probe

AT-1004/ASR-5(V).....UHF  
 AT-220/APR-9.....UHF

### Rectangular Array

AS-335/ARD-4.....VHF

### Rod

\*A-15.....VHF  
 \*A-16.....VHF  
 AN-147-1(\*).....VHF  
 AN-167.....UHF  
 AN-95-1(\*).....UHF  
 AS-116/APR-3.....UHF  
 AS-117/APR-3.....UHF  
 AS-166/AP.....VHF  
 AS-168/AP.....VHF, UHF

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## ANTENNA TYPE INDEX ( continued )

### Rod (continued)

AS-215/ARN.....VHF  
 AS-234/ARW-26.....VHF  
 AS-339/APX-11.....UHF, SHF  
 AS-340/APX-16.....UHF, SHF  
 AS-456/APN-63.....UHF  
 AS-65/APQ-2(\*).....VHF, UHF  
 AS-70/APR-4.....VHF, UHF, SHF  
 AT-1/APN-2.....VHF  
 AT-180/ARW.....VHF  
 AT-181/ARW.....HF, VHF  
 AT-79/AP.....UHF  
 AT-80/AP.....UHF  
 AT-907/USD-1.....VHF  
 66ACA.....VHF

### Scimitar

\*041-334304.....SHF  
 \*057-300314.....UHF, SHF  
 \*057-400309.....UHF, SHF  
 AT-811/AP.....UHF  
 AT-812/AP.....UHF, SHF  
 AT-813/AP.....UHF, SHF  
 AT-814/AP.....UHF  
 AT-815/AP.....SHF  
 AT-823/AP.....UHF, SHF  
 AT-824/AP.....UHF, SHF  
 AT-829/AP.....UHF  
 AT-830/AP.....UHF  
 AT-831/AP.....UHF, SHF  
 AT-832/AP.....UHF, SHF  
 AT-833/AP.....SHF  
 AT-845/AP.....UHF, SHF

### Sleeve Dipole

\*M3204.....VHF, UHF  
 \*M3205.....VHF  
 \*M3206.....VHF, UHF  
 \*M3207.....UHF  
 \*M3211.....VHF  
 \*M3212.....VHF  
 AS-108(\*)/APA-17.....VHF, UHF  
 AT-(XA-114)/ARN.....VHF

### Slot

\*DM C4/B.....VHF, UHF  
 \*DM C4-3.....VHF, UHF  
 \*DM I2.....VHF  
 \*DM K1.....VHF  
 \*DM NI21.....UHF  
 \*DM NI22.....UHF  
 \*DM NI6.....UHF  
 \*DM NI7.....UHF  
 \*DM P2.....UHF  
 \*DM P3.....UHF  
 \*DM 220.....UHF  
 \*DM 327.....UHF  
 \*MG305.....UHF  
 \*M3302.....UHF  
 \*M6804.....UHF  
 \*M6806.....UHF  
 \*M6807.....UHF, SHF  
 \*M6809.....UHF  
 \*M6811.....UHF  
 \*M6812.....UHF  
 \*M7301.....VHF  
 \*M7302.....UHF  
 \*M7303.....UHF  
 \*M7304.....UHF  
 \*X-101.....UHF  
 \*X-102.....UHF  
 \*X-103.....SHF  
 \*001-403812.....UHF  
 \*057-300343.....SHF  
 \*057-400331.....SHF  
 \*057-400334.....UHF  
 AS-1059/ASQ-19.....VHF, UHF  
 AS-1101/APN-89A.....SHF  
 AS-180/APT.....UHF  
 AS-306/APN-11.....SHF  
 AS-316/AP.....UHF  
 AS-333(\*)/AP.....UHF  
 AS-521(\*)/APN-69.....SHF

### Slot (continued)

AS-578(\*)/ARA-25.....VHF, UHF  
 AS-60/APN-1.....UHF  
 AS-909/ARA-48.....VHF, UHF  
 AS-972/ASQ-19.....VHF, UHF  
 AT-(XA-106)/ARN-5A.....UHF  
 AT-(XA-109)/ARN-14.....VHF  
 AT-(XA-113)/ARN.....UHF  
 AT-(XA-118)/APN.....UHF, SHF  
 AT-(XA-121)/AP.....UHF  
 AT-1001/ASR-5(V).....UHF  
 AT-1003/ASR-5(V).....UHF  
 AT-134(\*)/ARN.....VHF  
 AT-171/AP.....UHF, SHF  
 AT-171A/AP.....UHF, SHF  
 AT-192(\*)/AP.....UHF, SHF  
 AT-220/APR-9.....UHF  
 AT-234/APX.....UHF  
 AT-246(\*)/U.....UHF, SHF  
 AT-247/U.....UHF, SHF  
 AT-300/APN.....UHF  
 AT-356/APR.....UHF  
 AT-505/AP.....UHF  
 AT-535/ARN.....VHF  
 AT-537/ARN.....VHF  
 AT-571/A.....UHF  
 AT-594/A.....UHF  
 AT-595/A.....UHF  
 AT-720/A.....UHF  
 AT-740/A.....UHF  
 AT-743/APW-16.....SHF  
 AT-878/APN.....UHF  
 AT-920/APN-134.....SHF  
 AT-995/A.....UHF  
 AT-997/A.....UHF  
 AT-999/ASR-5(V).....UHF

### Spiral

\*041-436129.....UHF, SHF  
 \*041-437205.....VHF  
 \*057-300339.....SHF  
 \*057-300347.....SHF  
 \*092-204489.....UHF  
 AS-1119/ASR-5(V).....UHF  
 AS-1120/ASR-5(V).....UHF  
 AS-1121/ASR-5(V).....UHF  
 AS-1122/ASR-5(V).....UHF  
 AS-1123/ASR-5(V).....UHF  
 AT-989/ASR-5(V).....UHF  
 AT-990/ASR-5(V).....UHF  
 AT-991/ASR-5(V).....UHF  
 AT-992/ASR-5(V).....UHF  
 AT-993/ASR-5(V).....UHF  
 AT-994/ASR-5(V).....UHF

### Stacked Array

\*001-403812.....UHF  
 \*057-300343.....SHF  
 \*057-400334.....UHF

### Structural

• FLUSH HOMING ANTENNA.....VHF  
 • ISOLATED TAIL ANTENNA.....LF  
 • PICKAXE ANTENNA.....VHF  
 • RHO ANTENNA.....VHF  
 • WING CAP ANTENNA.....MF, HF  
 AT-405/A.....VHF, UHF

### Stub

• VHF/IFF ANTENNA.....VHF  
 \*DM C3.....VHF, UHF  
 \*DM C3-2.....VHF, UHF  
 \*041-230399.....UHF, SHF  
 \*057-300246.....UHF, SHF  
 \*057-300265.....UHF, SHF  
 AN-104-(\*).....VHF  
 AN-132.....LF, MF  
 AN-155.....VHF, UHF  
 AN-166.....UHF  
 AN-65-().....UHF  
 AN-66-().....UHF  
 AS-1/APR-1.....VHF

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## ANTENNA TYPE INDEX ( continued )

### Stub (continued)

AS-114/APT.....VHF  
 AS-133/APX.....UHF  
 AS-148/ARA-8.....VHF  
 AS-25/APR-2.....VHF,UHF  
 AS-28/APR-1.....VHF  
 AS-285/UR.....VHF  
 AS-320(1)/APT.....VHF  
 AS-33/APT-2.....UHF  
 AS-336/AP.....VHF,UHF  
 AS-339/APX-11.....UHF,SHF  
 AS-340/APX-16.....UHF,SHF  
 AS-36/APQ-2.....VHF,UHF  
 AS-624/APX.....UHF  
 AS-625/APX.....UHF  
 AS-67/APQ-2B.....VHF,UHF  
 AS-786/A.....VHF,UHF  
 AT-(XA-119)/APN-34.....UHF  
 AT-(XA-120)/APN-34.....UHF  
 AT-104/APN-19.....UHF  
 AT-111/AP.....UHF  
 AT-13/APN-3.....VHF,UHF  
 AT-132/APD.....VHF  
 AT-14/APN-3.....VHF,UHF  
 AT-24/APQ-1.....UHF  
 AT-254(1)/APT.....VHF  
 AT-401/APN.....VHF  
 AT-446/ARR.....VHF  
 AT-450/ARC.....VHF,UHF  
 AT-456/AR.....VHF  
 AT-457/AR.....VHF  
 AT-491/AP.....VHF  
 AT-492/AP.....VHF,UHF  
 AT-493/AP.....UHF  
 AT-494/AP.....UHF,SHF  
 AT-5/ARR-1.....VHF  
 AT-520/AP.....UHF,SHF  
 AT-536/ARN.....VHF  
 AT-61/AXT-5.....VHF  
 AT-700/AR.....VHF  
 AT-722/APX.....UHF  
 AT-748/VRC.....VHF,UHF  
 AT-8/AR.....VHF  
 AT-81/APX.....VHF  
 AT-881/APN.....UHF  
 AT-889/DRT.....UHF  
 AT-9/APN-2.....VHF  
 AT-933/ARR-52.....VHF  
 AT-973/APX-39.....SHF  
 OA-163(1)/APT.....VHF  
 OA-2832/APX-39.....SHF  
 66AAT.....UHF

### Stub Sleeve

\*M6302.....VHF  
 AS-108B/APA-17.....VHF,UHF  
 AS-121A/APT.....VHF  
 AS-655/ALA-6.....VHF,UHF  
 AT-120/ART-24.....VHF,UHF  
 AT-139/AP.....UHF  
 AT-141(\*)/ARC.....VHF,UHF  
 AT-145(\*)/A.....VHF  
 AT-225/APN.....VHF  
 AT-440(\*)/U.....VHF,UHF  
 AT-500/AP.....UHF  
 AT-741/A.....UHF  
 AT-755/ARC.....VHF,UHF  
 AT-87(\*)/APX-13.....VHF  
 AT-879/ARC.....VHF,UHF  
 AT-935/A.....UHF

### Turnstile

\*M2203.....UHF  
 \*M2205.....UHF  
 AS-174/APX.....VHF  
 AS-251/AP.....UHF  
 AS-69/APT.....UHF  
 AT-149(\*)/UPN.....UHF

### Whip

\*A-12.....VHF  
 AN-117-A.....VHF  
 AS-(XA-18)/ART.....VHF  
 AS-139/ART.....VHF  
 AS-143/ARW-8X.....VHF  
 AS-149/TRT-1.....HF,VHF  
 AS-150/ART.....VHF  
 AS-161/ART+(1).....VHF  
 AS-188/ARQ-11.....VHF  
 AS-190/ARQ-11.....VHF  
 AS-318(1)/APT.....VHF  
 AS-319/APT.....VHF  
 AS-321(\*)/APX-1.....VHF  
 AS-328/ARW.....VHF  
 AS-47/ARW-8.....VHF  
 AS-89/ART.....VHF  
 AS-97/ART.....VHF  
 AS-98/ART.....VHF  
 AT-(XA-115)/ARW.....VHF  
 AT-(XA-132)/ARC-22.....HF,VHF  
 AT-202/AR.....VHF  
 AT-3(\*)/ARR-3.....VHF  
 AT-454(\*)/ARC.....HF,VHF  
 AT-455(\*)/ARC.....HF,VHF  
 AT-461/ARW.....VHF  
 AT-481/ARC-48.....VHF  
 AT-527/APT.....HF  
 AT-563/AR.....LF,MF  
 AT-598/APT.....VHF  
 AT-599/APT.....VHF  
 AT-600/APT.....VHF  
 AT-624/AR.....HF,VHF  
 AT-624(\*)/AR.....HF,VHF  
 AT-765/ARC.....VHF  
 66AAW.....VHF  
 66044(\*).....VHF  
 66080.....VHF  
 66119.....VHF  
 66120.....VHF  
 66150.....VHF

### Yagi

AN-148-(\*).....VHF  
 AS-151/APS-13.....UHF  
 AS-162/AP.....VHF  
 AS-183/APD-1.....VHF  
 AS-224/AXT-7.....VHF  
 AS-225/AXT-7.....VHF  
 AS-226/AXT-7.....VHF  
 AS-227/AXT-7.....VHF,UHF  
 AS-228/AXT-7.....UHF  
 AS-229/AXT-7.....UHF  
 AS-230/AXT-7.....UHF  
 AS-231/AXT-7.....UHF  
 AS-232/AXT-7.....UHF  
 AS-233/AXT-7.....UHF  
 AS-283/APS-13.....UHF  
 AS-391/APG-5C.....UHF  
 AS-416/U.....VHF  
 AS-417/U.....VHF  
 AS-418/U.....VHF  
 AS-419/U.....VHF,UHF  
 AS-420/U.....UHF  
 AS-421/U.....UHF  
 AS-422/U.....UHF  
 AS-423/U.....UHF  
 AS-424/U.....UHF  
 AS-425/U.....UHF  
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\*DM N5.....VHF  
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AS-1127/ASR-5(V).....  
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 AT-990/ASR-5(V).....UHF  
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 AS-319/APT.....VHF  
 AS-320()/APT.....VHF  
 AS-321()/APT-13.....VHF  
 AS-322()/APT.....VHF, UHF  
 AS-33/APT-2.....UHF  
 AS-336/AP.....VHF, UHF  
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 AS-89/ART.....VHF  
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AN/APA-24(\*).....VHF, UHF  
 AS-101/APA-24.....VHF, UHF  
 AS-108(\*)/APA-17.....VHF, UHF  
 AS-108B/APA-17.....VHF, UHF  
 AS-158/APA-24.....UHF  
 AS-186/APA-17.....UHF, SHF  
 AS-222/APA-17B.....VHF  
 AS-242/A.....VHF  
 AS-247/APA-17B.....SHF  
 AS-269/APA-42.....VHF  
 AS-270/APA-42.....VHF  
 AS-271/APA-42.....VHF, UHF  
 AS-272/APA-42.....UHF  
 AS-302/APA-24A.....VHF  
 AS-303/APA-24A.....VHF  
 AS-304/APA-24A.....VHF, UHF  
 AS-305/APA-24A.....UHF  
 AS-312()/APA-48.....VHF  
 AS-369/APA-17B.....VHF  
 AS-370/APA-17B.....VHF  
 AS-654(\*)/ALA-6.....VHF  
 AS-655/ALA-6.....VHF, UHF

### Countermeasures, Direction Finding (continued)

AS-656/ALA-6.....UHF, SHF  
 AS-657/ALA-6.....SHF  
 AS-84/APA-24.....VHF  
 AS-88/APA-24.....VHF  
 AT-951/ALD-2.....UHF  
 AT-952/ALD-2.....UHF  
 AT-953/ALD-2.....UHF  
 OA-2663/ALD-2.....UHF

### Countermeasures, Jamming

\*M2203.....UHF  
 \*M2205.....UHF  
 \*M4905.....UHF, SHF  
 AN-148-A(MODIFIED).....VHF  
 AS-115/APT+().....UHF  
 AS-161/ART+().....VHF  
 AS-181/AP.....VHF, UHF  
 AS-245/AP.....UHF  
 AS-251/AP.....UHF  
 AS-259/AP.....UHF, SHF  
 AS-65/APQ-2(\*).....VHF, UHF  
 AS-67/APQ-28.....VHF, UHF  
 AS-69/APT.....UHF  
 AT-36(\*)/APT.....VHF  
 AT-37(\*)/APT.....VHF  
 AT-38(\*)/APT.....VHF  
 AT-41/APT.....VHF  
 AT-42/APT.....VHF  
 AT-43/APT.....VHF  
 AT-49(\*)/APR-4.....VHF, UHF, SHF  
 AT-52/AP.....VHF  
 AT-53/AP.....VHF  
 AT-54/AP.....VHF  
 AT-811/AP.....UHF  
 AT-812/AP.....UHF, SHF  
 AT-813/AP.....UHF, SHF  
 AT-814/AP.....UHF  
 AT-815/AP.....SHF  
 AT-823/AP.....UHF, SHF  
 AT-824/AP.....UHF, SHF  
 AT-829/AP.....UHF  
 AT-830/AP.....UHF  
 AT-831/AP.....UHF, SHF  
 AT-832/AP.....UHF, SHF  
 AT-833/AP.....SHF  
 AT-845/AP.....UHF, SHF  
 AT-89/AP.....VHF  
 AT-90/AP.....VHF, UHF  
 AT-91/AP.....UHF  
 AT-92/AP.....UHF  
 AT-93/AP.....UHF  
 AT-94/AP.....UHF  
 AT-95/AP.....UHF

### Countermeasures, Monitoring

AT-49(\*)/APR-4.....VHF, UHF, SHF

### Countermeasures, Search

AS-114/APT.....VHF  
 AS-116/APR-3.....UHF  
 AS-117/APR-3.....UHF  
 AS-121A/APT.....VHF  
 AS-124/APR.....VHF, UHF  
 AS-125/APR.....UHF  
 AS-246/AP.....UHF, SHF  
 AS-25/APR-2.....VHF, UHF  
 AS-25/APR-2.....UHF  
 AS-28/APR-1.....VHF  
 AS-29/APR-1.....UHF  
 AS-44/APR-5.....UHF  
 AS-482/APR.....SHF  
 AS-70/APR-4.....VHF, UHF, SHF  
 AT-139/AP.....UHF  
 AT-183(\*)/AP.....VHF, UHF  
 AT-184(\*)/AP.....UHF  
 AT-185(\*)/AP.....UHF, SHF  
 AT-189(\*)/AP.....VHF  
 AT-190(\*)/AP.....VHF  
 AT-191(\*)/AP.....VHF  
 AT-214/APR.....SHF  
 AT-220/APR-9.....UHF  
 AT-36(\*)/APT.....VHF

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## EQUIPMENT FUNCTION INDEX ( continued )

### Countermeasures, Search (continued)

AT-37(\*)/APT.....VHF  
 AT-38(\*)/APT.....VHF  
 AT-49(\*)/APR-4.....VHF,UHF,SHF  
 AT-52/AP.....VHF  
 AT-53/AP.....VHF  
 AT-54/AP.....VHF  
 AT-79/AP.....UHF  
 AT-80/AP.....UHF

### Direction Finding

AS-1059/ASQ-19.....VHF,UHF  
 AS-269/APA-42.....VHF  
 AS-270/APA-42.....VHF  
 AS-271/APA-42.....VHF,UHF  
 AS-272/APA-42.....UHF  
 AS-545/APA-17B.....VHF,UHF  
 AS-578(\*)/ARA-25.....VHF,UHF  
 AS-909/ARA-48.....VHF,UHF  
 AS-963/ARD-13.....LF,MF  
 AT-430/ARD-7.....LF,MF  
 AT-447/ARD-8.....LF,MF  
 AT-533/ARN.....LF,MF  
 AT-556(\*)/ARN-41.....LF,MF  
 AT-593(\*)/ARN-42.....LF,MF  
 69054.....LF,MF  
 69065.....VLF,MF

### Fire Control

\*DM P1.....SHF  
 AS-13/APG-2.....SHF  
 AS-132/APG-13.....UHF  
 AS-182/APG-3.....SHF  
 AS-205(\*)/APS.....SHF  
 AS-217(\*)/APG-15.....UHF  
 AS-24/APS-6.....SHF  
 AS-314(\*)/APG-13B.....UHF  
 AS-323/APG-16.....SHF  
 AS-331/APG-15C.....UHF  
 AS-384/APG-18.....SHF  
 AS-387/APG-28.....SHF  
 AS-391/APG-5C.....UHF  
 AS-392/APG-5C.....UHF  
 AS-409/APG-27.....SHF  
 AS-448(\*)/APG-32.....SHF  
 AS-485/APG-5C.....UHF  
 AS-487/APG-33.....SHF  
 AS-568/APG-41.....SHF  
 AS-573/APG-32A.....SHF  
 AS-579/APG.....SHF  
 AS-68/APG-5.....UHF  
 AS-7/APG-1.....UHF  
 AS-724/APG-41B.....SHF  
 AT-223/APG-30.....SHF  
 AT-224/APG-30.....SHF  
 AT-245/APG-30.....SHF  
 AT-369/APG-44.....SHF

### Guidance

AT-104/APN-19.....UHF  
 AT-119/ARW.....VHF  
 AT-120/ART-24.....VHF,UHF

### Guidance, Command

AS-1058/APW-23.....  
 AS-161/ART+().....VHF  
 AT-246(\*)/U.....UHF,SHF

### Guidance, Surface Reference

AT-149(\*)/UPN.....UHF

### IFF ("Identification, friend or foe")

•VHF/IFF ANTENNA.....VHF  
 \*DM I2.....  
 \*DM NI12.....UHF  
 \*DM NI21.....UHF  
 \*DM NI22.....UHF  
 \*DM NI3.....UHF  
 \*DM NI3-2.....UHF  
 \*DM NI3-3.....UHF

### IFF ("Identification, friend or foe") (continued)

\*DM NI3-4.....UHF  
 \*DM NI6.....UHF  
 \*DM NI7.....UHF  
 \*DM 320.....UHF  
 \*DM 327.....UHF  
 AN-147(\*).....VHF  
 AN-148(\*).....VHF  
 AS-100/APX.....UHF  
 AS-1064/APX-39.....SHF  
 AS-133/APX.....UHF  
 AS-162/AP.....VHF  
 AS-166/AP.....VHF  
 AS-174/APX.....VHF  
 AS-217(\*)/APG-15.....UHF  
 AS-32(\*)/APX-1.....VHF  
 AS-339/APX-11.....UHF,SHF  
 AS-340/APX-16.....UHF,SHF  
 AS-539/APS-20.....UHF  
 AS-624/APX.....UHF  
 AS-625/APX.....UHF  
 AS-638/A.....VHF,UHF  
 AS-786/A.....VHF,UHF  
 AS-851/APX.....UHF  
 AS-874/APX.....UHF  
 AT-104/APN-19.....UHF  
 AT-145(\*)/A.....VHF  
 AT-571/A.....UHF  
 AT-62/APS-3.....SHF  
 AT-722/APX.....UHF  
 AT-81/APX.....VHF  
 AT-87(\*)/APX-13.....VHF  
 AT-884/APX-44.....  
 AT-973/APX-39.....SHF  
 AT-974/APX-39.....SHF  
 OA-2832/APX-39.....SHF  
 OA-493/APS-20.....UHF  
 RC-94(\*).....  
 66AAL.....  
 66AEO.....

### Navigation

\*DM NI12.....UHF  
 \*DM NI21.....UHF  
 \*DM NI22.....UHF  
 \*DM 320.....UHF  
 \*DM 327.....UHF  
 AS-12/APS-3.....SHF  
 AS-163/APS-3A.....SHF  
 AS-164/AP.....  
 AS-205(\*)/APS-4.....SHF  
 AS-21/APQ-10.....SHF  
 AS-22/APS-3.....SHF  
 AS-238/APS-19.....SHF  
 AS-284/APS-19.....SHF  
 AS-287(\*)/APS-31.....SHF  
 AS-288/APS-32.....SHF  
 AS-289(\*)/APS-33.....SHF  
 AS-290/APS-34.....SHF  
 AS-291/APQ.....SHF  
 AS-298(\*)/APS-20.....UHF  
 AS-378/APS-33A.....SHF  
 AS-428(\*)/APS-42.....SHF  
 AS-5/APS-2.....SHF  
 AS-539/APS-20.....UHF  
 AS-617/APS-33F.....SHF  
 AS-652/APN-59.....SHF  
 AS-653/APN-59.....SHF  
 AS-665/APN-42.....UHF  
 AS-698/ARN-27.....LF  
 AS-739/APX.....UHF  
 AS-960/ASQ-29.....  
 AT-1/APN-2.....VHF  
 AT-103/APS-15.....SHF  
 AT-104/APN-19.....UHF  
 AT-116/APQ.....SHF  
 AT-178/APS-42.....SHF  
 AT-2(\*)/APN-2.....VHF  
 AT-401/APN.....VHF  
 AT-440(\*)/U.....VHF,UHF  
 AT-479/A.....UHF  
 AT-480/A.....UHF,SHF  
 AT-5/ARR-1.....VHF  
 AT-505/AP.....UHF  
 AT-526/ARN-40.....LF

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## EQUIPMENT FUNCTION INDEX (continued)

### Navigation (continued)

AT-559/APN-59.....SHF  
 AT-560/APN-59.....SHF  
 AT-563/AR.....LF,MF  
 AT-571/A.....UHF  
 AT-624(\*)/AR.....HF,VHF  
 AT-720/A.....UHF  
 AT-734/ARA-36.....HF  
 AT-740/A.....UHF  
 AT-741/A.....UHF  
 AT-764/AR.....VHF  
 AT-839/ARA-44.....SHF  
 AT-9/APN-2.....VHF  
 AT-96(\*)/APN-12.....VHF  
 AT-97/APN-12.....VHF  
 OA-493/APS-20.....UHF  
 RC-286.....UHF,SHF

### Navigation, Direction Finding

•FLUSH HOMING ANTENNA.....VHF  
 •AML-10.....LF,MF,MF  
 •DM N13.....UHF  
 •DM N13-2.....UHF  
 •DM N13-3.....UHF  
 •DM N13-4.....UHF  
 •DM N16.....UHF  
 •DM N17.....UHF  
 •DM N2.....VHF  
 •DM N4-2.....VHF  
 •DM N4-4.....VHF  
 •DM N4-5.....VHF  
 •DM N5.....VHF  
 •L-10.....LF,MF  
 •L-10A.....LF,MF  
 •MN-20(\*).....LF,MF,MF  
 •MN-24(\*).....LF,MF,MF  
 •MN-36(\*).....LF,MF,MF  
 •MN-60(\*).....LF,MF,MF  
 AN/APA-24(\*).....VHF,UHF  
 AN/ARA-31(\*).....HF,VHF  
 AN-147-(\*).....VHF  
 AN-148-(\*).....VHF  
 AN-65-(\*).....VHF  
 AN-66-(\*).....VHF  
 AS-101/APA-24.....VHF,UHF  
 AS-133/APX.....UHF  
 AS-137/ARN.....LF,MF  
 AS-138/ARN.....LF,MF  
 AS-140(\*)/ARN-6.....LF,MF  
 AS-141/ARN-6.....LF,MF  
 AS-148/ARA-8.....VHF  
 AS-153/ARN.....LF,MF  
 AS-158/APA-24.....UHF  
 AS-183/APD-1.....VHF  
 AS-242/A.....VHF  
 AS-281/ARN.....LF,MF  
 AS-302/APA-24A.....VHF  
 AS-303/APA-24A.....VHF  
 AS-304/APA-24A.....VHF,UHF  
 AS-305/APA-24A.....UHF  
 AS-313(\*)/ARN-6.....LF,MF  
 AS-335/ARD-4.....VHF  
 AS-669/ARN-34.....LF,MF  
 AS-84/APA-24.....VHF  
 AS-86/ARD-3.....UHF  
 AS-875/ARN-6.....LF,MF  
 AS-88/APA-24.....VHF  
 AT-132/ARD-4.....VHF  
 AT-145(\*)/A.....VHF  
 AT-23/ARA-1.....LF,MF  
 AT-269/ARN-6A.....LF,MF  
 AT-300/APN.....UHF  
 AT-305/APA-70.....UHF  
 AT-306/APA-70.....UHF,SHF  
 AT-307/APA-70.....SHF  
 AT-382/ARC.....LF,MF  
 AT-452/AR.....VHF  
 AT-624/AR.....HF,VHF  
 AT-708/AR.....LF,MF,VHF  
 AT-890/ARN.....LF,MF  
 LP-21-A.....LF,MF  
 LP-21-AM.....LF,MF  
 LP-21-B.....LF,MF  
 LP-21-F.....LF,MF  
 LP-21-LM.....LF,MF

### Navigation, Direction Finding (continued)

LP-31-A.....LF,MF  
 LP-31-AM.....LF,MF  
 OA-846(1)/ARC-44.....HF,VHF  
 RC-94-(\*).....UHF

### Navigation, Surface Reference

•ISOLATED TAIL ANTENNA.....LF  
 •ADF-12(\*).....LF,MF  
 •DM N13.....UHF  
 •DM N13-2.....UHF  
 •DM N13-3.....UHF  
 •DM N13-4.....UHF  
 •DM N16.....UHF  
 •DM N17.....UHF  
 •DM N1-2.....UHF  
 •DM N2.....VHF  
 •DM N4-2.....VHF  
 •DM N4-4.....VHF  
 •DM N4-5.....VHF  
 •DM N5.....VHF  
 AN-132.....LF,MF  
 AS-17(\*)/APS.....SHF  
 AS-215/ARN.....VHF  
 AS-27(\*)/ARN-5.....VHF,UHF  
 AS-292/APS-35.....SHF  
 AS-580(\*)/ARN-30.....VHF  
 AS-61/ARN-5.....UHF  
 AS-786/A.....VHF,UHF  
 AT-(XA-106)/ARN-5A.....UHF  
 AT-(XA-107)/ARN.....UHF  
 AT-(XA-109)/ARN-14.....VHF  
 AT-(XA-113)/ARN.....UHF  
 AT-(XA-114)/ARN.....VHF  
 AT-(XA-119)/APN-34.....UHF  
 AT-(XA-120)/APN-34.....UHF  
 AT-(XA-121)/AP.....UHF  
 AT-13/APN-3.....VHF,UHF  
 AT-14/APN-3.....VHF,UHF  
 AT-176(\*)/AP.....VHF,UHF  
 AT-254/APX.....UHF  
 AT-535/ARN.....VHF  
 AT-536/ARN.....VHF  
 AT-537/ARN.....VHF  
 AT-640(\*)/ARN.....VHF  
 AT-780/ARN.....LF,MF

### Radar Beacon

AS-135/APN-13.....UHF,SHF  
 AS-154(\*)/APS-10.....SHF  
 AS-163/APS-3A.....SHF  
 AS-172/AP.....UHF  
 AS-179/APS-3A.....SHF  
 AS-273/ARN.....VHF  
 AS-306/APN-11.....SHF  
 AS-31(\*)/APN-7.....UHF,SHF  
 AS-428(\*)/APS-43.....SHF  
 AS-456/APN-63.....UHF  
 AS-421(\*)/APN-69.....UHF  
 AS-549/APS-21B.....SHF  
 AS-567(\*)/APS-33B.....SHF  
 AS-602/APS-19B.....SHF  
 AS-630/APS-19C.....SHF  
 AS-652/APN-59.....SHF  
 AS-653/APN-59.....SHF  
 AT-(XA-118)/APN.....UHF,SHF  
 AT-144(\*)/ARN.....VHF  
 AT-147/AP.....UHF,SHF  
 AT-149(\*)/UPN.....UHF  
 AT-171/AP.....UHF,SHF  
 AT-171A/AP.....UHF,SHF  
 AT-178/APS-47.....SHF  
 AT-225/APN.....VHF  
 AT-246(\*)/U.....UHF,SHF  
 AT-247/U.....UHF,SHF  
 AT-347(1)/UPN.....UHF  
 AT-559/APN-59.....SHF  
 AT-560/APN-59.....SHF  
 AT-920/APN-134.....SHF

### Remote Control

AN-117-A.....VHF  
 AN-181.....VHF

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## EQUIPMENT FUNCTION INDEX ( continued )

### Remote Control (continued)

AN-182.....VHF  
AN-183.....VHF  
AN-184.....VHF  
AN-185.....VHF  
AS-143/ARW-8X.....VHF  
AS-149/TRT-1.....VHF  
AS-150/ART.....VHF  
AS-234/ARW-26.....VHF  
AS-254/ARW-38.....VHF  
AS-256/ADW-2.....SHF  
AS-255/UR.....VHF  
AS-328/ARW.....VHF  
AS-366(\*)/AR.....UHF  
AS-416/U.....VHF  
AS-417/U.....VHF  
AS-418/U.....VHF  
AS-419/U.....VHF  
AS-420/U.....UHF  
AS-421/U.....UHF  
AS-422/U.....UHF  
AS-423/U.....UHF  
AS-424/U.....UHF  
AS-425/U.....UHF  
AS-4 / ARW-9.....VHF  
AS-89/ART.....VHF  
AT-180/ARW.....VHF  
AT-181/ARW.....VHF  
AT-185/ARW.....VHF  
AT-889/DRT.....UHF

### Search

AS-163/APS-3A.....SHF  
AS-164/AP.....SHF  
AS-17(\*)/APS.....SHF  
AS-21/APQ-10.....SHF  
AS-22/APS-3.....SHF  
AS-239/APS-19.....SHF  
AS-284/APS-19.....SHF  
AS-287(\*)/APS-31.....SHF  
AS-288/APS-32.....SHF  
AS-289(\*)/APS-33.....SHF  
AS-290/APS-34.....SHF  
AS-301(\*)/APS-40.....SHF  
AS-379/APS-33A.....SHF  
AS-409/APG-27.....SHF  
AS-428(\*)/APS-42.....SHF  
AS-5/APS-2.....SHF  
AS-539/APS-20.....UHF  
AS-619/APS-58.....SHF  
AS-850/APN-107.....SHF  
AS-985/APS-88.....SHF  
AT-178/APS-42.....SHF  
OA-493/APS-20.....UHF  
RC-264-(\*).....SHF  
66ACH.....SHF  
66ACN-(\*).....SHF  
66ACW.....SHF  
66ACY.....SHF  
66AZ.....SHF  
66AEV.....SHF

### Search, Air

AS-154(\*)/APS-15.....SHF  
AS-179/APS-3A.....SHF  
AS-205(\*)/APS-4.....SHF  
AS-237/APS-20.....UHF  
AS-298(\*)/APS-20.....UHF  
AS-49/APS-21B.....SHF  
AS-602/APS-19B.....SHF  
AS-630/APS-19C.....SHF  
RC-286.....UHF, SHF  
RC-94-(\*).....SHF

### Search, Surface

AS-12/APS-3.....SHF  
AS-205(\*)/APS-4.....SHF  
AS-292/APS-35.....SHF  
AS-549/APS-21B.....SHF  
AS-553/APS-31B.....SHF  
AS-561/APS-44.....SHF  
AS-562/APS-44A.....SHF  
AS-567/APS-33B.....SHF

### Search, Surface (continued)

AS-602/APS-19B.....SHF  
AS-628/APS-31C.....SHF  
AS-630/APS-19C.....SHF  
AS-652/APN-59.....SHF  
AS-653/APN-59.....SHF  
AT-103/APS-15.....SHF  
AT-559/APN-59.....SHF  
AT-560/APN-59.....SHF  
AT-62/APS-3.....SHF

### Tail Warning

AS-151/APS-13.....UHF  
AS-217(\*)/APG-15.....UHF  
AS-283/APS-13.....UHF  
AS-448(\*)/APG-32.....SHF  
AS-62/APS-13.....UHF  
AS-63/APS-16.....UHF

### Teletyping

\*DM K1.....VHF  
\*DM K3.....VHF  
AT-256(\*)/ARC.....VHF, UHF  
AT-86/ART-22.....VHF, UHF  
AT-895/A.....VHF  
AT-896/A.....UHF  
AT-897/A.....VHF  
AT-907/USD-1.....UHF  
AT-919/APN-22.....UHF

### Teletype

AN-142-(\*).....UHF  
AN-143-(\*).....UHF  
AN-144-(\*).....UHF  
AN-145-(\*).....UHF  
AN-146-(\*).....UHF  
AN-147.....VHF, UHF  
AN-148.....VHF, UHF  
AN-149.....VHF, UHF  
AN-150.....VHF, UHF  
AN-151.....VHF, UHF  
AN-152.....VHF, UHF  
AN-153.....VHF, UHF  
AN-154.....VHF, UHF  
AN-155.....VHF, UHF  
AN-156.....VHF, UHF  
AN-157.....VHF, UHF  
AN-158.....VHF, UHF  
AN-159.....VHF, UHF  
AN-160.....VHF, UHF  
AN-161.....VHF, UHF  
AN-162.....VHF, UHF  
AN-163.....VHF, UHF  
AN-164.....VHF, UHF  
AN-165.....VHF, UHF  
AN-166.....VHF, UHF  
AN-167.....VHF, UHF  
AN-168.....VHF, UHF  
AN-169.....VHF, UHF  
AN-170.....VHF, UHF  
AN-171.....VHF, UHF  
AN-172.....VHF, UHF  
AN-173.....VHF, UHF  
AN-174.....VHF, UHF  
AN-175.....VHF, UHF  
AN-176.....VHF, UHF  
AN-177.....VHF, UHF  
AN-178.....VHF, UHF  
AN-179.....VHF, UHF  
AN-180.....VHF, UHF  
AS-144/AXR-3.....VHF, UHF  
AS-191/AX.....VHF  
AS-192/AX.....VHF  
AS-193/AX.....VHF  
AS-194/AX.....VHF  
AS-195/AX.....VHF  
AS-196/AX.....VHF  
AS-197/AX.....VHF  
AS-198/AX.....VHF  
AS-199/AX.....VHF  
AS-200/AX.....VHF  
AS-224/AXT-7.....VHF  
AS-225/AXT-7.....VHF  
AS-226/AXT-7.....VHF  
AS-227/AXT-7.....VHF, UHF  
AS-228/AXT-7.....UHF  
AS-229/AXT-7.....UHF  
AS-230/AXT-7.....UHF  
AS-231/AXT-7.....UHF  
AS-232/AXT-7.....UHF  
AS-233/AXT-7.....UHF  
AS-416/U.....VHF  
AS-417/U.....VHF  
AS-418/U.....VHF  
AS-419/U.....VHF, UHF  
AS-420/U.....UHF  
AS-421/U.....UHF  
AS-422/U.....UHF  
AS-423/U.....UHF  
AS-424/U.....UHF  
AS-425/U.....UHF  
AT-61/AXT-5.....VHF  
66ADT.....VHF, UHF

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# EQUIPMENT FUNCTION INDEX (continued)

## Television (continued)

66ADU.....UHF  
66AED.....VHF  
66AEE.....VHF  
66AEF.....VHF  
66AEG.....UHF  
66AEH.....UHF  
66AEJ.....UHF  
66AEK.....UHF  
66AEL.....UHF  
66AEM.....UHF  
66AEN.....UHF  
66AFW.....VHF, UHF  
66AFX.....VHF  
66AFY.....VHF  
66AFZ.....VHF  
66AGA.....UHF  
66AGB.....UHF

## Test

AN-147-(\*).....VHF  
AS-14(\*)/AP.....UHF, SHF  
AS-15/AP.....SHF  
AS-168/AP.....VHF, UHF  
AS-23/AP.....UHF, SHF  
AS-373(\*)/APG-3.....SHF  
AT-521/URM-42.....SHF  
AT-522/URM-42.....UHF  
AT-67/AP.....UHF, SHF  
AT-83/AP.....VHF  
66ACZ.....AT-90/AP  
66ADL.....SHF  
66ADM.....SHF

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2-30.....OA-429/ALT-3(I)

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0.15-7.....\*MN-24(I)  
0.19-25.....AS-401/A  
0.2-6.7.....\*AML-10  
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18-40.....AS-189/ARQ-11  
24-51.9.....AN/ARA-31(I)  
24-51.9.....AT-454(I)/ARC  
24-51.9.....AT-455(I)/ARC  
24-51.9.....AT-624(I)/AR  
24-52.....AT-(XA-132)/ARC-22  
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27-34.....AS-(XA-17)/ART

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