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NRL Memorandum Report 2425

Short Range Air-to-Air Weapon Control Requirements

[Unclassified Title]

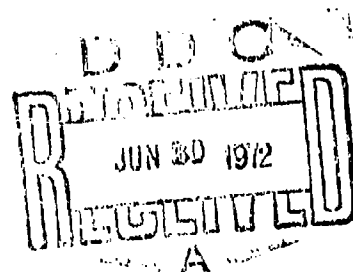
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April 1972



NAVAL RESEARCH LABORATORY
Washington, D.C.



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MEMORANDUM

1. Background

(C) The Southeast Asia conflict has demonstrated the need for a short range air-to-air weapon. As a result, several dogfight missiles are being developed, namely, AGILE, AIM-7E-2/F and a dogfight AIM-9. The need therefore arises for a definition of the dogfight environment in terms of design requirements (so that system components can be made) for weapon control systems capable of operating in this dogfight environment.

2. Findings

(C) This study defines the dogfight environment in terms of a tracking weapon control system. It is shown that the present airborne intercept (AI) radars, and in particular their range and angle tracking circuits, are not capable of handling the dogfight weapon control problem. More importantly, however, the tracking requirements for a weapon control system are defined in terms of cumulative probability distributions.

3. R & D Implications

(C) This study shows that full-sphere tracking capability is desired for the dogfight environment. Coupled with this feature, an extremely rapid automatic lock-up and very wide-bandwidth tracking loops are required. Full-sphere tracking may require the development of a completely new type of tracking system.

4. Recommended Action

(C) It is recommended that models of the present AI radars be utilized to evaluate the recommended tracking parameters. It is further recommended that a study be undertaken to design the 360° tracking loops required for full-sphere tracking capability.

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ABSTRACT

(U) The primary objective of this study is to define the dogfight environment in terms of a tracking system. The secondary objective is to apply this dogfight definition to present AI radars.

(U) This study is divided into two efforts, a determination of the primary weapon control requirements and a parameter interaction study. The purpose of the primary weapon control requirements study is to define the dogfight environment and to investigate the relationship of aircraft, tactics, weapons, and the available data base. The purpose of the parameter interaction study is to define the dogfight environment more precisely in terms of tracking loop requirements, clutter problems, and glint.

PROBLEM STATUS

(U) The two studies, the primary weapon control requirement study and the parameter interaction study, have been completed. Work, however, continues on interpretation of the data developed during the parameter interaction study.

(U) Tracking models for AI radar are being developed to determine the effects of the recommended tracking parameters on these radars.

AUTHORIZATION

Short Range Weapon Control Compatibility with AWG-10/AWG-14
NRL Problem 53D01-03.308
A510-5108/652-4/1510-00-31

F-14/AWG-9 Weapon Systems Analysis
NRL Problem 53D01-03.308
A510-5108/652-F/1W16-08-0000

Airborne Intercept Weapon Control
NRL Problem 53D01-03.323
A360-5333/652B/1F17-342-603

Guided Missile AIM-7F Simulation Studies
NRL Problem 53D01-03.311
A510-5108/652-F/1W16-14-0000

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Short Range Air-to-Air Weapons Control Requirements

I. INTRODUCTION

A. Background

(C) In the past, Naval airborne intercept (AI) radars were designed to intercept non-maneuvering bomber targets. Since these radars were designed to detect and track such targets at long range, they required a high power but relatively little angular coverage. Further, since these bomber targets have low maneuvering capabilities, the radars were designed with low tracking rates and accelerations. With these restrictions these radars were severely limited in their short-range air-to-air capability.

(C) The Southeast Asian conflict has shown that superiority in the short-range air-to-air (dogfight) engagement is a critical requirement for today's Naval aircraft. Many reports attest to this fact, the best known being the "Red Baron" (1) reports.

(C) A short-range weapon is required in a dogfight engagement. To fulfill this need, a dogfight missile (AGILE) is currently being developed by The Naval Weapons Center (NWC), China Lake (Refs. 2,3,4,5, 6,7,8). In addition, modifications are being made to the AIM-7 Sparrow-III and the AIM-9 Sidewinder missiles to provide a dogfight capability.

(C) With the development of dogfight missiles, the need for a short range air-to-air weapon control system (WCS) becomes evident. The nature of the dogfight environment requires that this WCS be quite different from those of the present AI radars. The target, instead of being a slowly maneuvering bomber at long range, is now a highly maneuverable fighter at close range.

B. Program Objectives

(U) The primary objective of this study is to accurately define the dogfight environment in terms of the tracking requirements for a variety of WCS. Many flight tests, computer simulations, and manned simulations have been performed by many people to gather data on the dogfight environment. For the purpose of this report, one of the manned simulations and one of the flight tests were used to determine the tracking requirements. The influence of specific weapons and their associated kill probabilities are important but fortunately not critical to this study.

(U) The generic types of tracking systems investigated in this study are listed below.

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1. A typical AI radar $\pm 60^\circ$ off the nose in azimuth and elevation.
2. A tail warning/tracking system having a coverage $\pm 60^\circ$ off the tail in azimuth and elevation.
3. A full sphere coverage system.

(U) Further objectives of this study pertain directly to problems associated with clutter and glint.

C. Analytical Approach

1. (U) This study made use of existing dogfight data from the NADC manned simulation and from VX-4 flight tests.

a. The NADC simulation consisted of two cockpits in which two pilots simulated a dogfight while computers provided the aircraft dynamics. Pertinent details of the simulation are given below. Full details may be found in Refs. 9 and 10.

- i. Each aircraft was modeled with 6 by 4 degrees of freedom.
- ii. Each dogfight originated at 15,000 feet altitude with the aircraft abeam of each other and separated by 2 nm.
- iii. Three friendly and two enemy type aircraft were simulated.
- iv. Two weapon mixes were simulated for the friendly aircraft.
 - (A) A short range missile with an all-aspect and a 45° off-boresight capability.
 - (B) Guns and Sidewinder
- v. 72 dogfights with a given aircraft and weapon mix made up one situation for study.
- vi. Pilot presentation was a 16" CRT providing a forward hemisphere field of view with the presentation slewable to allow full cockpit visibility. Pilot blackout was simulated by dimming the display.
- vii. The trained pilots were selected from tactics instructors on the F-4 and F-8 aircraft.

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viii. Pilots were rotated every 6 encounters.

b. The VX-4 flight test data were obtained from a simulated combat of two F-4 aircraft. Pertinent characteristics of the VX-4 data are:

1. All aircraft position data were obtained by beacon tracking of the aircraft with two FPS-16 ground-based radars.
- ii. For safety, a minimum altitude of 5,000 feet was required.
- iii. Approximately 800 seconds of useful data were obtained.
- iv. The pilots were flying gun/Sidewinder tactics.

2. To achieve a precise definition of the dogfight environment, the study was divided into phases so that the results of each phase could be thoroughly understood and applied in the following phases. This study is divided into three phases, with the results of the first two phases being the subject of this report.

(U) The first phase, the primary weapon control requirement study, is designed to assess the effects of the various aircraft, the tactics, and the two simulations upon the short-range WCS requirement. The specific areas of interest for the first phase are the coverage requirement, the maximum range requirement, and the tracking requirements as a function of target angular position.

(U) The second phase is the parameter interaction study. Based upon results of the first phase, data were selected for this detailed study of tracking loop requirements, clutter, and glint. The areas of investigation were a forward tracker, a rearward tracker, and a full sphere tracker.

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II. PRIMARY WEAPONS CONTROL REQUIREMENTS

A. Program Description

(U) Approximately 157,000 seconds of data are available from the two sources. A description of the basic computer program to reduce these data is contained in Appendix A. This basic program required extensive modification before use on the VX-4 data.

(C) Table 1 lists the simulation, the aircraft type, and the tactics by data tape number. As will be seen by the data presented later in this Section, the results, for the parameters of interest, are relatively independent of aircraft type. For this reason, and at the request of NADC, the aircraft are designated by letters. Specifically, three friendly aircraft types, designated A, B or C were used in the NADC simulations. The F-4 aircraft used in the VX-4 flight tests are designated by F.

TABLE 1.

Tape Number	Simulation	Fighter 1 (Friendly)	Fighter 2 (Enemy)	Fighter 1 Tactics	Fighter 2 Tactics
1	NADC	C	E	SRAAM*	G/S
2	NADC	C	D	G/S**	G/S
3	NADC	A	E	G/S	G/S
4	NADC	A	D	SRAAM	G/S
5	NADC	B	D	SRAAM	G/S
6	NADC	B	E	G/S	G/S
101	VX-4	F	F	G/S	G/S

* Short Range Air-To-Air Missile

** Guns/Sidewinder

(U) The data reduction for this phase of the study was carried out in three parts, (1) azimuth vs elevation of the target vs frequency of occurrence, (2) angle off boresight vs range of the target vs frequency of occurrence, and (3) tracking rates and accelerations as a function of relative target position.

1. Azimuth vs Elevation of the Target vs Frequency of Occurrence

(U) The results of this study are shown in Figs. A-2 to A-15, Appendix A. The purpose of these plots is to determine the most

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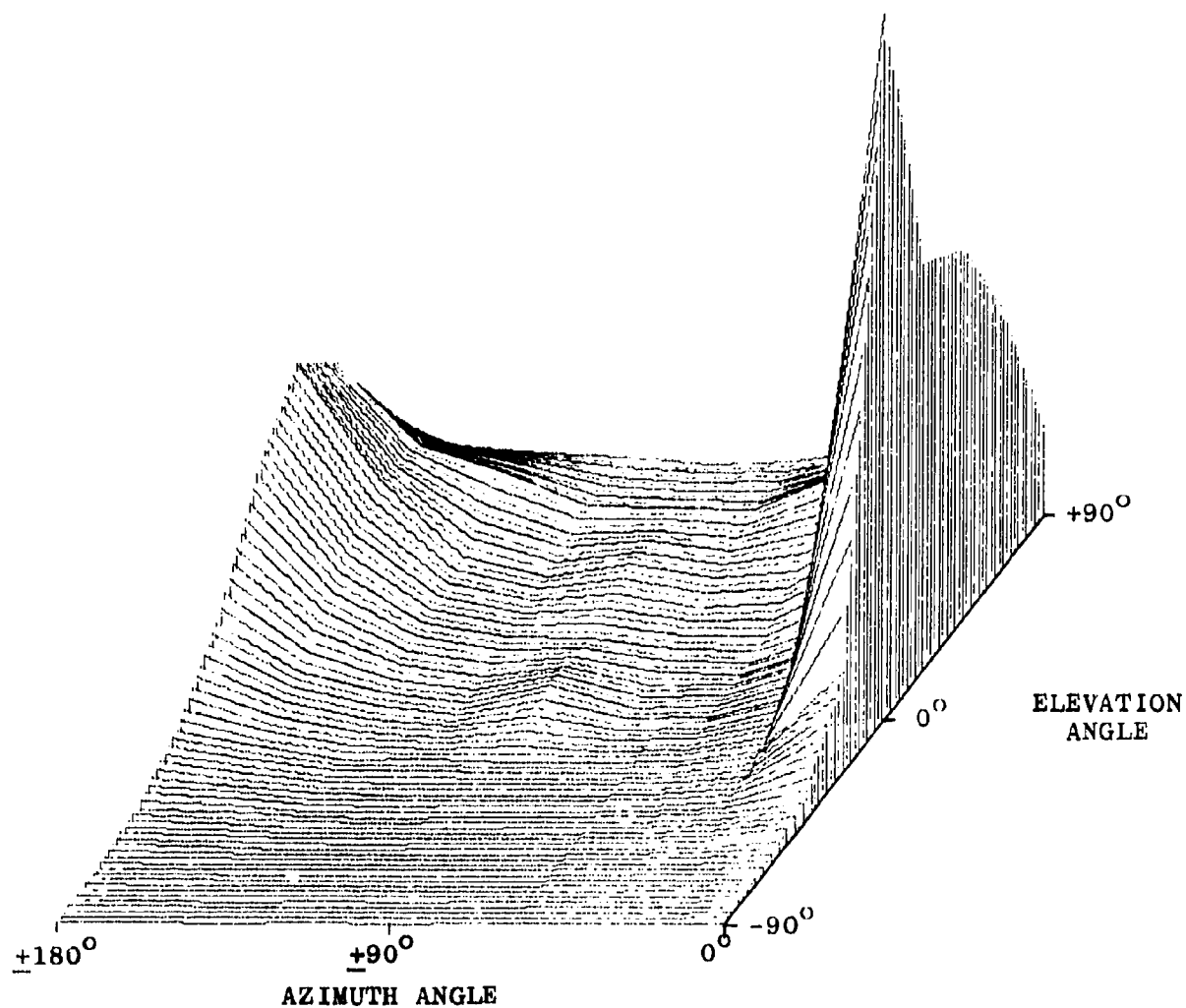


FIG. 1 - TAPE 1 - FIGHTER 1 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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likely positions of the target with respect to the fighter in aircraft coordinates. Figure 1, an example of these plots, was computer generated from tabulated data with a linear interpolation between the azimuth-elevation points. Because of this interpolation, these plots are qualitative and are presented only for visualization purposes. Quantitative data are given later in this report.

(C) Figure 1 is a three-dimensional plot of target position with respect to the fighter (Fighter 1 in this case) as experienced in 72 three-minute encounters. The azimuth position of the target with respect to the fighter is plotted along the X-axis (180° is the tail-on position and 0° is head-on). The corresponding position of the target in elevation with respect to the fighter is plotted along the Y-axis. Directly underneath the fighter is designated -90° and directly overhead is $+90^\circ$. The frequency of occurrence during the 72 three minute encounters is plotted along the Z-axis. It can be seen that the target is below the fighter a very small portion of the time. Further, the target is within approximately 30° in azimuth off the nose and/or tail of the fighter a majority of the time. The plots for all the aircraft show the same general trend with wide variation in the amplitude of forward and rearward peaks.

2. Angle Off Boresight vs Range to the Target vs Frequency of Occurrence.

(U) The results of this study are shown in Fig. A-16 to A-29, Appendix A. These plots portray the dependence of range on angle off boresight. In the collection of the data, the cell sizes (segment of range at a segment of angle off boresight) were not chosen to be equal, which makes the interpretation of these plots difficult.

(C) Referring to Fig. 2, which is an example, it can be noted that the distribution of range is independent of angle off boresight. This feature, noted in all the data, can be seen by the ridges and valleys which are constant in range, regardless of angle.

3. Tracking Rates and Accelerations as a Function of Relative Target Position.

(U) The purpose of this portion of the study was to obtain an estimate of the tracking requirements as a function of target position with respect to the fighter. Figure 3 depicts the various gimbal angle zones which were investigated. The total sphere around the fighter aircraft is divided into a top and a bottom hemisphere. Each hemisphere is divided into forward, rearward, side, and top (bottom) zones of coverage. The zones are grouped in the following manner:

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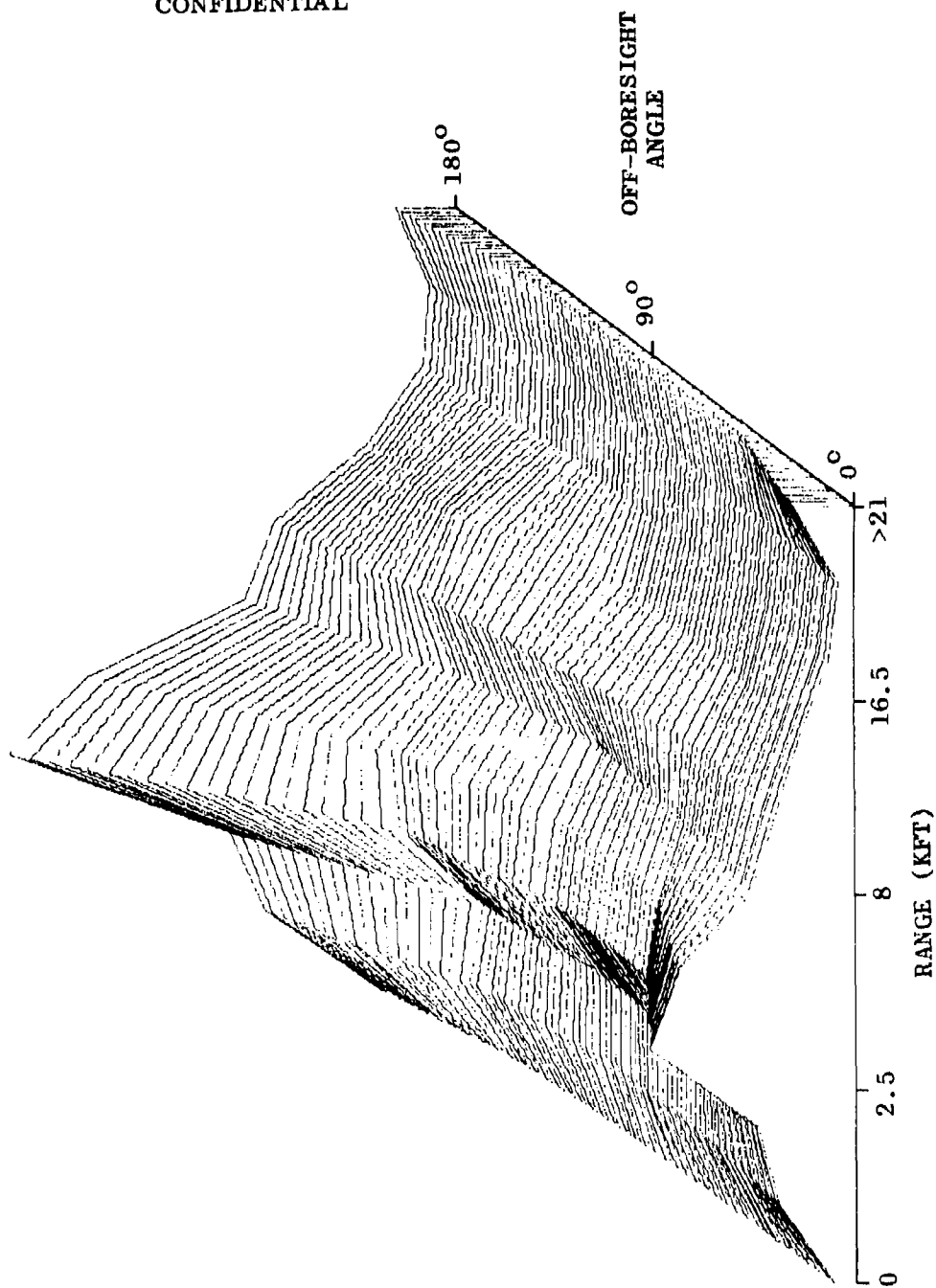
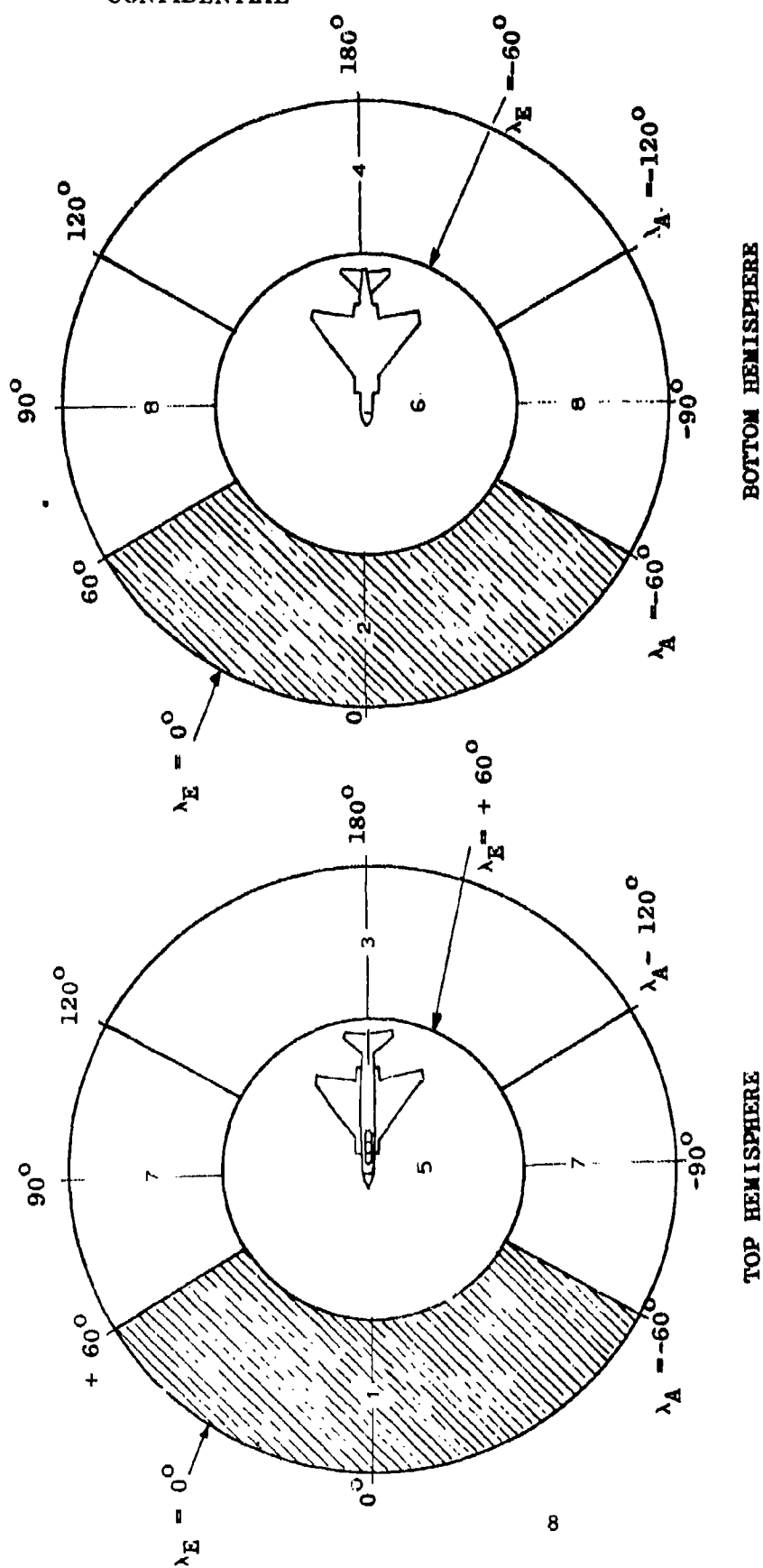


FIG. 2 - TAPE 1 - FIGHTER 1 - RANGE VERSUS OFF-BORESIGHT
ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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NOTE - SHADED AREA REPRESENTS CONVENTIONAL RADAR COVERAGE

FIG. 3 - DEFINITION OF AZIMUTH (λ_A) AND ELEVATION (λ_E) GIMBAL ANGLE ZONES.

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- a. Conventional AI radar coverage - zones 1 and 2.
- b. Rearward coverage - zones 3 and 4.
- c. Top and bottom coverage - zones 5 and 6.
- d. Side coverage - zones 7 and 8.

(U) The results of the data reductions are presented in Figs. A-30 to A-125, Appendix A, as bar graphs, with fourteen bars depicting the various aircraft, weapons, and simulations as shown in Table 1. The parameters listed below are of specific interest in the design of the tracking loops for a weapon control system.

- a. The percent of time that the target was in a particular gimbal angle zone. This assesses the importance of the various zones.
- b. The statistics of range, Figures A-38 to A-45 (11).
- c. Range rate, Figures A-46 to A-53.
- d. Range acceleration, Figures A-54 to A-61.
- e. Azimuth line-of-sight rate, Figures A-62 to A-69.
- f. Azimuth line-of-sight acceleration, Figures A-70 to A-77.
- g. Elevation line-of-sight rate, Figures A-78 to A-85.
- h. Elevation line-of-sight acceleration, Figures A-86 to A-93.
- i. Azimuth gimbal rate, Figures A-94 to A-101.
- j. Azimuth gimbal acceleration, Figures A-102 to A-109.
- k. Elevation gimbal rate, Figures A-110 to A-117.
- l. Elevation gimbal acceleration, Figures A-118 to A-125.

(U) Using Fig. 4 as an example, the average value of all range rate values experienced during 72 three minute encounters is shown as a line through the shaded area of each bar. The 2σ values (95%) are shown as the shaded area in each bar and the minimum and maximum values are shown as the full extent of each bar. In order to accurately portray these values, a log scale is used on the ordinate axis. The use of the log scale expanded the data about zero to show the average and 2σ values, and contracted the data to show minimum and maximum values.

B. Data Verification

(C) In general, the VX-4 and the NADC data are in close agreement. This can be seen in Figs. A-30 to A-125. Points of disagreement are listed below.

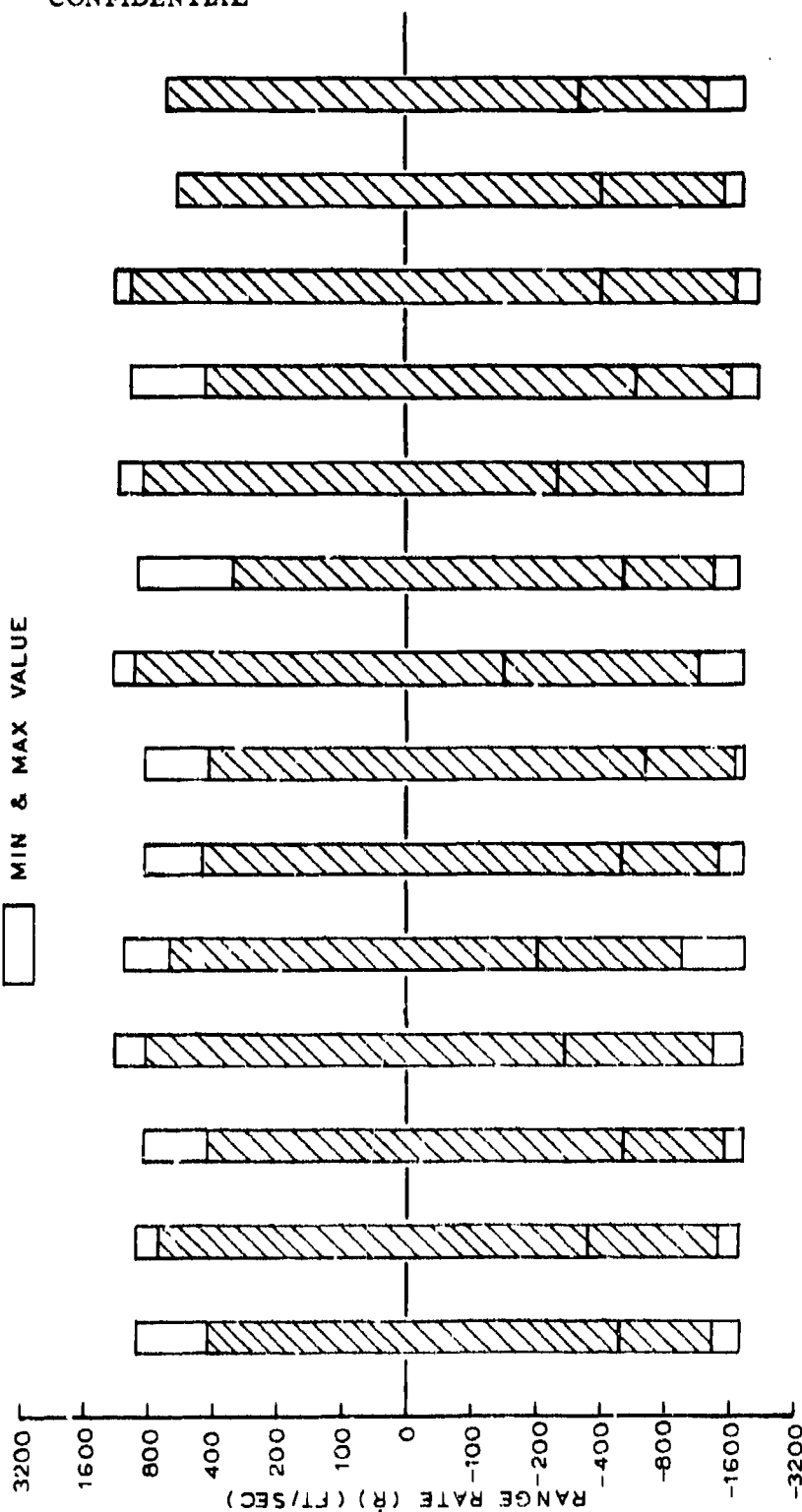
1. In the range plots, shown in Figs. A-46 to A-53, the minimum range in the VX-4 data is greater than in the NADC data. In the manned NADC simulation, the fear of aircraft collision does not exist, and therefore, for range, the VX-4 data are more accurate. Consequently,

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AZIMUTH GIMBAL ANGLE - 0° to ±60°
ELEVATION GIMBAL ANGLE - 0° to +50°

2σ VALUE

MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
AIRCRAFT	C	C	A	A	B	B	D	D	E	E	F	F	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1	1	1	1	1

FIG. 4 - SUMMARY OF RANGE RATE.

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conclusions drawn from this entire study will neglect some of the short-range NADC data.

2. The accelerations (range, line-of-sight, and angular) shown in Figs. A-70 to A-125 are greater in the VX-4 data. The VX-4 data, based on ground-based radar tracking information, are very noisy, and differentiations amplify the noise and render the accelerations suspect. For this reason the VX-4 data were not used for analyzing accelerations.

3. The amount of VX-4 data is small compared to the amount of NADC data. At times, there were insufficient VX-4 data from which to develop meaningful statistics.

For the above reasons, further analyses in this program will use NADC data with limits being imposed by the VX-4 data.

(C) A direct analysis of the differences in WCS requirements brought about by aircraft type was a goal. However, of the combinations possible from 3 friendly and 2 enemy aircraft, and 2 weapon mixes, only six were available for analysis. But, in general, the data reflect little direct change with the aircraft type with the exception of the relative importance of tail and forward coverage. For this reason, the 2σ values for the worst case are cited in the conclusions of this phase of the report.

(U) In Figs. A-2, A-6, and A-12, it can be seen that the friendly aircraft have an advantage over the same enemy aircraft, fighter E. This was the only discernible effect of influence by aircraft type.

C. Coverage Requirement

(C) The WCS coverage requirements are shown graphically in Section A-2 of Appendix A. As might be expected, the upper hemisphere is extremely important, as is the forward zone of approximately $\pm 30^\circ$ azimuth. Also, it is important to be able to track the target in the off tail zone. This indicates a need for the upper hemisphere, nose, and tail coverage for the weapon control system. A trade off based on probability of occurrence for azimuth and elevation coverage can be made with the use of Fig. 5. Although the relative weights on the tail and nose vary among aircraft types, the general distribution is independent of aircraft type.

D. Tracking Parameter Variations as a Function of Coverage Areas

(U) For the reporting of the results of this section, the area around the fighter aircraft is broken into five zones:

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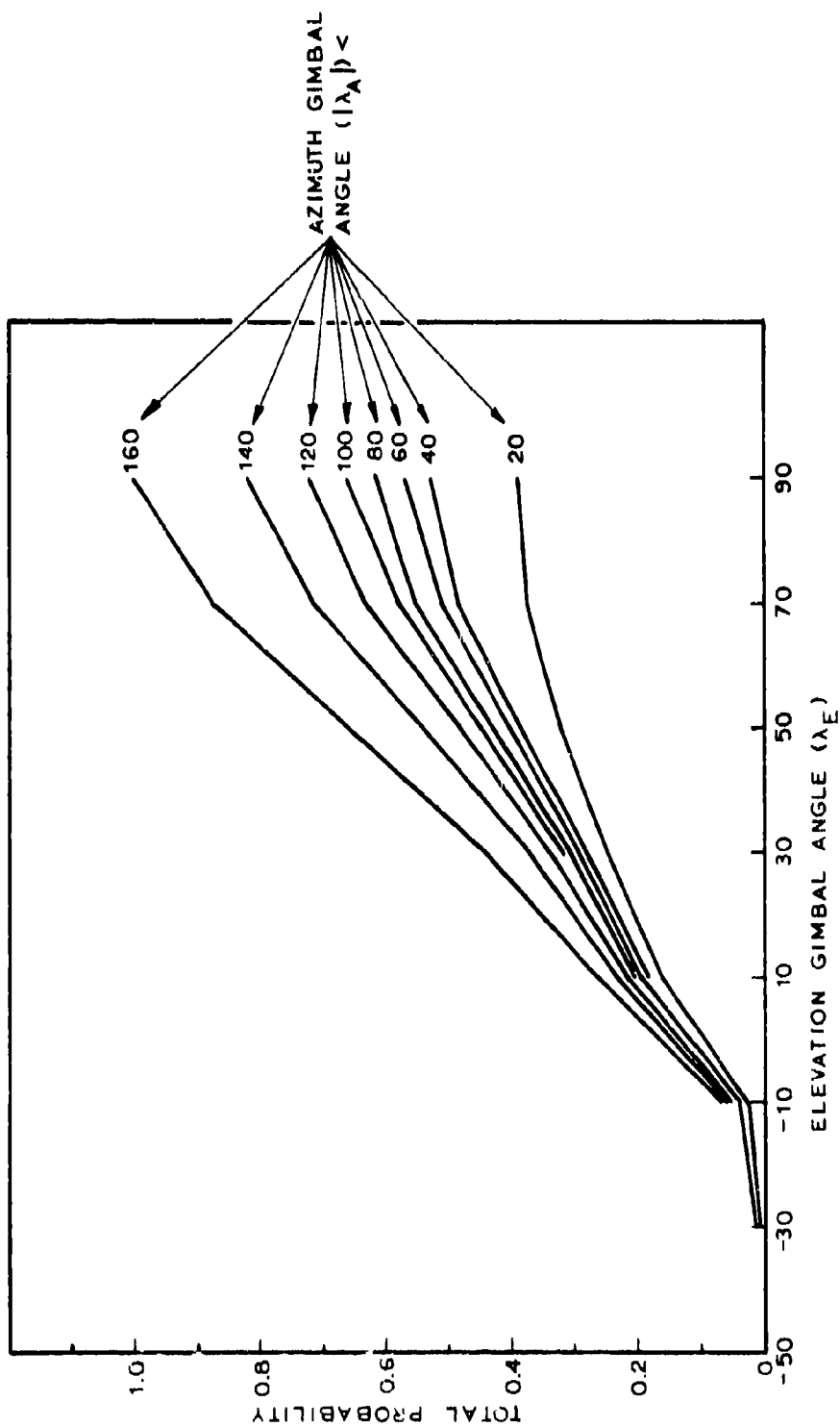


FIG. 5 - CUMULATIVE PROBABILITY DISTRIBUTION OF ELEVATION GIMBAL ANGLE FOR SEVERAL VALUES OF AZIMUTH GIMBAL ANGLE.

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1. The forward $\pm 60^\circ$ in azimuth and elevation - nose sector.
2. The rear $\pm 60^\circ$ in azimuth and elevation - tail sector.
3. The top and bottom ± 30 cones - top and bottom cones.
4. The side sectors $\pm 60^\circ$ in elevation and between $\pm 60^\circ$ and $\pm 120^\circ$ azimuth - side sectors.
5. Total sphere coverage.

(U) The values quoted in Table 2 are maxima of the 2σ values (95% based upon normal distribution assumption) except for the total sphere coverage case, for which maximum and minimum are quoted. The bottom side sector and the bottom tail sector were not used in the determination of rates and accelerations for the table because of their low frequency of occurrence. Their small sample size makes the normal distribution assumption less valid; therefore, confidence is reduced in the 2σ value containing 95% for the data. It is also important to note that the data in Section A-4 of Appendix A is divided into 8 sectors, which differs from the division of data shown in Table 2.

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TABLE 2 - TRACKING PARAMETER VARIATIONS AS A FUNCTION OF COVERAGE AREA.

PARAMETER	COVERAGE AREA			
	NOSE SECTOR (2σ)	TAIL SECTOR (2σ)	TOP & BOTTOM CONE (2σ)	SIDE SECTORS (2σ)
% OF TIME IN COVERAGE AREA	44	28	23	5
RANGE (FT)	30,000	37,000	28,000	32,000
RANGE RATE (FT/SEC)	- 2,100 to + 1,000	- 1,000 to + 2,100	- 1,300 to + 1,600	- 1,300 to + 1,500
RANGE ACCELERATION (FT/SEC ²)	400	360	670	800
AZIMUTH LINE OF SIGHT RATE (DEG/SEC)	40	66	28	85
AZIMUTH LINE OF SIGHT ACCELERATION (DEG/ SEC ²)	36	68	38	102
ELEVATION LINE OF SIGHT RATE (DEG/SEC)	41	45	31	38
ELEVATION LINE OF SIGHT ACCELERATION (DEG/ SEC ²)	37	51	40	45
AZIMUTH GIMBAL RATE (DEG/SEC)	51	82	450	95
AZIMUTH GIMBAL ACCELE- RATION (SEG/SEC ²)	47	88	580	140
ELEVATION GIMBAL RATE (DEG/SEC)	47	46	37	68
ELEVATION GIMBAL ACCELE- RATION (DEG/SEC ²)	51	55	49	76
				100
				50,000
				+ 2,400
				3,000
				1,300
				1,300
				1,140
				1,130
				12,000
				12,000
				12,000
				930

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III. PARAMETER INTERACTION STUDY

A. Program Description

(U) In Section II of this report, the mean plus or minus 2σ values for the tracking parameters were given. In order to assign a probability to these numbers, a distribution must be assumed. If a normal distribution is assumed, then the average plus 2σ yields a 95% probability. In this section of the report, the actual distributions of the parameters were determined and the actual probabilities found. In addition, the actual distribution of two related parameters were determined thus enabling the determination of a single probability for two related parameters, such as the range rate and range acceleration.

(C) The basic computer program description is contained in Appendix B. This program has the capability of computing a two-variable cumulative distribution with average and 1σ of the dwell time for any parameters of interest. The program has the further capability of calculating a frequency distribution in the third dimension and/or collecting the data by gimbal angle off nose and off tail of the fighter aircraft. Further restrictions such as minimum range, maximum range, etc., can be applied to the data.

(U) Tape 1 was used for this study because by the primary weapon control study it was shown to be a good representative of the dogfight engagement. For the parameters of interest, the 2σ values do vary somewhat for the various tapes (Appendix A). As an example of the continuing verification of the results of the parameter interaction study, tape 3 in addition to tape 1 was used in analysis of the tracking parameters. A comparison of the results from these two tapes showed that for the primary area of interest (the 90% to 99% probability of track), the results were the same. In the lower probability of track region, tape 3 showed a higher rate and acceleration requirement than tape 1.

(U) A conclusion to be drawn by the comparison of the two tapes is that for the 90% to 99% probability of track the results of tape 1 are valid for all the data tapes. The differences in the 2σ values between tapes arises because of the assumption of a normal distribution made for the primary weapon control requirements study.

(U) The following is an explanation of three basic types of parameter interactions completed under this study. It should be noted that the basic reduction method is not restricted to the interactions accomplished. An example of the flexibility of this program was a study to analyze the altitude clutter as a function of range and altitude while in the vertical scan lock-up mode of the AWC-9 radar.

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1. Tracking Parameter Interactions

(U) The tracking parameter interactions were accomplished using a minimum range restriction of 225 feet in order to eliminate unrealistic rates and accelerations (inside minimum range of most tracking systems) and in order to reflect the minimum ranges experienced in the VX-4 flight test. Furthermore, the data were collected for three cases $\pm 60^\circ$ off nose, $\pm 60^\circ$ off tail, and the full sphere coverage case.

(U) Figure 6 is representative of the plots for the tracking parameters contained in Appendix B. Referring to Fig. 6, the absolute value of range rate is plotted versus the total probability of occurrence. In cases where the coverage is not full-sphere, a probability normalized to the area of coverage is shown alongside of the total probability. The various solid lines on the graph represent the variations in maximum range accelerations. The average dwell times for the conditions of range rate and accelerations are shown by the dotted lines.

(U) Referring to Fig. 6, and taking a range rate capability of 960 ft/sec, it can be seen that the probability of occurrence of range acceleration less than 180 ft/sec^2 is .77. In other words, with a 360° tracker with a range rate capability of 960 ft/sec and a range acceleration capability of 180 ft/sec^2 , tracking can be accomplished 77% of the total combat time. Referring to the dotted lines on the same graphs, the average duration of the track under these conditions is approximately 11 seconds. Further details on the tracking performance under these specific conditions can be extracted from the tables in Appendix B.

The parameter interactions studied in the aforementioned manner are:

- i. Range rate versus range acceleration
- ii. Azimuth line-of-sight rate versus azimuth line-of-sight acceleration
- iii. Elevation line-of-sight rate versus elevation line-of-sight acceleration.

2. Clutter Interactions

(U) The clutter interactions, like the tracking parameter interactions, were subject to a minimum range of 225 ft. and for three cases: $\pm 60^\circ$ off nose, $\pm 60^\circ$ off tail, and the full sphere coverage case.

(U) Figure 7 is representative of the plots for the clutter interactions contained in Appendix B. Referring to Fig. 7, the

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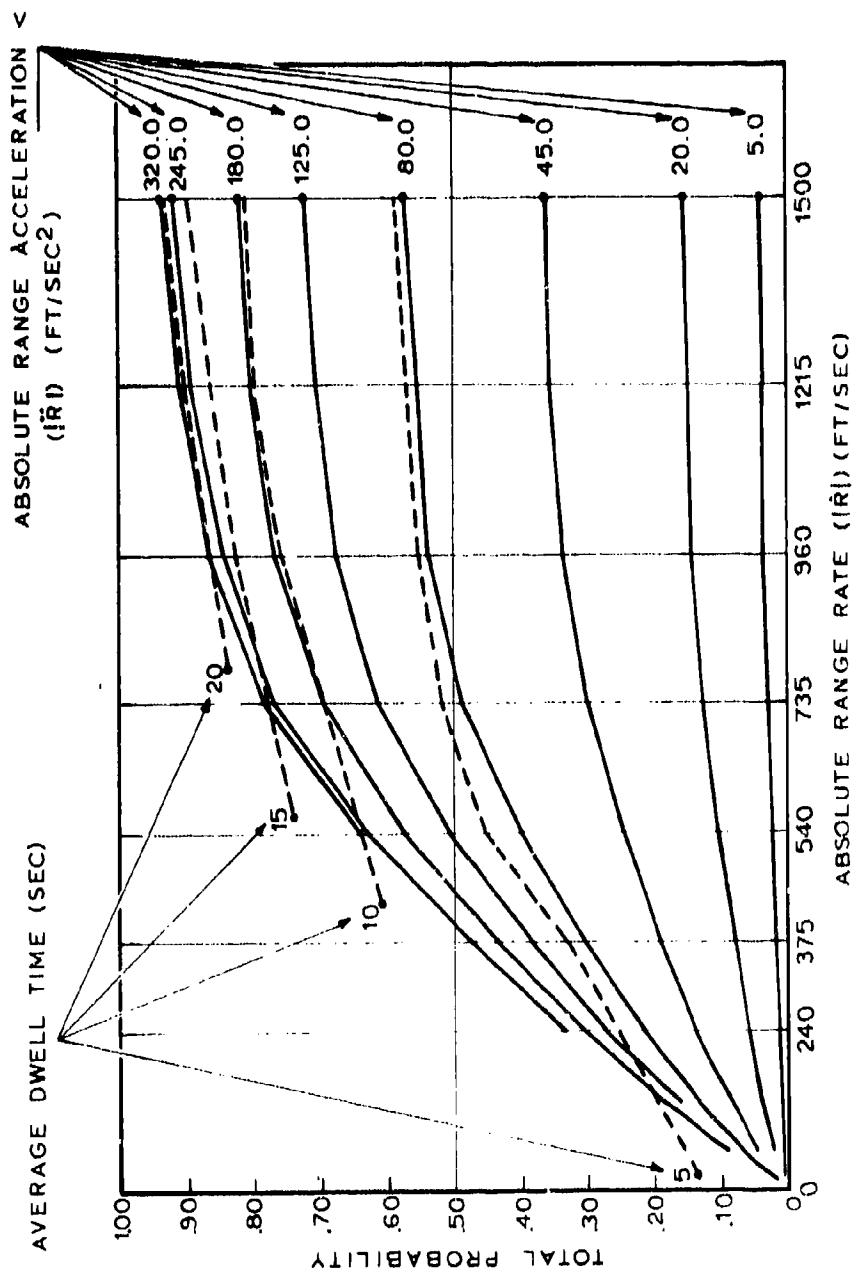


FIG. 6 - CUMULATIVE PROBABILITY DISTRIBUTION OF ABSOLUTE RANGE RATE FOR SEVERAL ABSOLUTE RANGE ACCELERATION LIMITS FOR TOTAL SPHERE COVERAGE AND MINIMUM RANGE = 225 FT.

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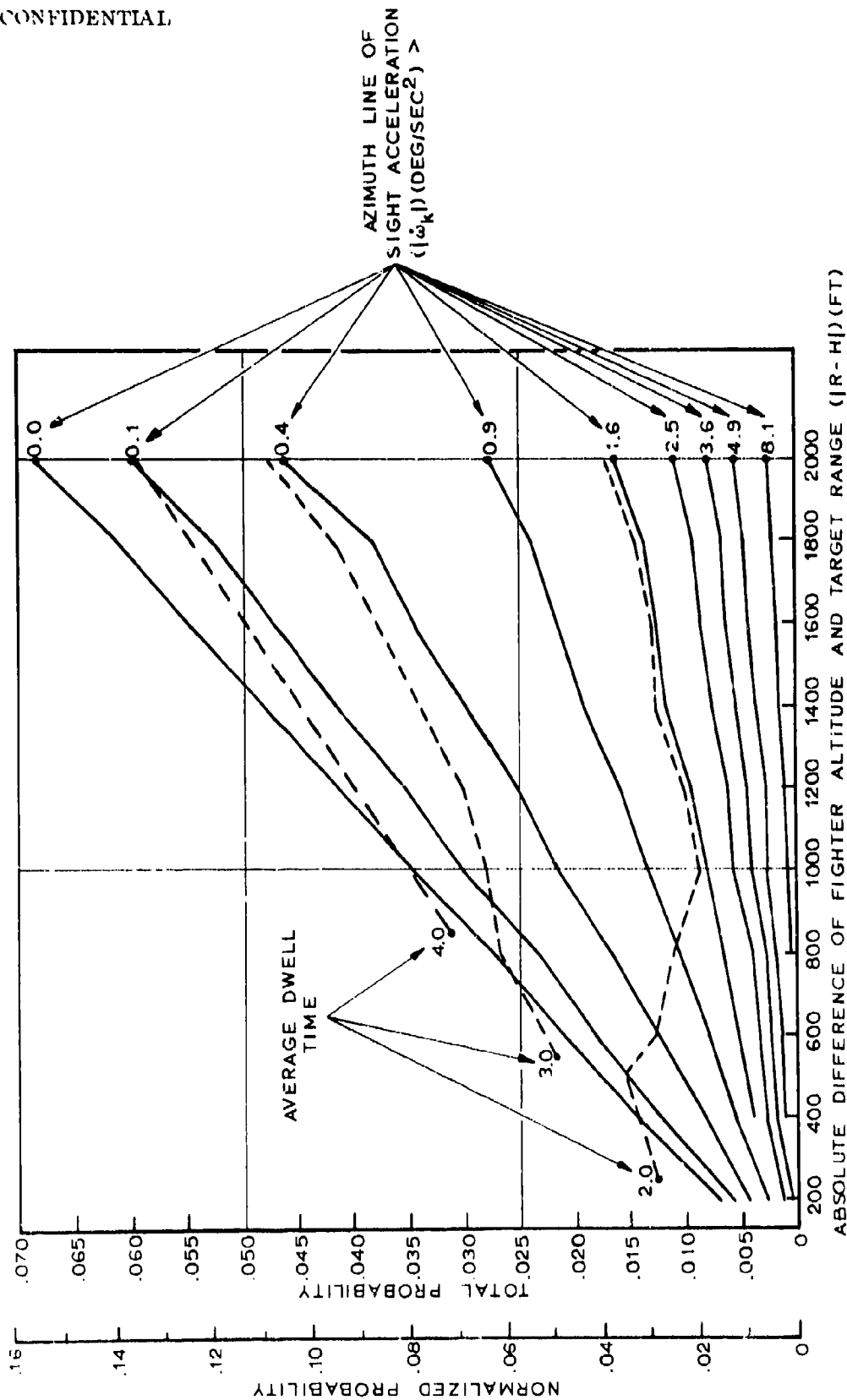


FIG. 7 - CUMULATIVE PROBABILITY DISTRIBUTION OF ABSOLUTE DIFFERENCE OF FIGHTER ALTITUDE AND TARGET RANGE FOR SEVERAL VALUES OF AZIMUTH LINE OF SIGHT ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE = 225 FT.

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difference in the range to the target and the altitude of the fighter is plotted versus the total probability of occurrence and the normalized probability (normalized to the area coverage, in this case $\pm 60^\circ$ off nose) of occurrence. The solid lines represent the probability that the azimuth line-of-sight rate is greater than the value indicated. The dotted lines represent the average dwell time in clutter. Using Fig. 7 as an example and assuming the altitude clutter return has a spread of ± 1000 ft, the target is within that region 4.3% of the total combat time and 7.8% of the time when the target is within $\pm 60^\circ$ of the nose of the fighter. Using the same clutter width, the azimuth line-of-sight rate exceeds $.9^\circ/\text{sec}^2$ 3.5% of the normalized time for an average duration of 2.3 seconds.

(U) Four types of clutter were investigated as a function of range acceleration, azimuth line-of-sight acceleration, and elevation line-of-sight acceleration. These three parameters, with their time duration, were chosen because they present the severest problem in tracking through a clutter "blind" zone. The servo or memory systems are dependent upon the extrapolation of old information to coast through the clutter. The rate of change of the old information and the associated blind time are vital in order to be able to assess the probability of a track through clutter. For example, assuming a "blind" time of 2.3 seconds and an azimuth line-of-sight acceleration during this time of $.9^\circ/\text{sec}^2$, the azimuth angle error of the tracking loop is 2.38° . The four types of clutter parameterized are listed below:

a. Pulse Doppler Main Beam Clutter (see Fig. 8)

(U) The main beam return of a pulse doppler radar has a frequency shift and a finite width dependent upon the main beam ground return, the antenna beamwidth, and the look-down angle from the velocity vector. Because of this clutter, the area around the mainbeam return is notched out. The data presented in this report can be evaluated for various notch widths.

The equation used to position the main beam clutter notch is given below:

$$\text{VCBT} = V_T \cos \lambda_{AT} \cos \lambda_{ET}$$

$$V_T = \text{target velocity}$$

$$\text{VCBT} = \text{target contribution to the range rate}$$

$$\lambda_{AT} = \text{target azimuth angle}$$

$$\lambda_{ET} = \text{target elevation angle}$$

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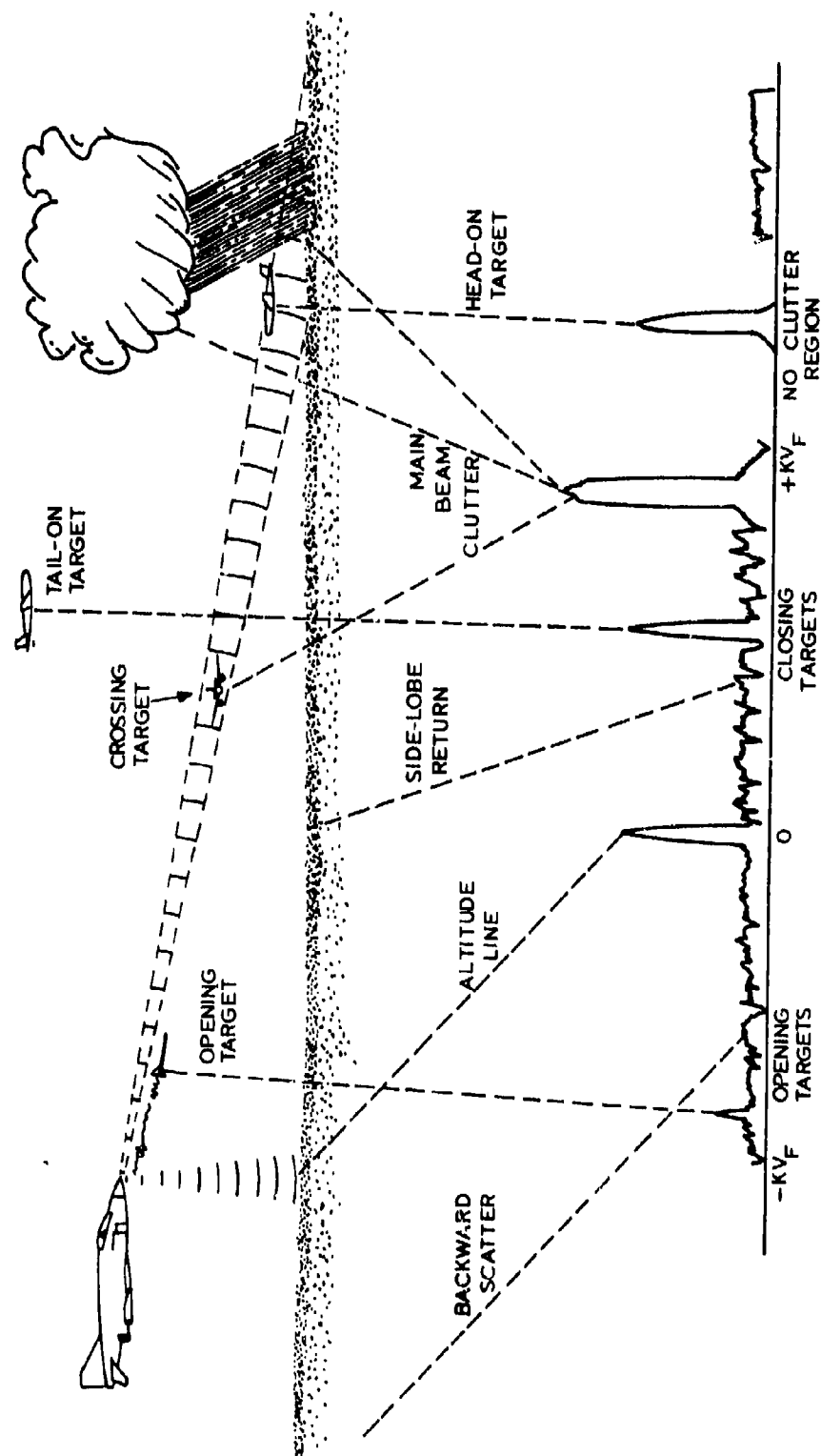


FIG. 8 - DOPPLER CLUTTER SPECTRUM.

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b. Pulse Doppler Altitude Line, f_0 (see Fig. 8)

(U) The altitude line return in a pulse doppler system is the return from the ground directly below the aircraft which has a doppler shift equal to the velocity of the fighter times the sine of the climb angle. With the fighter flying straight and level, the doppler shift is zero, i.e., the return from the ground is at the transmitted frequency f_0 . This ground return has, like the main beam clutter, a frequency spread. For this reason and because of the f_0 notch mechanization of the current AI radars, this study used various notch widths about the transmitted frequency. Therefore, when the range rate to the target is zero, within the tolerance of the notch, the target is said to be in the notch.

c. Pulse Mainbeam Clutter (see Fig. 9)

(U) The pulse mainbeam clutter is the return of the mainbeam from ground. The equation used for this analysis is given below:

$$\text{DELTA-R} = \frac{\text{HF}}{\sin (B + 2.5^\circ)} - R$$

DELTA-R = range difference between target return and leading edge of mainbeam clutter - ft.

HF = fighter altitude - ft.

B = angle the center of mainbeam makes with the ground - degrees.

2.5° = the first null on the antenna pattern - degrees.

R = range to the target - ft.

Various widths of DELTA-R were used in order to approximate the effect of the various size range gates used in the AI radars of today.

d. Pulse Altitude Line (see Fig. 9)

(U) The pulse altitude line is the ground return directly below the aircraft. When the range to the target and the altitude of the fighter are close to each other, the target is said to be in altitude line clutter. As before, this clutter is investigated for various widths.

3. Miscellaneous Interactions

(U) The primary interaction conducted in this portion of the study consisted of a preliminary study of radar glint. The objec-

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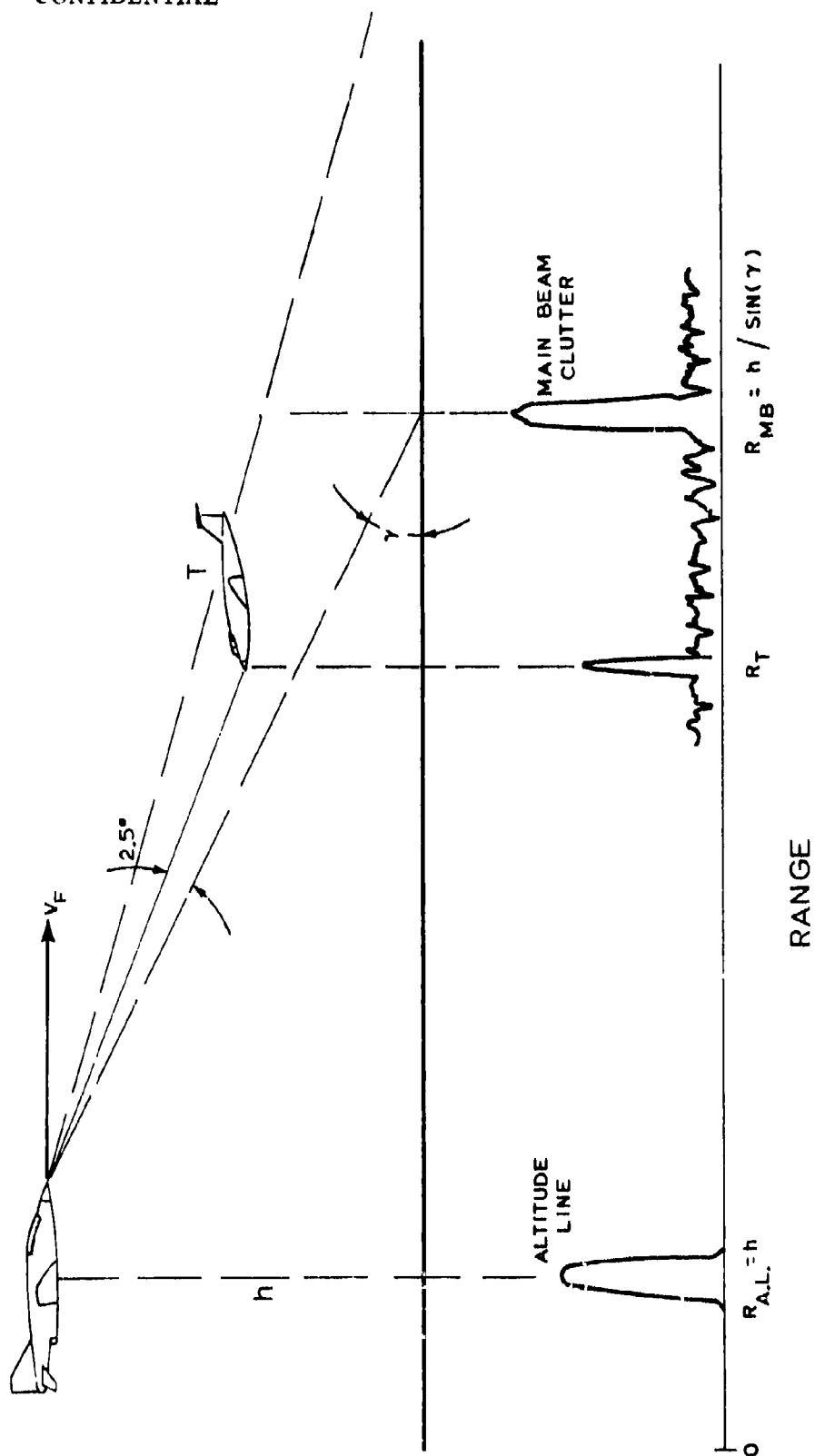


FIG. 9 - PULSE CLUTTER SPECTRUM.

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tive was to determine whether or not glint is a problem and, if so, to ascertain the magnitude of the problem. To accomplish this, the range to the target versus the rate of change of the target aspect was investigated for various target aspects.

(U) Another study undertaken in this section was one to determine the minimum range distribution. In the previous study, primary weapon control requirements, it can be noted that the distributions given for range were with regard to maximum range only. This study shows the distribution of the other end of the total range distribution.

(U) Also given in this section is the distribution of the fighter "g" loading.

B. Results

1. Tracking Parameter Interaction

(U) Table 3 is a summary of weapon system tracking requirement for a dogfight environment. The parameter values given are the tracking loop requirements in terms of rates and accelerations for 90, 95, and 99% probability of each loop retaining lock. Appendix B contains the curves and data tables from which these numbers were extracted. Through use of Appendix B, values for different probabilities may be obtained and average track times may be determined.

(U) The probability of track in Table 3 is expressed for each track loop independent of the other two track loops. The rates and accelerations given for each loop are dependent and thus various combinations of the two parameters can yield the same probability of track. For a description of this dependence, refer to Appendix B.

2. Clutter Interactions

(U) Appendix B contains the figures and data used to determine the probabilities of being in clutter and the average duration in the clutter. In addition, track errors at time of emergence from clutter may also be calculated.

(U) Table 4, in addition to summarizing the pulse and pulse doppler clutters, shows the clutter for a coherent pulse radar. A coherent pulse radar as used herein is basically a short pulse, low PRF radar with doppler filters in the range bins. The coherent pulse radar has the same altitude clutter as a pulse radar but has pulse doppler type main beam clutter. The blind velocity for the main beam clutter notch filter is smaller than in a conventional high PRF pulse

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TABLE 3 - SUMMARY OF WEAPON CONTROL SYSTEM TRACKING REQUIREMENTS.

	<u>AI RADAR COVERAGE</u>			<u>+60 TAIL COVERAGE</u>			<u>FULL SPHERE COVERAGE</u>		
	90%	95%	99%	90%	95%	99%	90%	95%	99%
<u>RANGE TRACK LOOP</u>									
RATE (ft/sec)	1700	1700	1800	1700	1700	2000	1400	1700	2200
ACCELERATION (ft/sec ²)	210	280	460	210	290	500	310	390	1000
AVERAGE TRACK TIME (sec)	9	10	9	6	7	8	20	30	100
<u>ELEVATION TRACK LOOP</u>									
RATE (deg/sec)	25	25	50	15	20	35	25	35	72
ACCELERATION (deg/sec ²)	7	15	32	9	15	39	10	19	81
AVERAGE TRACK TIME (sec)	10	11	12	7	8	8	23	38	143
<u>AZIMUTH TRACK LOOP</u>									
RATE (deg/sec)	20	25	45	10	15	30	20	30	72
ACCELERATION (deg/sec ²)	5	10	34	9	13	44	9	20	81
AVERAGE TRACK TIME (sec)	9	11	12	7	8	8	24	38	165

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TABLE 4 - CLUTTER SUMMARY FOR AI RADAR.

	<u>PULSE</u>		<u>PULSE DOPPLER</u>		<u>COHERENT PULSE</u>	
	MBC	AL	MBC	f_o	MBC	AL
SIZE NOTCH USED	300 (FT)	+1000 -(FT)	+200 (FT/SEC)	+150 (FT/SEC)	+40 (FT/SEC)	+1000 -(FT)
PROBABILITY OF OCCURENCE	.005	.078	.090	.083	.0001	.078
AVERAGE DWELL TIME (SEC)	1.1	3.9	1.8	2.4	1.0	3.9
<u>.05 PROBABILITY OF BREAK LOCK ERROR</u>						
a) RANGE (FT)	*	115			*	115
RANGE RAGE (FT/SEC)			75	61		
b) ELEVATION ANGLE (DEGREES)	*	1.7	.22	.34	*	1.7
c) AZIMUTH ANGLE (DEGREES)	*	1.01	.15	.43	*	1.01

* NOT MEASURABLE BY .05 CRITERIA

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doppler radar. A typical value for this notch filter is ± 40 ft/sec.

(U) The 0.05 probability of break lock error contained in Table 4 is the average error in the tracking loop that is seen when the target comes out of the clutter. This error or greater than this error is experienced 5% of the time the target is within AI radar coverage.

(C) As can be seen in Table 4, the pulse doppler system has the severest problem with clutter. 17% of the time in AI radar coverage, the PD radar is in clutter. It can also be seen that in order to effectively use a short pulse radar, the altitude clutter problem must be overcome. A signal strength analysis will provide better insight into the severity of this problem.

3. Miscellaneous Interactions

(U) For a complete description of the interactions performed in this section, refer to Appendix B.

(C) In looking at the minimum range of a dogfight, it was shown that 2.5% of the engagement time the two aircraft were within 765 ft. Of the time the target was within the fighters AI radar coverage, 2.5% of the time the target was within 1200 ft.

(C) In the investigation of the aircraft "g" loading, it was shown that the fighter aircraft pulled 6 "g" or better, 5% of the time.

(C) In a preliminary investigation of glint, it was suggested that it is possible to increase the tracking loops' bandwidth at short ranges without worsening the glint problems. A notable exception to this is the head on case where the target is nonmaneuvering prior to a flyby. In this case, an increase in bandwidth will probably cause an earlier break-lock.

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IV. CONCLUSIONS

A. (C) In Section II of this report, the verification of the NADC manned air combat simulation by VX-4 flight tests was shown.

B. (C) In Section II of this report, the weapon control parameter requirements, with the exception of coverage requirements, were shown to be independent of aircraft and weapons.

C. (C) In the comparison of Tables 2 and 3, it can be seen that distribution of the weapon control parameters is not normal. The impact of this conclusion is that the actual distribution, as shown in Section III, is required in order to arrive at valid weapon control parameters.

D. (C) It was shown in Section III that the rates and accelerations for each tracking loop are dependent and that they must be considered jointly when deriving realistic tracking requirements. To look at the parameters independently, one could erroneously derive tracking requirements too severe.

E. (C) Due to the length of time in clutter notches (Table 4), it is concluded that high PRF pulse doppler radar should not be used in the dogfight engagement.

F. (C) The altitude line presents the severest clutter problem for the short pulse mode. The occurrences of main beam clutter for pulse and coherent pulse radar modes are small enough to be ignored.

G. (C) Table 5 presents the probability of track for the AERO-1A, AWG-9, and AWG-10 AI radars operating in the short pulse mode. This table is useful in determining the areas in which improvements could be made in order to improve overall capability.

(C) This table, although specifying track loop probabilities, gives the independent probabilities for the parameters listed with the exception of gimbal angle by which the rest of the parameters were limited. The "worst case" total track probabilities assume the independence of the parameters. The "best case" total track probabilities assume total dependence. The actual track probability for each radar is between these two extremes and in order to ascertain this actual probability, the correlation of all these parameters must be considered. This is best accomplished in a tracking model of each radar with special emphasis on the treatment of altitude line clutter.

H. (C) It is apparent throughout this report that the expansion of the coverage area would yield the most gain in track time. However,

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TABLE 5 - PROBABILITY OF TRACK FOR PRESENT AI RADARS.

	<u>AERO 1A</u>		<u>AWG-9</u>		<u>AWG-10</u>	
	%	AVG. DURATION (sec.)	%	AVG. DURATION (sec.)	%	AVG. DURATION (sec.)
<u>PROBABILITY OF BEING IN</u>						
GIMBAL ANGLE	44.8	12	39.8	12	44.8	12
RANGE*	99	125	99	125	99	125
RANGE TRACK*	70.8	6	90.1	9	95.4	10.5
ELEVATION TRACK*	89.1	9.7	95.6	11	89.1	9.7
AZIMUTH TRACK*	93.2	10.2	97.5	11	93.2	10.2
<u>PROBABILITY OF BEING FREE OF</u>						
ALTITUDE LINE CLUTTER*	92.2	112	92.2	112	92.2	112
MAIN BEAM CLUTTER*	99.5	220	99.5	220	99.5	220
<u>"WORST CASE," TOTAL TRACK PROBABILITY</u>	23.9%		30.4%		32.2%	
<u>"BEST CASE," TOTAL TRACK PROBABILITY</u>	31.7%		35.9%		39.9%	

* VALUES GIVEN ARE WHILE IN GIMBAL ANGLE

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it is also shown that the size and shape of the coverage area greatly influences the remainder of the parameters. Furthermore, with expansion of the coverage area towards a hemisphere, the present type of tracking loops would be inadequate to handle the situation.

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V. RECOMMENDATIONS

A. (C) It is recommended that radar tracking models (currently under development) be utilized to more precisely define the dogfight capabilities of present radars. These tracking models would be further utilized for the final determination of the modifications to be made to the AI radars to improve their dogfight capabilities.

B. (C) It is recommended that adaptive bandwidth tracking loops be investigated as a means of coordinating the AI and the dogfight requirements.

C. (C) It is recommended that a pulse clutter model, including antenna patterns and terrain reflectivity, be incorporated into the tracking model. This is necessary in order to properly size the clutter notches and to optimize the track-through requirements presented in this report.

D. (C) This study shows that glint should be incorporated into the tracking model.

E. (C) As explained in this report, no single data source is totally descriptive of the dogfight environment. It is recommended that an additional data source, NMC-ACM free combat flight test data, be utilized to further verify and strengthen the conclusions of this report.

F. (C) The desirability of a total coverage tracker is evident. It can be noted that the present range-angle tracking system presents extremely high rates and accelerations around the beam of the aircraft. It is recommended that an investigation of alternative tracking methods be made. Candidate systems would be adaptive bandwidth tracking and a new tracker based on inertial coordinates.

G. (C) Although electro-optical trackers could be utilized to provide angle information, range information would still be required for the development of launch criteria. It is recommended that an investigation of alternative ranging systems be made for use with electro-optical trackers.

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VII. ACKNOWLEDGEMENTS

Mr. Ken McQueen of Naval Air Development Center provided the NADC simulation data and assistance in the use of the data.

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Mr. E. Quesinberry, Mr. L. Kuchinski, and Mr. R. Phillips of Westinghouse, Aerospace Division, Friendship, Md., provided assistance with the data reduction programs and wrote the basic computer programs.

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IX. APPENDIX

A. Primary Weapon Control Requirements

1. Data Reduction Program

The data reduction program for this phase of the study was originally written to provide the desired data from the data collected by NADC on their manned simulator. The data provided by the NADC simulation are shown in Table A-1. With much modification of the data reduction program, the VX-4 data were used to obtain the same data output. The VX-4 tape output (as supplied by NWC) is shown in Table A-2.

The flow diagram of the data reduction program used in this phase of the study is shown in Figure A-1.

The following paragraphs are a description and derivation of the equations used in this data reduction program.

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TABLE A-1

QUANTITIES PRINTED OUT
BY JOHNSVILLE SIMULATION

X - relative position in earth coordinates

Y - relative position in earth coordinates

H - altitude of each aircraft in earth coordinates

The following quantities are given for both aircraft.

ψ - course angle in degrees

Θ - climb angle in degrees

ϕ - roll angle of velocity vector

$\dot{\phi}$ - roll rate

α - angle of attack

L - lift

T - thrust

W_F - weight of fuel

M - mach number

W - weight of fighter

t - time

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TABLE A-2

QUANTITIES PRINTED OUT BY NWC
REDUCED VX-4 FLIGHT TESTS

X - X position
Y - Y position
Z - Z position
 λ - angle off boresight
 A_n - acceleration perpendicular to the velocity vector
 A_L - acceleration along the velocity vector
t - time

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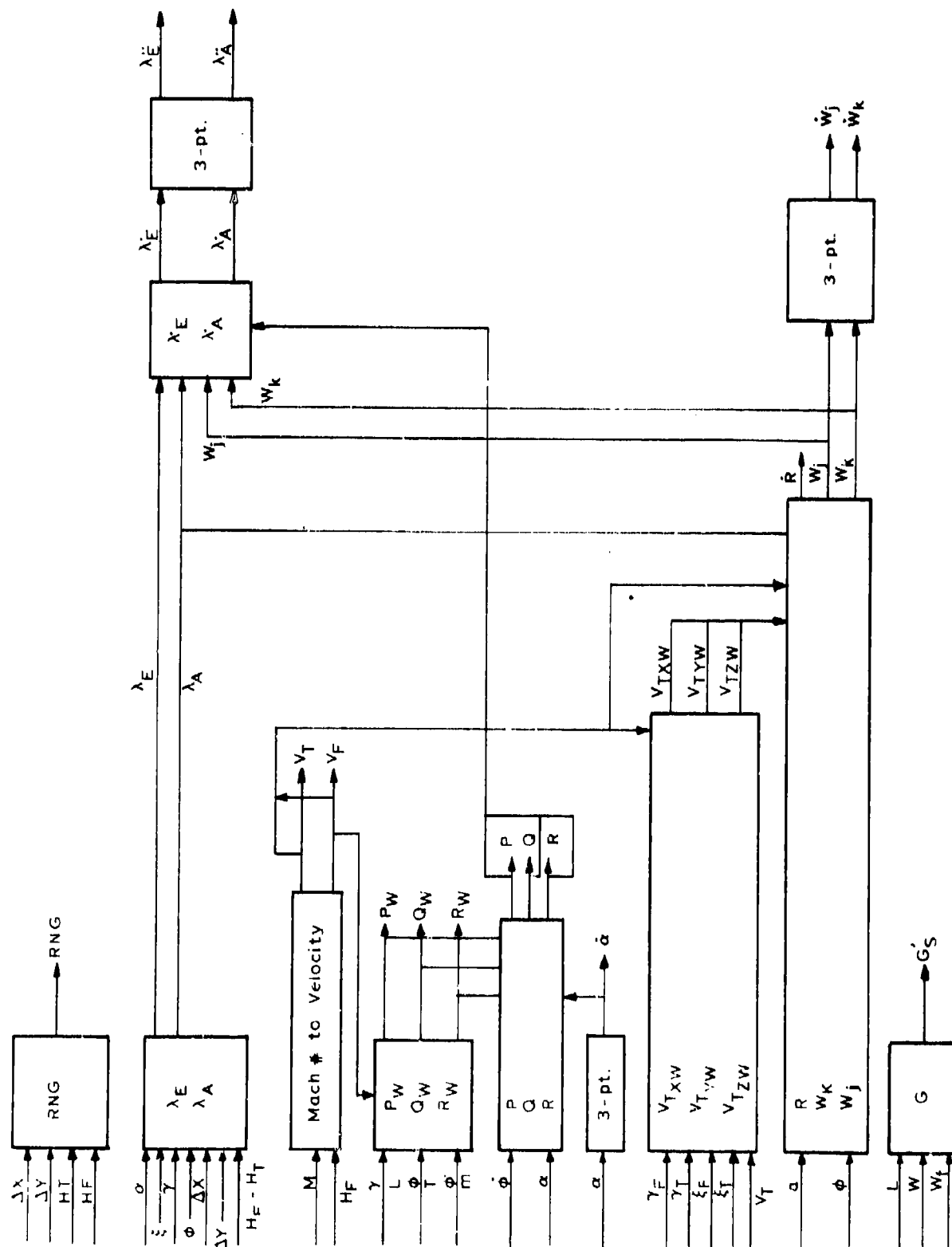


FIG. A-1 - DATA REDUCTION TECHNIQUE.

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a. Matrix Notation

The following are expansions of matrices which will hereafter be expressed in their shorthand forms.

$$\begin{bmatrix} \cos \xi & \sin \xi & 0 \\ -\sin \xi & \cos \xi & 0 \\ 0 & 0 & 1 \end{bmatrix} = [\xi]$$

$$\begin{bmatrix} \cos \gamma & 0 & -\sin \gamma \\ 0 & 1 & 0 \\ \sin \gamma & 0 & \cos \gamma \end{bmatrix} = [\gamma]$$

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos \phi & \sin \phi \\ 0 & -\sin \phi & \cos \phi \end{bmatrix} = [\phi]$$

$$\begin{bmatrix} \cos \alpha & 0 & -\sin \alpha \\ 0 & 1 & 0 \\ \sin \alpha & 0 & \cos \alpha \end{bmatrix} = [\alpha]$$

$$\begin{bmatrix} \cos \lambda_A & \sin \lambda_A & 0 \\ -\sin \lambda_A & \cos \lambda_A & 0 \\ 0 & 0 & 1 \end{bmatrix} = [\lambda_A]$$

$$\begin{bmatrix} \cos \lambda_E & 0 & -\sin \lambda_E \\ 0 & 1 & 0 \\ \sin \lambda_E & 0 & \cos \lambda_E \end{bmatrix} = [\lambda_E]$$

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The inverses of these matrices are the following:

$$\begin{bmatrix} \cos \xi & -\sin \xi & 0 \\ \sin \xi & \cos \xi & 0 \\ 0 & 0 & 1 \end{bmatrix} = [\xi]^{-1}$$

$$\begin{bmatrix} \cos \gamma & 0 & \sin \gamma \\ 0 & 1 & 0 \\ -\sin \gamma & 0 & \cos \gamma \end{bmatrix} = [\gamma]^{-1}$$

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos \phi & -\sin \phi \\ 0 & \sin \phi & \cos \phi \end{bmatrix} = [\phi]^{-1}$$

$$\begin{bmatrix} \cos a & 0 & \sin a \\ 0 & 1 & 0 \\ -\sin a & 0 & \cos a \end{bmatrix} = [a]^{-1}$$

$$\begin{bmatrix} \cos \gamma_A & -\sin \gamma_A & 0 \\ \sin \gamma_A & \cos \gamma_A & 0 \\ 0 & 0 & 1 \end{bmatrix} = [\lambda_A]^{-1}$$

$$\begin{bmatrix} \cos \lambda_E & 0 & \sin \lambda_E \\ 0 & 1 & 0 \\ -\sin \lambda_E & 0 & \cos \lambda_E \end{bmatrix} = [\lambda_E]^{-1}$$

b. Calculation of Gimbal Angles

Define an earth axis coordinate system such that $R_{XE} = \Delta X$, $R_{YE} = \Delta Y$, and $R_{ZE} = \Delta H$ where H corresponds to altitude. The range between the fighter and target is then given by

$$RNG = \sqrt{R_{XE}^2 + R_{YE}^2 + R_{ZE}^2} \quad (A-1)$$

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In the body axis system of an aircraft these become

$$\begin{bmatrix} R_X \\ R_Y \\ R_Z \end{bmatrix} = [\alpha] [\phi] [\gamma] [l] \begin{bmatrix} R_{XE} \\ R_{YE} \\ R_{ZE} \end{bmatrix} \quad (A-2)$$

Where the aircraft has an angle of attack α and a sideslip angle assumed to be zero. In the antenna axis, the range lies along the line-of-sight or X-axis therefore

$$\begin{bmatrix} R_X \\ R_Y \\ R_Z \end{bmatrix} = \begin{bmatrix} \lambda_A \end{bmatrix}^{-1} \begin{bmatrix} \lambda_E \end{bmatrix}^{-1} \begin{bmatrix} \text{RNG} \\ 0 \\ 0 \end{bmatrix} \quad (A-3)$$

Expanding A-2 and A-3 and equating:

$$\begin{aligned} & [\cos \alpha \cos \gamma \cos \xi - \sin \alpha (\sin \phi \sin \xi + \cos \phi \sin \gamma \cos \xi)] R_{XE} + \\ & [-\cos \phi \sin \xi + \sin \phi \sin \gamma \cos \xi] R_{YE} + \\ & [\sin \alpha \cos \gamma \cos \xi + \cos \alpha (\sin \phi \sin \xi + \cos \phi \sin \gamma \cos \xi)] R_{ZE} + \\ & [\cos \alpha \cos \gamma \sin \xi - \sin \alpha (-\sin \phi \cos \xi + \cos \phi \sin \gamma \sin \xi)] R_{XE} + \\ & [\cos \phi \cos \xi + \sin \phi \sin \gamma \sin \xi] R_{YE} + \\ & [\sin \alpha \cos \gamma \sin \xi + \cos \alpha (-\sin \phi \cos \xi + \cos \phi \sin \gamma \sin \xi)] R_{ZE} \\ & + [-\cos \alpha \sin \gamma - \sin \alpha \cos \phi \cos \gamma] R_{ZE} \\ & + [\sin \phi \cos \gamma] R_{ZE} \\ & + [-\sin \alpha \sin \gamma + \cos \alpha \cos \phi \cos \gamma] R_{ZE} \end{aligned} = \begin{bmatrix} \text{RNG} \cos \lambda_E \cos \lambda_A \\ \text{RNG} \cos \lambda_E \sin \lambda_A \\ -\text{RNG} \sin \lambda_E \end{bmatrix} \quad (A-4)$$

Solving the three equations of the matrices for λ_E and λ_A

$$\lambda_E = -\sin^{-1} \left(\frac{[\sin \alpha \cos \gamma \cos \xi + \cos \alpha (\sin \phi \sin \xi + \cos \phi \sin \gamma \cos \xi)] R_{XE} + [\sin \alpha \cos \gamma \sin \xi + \cos \alpha (-\sin \phi \cos \xi + \cos \phi \sin \gamma \sin \xi)] R_{YE} + [-\sin \alpha \sin \gamma + \cos \phi \cos \alpha \cos \gamma] R_{ZE}}{\text{RNG}} \right) \quad (A-5)$$

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$$\lambda_A = \tan^{-1} \left(\frac{[-\cos \emptyset \sin \xi + \sin \emptyset \sin \gamma \cos \xi] R_{XE} + [\cos \emptyset \cos \xi + \sin \emptyset \sin \gamma \sin \xi] R_{YE} + [\sin \emptyset \cos \gamma] R_{ZE}}{[\cos \alpha \cos \gamma \cos \xi - \sin \alpha (\sin \emptyset \sin \xi + \cos \emptyset \sin \gamma \cos \xi)] R_{XE} + [\cos \alpha \cos \gamma \sin \xi - \sin \alpha (\sin \emptyset \cos \xi + \cos \emptyset \sin \gamma \sin \xi)] R_{YE} + [-\cos \alpha \sin \gamma - \sin \alpha \cos \emptyset \cos \gamma] R_{ZE}} \right) \quad (A-6)$$

c. Calculation of $\dot{W}$ and $\dot{R}$

In the wind coordinate axis of the target, the velocity is entirely in the X-direction. Transforming this velocity vector to the wind axis of the fighter, the components of velocity become

$$\begin{bmatrix} V_{TXW} \\ V_{TYW} \\ V_{YZW} \end{bmatrix} = \begin{bmatrix} \gamma_F \\ \xi_F \\ \xi_T \end{bmatrix}^{-1} \begin{bmatrix} \gamma_T \end{bmatrix}^{-1} \begin{bmatrix} V_T \\ 0 \\ 0 \end{bmatrix} \quad (A-7)$$

Expanding the matrix equation:

$$V_{TXW} = V_T [\cos \gamma_F \cos \gamma_T (\cos \xi_T \cos \xi_F + \sin \xi_T \sin \xi_F) + \sin \gamma_T \sin \gamma_F] \quad (A-8)$$

$$V_{TYW} = V_T [\sin \xi_F \cos \xi_T \cos \gamma_T - \cos \gamma_F \sin \gamma_T \cos \xi_T] \quad (A-9)$$

$$V_{TZW} = V_T [\sin \gamma_F (\cos \xi_F \cos \xi_T \cos \gamma_T + \sin \xi_F \cos \gamma_T \sin \xi_T) - \cos \gamma_F \sin \gamma_T] \quad (A-10)$$

These are the components of the target velocity in the modified wind axis of the fighter where the roll of the fighter has not yet been included. The components of velocity of the fighter can now be subtracted and the difference in the velocities transformed to the antenna axis of the fighter to give

$$\begin{bmatrix} \dot{R} \\ RW_j \\ RW_K \end{bmatrix} = \begin{bmatrix} \lambda_E \\ \lambda_A \\ \alpha \\ \emptyset \end{bmatrix} \begin{bmatrix} V_{TXW} - V_F \\ V_{TYW} - 0 \\ V_{TZW} - 0 \end{bmatrix} \quad (A-11)$$

Here the roll angle of the fighter has been included. Expanding A-11 and solving for W_j , W_K , and $\dot{R}$ results in

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$$W_K = \left\{ \begin{aligned} &[-\sin \lambda_A \cos \alpha] (V_{TXW} - V_F) - [\sin \lambda_A \sin \alpha \sin \phi + \cos \lambda_A \cos \phi] V_{TYW} \\ &+ [\sin \lambda_A \sin \alpha \cos \phi + \cos \lambda_A \sin \phi] V_{TZW} \end{aligned} \right\} / \text{RNG} \quad (\text{A-12})$$

$$-W_J = \left\{ \begin{aligned} &[\sin \lambda_E \cos \lambda_A \cos \alpha + \cos \lambda_E \sin \alpha] (V_{TXW} - V_F) \\ &+ [\sin \lambda_E (\cos \lambda_A \sin \alpha \sin \phi + \sin \lambda_A \cos \phi) - \cos \lambda_E \cos \alpha \sin \phi] V_{TYW} \\ &- [\sin \lambda_E \cos \lambda_A \cos \phi \cos \alpha - \sin \lambda_E \sin \lambda_A \sin \phi - \cos \phi \cos \alpha \cos \lambda_E] V_{TZW} \end{aligned} \right\} / \text{RNG} \quad (\text{A-13})$$

$$\begin{aligned} \dot{R} = & [\cos \lambda_E \cos \lambda_A \cos \alpha + \sin \lambda_E \sin \alpha] (V_{TXW} - V_F) \\ & + [\cos \lambda_E (\cos \lambda_A \sin \alpha \sin \phi + \sin \lambda_A \cos \phi) + \sin \lambda_E \cos \alpha \sin \phi] V_{TYW} \\ & - [\cos \lambda_E (\cos \lambda_A \sin \alpha \cos \phi - \sin \lambda_A \sin \phi) + \sin \lambda_E \cos \alpha \cos \phi] V_{TZW} \end{aligned} \quad (\text{A-14})$$

d. Calculation of Gimbal Angle Rates

The aircraft is assumed to be acted upon by the forces of thrust, gravity, lift, and drag. Thrust is defined to be aligned with the body X-axis of the aircraft and an angle of attack α is assumed. In the wind axis system of the aircraft, the acceleration is given by

$$\frac{1}{m} \begin{bmatrix} \Sigma F_{XW} \\ \Sigma F_{YW} \\ \Sigma F_{ZW} \end{bmatrix} = \begin{bmatrix} \dot{V}_F \\ R_W V_F \\ -Q_W V_F \end{bmatrix} \quad (\text{A-15})$$

where R_W and Q_W are the aircraft angular rates about the wind axis.

$$\frac{1}{m} \begin{bmatrix} \Sigma F_{XW} \\ \Sigma F_{YW} \\ \Sigma F_{ZW} \end{bmatrix} = \left(\frac{1}{m} \begin{bmatrix} -D \\ 0 \\ -L \end{bmatrix} + [\alpha] \begin{bmatrix} T \\ 0 \\ 0 \end{bmatrix} + [\phi] \begin{bmatrix} 0 \\ 0 \\ mg \end{bmatrix} + [\gamma] \begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix} \right) \quad (\text{A-16})$$

where gravitational force is changed from the earth axis system to wind axis system. Expanding (A-16) and substituting in (A-15) yields:

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$$\dot{V}_F = \frac{T \cos \alpha - D}{m} - g \sin \gamma \quad (A-17)$$

$$R_W = g \sin \theta \cos \gamma / V_F \quad (A-18)$$

$$Q_W = (-g \cos \theta \cos \gamma + \frac{L - T \sin \alpha}{m}) / V_F \quad (A-19)$$

P_W is assumed to be equal to $\dot{\phi}$ whose value is given.

The angular rates in the wind axis system are related to the angular rates in the body axis system by

$$\begin{bmatrix} P \\ Q \\ R \end{bmatrix} = \begin{bmatrix} 0 \\ \dot{\alpha} \\ 0 \end{bmatrix} + [\alpha] \begin{bmatrix} P_W \\ Q_W \\ R_W \end{bmatrix} \quad (A-20)$$

The expanded matrix equation results in:

$$P = P_W \cos \alpha - R_W \sin \alpha \quad (A-21)$$

$$Q = \dot{\alpha} + Q_W \quad (A-22)$$

$$R = P_W \sin \alpha + R_W \cos \alpha \quad (A-23)$$

The gimbal angle rates are related to P, Q, and R in the following way

$$\begin{bmatrix} W_i \\ W_j \\ W_k \end{bmatrix} = \begin{bmatrix} \lambda_E \\ \lambda_A \end{bmatrix} \begin{bmatrix} P \\ Q \\ R \end{bmatrix} + \begin{bmatrix} \lambda_E \\ \lambda_A \end{bmatrix} \begin{bmatrix} 0 \\ 0 \\ \dot{\lambda}_A \end{bmatrix} + \begin{bmatrix} 0 \\ \dot{\lambda}_E \\ 0 \end{bmatrix} \quad (A-24)$$

The equation in the expanded matrix equation are:

$$W_i = P \cos \lambda_E \cos \lambda_A + Q \cos \lambda_E \sin \lambda_A - R \sin \lambda_A - \dot{\lambda}_A \sin \lambda_E \quad (A-24)$$

$$W_j = -P \sin \lambda_A + Q \cos \lambda_A + \dot{\lambda}_E \quad (A-25)$$

$$W_k = P \sin \lambda_E \cos \lambda_A + Q \sin \lambda_E \sin \lambda_A + R \cos \lambda_E + \dot{\lambda}_A \cos \lambda_E \quad (A-26)$$

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Solving for $\dot{\lambda}_A$ and $\dot{\lambda}_E$ in terms of W_j and W_K yields:

$$\dot{\lambda}_E = W_j + P \sin \lambda_A - Q \cos \lambda_A$$

$$\dot{\lambda}_A = \left[W_K - P \sin \lambda_E \cos \lambda_A - Q \sin \lambda_E \sin \lambda_A - R \cos \lambda_E \right] / \cos \lambda_E$$

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e. Glossary

ξ_F = yaw angle of fighter

ξ_T = yaw angle of target

γ_F = pitch angle of fighter

γ_T = pitch angle of target

$\emptyset$ = roll angle of fighter

α = angle of attack of fighter

λ_A = gimbal angle in azimuth

λ_E = gimbal angle in elevation

R_{XE} = X-coordinate	}	of Range between fighter and target in earth axis system
R_{YE} = Y-coordinate		
R_{ZE} = Z-coordinate		

R_X = X-coordinate	}	of Range between fighter and target in body axis system
R_Y = Y-coordinate		
R_Z = Z-coordinate		

RNG = Range from fighter to target

V_T = Velocity of target

V_{TXW} = X-coordinate	}	of velocity of target in modified wind axis system of fighter
V_{TYW} = Y-coordinate		
V_{TZW} = Z-coordinate		

$\dot{R}$ = Closing velocity between fighter and target

W_i = Space line of sight rate measured about line of sight X-axis

W_j = Space line-of-sight rate measured about line of sight Y-axis

W_K = Space line of sight rate measured about line of sight Z-axis

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V_F = Velocity of fighter

$\dot{V}_F$ = Acceleration of fighter

P_W	$\left\{ \begin{array}{l} \text{Angular rate of fighter in wind} \\ \text{Axis system measured about} \end{array} \right\}$	X-axis
Q_W		Y-axis
R_W		Z-axis

F_{XW} = X-component	$\left\{ \begin{array}{l} \text{of forces on fighter} \\ \text{in wind axis system} \end{array} \right\}$
F_{YW} = Y-component	
F_{ZW} = Z-component	

T = thrust

D = drag

L = lift

g = gravitational constant

m = mass of fighter and fuel

$\dot{\alpha}$ = rate of change of angle of attack

$\dot{\lambda}_A$ = rate of change of gimbal azimuth angle

$\dot{\lambda}_E$ = rate of change of gimbal elevation angle

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2. Azimuth versus elevation of the target versus frequency of occurrence data plots are contained in Fig. A-2 through Fig. A-15.

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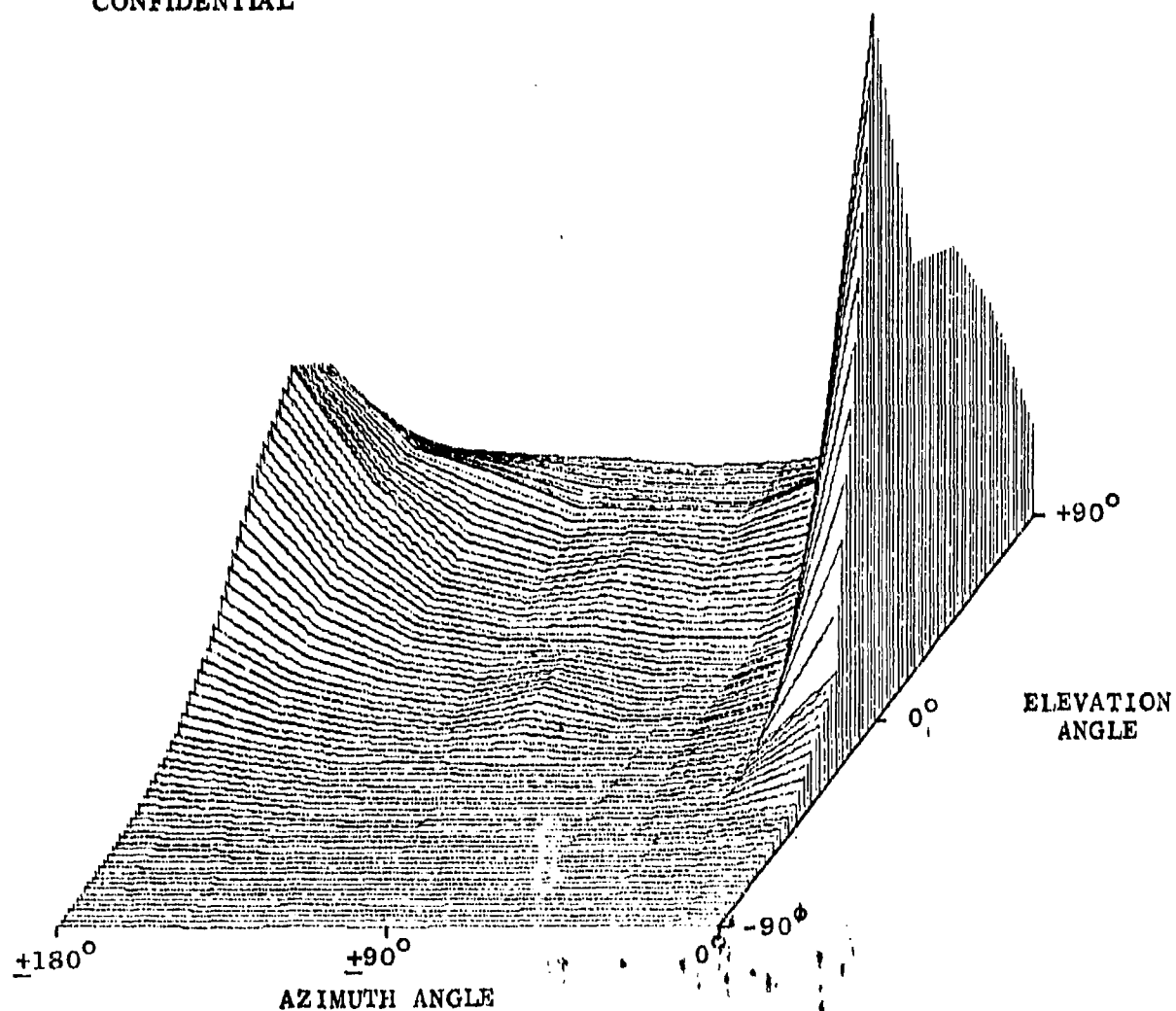


FIG. A-2 - TAPE 1 - FIGHTER 1 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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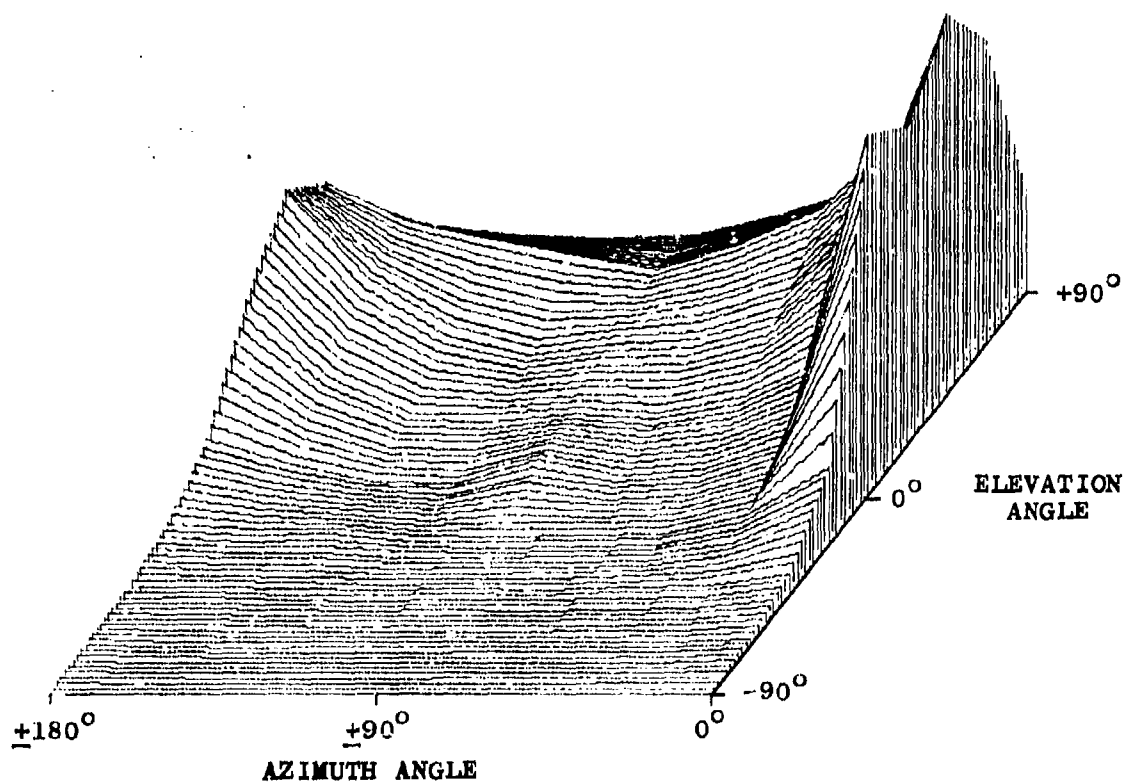


FIG. A-3 - TAPE 1 - FIGHTER 2 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

CONFIDENTIAL

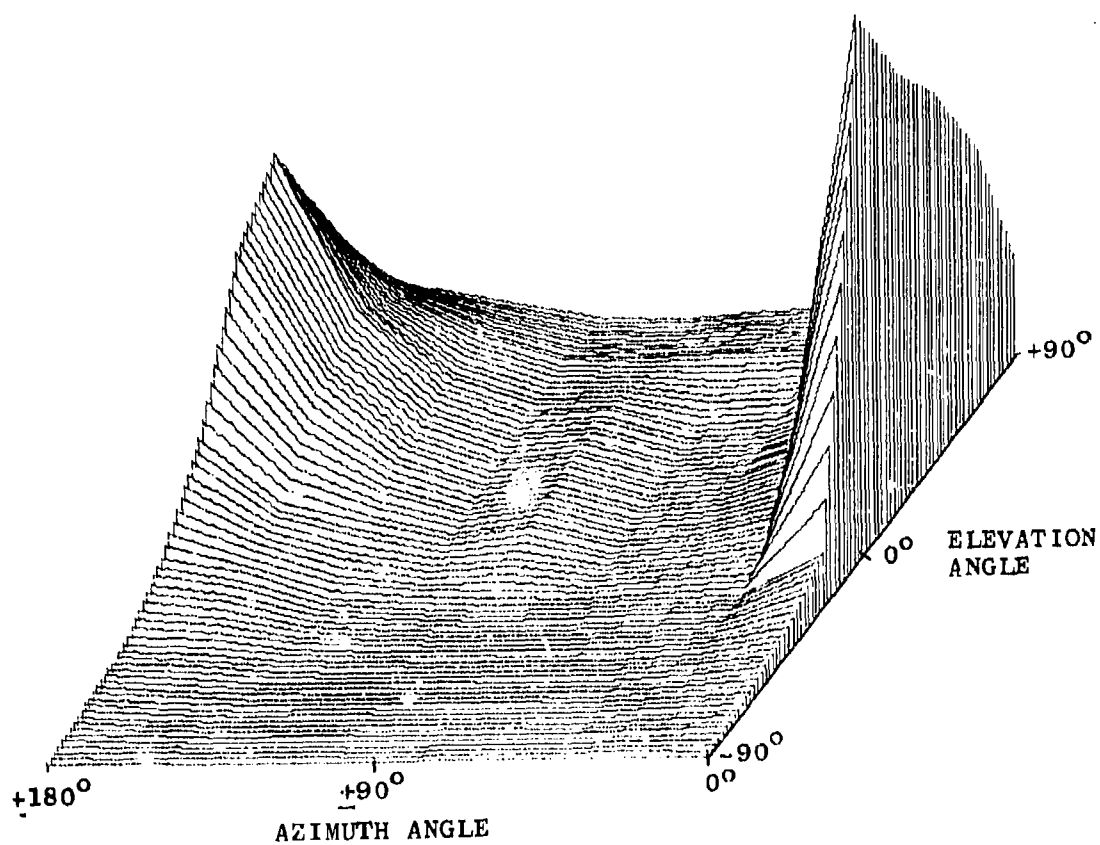


FIG. A-4 - TAPE 2 - FIGHTER 1 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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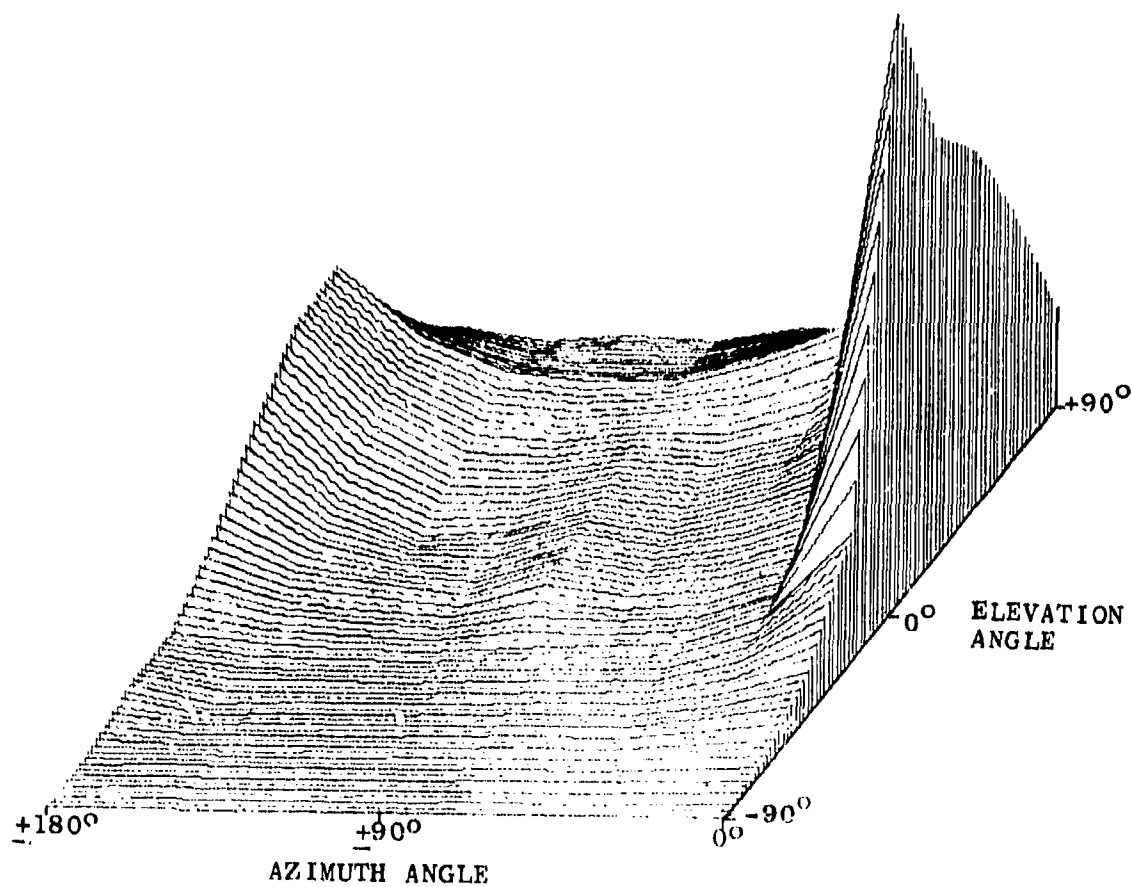


FIG. A-5 - TAPE 2 - FIGHTER 2 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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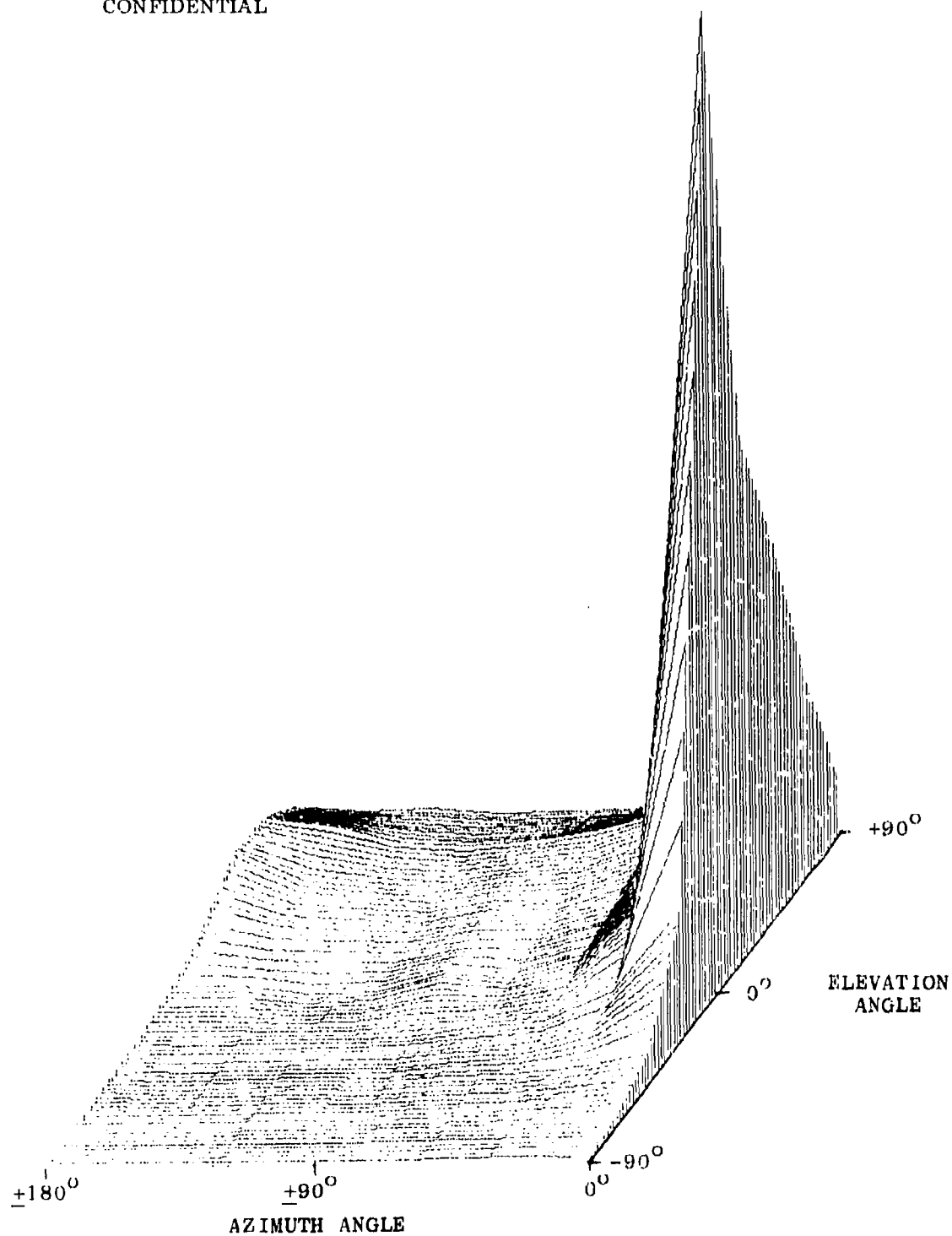


FIG. A-6 - TAPE 3 - FIGHTER 1 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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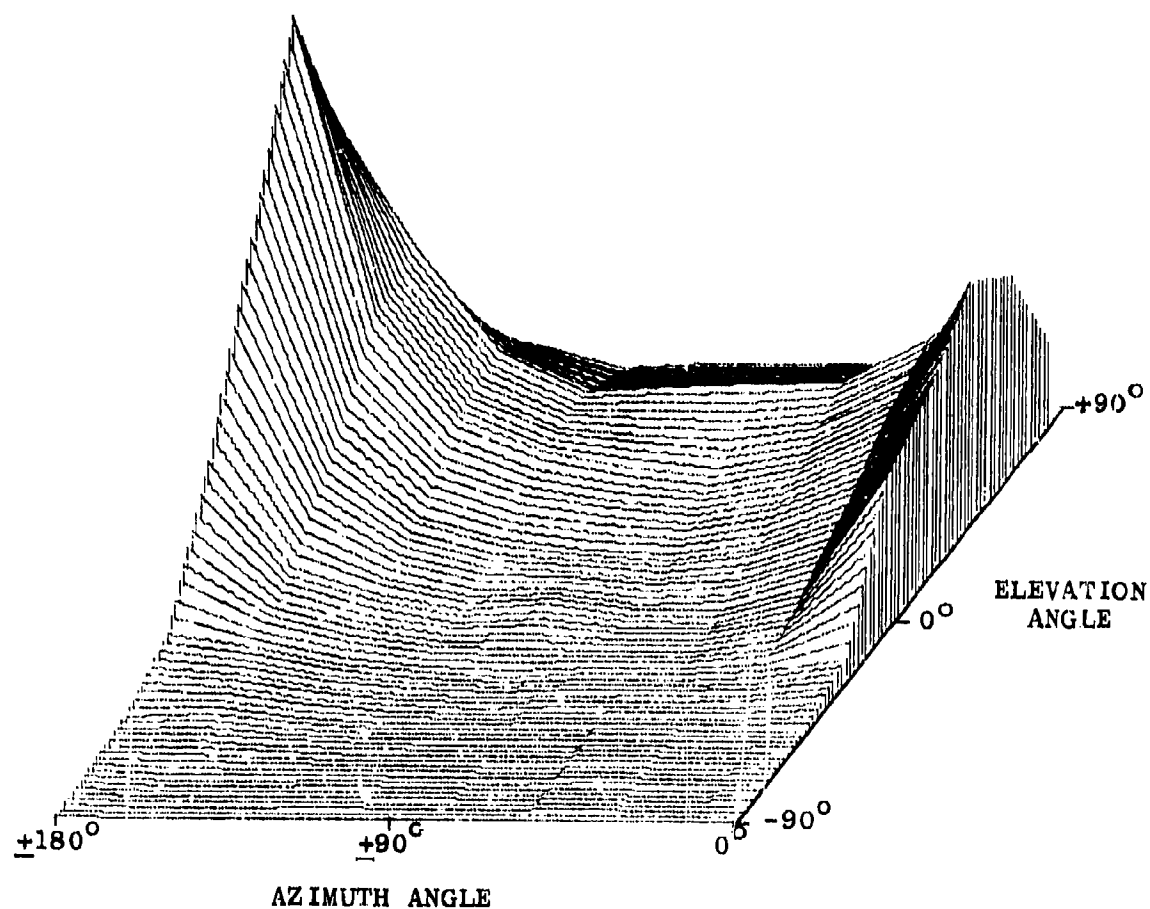


FIG. A-7 - TAPE 3 - FIGHTER 2 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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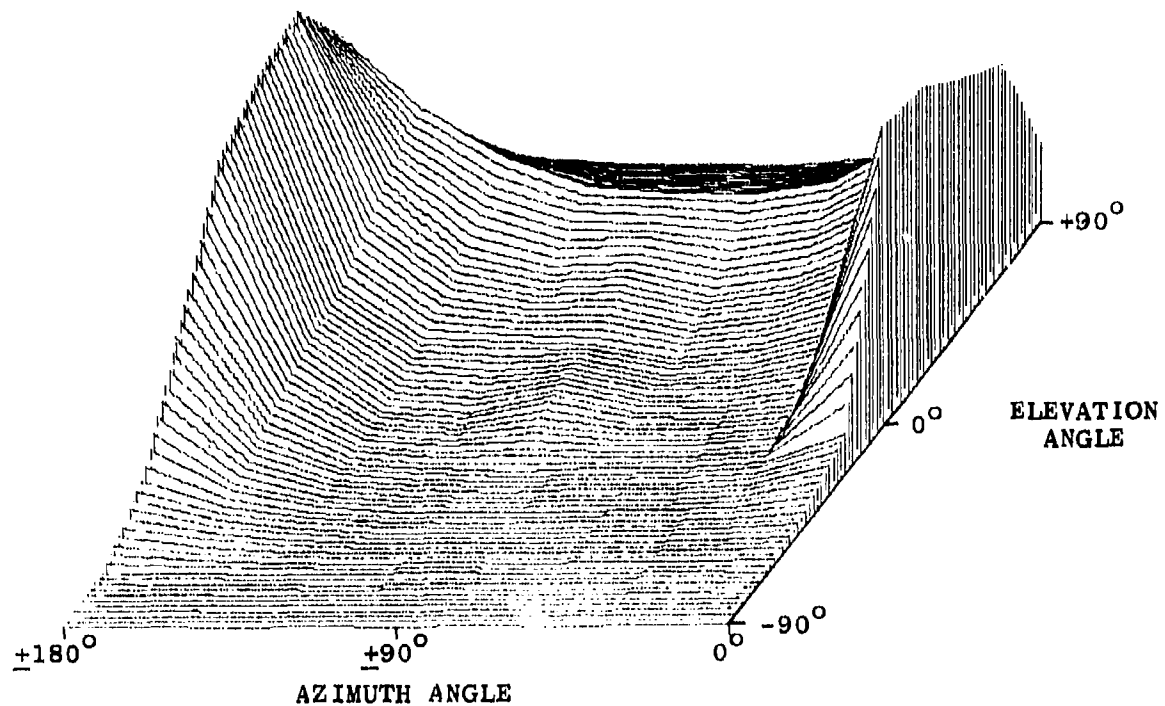


FIG. A-8 - TAPE 4 - FIGHTER 1 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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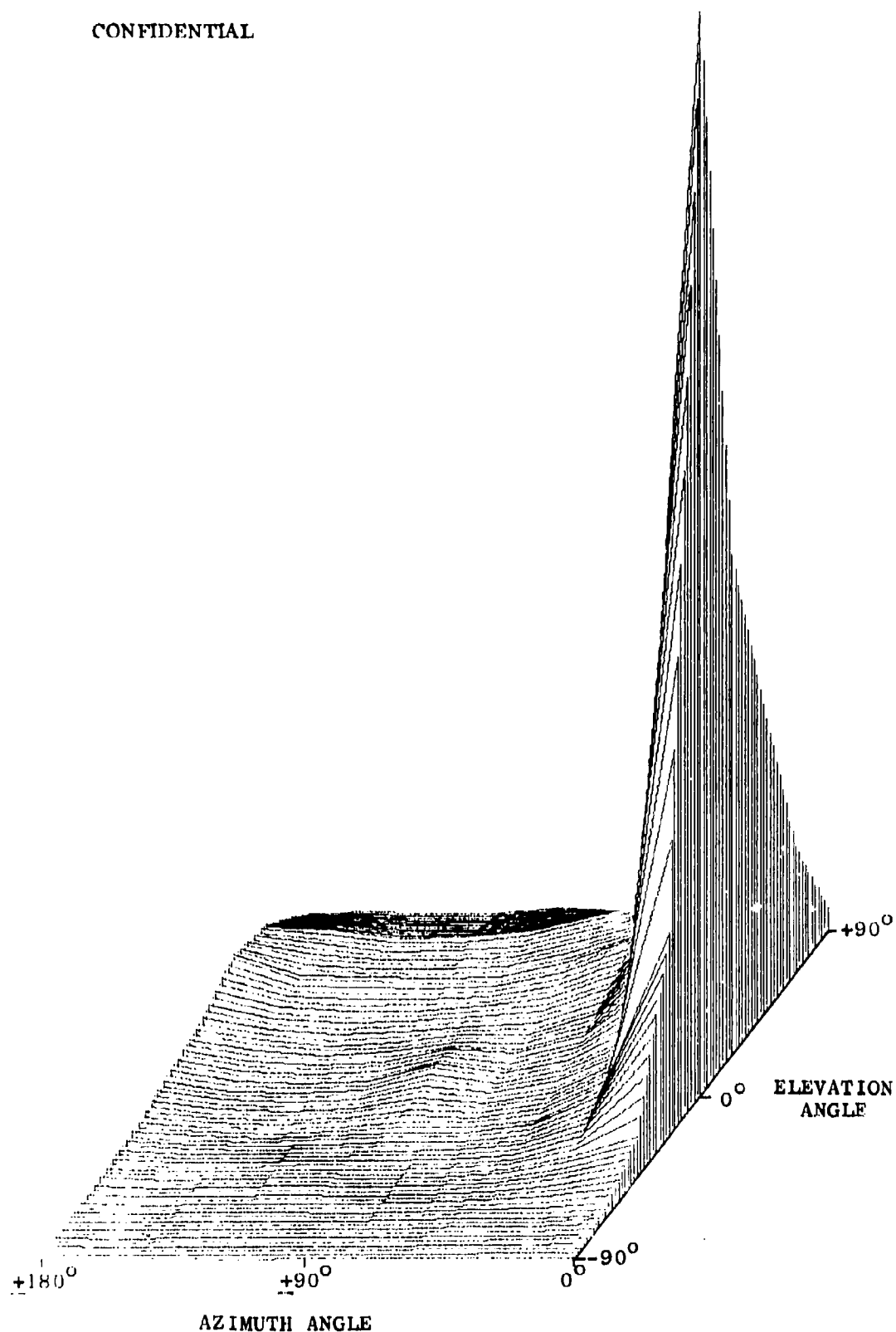


FIG. A-9 - TAPE 4 - FIGHTER 2 - ELEVATION ANGLE VERSUS AZIMUTH ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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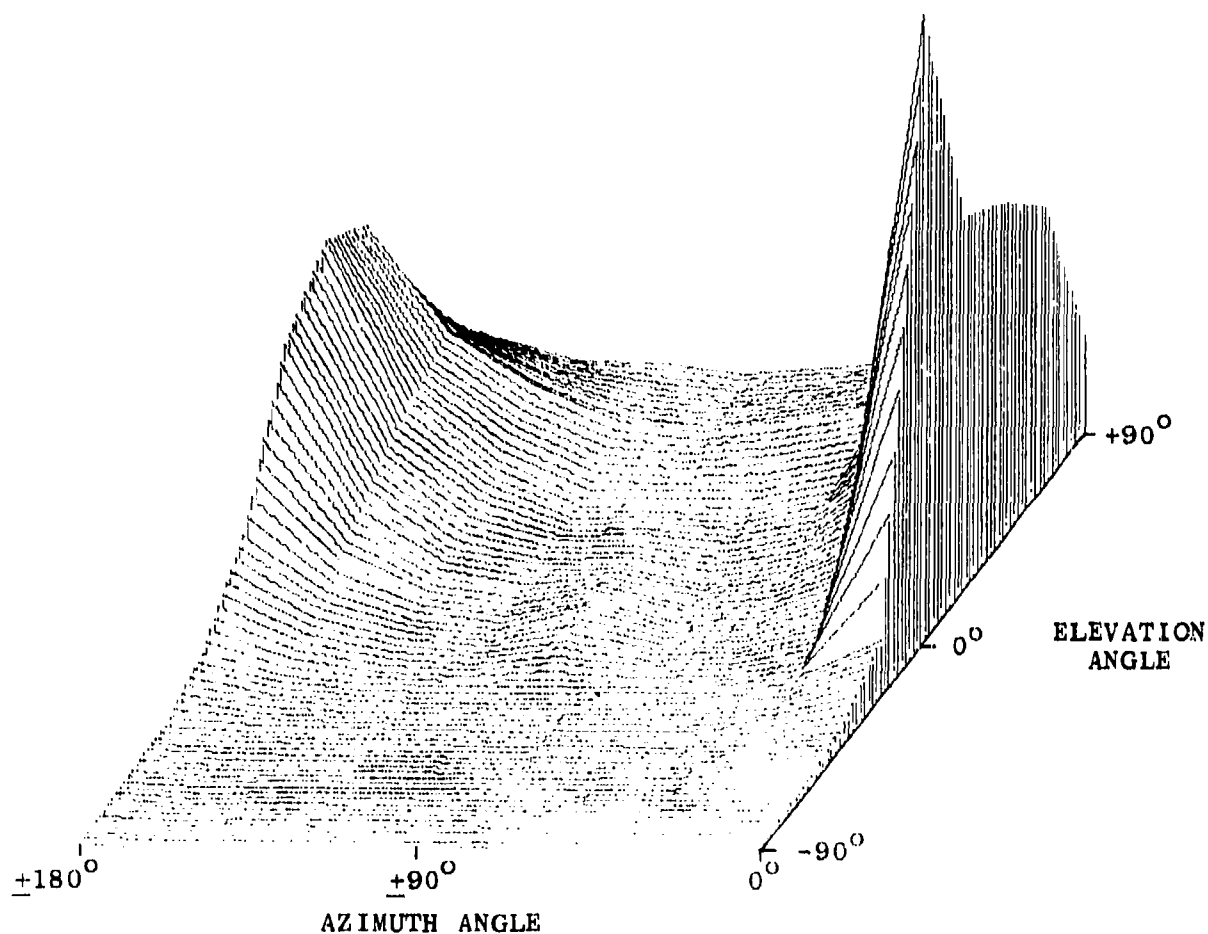


FIG. A-10 - TAPE 5 - FIGHTER 1 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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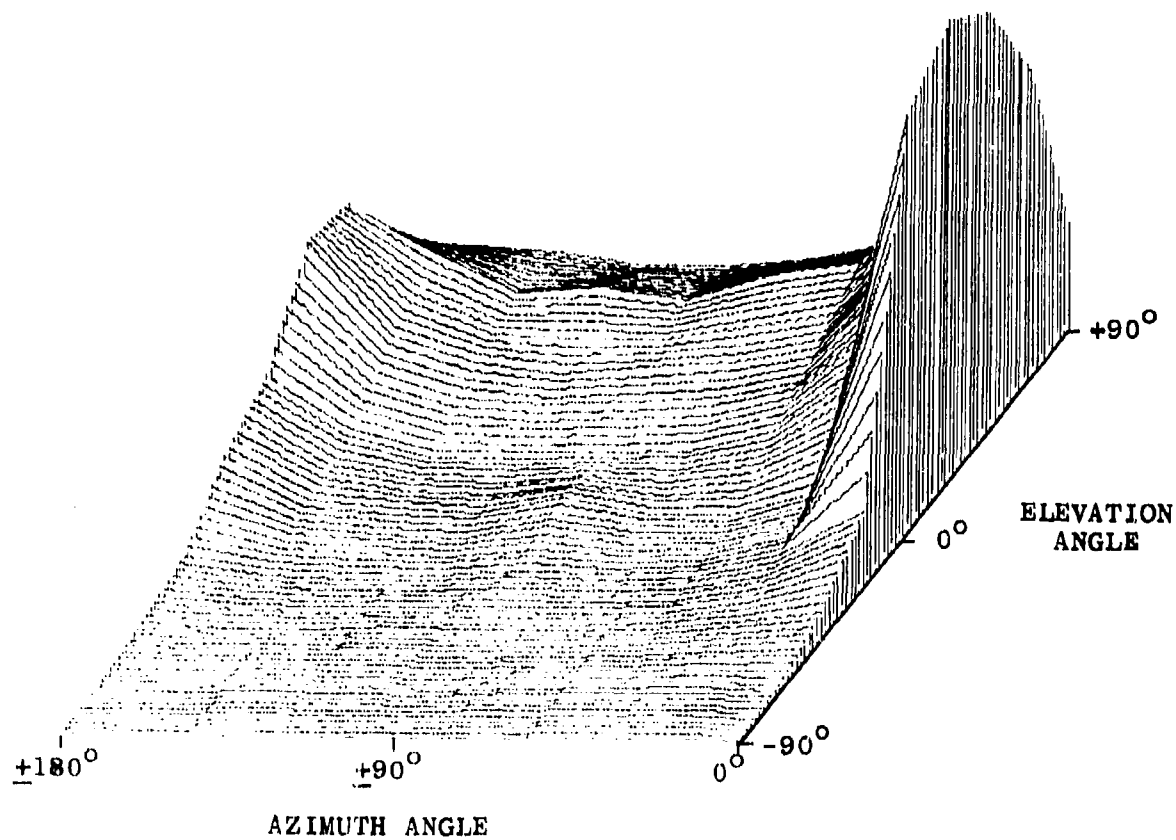


FIG. A-11- TAPE 5 - FIGHTER 2 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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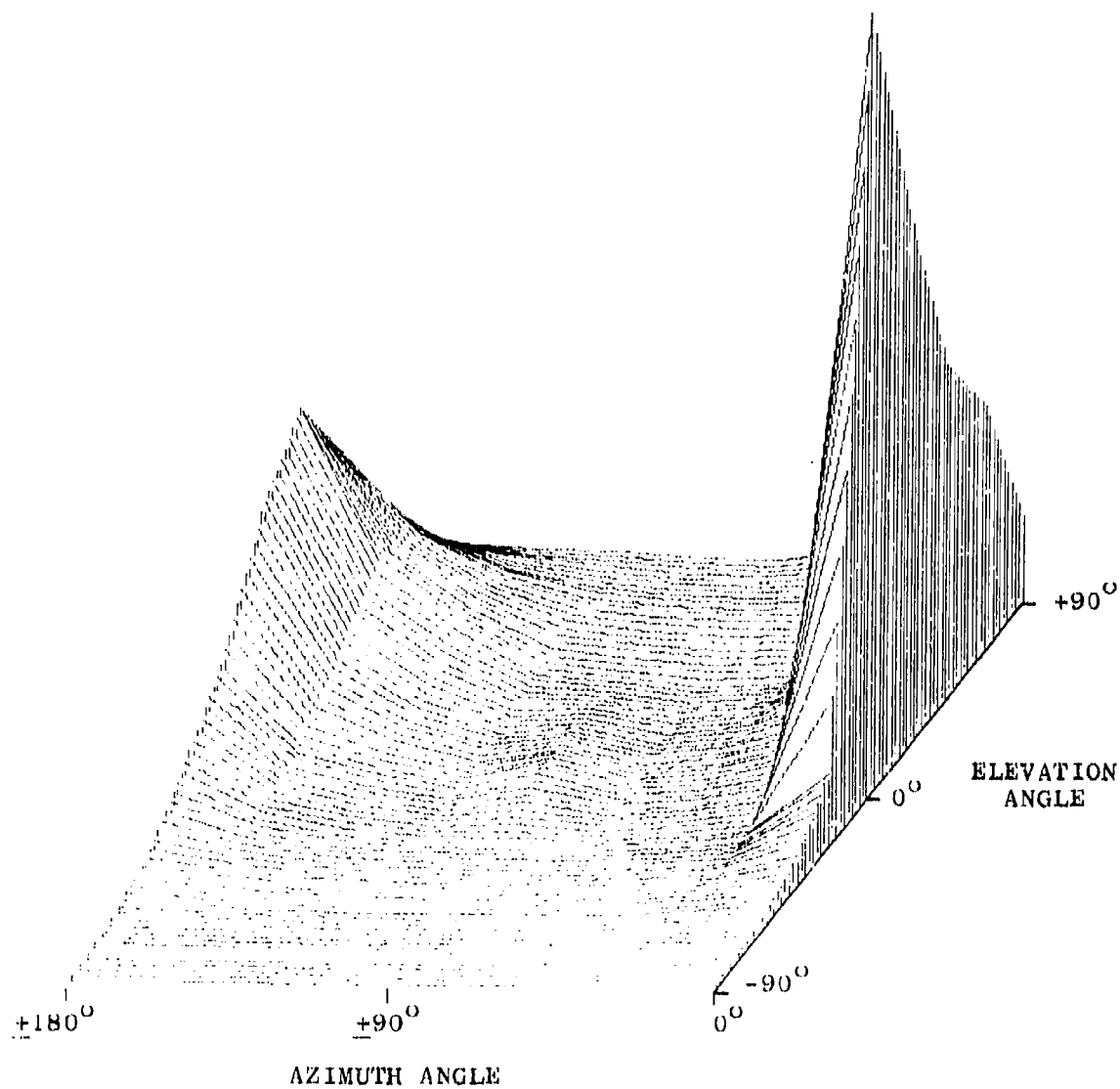


FIG. A-12 - TAPE 6 - FIGHTER 1 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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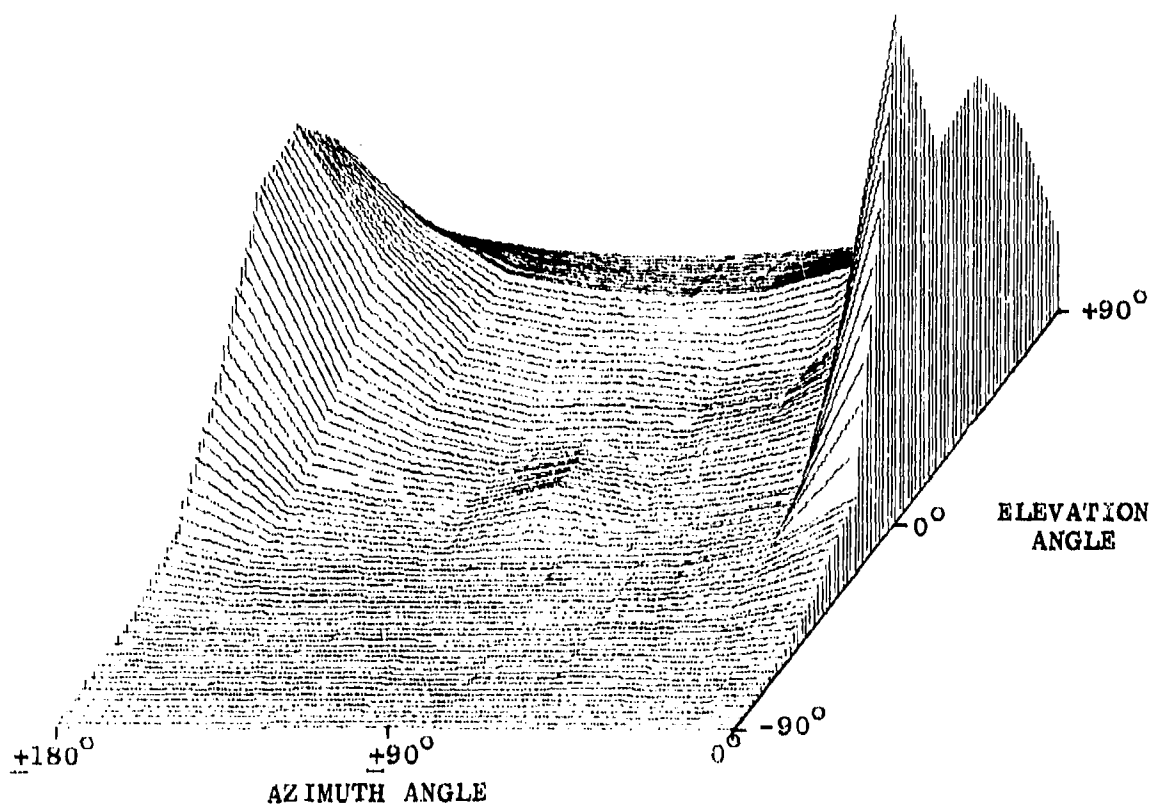


FIG. A-13 - TAPE 6 - FIGHTER 2 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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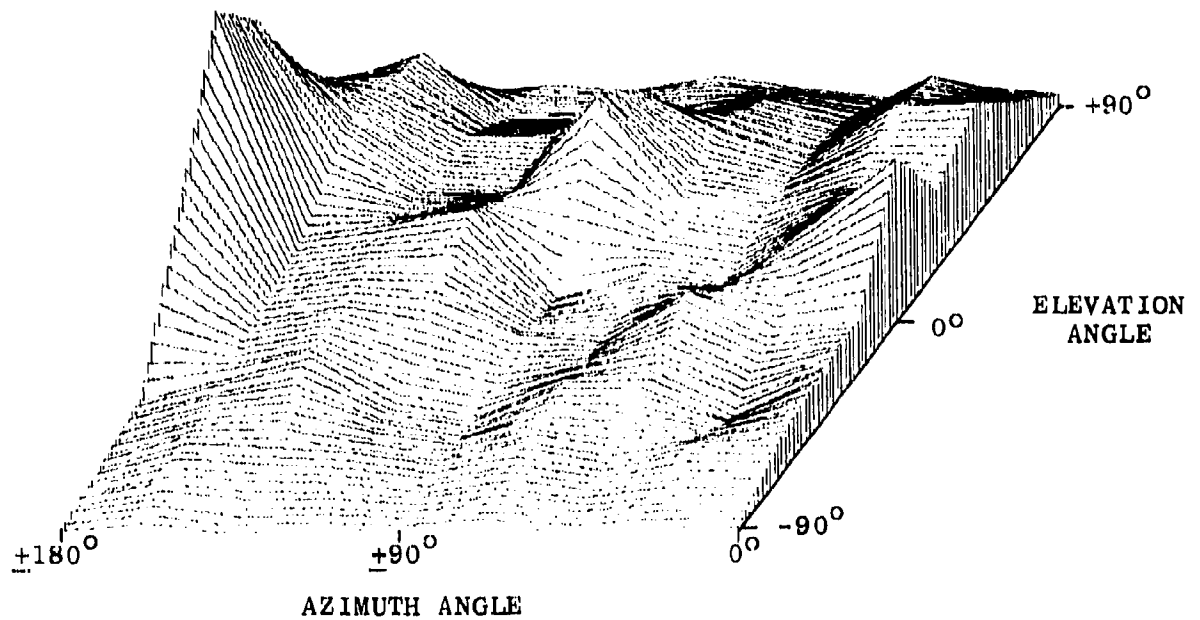


FIG.A-14 - TAPE 101 - FIGHTER 1 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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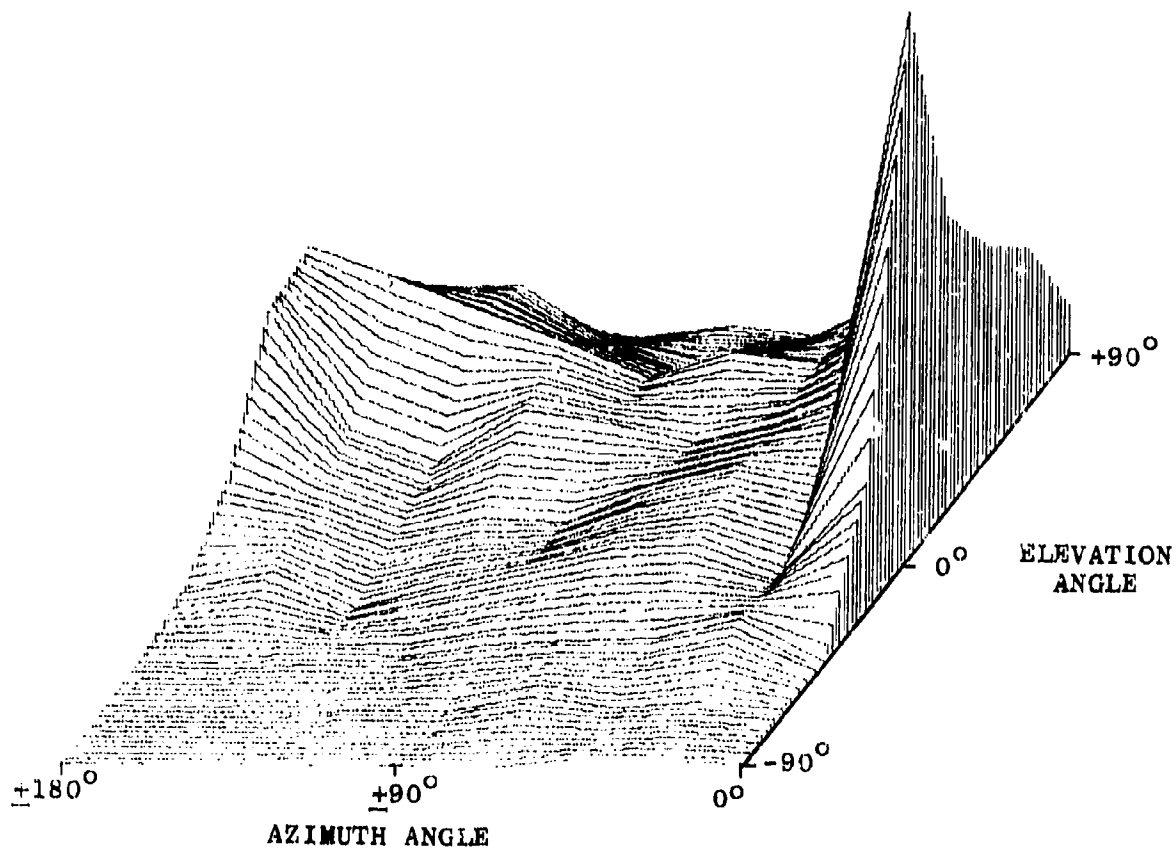


FIG. A-15- TAPE 101 - FIGHTER 2 - ELEVATION ANGLE
VERSUS AZIMUTH ANGLE VERSUS FREQUENCY
OF OCCURRENCE.

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3. Angle off boresight versus range to the target versus frequency of occurrence plots are shown in Fig. A-16 through A-29.

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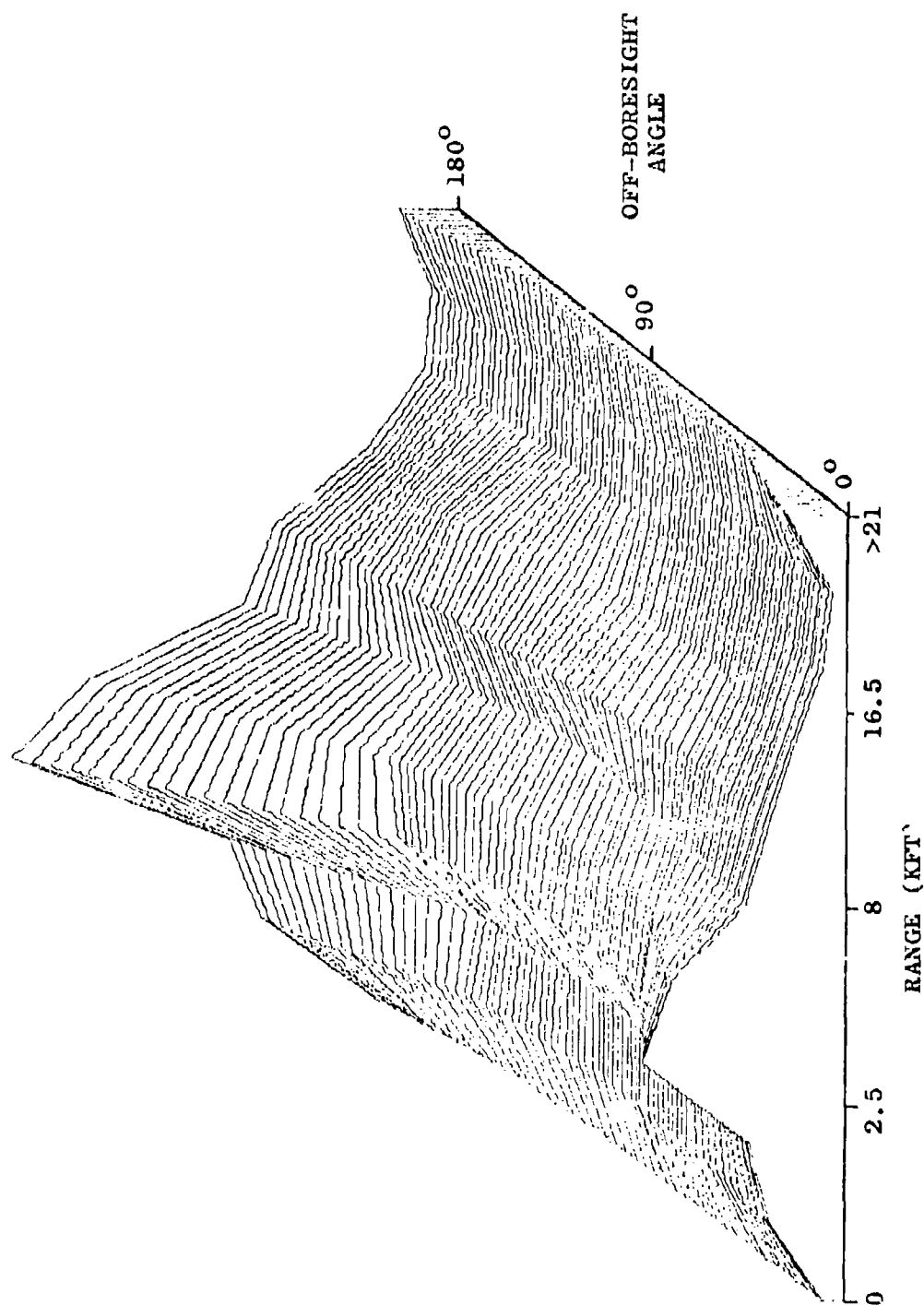


FIG. A-16 - TAPE 1 - FIGHTER 1 - RANGE VERSUS OFF-BORESIGHT
ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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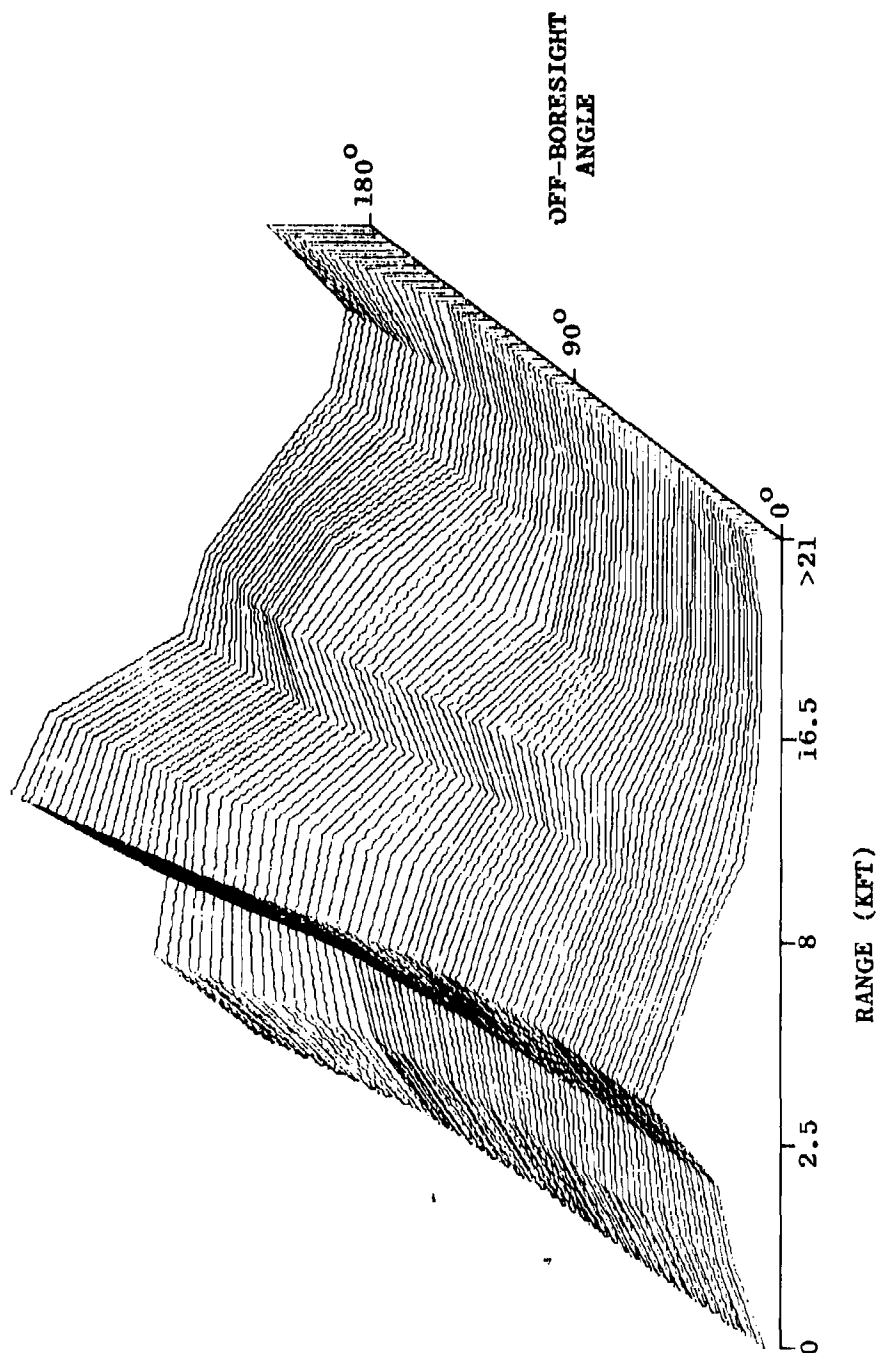


FIG. A-17 TAPE 1 - FIGHTER 2 - RANGE VERSUS OFF-BORESIGHT
ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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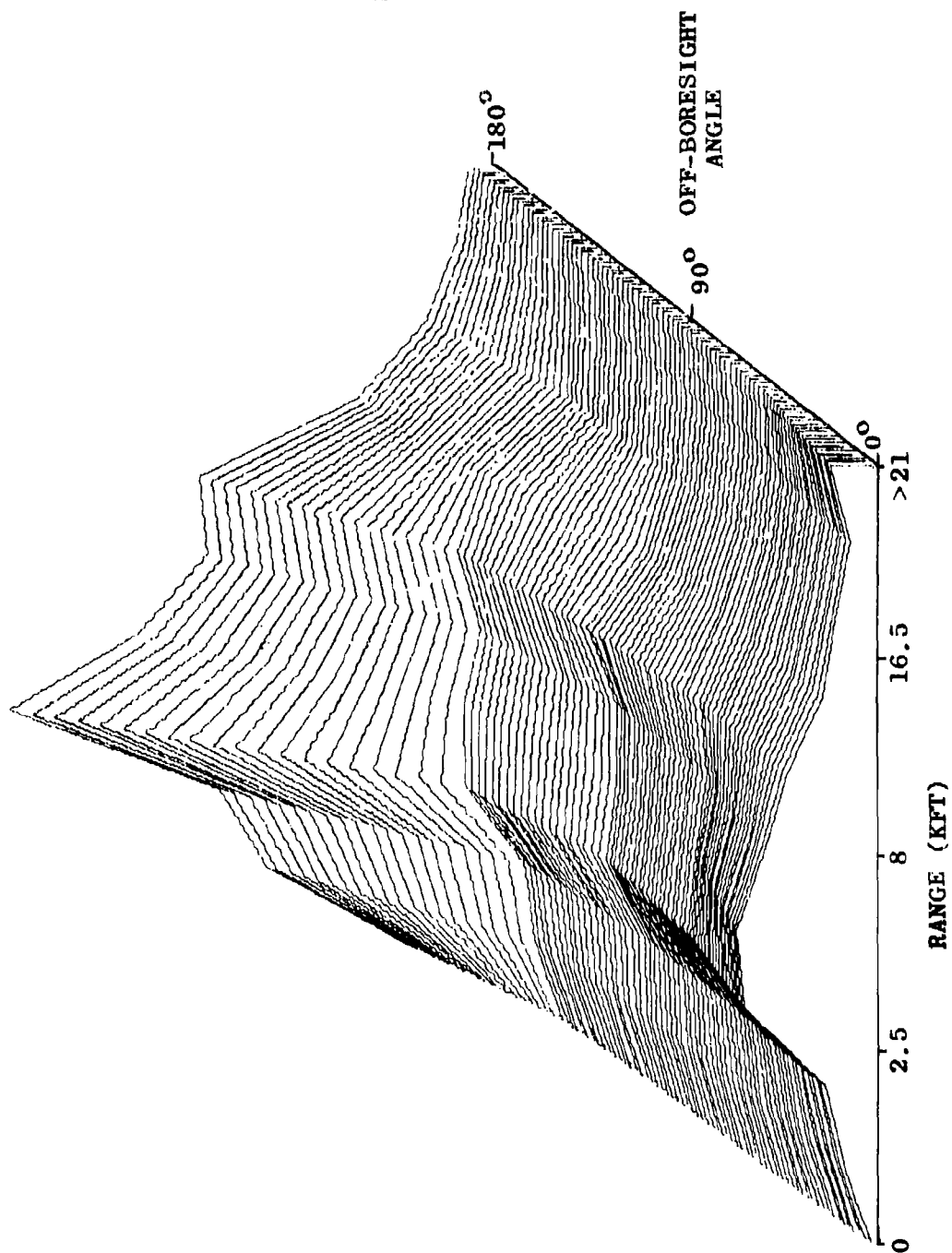
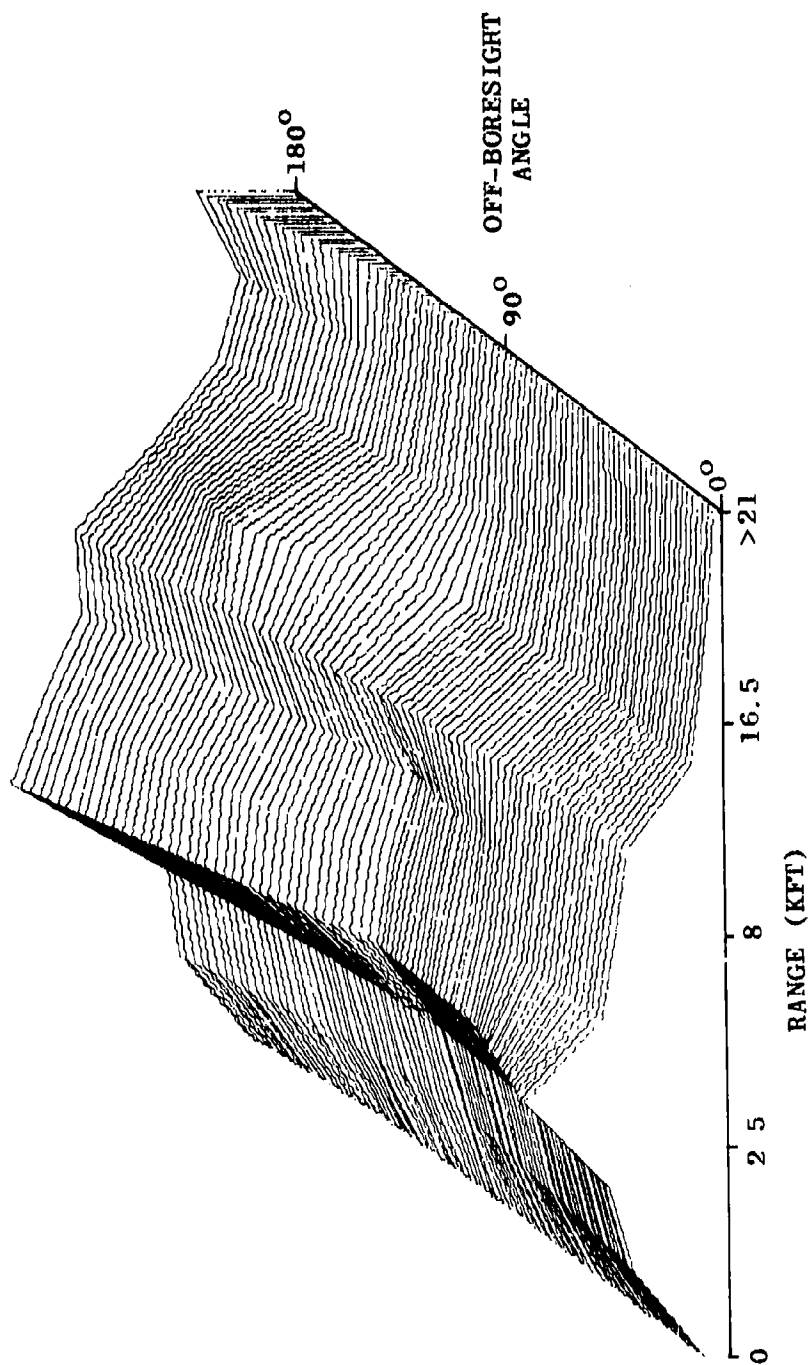


FIG. A-18 - TAPE 2 - FIGHTER 1 - RANGE VERSUS OFF-BORESIGHT
ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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FJG. A-19- TAPE 2 - FIGHTER 2 - RANGE VERSUS OFF-BORESIGHT
ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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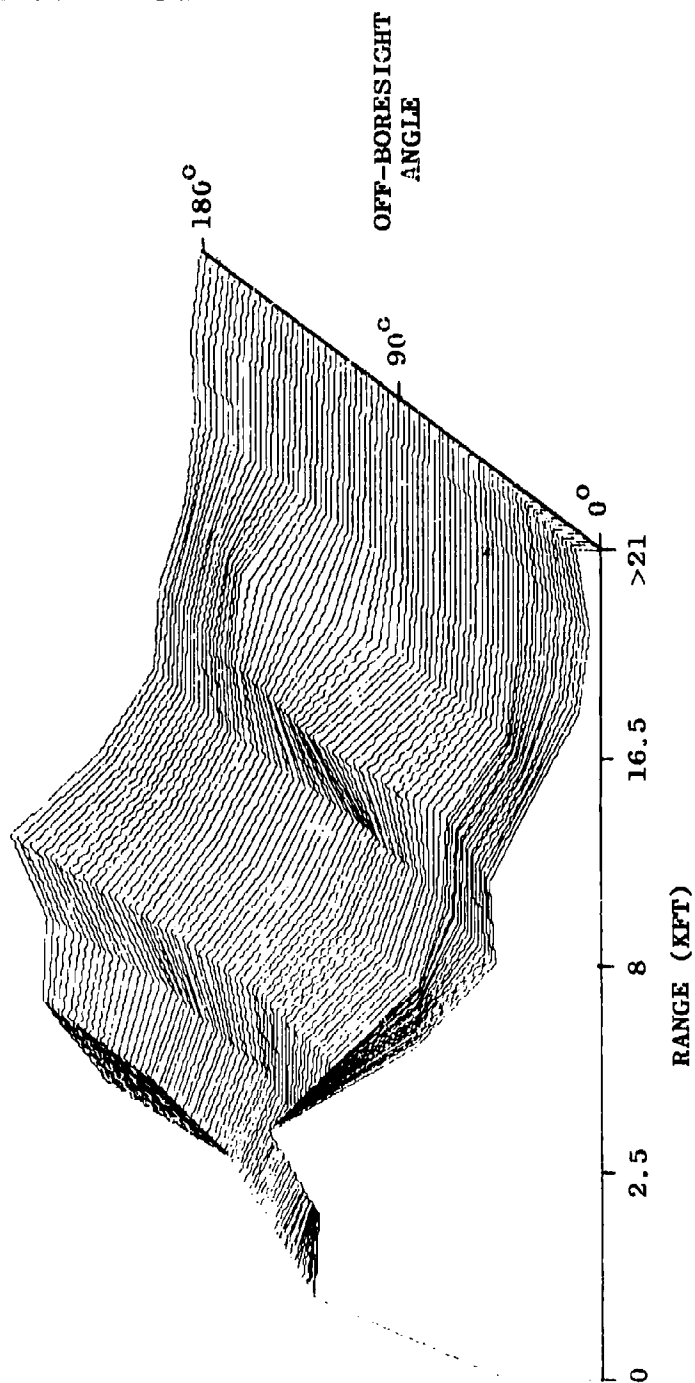


FIG. A-20- TAPE 3 - FIGHTER 1 - RANGE VERSUS OFF-BORESIGHT ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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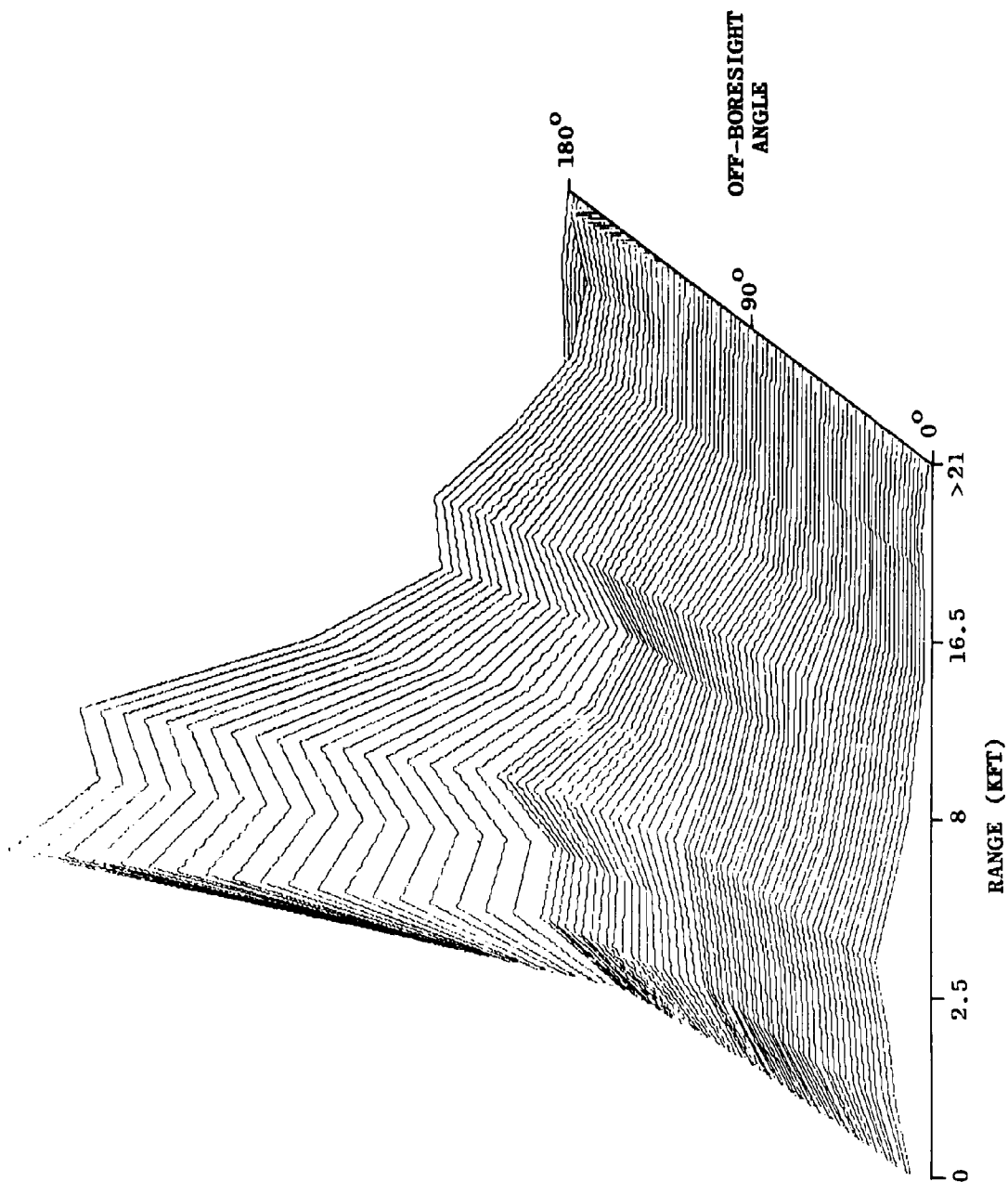


FIG. A-21- TAPE 3 - FIGHTER 2 - RANGE VERSUS OFF-BORESIGHT
ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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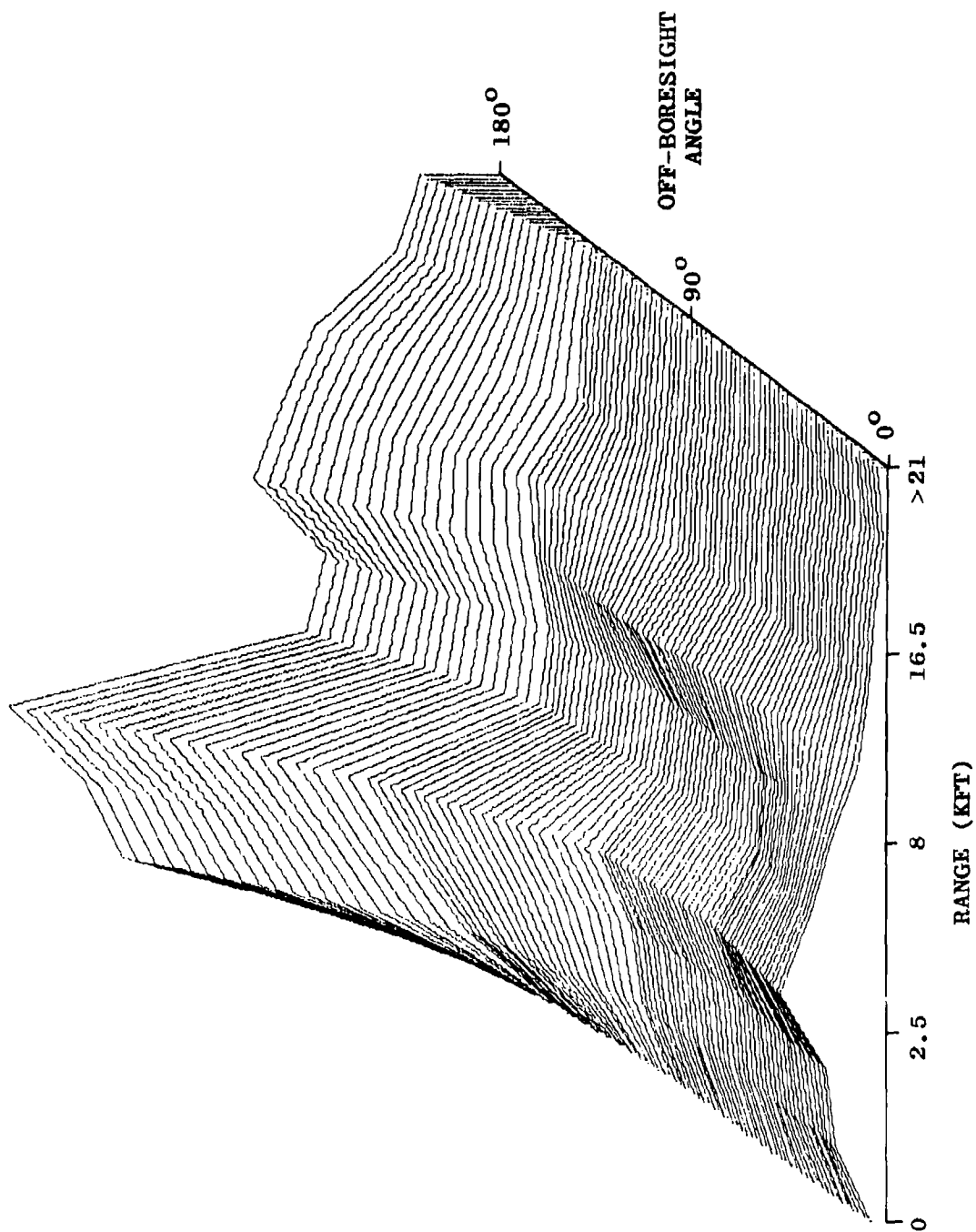


FIG.A-22 - TAPE 4 - FIGHTER 1 - RANGE VERSUS OFF-BORESIGHT
ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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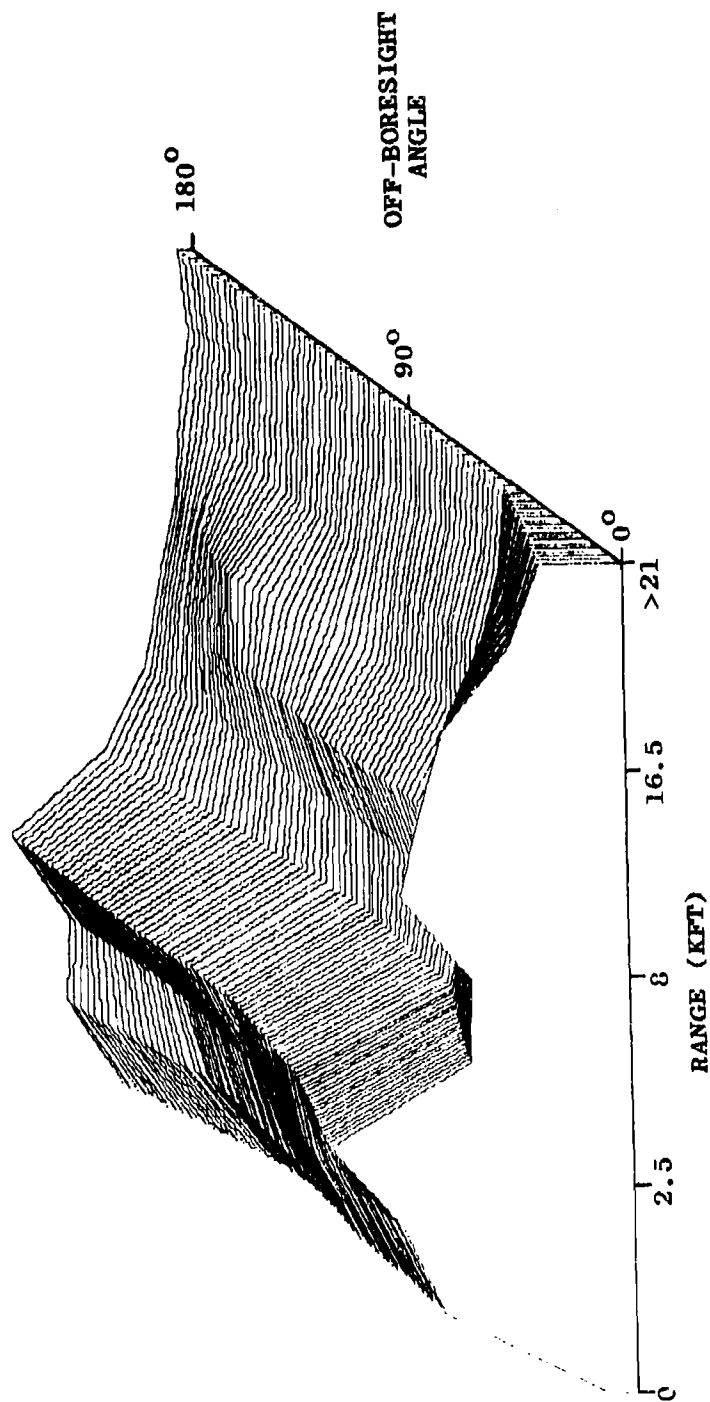


FIG. A-23- TAPE 4 - FIGHTER 2 - RANGE VERSUS OFF-BORESIGHT
ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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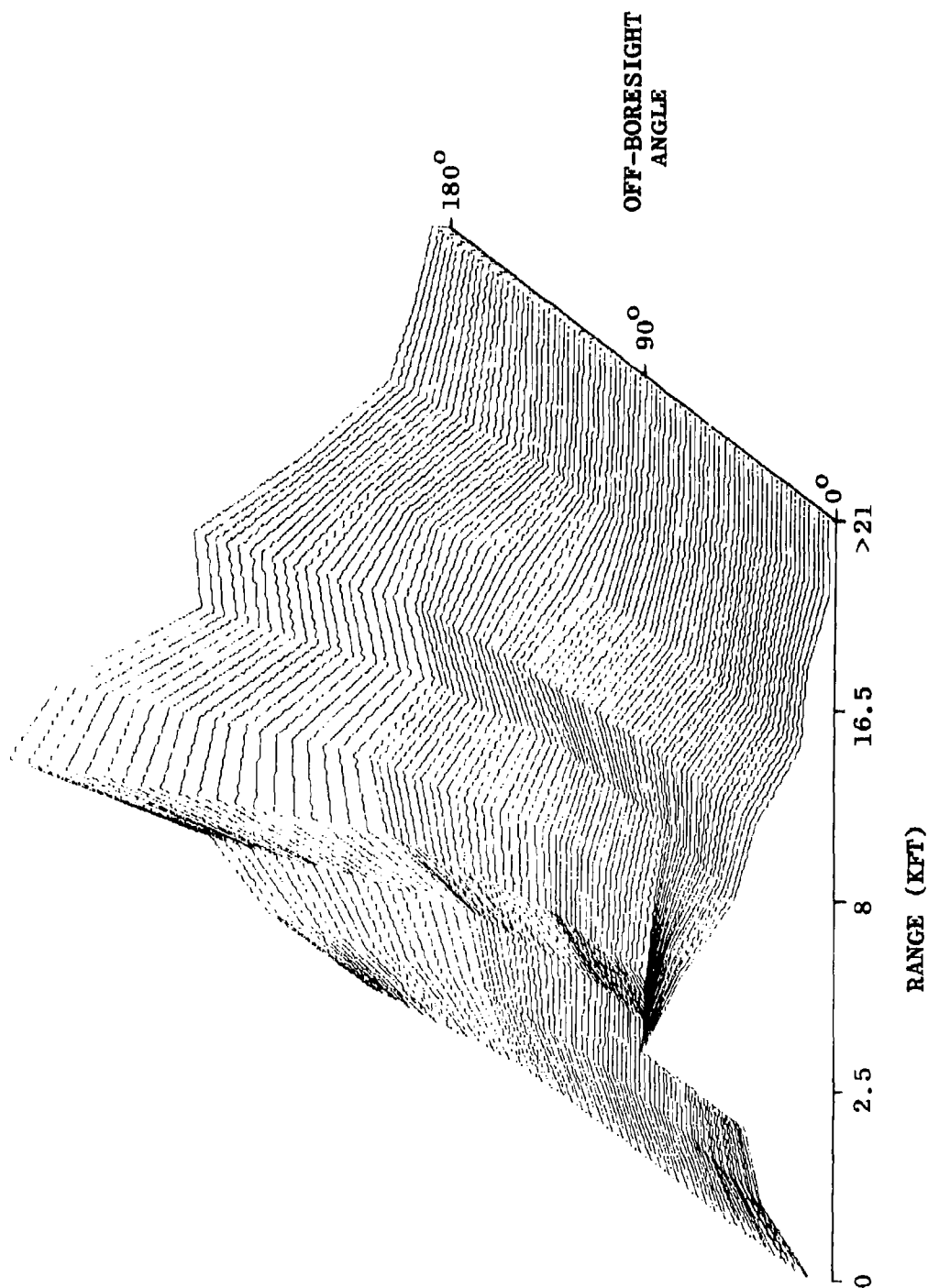


FIG. A-24- TAPE 5 - FIGHTER 1 - RANGE VERSUS OFF-BORESIGHT ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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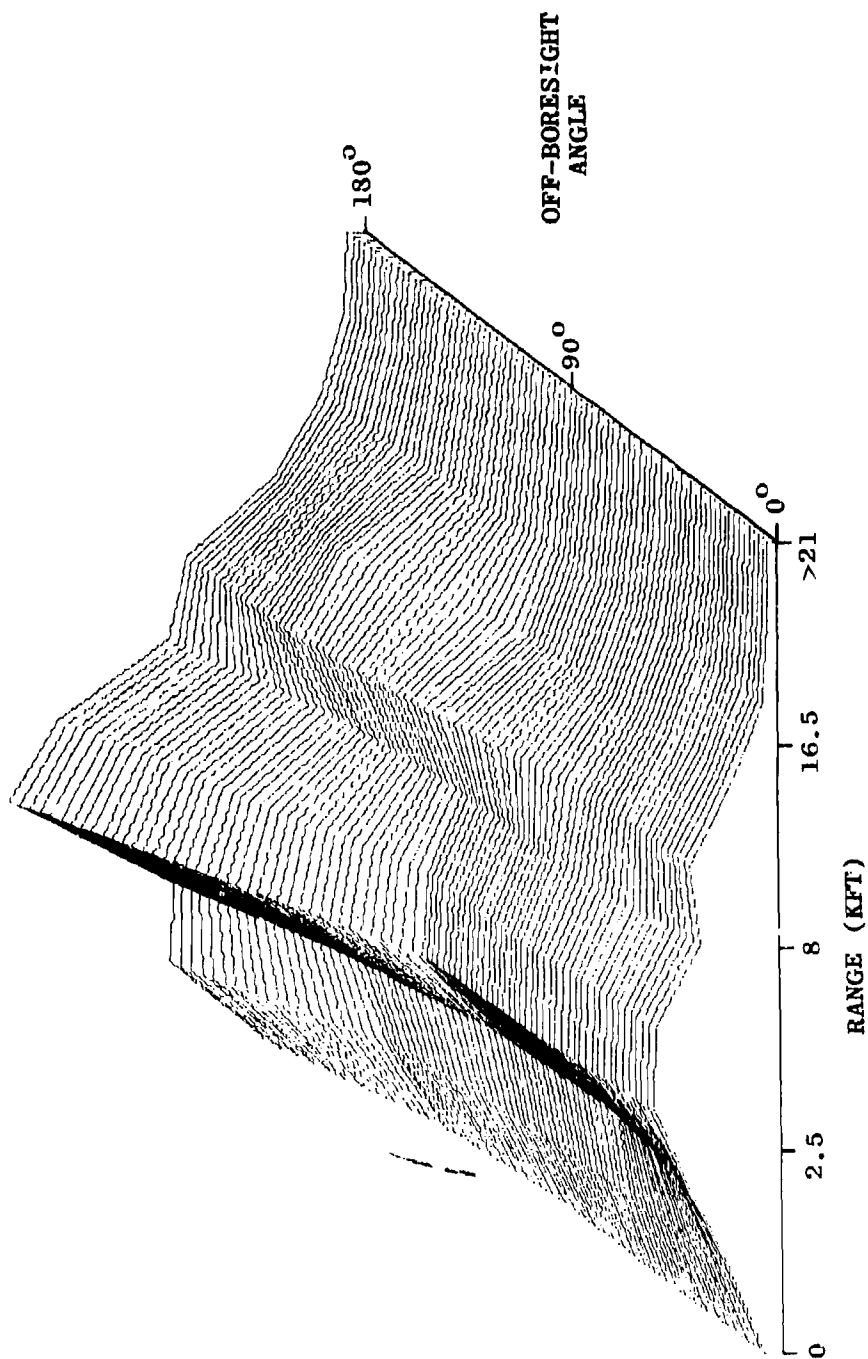


FIG. A-25- TAPE 5 - FIGHTER 2 - RANGE VERSUS OFF-BORESIGHT
ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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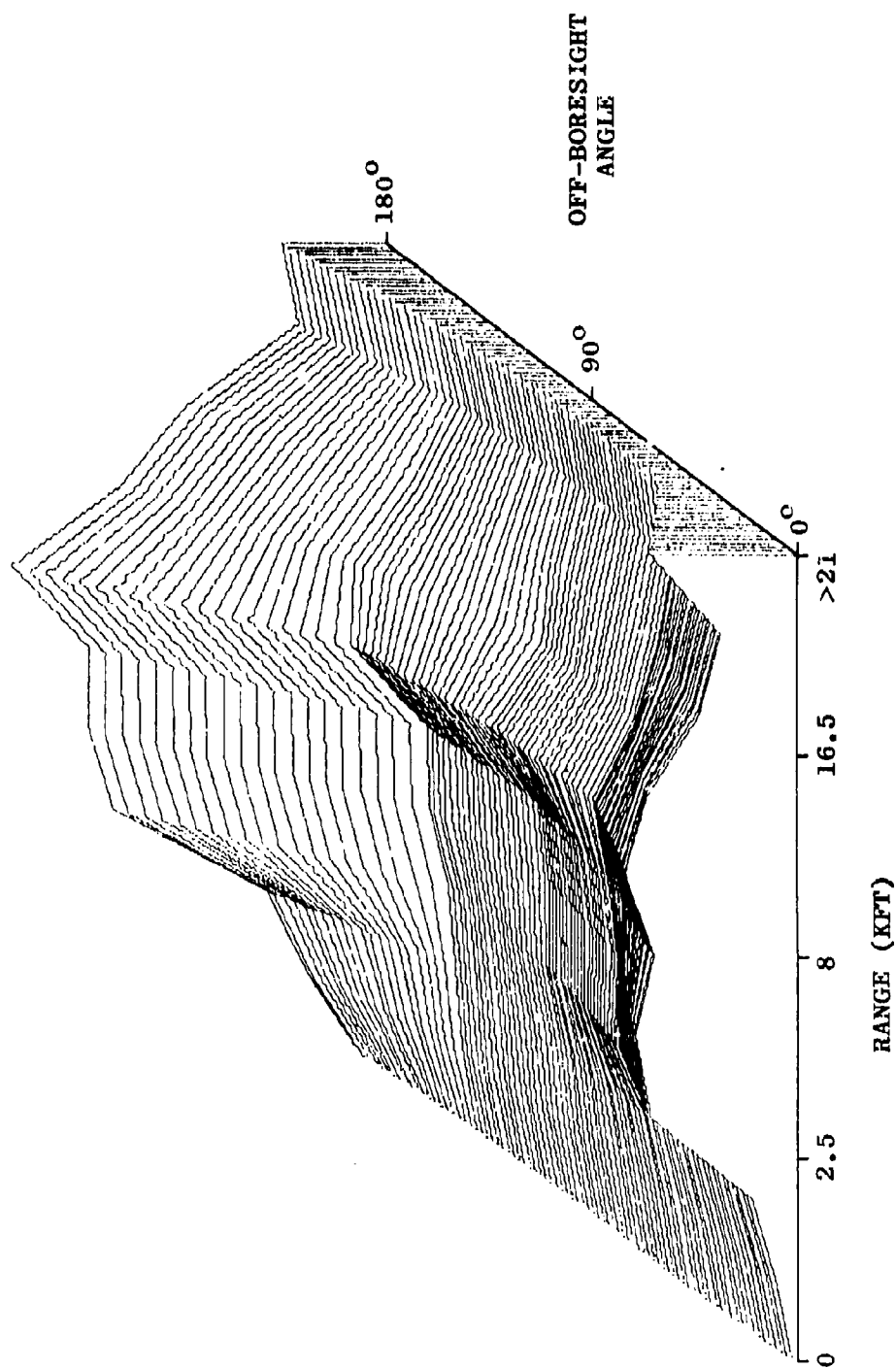


FIG. A-26- TAPE 6 - FIGHTER 1 - RANGE VERSUS OFF-BORESIGHT
ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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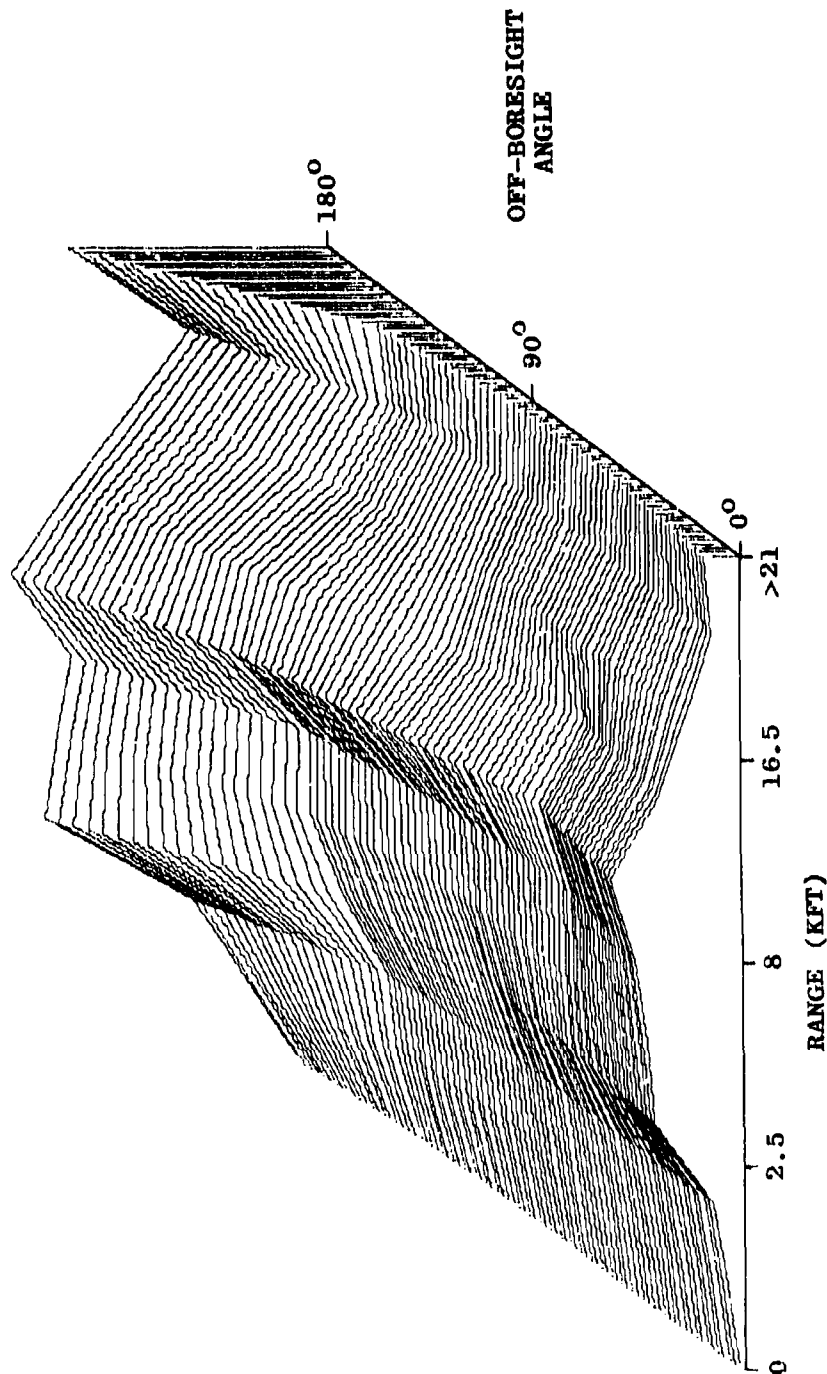


FIG. A-27 - TAPE 6 - FIGHTER 2 - RANGE VERSUS OFF-BORESIGHT
ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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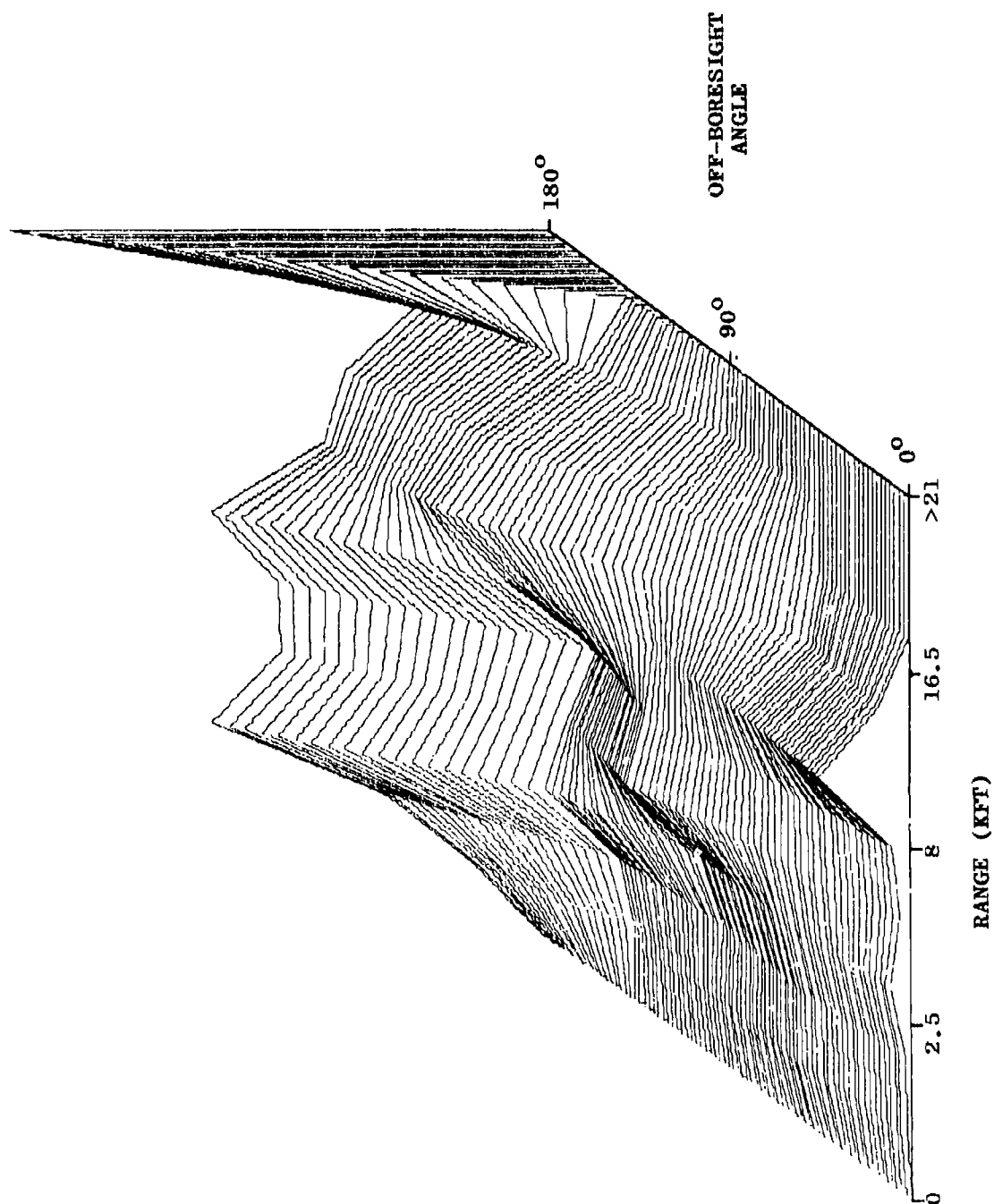


FIG. A-28 - TAPE 101 - FIGHTER 1 - RANGE VERSUS OFF-BORESIGHT ANGLE VERSUS FREQUENCY OF OCCURRENCE.

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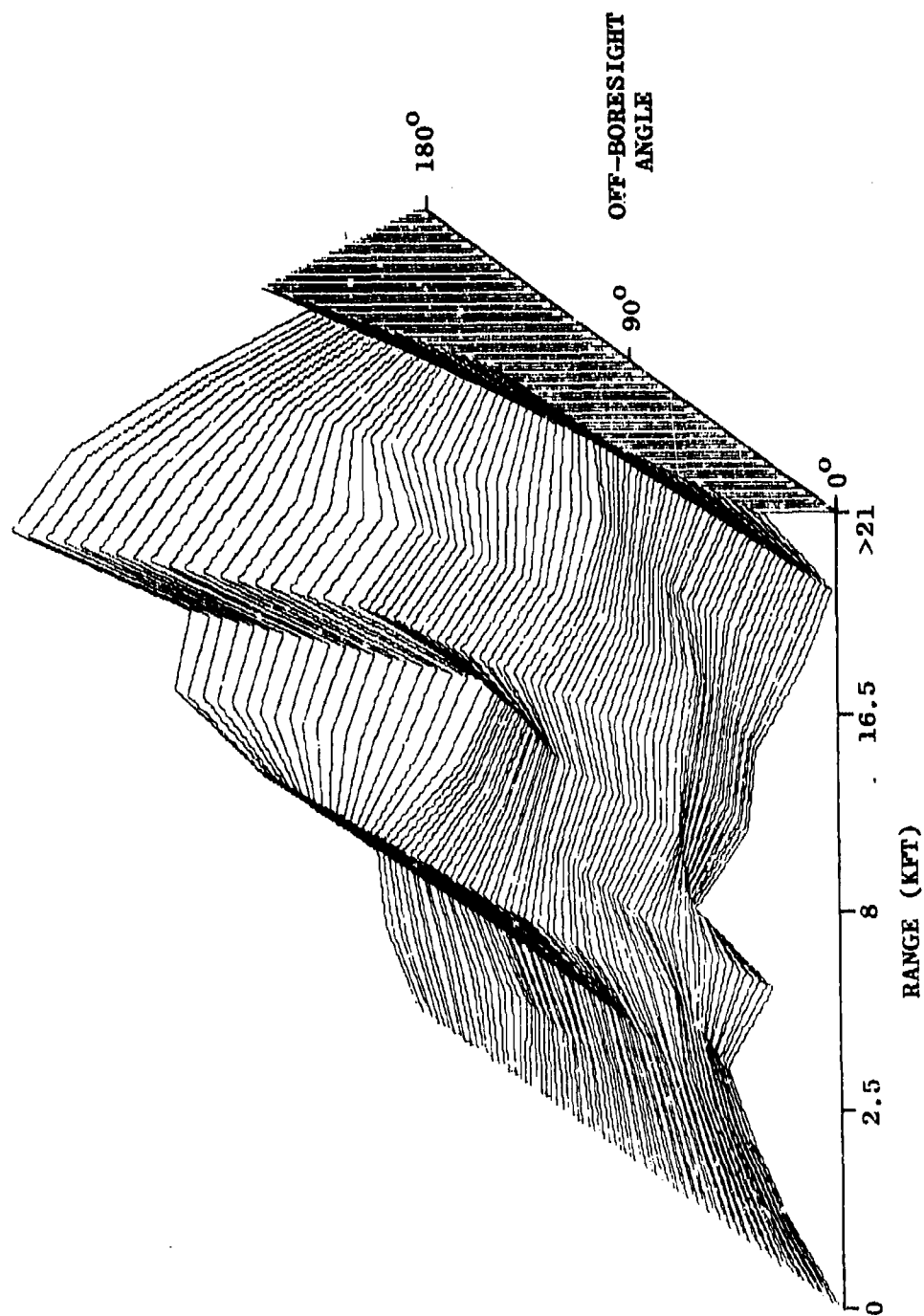


FIG. A-29 TAPE 101 - FIGHTER 2 - RANGE VERSUS OFF-BORESIGHT
ANGLE VERSUS FREQUENCY OF OCCURRENCE.

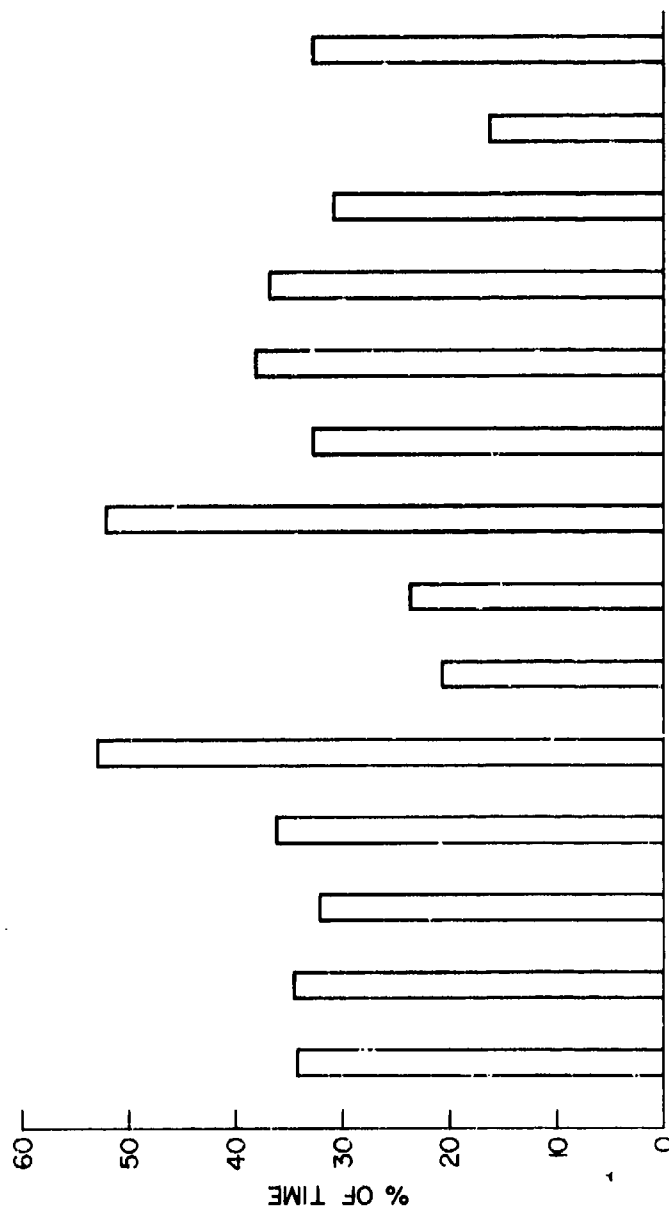
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4. Tracking parameters as a function of target position are contained in the following figures:

- a. Percent of time target is in sector - Fig. A-30 thru A-37.
- b. Range - Figs. A-38 through A-45.
- c. Range rate - Figs. A-46 through A-53.
- d. Range acceleration - Figs. A-54 through A-61.
- e. Azimuth line of sight rate - Figs. A-62 through A-69.
- f. Azimuth line of sight acceleration - Figs. A-70 through A-77.
- g. Elevation line of sight rate - Figs. A-78 through A-85.
- h. Elevation line of sight acceleration - Figs. A-86 through A-93.
- i. Azimuth gimbal rate - Figs. A-94 through A-101.
- j. Azimuth gimbal acceleration - Figs. A-102 through A-109.
- k. Elevation gimbal rate - Fig. A-110 through A-117.
- l. Elevation gimbal acceleration - Figs. A-118 through A-125.

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AZIMUTH GIMBAL ANGLE -0° TO +60°
 ELEVATION GIMBAL ANGLE -0° TO +60°

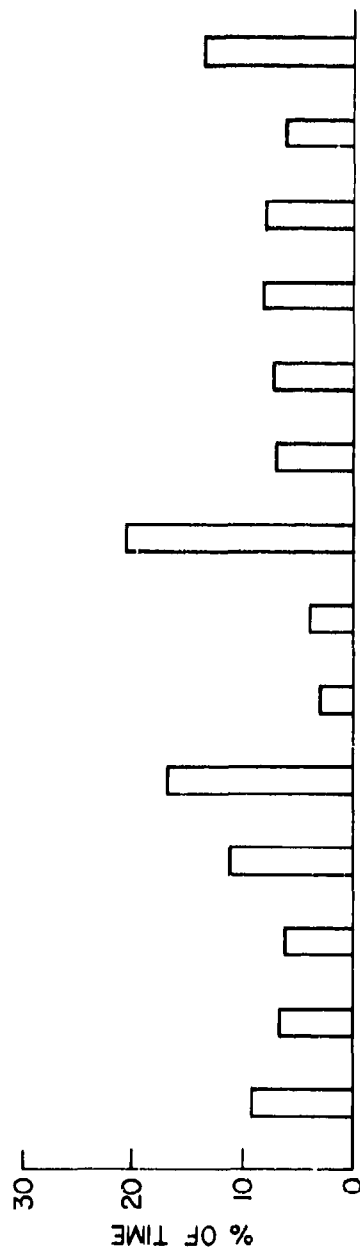


CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	B	B	D	D	D	D	E	F
WEAPONS	2	1	1	2	1	1	2	1	1	1	1	1

FIG. A-30- SUMMARY OF GIMBAL ANGLE

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AZIMUTH GIMBAL ANGLE - 0° TO ±60°
 ELEVATION GIMBAL ANGLE - -60° TO 0°

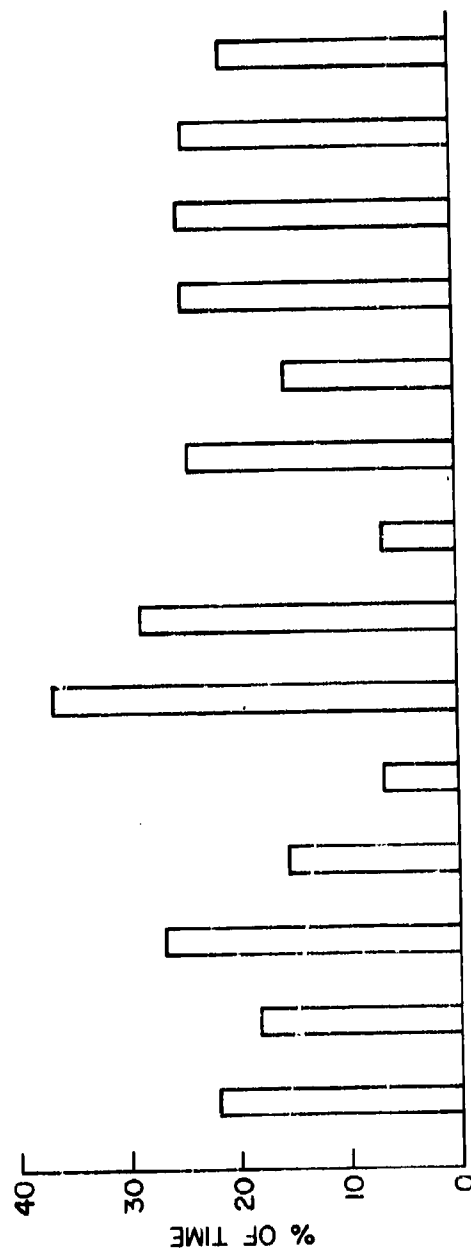


CASE NO	1	1	2	2	3	3	4	4	5	5	6	6	101
AIRCRAFT	C	E	C	D	A	A	D	D	B	D	B	E	F
WEAPONS	2	1	1	1	1	1	2	1	2	1	1	1	1

FIG.A-31 - SUMMARY OF GIMBAL ANGLE

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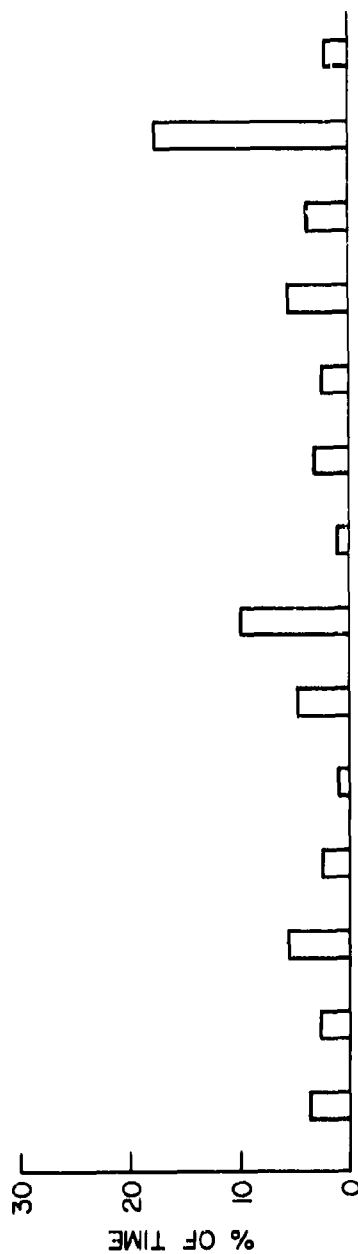
AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$



CASE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIRCRAFT	C	C	A	A	D	B	D	B	D	B	E	F	F	F	F	F	F	F	F	F	F	F	F	F
WEAPONS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

FIG. A-32 - SUMMARY OF GIMBAL ANGLE

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°

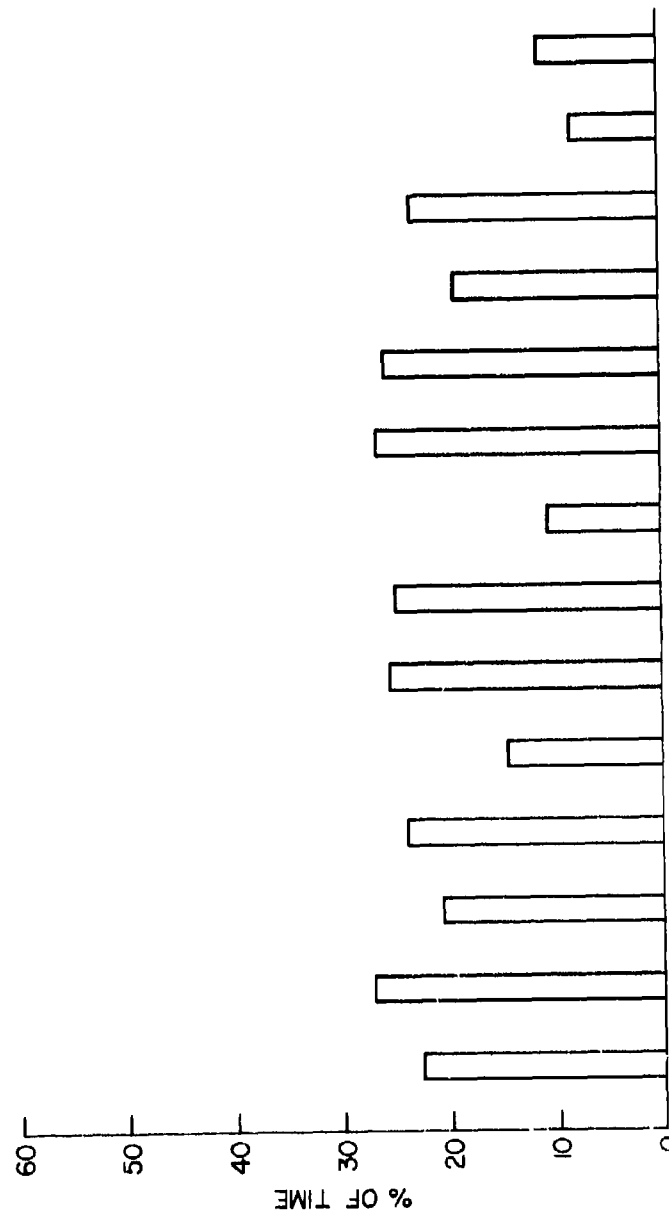


CASE NO.	1	1	2	2	3	3	4	4	5	6	101
AIRCRAFT	C	E	C	D	A	E	A	D	B	B	F
WEAPONS	2	1	1	1	1	1	2	1	1	1	1

FIG. A-33 - SUMMARY OF GIMBAL ANGLE

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AZIMUTH GIMBAL ANGLE - 0° TO $\pm 180^{\circ}$
ELEVATION GIMBAL ANGLE - $+60^{\circ}$ TO $+90^{\circ}$

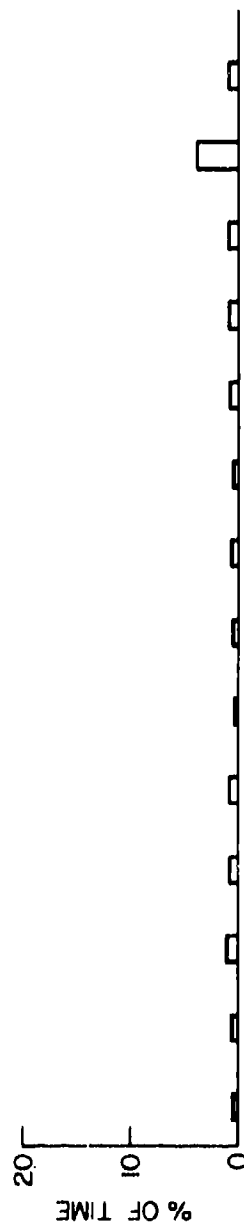


CASE NO	1	1	2	2	3	3	3	4	4	4	5	5	6	6	6	10	10
AIRCRAFT	C	E	C	D	A	E	A	A	D	D	B	D	B	E	E	F	F
WEAPONS	2	1	1	1	1	1	1	2	2	1	2	1	1	1	1	1	1

FIG. A-34 - SUMMARY OF GIMBAL ANGLE

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AZIMUTH GIMBAL ANGLE - 0° TO ±180°
ELEVATION GIMBAL ANGLE - -90° TO -60°

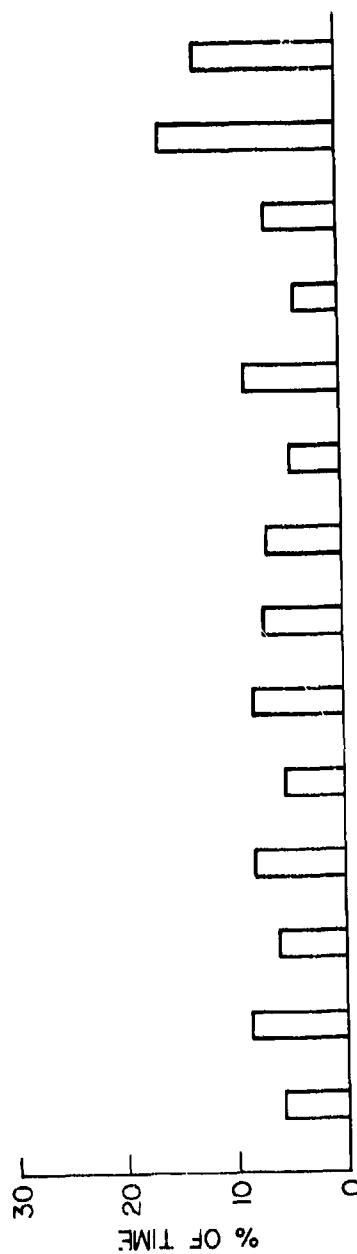


CASE NO	1	1	2	2	3	3	4	4	5	5	6	6	10	10
AIRCRAFT	C	E	C	D	A	E	A	D	B	D	B	E	F	F
WEAPONS	2	1	1	1	1	1	2	1	2	1	1	1	1	1

FIG. A-35 - SUMMARY OF GIMBAL ANGLE

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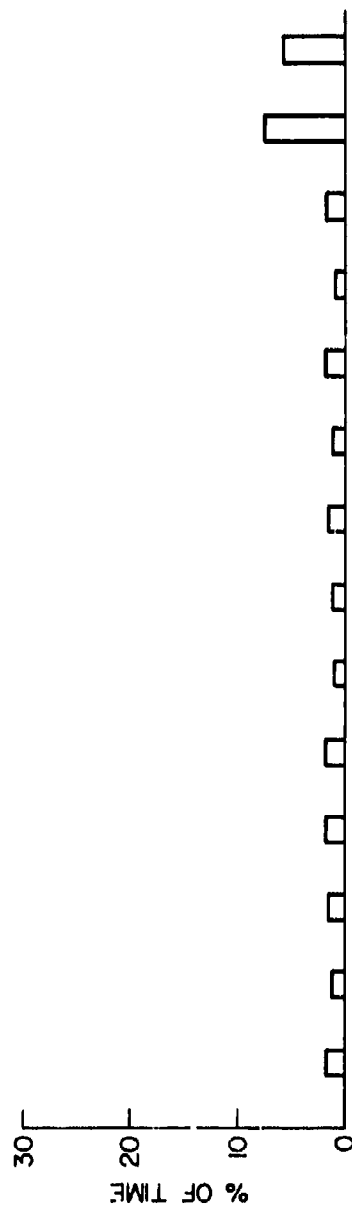
AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$



CASE NO	1	1	2	2	3	3	4	4	5	5	6	6	10	10
AIRCRAFT	C	E	C	D	A	E	A	D	B	D	B	E	F	F
WEAPONS	2	1	1	1	1	1	2	1	2	1	1	1	1	1

FIG. A-36-SUMMARY OF GIMBAL ANGLE

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°



CASE NO	1	1	2	2	3	3	4	4	5	5	6	6	MO
AIRCRAFT	C	E	C	D	A	E	A	D	B	D	B	E	F
WEAPONS	2	1	1	1	1	1	2	1	2	1	1	1	1

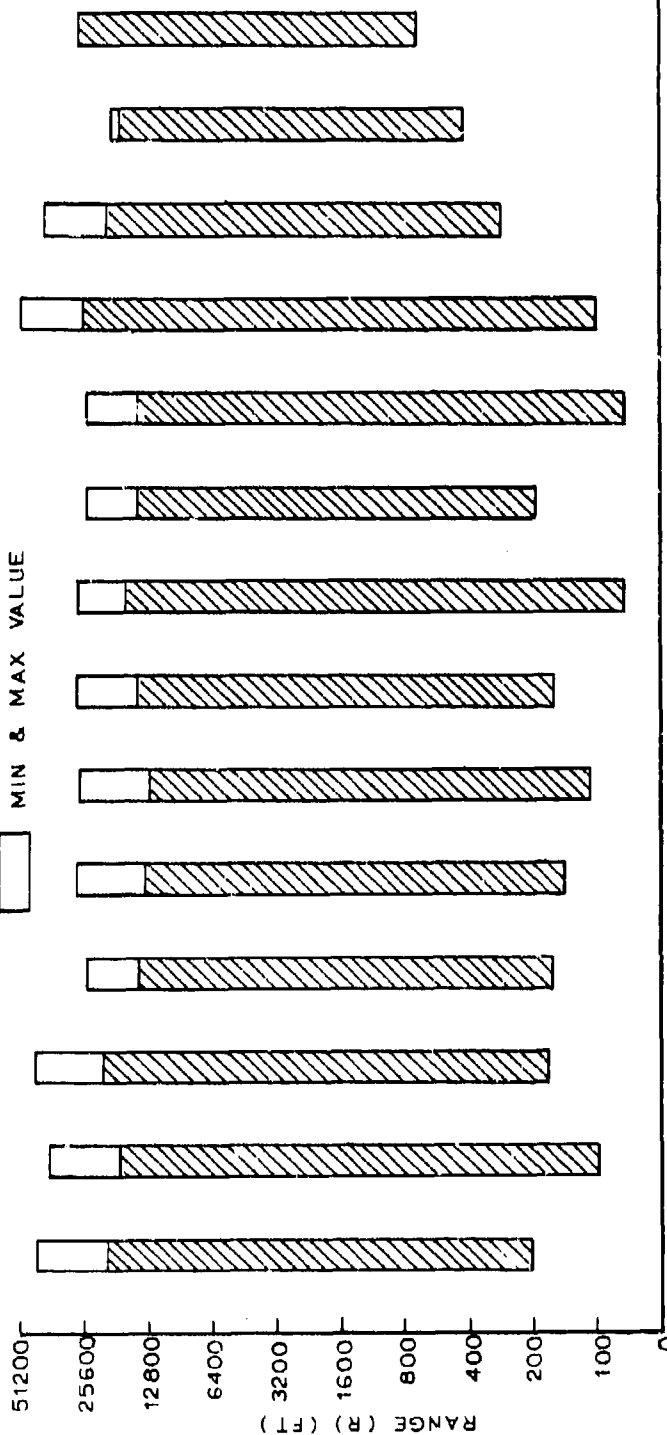
FIG. A-37 - SUMMARY OF GIMBAL ANGLE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° to ±60°
ELEVATION GIMBAL ANGLE - 0° to +60°

95% VALUE

MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	B	B	E	E	D	D	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1	1	1

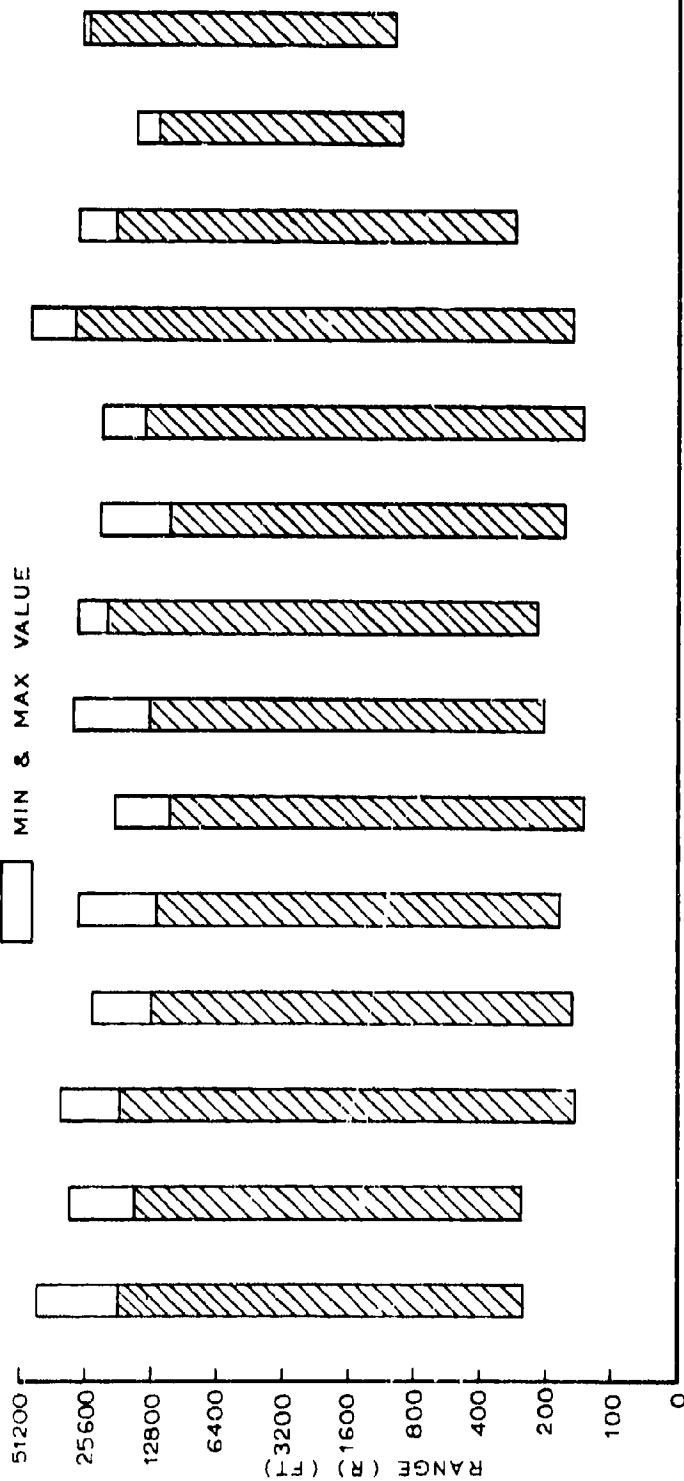
FIG. A-38 - SUMMARY OF RANGE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° to ±60°
ELEVATION GIMBAL ANGLE - -60° to 0°

95% VALUE

MIN & MAX VALUE



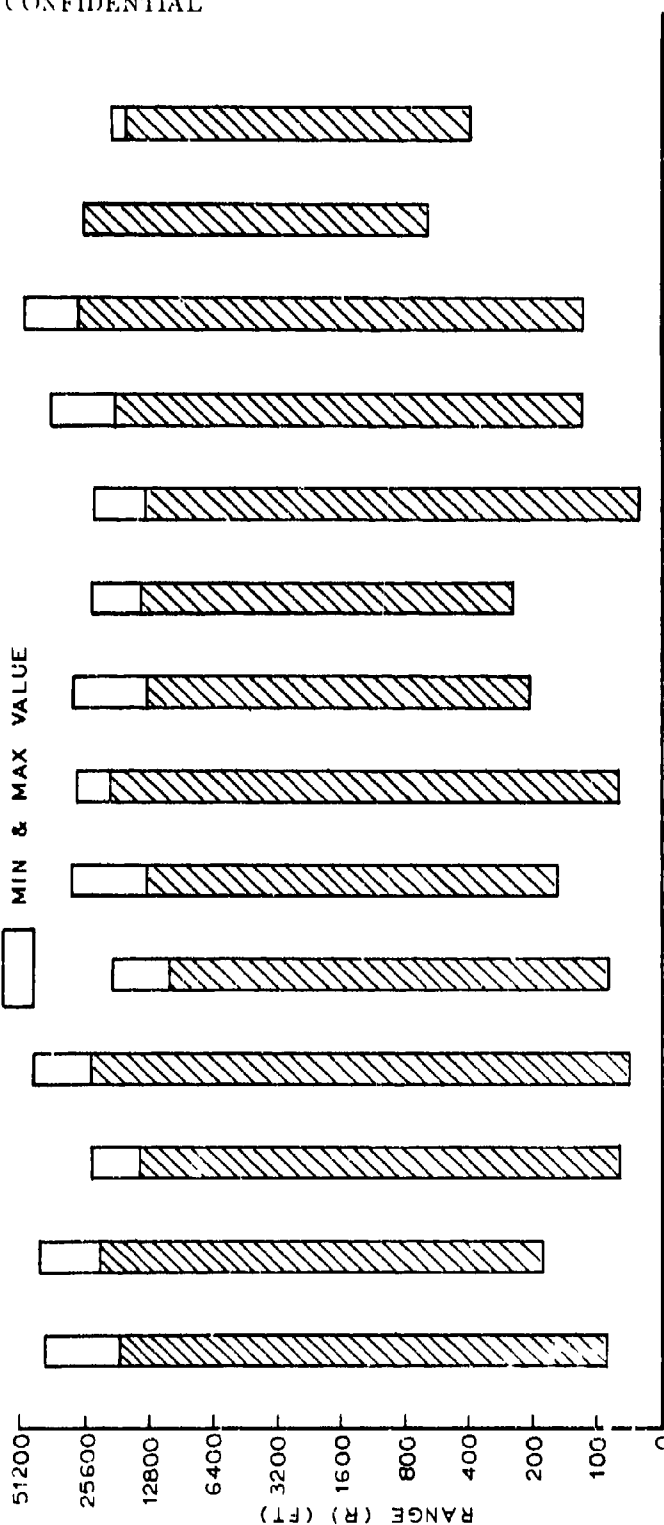
CASE NO.	1	1	2	2	3	3	3	4	4	5	5	6	6	101	102
AIRCRAFT	C	E	C	D	A	E	A	D	B	D	B	E	F	F	F
WEAPONS	2	1	1	1	1	1	2	1	2	1	1	1	1	1	1

FIG. A-39 - SUMMARY OF RANGE

CONFIDENTIAL

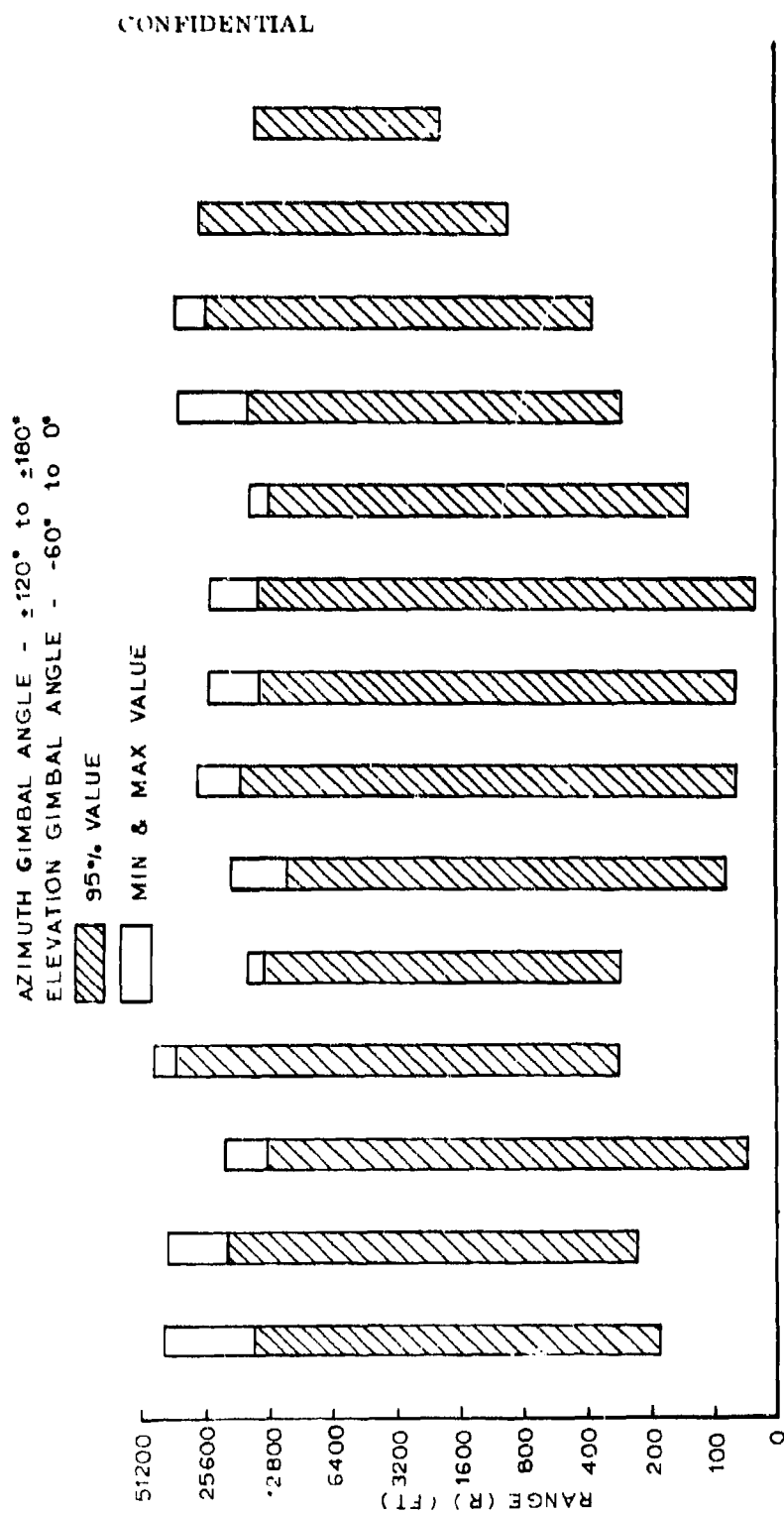
AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ to $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - 0° to $+60^\circ$

 95% VALUE
 MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	C	A	A	B	B	E	F	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1

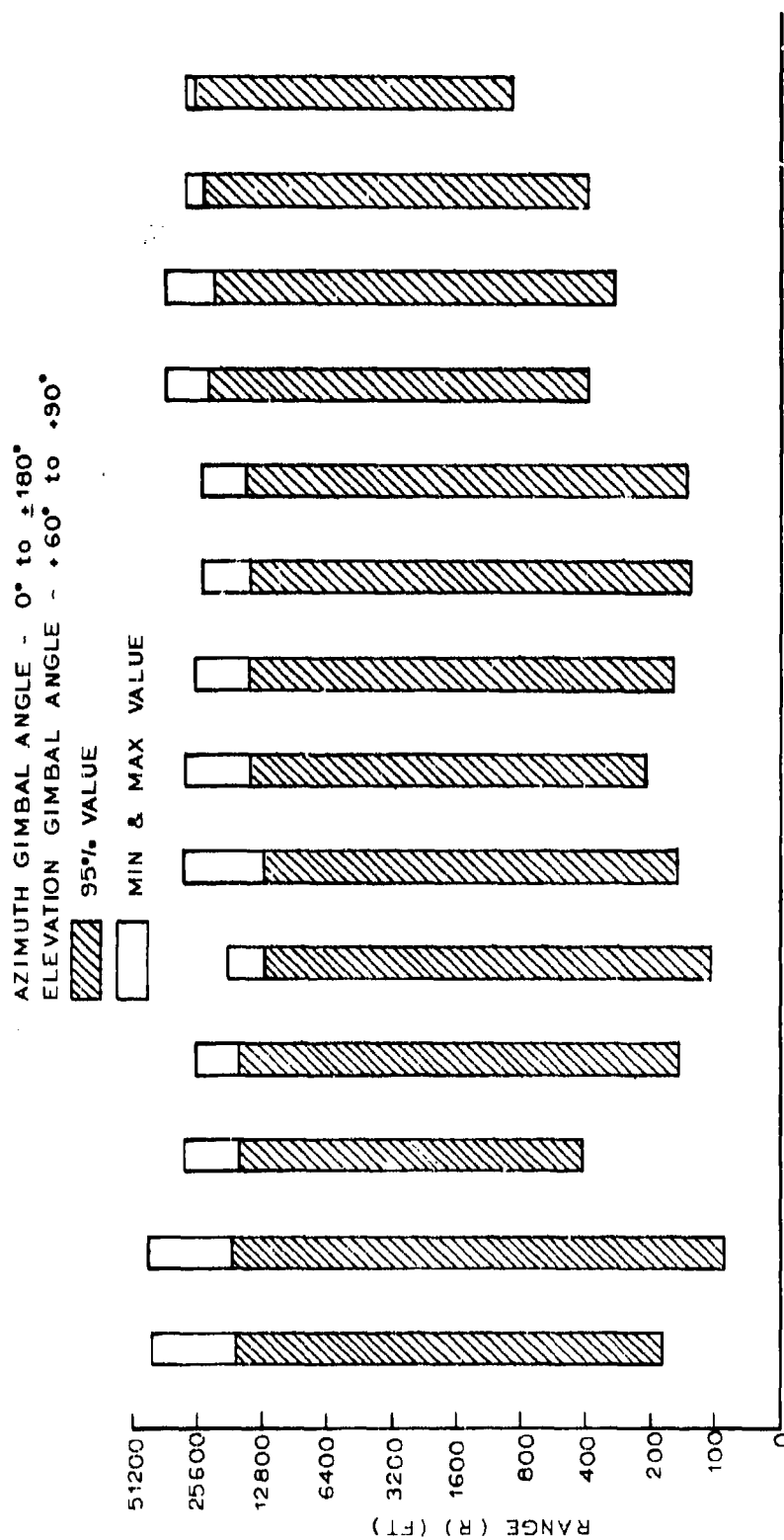
FIG. A-40 - SUMMARY OF RANGE



CASE NO.	1	1	2	2	3	3	3	4	4	4	5	5	6	6	101	101
AIRCRAFT	C	E	C	D	A	E	D	A	D	B	D	B	E	E	F	F
WEAPONS	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1

FIG. A-41 - SUMMARY OF RANGE

CONFIDENTIAL



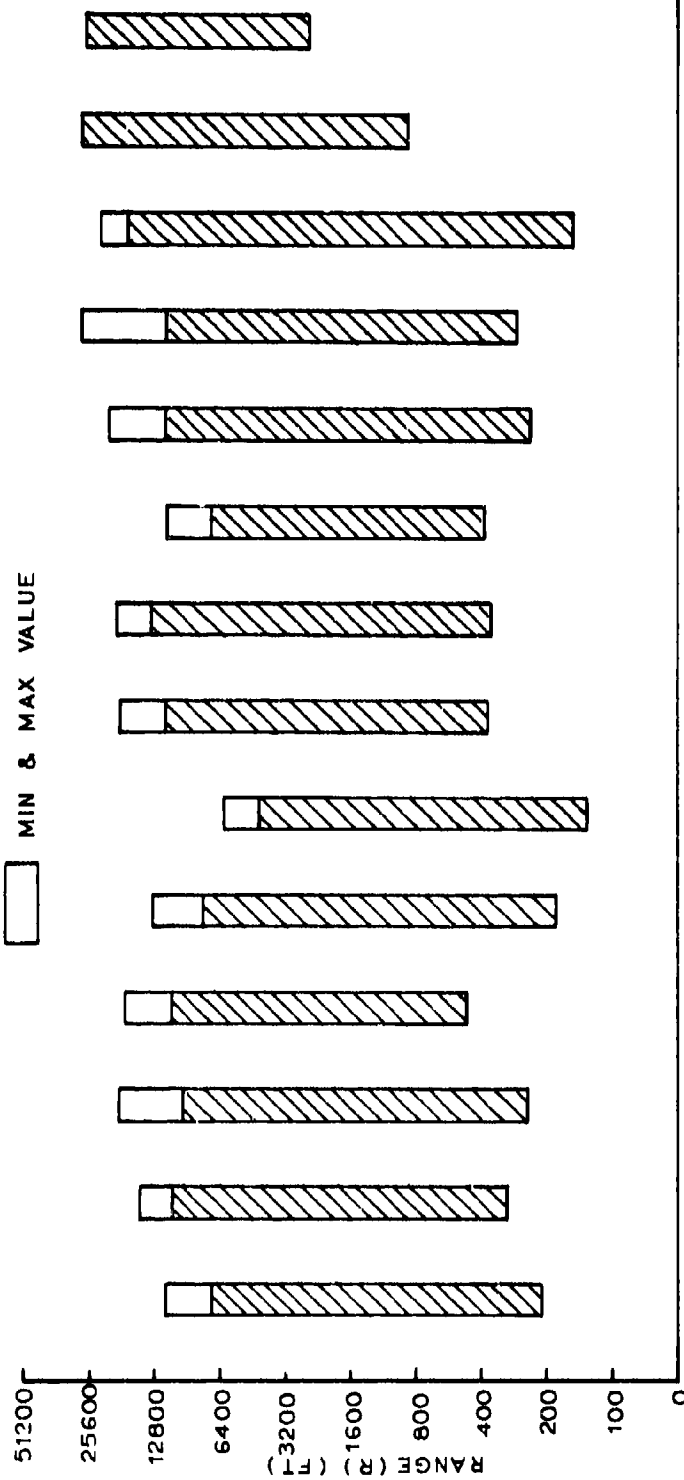
CASE NO.	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	C	A	A	B	B	E	E	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1

FIG. A-42 - SUMMARY OF RANGE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° to ±180°
ELEVATION GIMBAL ANGLE - -90° to -60°

95% VALUE
MIN & MAX VALUE



CASE NO.	1	1	2	2	2	3	3	3	4	4	5	5	6	6	10	10
AIRCRAFT	C	E	C	D	D	A	E	A	D	B	D	B	E	F	F	F
WEAPONS	2	1	1	1	1	1	1	2	1	1	1	2	1	1	1	1

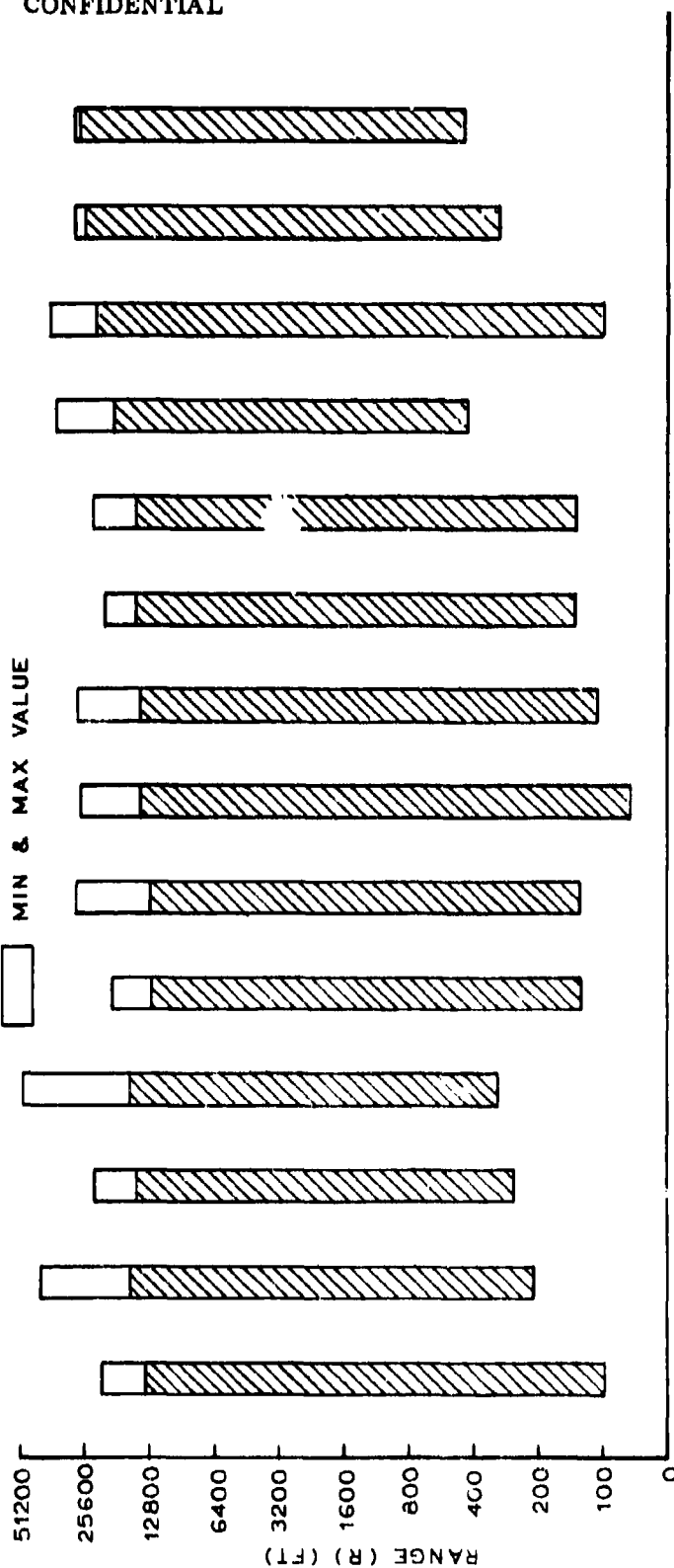
FIG A-43 - SUMMARY OF RANGE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ to $\pm 120^\circ$
ELEVATION GIMBAL ANGLE - 0° to $+60^\circ$

95% VALUE

MIN & MAX VALUE



CASE NO.	1	1	2	2	3	3	4	4	5	5	6	6	101	101
AIRCRAFT	C	E	C	D	A	E	A	D	B	D	E	E	F	F
WEAPONS	2	1	1	1	1	1	2	1	2	1	1	1	1	1

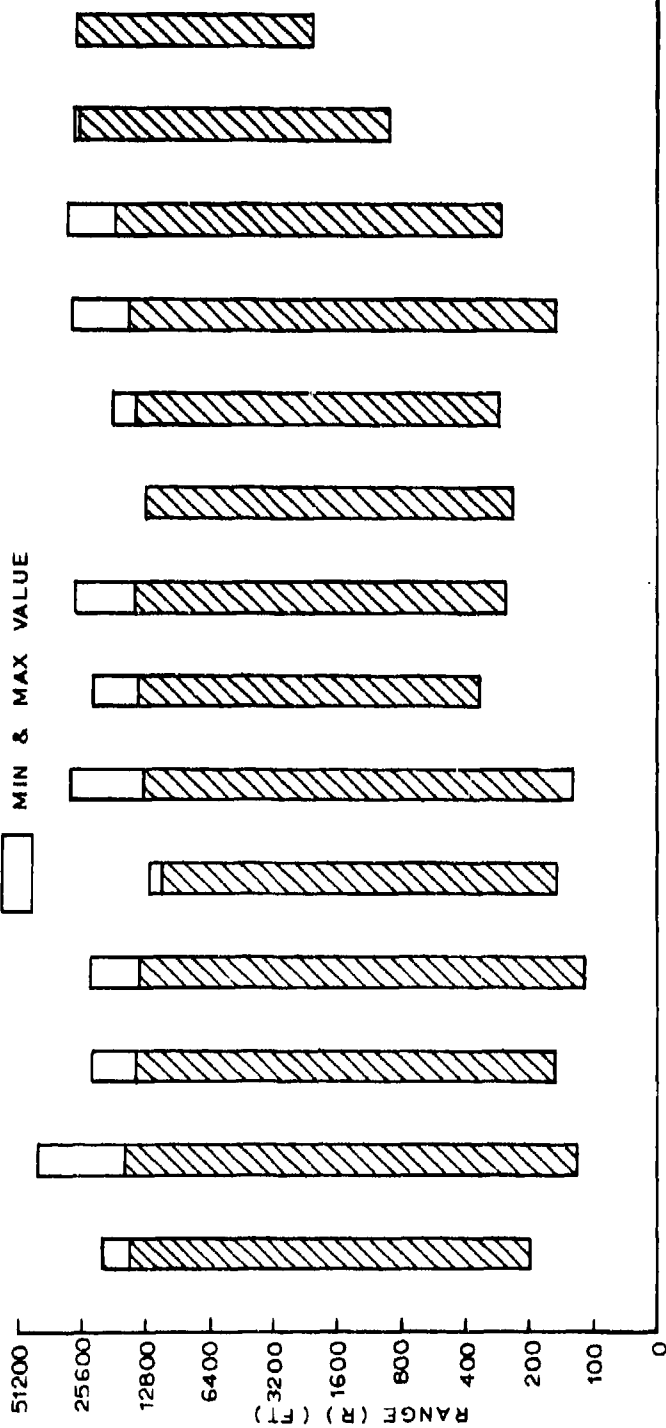
FIG. A-44 - SUMMARY OF RANGE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ to $\pm 120^\circ$
ELEVATION GIMBAL ANGLE - -60° to 0°

95% VALUE

MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AIRCRAFT	C	E	A	D	B	B	D	A	E	C	D	C	E	F	F
WEAPONS	2	1	1	2	2	1	1	2	1	1	1	1	1	1	1

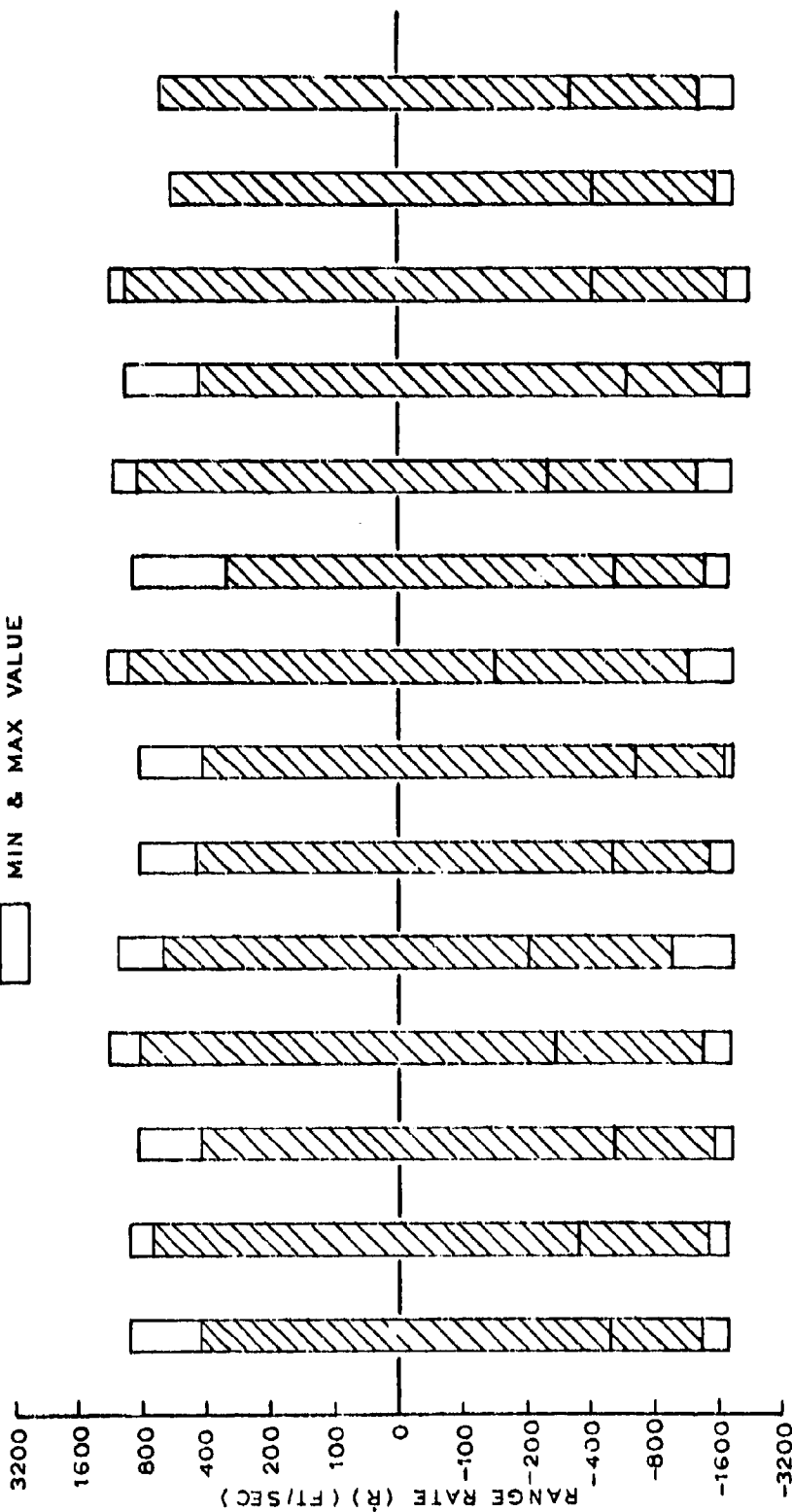
FIG. A-45 - SUMMARY OF RANGE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° to ±60°
ELEVATION GIMBAL ANGLE - 0° to ±60°

2σ VALUE

MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	D	A	E	A	D	B	D	B	E	F
WEAPONS	2	1	1	1	2	1	1	1	1	1	1	1

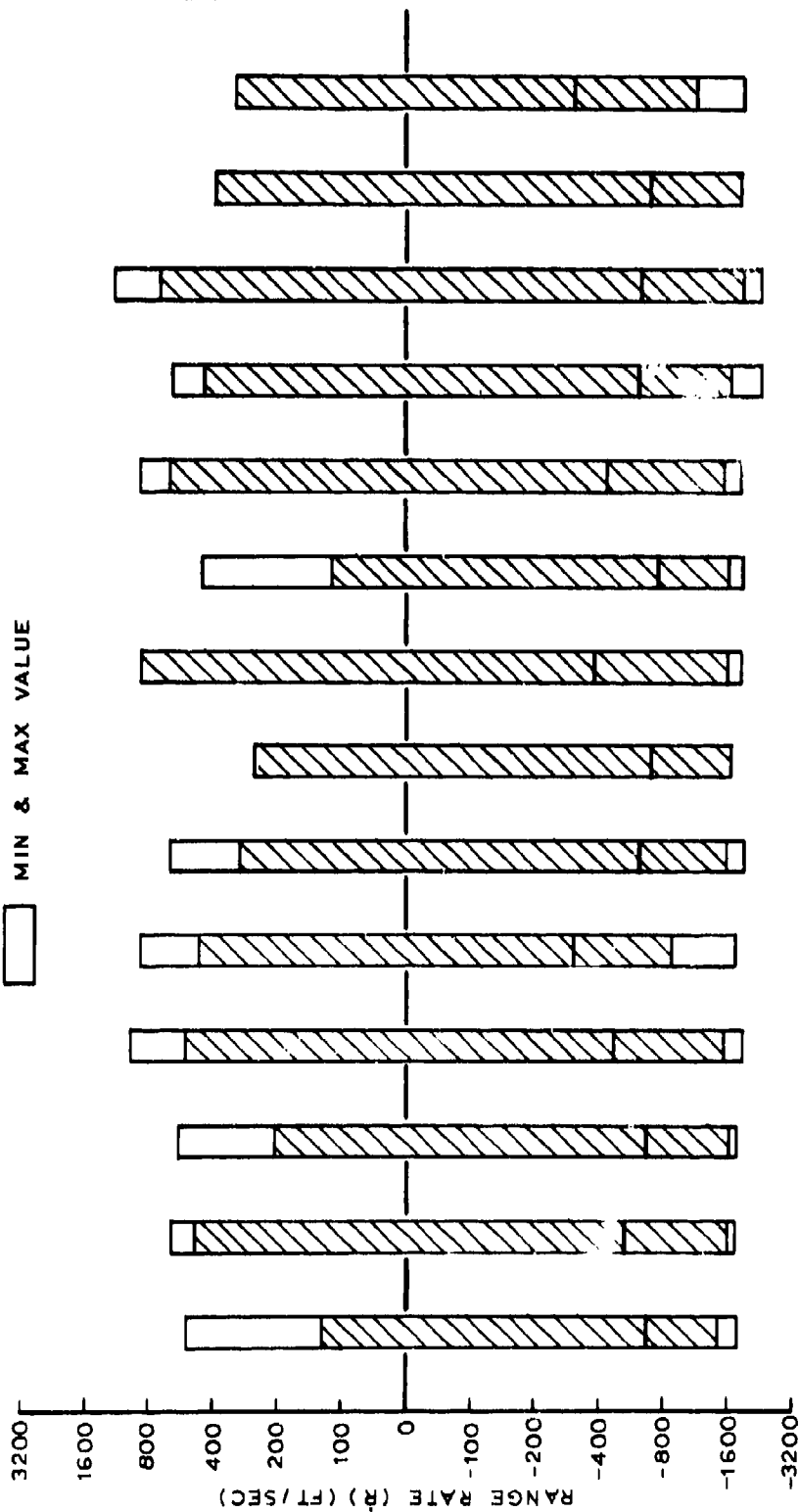
FIG. A-46 - SUMMARY OF RANGE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° to ±60°
ELEVATION GIMBAL ANGLE - -60° to 0°

2σ VALUE

MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	B	B	D	D	E	E	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1	1	1

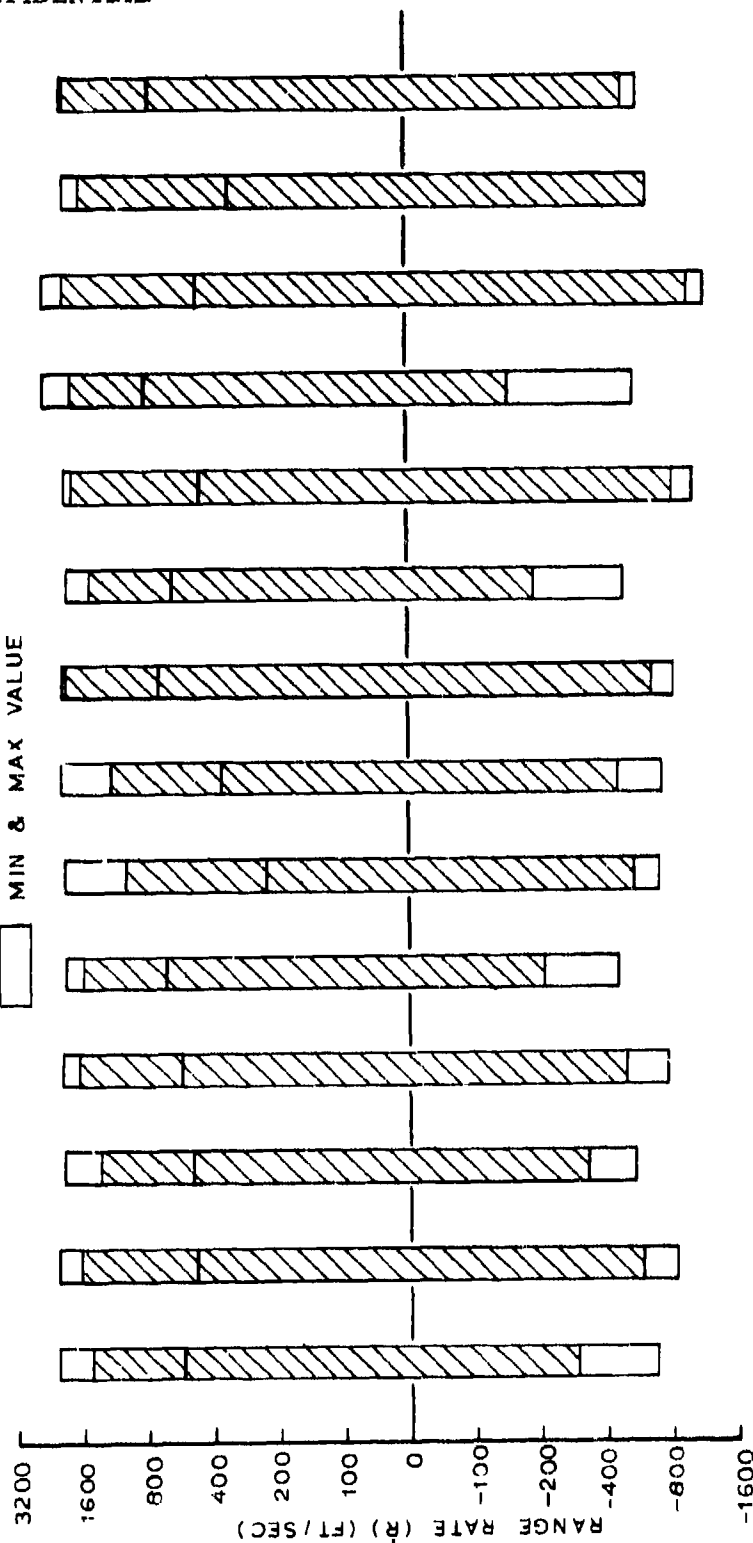
FIG. A-47 - SUMMARY OF RANGE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ to $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - 0° to $+60^\circ$

2 σ VALUE

MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	B	B	E	D	B	F	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1	1	1

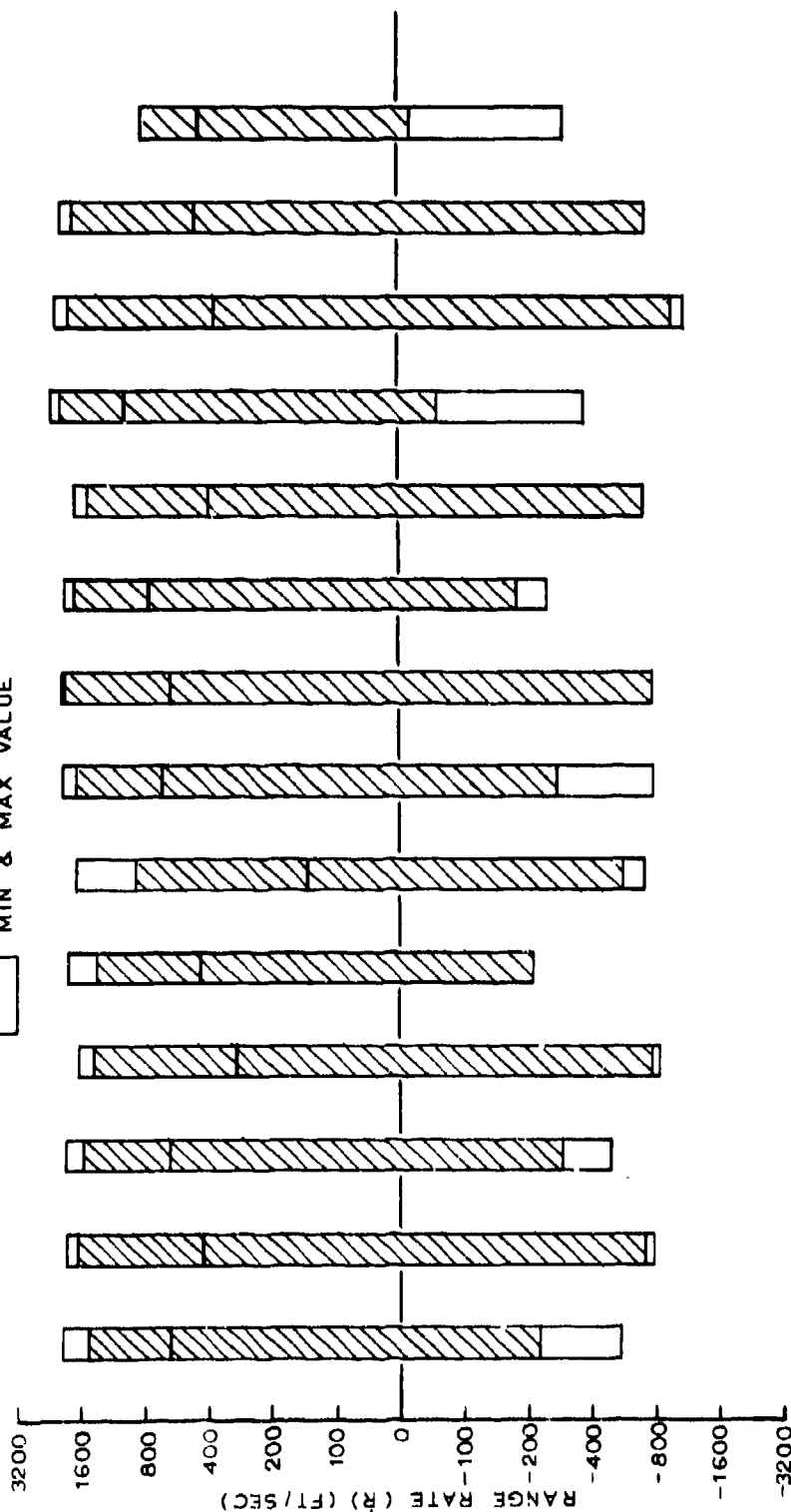
FIG. A-48 - SUMMARY OF RANGE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ to $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - -60° to 0°

 2σ VALUE

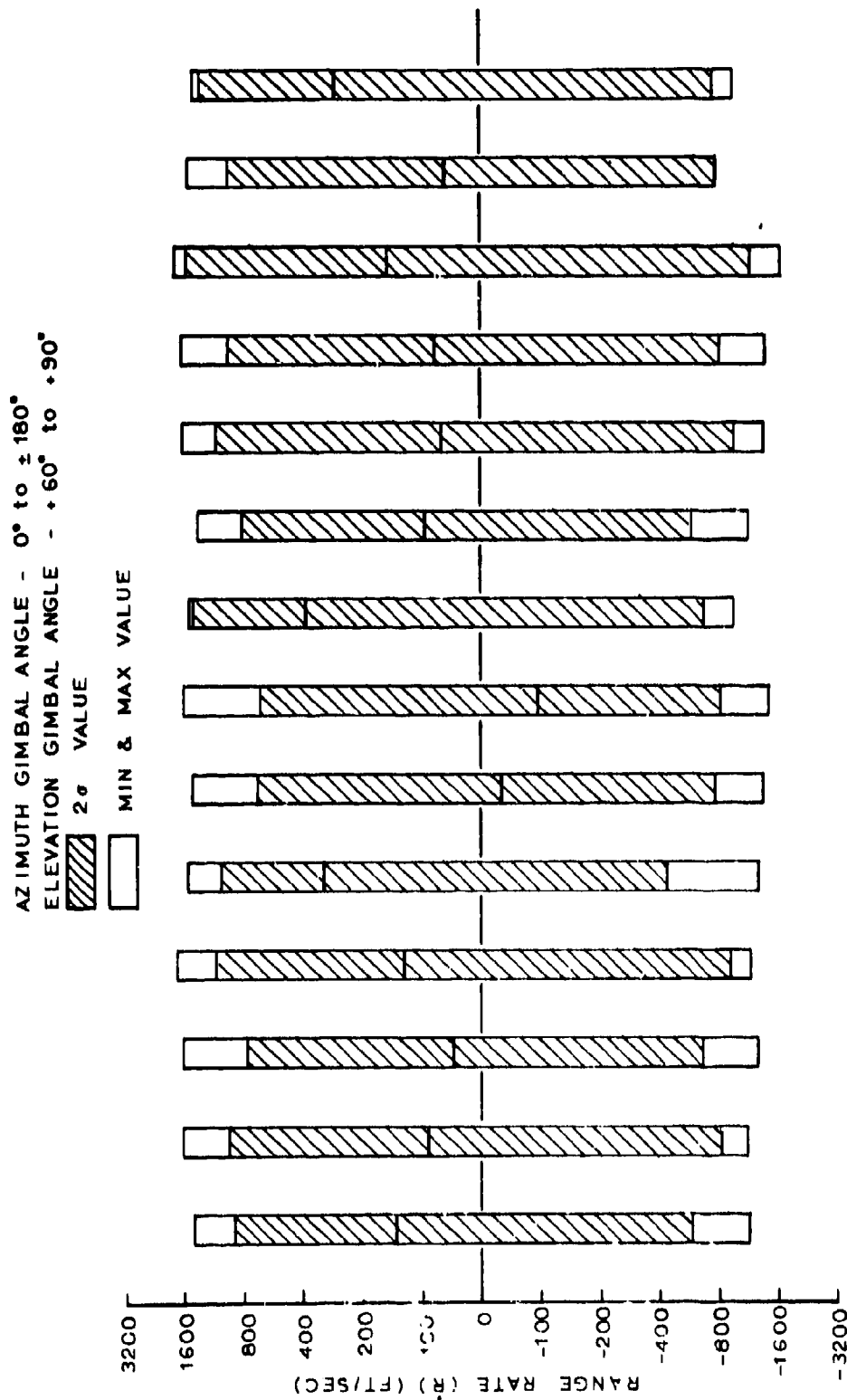
 MIN & MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14
AIRCRAFT	C	C	A	A	B	B	D	D	B	B	E	E	E	E
WEAPONS	2	1	1	1	1	1	1	1	2	1	1	1	1	1

FIG. A-49 - SUMMARY OF RANGE RATE

CONFIDENTIAL



CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
AIRCRAFT	C	C	A	A	B	B	D	D	D	D	D	D	D	D
WEAPONS	2	1	1	1	2	1	1	2	1	1	1	1	1	1

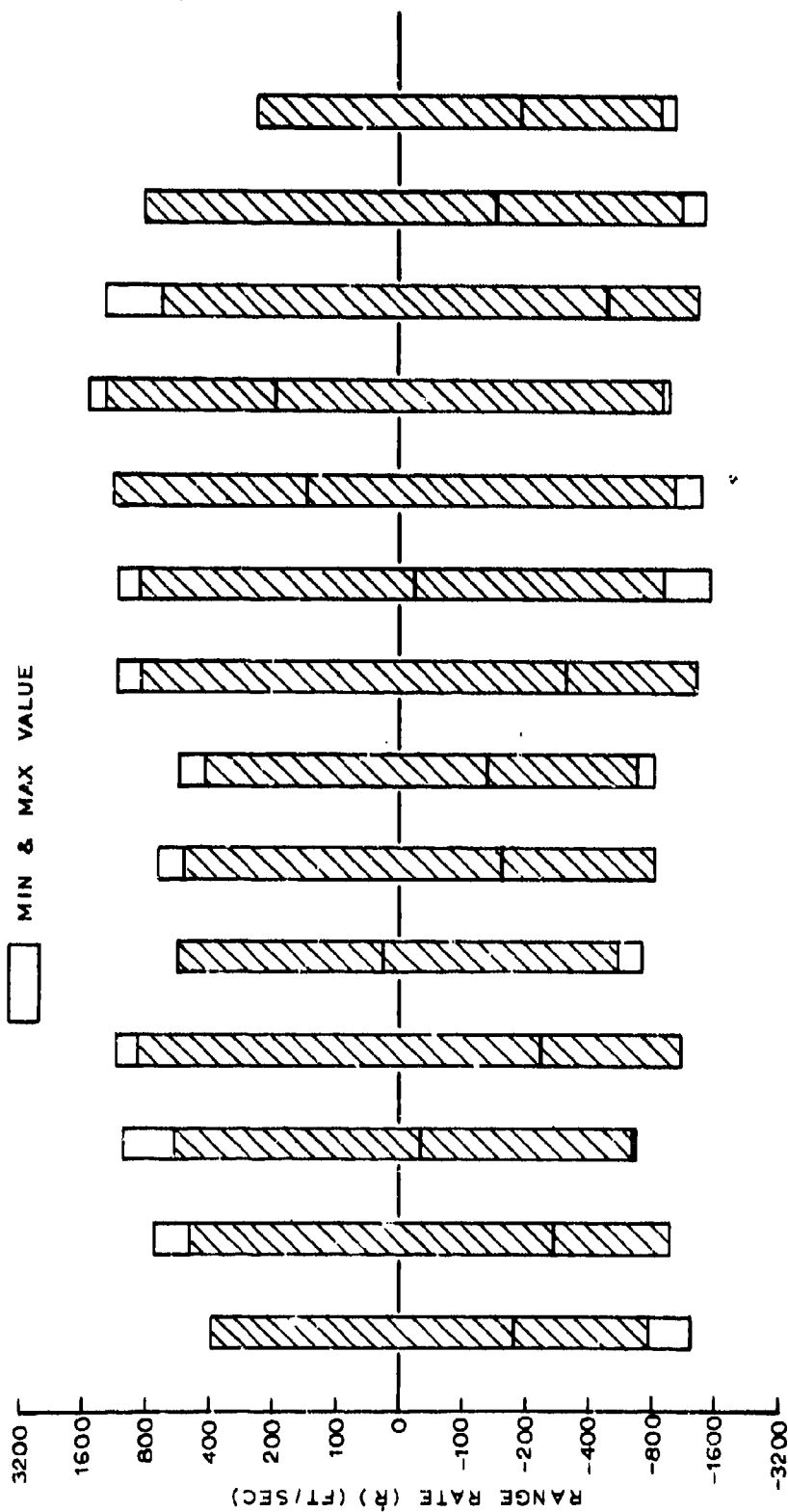
FIG. A-50 - SUMMARY OF RANGE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° to ±180°
ELEVATION GIMBAL ANGLE - -90° to -60°

2σ VALUE

MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	6	101	101
AIRCRAFT	C	C	A	A	B	D	B	F	F
WEAPONS	2	1	1	2	2	1	1	1	1

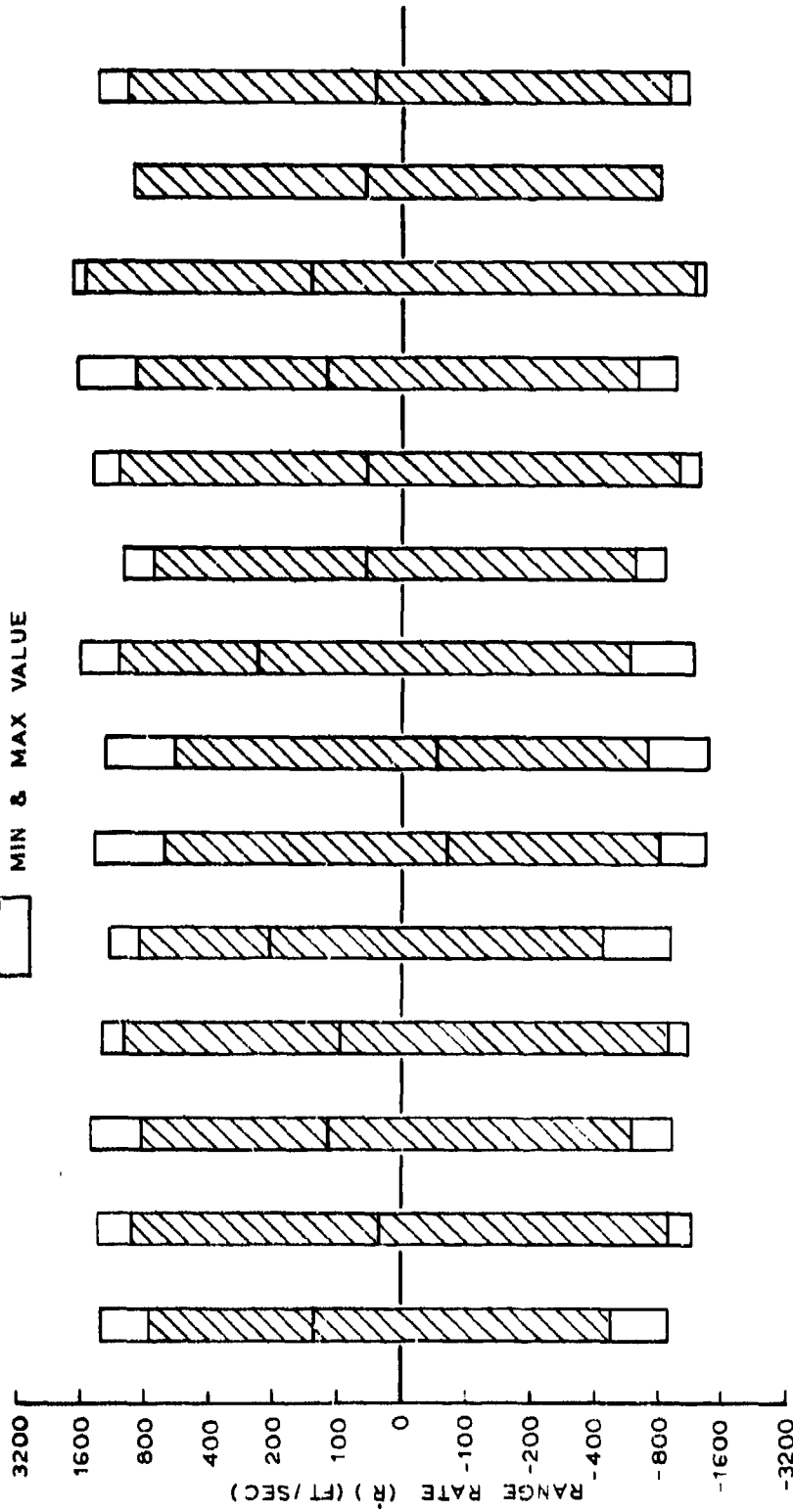
FIG. A-51 - SUMMARY OF RANGE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ to $\pm 120^\circ$
ELEVATION GIMBAL ANGLE - 0° to $\pm 60^\circ$

2 σ VALUE

MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	B	B	D	E	E	F	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1	1	1

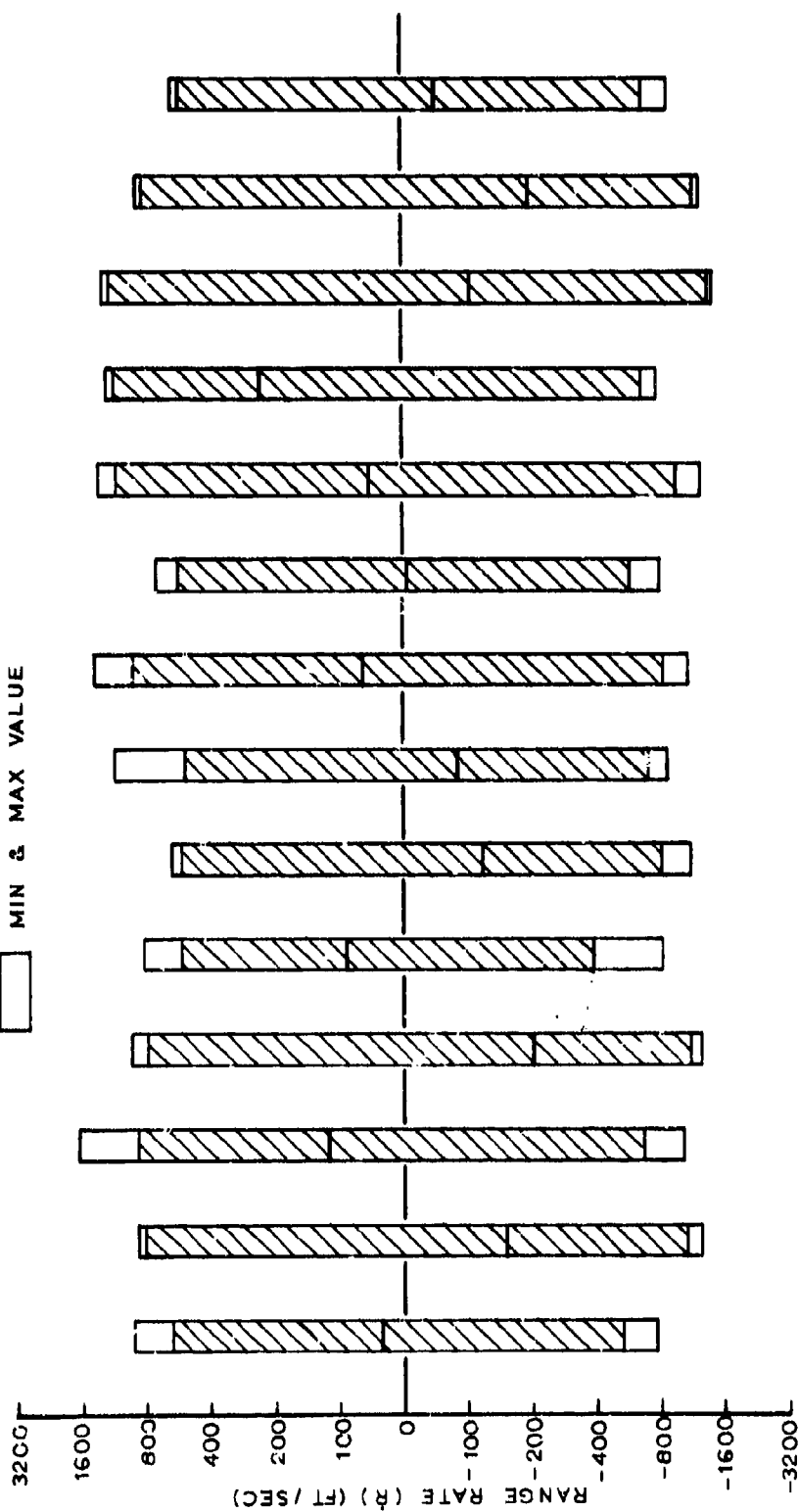
FIG A-52 - SUMMARY OF RANGE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ to $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - -60° to 0°

2 σ VALUE

MIN & MAX VALUE

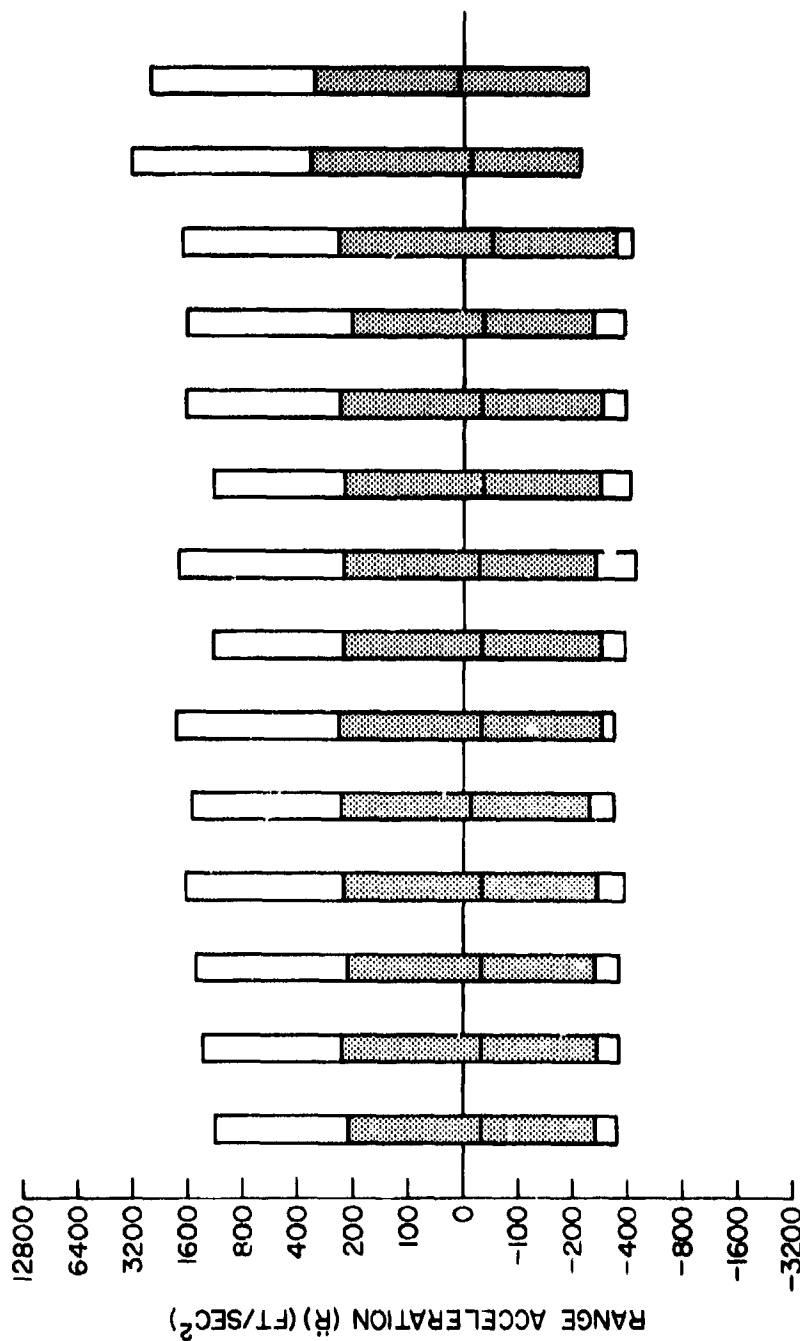


CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	B	B	D	D	B	E	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1	1	1

FIG. A-53 - SUMMARY OF RANGE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO ±60°
 ELEVATION GIMBAL ANGLE - 0° TO +60°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO	1	1	2	2	3	3	4	4	5	5	6	6	10	10
AIRCRAFT	C	E	C	D	A	E	A	D	B	D	B	E	F	F
WEAPONS	2	1	1	1	1	1	2	1	2	1	1	1	1	1

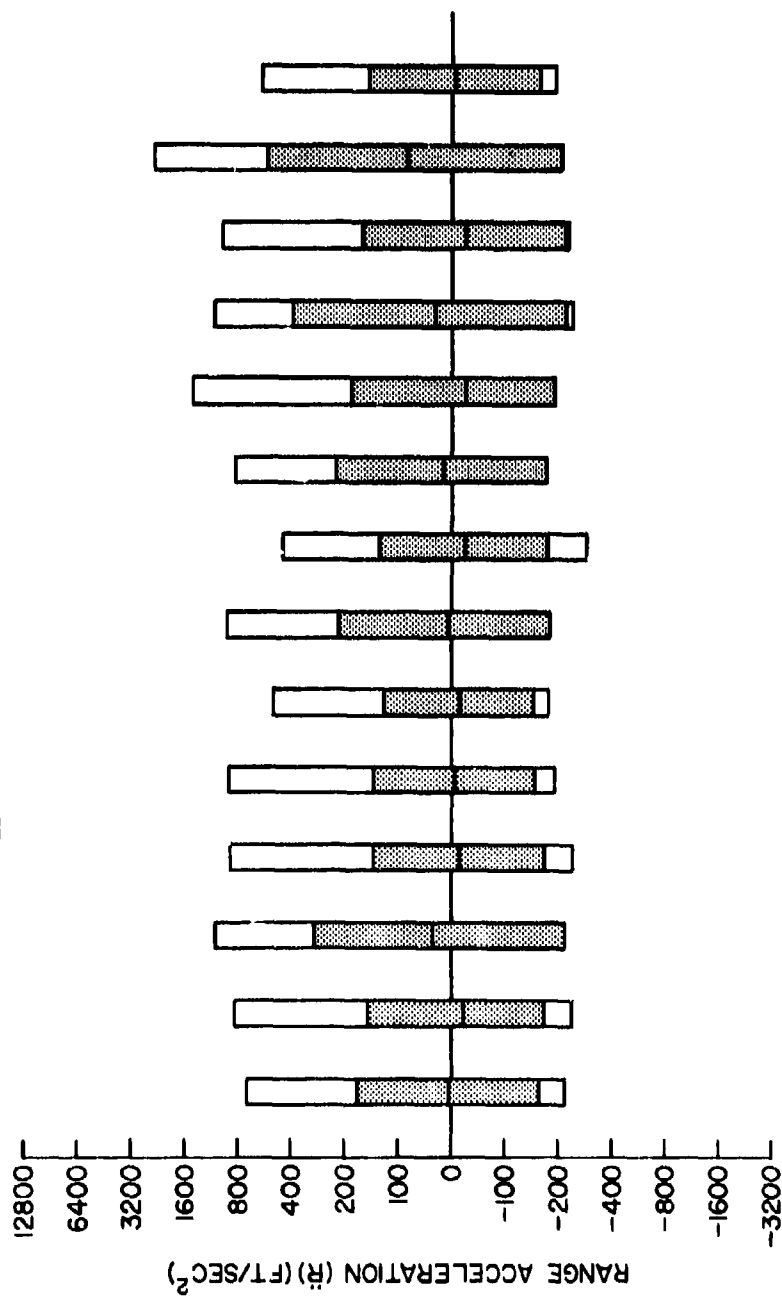
FIG. A-54-SUMMARY OF RANGE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° TO ±60°
ELEVATION GIMBAL ANGLE - -60° TO 0°

■ 2σ VALUE

□ MIN & MAX VALUE

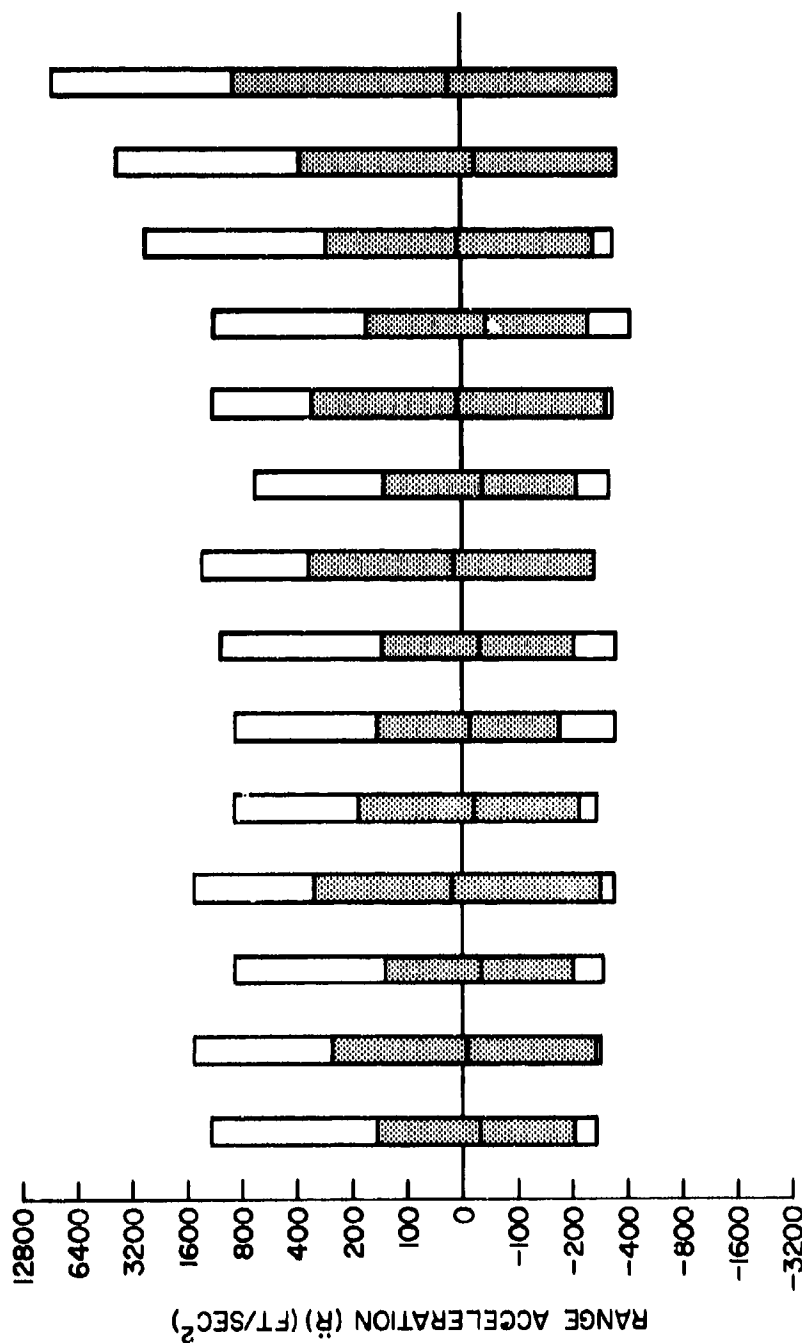


CASE NO	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	B	B	D	D	E	E	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1	1	1

FIG. A-55--SUMMARY OF RANGE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO.	1	1	2	2	3	3	3	4	4	5	6	6	10	10
AIRCRAFT	C	E	C	D	A	A	D	B	D	B	E	B	F	F
WEAPONS	2	1	1	1	1	1	1	2	2	1	1	1	1	1

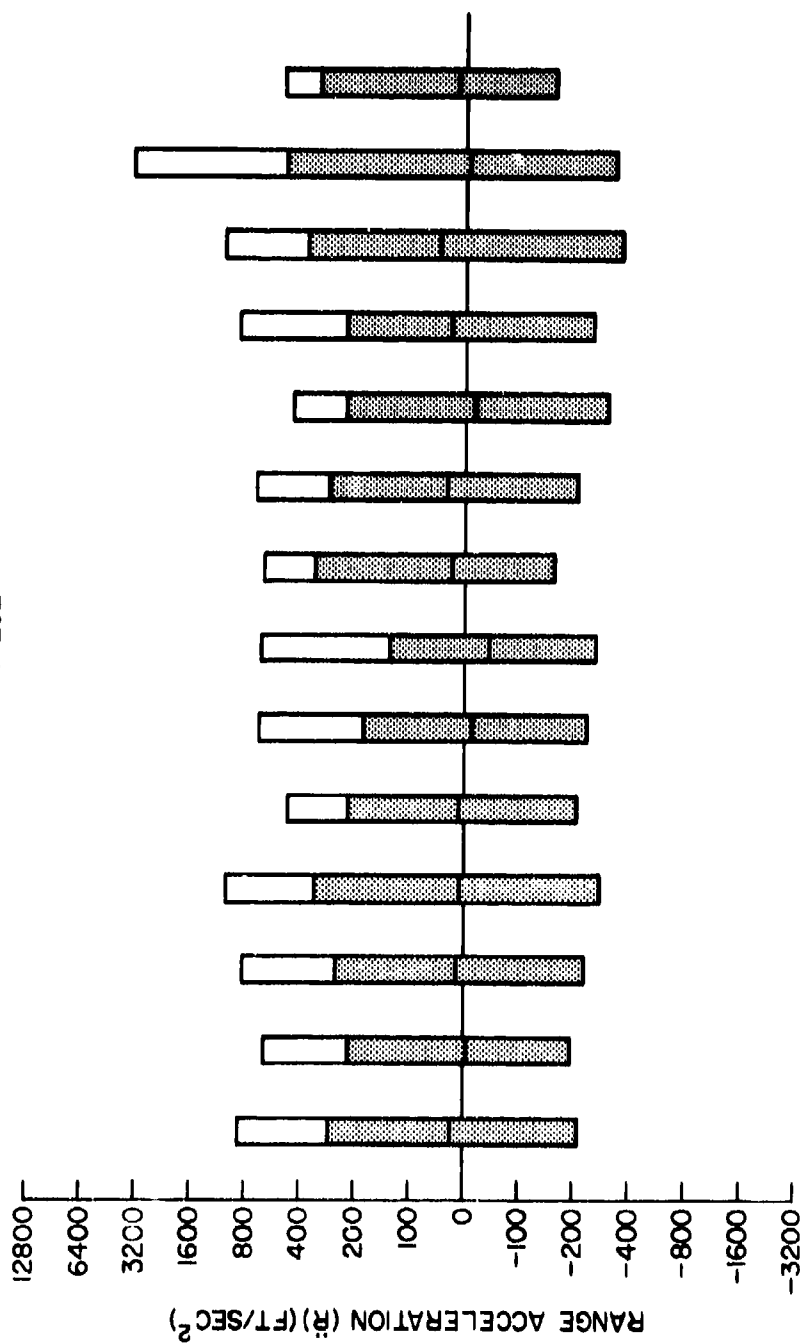
FIG. A-56-SUMMARY OF RANGE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°

■ 2 σ VALUE

□ MIN & MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	C	A	A	D	B	E	F	F	F
WEAPONS	2	1	1	1	2	1	1	1	1	1

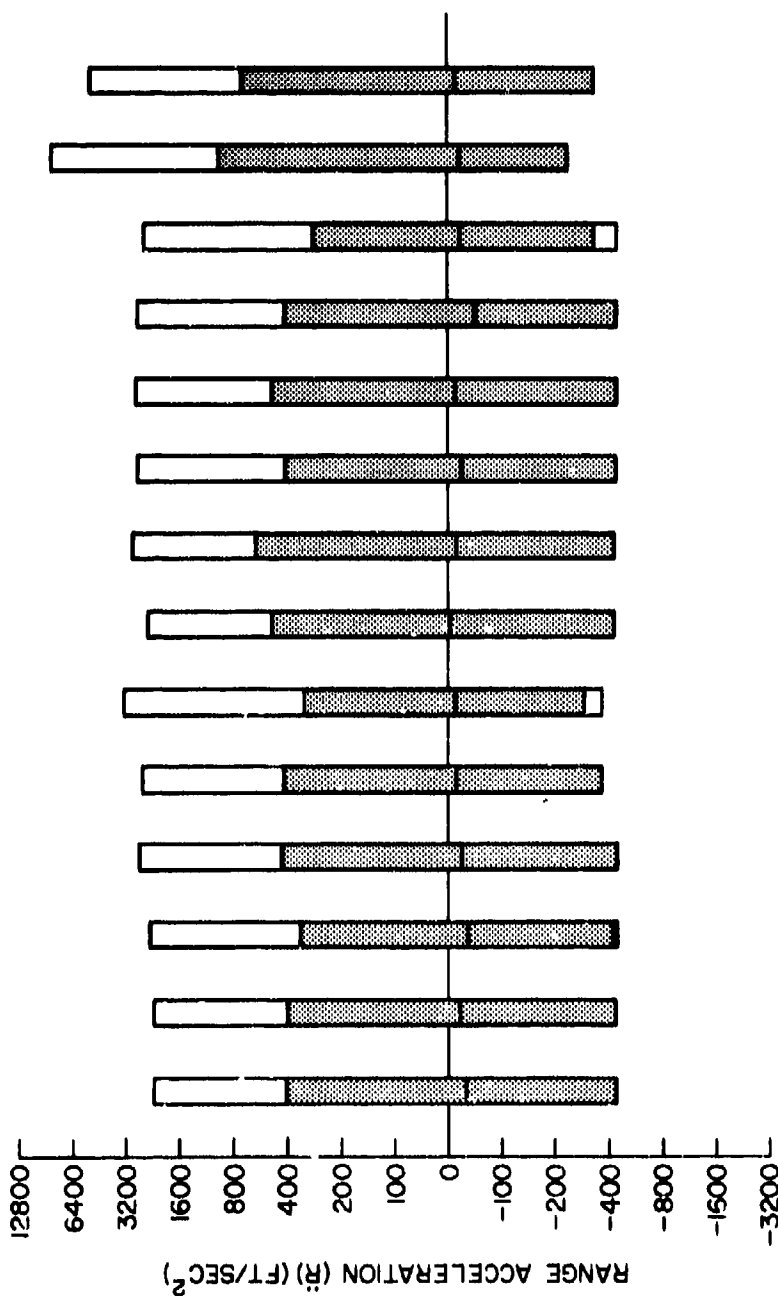
FIG. A-57 - SUMMARY OF RANGE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO ±180°
ELEVATION GIMBAL ANGLE - +60° TO +90°

■ 2σ VALUE

□ MIN & MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	B	B	D	D	E	F	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1	1	1

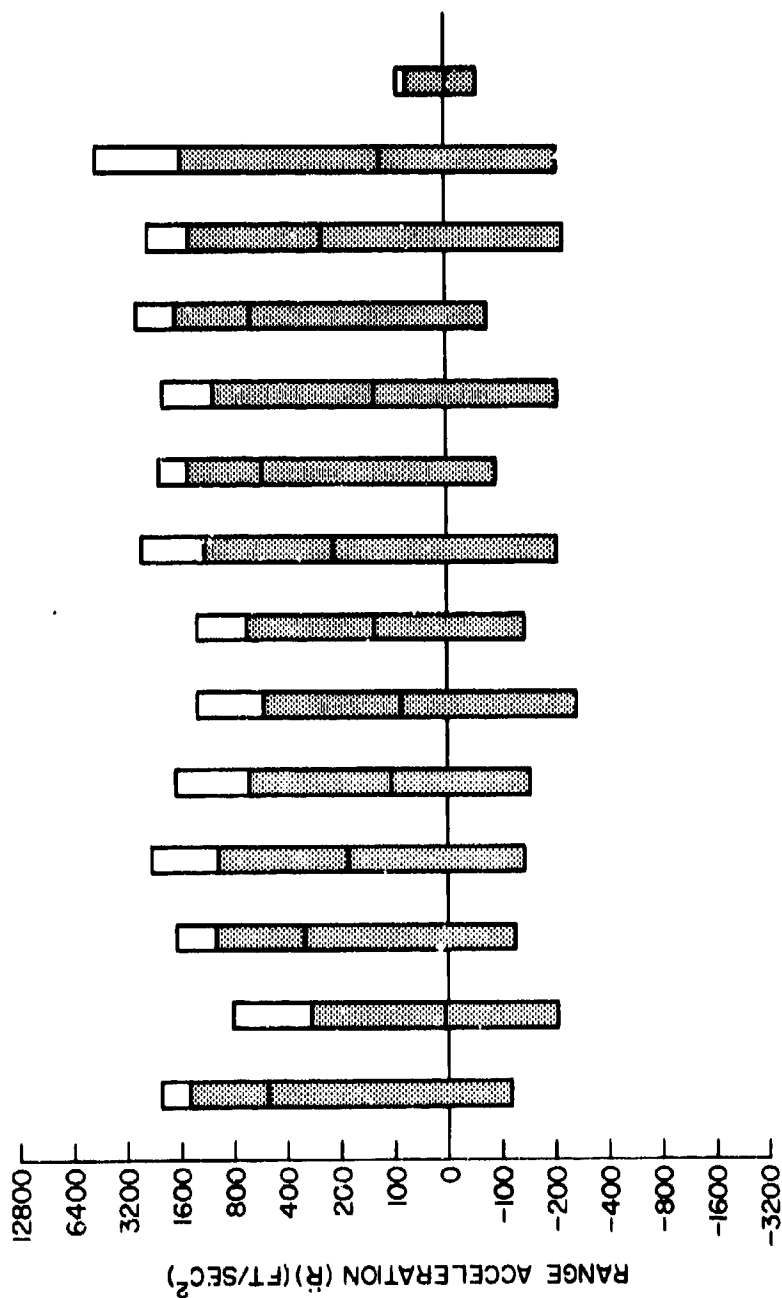
FIG. A-58-SUMMARY OF RANGE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO ±180°
ELEVATION GIMBAL ANGLE -90° TO -60°

■ 2σ VALUE

□ MIN & MAX VALUE



CASE NO	1	1	2	2	3	3	4	4	5	5	6	6	10	10
AIRCRAFT	C	E	C	D	A	E	A	D	B	B	E	F	F	F
WEAPONS	2	1	1	1	1	1	2	1	2	1	1	1	1	1

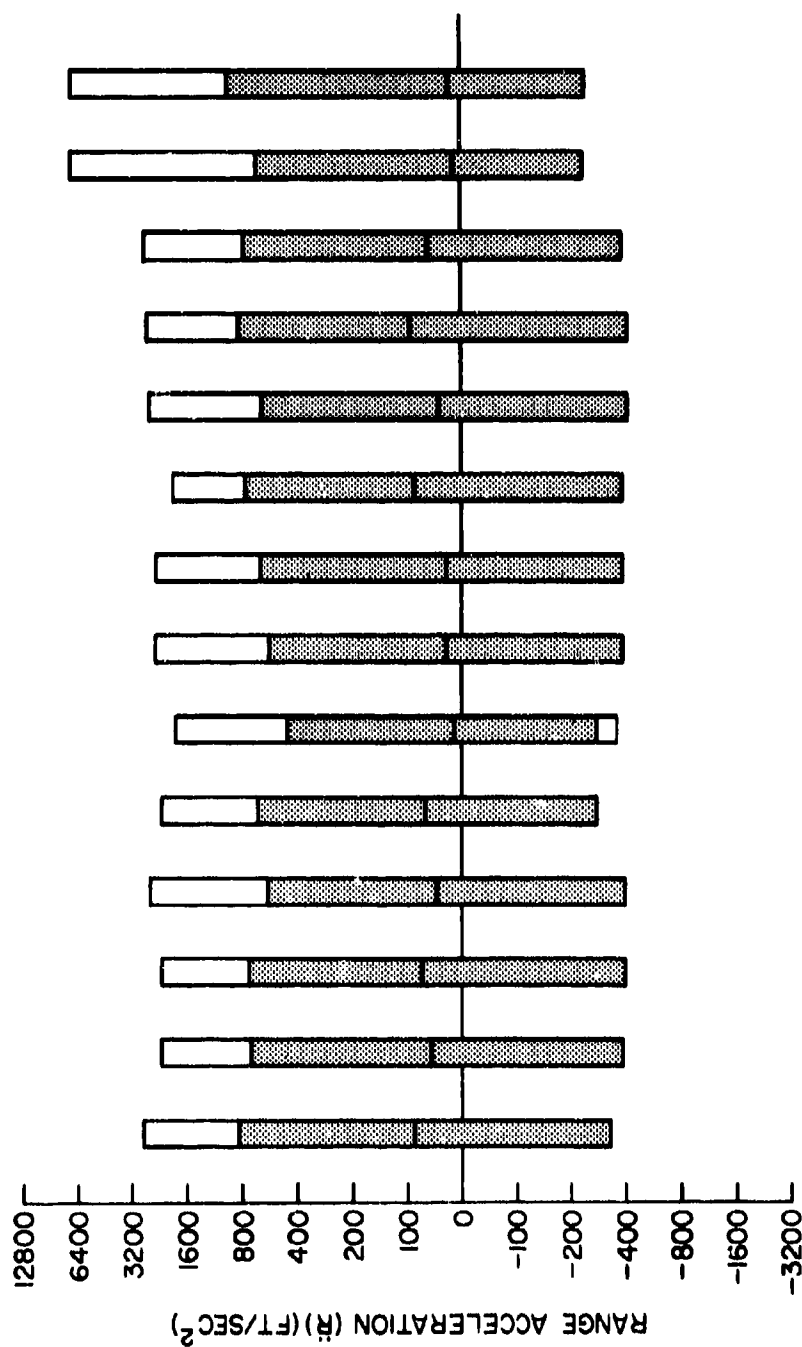
FIG. A-59-SUMMARY OF RANGE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$

■ 2σ VALUE

□ MIN & MAX VALUE

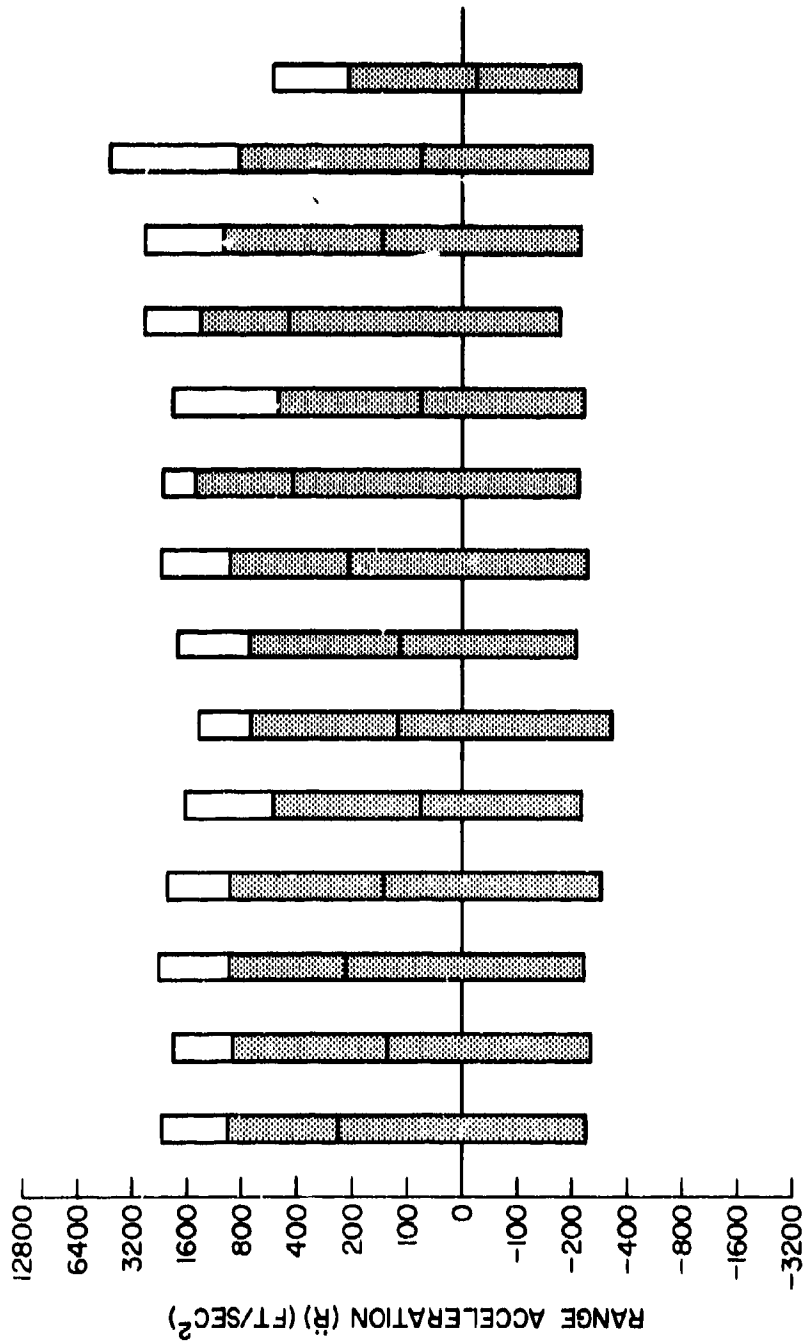


CASE NO	1	1	2	2	3	3	4	4	5	5	6	6	10	10
AIRCRAFT	C	E	C	D	A	E	A	D	B	D	B	E	F	F
WEAPONS	2	1	1	1	1	1	2	1	1	1	1	1	1	1

FIG. A-60-SUMMARY OF RANGE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO	1	1	1	2	2	2	3	3	3	4	4	4	5	5	6	6	10
AIRCRAFT	C	E	C	C	D	D	A	E	A	D	A	D	D	B	E	F	F
WEAPONS	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1

FIG. A-61 - SUMMARY OF RANGE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° TO ±60°
 ELEVATION GIMBAL ANGLE - 0° TO +60°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

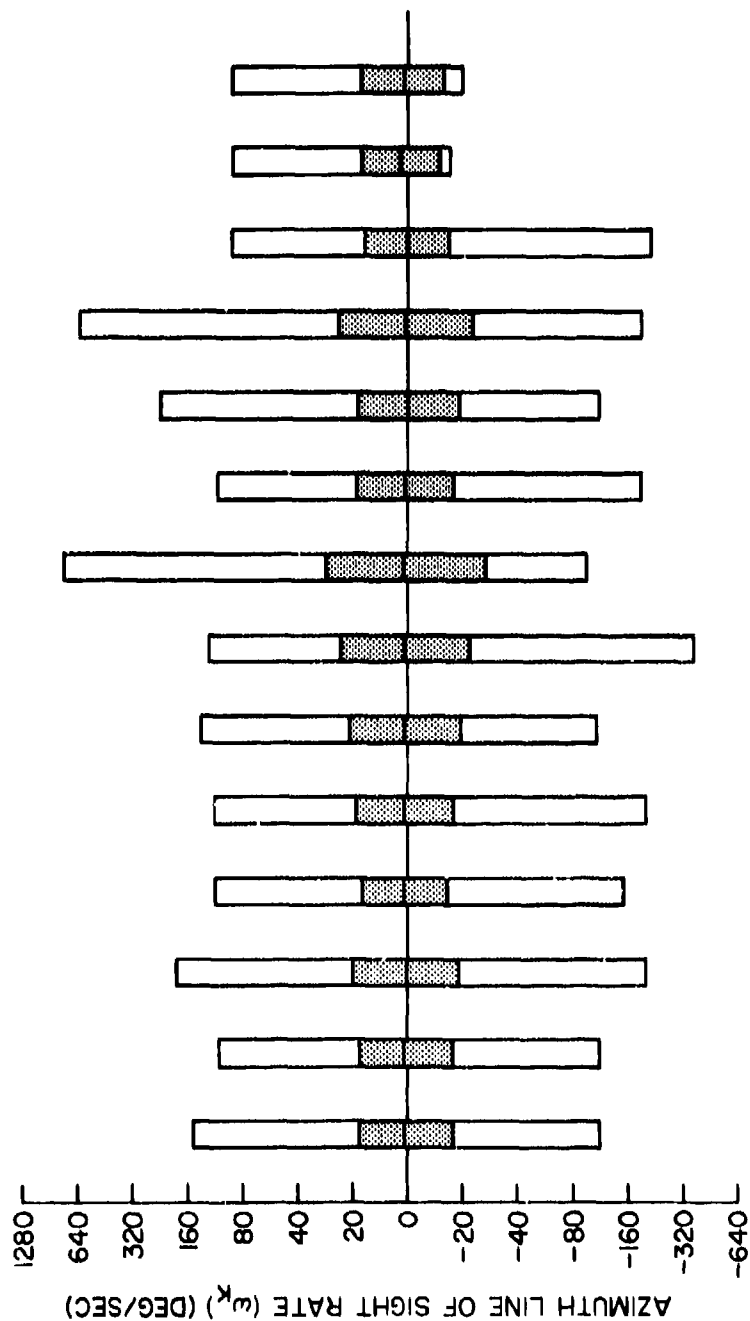


FIG. A-62-SUMMARY OF AZIMUTH LINE OF SIGHT RATE

CASE NO	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	C	A	D	B	B	E	F	F	F
WEAPONS	2	1	1	1	2	1	1	1	1	1

CONFIDENTIAL

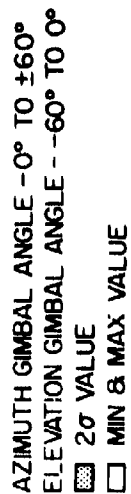
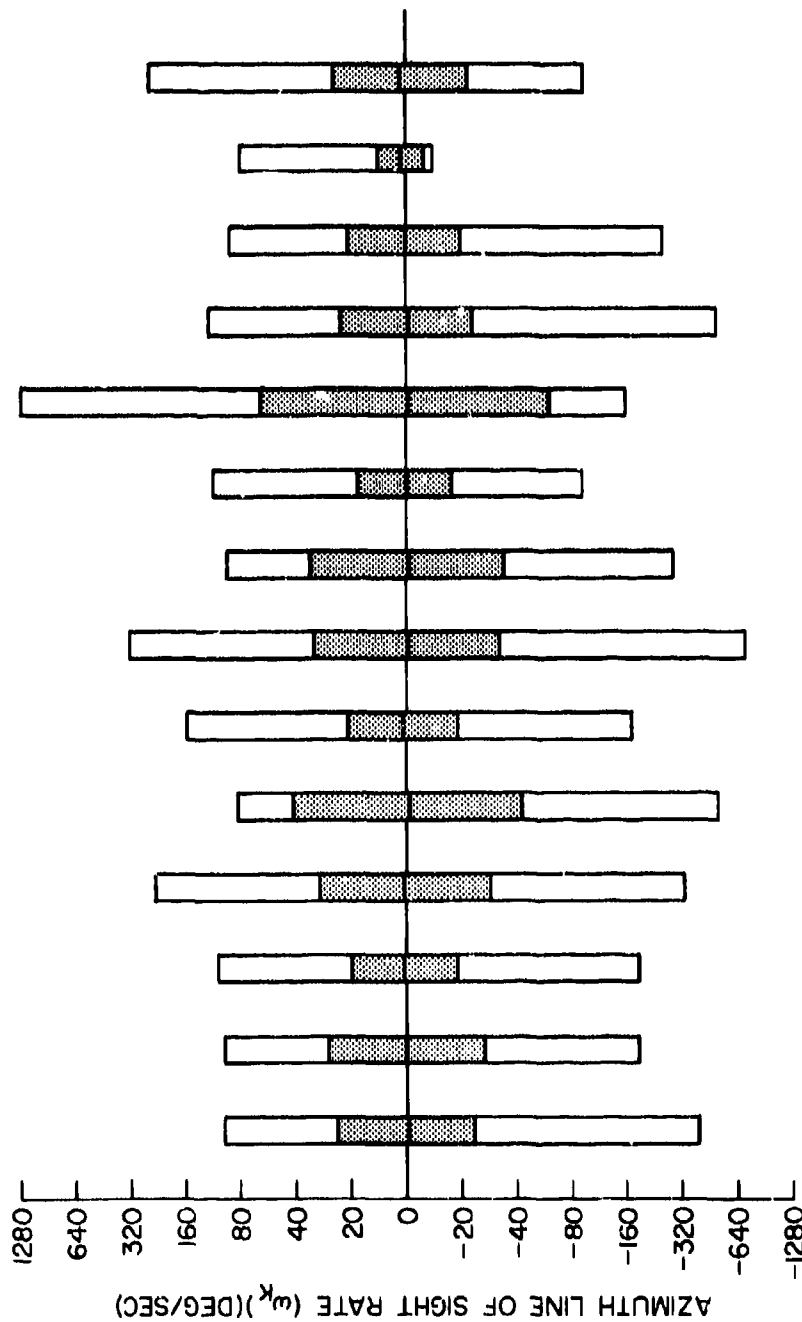


FIG. A-63-SUMMARY OF AZIMUTH LINE OF SIGHT RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$
 ■ 2σ VALUE
 □ MIN & MAX VALUE

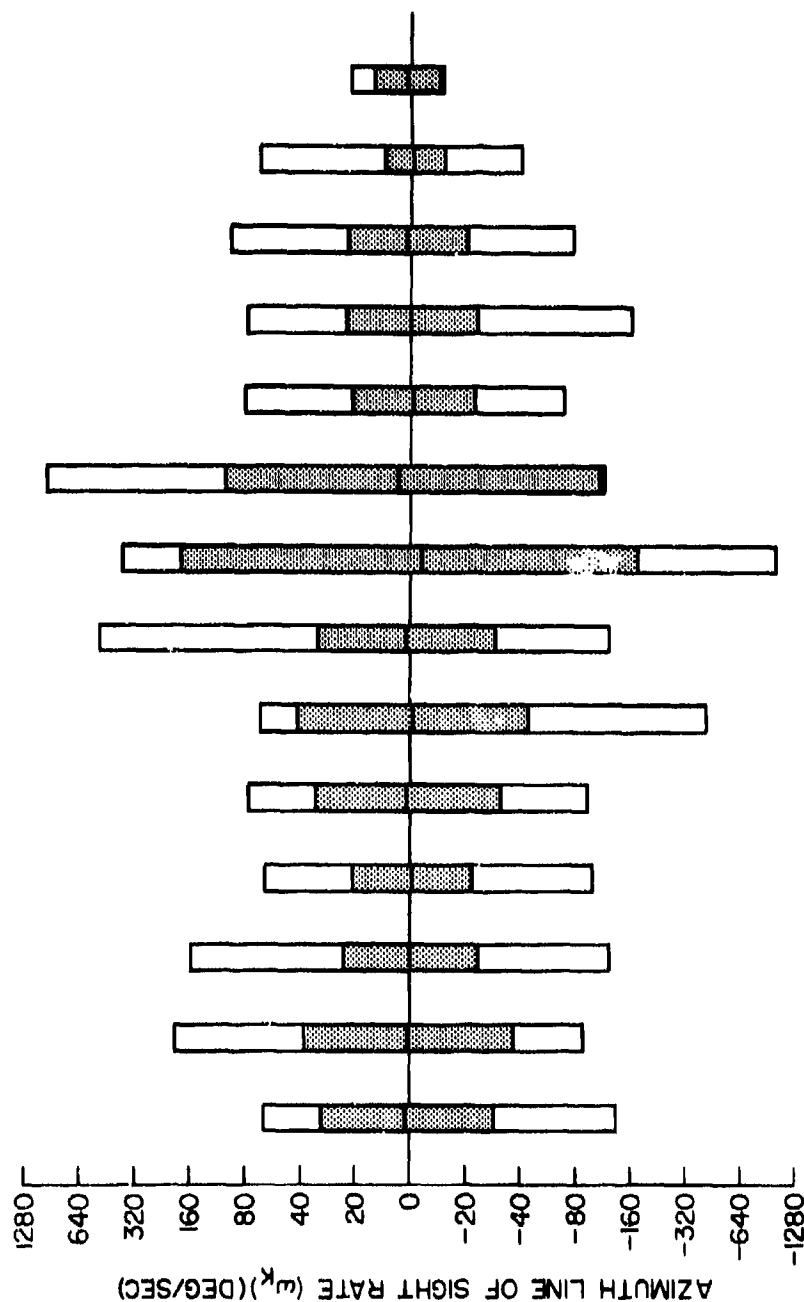


CASE NO	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	E	C	D	A	E	A	C	D	E	C	A
WEAPONS	2	1	1	1	1	1	1	1	1	1	1	1

FIG. A-64-SUMMARY OF AZIMUTH LINE OF SIGHT RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

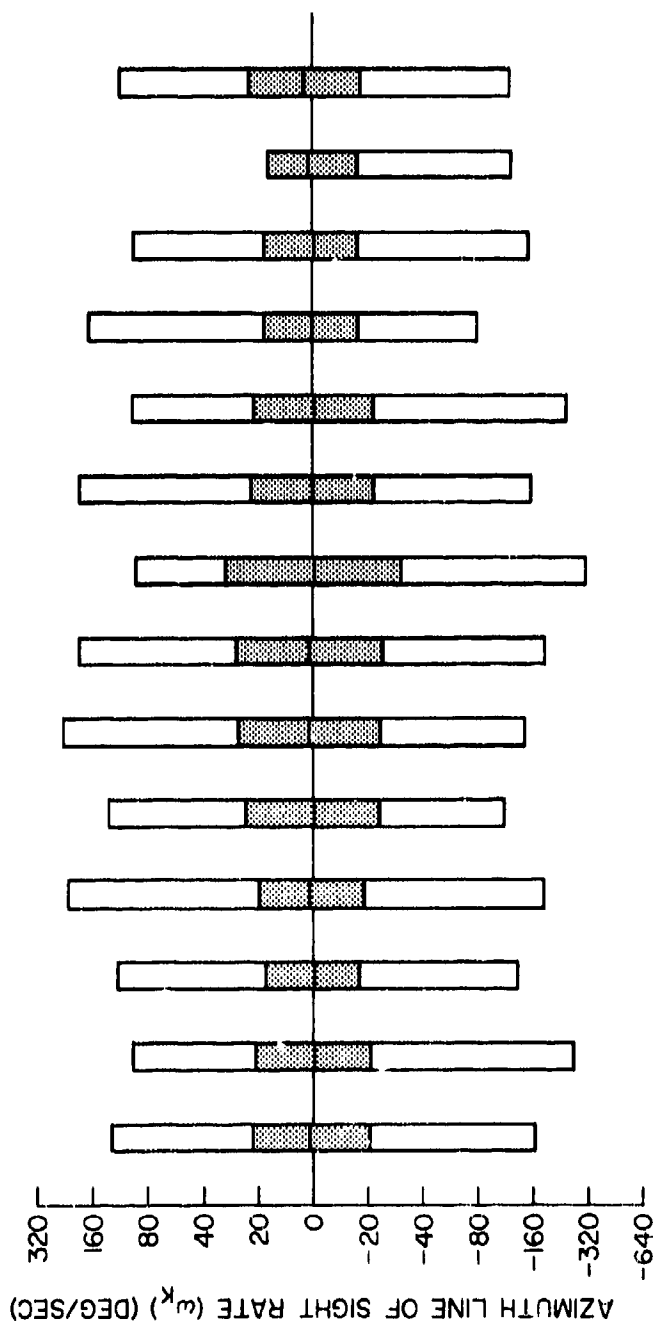


CASE NO	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6	7
AIRCRAFT	C	E	C	C	D	A	A	E	D	A	D	B	B	D	E	D	D
WEAPONS	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1

FIG. A-65-SUMMARY OF AZIMUTH LINE OF SIGHT RATE

CONFIDENTIAL

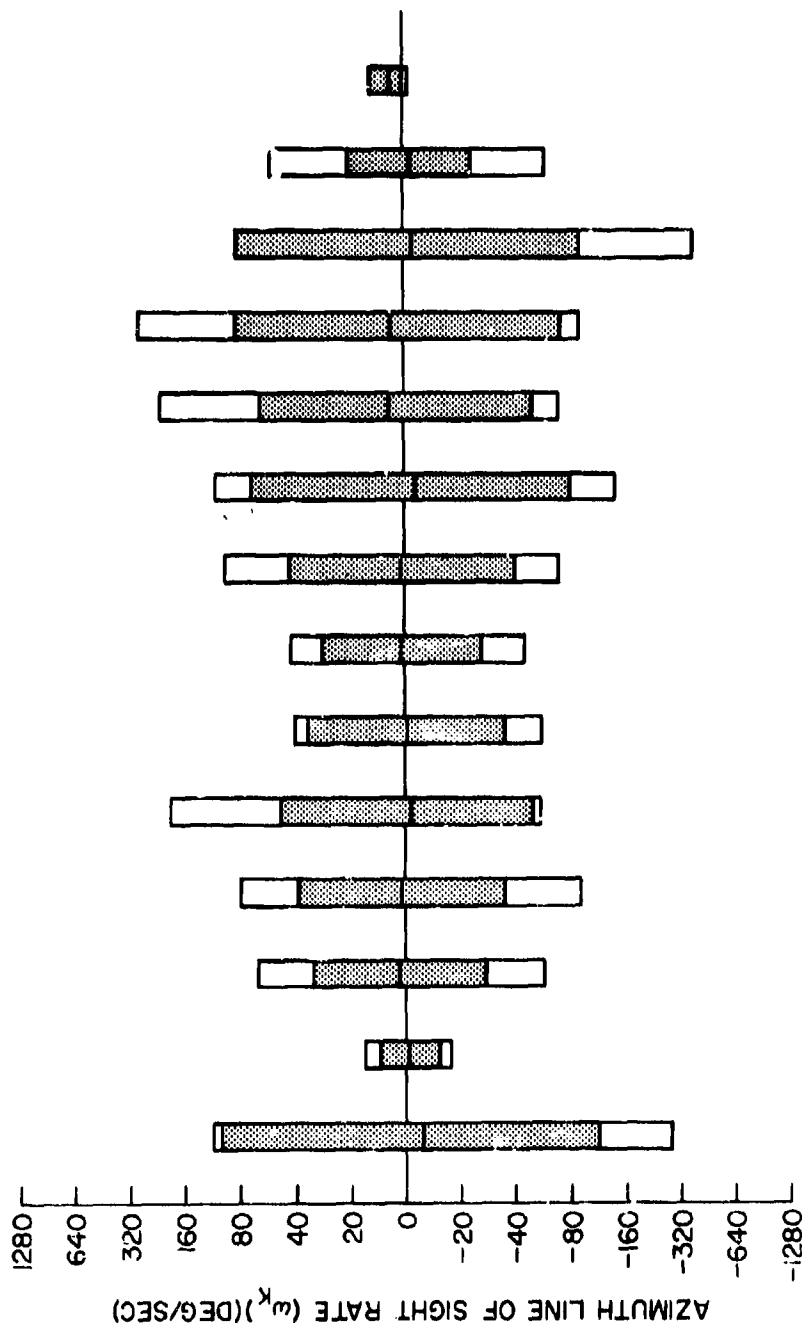
AZIMUTH GIMBAL ANGLE - 0° TO ±180°
 ELEVATION GIMBAL ANGLE - +60° TO +90°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14
AIRCRAFT	C	E	C	A	B	D	B	D	B	D	B	D	B	D
WEAPONS	2	1	1	2	1	1	2	1	1	2	1	1	2	1

FIG. A-63-SUMMARY OF AZIMUTH LINE OF SIGHT RATE

☒ AZIMUTH GIMBAL ANGLE - 0° TO ±180°
☐ ELEVATION GIMBAL ANGLE - 90° TO -60°
☒ 2σ VALUE
☐ MIN & MAX VALUE

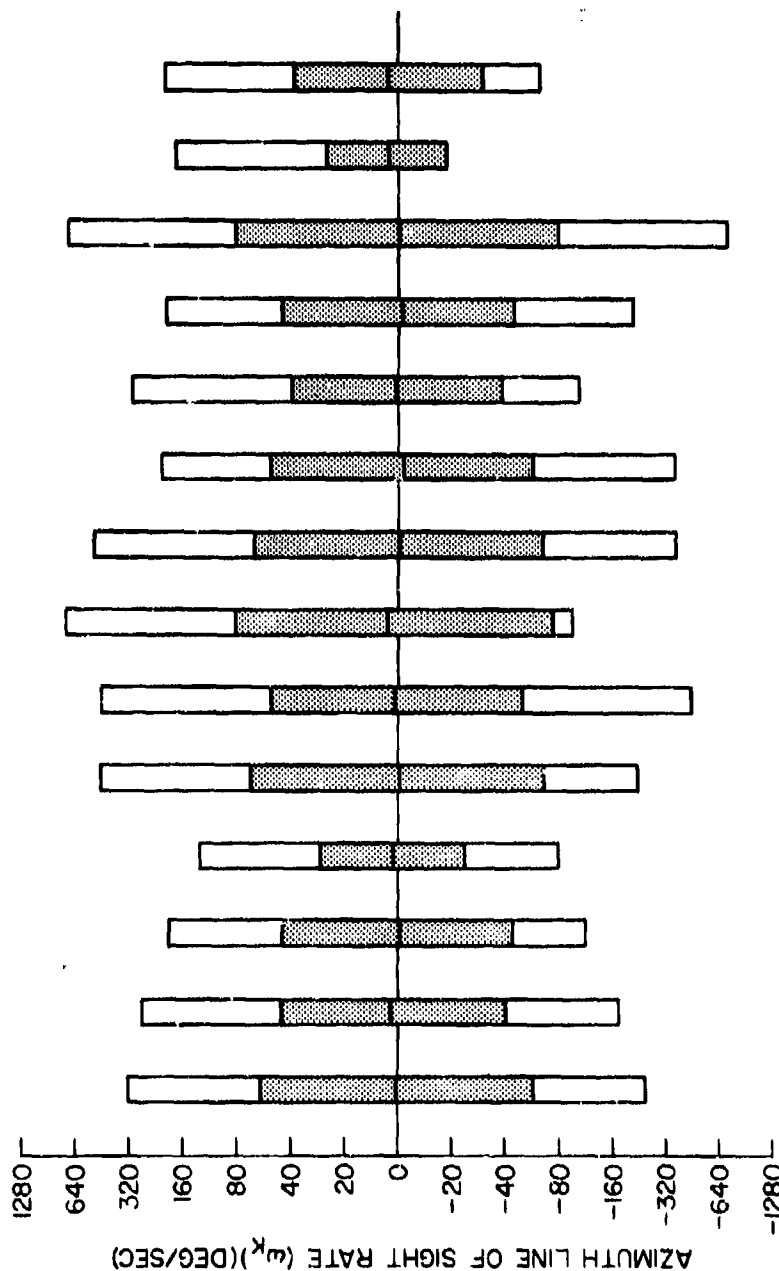


CASE NO.	1	2	3	4	5	6	7
AIRCRAFT	E	C	A	A	B	D	E
WEAPONS	1	1	1	2	2	1	1

FIG. A-67-SUMMARY OF AZIMUTH LINE OF SIGHT RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	D	B	D	B	D	A	E	F
WEAPONS	2	1	1	2	1	1	1	2	1	1	1	1

FIG. A-68 - SUMMARY OF AZIMUTH LINE OF SIGHT RATE

CONFIDENTIAL

AZMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°

■ 2σ VALUE
 □ MIN & MAX VALUE

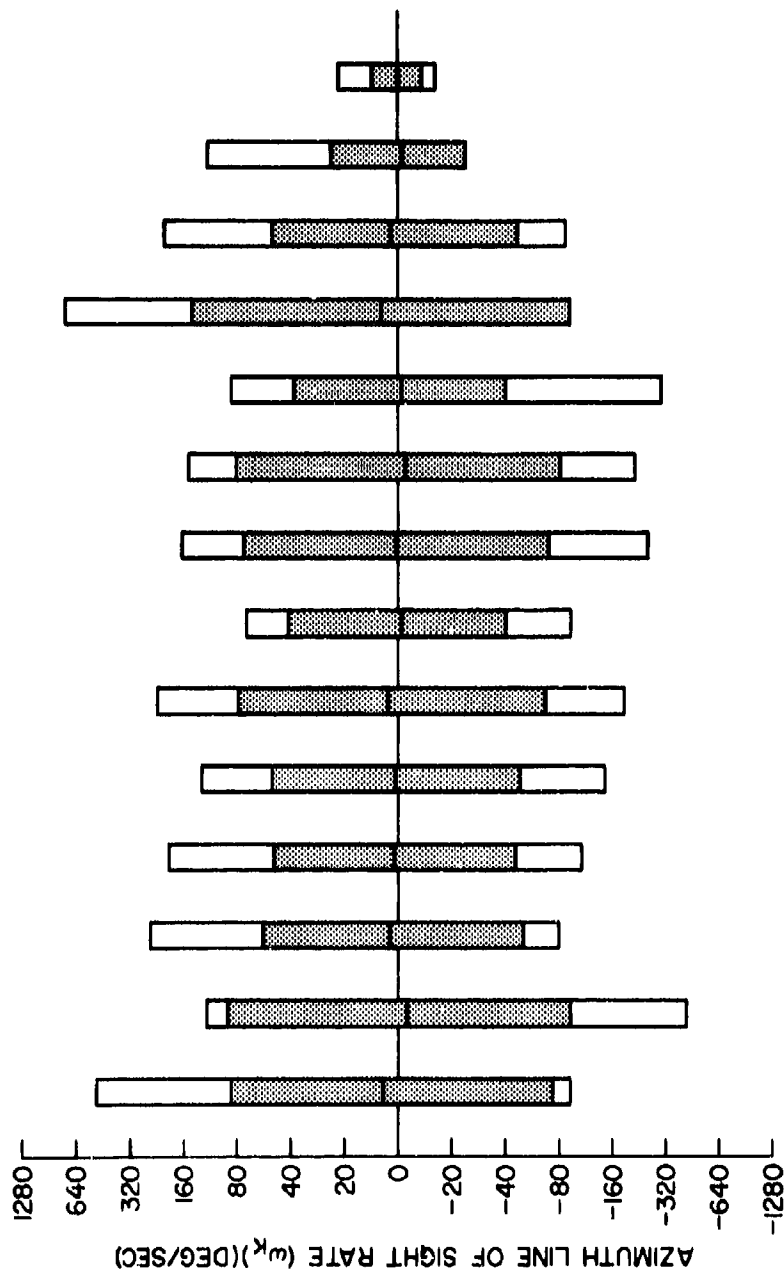
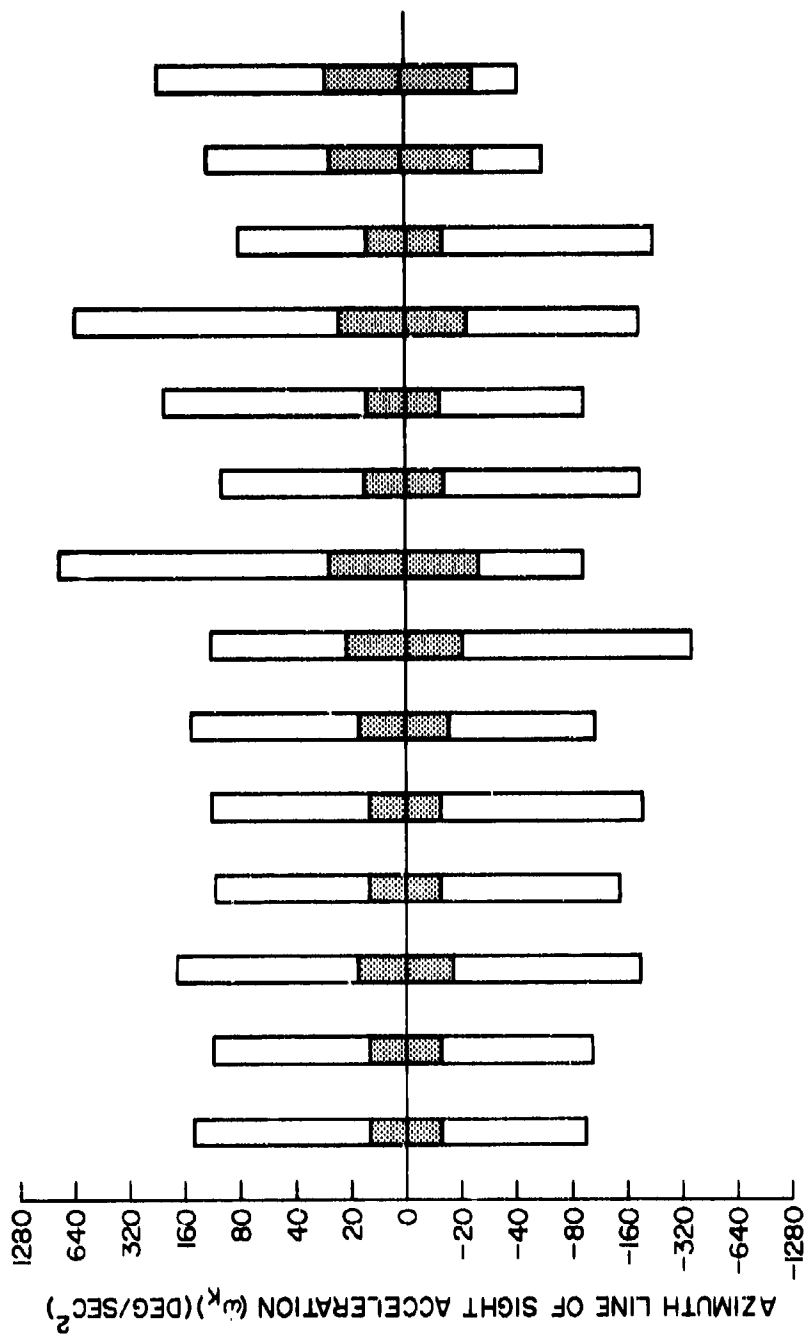


FIG. A-69-- SUMMARY OF AZIMUTH LINE OF SIGHT RATE

CASE NO.	1	1	2	2	2	3	3	3	4	4	5	5	6	6	6	7
AIRCRAFT	C	E	C	D	D	A	A	E	A	D	B	D	B	E	F	F
WEAPONS	2	1	1	1	1	1	2	1	2	1	2	1	1	1	1	1

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° TO ±60°
 ELEVATION GIMBAL ANGLE - 0° TO +60°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO	1	1	2	2	3	3	3	4	4	5	5	6	6	6	7
AIRCRAFT	C	E	C	D	A	E	A	D	A	B	D	E	B	E	F
WEAPONS	2	1	1	1	1	1	1	1	2	2	1	1	1	1	1

FIG. A-70- SUMMARY OF AZIMUTH LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO +60°
 ELEVATION GIMBAL ANGLE --60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

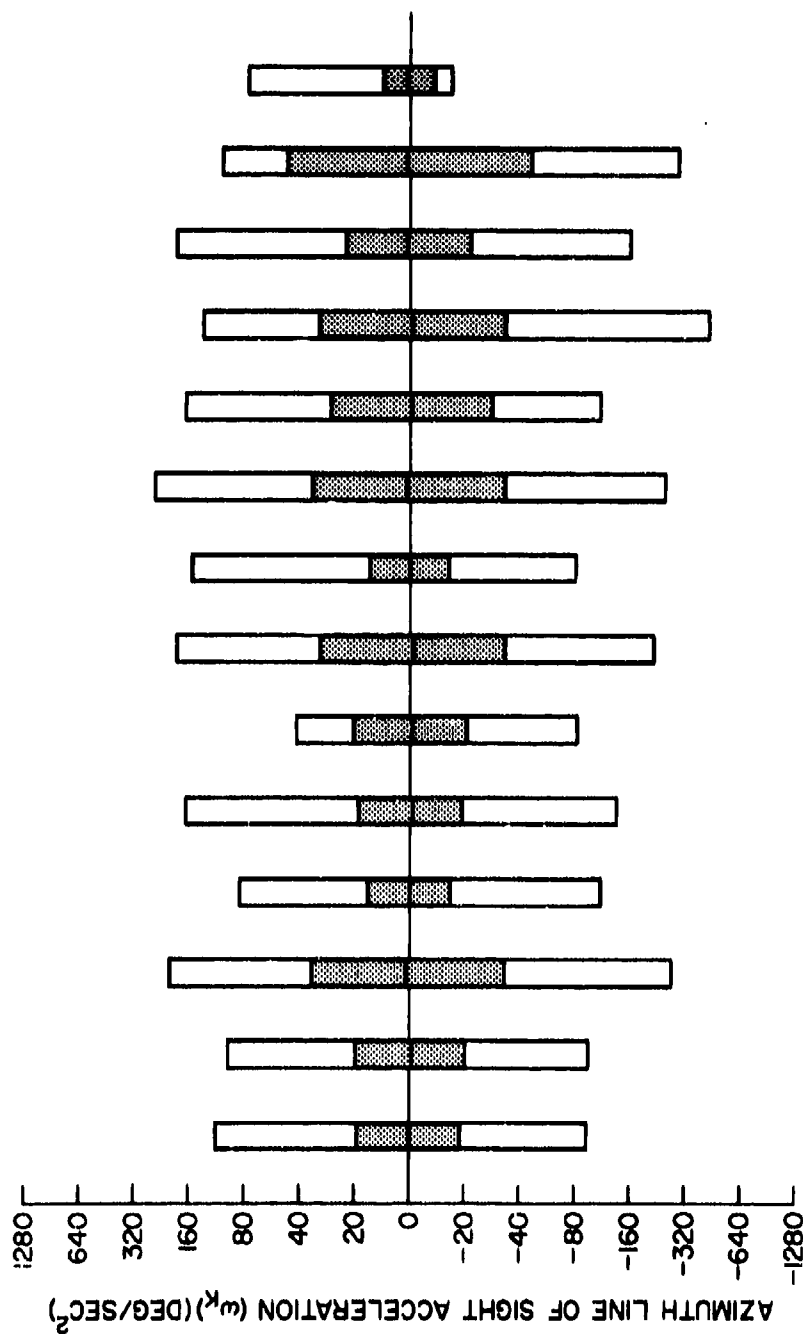
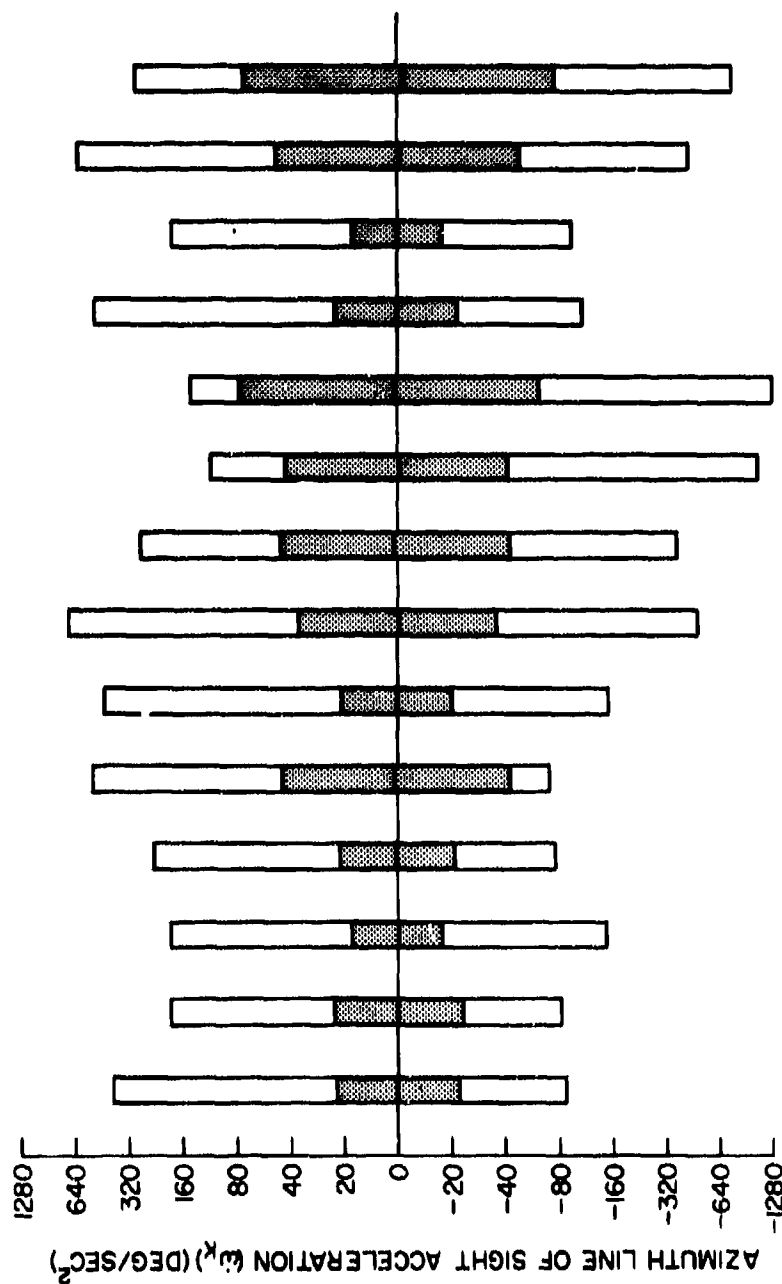


FIG. A-71-SUMMARY OF AZIMUTH LINE OF SIGHT ACCELERATION

CONFIDENTIAL

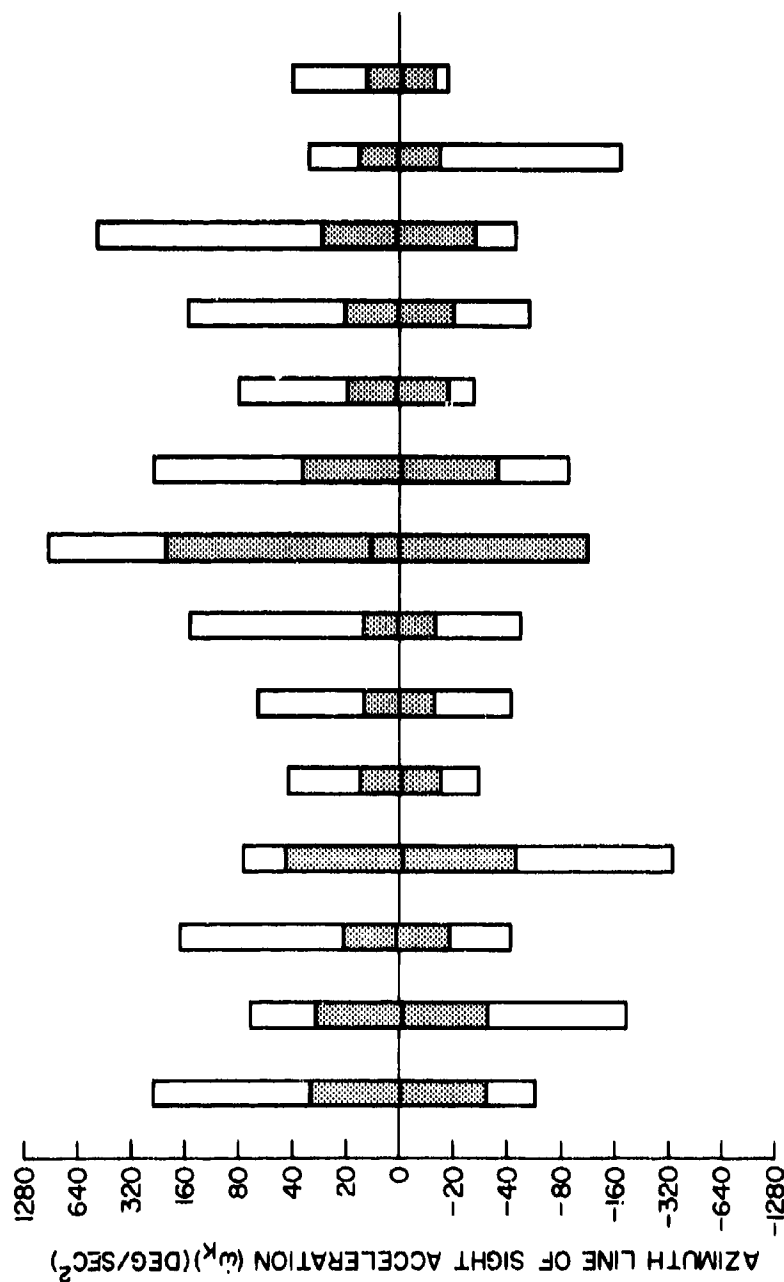
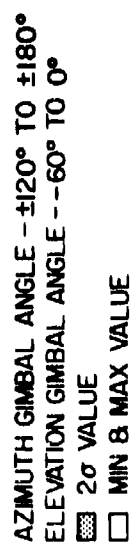
AZIMUTH GIMBAL ANGLE -120° TO $+180^{\circ}$
 ELEVATION GIMBAL ANGLE -0° TO $+60^{\circ}$
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO.	1	1	2	2	2	3	3	3	4	4	5	5	6	6	10
AIRCRAFT	C	E	C	C	D	E	A	A	D	D	B	D	E	F	F
WEAPONS	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1

FIG. A-72-- SUMMARY OF AZIMUTH LINE OF SIGHT ACCELERATION

CONFIDENTIAL

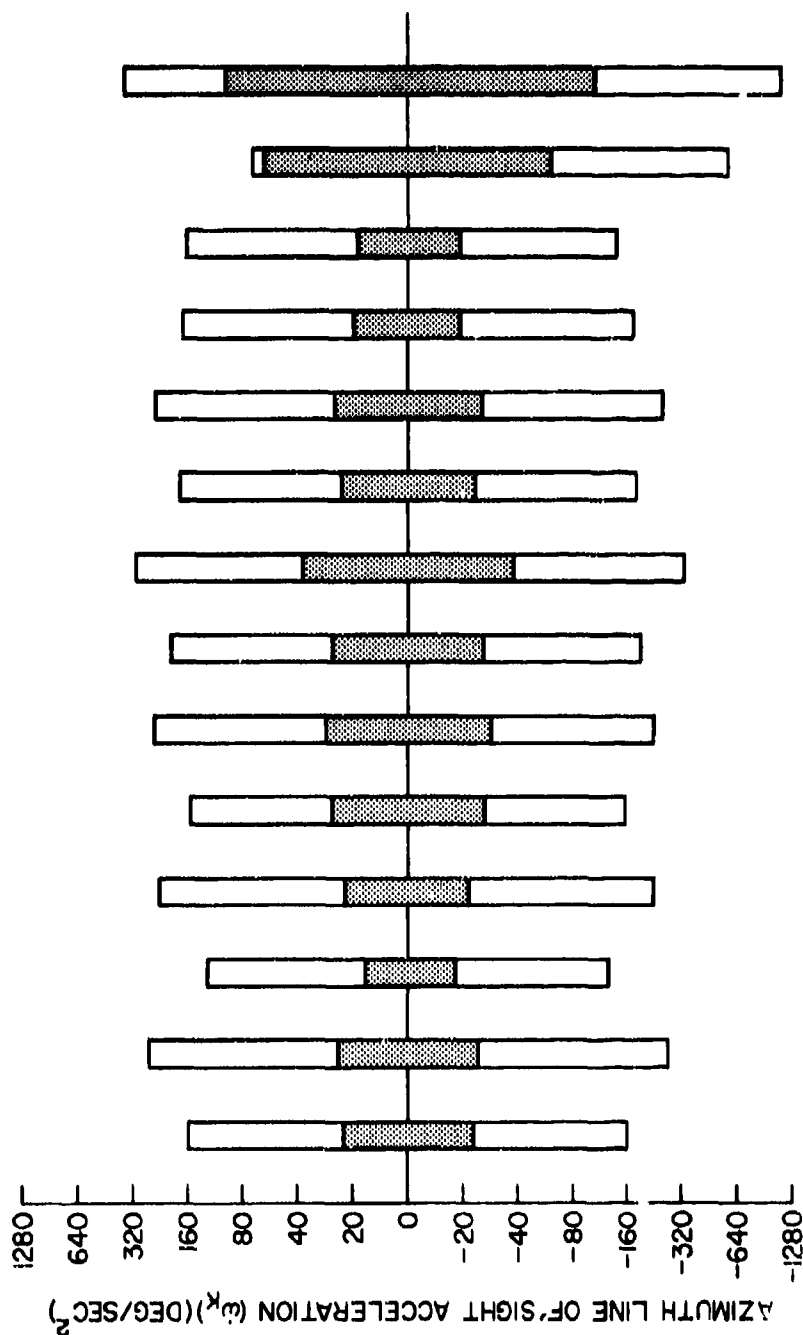


CASE NO.	1	2	2	3	4	5	6	6A
AIRCRAFT	E	C	D	A	A	B	E	F
WEAPONS	1	1	1	1	2	1	1	1

FIG. A-73—SUMMARY OF AZIMUTH LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° TO ±180°
 ELEVATION GIMBAL ANGLE - +60° TO +90°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

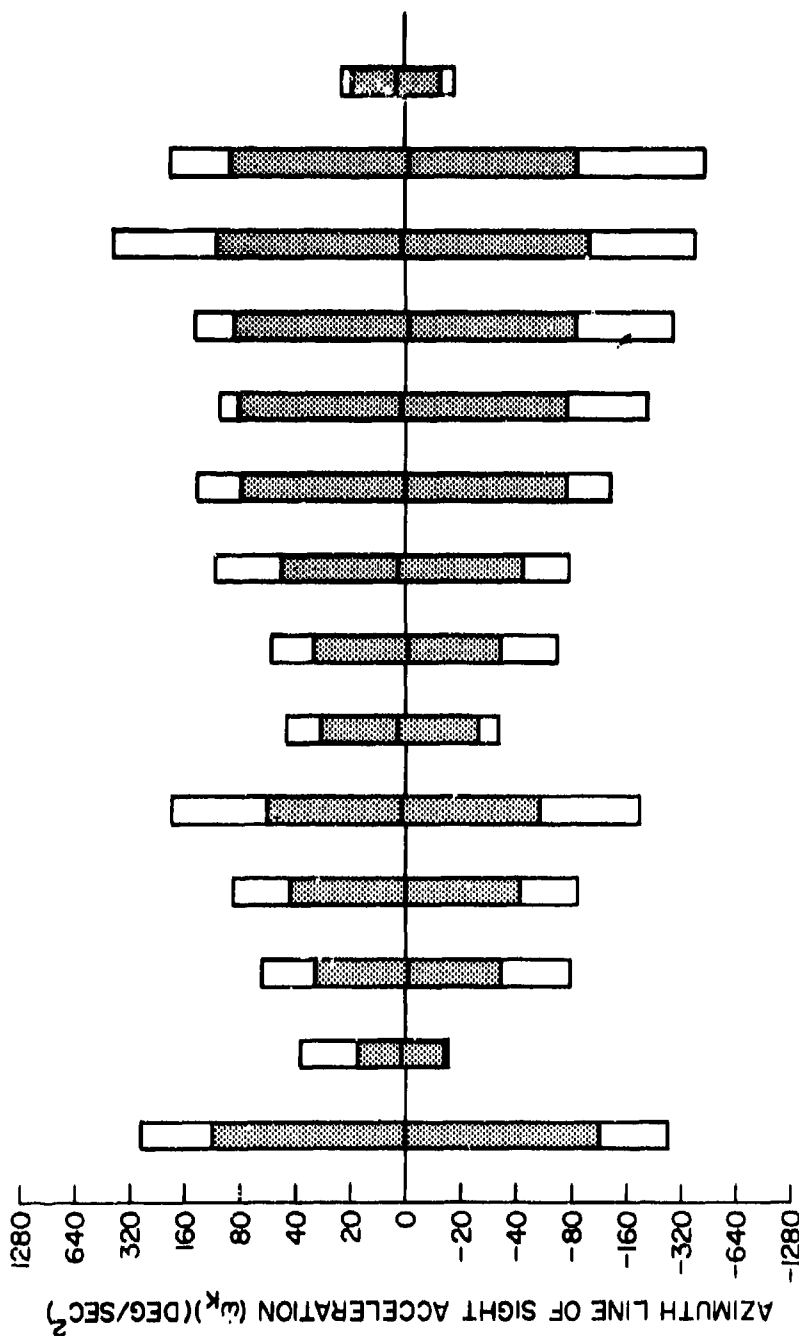


CASE NO	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT C	E	C	A	E	B	D	B	A	D	B	D	B
WEAPONS 2	1	1	1	1	2	1	2	1	1	2	1	1

FIG. A-74- SUMMARY OF AZIMUTH LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO ±180°
 ELEVATION GIMBAL ANGLE --90° TO -60°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
AIRCRAFT	C	C	A	A	B	B	D	D	B	B	D	D	B	B	D	D	B	B	D	D	B	B	D	D	B	B	D	D	B	B	D	D	B	B	D	D	B	B	D	D	B	B	D	D	B	B	D	D		
WEAPONS	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

FIG. A-75-SUMMARY OF AZIMUTH LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$
 ■ 2σ VALUE
 □ MIN & MAX VALUE

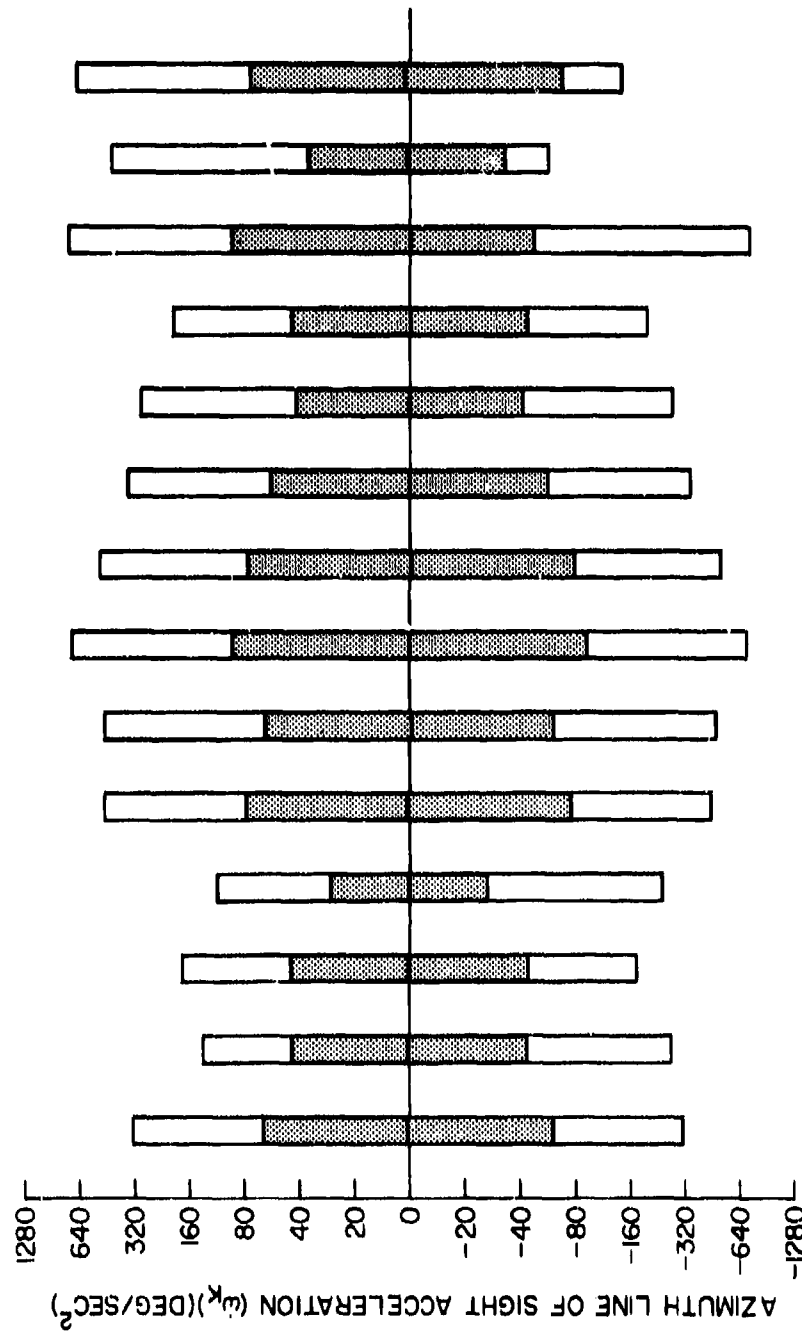
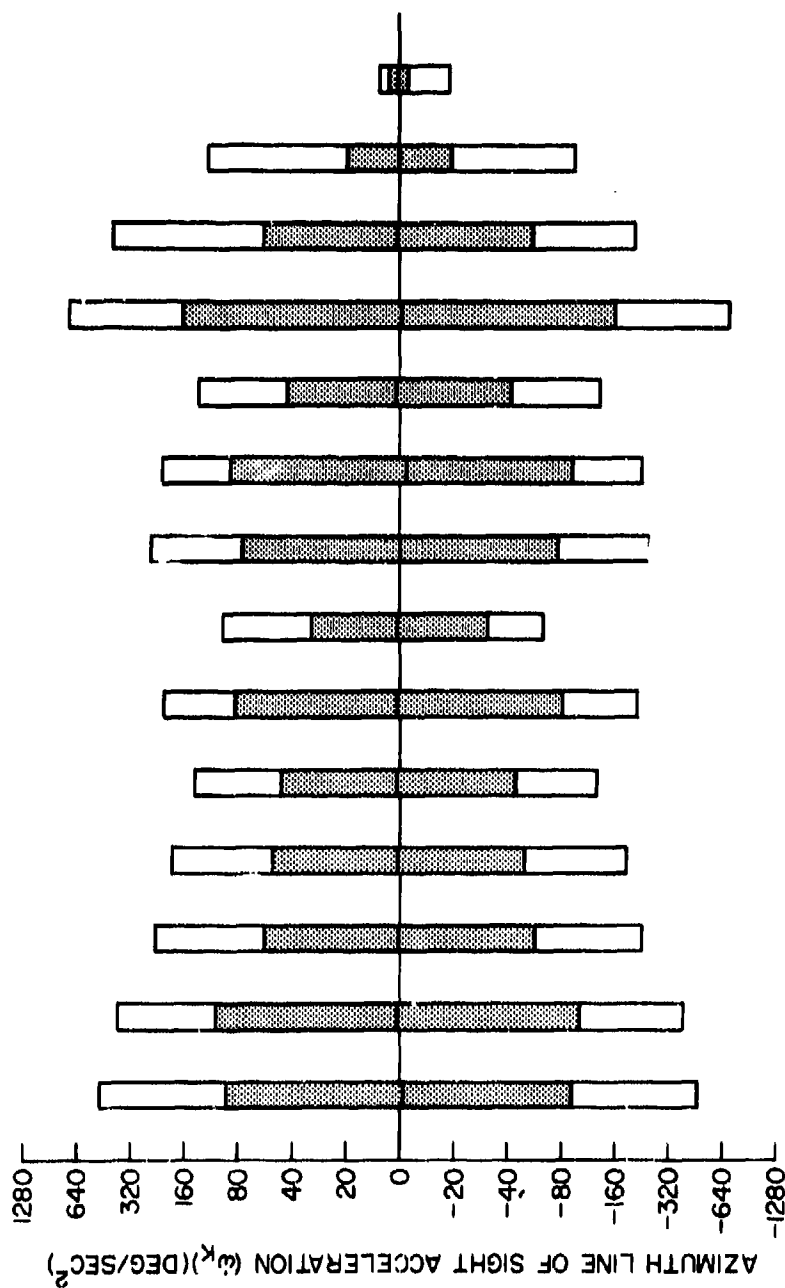


FIG. A-76- SUMMARY OF AZIMUTH LINE OF SIGHT ACCELERATION

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°

2σ VALUE

☐ MIN & MAX VALUE



CASE NO.	1	1	2	2	3	3	4	4	5	5	6	6	7
AIRCRAFT	C	E	C	D	A	E	A	D	B	D	B	E	F
WEAPONS	2	1	1	1	1	1	2	1	1	1	1	1	1

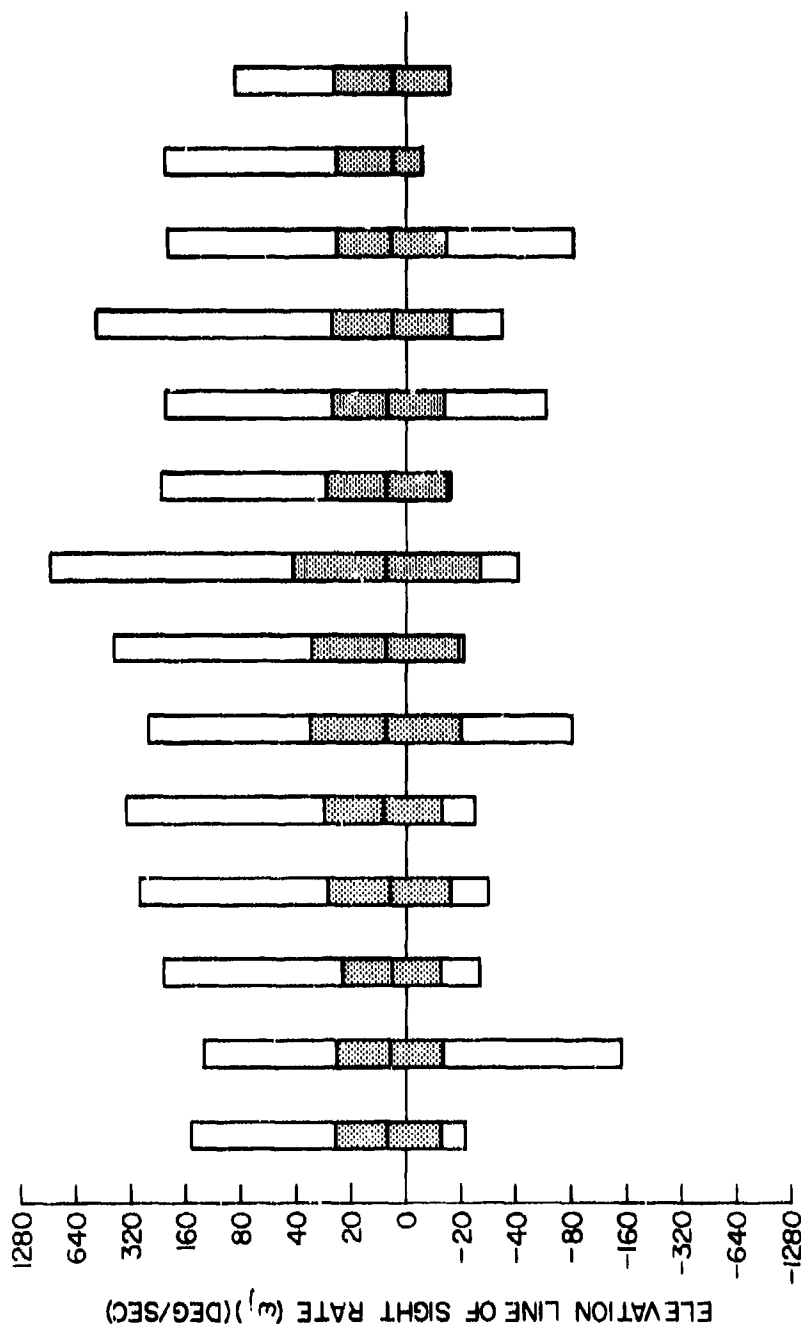
FIG. A-77-SUMMARY OF AZIMUTH LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO +60°
ELEVATION GIMBAL ANGLE -0° TO +60°

■ 2σ VALUE

□ MIN & MAX VALUE

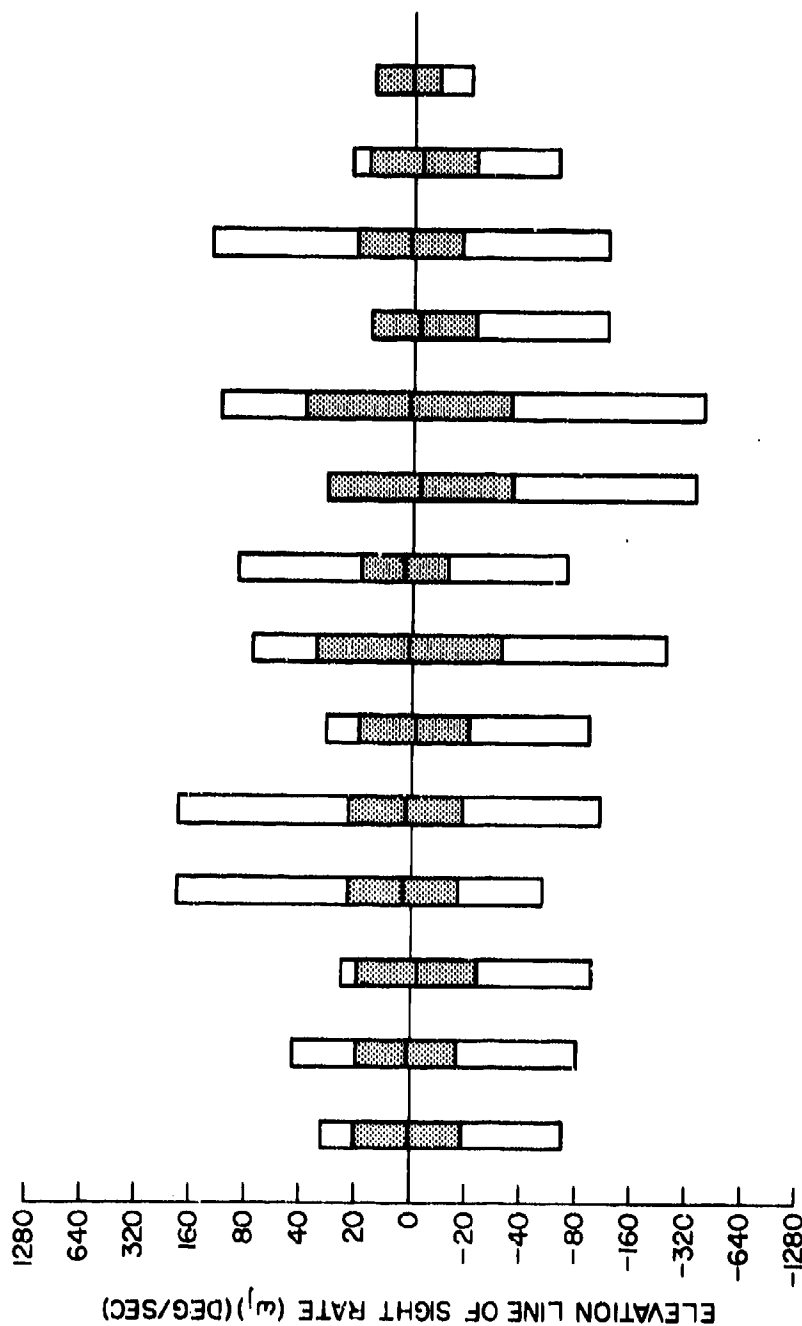


CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	B	B	D	D	E	E	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1	1	1

FIG. A-78-SUMMARY OF ELEVATION LINE OF SIGHT RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO ±60°
 ELEVATION GIMBAL ANGLE --60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	E	C	D	A	E	A	D	B	F
WEAPONS	2	1	1	1	2	1	1	1	1	1

FIG. A-79-SUMMARY OF ELEVATION LINE OF SIGHT RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -- $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE -- -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

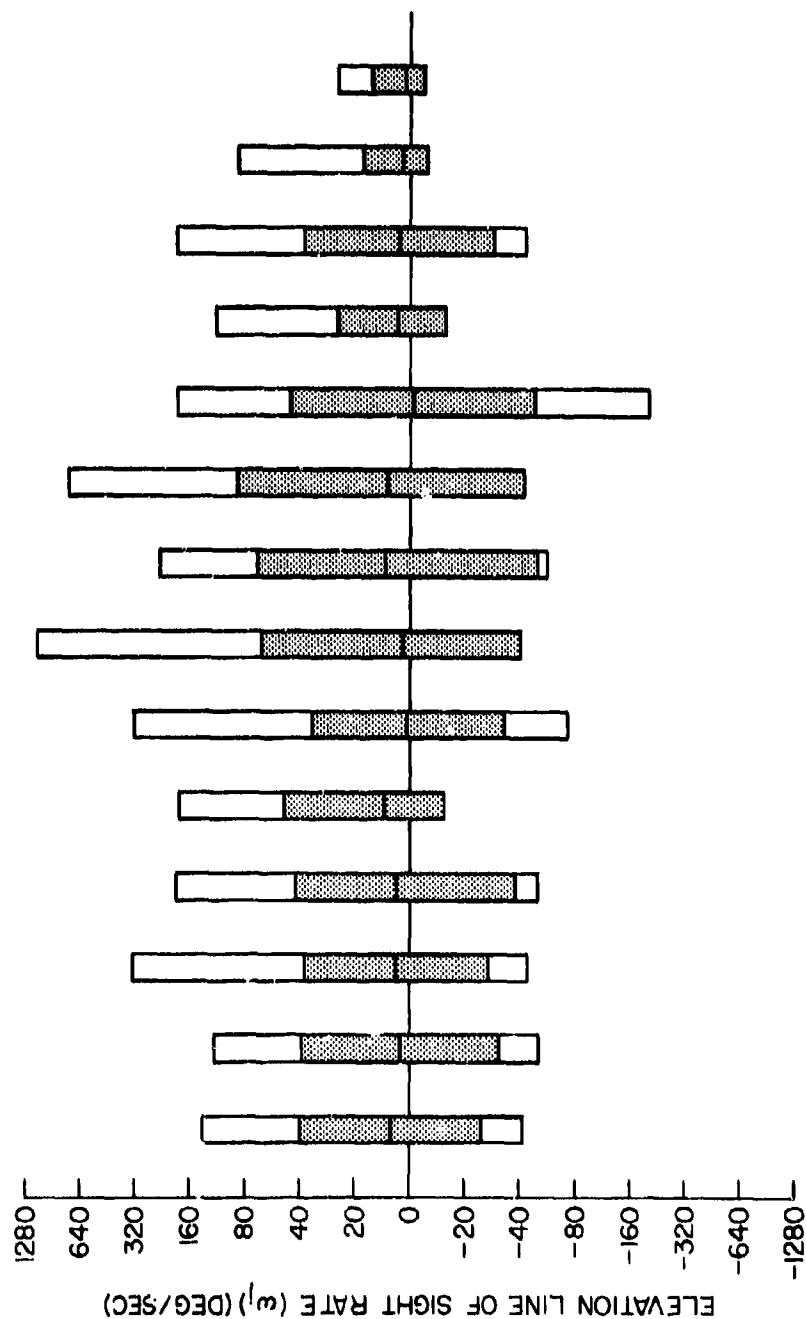


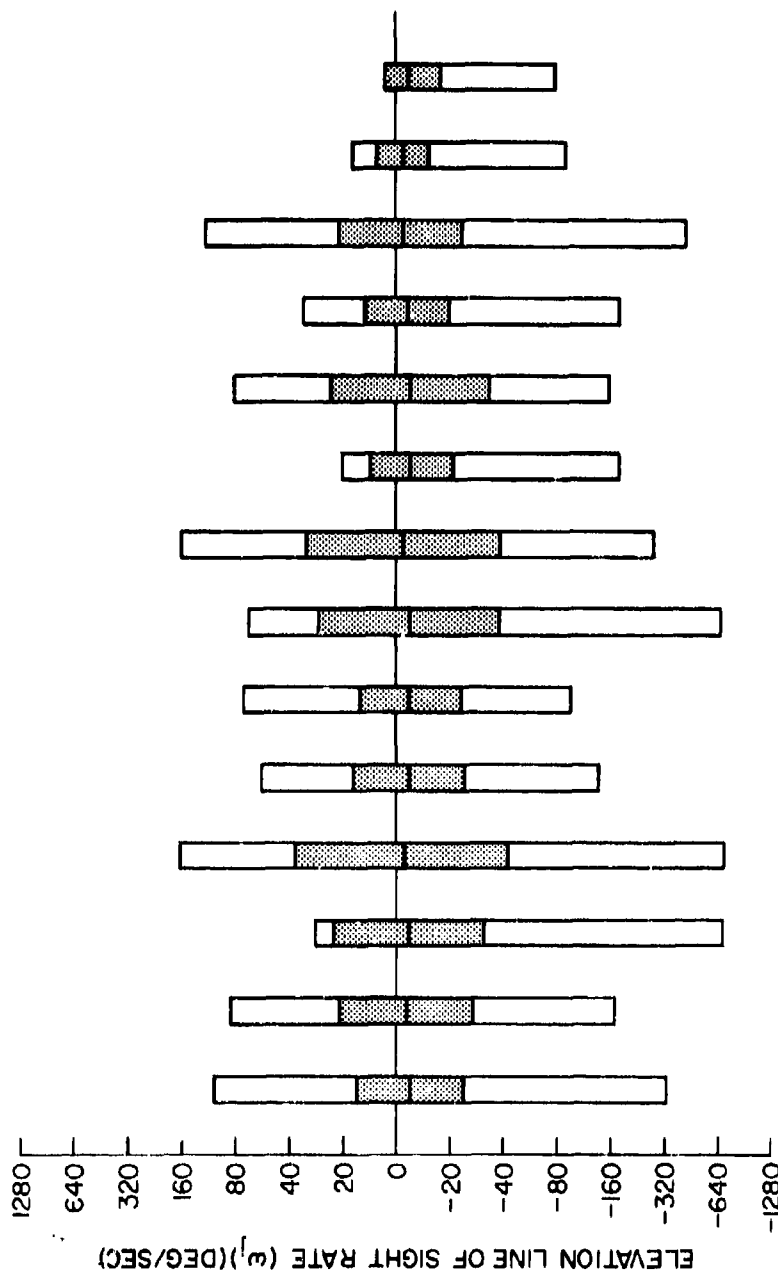
FIG.A-80 - SUMMARY OF ELEVATION LINE OF SIGHT RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$

■ 2σ VALUE

□ MIN & MAX VALUE

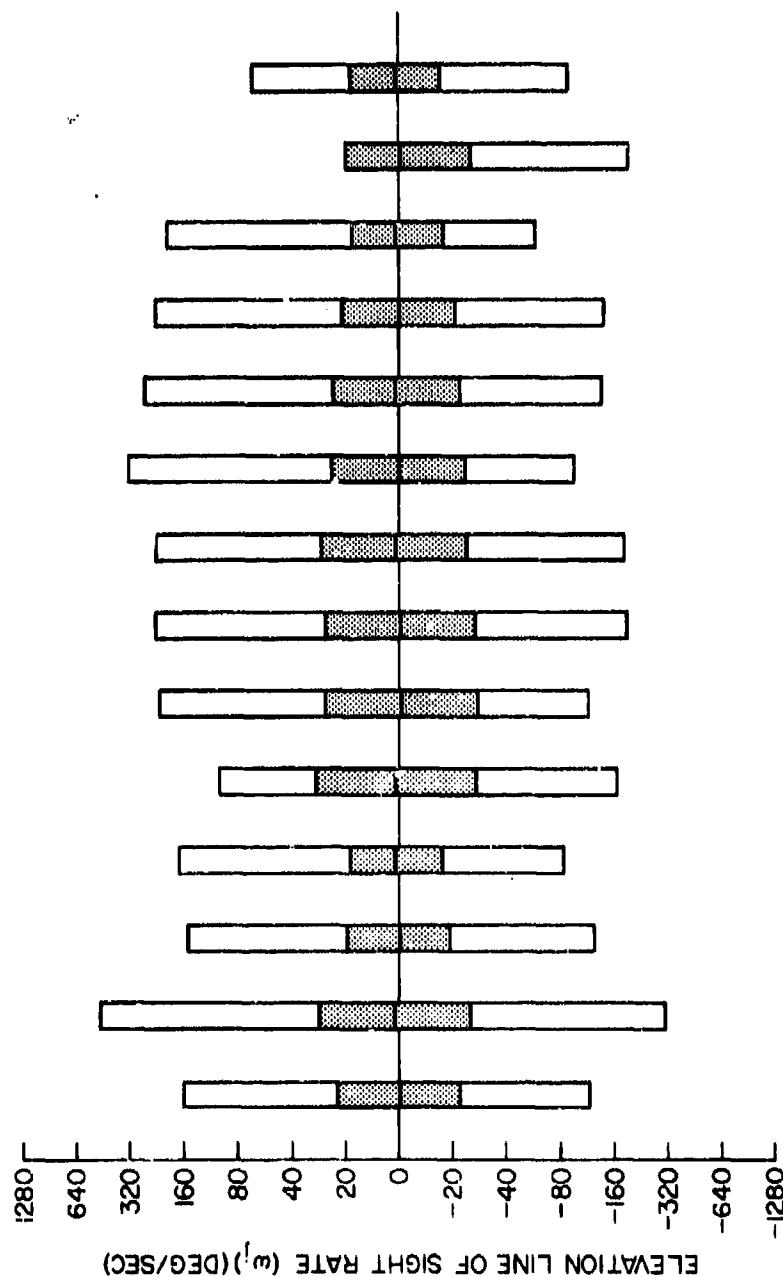


CASE NO	1	1	2	2	2	3	3	3	4	4	5	5	6	6	10	10
AIRCRAFT	C	E	C	D	D	A	A	E	A	A	B	D	B	E	F	F
WEAPONS	2	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1

FIG A-81- SUMMARY OF ELEVATION LINE OF SIGHT RATE

CONFIDENTIAL

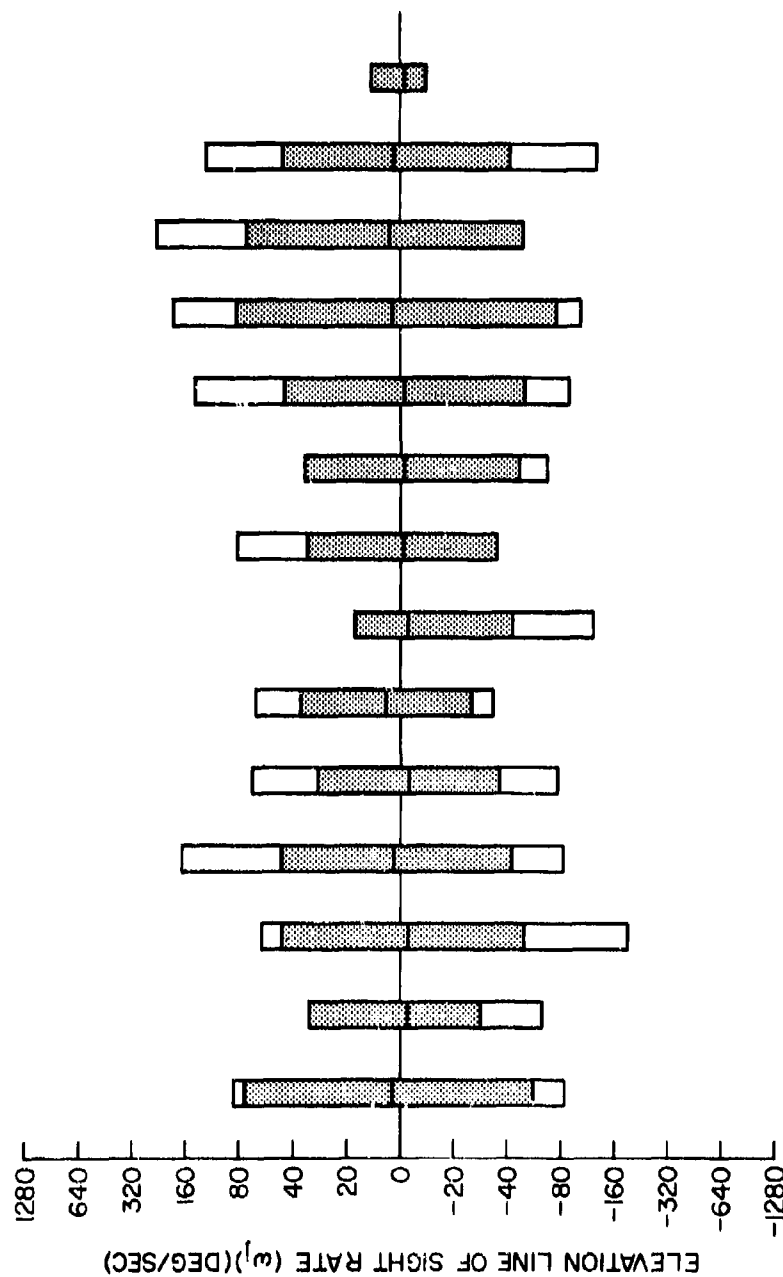
AZIMUTH GIMBAL ANGLE - 0° TO ±180°
 ELEVATION GIMBAL ANGLE - +60° TO +90°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14
AIRCRAFT	C	C	A	A	B	B	D	D	E	E	F	F	F	F
WEAPONS	2	1	1	1	2	1	1	1	1	1	1	1	1	1

FIG. A-82- SUMMARY OF ELEVATION LINE OF SIGHT RATE

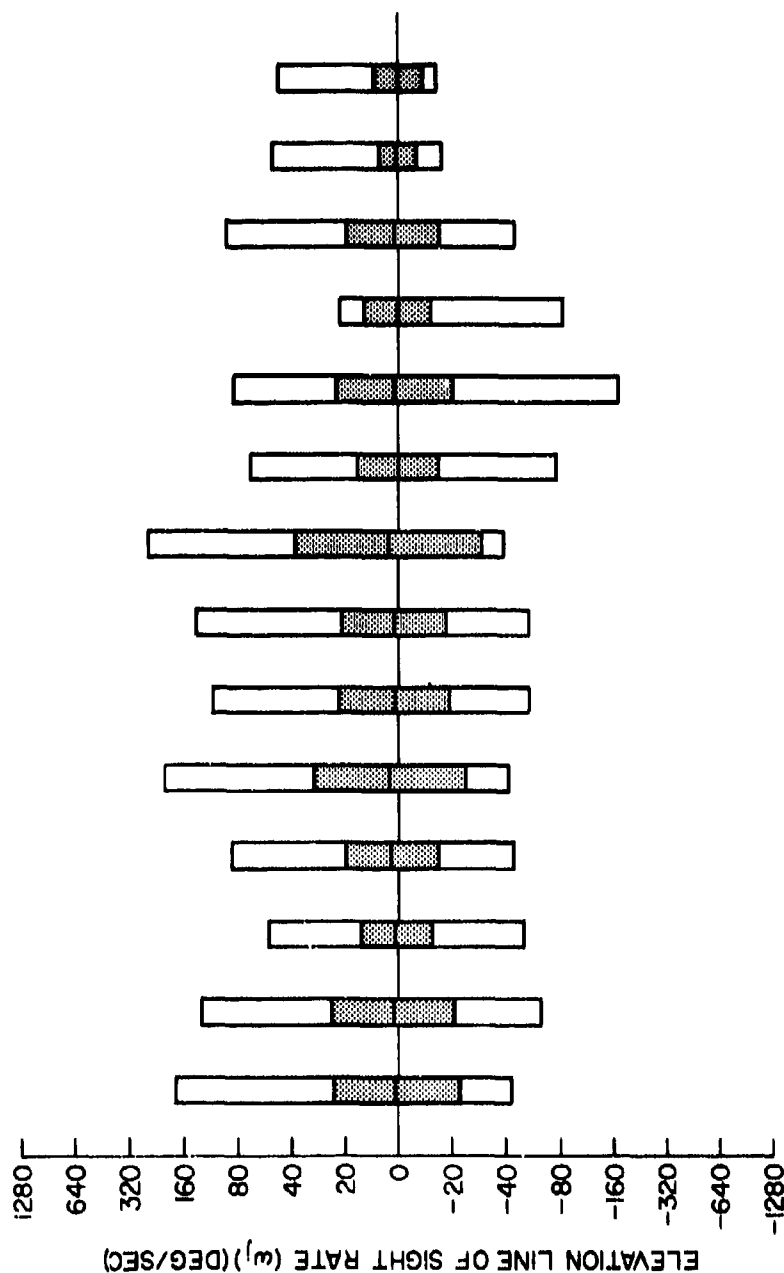
AZIMUTH GIMBAL ANGLE - 0° TO ±180°
 ELEVATION GIMBAL ANGLE - -90° TO -60°
 2σ VALUE
 MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7
AIRCRAFT	E	C	A	A	B	B	E
WEAPONS	1	1	1	2	2	1	1

FIG. A-83-- SUMMARY OF ELEVATION LINE OF SIGHT RATE

CONFIDENTIAL



CASE NO.	1	2	3	4	5	6	7
AIRCRAFT	E	C	A	A	B	B	F
WEAPONS	2	1	1	2	2	1	1

FIG. A-84-SUMMARY OF ELEVATION LINE OF SIGHT RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -- $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE -- -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

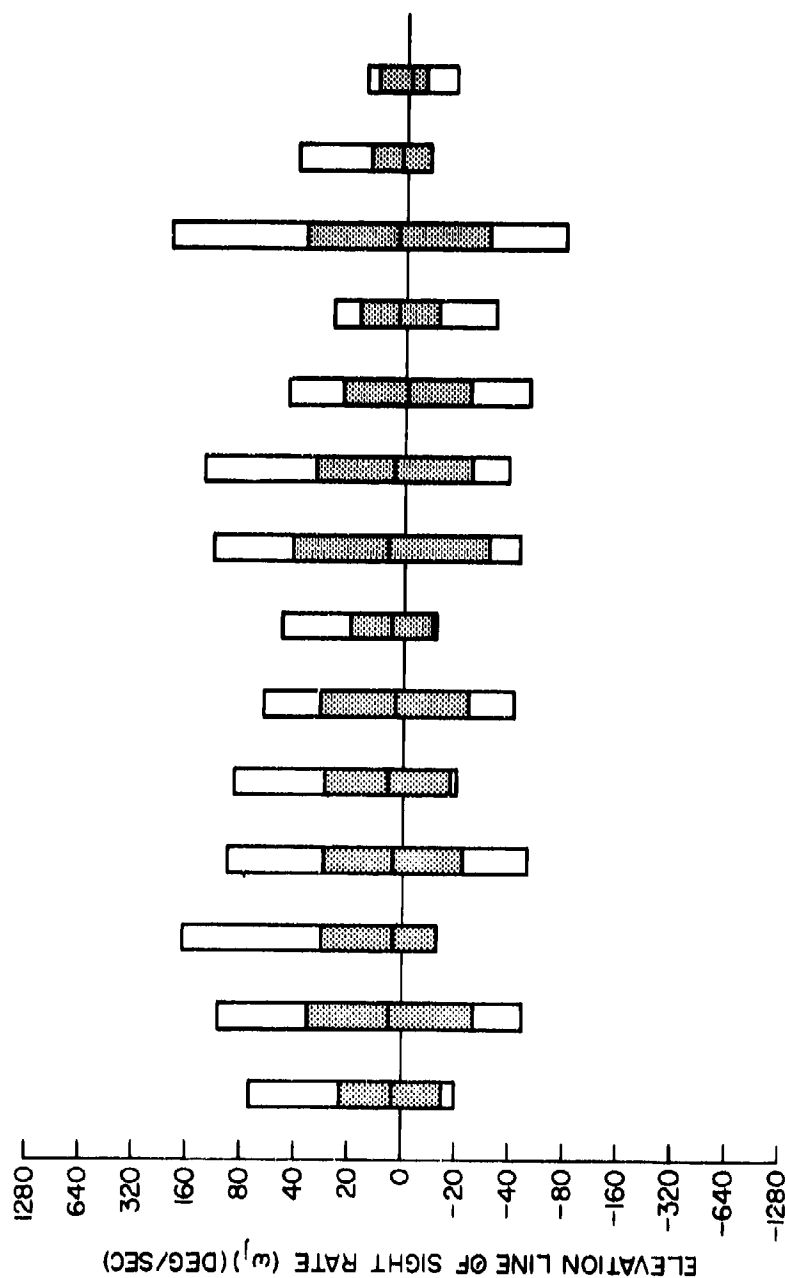


FIG. A-85-- SUMMARY OF ELEVATION LINE OF SIGHT RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO $\pm 60^{\circ}$
 ELEVATION GIMBAL ANGLE -0° TO $+60^{\circ}$
 ■ 2σ VALUE
 □ MIN & MAX VALUE

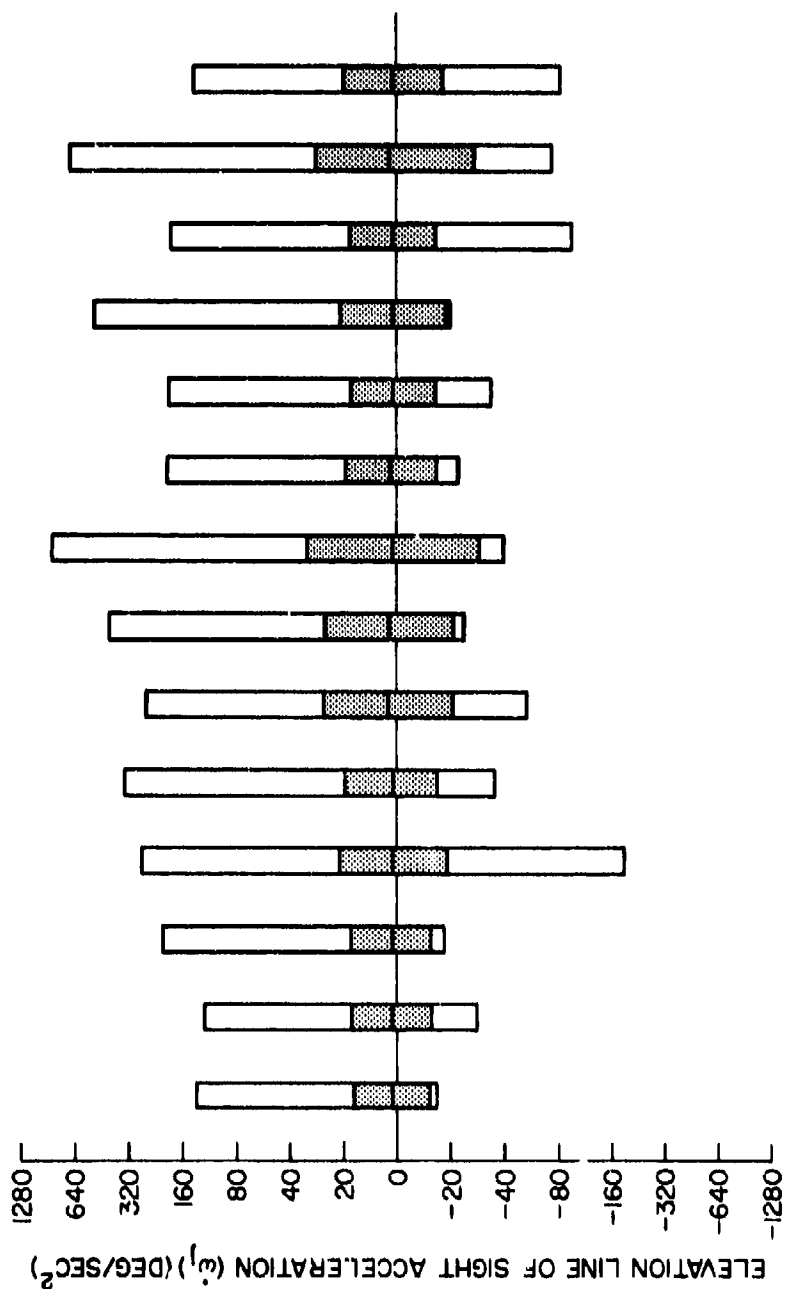


FIG.A-86 - SUMMARY OF ELEVATION LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° TO ±60°
 ELEVATION GIMBAL ANGLE - -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

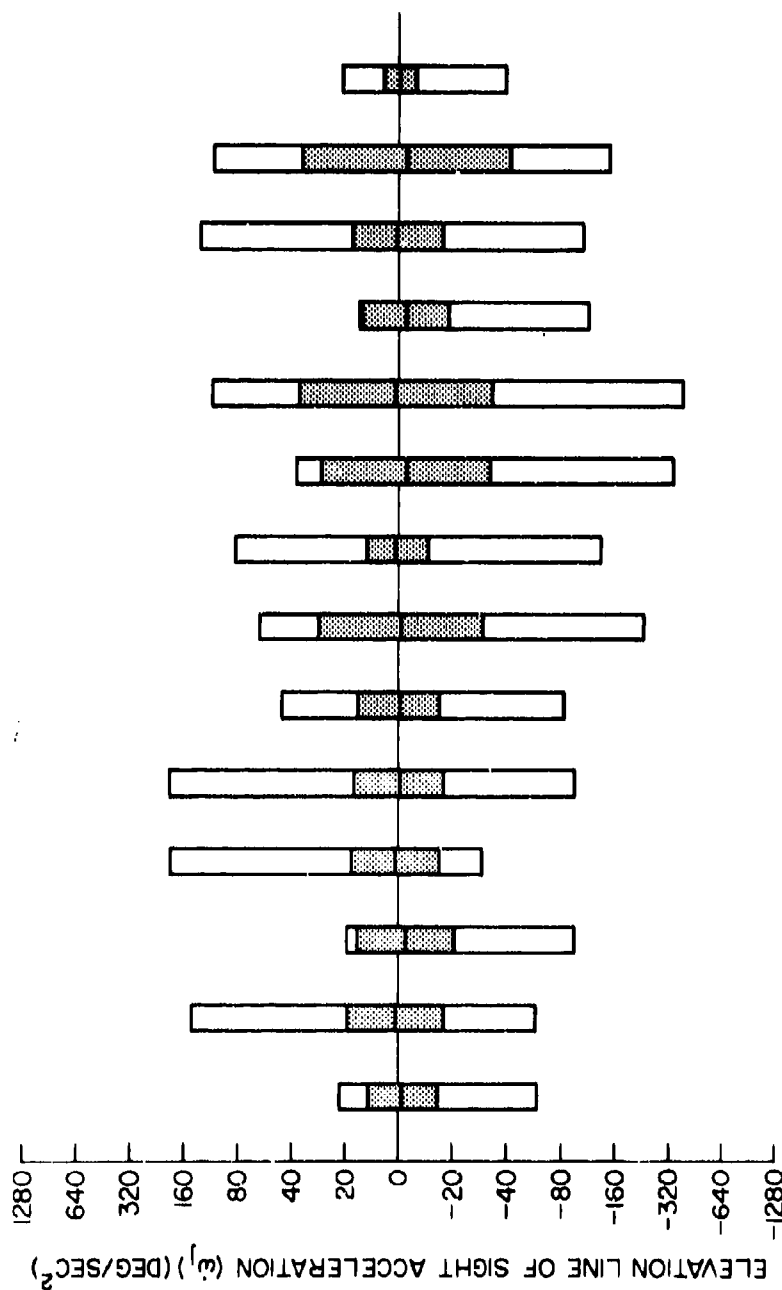


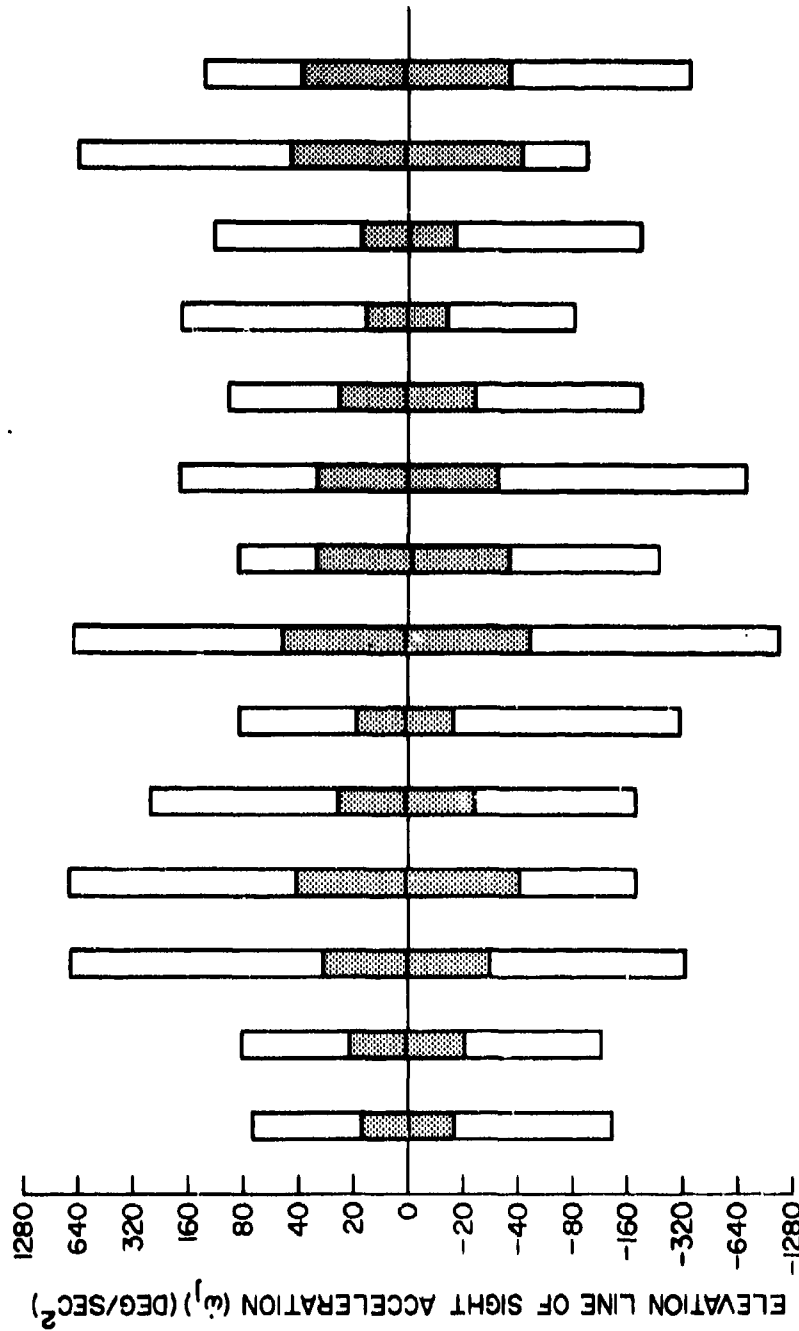
FIG. A-87- SUMMARY OF ELEVATION LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$

■ 2σ VALUE

□ MIN & MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT C	E	C	A	A	B	B	D	D	B	B	E	F
WEAPONS 2	1	1	1	1	2	1	1	1	2	1	1	1

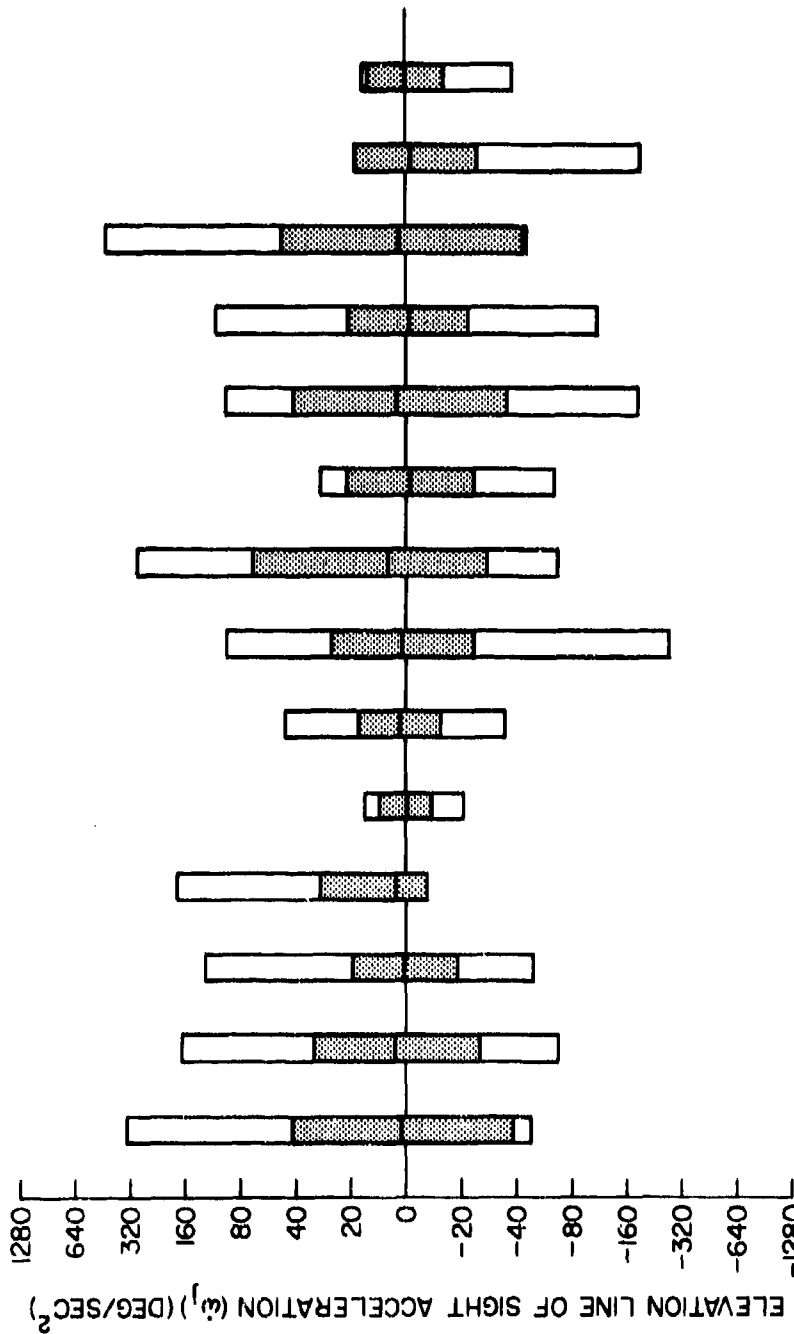
FIG. A-88- SUMMARY OF ELEVATION LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°

■ 2σ VALUE

□ MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
AIRCRAFT	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E
WEAPONS	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1

FIG. A-89 - SUMMARY OF ELEVATION LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° TO ±180°
 ELEVATION GIMBAL ANGLE - +60° TO +90°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

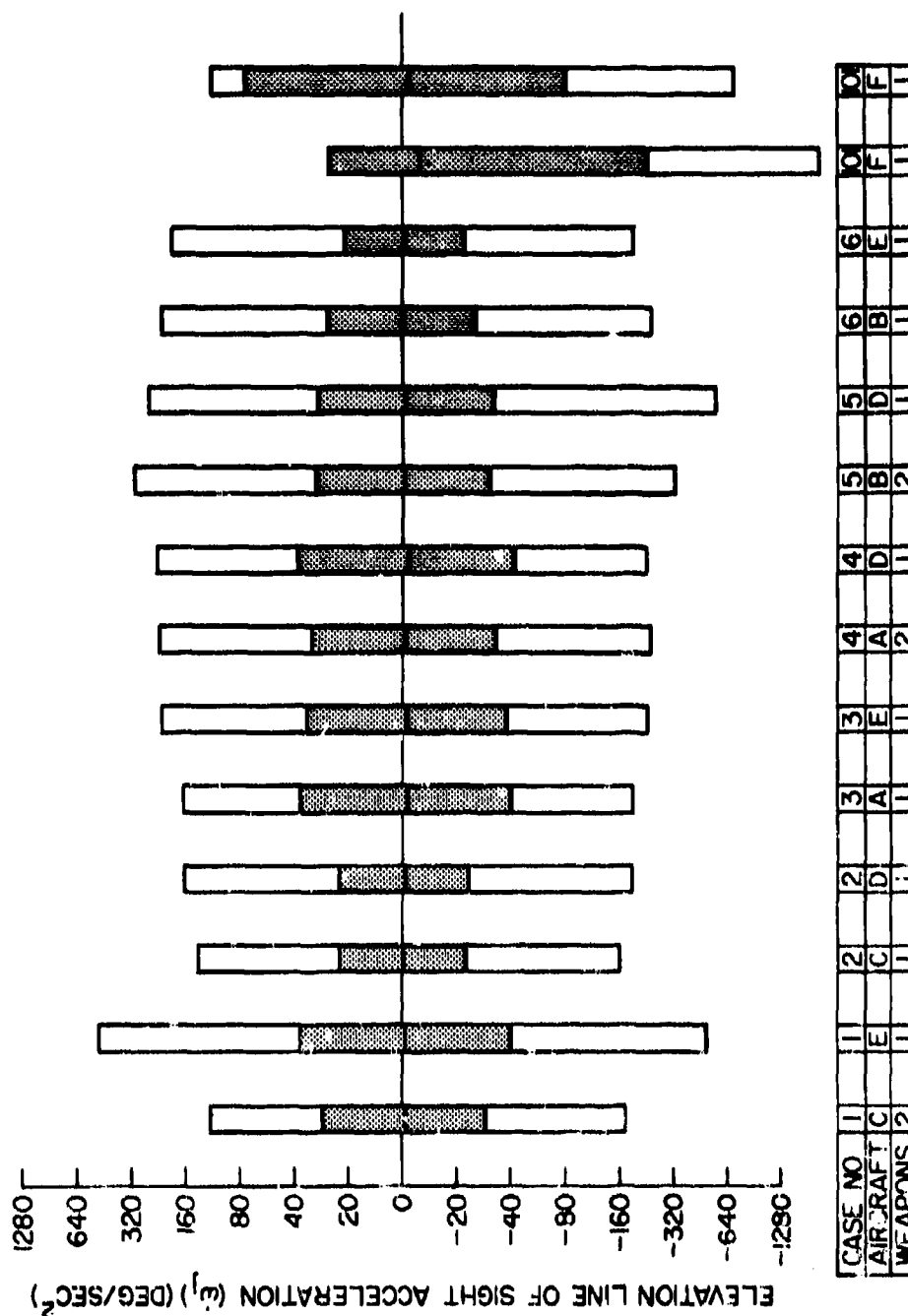


FIG. A-90 - SUMMARY OF ELEVATION LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO ±180°
 ELEVATION GIMBAL ANGLE --90° TO -60°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

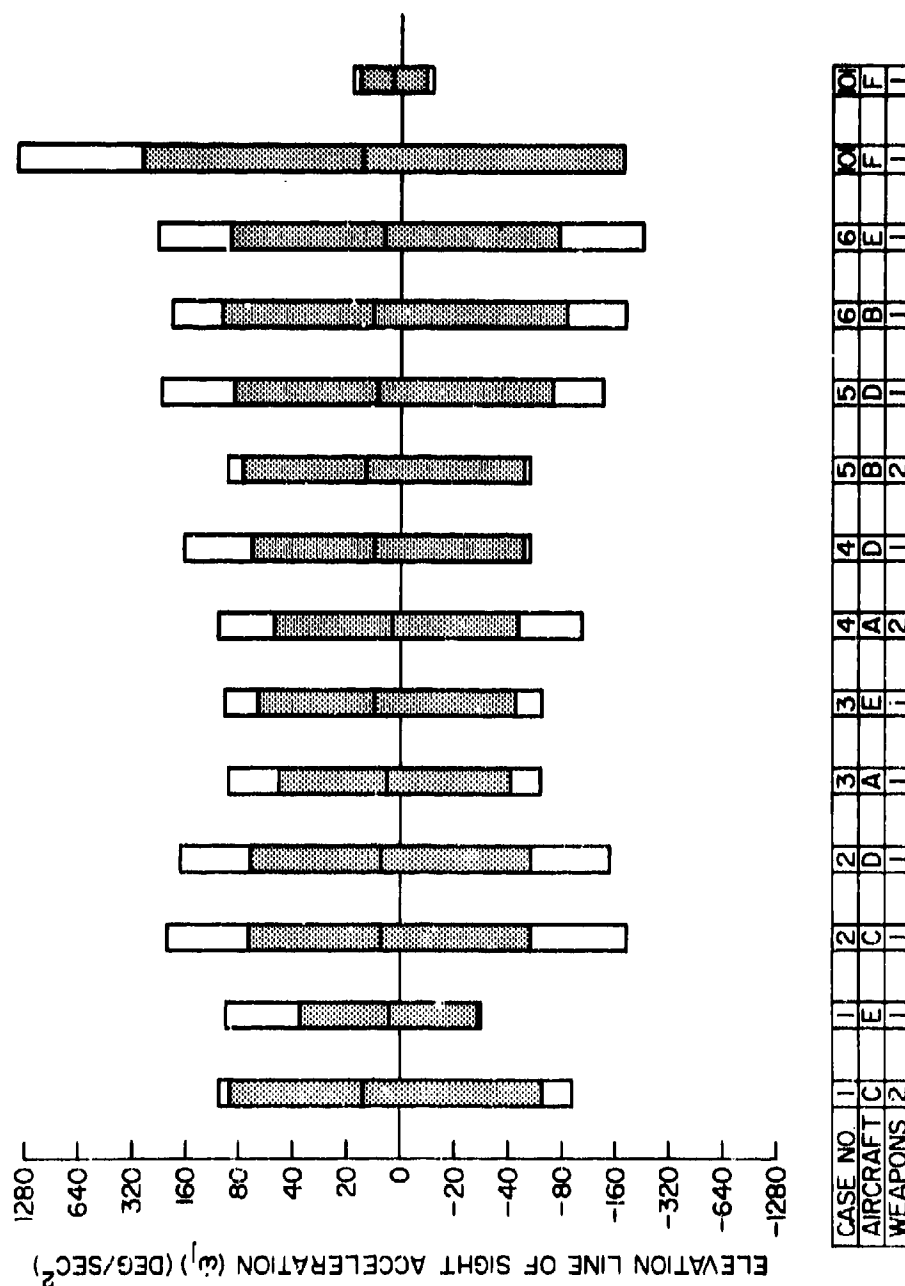
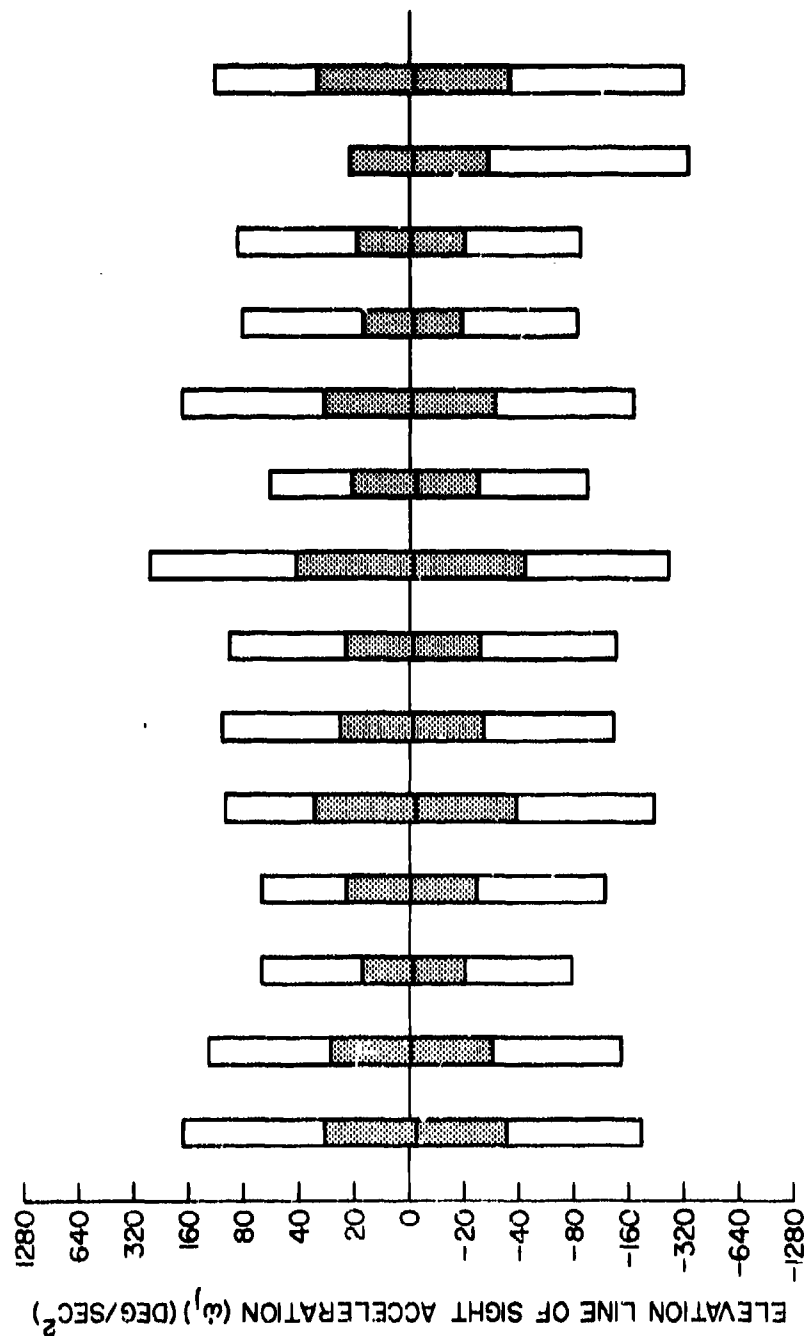


FIG. A-91- SUMMARY OF ELEVATION LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE -0° TO $+60^\circ$
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
AIRCRAFT	C	C	A	A	B	D	B	B	B	B	B	B	B	B
WEAPONS	2	1	1	1	2	1	1	1	1	1	1	1	1	1

FIG. A-92-- SUMMARY OF ELEVATION LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°
 ■ 2 σ VALUE
 □ MIN & MAX VALUE

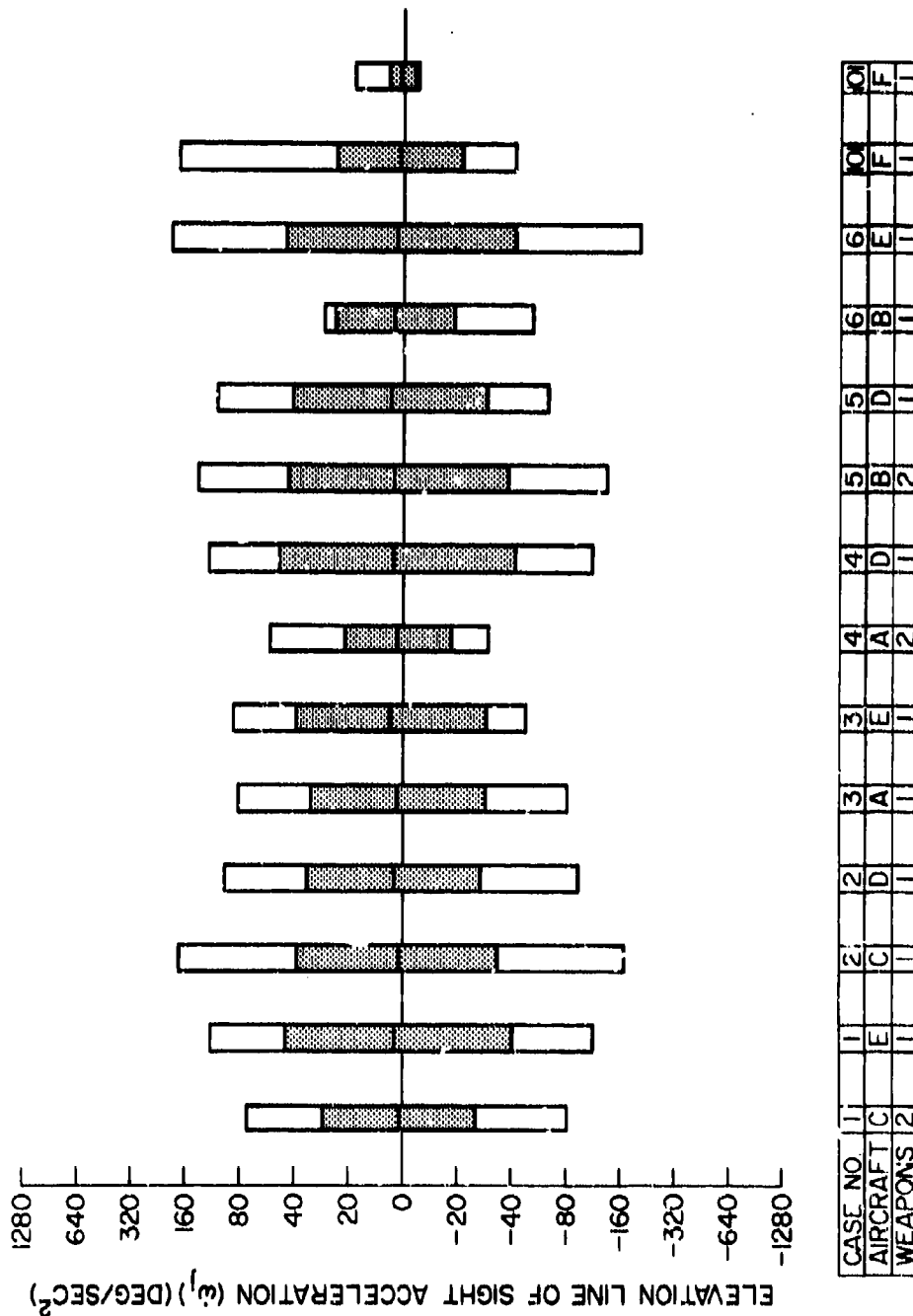


FIG. A-93-- SUMMARY OF ELEVATION LINE OF SIGHT ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO +60°
ELEVATION GIMBAL ANGLE -0° TO +60°
■ 2σ VALUE
□ MIN & MAX VALUE

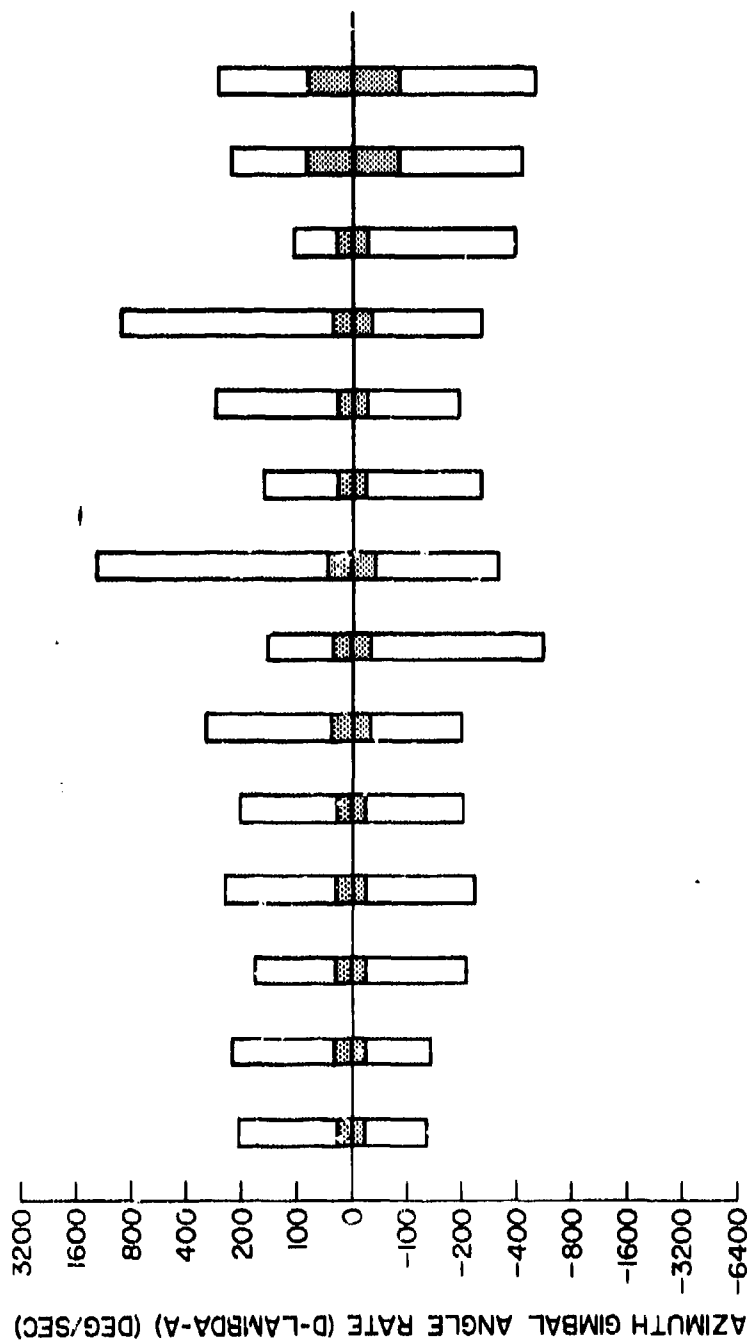


FIG. A-94-SUMMARY OF AZIMUTH GIMBAL ANGLE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° TO ±60°
ELEVATION GIMBAL ANGLE - -60° TO 0°

■ 2σ VALUE

□ MIN & MAX VALUE

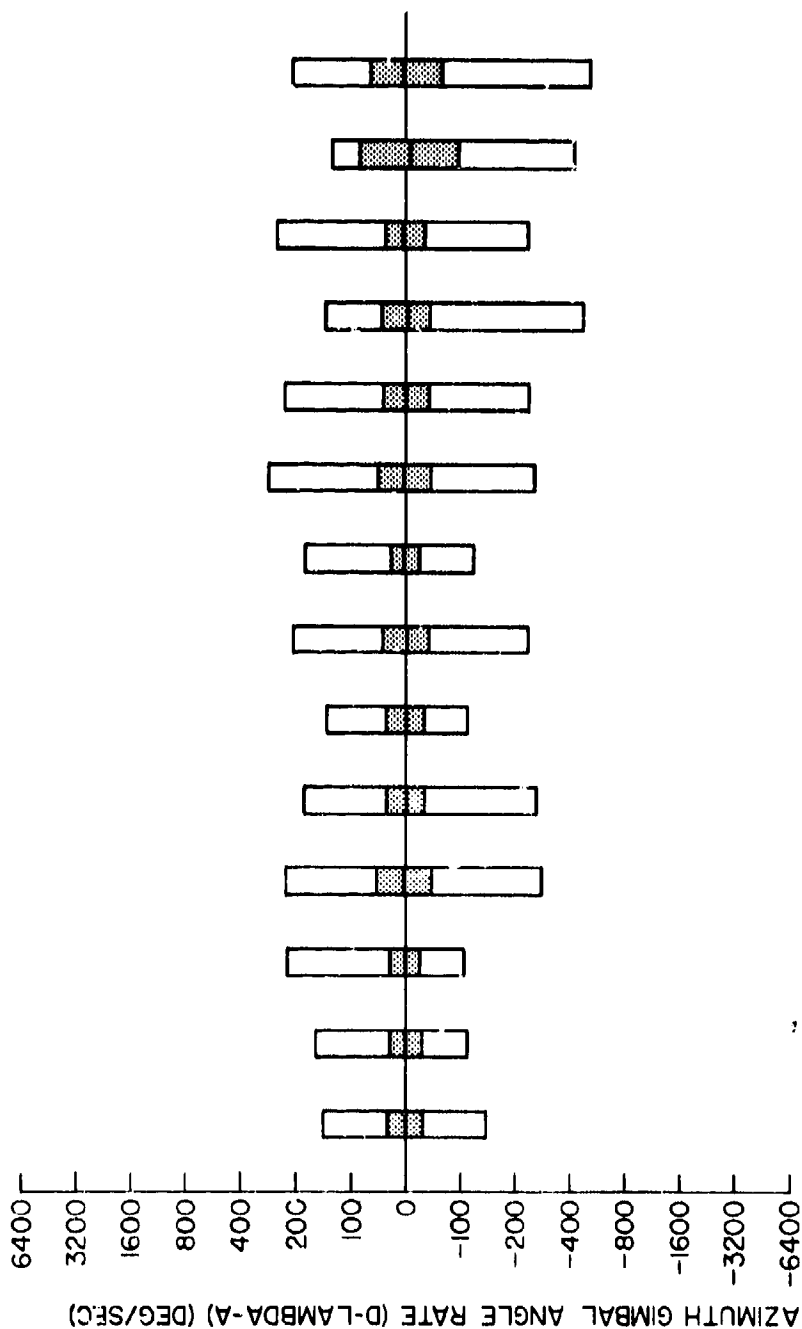


FIG. A-95- SUMMARY OF AZIMUTH GIMBAL ANGLE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$
 ■ 2σ VALUE
 □ MIN & MAX VALUE

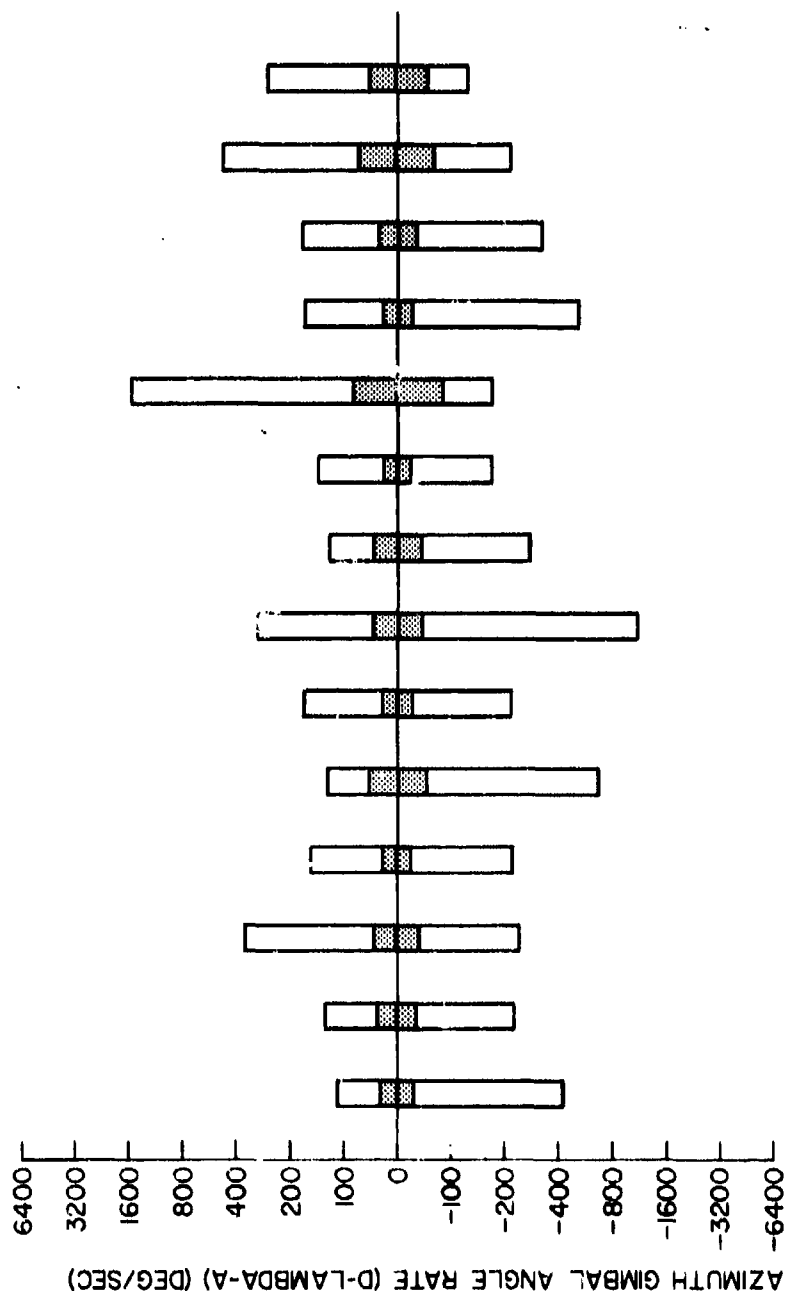


FIG. A-96-SUMMARY OF AZIMUTH GIMBAL ANGLE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

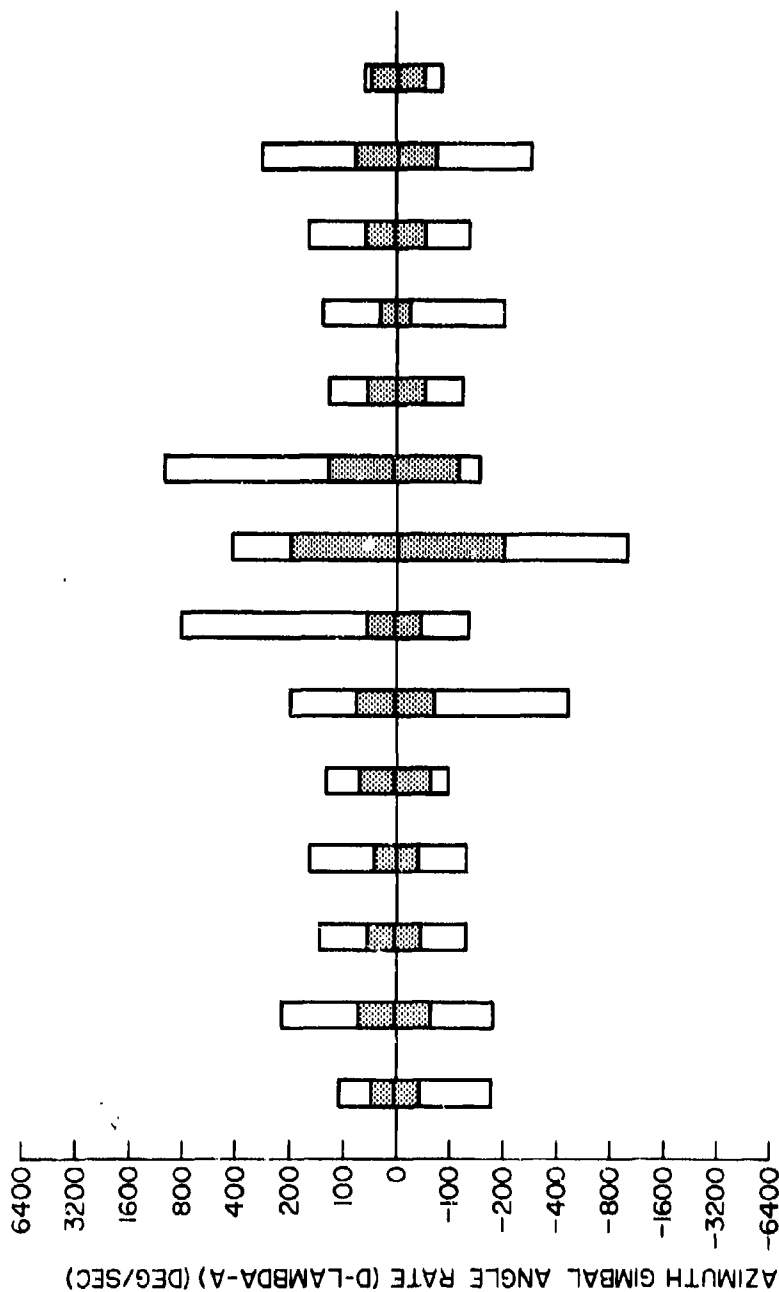
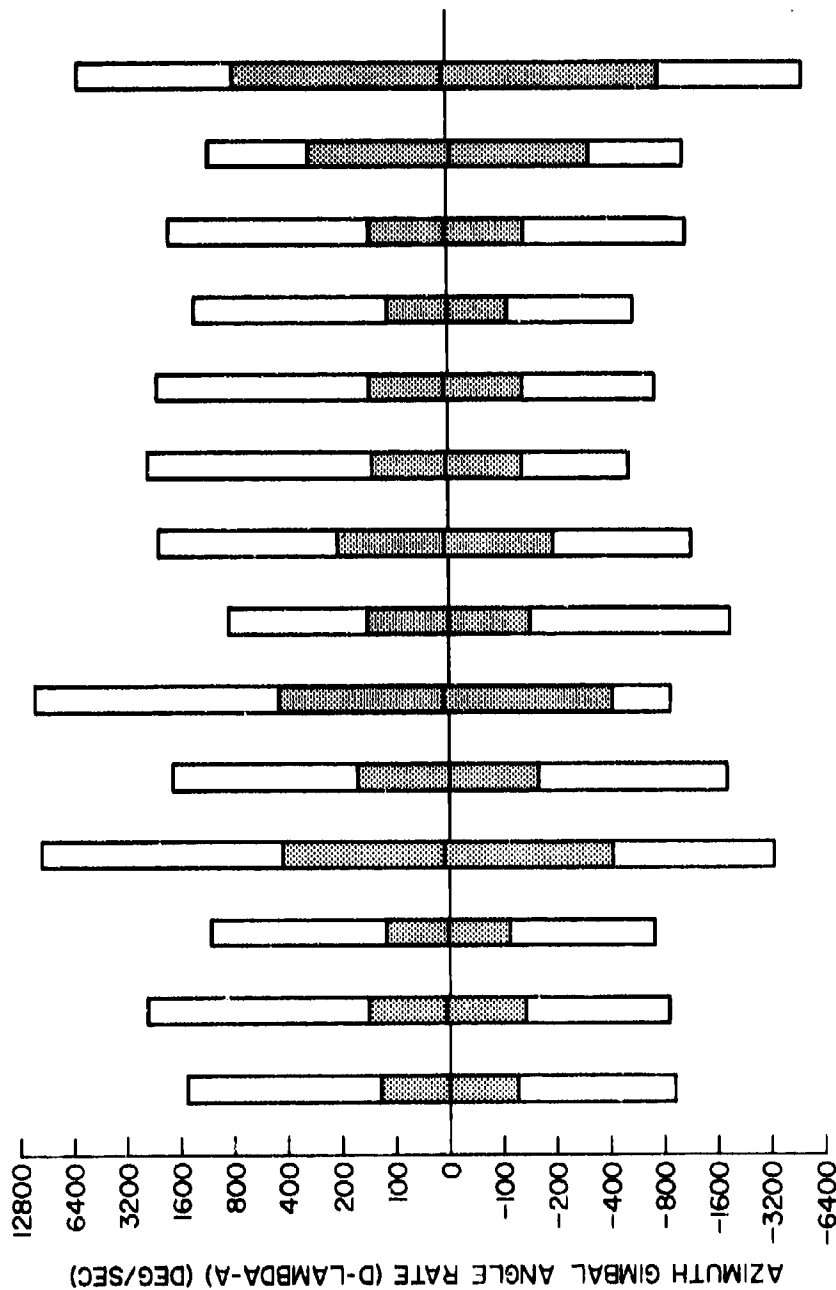


FIG. A-97 - SUMMARY OF AZIMUTH GIMBAL ANGLE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° TO ±180°
 ELEVATION GIMBAL ANGLE - +60° TO +90°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	E	C	A	D	A	E	D	B	D	B	F
WEAPONS	2	1	1	1	2	1	1	1	1	1	1	1

FIG. A-98-SUMMARY OF AZIMUTH GIMBAL ANGLE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO ±180°
 ELEVATION GIMBAL ANGLE --90° TO -60°

■ 2σ VALUE
 □ MIN & MAX VALUE

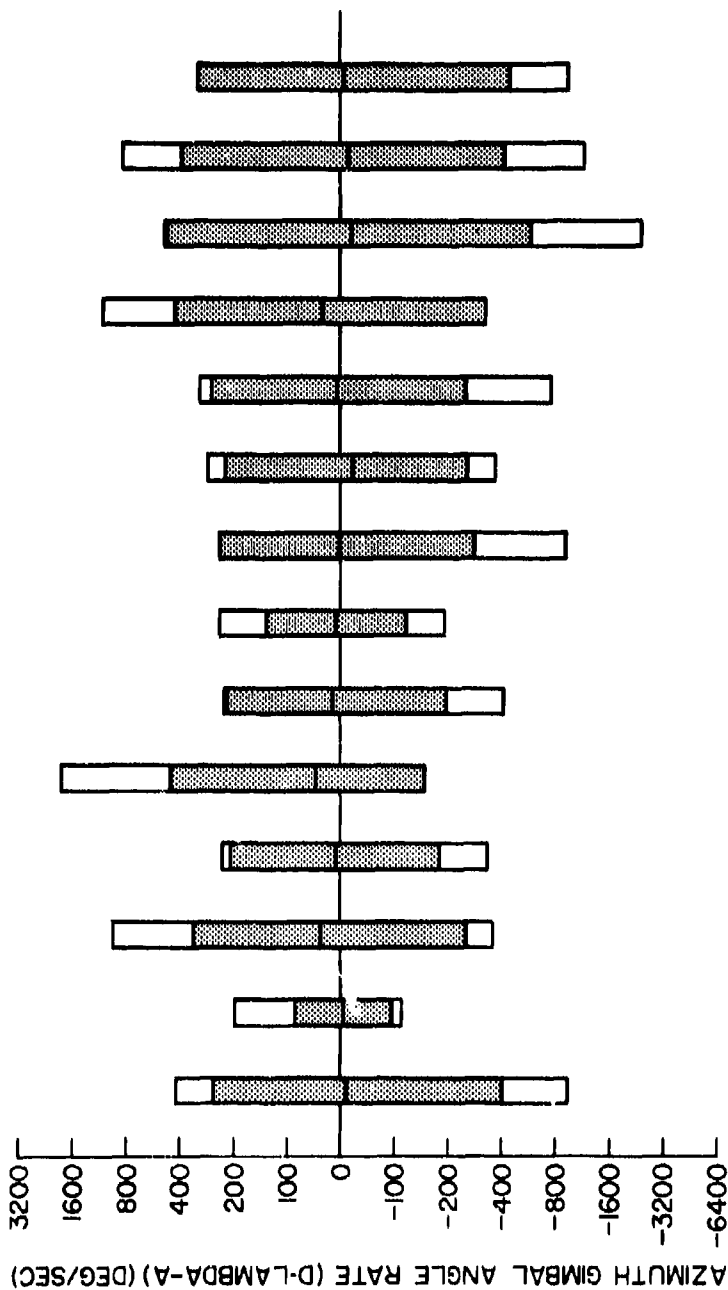


FIG A-99- SUMMARY OF AZIMUTH GIMBAL ANGLE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$
 ■ 2σ VALUE
 □ MIN & MAX VALUE

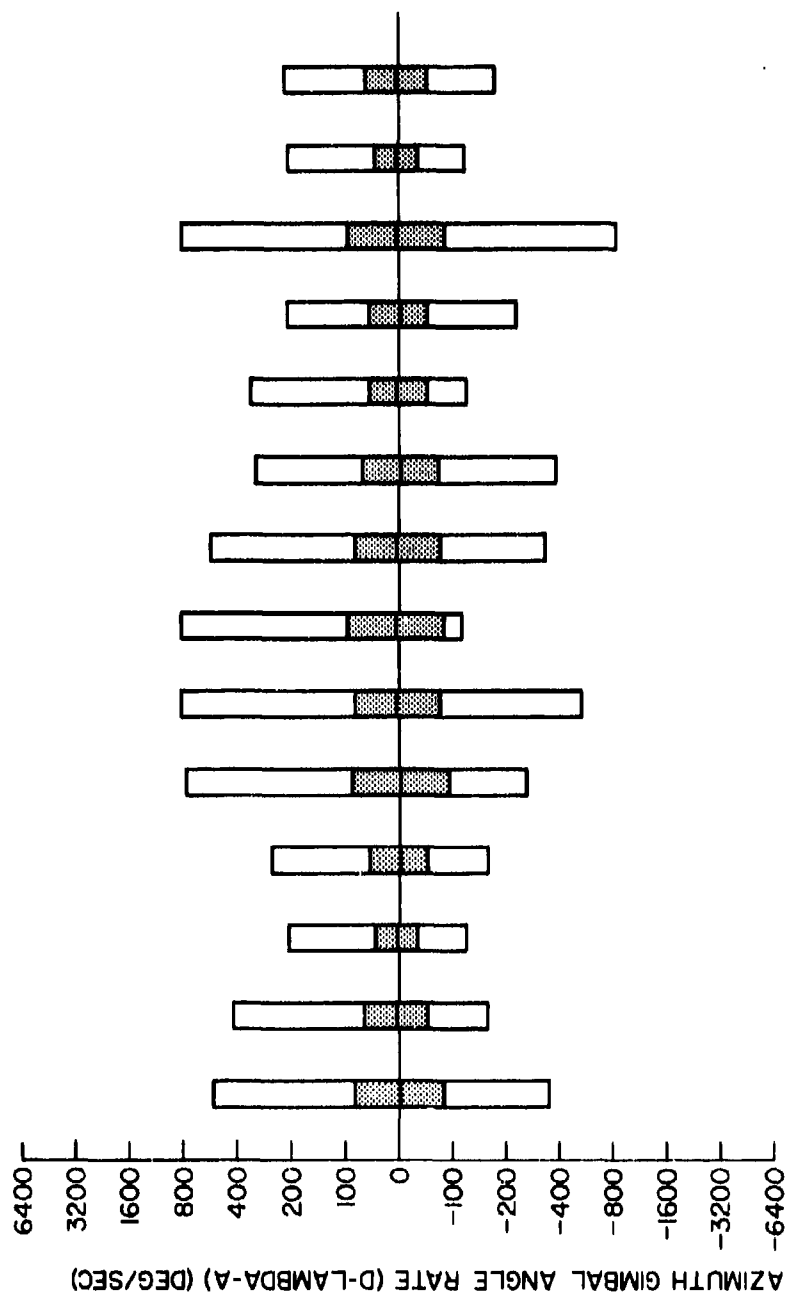


FIG. A-100-SUMMARY OF AZIMUTH GIMBAL ANGLE RATE

CONFIDENTIAL

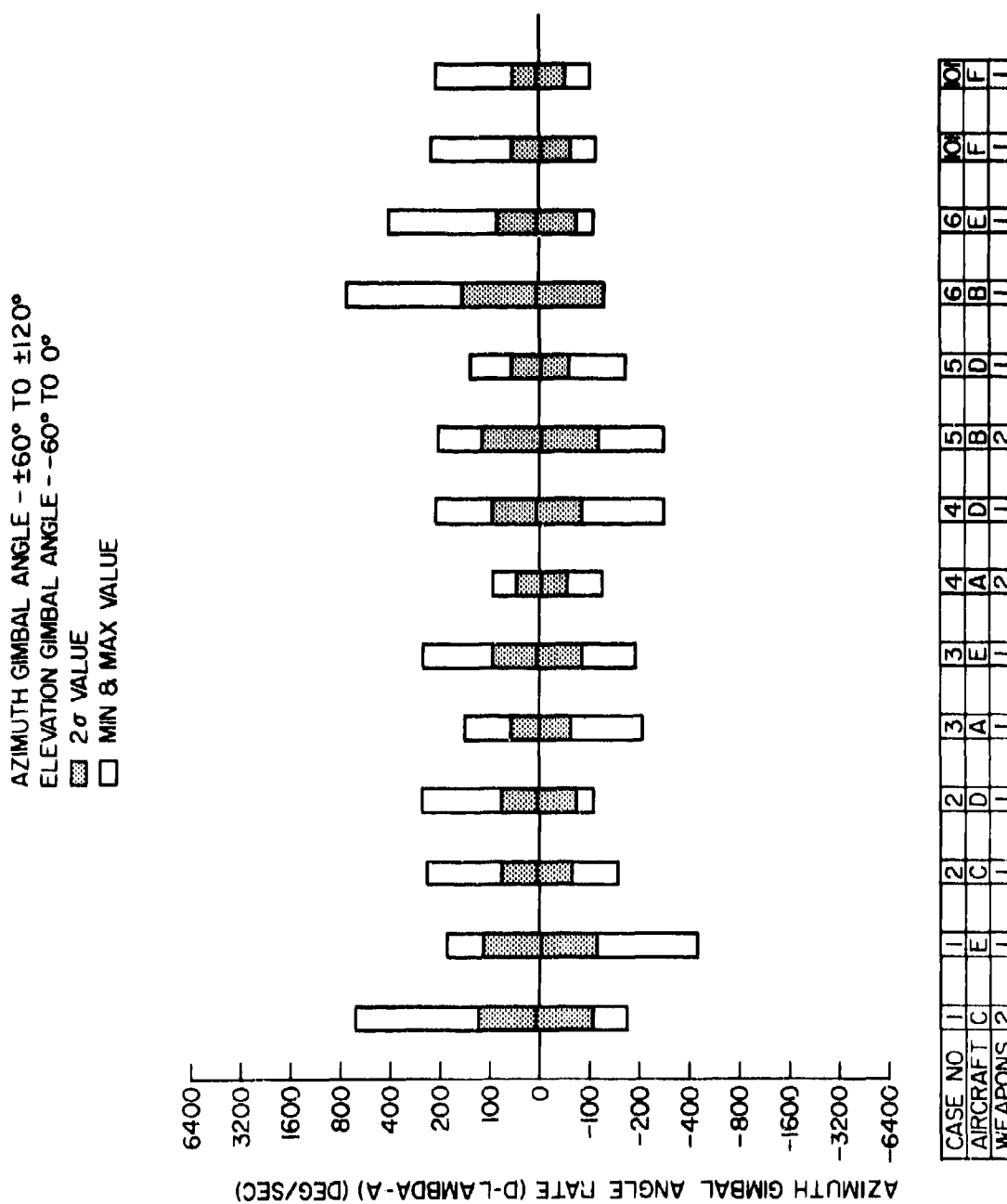
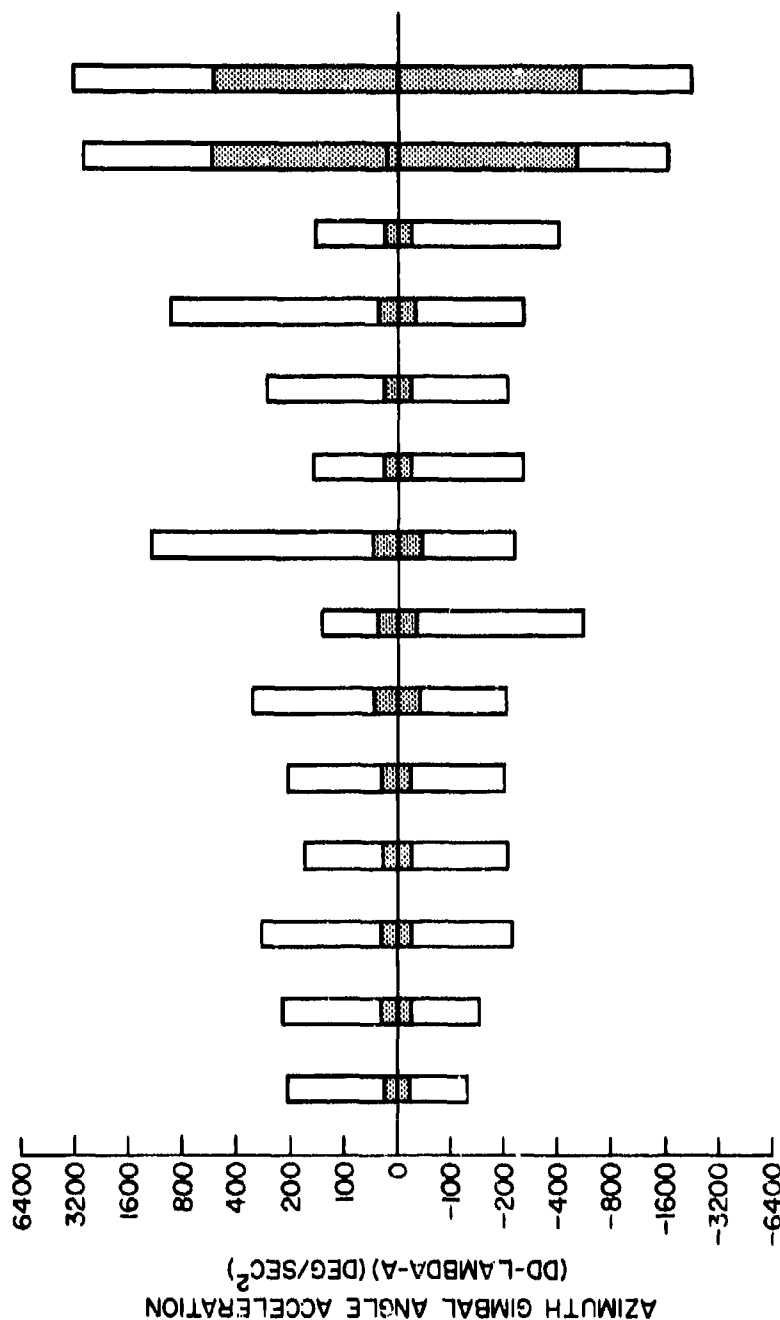


FIG. A-101-SUMMARY OF AZIMUTH GIMBAL ANGLE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° TO ±60°
 ELEVATION GIMBAL ANGLE - 0° TO +60°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10	11
AIRCRAFT	C	E	C	D	A	B	D	B	E	F	F
WEAPONS	2	1	1	1	1	2	1	2	1	1	1

FIG.A-102-SUMMARY OF AZIMUTH GIMBAL ANGLE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO +60°
 ELEVATION GIMBAL ANGLE -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

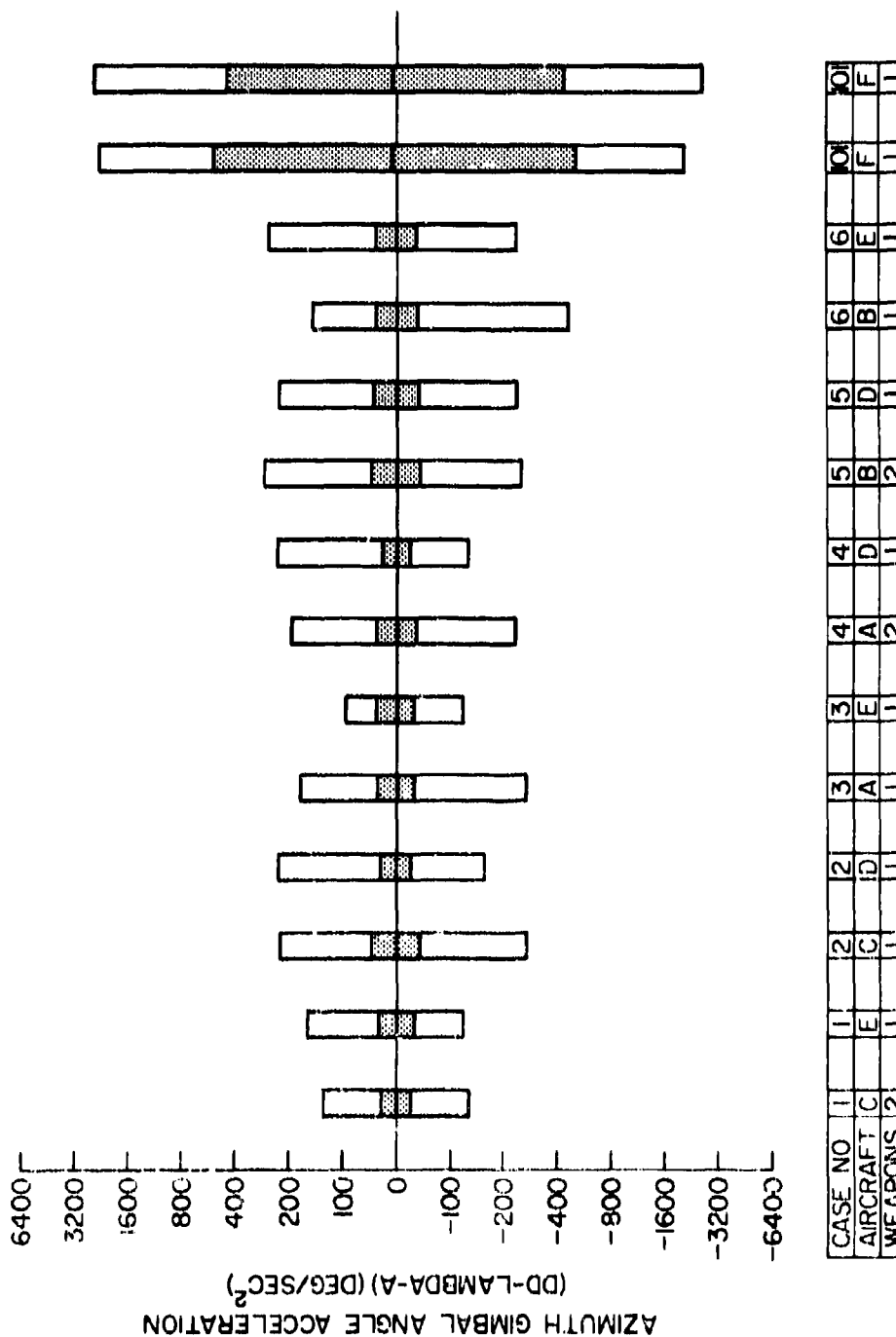
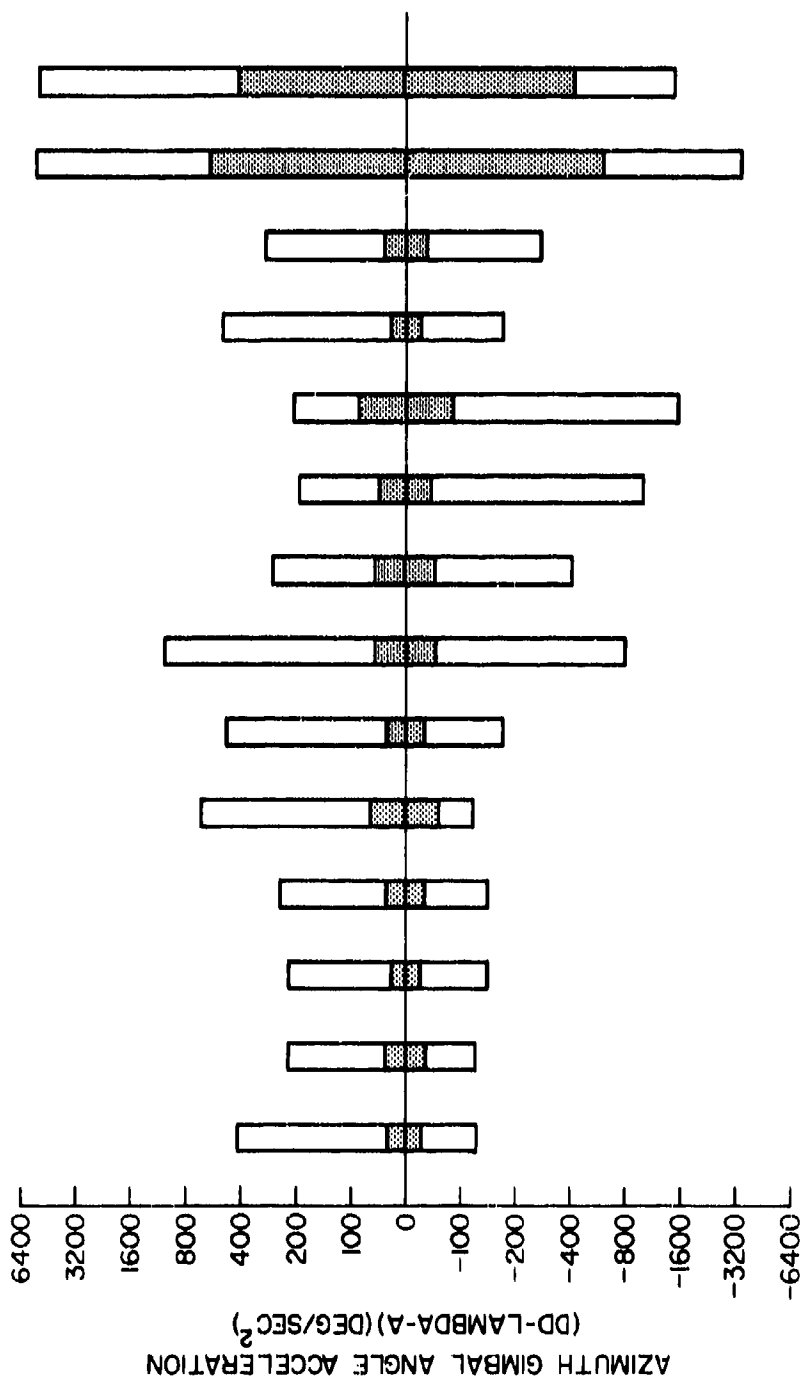


FIG.A-103-SUMMARY OF AZIMUTH GIMBAL ANGLE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$
 ■ 2σ VALUE
 □ MIN 8 MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	D	E	A	B	B	E	F	F	F
WEAPONS	2	1	1	2	1	1	1	1	1	1

FIG. A-104-SUMMARY OF AZIMUTH GIMBAL ANGLE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -- $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE -- -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

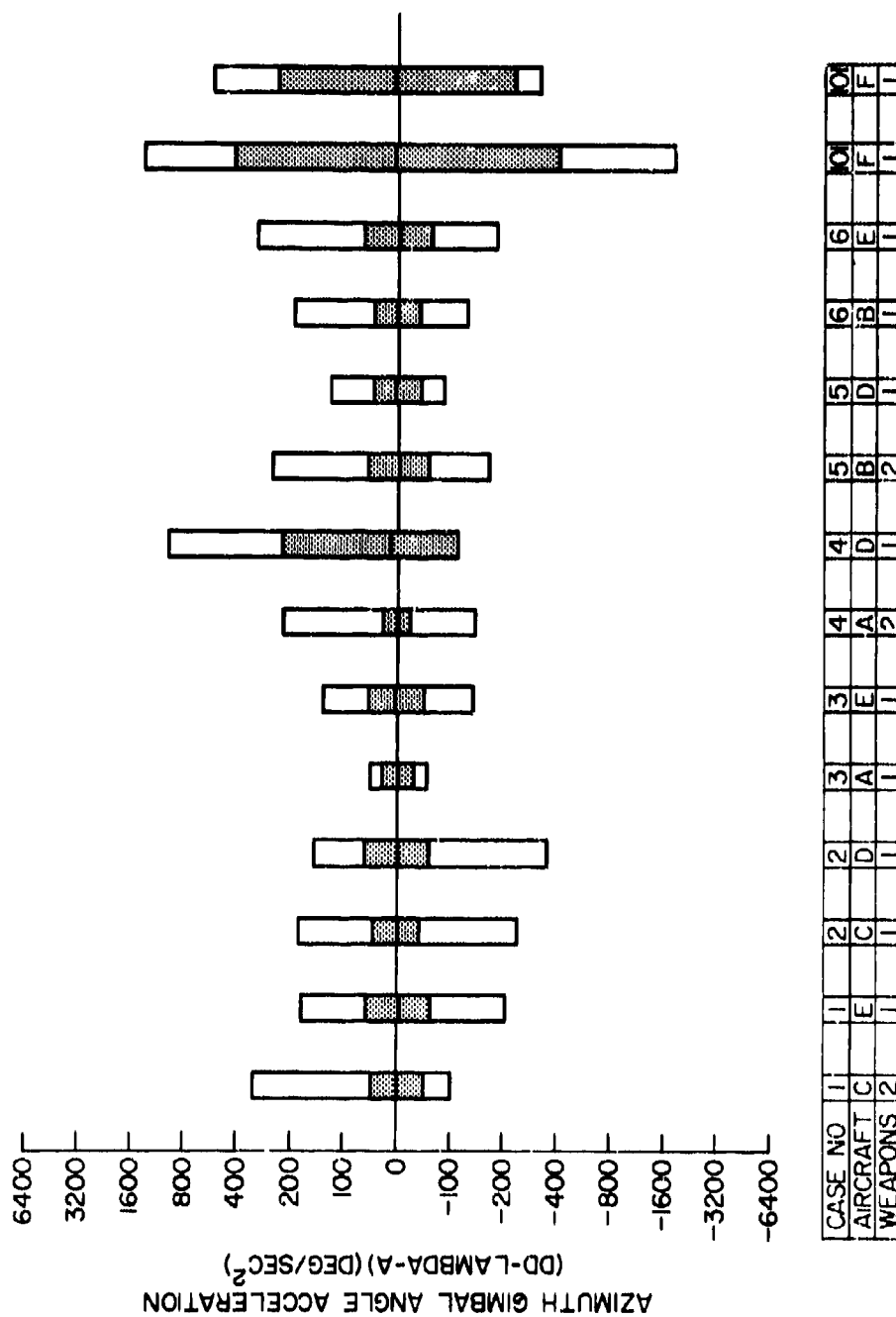
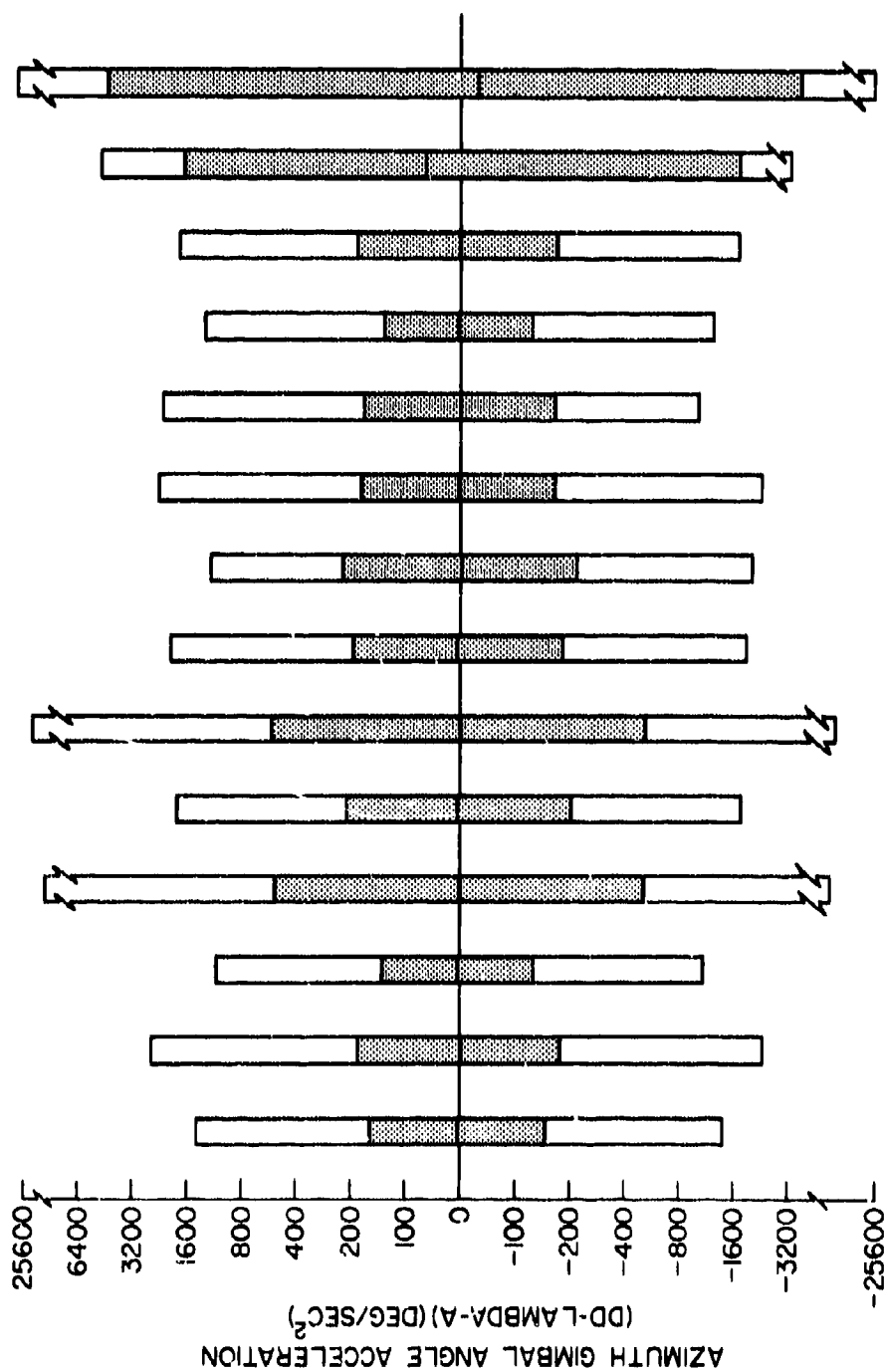


FIG. A-105-SUMMARY OF AZIMUTH GIMBAL ANGLE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE -0° TO +180°
 ELEVATION GIMBAL ANGLE -+60° TO +90°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	B	D	B	D	B	E	F	F
WEAPONS	2	1	1	1	2	1	1	1	1	1	1	1

FIG.A-106-SUMMARY OF AZIMUTH GIMBAL ANGLE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° TO ±180°
 ELEVATION GIMBAL ANGLE - -90° TO -60°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

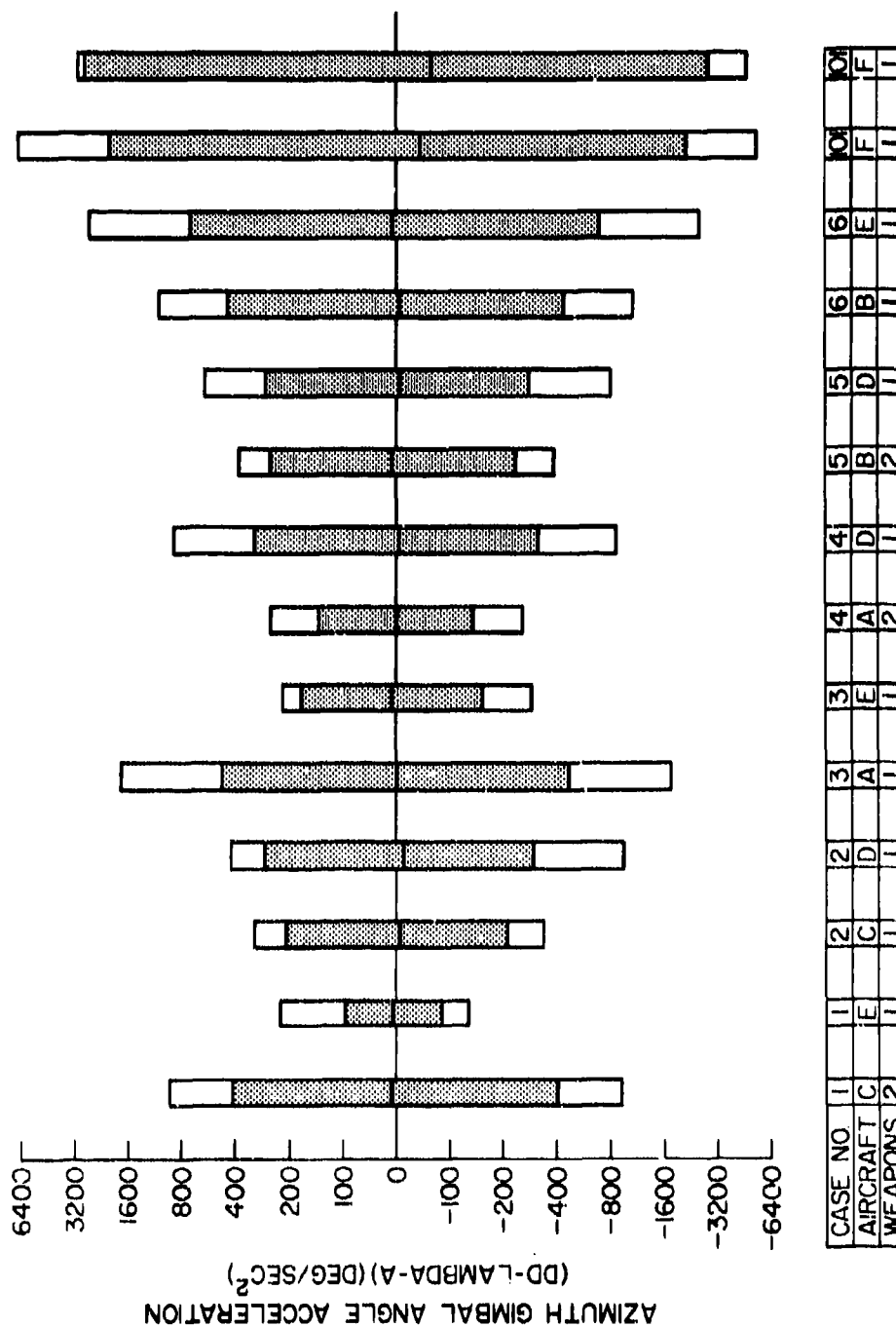


FIG.A-107-SUMMARY OF AZIMUTH GIMBAL ANGLE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$
 ■ 2σ VALUE
 □ MIN & MAX VALUE

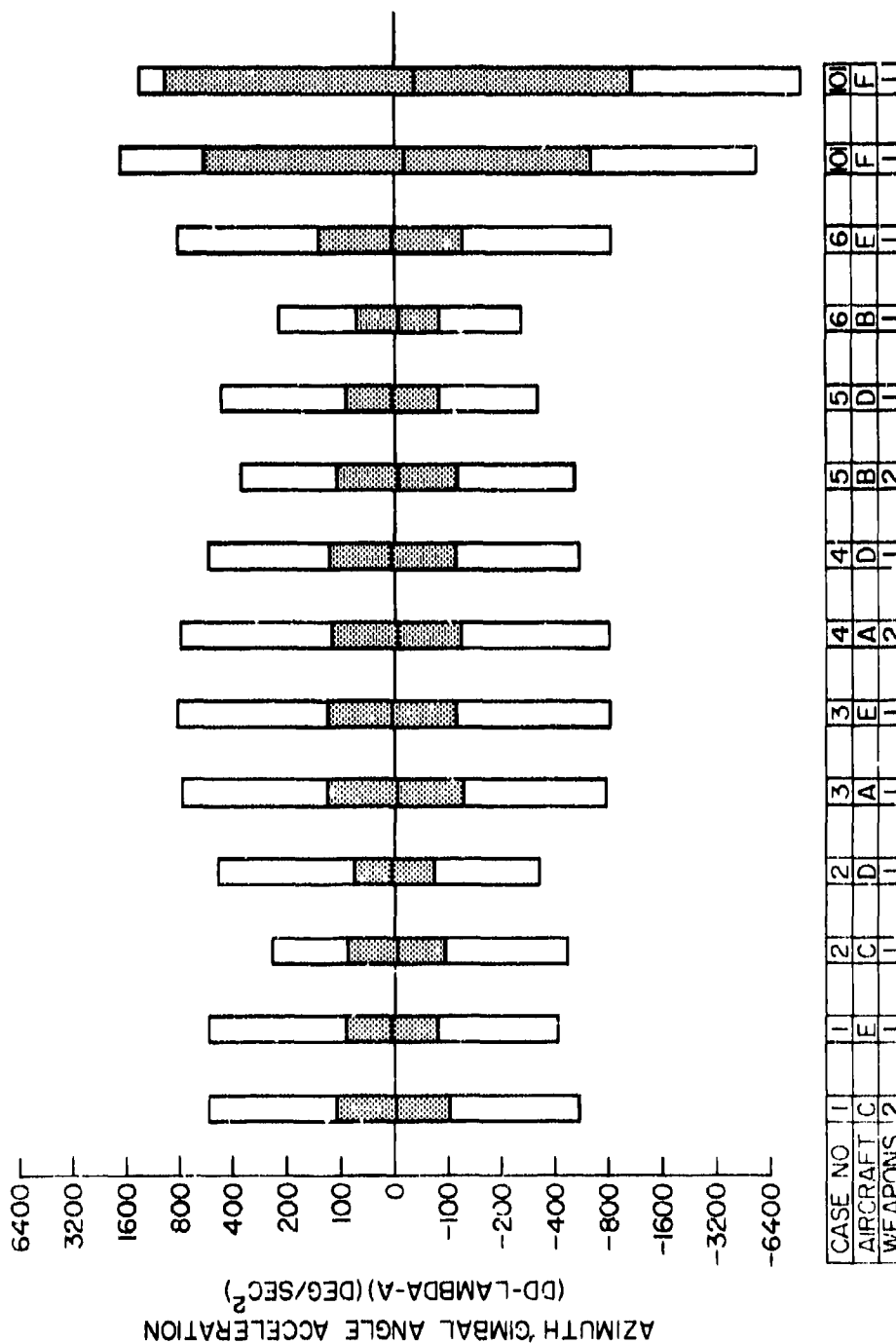


FIG. A-108-SUMMARY OF AZIMUTH GIMBAL ANGLE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°

■ 2σ VALUE

□ MIN & MAX VALUE

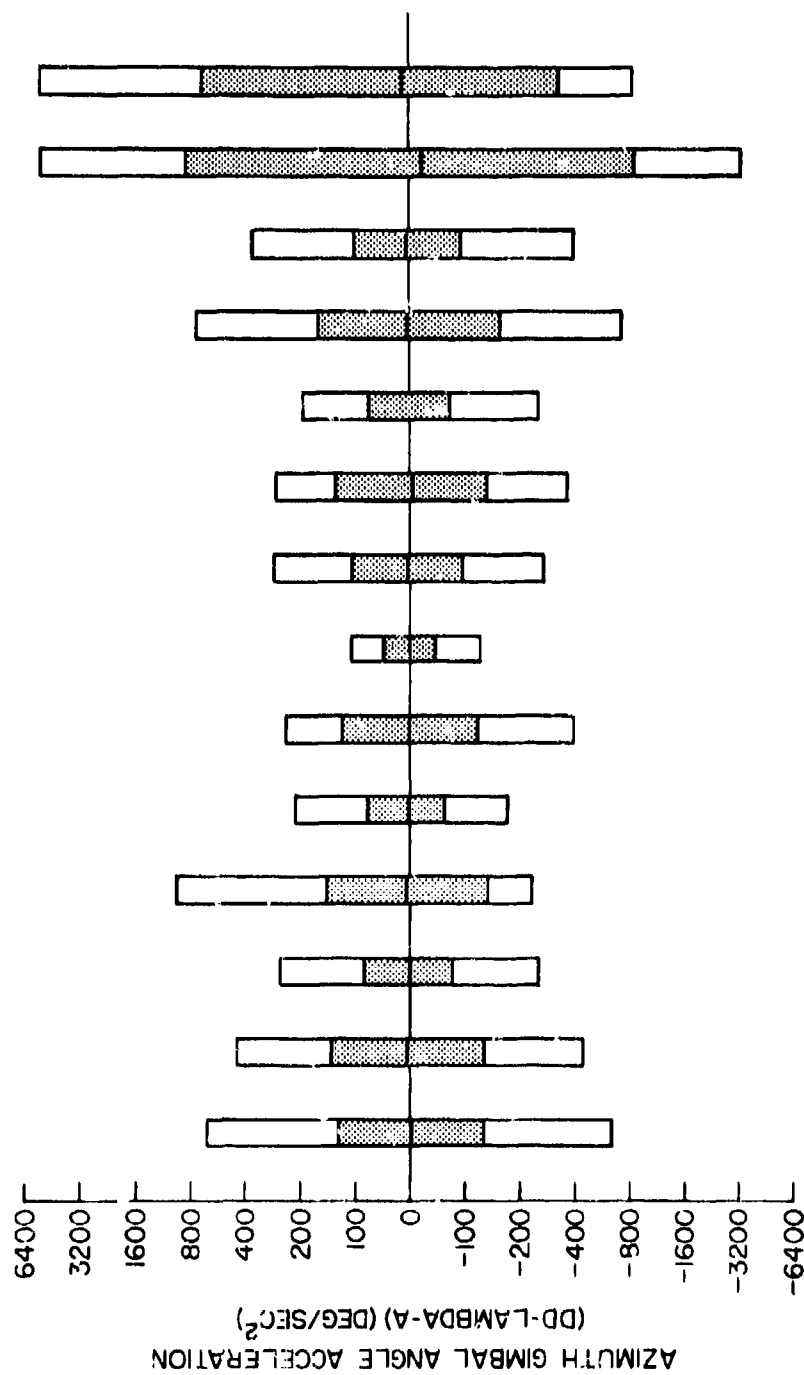
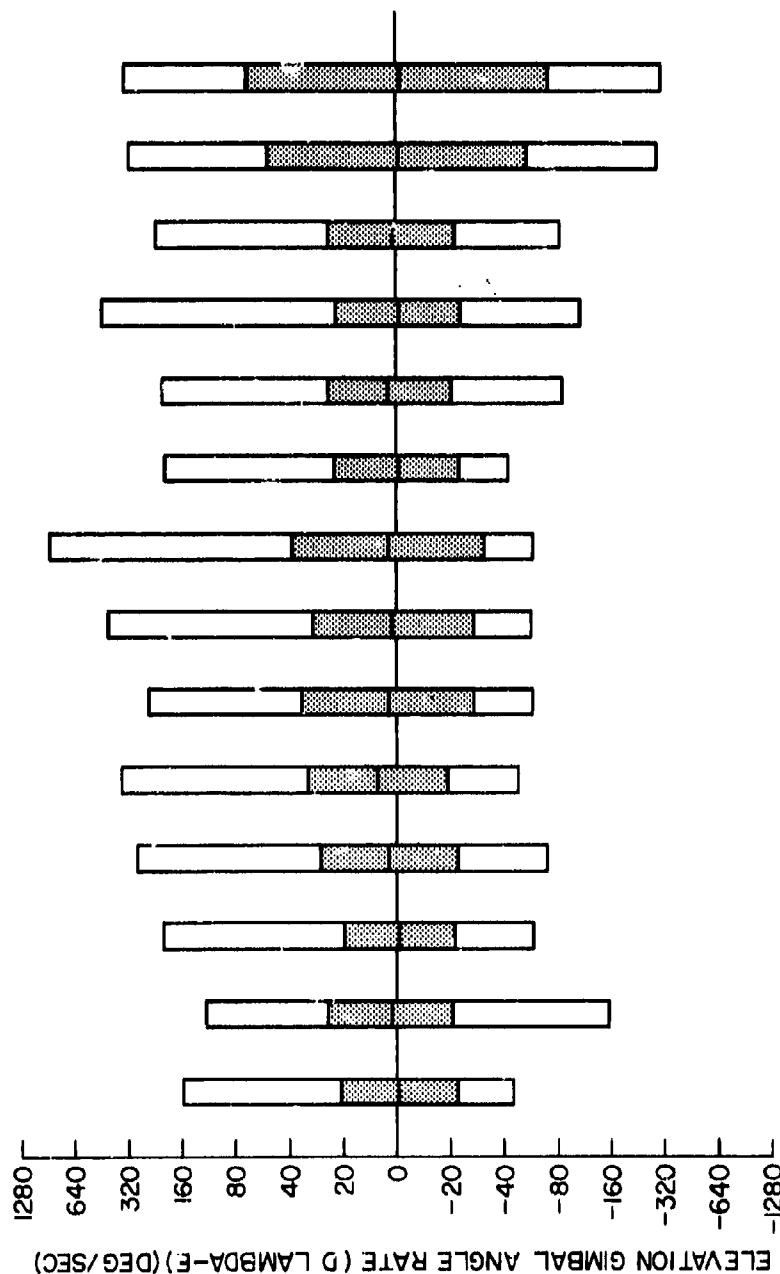


FIG. A-109-SUMMARY OF AZIMUTH GIMBAL ANGLE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° TO ±60°
 ELEVATION GIMBAL ANGLE - 0° TO +60°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

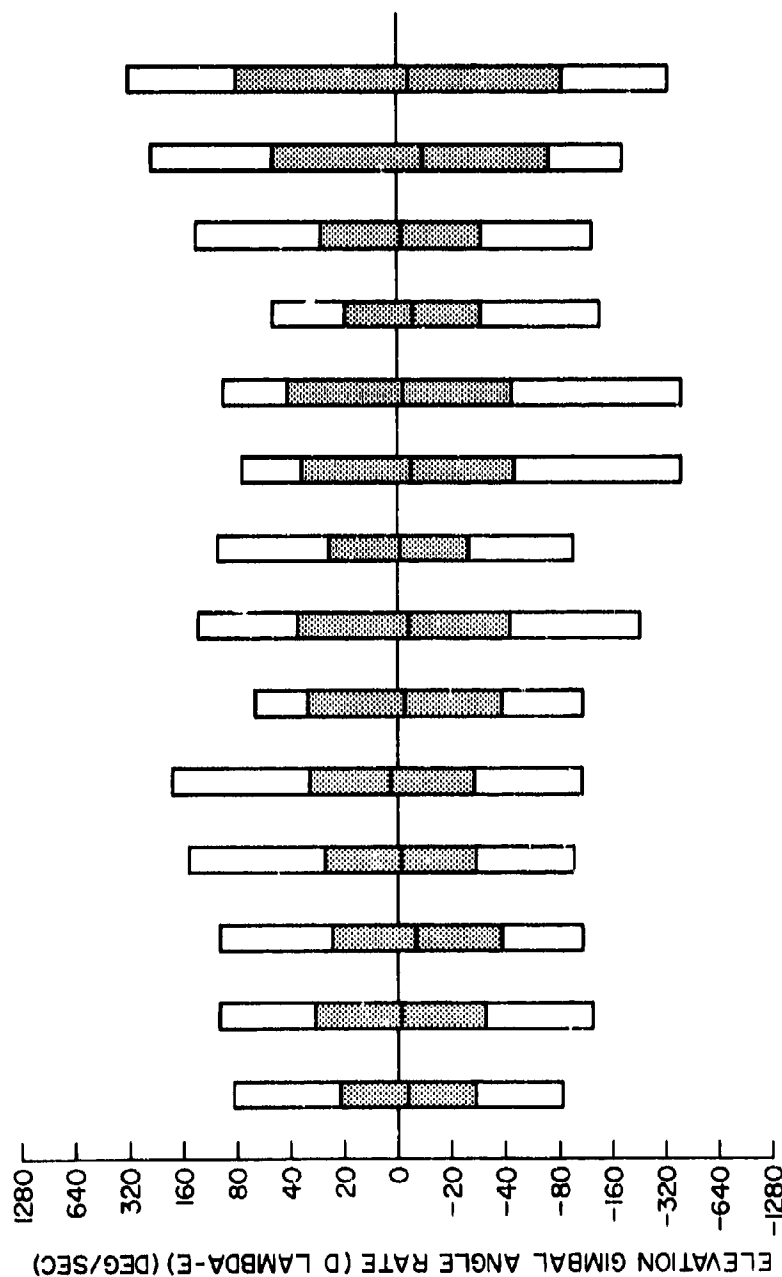


CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	E	C	D	A	E	A	D	B	D	B	F
WEAPONS	2	1	1	1	1	1	2	1	1	1	1	1

FIG. A-110-SUMMARY OF ELEVATION GIMBAL ANGLE RATE

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AZIMUTH GIMBAL ANGLE - 0° TO ±60°
 ELEVATION GIMBAL ANGLE - -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

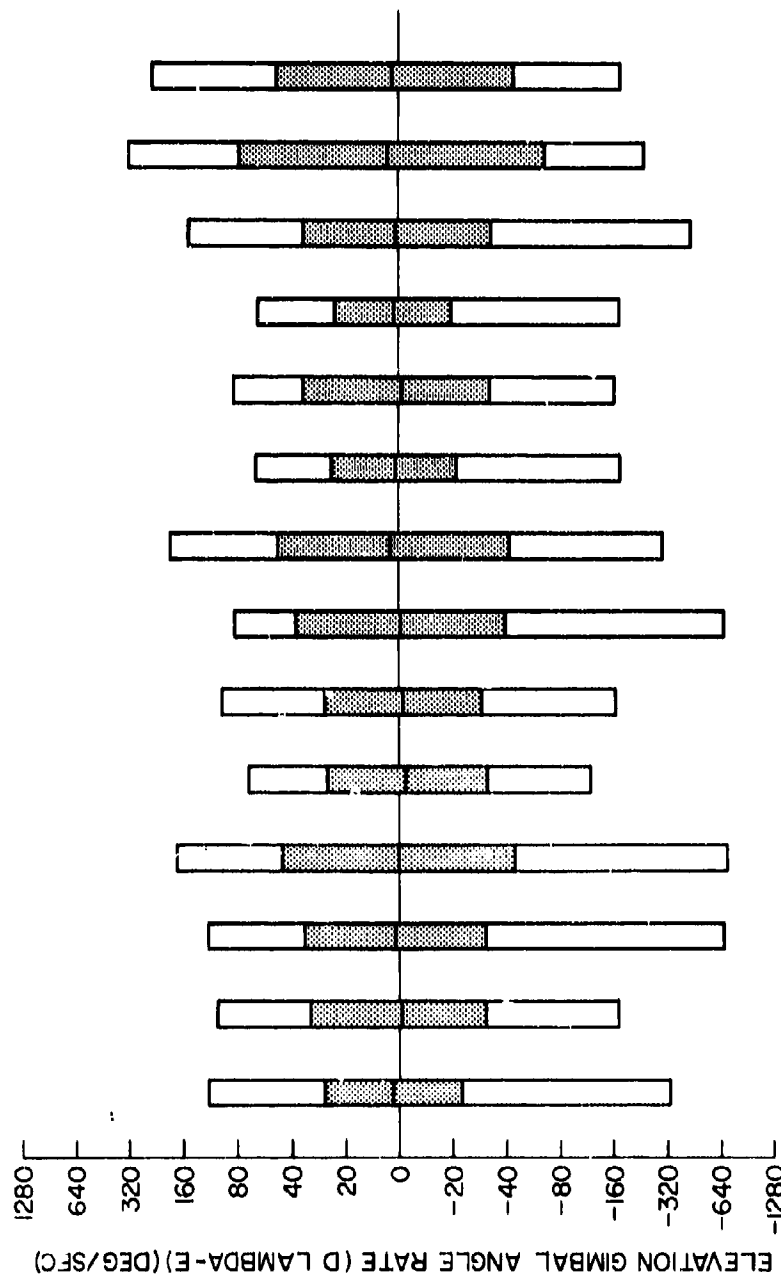


CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
AIRCRAFT	E	C	A	A	B	B	D	D	D	F	F	F	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1	1	1	1	1

FIG. A-111-SUMMARY OF ELEVATION GIMBAL ANGLE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $\pm 60^\circ$
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	B	D	E	F	F	F	F	F
WEAPONS	2	1	1	1	2	1	1	1	1	1	1	1

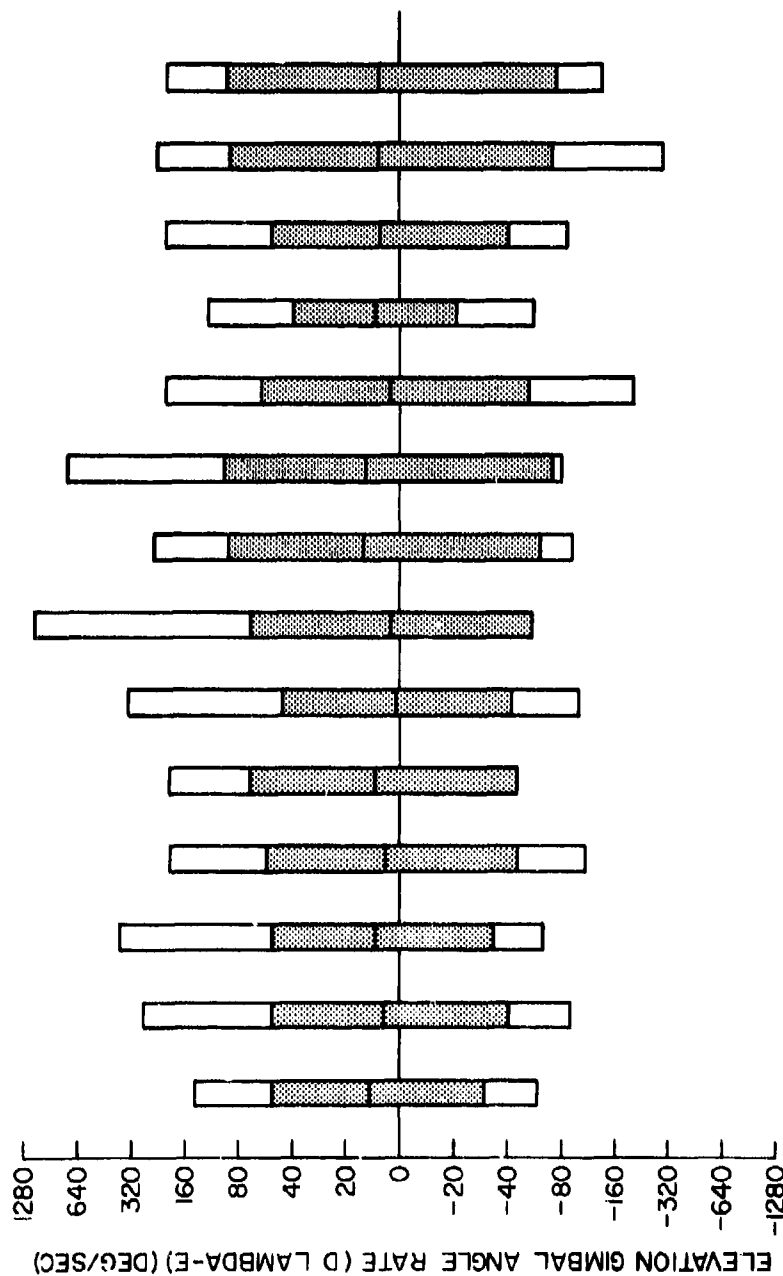
FIG. A-112-SUMMARY OF ELEVATION GIMBAL ANGLE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°

■ 2σ VALUE

□ MIN & MAX VALUE

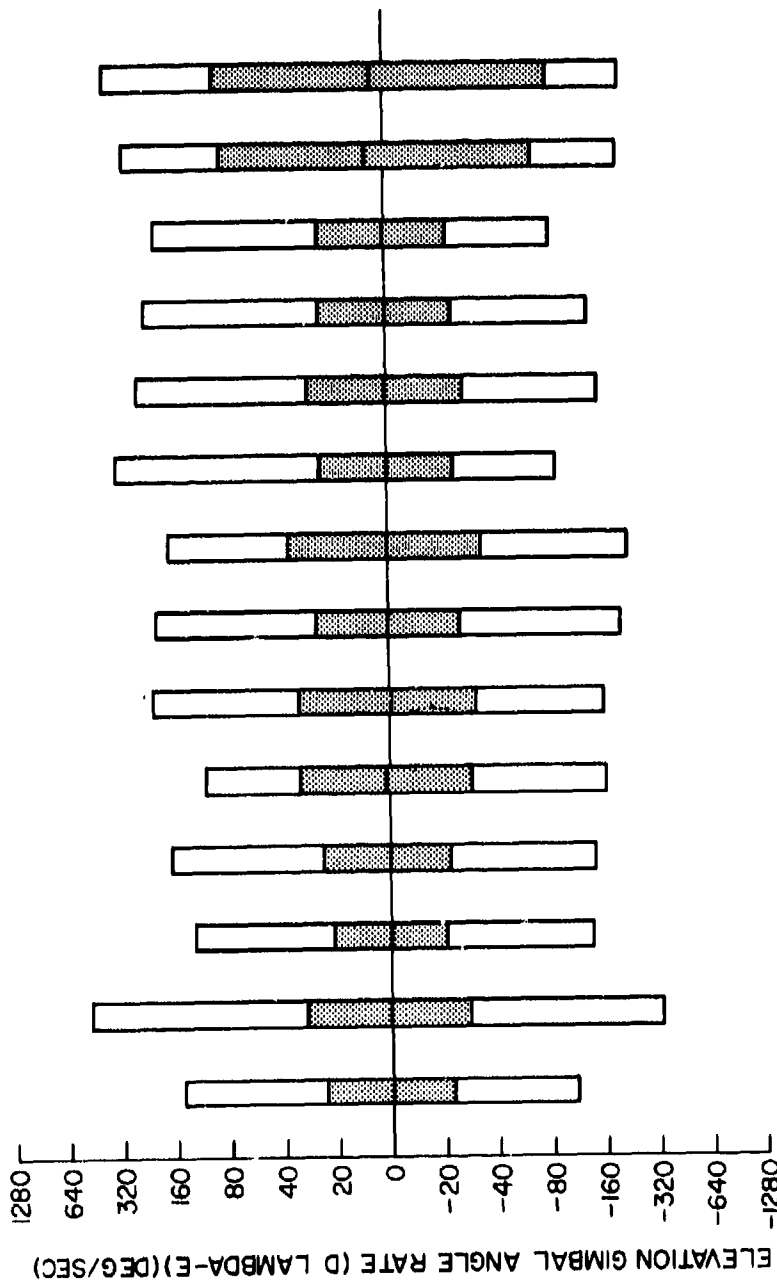


CASE NO.	1	2	3	4	5	6	7	8	9	10	11	12
AIRCRAFT	C	C	A	A	B	B	D	D	E	F	F	F
WEAPONS	2	1	1	2	1	1	1	1	1	1	1	1

FIG. A-113-SUMMARY OF ELEVATION GIMBAL ANGLE RATE

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - 0° TO ±180°
 ELEVATION GIMBAL ANGLE - +60° TO +90°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO.	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	D	A	A	B	B	E		F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1

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AZIMUTH GIMBAL ANGLE - 0° TO ±180°
 ELEVATION GIMBAL ANGLE - -90° TO -60°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

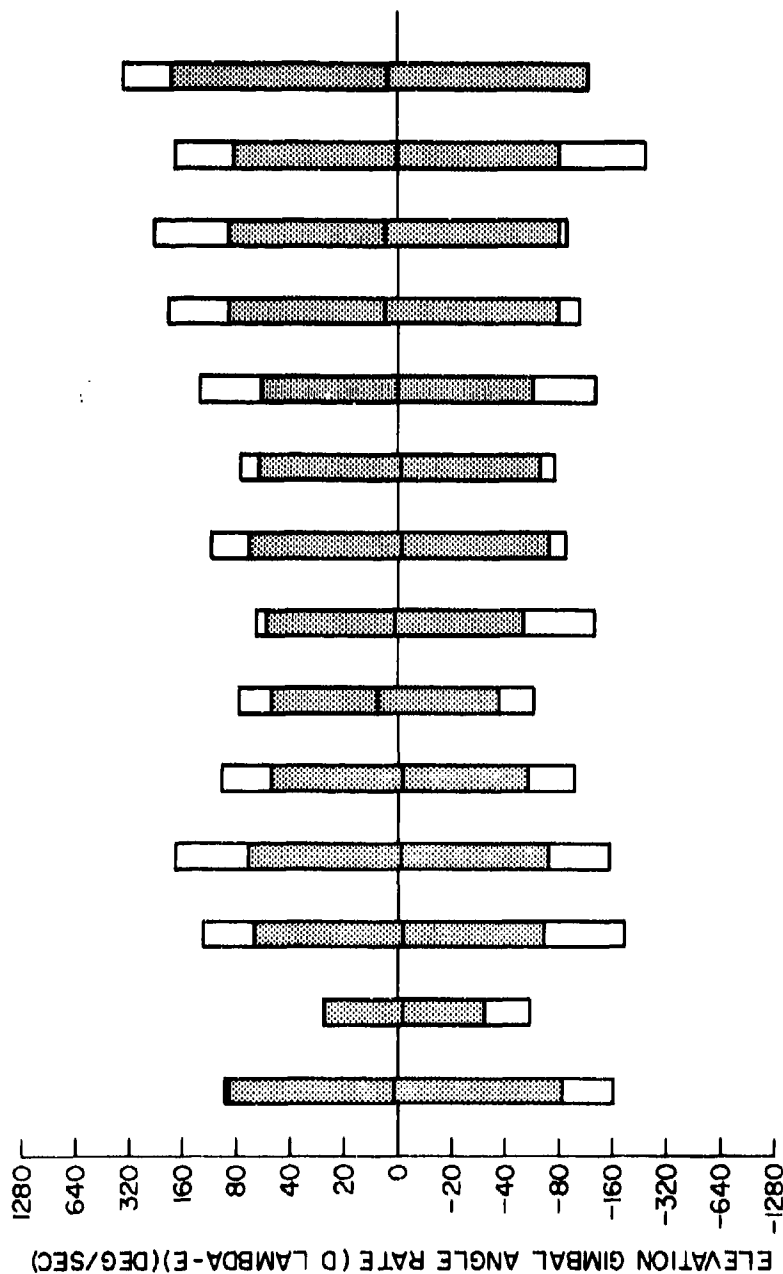
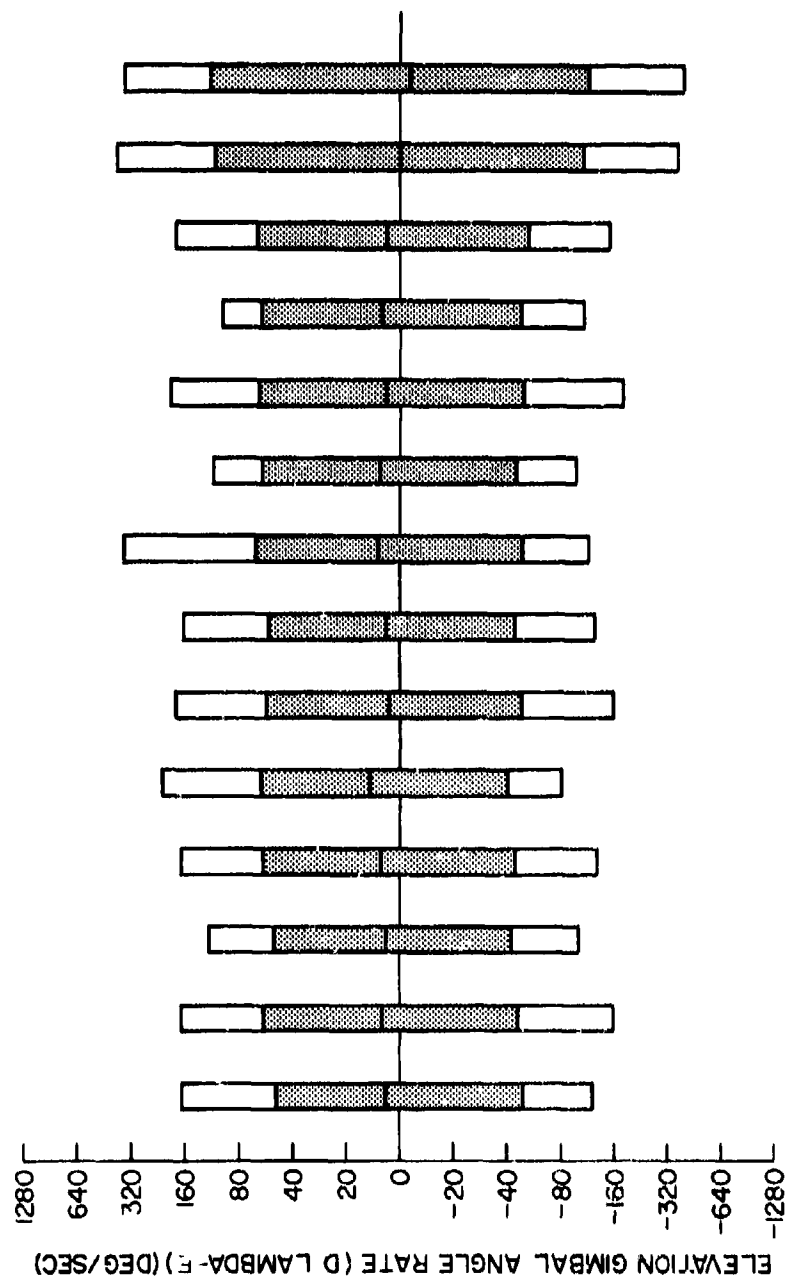


FIG.A-115-SUMMARY OF ELEVATION GIMBAL ANGLE RATE

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CASE NO	1	1	2	3	4	5	6	7
AIRCRAFT	C	E	D	A	D	B	E	F
WEAPONS	2	1	1	1	1	1	1	1

FIG. A-116-SUMMARY OF ELEVATION GIMBAL ANGLE RATE

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AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

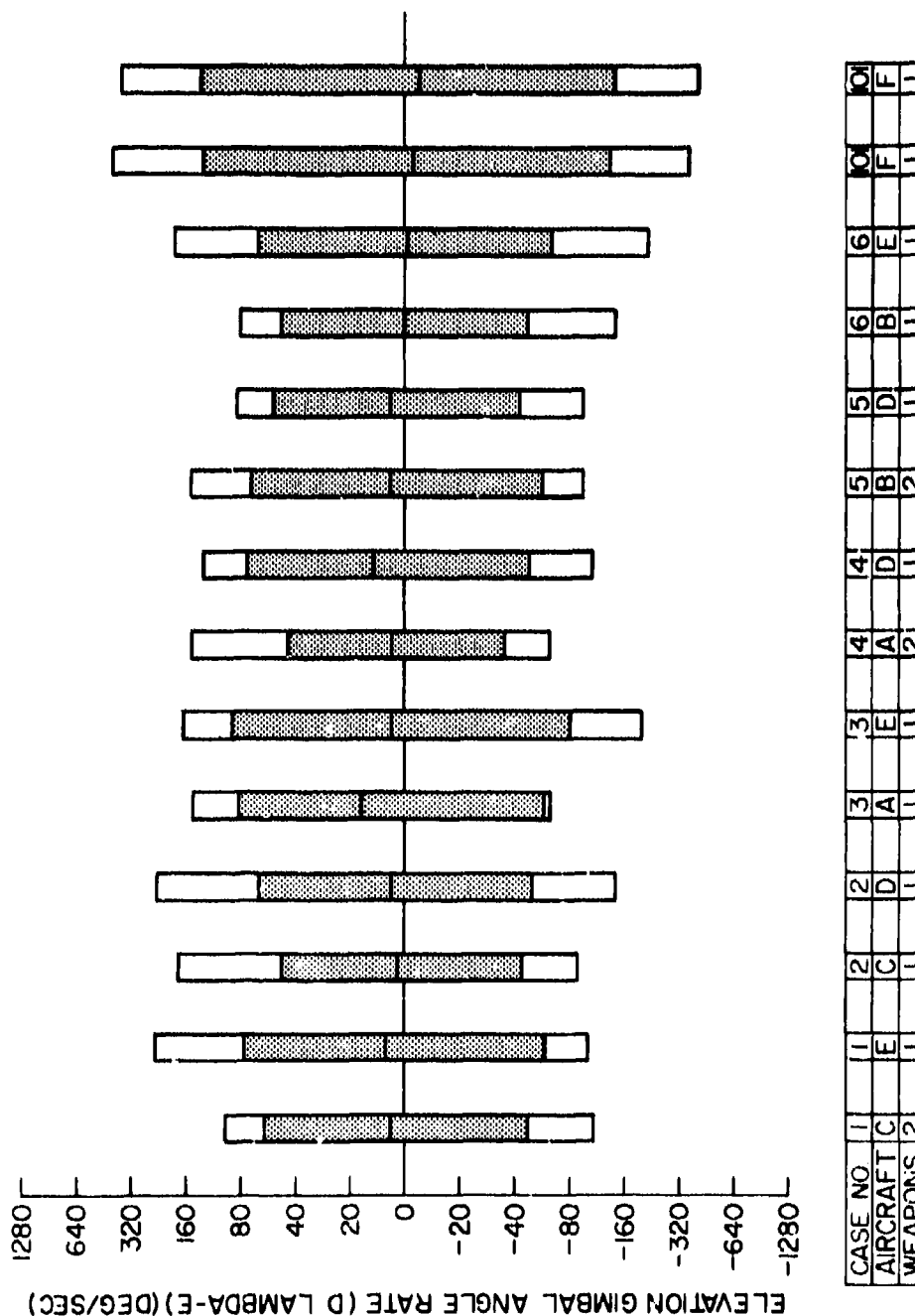
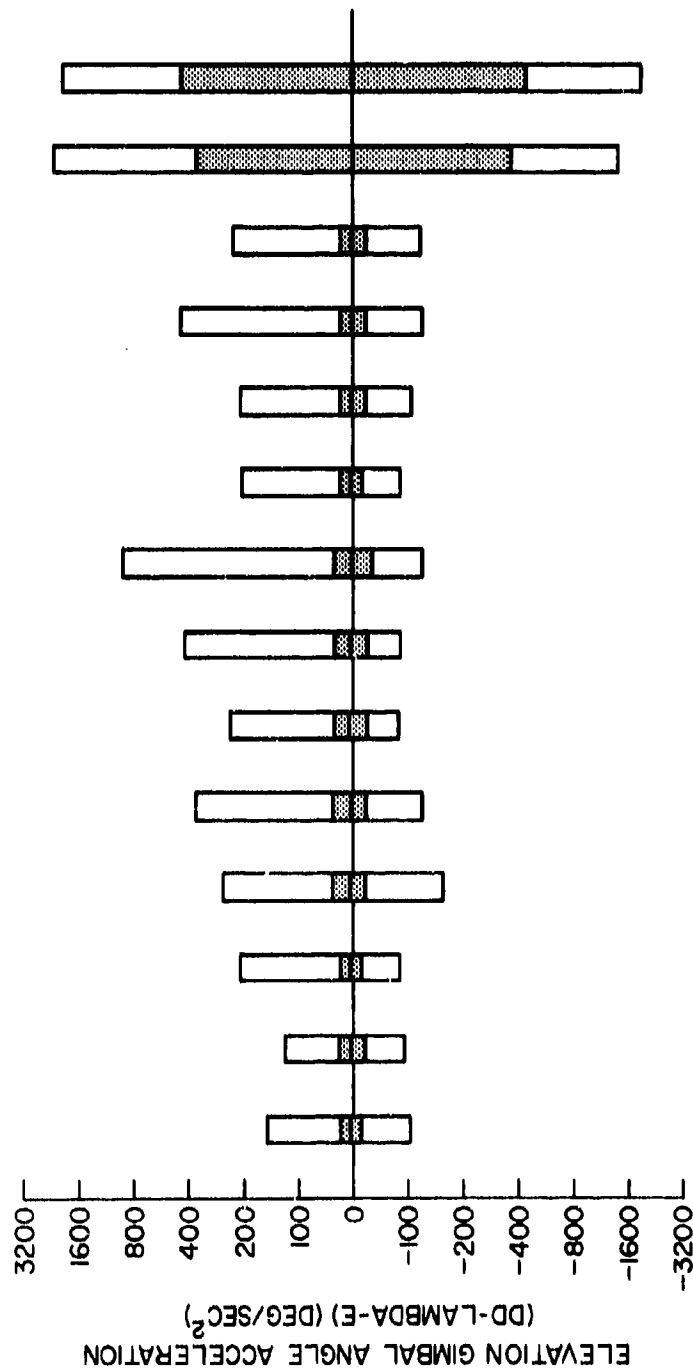


FIG.A-117-SUMMARY OF ELEVATION GIMBAL ANGLE RATE

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AZIMUTH GIMBAL ANGLE -0° TO +60°
 ELEVATION GIMBAL ANGLE -0° TO +60°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

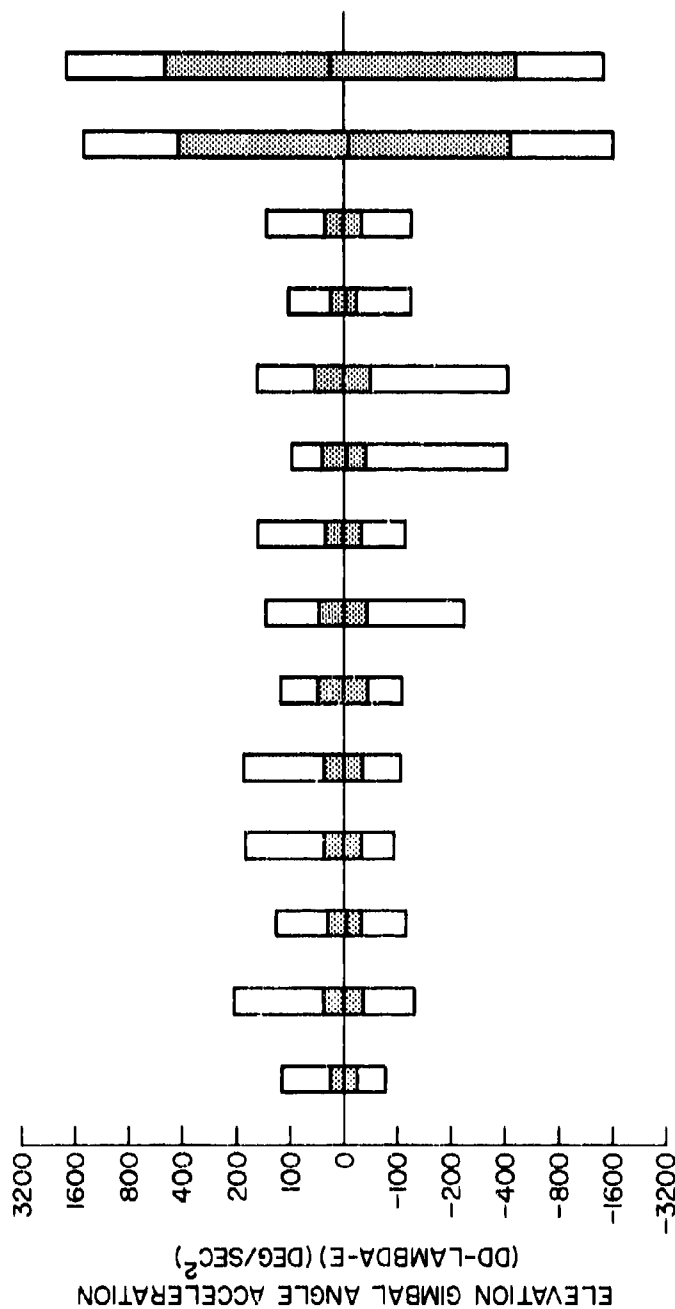


CASE NO.	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	C	A	A	B	B	E	F	F	F
WEAPONS	2	1	1	2	1	1	1	1	1	1

FIG.A-118-SUMMARY OF ELEVATION GIMBAL ANGLE ACCELERATION

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AZIMUTH GIMBAL ANGLE - 0° TO ±60°
 ELEVATION GIMBAL ANGLE - -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO	1	1	2	2	3	3	4	4	5	5	6	6	10	10
AIRCRAFT	C	E	C	D	A	E	A	A	B	B	B	E	F	F
WEAPONS	2	1	1	1	1	1	2	2	2	1	1	1	1	1

FIG A-119-SUMMARY OF ELEVATION GIMBAL ANGLE ACCELERATION

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AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$
 ■ 2σ VALUE
 □ MIN & MAX VALUE

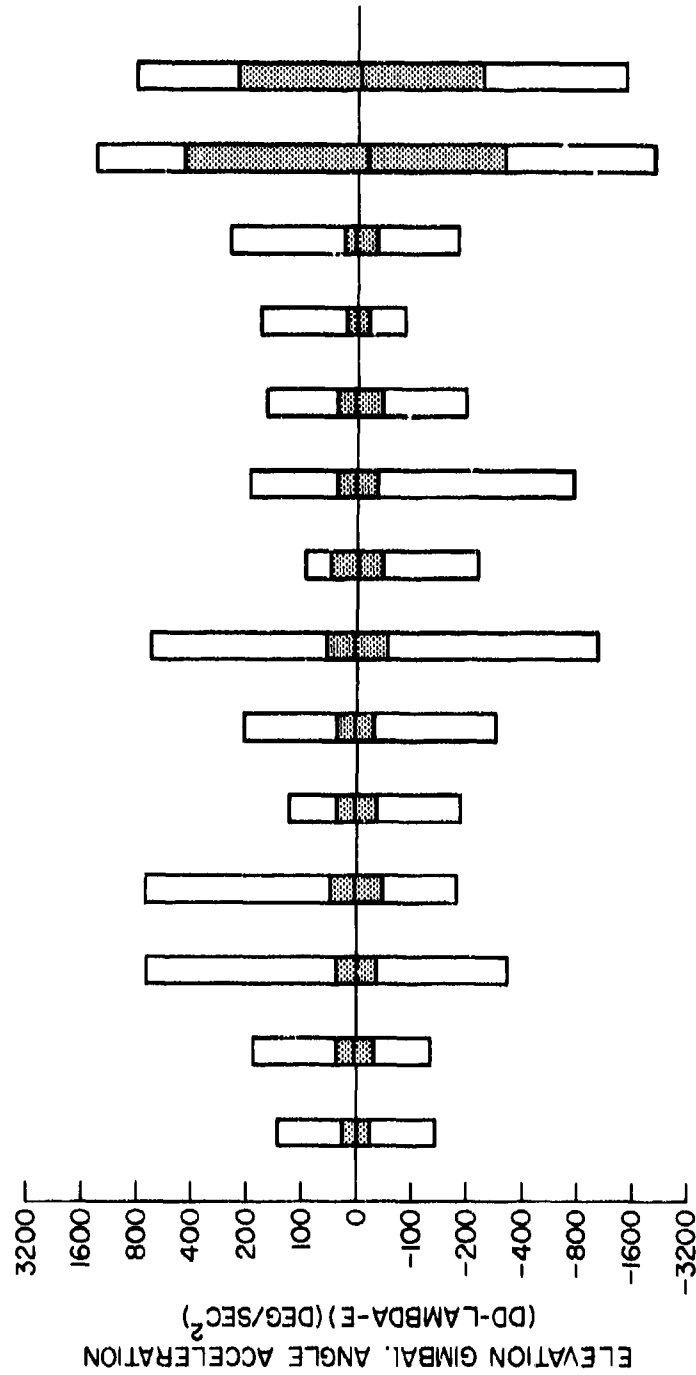
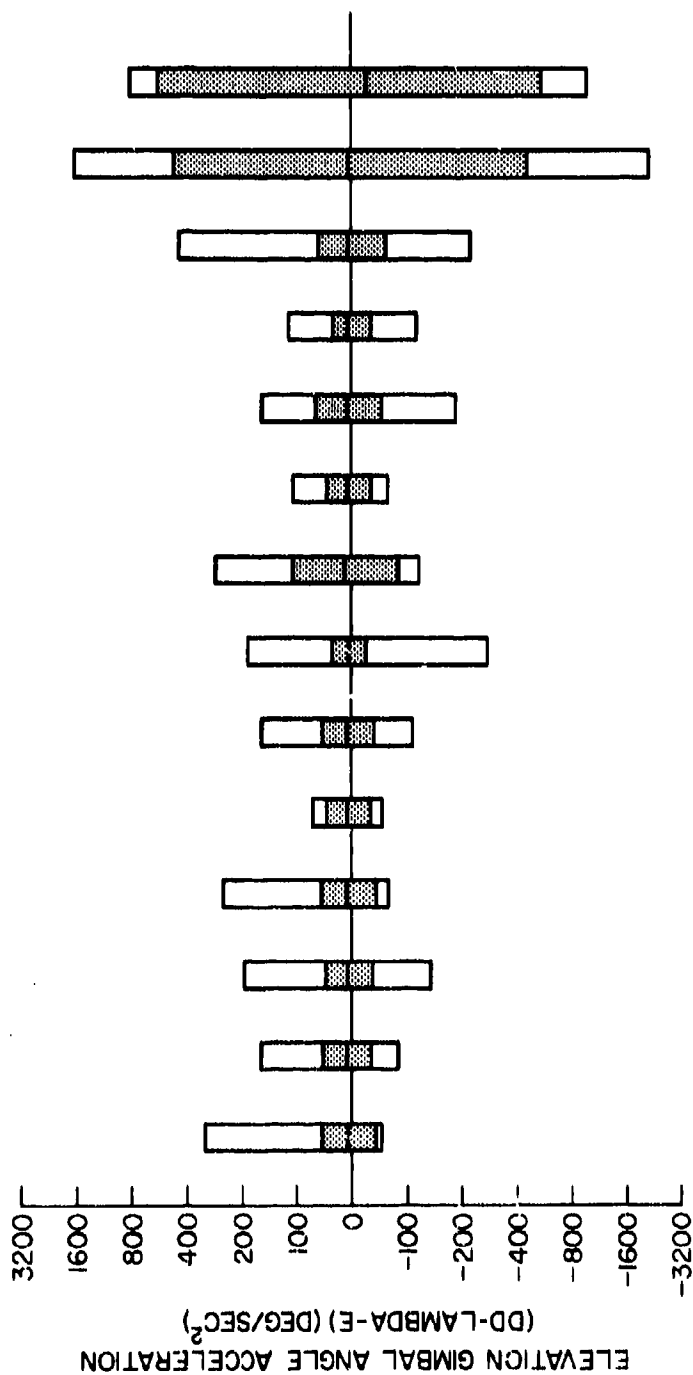


FIG. A-120-SUMMARY OF ELEVATION GIMBAL ANGLE ACCELERATION

CONFIDENTIAL

AZIMUTH GIMBAL ANGLE - $\pm 120^\circ$ TO $\pm 180^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

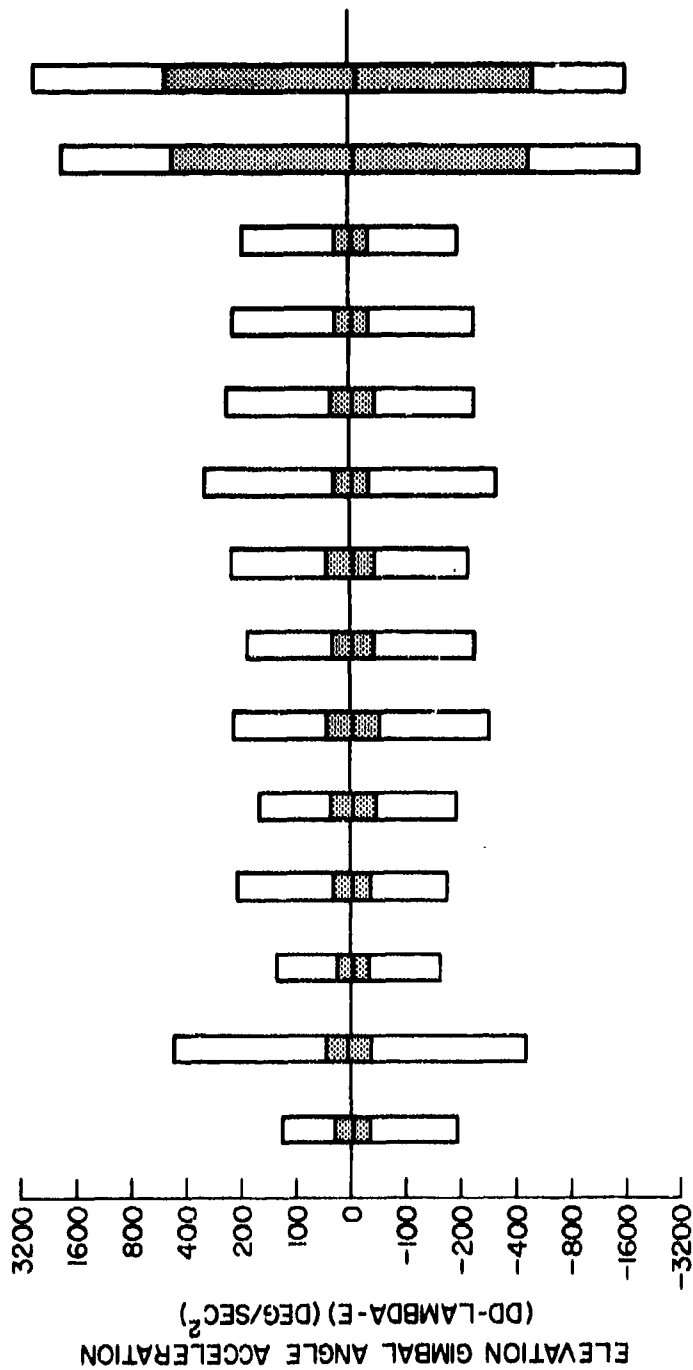


CASE NO.	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	C	A	A	B	B	E	F	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1

FIG. A-121-SUMMARY OF ELEVATION GIMBAL ANGLE ACCELERATION

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AZIMUTH GIMBAL ANGLE - 0° TO ±180°
 ELEVATION GIMBAL ANGLE - +60° TO +90°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

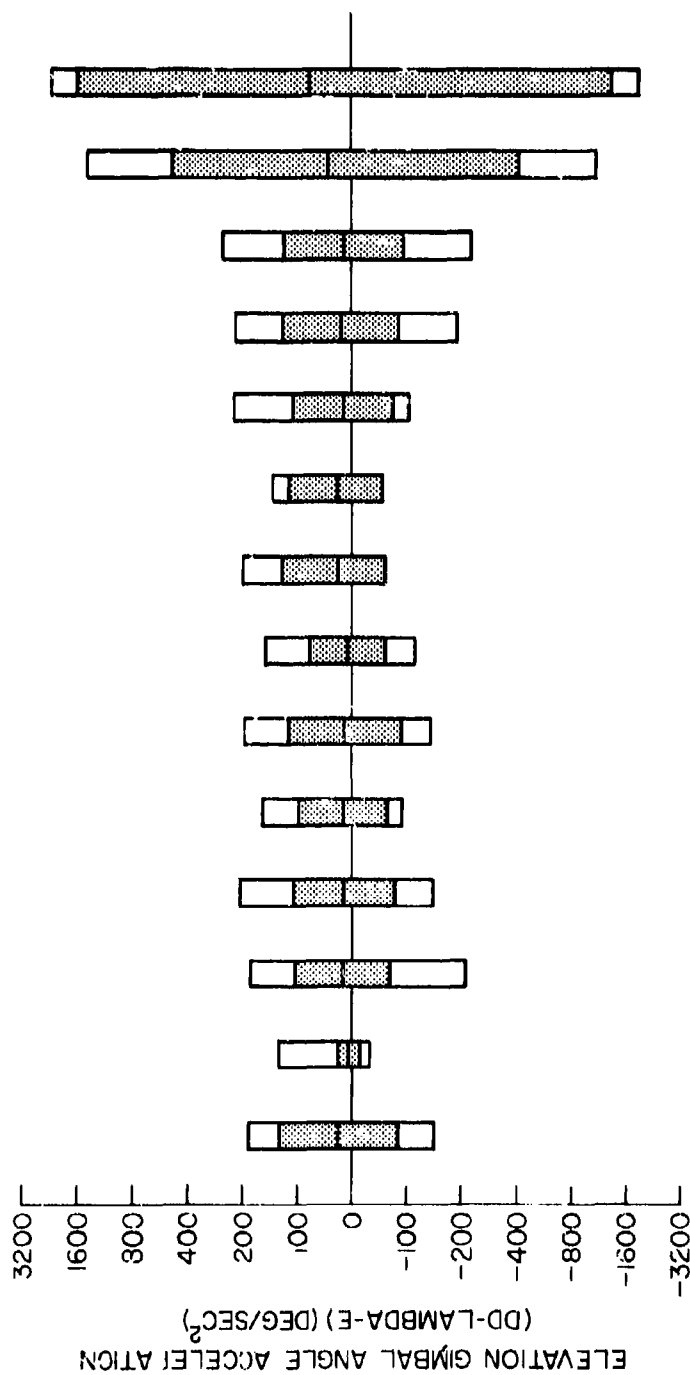


CASE NO	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	C	A	A	B	B	E	E	F	F
WEAPONS	2	1	1	2	1	1	1	1	1	1

FIG.A-122-SUMMARY OF ELEVATION GIMBAL ANGLE ACCELERATION

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AZIMUTH GIMBAL ANGLE -0° TO ±180°
 ELEVATION GIMBAL ANGLE --90° TO -60°
 ■ 2σ VALUE
 □ MIN & MAX VALUE

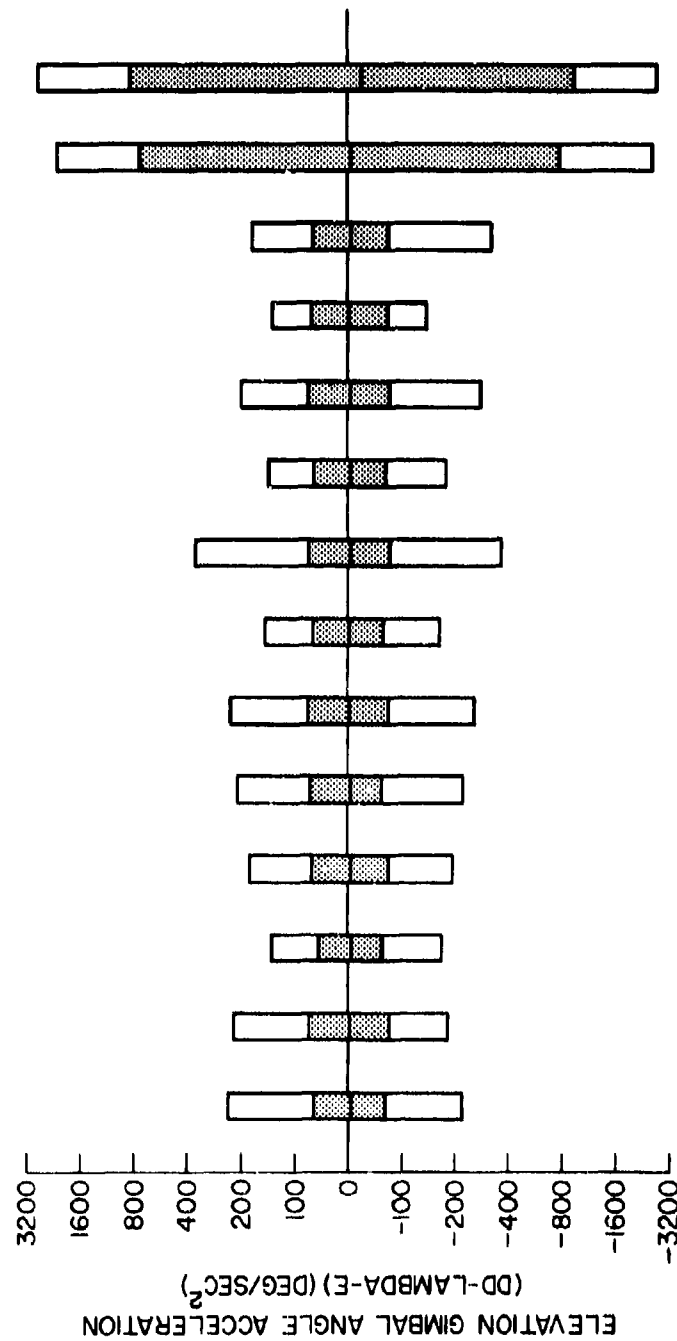


CASE NO.	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	E	A	A	B	B	E	F	F	F
WEAPONS	2	1	1	2	2	1	1	1	1	1

FIG. A-123-SUMMARY OF ELEVATION GIMBAL ANGLE ACCELERATION

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AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - 0° TO $+60^\circ$
 ■ 2σ VALUE
 □ MIN & MAX VALUE

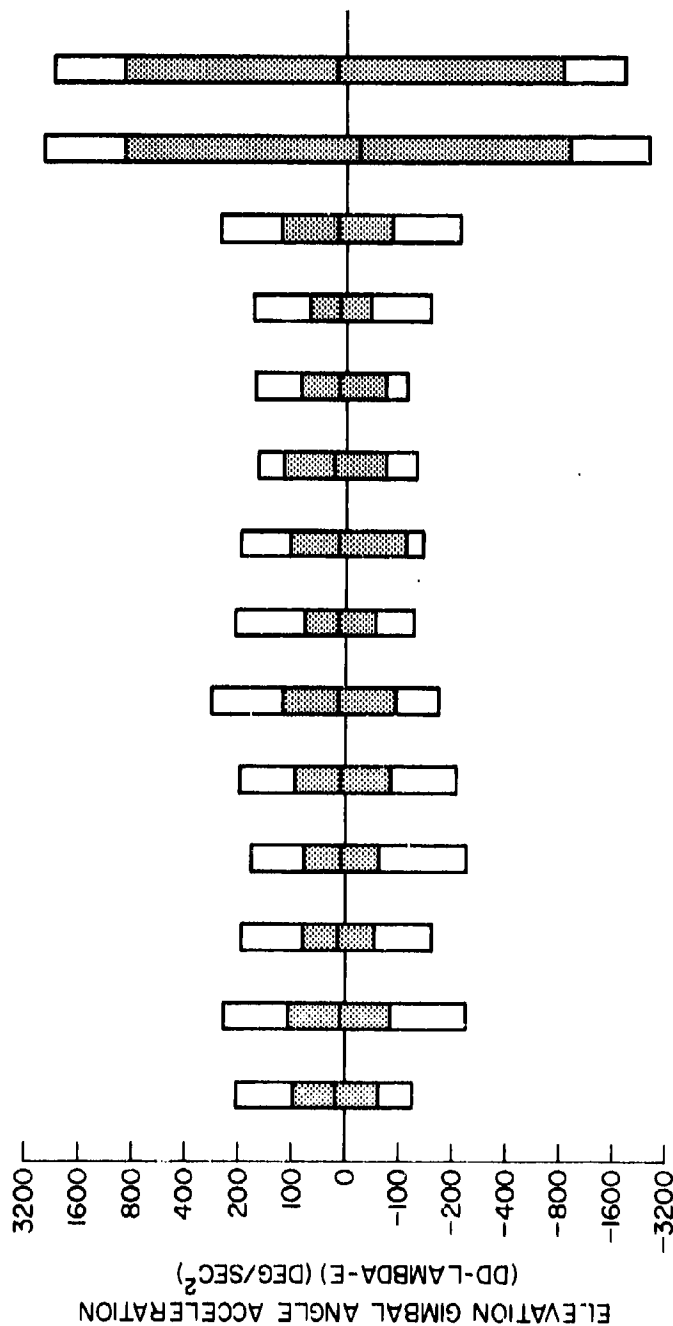


CASE NO	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	E	C	D	A	B	D	E	F	F
WEAPONS	2	1	1	1	2	1	1	1	1	1

FIG. A-124-SUMMARY OF ELEVATION GIMBAL ANGLE ACCELERATION

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AZIMUTH GIMBAL ANGLE - $\pm 60^\circ$ TO $\pm 120^\circ$
 ELEVATION GIMBAL ANGLE - -60° TO 0°
 ■ 2σ VALUE
 □ MIN & MAX VALUE



CASE NO	1	2	3	4	5	6	7	8	9	10
AIRCRAFT	C	C	A	A	B	B	E	F	F	F
WEAPONS	2	1	1	2	1	1	1	1	1	1

FIG. A-125-SUMMARY OF ELEVATION GIMBAL ANGLE ACCELERATION

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B. Parameters Interaction

This program performs a numerical bivariate cumulative probability distribution. It also has the additional capability to perform, at the same time, a frequency distribution of another variable. These capabilities are quite general; however, the remainder of the options of the program are more specific. These include classifying the data into three groups according to gimbal angle or restricting the data to a minimum range.

An important facet of the program is its capability to study the distribution of dwell times. For instance, the probability distribution gives the likelihood that a particular value of a variable is exceeded but it is also necessary to know for how long the value of the parameter is exceeded. To this end, the program gives the average dwell times and their standard deviations.

Following is a glossary of terms used in work completed with Program Inact. Additional details on the program: logic, inputs, and flow charts, are available.

- ABS VC - Absolute value of the closing velocity.
- ARDDOT - Absolute value of the range acceleration.
- A VCBT - Absolute value of the target's contribution to the closing velocity.
- AWJDF - Absolute value of the elevation stabilized line of sight acceleration.
- AWJF - Absolute value of the elevation stabilized line of sight rate.
- AWKDF - Absolute value of the azimuth stabilized line of sight acceleration.
- AWKF - Absolute value of the azimuth stabilized line of sight rate.
- DELTAR - Range to closest main beam ground return (given a 2.5° half beam width), minus the target range.
- LAMB-T - Off-boresight angle of the target (total target aspect angle).
- LT-DOT - Total rate of rotation of the target = $(\dot{\lambda}_E^2 + \dot{\lambda}_A^2 \cos^2 \lambda_E)^{1/2}$ where λ_E = elevation gimbal angle, λ_A = azimuth gimbal angle rate $\dot{\lambda}_E$ = elevation gimbal angle rate.
- RANGE - Range from fighter to target
- R-DOT - Range rate
- R-H - Absolute value of range minus fighter altitude

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(U) Using the following table as an example, an explanation of how to interpret the tables in Appendix B is given below:

a. The top line identifies this interaction as one that is restricted to the zone off the nose of the fighter.

b. The second line identifies the restrictions on the data as a minimum range of 225 ft and the off nose interaction is defined by $\pm 60^\circ$ in azimuth and elevation.

c. The third line identifies the parameters interacted. (refer to the glossary in Appendix B). In this case the Y parameter (listed down the page) is designated ABS VC which is absolute value of the closing velocity, and the X parameter (listed across the page) is designated A WJDF which is the absolute value of the elevation line of sight acceleration.

d. In this case, the Y parameter is collected such that the absolute value of the closing velocity is less than 25, 50, ..., 250 ft/sec as shown in the first column on the left. The LIMIT is all values of the closing velocity less than infinity (unrestricted Y parameter). These restrictions on the Y parameter hold for the entire row.

e. In this case, the X-parameter is collected such that the absolute value of the elevation line of sight acceleration is greater than 50, 40.5, ..., $.5^\circ/\text{sec}^2$ as indicated at the top of each column. The LIMIT in this case is all values of the X parameter greater than zero (unrestricted X parameters). These restrictions on the X parameter hold for all numbers in each column.

f. Each block within the table contains four numbers:

- i. NO. = number of entries into the zone defined by the X and Y parameters.
- ii. PCT. = percent of the total combat time the conditions of the X and Y parameters were met.
- iii. DT. = average dwell time in seconds that the conditions of the X and Y were met.
- iv. STD. = standard deviation of the dwell time in seconds that the conditions of the X and Y parameters were met.

g. As an example, take the X parameter value as 8.00 and the Y parameter value as 200.00. Referring to the intersection of these two values, it can be seen that for the absolute value of the elevation line of sight acceleration greater than $8^\circ/\text{sec}^2$ and the absolute value of the closing velocity less than 200 ft/sec² the results are:

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TABLE 1
PARAMETER INTERACTION OFF NOSE
SUBJECT TO CONDITIONS RAIN = 225.00 LAMDA =

Y PARAMETER ABS VC	90.00	40.50	36.00	24.50	TAPE NO. 1 16.00	12.50	0.00	60.00	X PARAMETER A WJDF
25.00 ME: PCT: ET: STD:	1 0.01 1.00 0.00	1 0.01 1.00 0.00	1 0.01 1.00 0.00	1 0.01 1.00 0.00	1 0.01 1.00 0.00	1 0.01 1.00 0.00	3 0.02 1.00 0.00	4.50 8 0.37 1.13 0.33	2.00 12 0.12 0.23 1.16 0.37 2.70 AVG
50.00 ME: PCT: ET: STD:	1 0.01 1.00 0.00	1 0.01 1.00 0.00	1 0.01 1.00 0.00	2 0.02 1.00 0.00	4 0.03 1.00 0.00	4 0.03 1.00 0.00	9 0.09 1.22 0.63	17 0.17 1.24 0.55	25 0.27 1.36 0.42 0.52 1.21 1.08 1.79 AVG
75.00 ME: PCT: ET: STD:	2 0.02 1.00 0.00	2 0.02 1.00 0.00	2 0.02 1.00 0.00	4 0.03 1.00 0.00	6 0.05 1.00 0.00	7 0.06 1.00 0.00	12 0.11 1.17 0.55	21 0.20 1.19 0.50	34 0.34 1.26 0.56 0.62 2.72 AVG
100.00 ME: PCT: ET: STD:	2 0.02 1.00 0.00	2 0.02 1.00 0.00	2 0.02 1.00 0.00	5 0.04 1.00 0.00	8 0.06 1.00 0.00	10 0.08 1.00 0.00	15 0.14 1.20 0.54	27 0.26 1.22 0.63	44 0.44 1.25 0.64 0.82 2.64 AVG
125.00 ME: PCT: ET: STD:	2 0.02 1.00 0.00	2 0.02 1.00 0.00	2 0.02 1.00 0.00	5 0.04 1.00 0.00	8 0.06 1.00 0.00	10 0.08 1.00 0.00	17 0.16 1.28 0.51	29 0.26 1.21 0.61	53 0.56 1.32 0.82 0.97 2.22 AVG
150.00 ME: PCT: ET: STD:	2 0.02 1.00 0.00	2 0.02 1.00 0.00	2 0.02 1.00 0.00	5 0.04 1.00 0.00	8 0.06 1.00 0.00	10 0.08 1.00 0.00	20 0.18 1.15 0.48	34 0.33 1.21 0.58	58 0.45 1.41 0.85 1.02 2.08 AVG
175.00 ME: PCT: ET: STD:	2 0.02 1.00 0.00	3 0.02 1.00 0.00	3 0.02 1.00 0.00	6 0.05 1.00 0.00	10 0.08 1.00 0.00	14 0.11 1.00 0.00	25 0.22 1.12 0.43	43 0.42 1.23 0.71	75 0.81 1.36 0.86 1.55 2.02 4.29 2.45 3.01 2.87 AVG
200.00 ME: PCT: ET: STD:	2 0.02 1.00 0.00	3 0.02 1.00 0.00	3 0.02 1.00 0.00	7 0.06 1.00 0.00	11 0.09 1.00 0.00	14 0.12 1.07 0.26	26 0.24 1.15 0.46	48 0.47 1.23 0.68	88 0.93 1.62 0.84 1.82 2.35 1.62 3.69 1.95 AVG
225.00 ME: PCT: ET: STD:	2 0.02 1.00 0.00	3 0.02 1.00 0.00	3 0.02 1.00 0.00	7 0.06 1.00 0.00	12 0.10 1.00 0.00	15 0.13 1.07 0.25	28 0.26 1.14 0.44	53 0.53 1.26 0.68	98 1.09 1.40 0.90 1.95 2.71 3.74 3.91 1.87 AVG
250.00 ME: PCT: ET: STD:	2 0.02 1.00 0.00	3 0.02 1.00 0.00	3 0.02 1.00 0.00	8 0.06 1.00 0.00	13 0.10 1.00 0.00	16 0.14 1.06 0.24	38 0.27 1.13 0.43	56 0.56 1.25 0.66	109 1.21 1.30 0.89 2.22 3.08 1.73 3.80 1.77 AVG
LIMIT ME: PCT: ET: STD:	17 0.14 1.00 0.00	26 0.21 1.00 0.00	35 0.28 1.00 0.00	75 0.60 1.00 0.00	122 1.04 1.07 0.25	192 1.76 1.15 0.48	283 2.99 1.33 0.58	401 5.45 1.70 0.99	571 10.22 2.24 1.67 833 23.83 3.58 3.12 445 43.77 12.33 9.71 2.36 AVG
AVG.	576.91	635.46	471.93	701.10	724.52	739.05	722.89	684.58	678.55 662.49 618.00

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- i. number of entrance into this condition is 26
- ii. the percent of the total combat time this occurred is 0.24%
- iii. the average duration of this occurrence is 1.15 seconds
- iv. the standard deviation of this duration is 0.46 seconds

h. The average values listed with the LIMIT cases denote the average values of the unlimited parameter while the other parameter is limited. As an example, the case where the Y parameter is less than 100 ft/sec. Going across the row to the case unlimited by the Y parameter, it is seen that the average X parameter is $2.48^{\circ}/\text{sec}^2$.

i. The bottom, right hand, corner block is noteworthy. This is the case where neither the X nor Y parameters are limited. Thus the only restrictions on these data are the initial conditions, in this case a minimum range of 225 ft and $\pm 60^{\circ}$ in azimuth and elevation.

2. Tracking Parameter Interaction

(U) The purpose of this section is to discuss the results of the tracking parameter interactions for the forward $\pm 60^{\circ}$ field of view and for the total sphere coverage. The data for the graphs used in this section are contained in Tables B1 to B79 in Appendix B. The tabulated data contains a quantity and quality of information not possible to include on the graphs. The detailed explanation of the use of the graphs is contained in a preceding section of this report.

(U) When interpreting the graphs for the interaction study (Figs. B-1 to B-57) it becomes obvious that several different sets of values of the interacted parameters produce the same probability of track with nearly the same average dwell time in track. When a limit is imposed on one parameter, only one value of the other parameter corresponds to a particular probability of occurrence. This, in essence, is the main use of these graphs: i.e., the influence of one parameter on the other. Keeping this in mind, a tradeoff analysis between the two parameters can be made.

(U) When studying these parameter interactions, it should be kept in mind that three separate tracking loops are being investigated. The overall probability of track is the product of the three separate tracking loops. For example, a 0.95 probability in each loop yields a total of 0.86 probability of track. Further probabilities may be included such as range probability, clutter track-through probabilities, etc.

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(U) The preceding calculation assumed that the three tracking loops (range, azimuth and elevation angle) are independent, that is, not influenced by one another. The parameters interacted were chosen in an attempt to study variables which were not likely to be independent, that is, not influenced by one another. The parameters interacted were chosen in an attempt to study variables which were not likely to be independent, such as range acceleration and range rate. The next logical step is to combine all the variables and determine one overall probability. This is best accomplished in a tracking model, which is planned as the next step in this study. The output of the parameter interactions will provide the logical point at which to begin in the tracking model and provides an indication of the necessary steps for further improvement of tracking capabilities required of the weapon control system in a dogfight environment.

a. (C) Range rate versus range acceleration (Fig. B-1, B-2, AI coverage; Fig. B-3 Total sphere coverage)

In the case of the AI radar, a range tracking loop with a range rate capability of ± 1500 ft/sec and a range acceleration capability of ± 500 ft/sec² would provide a 0.95 probability of range track within gimbal limits of $\pm 60^\circ$. The average length of track is approximately 10 seconds. Figure B-2 is an expanded portion of the data in Fig. B-1 as shown by the shaded area in the upper right corner. For high probability of track considerations this is the most important region for trade-off consideration.

b. (C) Azimuth line of sight rate versus azimuth line of sight acceleration. (Fig. B-4, B-5, AI coverage; Fig. B-6, Full sphere coverage).

In the case of the AI radar, a 25° /sec azimuth line of sight rate and a 25° /sec² azimuth line of sight acceleration capability provides a 0.97 probability of track while within gimbal limits. The average duration of track is 12 seconds.

(C) In the case of the full sphere coverage, the same values yields a 0.94 probability of track for an average duration of 38 seconds.

(U) In order to determine the requirements for a higher probability of track, it is necessary to refer to the data contained in the tables in this appendix.

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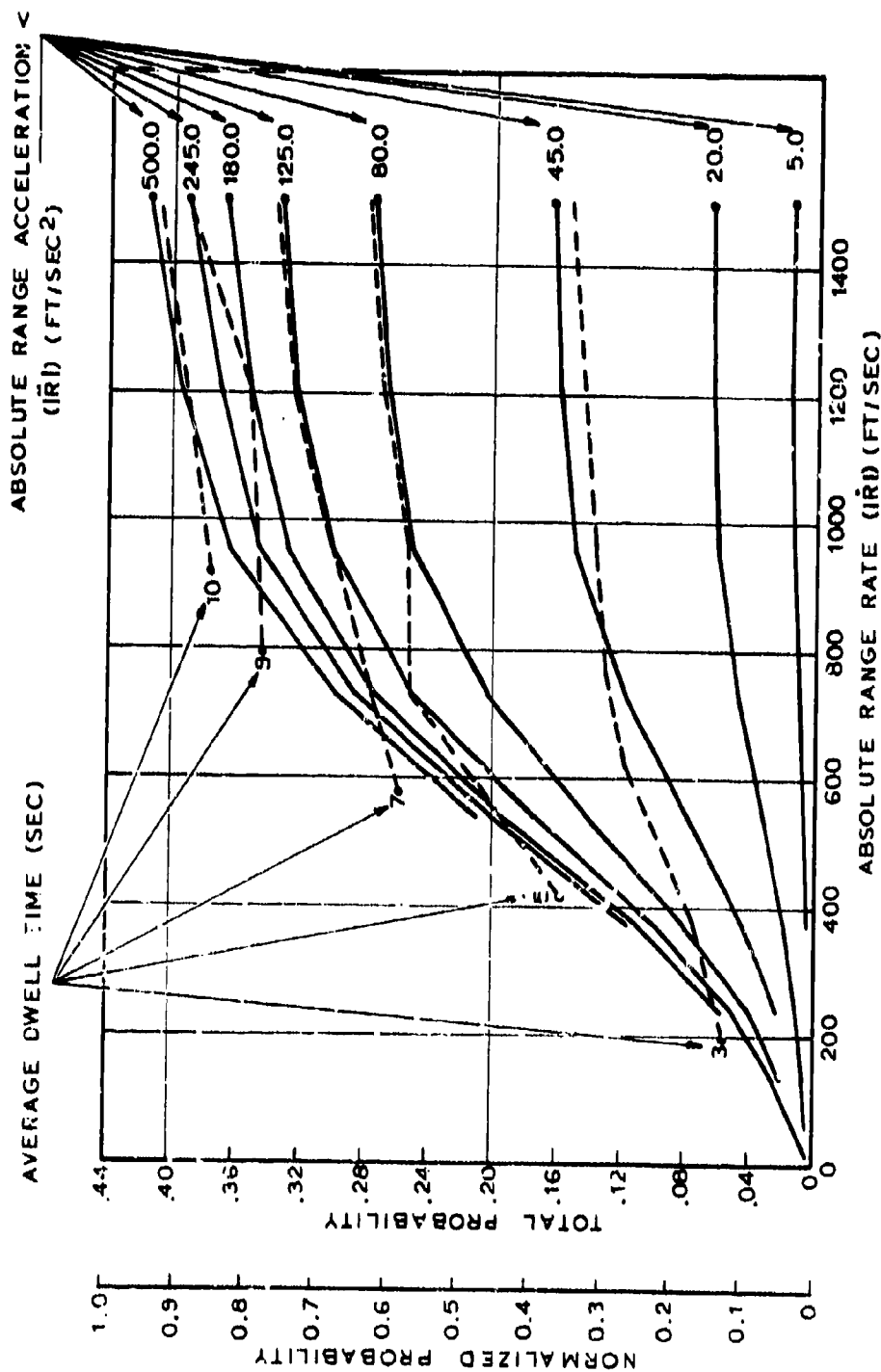


FIG. B-1 - CUMULATIVE PROBABILITY DISTRIBUTION OF ABSOLUTE RANGE RATE FOR SEVERAL ABSOLUTE RANGE ACCELERATIONS FOR AI RADAR COVERAGE AND MINIMUM RANGE = 225 FT

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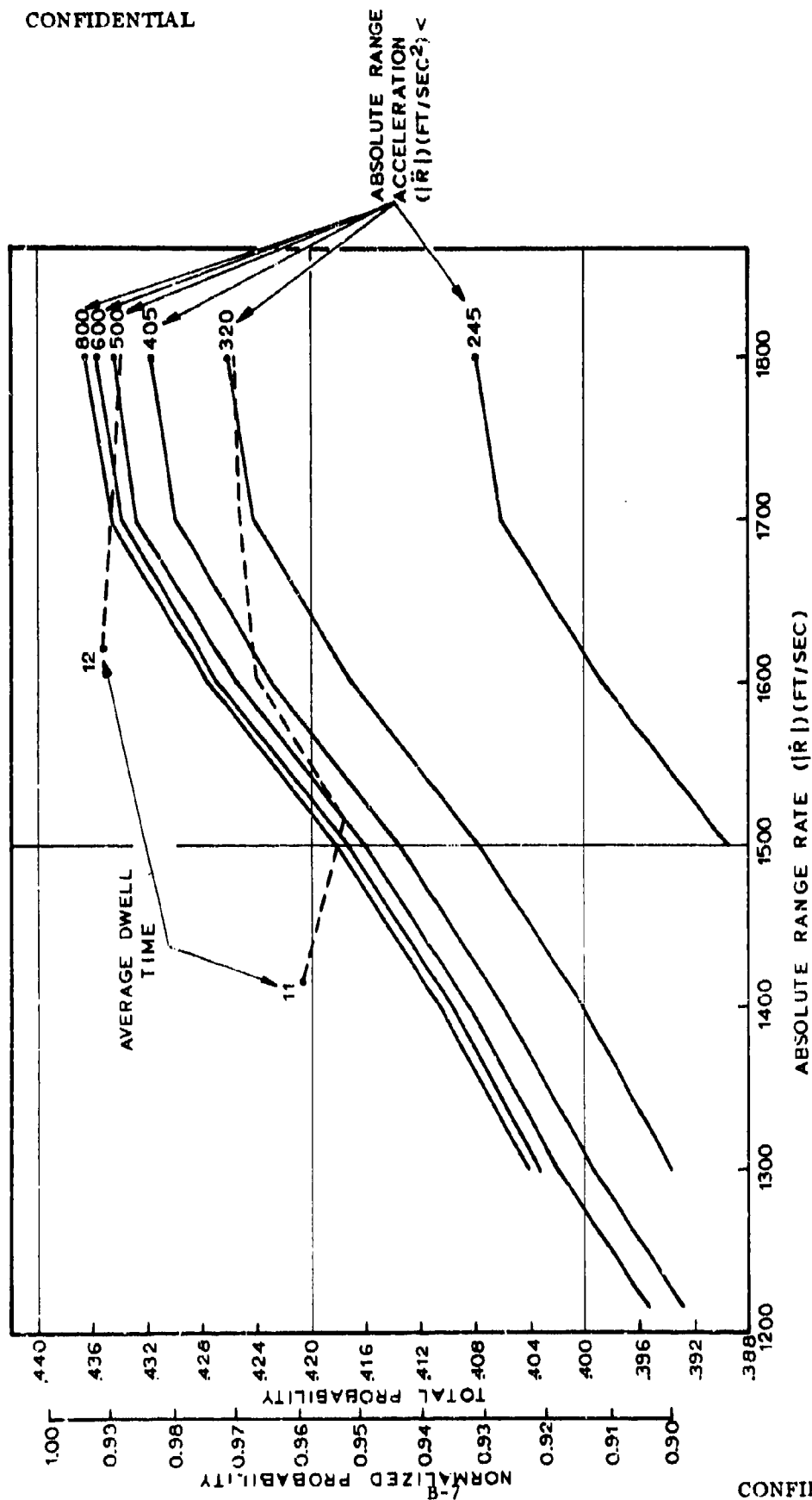


FIG. B-2 - CUMULATIVE PROBABILITY DISTRIBUTION OF RANGE RATE FOR SEVERAL VALUES OF RANGE ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE - 225 FT

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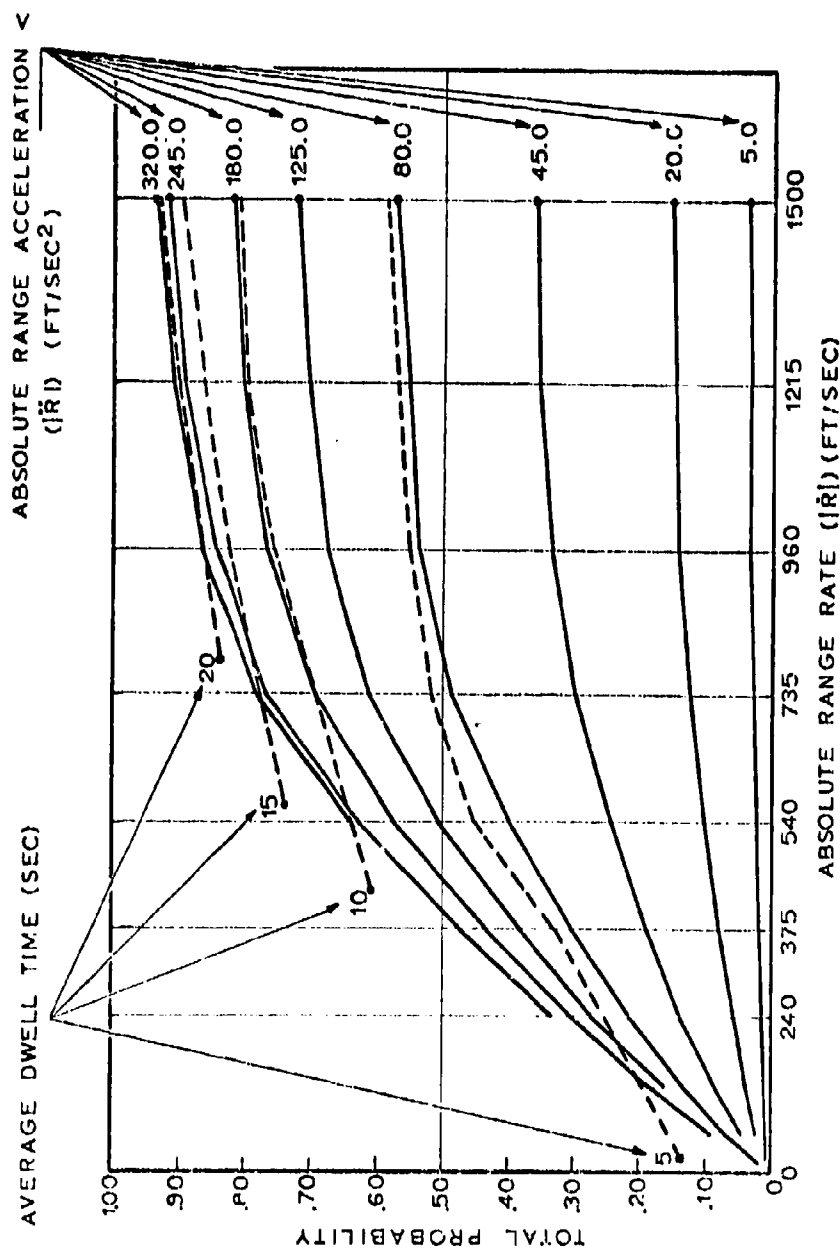


FIG.B-3 - CUMULATIVE PROBABILITY DISTRIBUTION OF ABSOLUTE RANGE RATE FOR SEVERAL ABSOLUTE RANGE ACCELERATION LIMITS FOR TOTAL SPHERE COVERAGE AND MINIMUM RANGE = 225 FT

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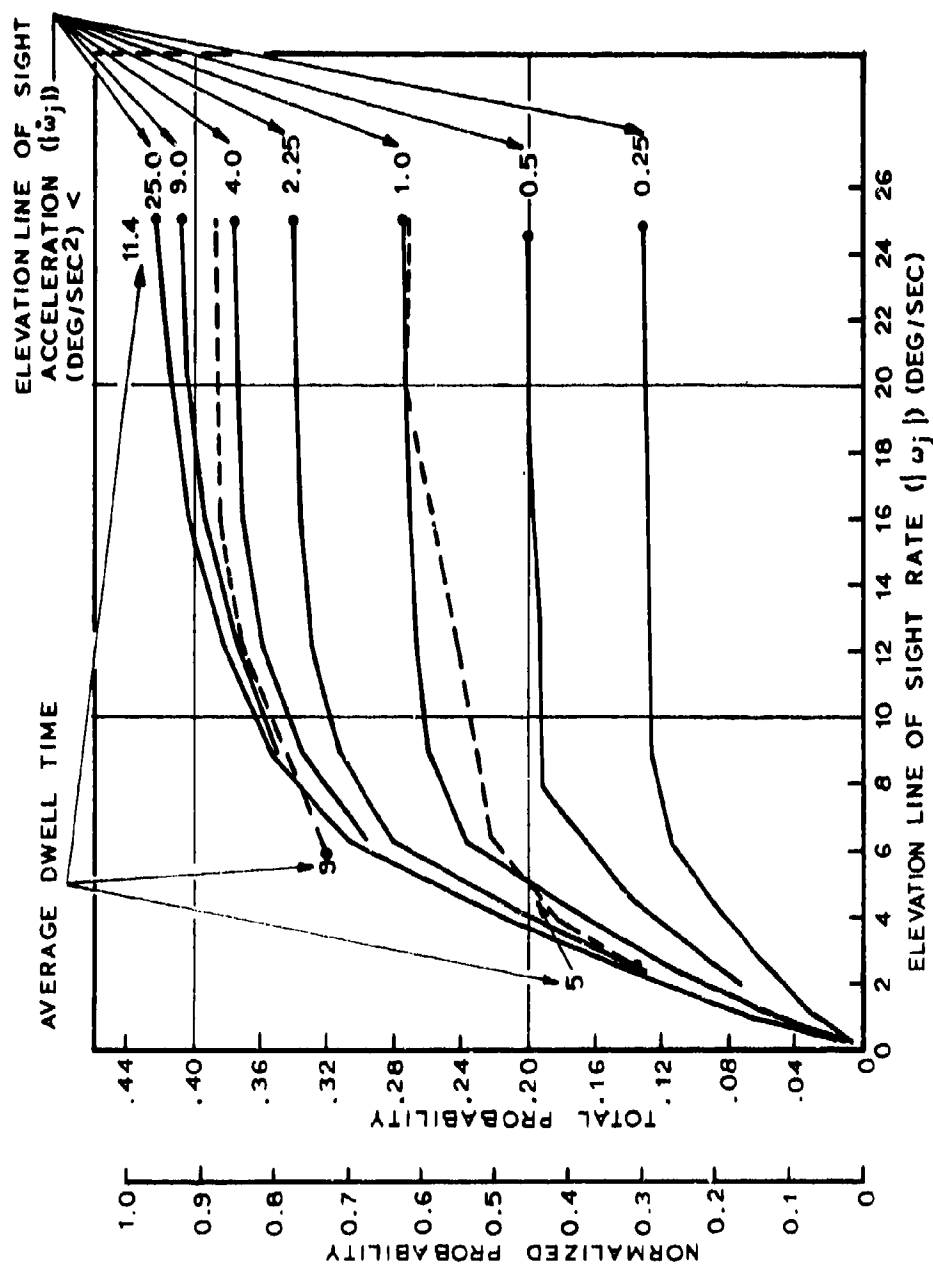


FIG. B-4- CUMULATIVE PROBABILITY DISTRIBUTION OF ELEVATION LINE OF SIGHT RATE FOR SEVERAL VALUES OF ELEVATION LINE OF SIGHT ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE = 225 FT

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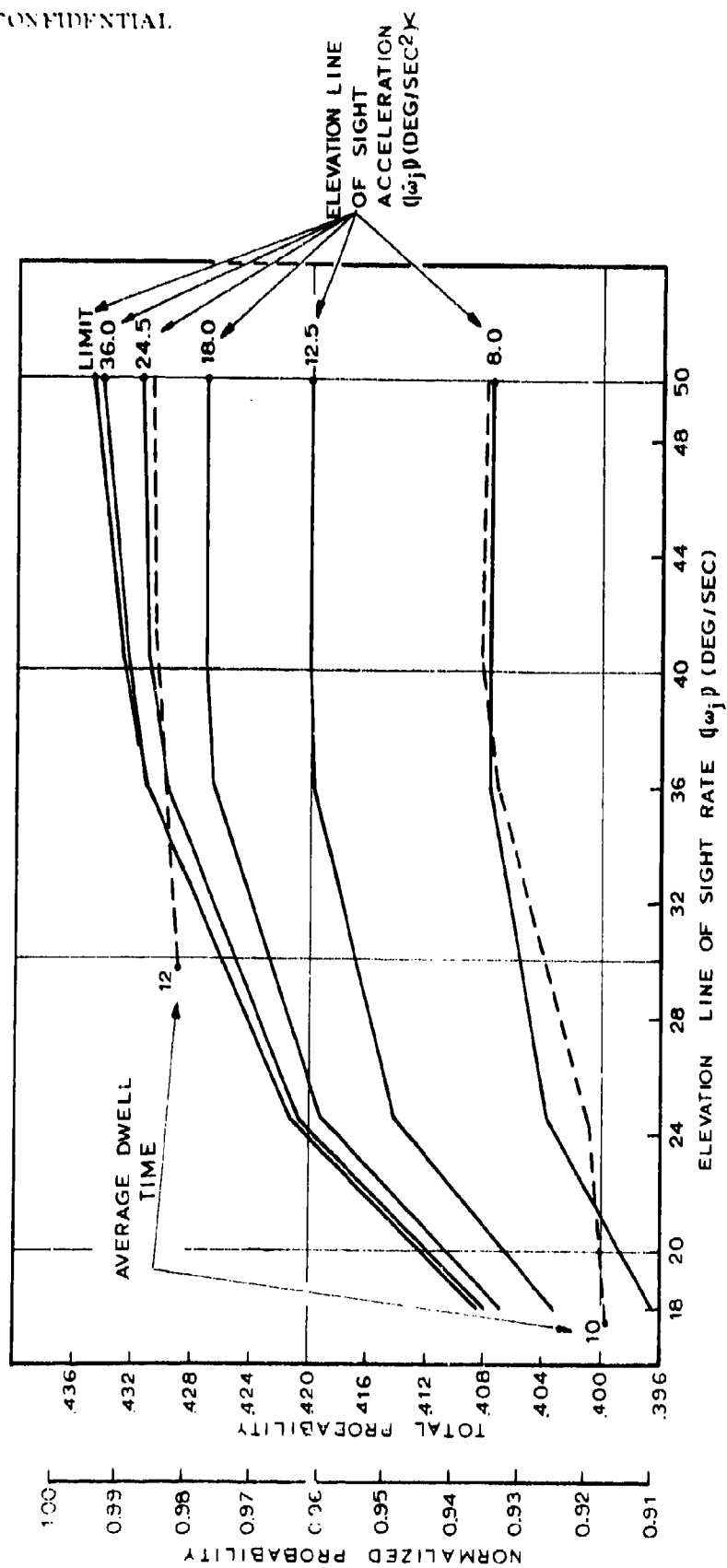


FIG. B-5 - CUMULATIVE PROBABILITY DISTRIBUTION OF ELEVATION LINE OF SIGHT RATE FOR SEVERAL VALUES OF ELEVATION LINE OF SIGHT ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE - 225 FT

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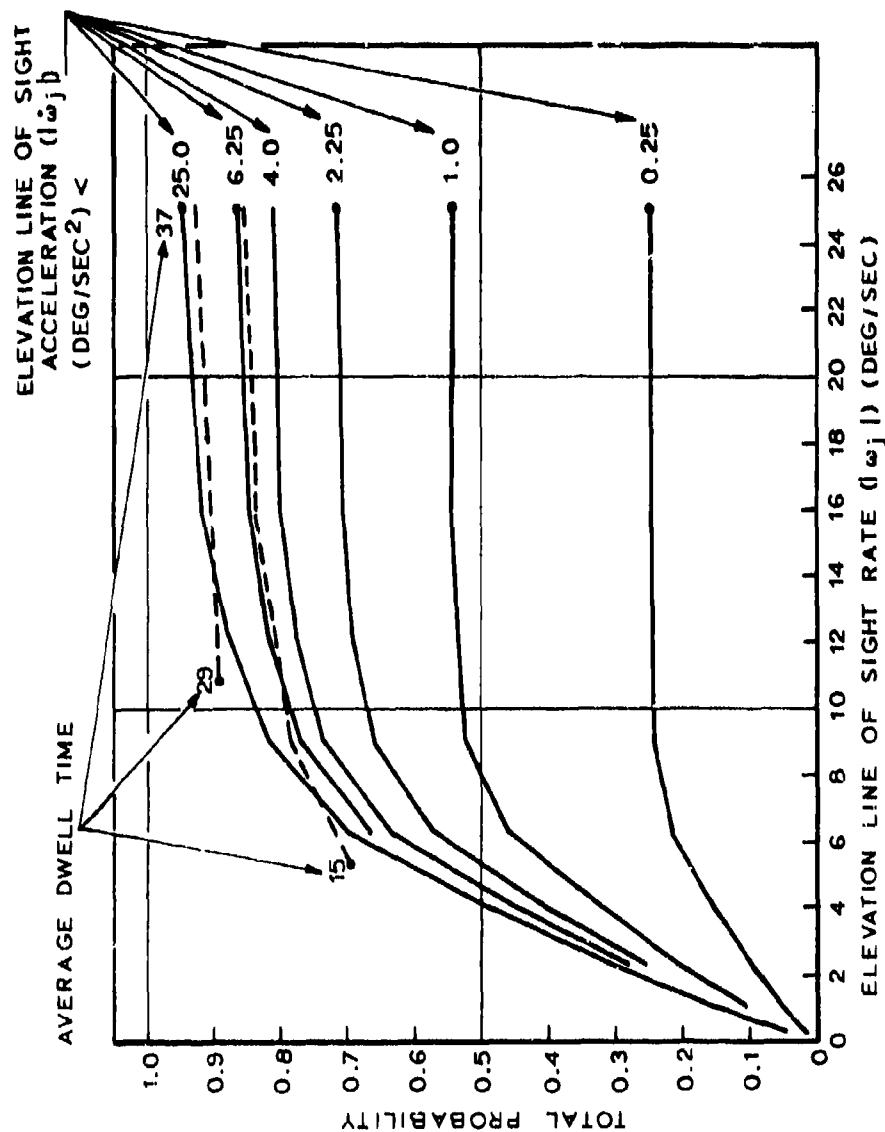


FIG.B-6 - CUMULATIVE PROBABILITY DISTRIBUTION OF ELEVATION
LINE OF SIGHT RATE FOR SEVERAL VALUES OF ELEVATION
LINE OF SIGHT ACCELERATION FOR FULL SPHERE
COVERAGE AND MINIMUM RANGE = 225 FT

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c. (C) Elevation line of sight rate versus elevation line of sight acceleration. (Fig. B-7, B-8, AI coverage; Fig. B-9 Full sphere coverage.)

(C) In the case of the AI radar coverage, $25^\circ/\text{sec}$ elevation line of sight rate and $25^\circ/\text{sec}^2$ elevation line of sight acceleration yields a 0.95 probability of track with an average duration of track of 11 seconds.

(C) In the case of the full sphere coverage, the same values yield again a 0.95 probability of track with now an average duration of track of 37 seconds.

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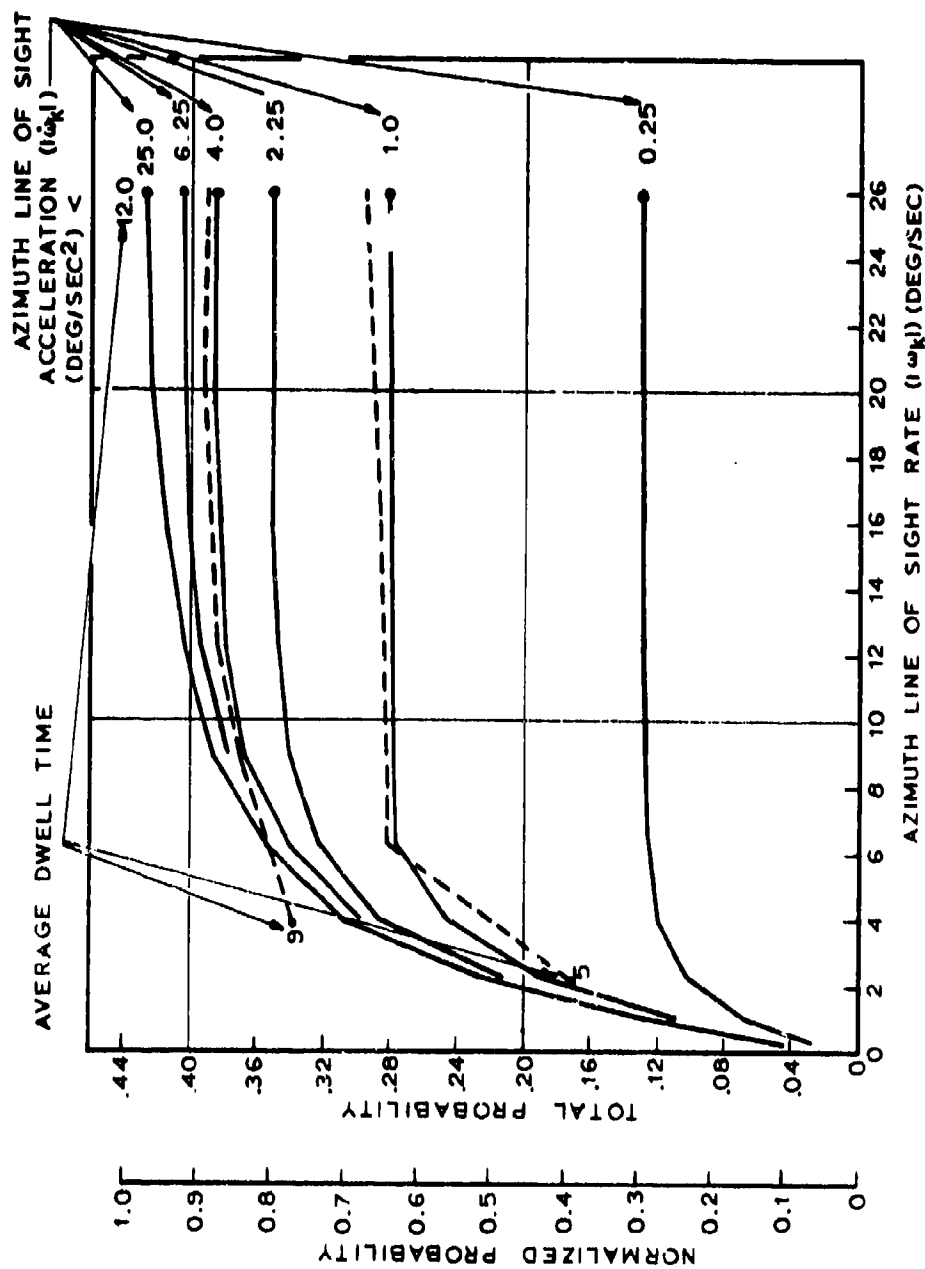


FIG. B-7 - CUMULATIVE PROBABILITY DISTRIBUTION OF AZIMUTH LINE OF SIGHT RATE FOR SEVERAL VALUES OF AZIMUTH LINE OF SIGHT ACCELERATIONS FOR AI RADAR COVERAGE AND MINIMUM RANGE = 225 FT

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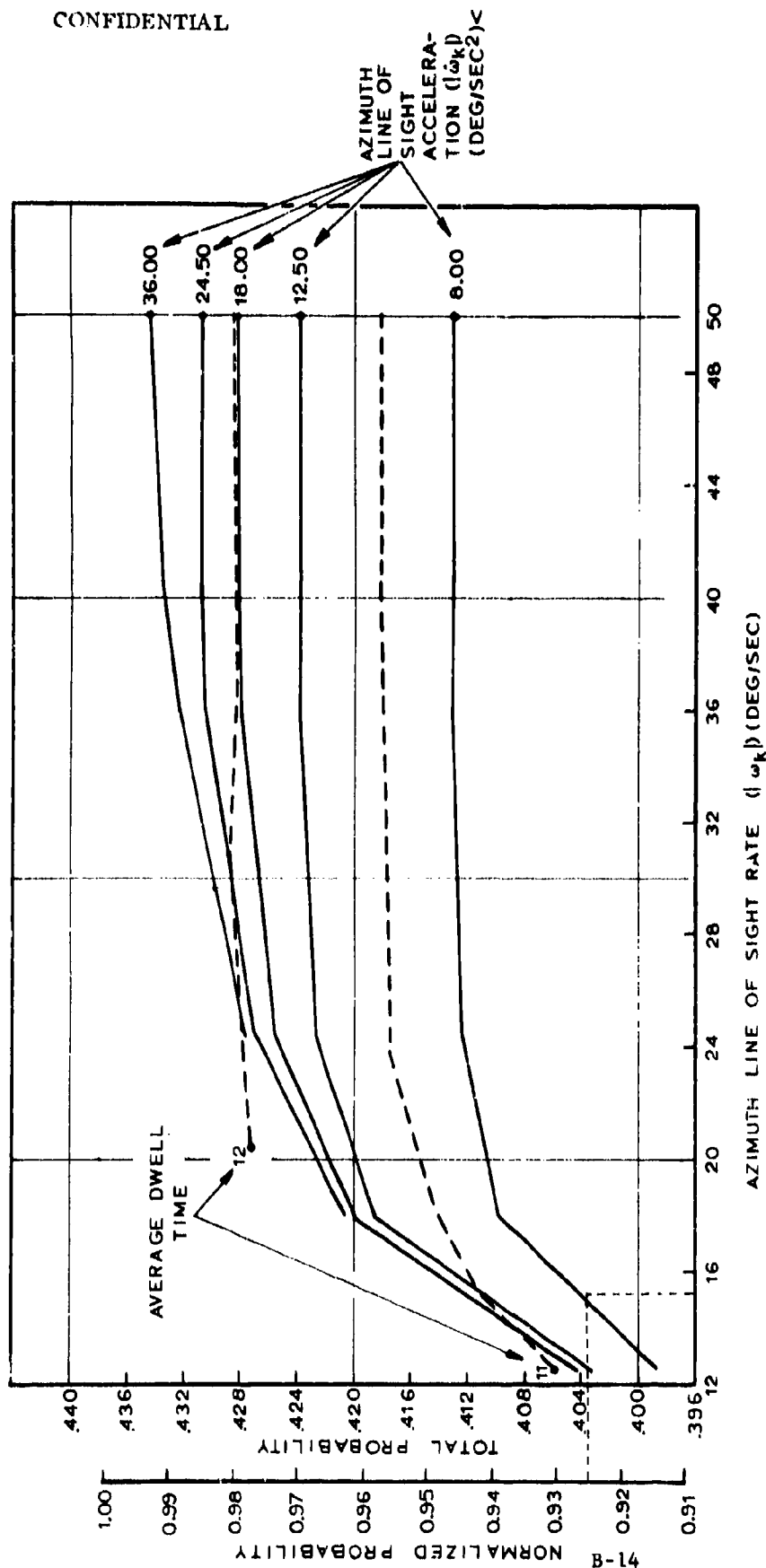


FIG. B-8 - CUMULATIVE PROBABILITY DISTRIBUTION OF AZIMUTH LINE OF SIGHT RATE FOR SEVERAL VALUES OF AZIMUTH LINE OF SIGHT ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE - 225 FT

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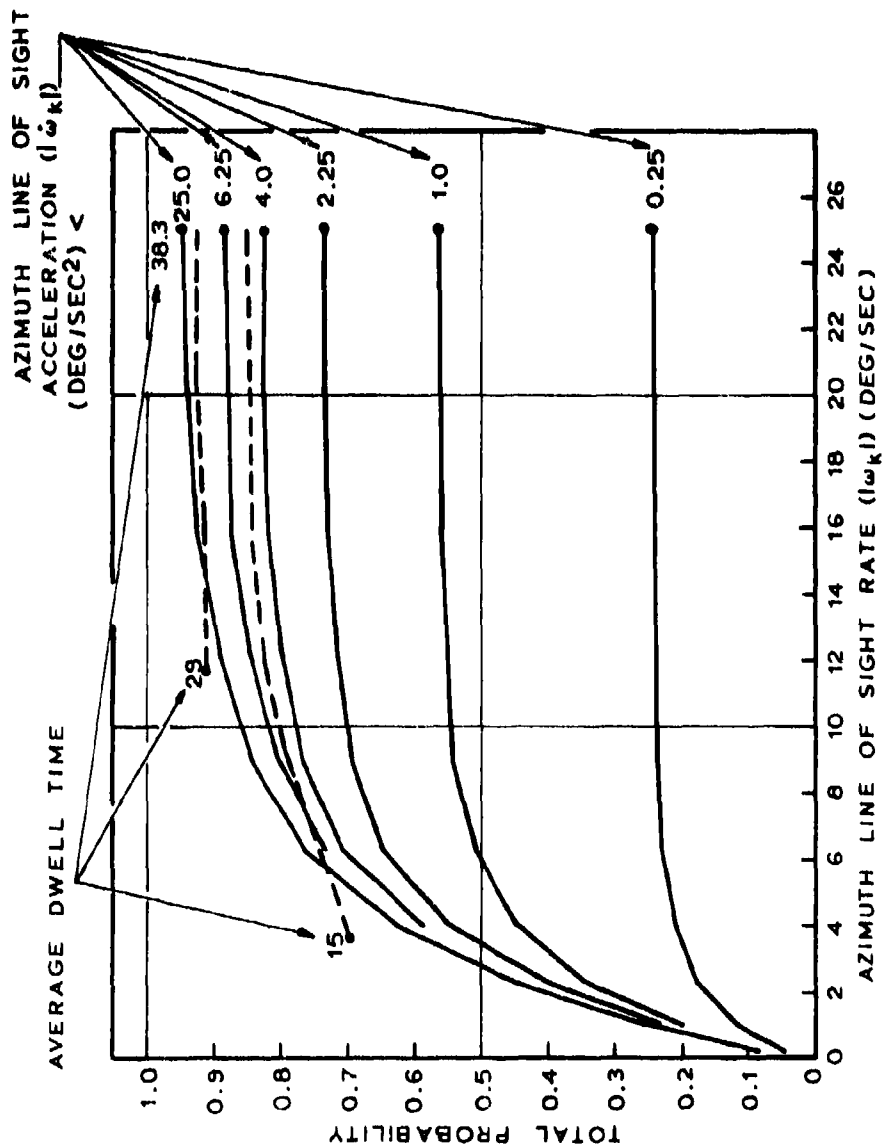


FIG. B-9 - CUMULATIVE PROBABILITY DISTRIBUTION OF AZIMUTH LINE OF SIGHT RATE FOR SEVERAL VALUES OF AZIMUTH LINE OF SIGHT ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE = 225 FT

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3. Tracking Requirements Interaction Data Tables

Tables for tracking requirements interactions

a. Range track

- i. Nose section (AI radar coverage) - Table B-1
- ii. Tail sector - Table B-2
- iii. Full sphere - Table B-3

b. Azimuth angle track

- i. Nose sector (AI radar coverage) - Table B-4
- ii. Tail Sector - Table B-5
- iii. Full sphere - Table B-6

c. Elevation angle track

- i. Nose sector - (AI radar coverage) - Table B-7
- ii. Tail sector - Table B-8
- iii. Full sphere - Table B-9

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TABLE B-1

Y PARAMETER AND/OR		PARAMETER INTERACTION OFF NOSE SUBJECT TO CONDITIONS RMIN = 225,00 LANDAR = 60,00										X PARAMETER AND VC	
		TAPE NO. 1											
		1300.00	1400.00	1500.00	1600.00	1700.00	1800.00	1900.00	2000.00	2100.00	2200.00	LIMIT	
180.00	NE	437	467	482	510	516	512	512	512	512	512	312	312
	PCY	33.22	35.63	34.14	35.04	35.75	35.94	36.00	36.00	36.00	36.00	36.00	36.00
	DT	9.11	9.02	8.88	8.88	8.68	8.75	8.81	8.81	8.81	8.81	8.81	8.81
	STD	7.68	7.67	7.70	7.63	7.50	7.46	7.45	7.45	7.45	7.45	7.45	7.45
245.00	NE	432	472	500	510	493	487	486	486	486	486	486	486
	PCY	34.50	35.47	36.23	37.10	37.88	38.06	38.12	38.12	38.12	38.12	38.12	38.12
	DT	9.17	9.42	9.08	9.13	9.63	9.79	9.83	9.83	9.83	9.83	9.83	9.83
	STD	8.67	8.83	8.81	8.71	8.58	8.54	8.54	8.54	8.54	8.54	8.54	8.54
320.00	NE	467	472	479	483	444	458	457	457	457	457	457	457
	PCY	35.27	36.92	37.68	38.61	39.33	39.51	39.58	39.58	39.58	39.58	39.58	39.58
	DT	9.73	9.80	9.84	10.02	10.42	10.61	10.85	10.85	10.85	10.85	10.85	10.85
	STD	9.34	9.28	9.27	9.18	9.04	9.00	8.99	8.99	8.99	8.99	8.99	8.99
405.00	NE	452	454	461	463	444	438	437	437	437	437	437	437
	PCY	36.68	37.33	38.08	39.02	39.74	39.92	39.98	39.98	39.98	39.98	39.98	39.98
	DT	10.17	10.30	10.33	10.56	11.21	11.42	11.46	11.46	11.46	11.46	11.46	11.46
	STD	9.62	9.55	9.54	9.43	9.28	9.22	9.22	9.22	9.22	9.22	9.22	9.22
500.00	NE	447	448	454	454	434	428	427	427	427	427	427	427
	PCY	36.52	37.57	38.32	39.28	39.98	40.16	40.22	40.22	40.22	40.22	40.22	40.22
	DT	10.25	10.51	10.58	10.83	11.34	11.76	11.80	11.80	11.80	11.80	11.80	11.80
	STD	9.85	9.78	9.77	9.66	9.49	9.43	9.42	9.42	9.42	9.42	9.42	9.42
600.00	NE	448	449	453	453	432	425	424	424	424	424	424	424
	PCY	37.05	37.69	38.45	39.39	40.10	40.29	40.35	40.35	40.35	40.35	40.35	40.35
	DT	10.28	10.52	10.64	10.89	11.43	11.88	11.92	11.92	11.92	11.92	11.92	11.92
	STD	9.96	9.87	9.86	9.79	9.57	9.51	9.50	9.50	9.50	9.50	9.50	9.50
700.00	NE	448	448	451	451	430	423	422	422	422	422	422	422
	PCY	37.09	37.73	38.49	39.43	40.14	40.33	40.39	40.39	40.39	40.39	40.39	40.39
	DT	10.27	10.55	10.69	10.99	11.70	11.95	11.99	11.99	11.99	11.99	11.99	11.99
	STD	9.99	9.92	9.90	9.79	9.62	9.55	9.54	9.54	9.54	9.54	9.54	9.54
800.00	NE	451	451	453	451	430	423	422	422	422	422	422	422
	PCY	37.13	37.78	38.54	39.47	40.19	40.38	40.44	40.44	40.44	40.44	40.44	40.44
	DT	10.22	10.50	10.66	10.97	11.71	11.96	12.01	12.01	12.01	12.01	12.01	12.01
	STD	9.98	9.91	9.90	9.79	9.61	9.55	9.54	9.54	9.54	9.54	9.54	9.54
900.00	NE	452	452	454	451	430	423	422	422	422	422	422	422
	PCY	37.17	37.81	38.57	39.51	40.22	40.41	40.47	40.47	40.47	40.47	40.47	40.47
	DT	10.20	10.48	10.65	10.98	11.72	11.97	12.02	12.02	12.02	12.02	12.02	12.02
	STD	9.98	9.91	9.90	9.78	9.61	9.55	9.54	9.54	9.54	9.54	9.54	9.54
1000.00	NE	452	452	454	451	430	423	422	422	422	422	422	422
	PCY	37.18	37.84	38.57	39.51	40.22	40.41	40.47	40.47	40.47	40.47	40.47	40.47
	DT	10.20	10.48	10.65	10.98	11.72	11.97	12.02	12.02	12.02	12.02	12.02	12.02
	STD	9.98	9.91	9.90	9.78	9.61	9.55	9.54	9.54	9.54	9.54	9.54	9.54
LIMIT	NE	453	452	454	451	420	422	421	421	421	421	421	421
	PCY	37.18	37.84	38.60	39.53	40.25	40.43	40.49	40.49	40.49	40.49	40.49	40.49
	DT	10.28	10.49	10.65	10.98	11.76	12.00	12.05	12.05	12.05	12.05	12.05	12.05
	STD	9.98	9.95	9.94	9.83	9.65	9.59	9.58	9.58	9.58	9.58	9.58	9.58
	AVG	81.04	82.18	82.98	82.96	82.53	82.45	82.44	82.44	82.44	82.44	82.44	82.44

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TABLE B-2

PARAMETER INTERACTION OFF TAIL
SUBJECT TO CONDITIONS $\mu_{\min} = 225.00$ $\lambda_{\max} = 60.00$

[illegible]

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TABLE B-3
PARAMETER INTERACTION 360 DEGS
SUBJECT TO CONDITIONS RMN = 225,00 LAMDA = 60,00

Y PARAMETER ADDED	1300.00	1400.00	1500.00	1600.00	1700.00	1800.00	1900.00	2000.00	2100.00	2200.00	X PARAMETER ABS VC
150.00	NE: PCT: DT: STD:	608 81.06 11.70 12.68	842 81.71 11.63 12.51	880 82.71 11.51 12.40	916 83.48 11.41 12.30	917 83.69 11.30 12.20	912 83.77 11.20 12.10	913 83.81 11.10 12.00	914 83.82 11.00 11.90	915 83.85 10.90 11.80	LIMIT 913 83.85 10.80 11.70
205.00	NE: PCT: DT: STD:	697 86.10 12.64 17.84	725 87.70 15.16 17.84	754 89.51 15.16 17.79	783 91.31 15.16 17.71	792 92.51 15.16 17.71	792 93.71 15.16 17.71	792 94.91 15.16 17.71	792 96.11 15.16 17.71	792 97.31 15.16 17.71	401.27 AVG 713 89.88 15.88 17.70
320.00	NE: PCT: DT: STD:	517 89.16 21.60 21.69	522 90.88 21.60 21.69	531 92.73 21.60 21.69	543 94.58 21.60 21.69	556 96.43 21.60 21.69	566 98.28 21.60 21.69	586 100.13 21.60 21.69	586 101.98 21.60 21.69	586 103.83 21.60 21.69	446.15 AVG 505 93.09 23.38 21.67
405.00	NE: PCT: DT: STD:	354 91.53 27.19 34.18	394 93.38 27.19 34.18	400 94.23 27.19 34.18	400 95.08 27.19 34.18	400 95.93 27.19 34.18	400 96.78 27.19 34.18	400 97.63 27.19 34.18	400 98.48 27.19 34.18	400 99.33 27.19 34.18	451.58 AVG 374 95.77 32.09 28.36
500.00	NE: PCT: DT: STD:	324 92.85 35.11 34.18	328 93.70 35.11 34.18	328 94.55 35.11 34.18	328 95.40 35.11 34.18	328 96.25 35.11 34.18	328 97.10 35.11 34.18	328 97.95 35.11 34.18	328 98.80 35.11 34.18	328 99.65 35.11 34.18	451.58 AVG 298 96.80 40.78 34.62
600.00	NE: PCT: DT: STD:	282 93.48 41.24 39.89	284 94.33 42.06 40.43	284 95.18 42.88 41.06	284 96.03 43.70 41.69	284 96.88 44.52 42.32	284 97.73 45.34 42.95	284 98.58 46.16 43.58	284 99.43 46.98 44.21	284 100.28 47.80 44.84	449.93 AVG 252 97.44 48.45 40.99
706.00	NE: PCT: DT: STD:	244 94.79 46.17 46.17	243 95.64 47.01 46.17	243 96.49 47.84 46.17	243 97.34 48.67 46.17	243 98.19 49.50 46.17	243 99.04 50.32 46.17	243 99.89 51.14 46.17	243 100.74 51.96 46.17	243 101.59 52.78 46.17	449.93 AVG 211 97.98 50.14 47.07
808.00	NE: PCT: DT: STD:	218 95.14 51.51 51.51	215 95.99 52.33 51.51	215 96.84 53.15 51.51	215 97.69 53.97 51.51	215 98.54 54.79 51.51	215 99.39 55.61 51.51	215 100.24 56.43 51.51	215 101.09 57.25 51.51	215 101.94 58.07 51.51	449.93 AVG 181 98.38 60.05 58.57
900.00	NE: PCT: DT: STD:	193 95.45 60.17 58.47	193 96.30 60.99 59.29	193 97.15 61.81 60.11	193 98.00 62.63 60.93	193 98.85 63.45 61.75	193 99.70 64.27 62.57	193 100.55 65.09 63.39	193 101.40 65.91 64.21	193 102.25 66.73 65.03	449.93 AVG 158 98.59 70.18 69.47
1008.00	NE: PCT: DT: STD:	126 94.73 63.81 60.21	122 95.58 64.63 61.03	122 96.43 65.45 61.85	122 97.28 66.27 62.67	122 98.13 67.09 63.49	122 98.98 67.91 64.31	122 99.83 68.73 65.13	122 100.68 69.55 65.95	122 101.53 70.37 66.77	449.93 AVG 145 98.74 70.32 77.99
LIMIT	NE: PCT: DT: STD:	114 95.81 105.21 75.51	101 96.66 106.03 76.31	87 97.51 106.85 77.11	73 98.36 107.67 77.91	59 99.21 108.49 78.71	45 100.06 109.31 79.51	31 100.91 110.13 80.31	17 101.76 110.95 81.11	3 102.61 111.77 81.91	449.93 AVG 11 99.92 113.18 798.41
	AVG:	117.29	118.11	118.92	119.44	119.86	120.28	120.70	121.12	121.54	119.44

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TABLE B-4
PARAMETER INTERACTION OFF NOSE
SUBJECT TO CONDITIONS RMIN = 225.00 LAMDA = 60.00

Y PARAMETER INDEP	TAPE NO.										X PARAMETER ANKF	
	5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	LIMIT	
5.00 NO.	468	488	506	513	516	517	517	517	517	517	517	
PCT.	29.82	34.85	36.15	36.49	36.54	36.57	36.57	36.57	36.57	36.57	36.57	
DT.	7.99	8.95	8.95	8.91	8.97	8.86	8.86	8.86	8.86	8.86	8.86	
STD.	8.41	8.51	8.45	8.44	8.44	8.43	8.43	8.43	8.43	8.43	8.43	
10.00 NO.	467	451	450	448	451	450	450	450	450	452	452	
PCT.	30.33	35.95	37.70	38.44	38.61	38.67	38.67	38.67	38.67	38.68	38.68	
DT.	8.14	9.99	10.50	10.75	10.73	10.77	10.77	10.77	10.77	10.72	10.72	
STD.	8.52	9.87	9.11	9.15	9.16	9.15	9.15	9.15	9.15	9.15	9.15	
15.00 NO.	476	449	438	435	434	433	433	433	433	435	435	
PCT.	30.45	36.12	38.00	38.91	39.18	39.27	39.29	39.29	39.29	39.31	39.31	
DT.	8.02	10.08	10.67	11.21	11.31	11.36	11.37	11.37	11.37	11.32	11.32	
STD.	8.49	9.08	9.25	9.29	9.31	9.38	9.38	9.38	9.38	9.38	9.38	
20.00 NO.	478	448	435	429	427	425	425	425	425	426	426	
PCT.	30.47	36.16	38.06	39.06	39.39	39.56	39.60	39.62	39.63	39.65	39.65	
DT.	7.99	10.11	10.96	11.41	11.56	11.66	11.68	11.68	11.68	11.66	11.66	
STD.	8.49	9.12	9.35	9.45	9.51	9.58	9.58	9.58	9.58	9.58	9.58	
25.00 NO.	478	449	436	429	426	424	424	424	424	425	425	
PCT.	30.48	36.18	38.10	39.10	39.50	39.73	39.81	39.86	39.86	39.88	39.88	
DT.	7.99	10.10	10.95	11.42	11.62	11.74	11.76	11.78	11.78	11.76	11.76	
STD.	8.49	9.11	9.35	9.45	9.50	9.57	9.57	9.57	9.57	9.57	9.57	
30.00 NO.	478	450	437	430	426	424	424	423	423	424	423	
PCT.	30.48	36.19	38.11	39.11	39.53	39.78	39.90	39.98	40.01	40.04	40.06	
DT.	7.99	10.08	10.93	11.40	11.63	11.75	11.79	11.84	11.85	11.83	11.87	
STD.	8.49	9.11	9.35	9.45	9.50	9.57	9.57	9.57	9.56	9.58	9.58	
35.00 NO.	478	450	437	430	426	424	424	423	422	423	422	
PCT.	30.48	36.19	38.12	39.12	39.54	39.78	39.94	40.04	40.11	40.15	40.18	
DT.	7.99	10.08	10.93	11.40	11.63	11.76	11.80	11.86	11.91	11.91	11.93	
STD.	8.49	9.11	9.35	9.45	9.50	9.57	9.56	9.57	9.58	9.58	9.59	
40.00 NO.	479	451	438	432	427	425	425	423	422	423	422	
PCT.	30.49	36.20	38.12	39.15	39.56	39.81	39.96	40.08	40.16	40.20	40.24	
DT.	7.97	10.06	10.91	11.35	11.61	11.74	11.78	11.87	11.92	11.91	11.95	
STD.	8.48	9.11	9.35	9.45	9.50	9.58	9.57	9.57	9.58	9.58	9.58	
45.00 NO.	479	451	438	432	427	424	424	422	421	422	421	
PCT.	30.49	36.20	38.12	39.15	39.56	39.82	39.98	40.10	40.18	40.23	40.27	
DT.	7.97	10.06	10.91	11.35	11.61	11.77	11.81	11.91	11.96	11.95	12.00	
STD.	8.48	9.11	9.35	9.45	9.50	9.57	9.57	9.56	9.58	9.58	9.58	
50.00 NO.	479	451	438	432	427	424	424	422	421	422	421	
PCT.	30.49	36.20	38.12	39.15	39.56	39.82	39.98	40.10	40.18	40.24	40.28	
DT.	7.97	10.06	10.91	11.35	11.61	11.77	11.81	11.91	11.96	11.95	12.01	
STD.	8.48	9.11	9.35	9.45	9.50	9.57	9.57	9.56	9.58	9.58	9.58	
LIMIT	479	451	438	432	427	424	424	422	421	422	421	
PCT.	30.49	36.20	38.12	39.15	39.56	39.82	39.98	40.10	40.19	40.25	40.29	
DT.	7.97	10.06	10.91	11.35	11.61	11.77	11.81	11.91	11.96	11.95	12.05	
STD.	8.48	9.11	9.35	9.45	9.50	9.57	9.57	9.56	9.58	9.58	9.58	
AVG.	0.85	1.11	1.28	1.46	1.58	1.68	1.77	1.84	1.92	1.95	2.31	

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TABLE B-5

PARAMETER INTERACTION OFF TAIL
SUBJECT TO CONDITIONS RMN = 225.00 LAMDA = 60.00

Y PARAMETER ANWDF	TAPE NO. 1										X PARAMETER ANWDF	
	5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	LIMIT	
5.00 NO.	364	387	397	402	405	405	405	405	405	405	405	
PCT.	16.96	19.39	19.73	19.84	19.84	19.86	19.86	19.86	19.86	19.86	19.86	
DT.	5.84	6.28	6.23	6.18	6.15	6.15	6.15	6.15	6.15	6.15	6.15	
STD.	6.67	6.66	6.63	6.62	6.61	6.61	6.61	6.61	6.61	6.61	6.61	
10.00 NO.	359	345	351	352	353	356	356	356	356	356	356	2.68 AVG
PCT.	17.81	20.86	21.37	21.49	21.51	21.53	21.53	21.53	21.53	21.53	21.53	
DT.	6.21	7.58	7.63	7.65	7.63	7.58	7.58	7.58	7.58	7.58	7.58	
STD.	6.74	7.43	7.43	7.44	7.43	7.43	7.43	7.43	7.43	7.43	7.43	2.90 AVG
15.00 NO.	361	343	349	349	350	353	353	353	353	353	353	
PCT.	17.95	21.16	21.76	21.88	21.90	21.92	21.92	21.92	21.92	21.92	21.92	
DT.	6.23	7.73	7.81	7.84	7.84	7.78	7.78	7.78	7.78	7.78	7.78	
STD.	6.73	7.47	7.47	7.48	7.48	7.47	7.47	7.47	7.47	7.47	7.47	2.97 AVG
20.00 NO.	362	344	348	348	348	350	350	350	350	350	350	
PCT.	18.00	21.31	21.97	22.12	22.15	22.17	22.18	22.18	22.18	22.18	22.18	
DT.	6.23	7.76	7.91	7.97	7.97	7.94	7.94	7.94	7.94	7.94	7.94	
STD.	6.74	7.48	7.49	7.50	7.51	7.50	7.50	7.50	7.50	7.50	7.50	3.05 AVG
25.00 NO.	362	344	348	348	348	348	348	348	348	348	348	
PCT.	18.04	21.40	22.12	22.27	22.30	22.33	22.34	22.34	22.34	22.34	22.34	
DT.	6.25	7.80	7.97	8.02	8.03	8.04	8.04	8.04	8.04	8.04	8.04	
STD.	6.74	7.48	7.48	7.49	7.50	7.50	7.50	7.50	7.50	7.50	7.50	3.09 AVG
30.00 NO.	362	344	347	347	347	347	347	347	347	347	347	
PCT.	18.06	21.45	22.20	22.34	22.41	22.44	22.45	22.45	22.45	22.45	22.45	
DT.	6.25	7.81	8.02	8.08	8.09	8.10	8.11	8.11	8.11	8.11	8.11	
STD.	6.73	7.48	7.55	7.55	7.56	7.56	7.56	7.56	7.56	7.56	7.56	3.13 AVG
35.00 NO.	362	344	348	348	348	348	348	348	348	348	348	
PCT.	18.08	21.46	22.23	22.41	22.44	22.47	22.48	22.48	22.48	22.48	22.48	
DT.	6.25	7.82	8.01	8.07	8.08	8.09	8.09	8.09	8.09	8.09	8.09	
STD.	6.73	7.48	7.54	7.55	7.56	7.56	7.55	7.55	7.55	7.55	7.55	3.14 AVG
40.00 NO.	362	344	349	349	349	349	349	349	349	349	349	
PCT.	18.08	21.49	22.27	22.45	22.48	22.51	22.52	22.52	22.52	22.52	22.52	
DT.	6.26	7.83	8.00	8.06	8.07	8.08	8.09	8.09	8.09	8.09	8.09	
STD.	6.74	7.49	7.55	7.55	7.56	7.56	7.56	7.56	7.56	7.56	7.56	3.14 AVG
45.00 NO.	362	344	349	349	349	349	349	349	349	349	349	
PCT.	18.08	21.50	22.29	22.47	22.50	22.54	22.55	22.55	22.55	22.55	22.55	
DT.	6.26	7.83	8.00	8.07	8.08	8.09	8.10	8.10	8.10	8.10	8.10	
STD.	6.74	7.49	7.55	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	3.17 AVG
50.00 NO.	362	344	349	349	349	349	349	349	349	349	349	
PCT.	18.09	21.53	22.33	22.51	22.55	22.59	22.60	22.60	22.60	22.60	22.60	
DT.	6.26	7.84	8.02	8.08	8.09	8.11	8.11	8.11	8.11	8.11	8.11	
STD.	6.74	7.49	7.55	7.56	7.57	7.56	7.56	7.56	7.56	7.56	7.56	3.18 AVG
LIMIT	362	344	349	349	349	349	349	349	349	349	349	
PCT.	18.13	21.62	22.44	22.65	22.68	22.73	22.75	22.75	22.75	22.75	22.75	
DT.	6.28	7.88	8.06	8.13	8.14	8.16	8.17	8.17	8.17	8.17	8.17	
STD.	6.74	7.48	7.54	7.55	7.56	7.55	7.55	7.55	7.55	7.55	7.55	3.28 AVG
AVG.	1.75	2.43	2.78	2.96	2.98	3.03	3.05	3.05	3.05	3.05	3.05	3.12

CONFIDENTIAL

TABLE B-6

PARAMETER INTERACTION 360 DEGS
SUBJECT TO CONDITIONS RMH = 225.00 LAMDA = 60.00

Y PARAMETER ANKDF		X PARAMETER ANKF									
		TAPES NO. 1									
		5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
		NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
		749	717	730	735	757	766	772	778	782	785
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		66.37	80.38	84.30	85.35	85.65	85.79	85.84	85.89	85.92	85.95
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.10	14.05	14.47	14.45	14.18	13.93	13.83	13.77	13.72	13.72
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.18	15.22	15.86	15.98	15.92	15.94	15.92	15.90	15.89	15.88
		722	497	458	436	440	441	447	454	458	466
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		68.72	84.57	89.43	91.18	91.75	92.89	92.21	92.27	92.30	92.36
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.93	21.32	26.47	26.20	26.13	26.17	25.85	25.46	25.25	24.68
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.79	19.81	22.54	24.59	25.36	26.77	26.76	26.73	26.67	26.65
		742	475	410	375	362	356	357	363	369	377
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.20	85.48	90.69	92.77	93.50	93.97	94.17	94.24	94.30	94.40
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.69	22.55	27.71	31.08	32.36	33.08	33.05	32.53	32.02	31.13
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.72	20.25	24.17	27.70	31.03	33.54	33.66	33.83	33.79	33.72
		748	474	398	347	328	313	301	301	305	313
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.35	85.86	91.25	93.53	94.41	95.00	95.28	95.43	95.54	95.66
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.82	22.70	28.73	33.77	36.06	38.03	39.66	39.73	39.12	38.29
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.70	20.30	24.96	28.85	33.04	36.45	37.54	38.23	38.31	38.47
		751	477	392	334	311	276	259	256	260	260
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.45	86.99	91.65	93.94	94.94	95.65	95.99	96.19	96.30	96.44
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.59	22.61	28.30	35.24	38.25	43.42	46.44	47.88	46.41	45.14
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.69	20.32	25.06	29.05	34.38	46.17	48.35	49.52	49.65	50.11
		751	479	391	326	299	263	239	229	226	217
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.48	86.21	91.85	94.25	95.27	96.01	96.42	96.68	96.84	97.02
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.59	22.55	29.43	36.22	39.92	45.74	50.55	52.90	53.69	54.61
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.69	20.33	25.20	29.49	35.48	48.56	51.97	53.93	55.06	56.73
		752	480	393	323	296	259	234	220	206	192
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.51	86.26	92.00	94.41	95.45	96.19	96.67	96.99	97.21	97.39
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.58	22.52	29.33	36.62	40.41	46.54	51.76	55.24	59.13	63.56
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.69	20.34	25.22	29.42	35.50	49.38	53.00	55.31	58.31	62.37
		753	483	395	324	293	253	228	211	195	178
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.54	86.34	92.10	94.56	95.62	96.38	96.86	97.20	97.42	97.61
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.57	22.50	29.22	36.47	40.89	47.73	53.23	57.72	62.60	68.71
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.69	20.35	25.24	29.45	36.03	51.43	55.82	58.72	62.25	68.41
		753	483	395	324	290	248	221	202	185	168
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.55	86.37	92.15	94.67	95.75	96.54	97.06	97.40	97.63	97.85
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.57	22.41	29.23	36.41	41.37	48.78	55.81	60.42	66.12	74.76
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.69	20.36	25.24	29.45	36.12	52.85	57.60	61.49	65.29	74.78
		755	484	395	324	290	245	217	196	179	156
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.59	86.46	92.27	94.82	95.95	96.75	97.26	97.62	97.86	98.09
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.55	22.38	29.27	36.47	41.46	49.48	56.14	62.44	68.50	78.79
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.68	20.37	25.24	29.44	36.12	53.26	58.24	63.25	68.03	78.71
		757	484	395	324	290	245	215	191	171	145
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.76	86.74	92.68	95.49	96.57	97.41	97.93	98.32	98.58	98.83
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.55	22.45	29.40	36.80	41.72	49.62	57.07	64.50	72.23	85.41
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.68	20.38	25.24	29.41	36.09	51.72	58.34	64.48	71.29	83.97
		757	484	395	324	290	245	215	191	171	145
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.76	86.74	92.68	95.49	96.57	97.41	97.93	98.32	98.58	98.83
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.55	22.45	29.40	36.80	41.72	49.62	57.07	64.50	72.23	85.41
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.68	20.38	25.24	29.41	36.09	51.72	58.34	64.48	71.29	83.97
		757	484	395	324	290	245	215	191	171	145
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.76	86.74	92.68	95.49	96.57	97.41	97.93	98.32	98.58	98.83
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.55	22.45	29.40	36.80	41.72	49.62	57.07	64.50	72.23	85.41
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.68	20.38	25.24	29.41	36.09	51.72	58.34	64.48	71.29	83.97
		757	484	395	324	290	245	215	191	171	145
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.76	86.74	92.68	95.49	96.57	97.41	97.93	98.32	98.58	98.83
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.55	22.45	29.40	36.80	41.72	49.62	57.07	64.50	72.23	85.41
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.68	20.38	25.24	29.41	36.09	51.72	58.34	64.48	71.29	83.97
		757	484	395	324	290	245	215	191	171	145
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.76	86.74	92.68	95.49	96.57	97.41	97.93	98.32	98.58	98.83
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.55	22.45	29.40	36.80	41.72	49.62	57.07	64.50	72.23	85.41
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.68	20.38	25.24	29.41	36.09	51.72	58.34	64.48	71.29	83.97
		757	484	395	324	290	245	215	191	171	145
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.76	86.74	92.68	95.49	96.57	97.41	97.93	98.32	98.58	98.83
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.55	22.45	29.40	36.80	41.72	49.62	57.07	64.50	72.23	85.41
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.68	20.38	25.24	29.41	36.09	51.72	58.34	64.48	71.29	83.97
		757	484	395	324	290	245	215	191	171	145
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.76	86.74	92.68	95.49	96.57	97.41	97.93	98.32	98.58	98.83
		NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.	NT.
		11.55	22.45	29.40	36.80	41.72	49.62	57.07	64.50	72.23	85.41
		STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.	STN.
		13.68	20.38	25.24	29.41	36.09	51.72	58.34	64.48	71.29	83.97
		757	484	395	324	290	245	215	191	171	145
		PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.	PCT.
		69.76	86.74	92.68	95.49	96.57	97.41	97.93	98.32	98.58	98.83

TABLE B-7

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TABLE B-8

PARAMETER ANJF		PARAMETER INTERACTION OFF TAIL										PARAMETER ANJF	
		SUBJECT TO CONDITIONS RHIN = 225.00 LANDA = 60.00											
		TAPE NO.											
		30											
		15.00											
		20.00											
		25.00											
		35.00											
		40.00											
		45.00											
		50.00											
		55.00											
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		65.00											
		70.00											
		75.00											
		80.00											
		85.00											
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		225.00											
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		415.00											
		420.00											
		425.00											
		430.00											
		435.00											
		440.00											
		445.00											
		450.00											
		455.00											
		460.00											
		465.00											
		470.00											
		475.00											
		480.00											
		485.00											
		490.00											
		495.00											
		500.00											
		505.00											
		510.00											
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		560.00											
		565.00											
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		575.00											
		580.00											
		585.00											
		590.00											
		595.00											
		600.00											
		605.00											
		610.00											
		615.00											

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TABLE B-9

PARAMETER INTERACTION 360 DEGS
SUBJECT T₀ CONDITION'S MIN = 225.00 LAMDA = 60.00

Y PARAMETER ANJDF	5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	PARAMETER ANJDF
5.00	5.00	7.50	7.50	7.50	7.50	8.17	8.38	8.40	8.42	8.42	LIMIT
10.00	7.50	10.00	10.00	10.00	10.00	10.83	11.25	11.25	11.25	11.25	506
15.00	10.00	12.50	12.50	12.50	12.50	13.33	13.75	13.75	13.75	13.75	91.54
20.00	12.50	15.00	15.00	15.00	15.00	15.83	16.25	16.25	16.25	16.25	22.76
25.00	15.00	17.50	17.50	17.50	17.50	18.33	18.75	18.75	18.75	18.75	21.90
30.00	17.50	20.00	20.00	20.00	20.00	20.83	21.25	21.25	21.25	21.25	4.91 AVG
35.00	20.00	22.50	22.50	22.50	22.50	23.33	23.75	23.75	23.75	23.75	379
40.00	22.50	25.00	25.00	25.00	25.00	25.83	26.25	26.25	26.25	26.25	94.21
45.00	25.00	27.50	27.50	27.50	27.50	28.33	28.75	28.75	28.75	28.75	31.15
50.00	27.50	30.00	30.00	30.00	30.00	30.83	31.25	31.25	31.25	31.25	31.22
LIMIT	30.00	32.50	32.50	32.50	32.50	33.33	33.75	33.75	33.75	33.75	5.09 AVG
5.00	30.00	32.50	32.50	32.50	32.50	33.33	33.75	33.75	33.75	33.75	311
10.00	32.50	35.00	35.00	35.00	35.00	35.83	36.25	36.25	36.25	36.25	95.61
15.00	35.00	37.50	37.50	37.50	37.50	38.33	38.75	38.75	38.75	38.75	30.27
20.00	37.50	40.00	40.00	40.00	40.00	40.33	40.75	40.75	40.75	40.75	35.29
25.00	40.00	42.50	42.50	42.50	42.50	42.33	42.75	42.75	42.75	42.75	5.25 AVG
30.00	42.50	45.00	45.00	45.00	45.00	45.33	45.75	45.75	45.75	45.75	266
35.00	45.00	47.50	47.50	47.50	47.50	47.33	47.75	47.75	47.75	47.75	96.45
40.00	47.50	50.00	50.00	50.00	50.00	50.33	50.75	50.75	50.75	50.75	45.09
45.00	50.00	52.50	52.50	52.50	52.50	52.33	52.75	52.75	52.75	52.75	40.81
50.00	52.50	55.00	55.00	55.00	55.00	55.33	55.75	55.75	55.75	55.75	5.37 AVG
LIMIT	55.00	57.50	57.50	57.50	57.50	57.33	57.75	57.75	57.75	57.75	239
5.00	55.00	57.50	57.50	57.50	57.50	57.33	57.75	57.75	57.75	57.75	97.06
10.00	57.50	60.00	60.00	60.00	60.00	60.33	60.75	60.75	60.75	60.75	50.85
15.00	60.00	62.50	62.50	62.50	62.50	62.33	62.75	62.75	62.75	62.75	58.88
20.00	62.50	65.00	65.00	65.00	65.00	65.33	65.75	65.75	65.75	65.75	47.88
25.00	65.00	67.50	67.50	67.50	67.50	67.33	67.75	67.75	67.75	67.75	5.47 AVG
30.00	67.50	70.00	70.00	70.00	70.00	70.33	70.75	70.75	70.75	70.75	198
35.00	70.00	72.50	72.50	72.50	72.50	72.33	72.75	72.75	72.75	72.75	97.59
40.00	72.50	75.00	75.00	75.00	75.00	75.33	75.75	75.75	75.75	75.75	61.76
45.00	75.00	77.50	77.50	77.50	77.50	77.33	77.75	77.75	77.75	77.75	54.61
50.00	77.50	80.00	80.00	80.00	80.00	80.33	80.75	80.75	80.75	80.75	5.57 AVG
LIMIT	80.00	82.50	82.50	82.50	82.50	82.33	82.75	82.75	82.75	82.75	179
5.00	80.00	82.50	82.50	82.50	82.50	82.33	82.75	82.75	82.75	82.75	97.93
10.00	82.50	85.00	85.00	85.00	85.00	85.33	85.75	85.75	85.75	85.75	68.55
15.00	85.00	87.50	87.50	87.50	87.50	87.33	87.75	87.75	87.75	87.75	63.03
20.00	87.50	90.00	90.00	90.00	90.00	90.33	90.75	90.75	90.75	90.75	5.65 AVG
25.00	90.00	92.50	92.50	92.50	92.50	92.33	92.75	92.75	92.75	92.75	165
30.00	92.50	95.00	95.00	95.00	95.00	95.33	95.75	95.75	95.75	95.75	98.12
35.00	95.00	97.50	97.50	97.50	97.50	97.33	97.75	97.75	97.75	97.75	74.51
40.00	97.50	100.00	100.00	100.00	100.00	100.33	100.75	100.75	100.75	100.75	65.37
45.00	100.00	102.50	102.50	102.50	102.50	102.33	102.75	102.75	102.75	102.75	5.69 AVG
50.00	102.50	105.00	105.00	105.00	105.00	105.33	105.75	105.75	105.75	105.75	149
LIMIT	105.00	107.50	107.50	107.50	107.50	107.33	107.75	107.75	107.75	107.75	146
5.00	105.00	107.50	107.50	107.50	107.50	107.33	107.75	107.75	107.75	107.75	97.94
10.00	107.50	110.00	110.00	110.00	110.00	110.33	110.75	110.75	110.75	110.75	72.62
15.00	110.00	112.50	112.50	112.50	112.50	112.33	112.75	112.75	112.75	112.75	64.02
20.00	112.50	115.00	115.00	115.00	115.00	115.33	115.75	115.75	115.75	115.75	5.69 AVG
25.00	115.00	117.50	117.50	117.50	117.50	117.33	117.75	117.75	117.75	117.75	152
30.00	117.50	120.00	120.00	120.00	120.00	120.33	120.75	120.75	120.75	120.75	98.40
35.00	120.00	122.50	122.50	122.50	122.50	122.33	122.75	122.75	122.75	122.75	80.93
40.00	122.50	125.00	125.00	125.00	125.00	125.33	125.75	125.75	125.75	125.75	70.36
45.00	125.00	127.50	127.50	127.50	127.50	127.33	127.75	127.75	127.75	127.75	5.75 AVG
50.00	127.50	130.00	130.00	130.00	130.00	130.33	130.75	130.75	130.75	130.75	11
LIMIT	130.00	132.50	132.50	132.50	132.50	132.33	132.75	132.75	132.75	132.75	99.92
5.00	130.00	132.50	132.50	132.50	132.50	132.33	132.75	132.75	132.75	132.75	113.04
10.00	132.50	135.00	135.00	135.00	135.00	135.33	135.75	135.75	135.75	135.75	798.41
15.00	135.00	137.50	137.50	137.50	137.50	137.33	137.75	137.75	137.75	137.75	6.35 AVG
20.00	137.50	140.00	140.00	140.00	140.00	140.33	140.75	140.75	140.75	140.75	4.16
25.00	140.00	142.50	142.50	142.50	142.50	142.33	142.75	142.75	142.75	142.75	
30.00	142.50	145.00	145.00	145.00	145.00	145.33	145.75	145.75	145.75	145.75	
35.00	145.00	147.50	147.50	147.50	147.50	147.33	147.75	147.75	147.75	147.75	
40.00	147.50	150.00	150.00	150.00	150.00	150.33	150.75	150.75	150.75	150.75	
45.00	150.00	152.50	152.50	152.50	152.50	152.33	152.75	152.75	152.75	152.75	
50.00	152.50	155.00	155.00	155.00	155.00	155.33	155.75	155.75	155.75	155.75	
LIMIT	155.00	157.50	157.50	157.50	157.50	157.33	157.75	157.75	157.75	157.75	

INPUT PARAMETERS T, F, ANJDF

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4. Clutter Track Through Requirements

(C) As with the tracking study, the figure given in this section will be for the forward $\pm 60^\circ$ coverage and for the full sphere coverage. The rearward $\pm 60^\circ$ coverage and the necessary source data are contained in Section 3 of Appendix B.

a. Pulse Doppler Main Beam Clutter (PDMBC)

(C) Figure B-10 represents the probability of occurrence of the target signal within the PDMBC notch and the range acceleration greater than the indicated value as a function of this notch width. The top most curve labelled "0.0" for range acceleration thus contains all occurrences of the target signal entering the PDMBC notch. This curve therefore gives the probability of the target being within PDMBC notch as a function of the notch width. Using a typical value for notch width in present AI radars (± 200 ft/sec), it can be seen that for AI radar coverage, the probability that the target return is within the notch is 0.09 for an average duration of 1.8 seconds. For full sphere coverage (Fig. 17) the probability that the target is within the notch is 0.35 for an average duration of 6.5 seconds. The same interpretation holds for all the graphs from the "Clutter Track Through Requirements" portion of this report (Fig. 16, 39).

(U) Knowing the distribution of the clutter and knowing the average dwell time, the probabilities that the radar can track through this clutter may now be determined. The ability to track through this clutter is highly dependent upon the accelerations experienced during loss of signal. An acceleration over a long period of time, would prevent the radar from coasting through the clutter. This happens because the "memory" for coast through is an extrapolation of the last known velocity. Thus a change in velocity over a period of time would invalidate this extrapolation. The maximum acceleration/time combination a radar can handle depends on the particular radar in question. For that reason, the summary of the data presented herein will show the 0.05 probability that a given acceleration was exceeded while in the clutter and the associated average duration it was exceeded.

1. Range acceleration (Fig. B-10, AI coverage; Fig. B-11, Full coverage.)

(C) In the case of AI radar coverage, the range acceleration exceeded 50 ft/sec^2 while in PDMBC 5% of the time in gimbal limits for a duration of 1.5 seconds.

(C) In the case of full coverage, the range acceleration exceeded 180 ft/sec^2 while in PDMBC 5% of the total time for an average duration of 1.2 seconds.

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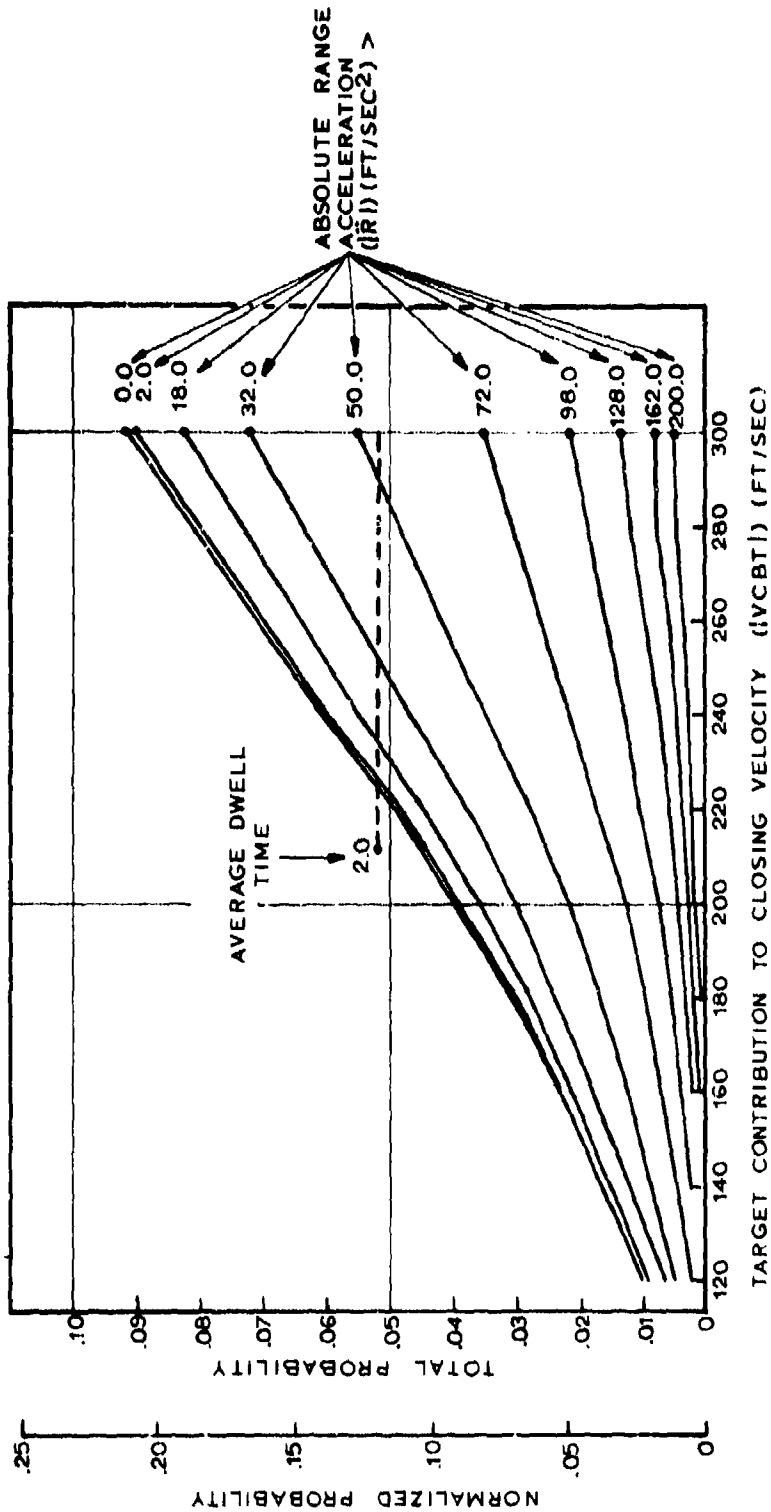


FIG. B-10 - CUMULATIVE PROBABILITY DISTRIBUTION OF TARGET CONTRIBUTION TO CLOSING VELOCITY FOR SEVERAL VALUES OF RANGE ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE - 225 FT

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ii. Azimuth line of sight acceleration (Fig. B-12, AI coverage; Fig. B-13, full coverage.)

(C) In the case of AI radar coverage, the azimuth line of sight acceleration exceeded $0.3^\circ/\text{sec}^2$ while in PDMBC 5% of the time the target was in gimbal limits for an average duration of 1.2 seconds.

(C) In the case of full sphere coverage, the azimuth line of sight acceleration exceeded $4.9^\circ/\text{sec}^2$ while in PDMBC 5% of the time the target was in gimbal limits for an average duration of 1.5 seconds.

iii. Elevation line of sight acceleration (Fig. B-14, AI coverage; Fig. B-15, Full coverage.)

(C) In the case of the AI radar coverage, the elevation line of sight acceleration exceeded $0.25^\circ/\text{sec}^2$ while in PDMBC 5% of the time the target was in gimbal limits for an average duration of 1.1 seconds.

(C) In the case of total coverage, the elevation line of sight acceleration exceeded $4.9^\circ/\text{sec}^2$ while in PDMBC 5% of the time the target was in gimbal limits for an average duration of 1.3 seconds.

b. Pulse Doppler f_0 Notch

(C) For this study, the f_0 notch is shown as a notch of varying widths to account for the difference in notch width among the present AI radars. The notch width used in this report is 150 ft/sec. By use of the graphs and tables, other size notches may be examined.

(C) The top line on each graph shows the probability that the target is in f_0 notch as a function of the notch width. Using a notch width of 150 ft/sec. it can be seen that, in the case of the AI radar coverage (Fig. 22) the probability that the target is in the f_0 notch is 0.235 for an average duration of 3.8 seconds.

1. Range acceleration (Fig. B-16, AI coverage; Fig. B-17, Full coverage.)

(C) In the case of the AI radar coverage, the range acceleration exceeded 38 ft/sec² while in f_0 notch 5% of the time the target was in gimbal limits for an average duration of 1.6 seconds.

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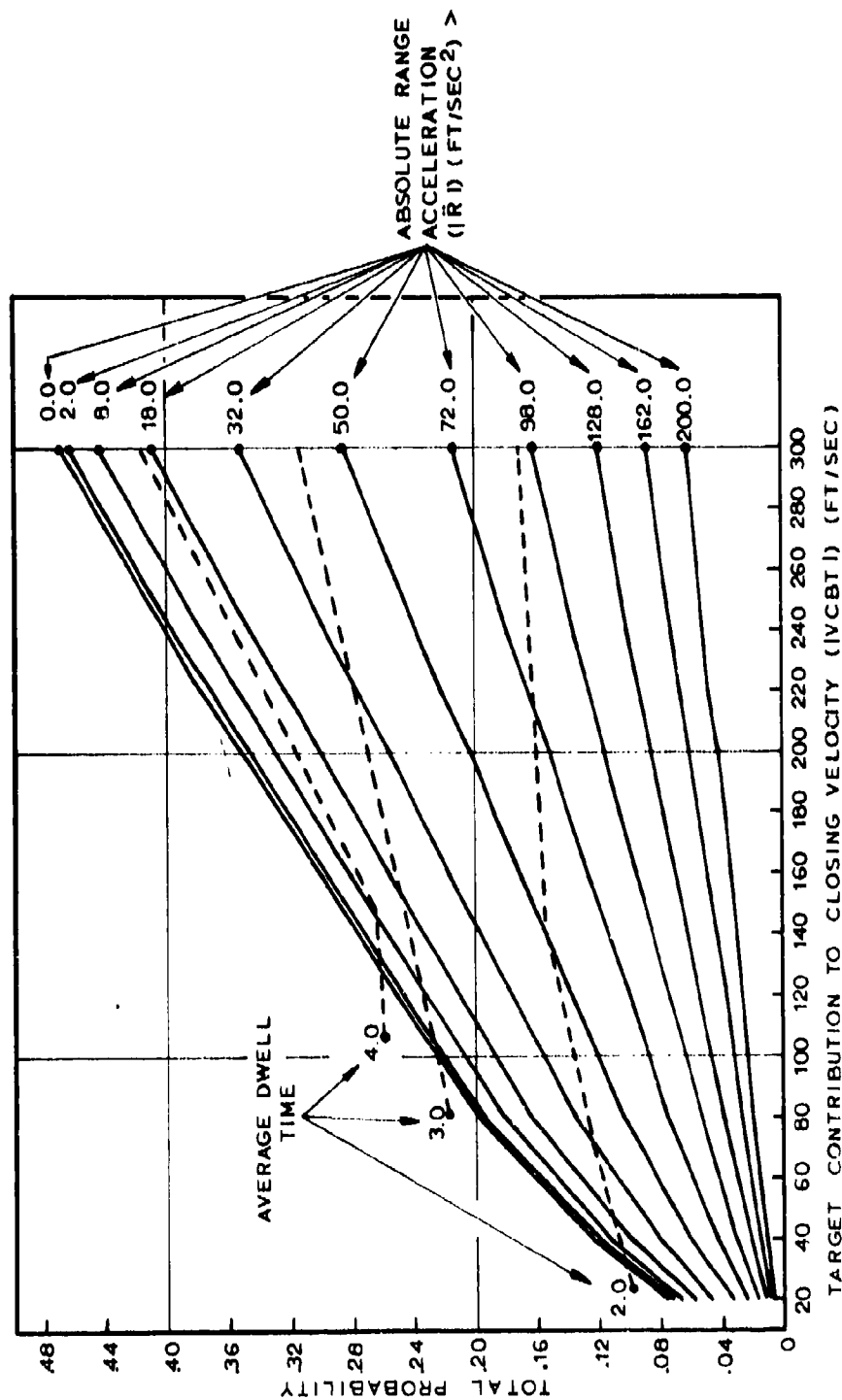


FIG. B-11 - CUMULATIVE PROBABILITY DISTRIBUTION OF TARGET CONTRIBUTION TO CLOSING VELOCITY FOR SEVERAL VALUES OF RANGE ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE ~ 225 FT

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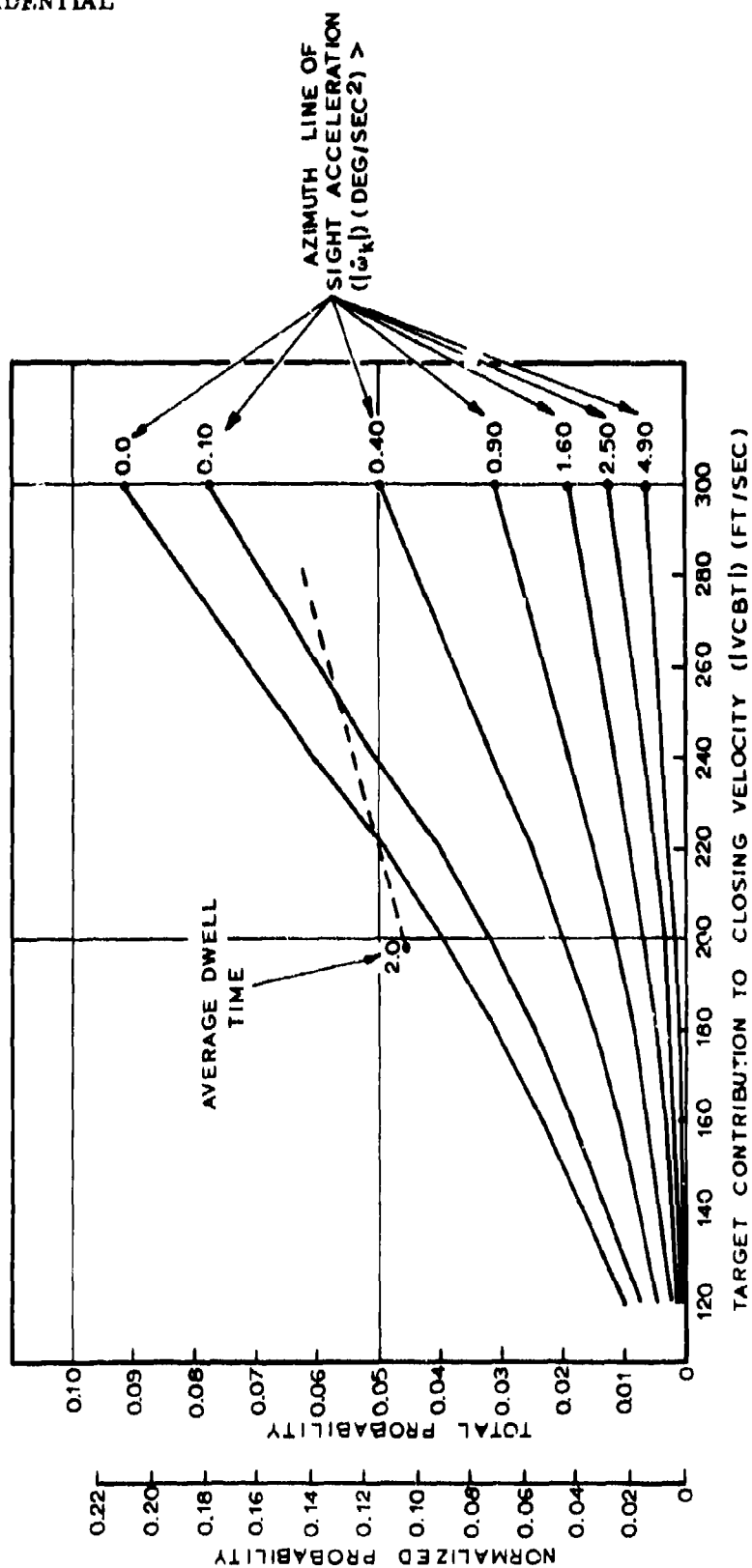


FIG. B-12 - CUMULATIVE PROBABILITY DISTRIBUTION OF TARGET CONTRIBUTION TO CLOSING VELOCITY FOR SEVERAL VALUES OF AZIMUTH LINE OF SIGHT ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE - 225FT

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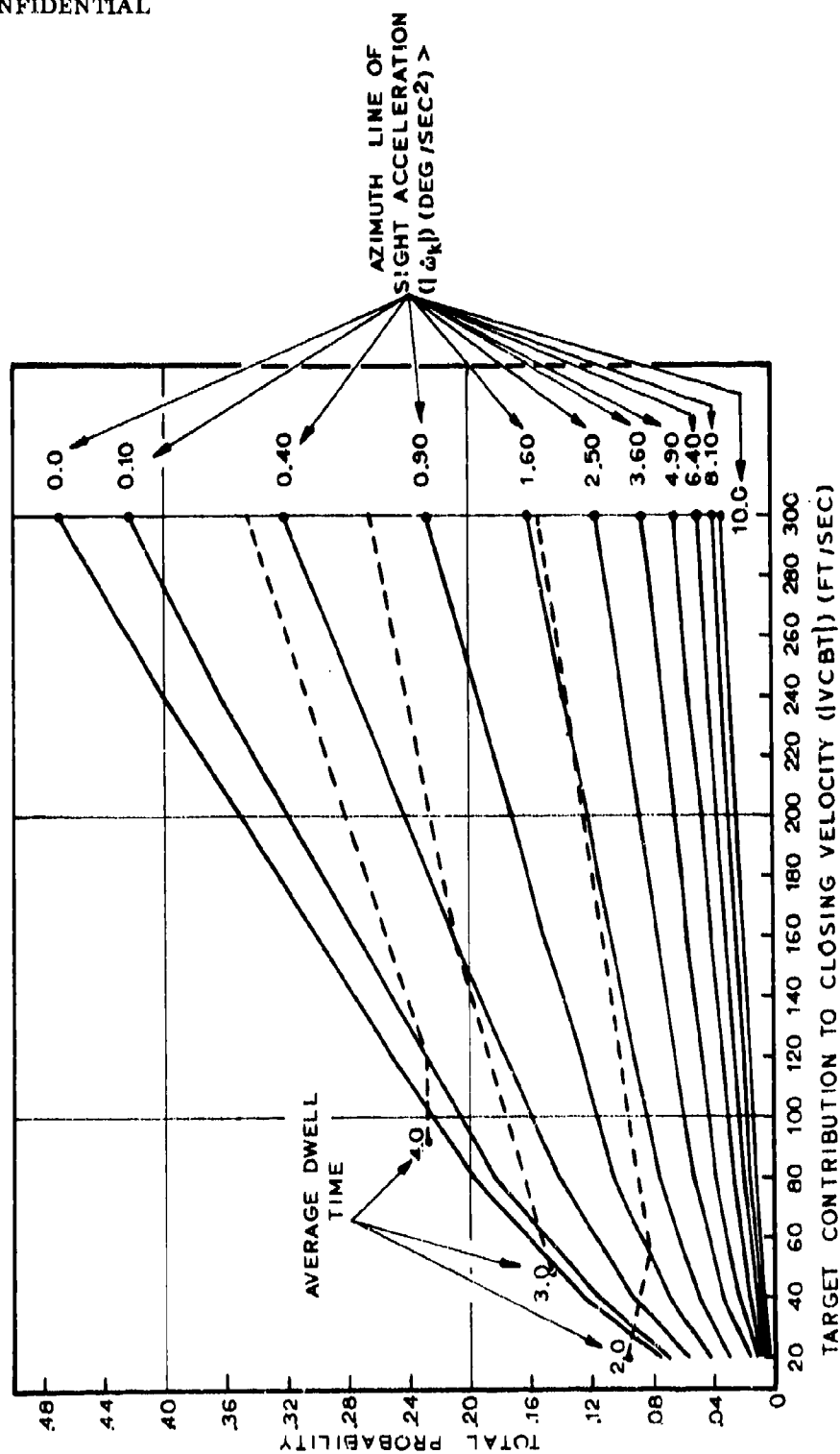


FIG. B-13 - CUMULATIVE PROBABILITY DISTRIBUTION OF TARGET CONTRIBUTION TO CLOSING VELOCITY FOR SEVERAL VALUES OF AZIMUTH LINE OF SIGHT ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE = 225 FT

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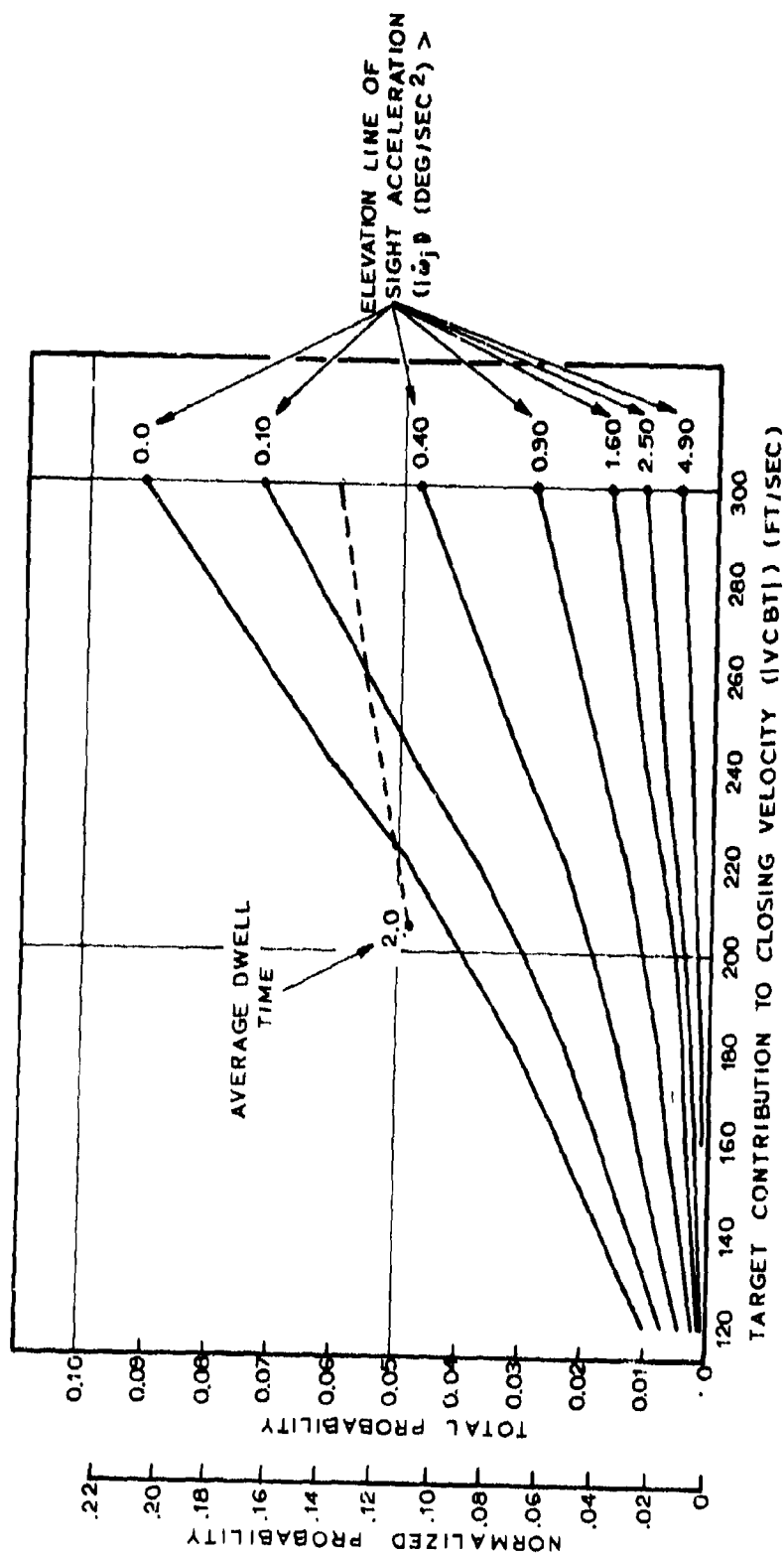


FIG. B-14 - CUMULATIVE PROBABILITY DISTRIBUTION OF TARGET CONTRIBUTION TO CLOSING VELOCITY FOR SEVERAL VALUES OF ELEVATION LINE OF SIGHT ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE - 225 FT

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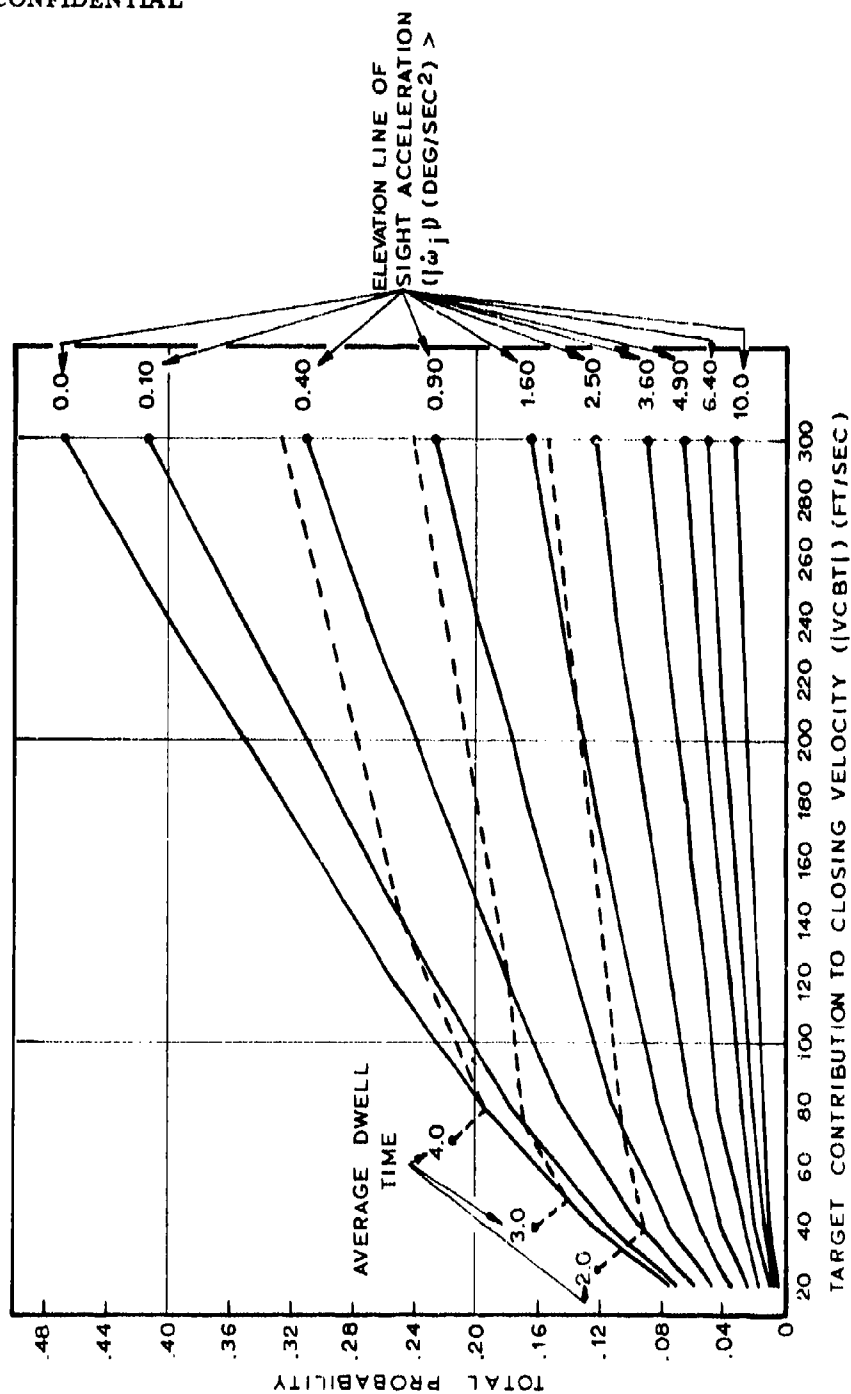


FIG.B-15 - CUMULATIVE PROBABILITY DISTRIBUTION OF TARGET CONTRIBUTION TO CLOSING VELOCITY FOR SEVERAL VALUES OF ELEVATION LINE OF SIGHT ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE = 225 FT

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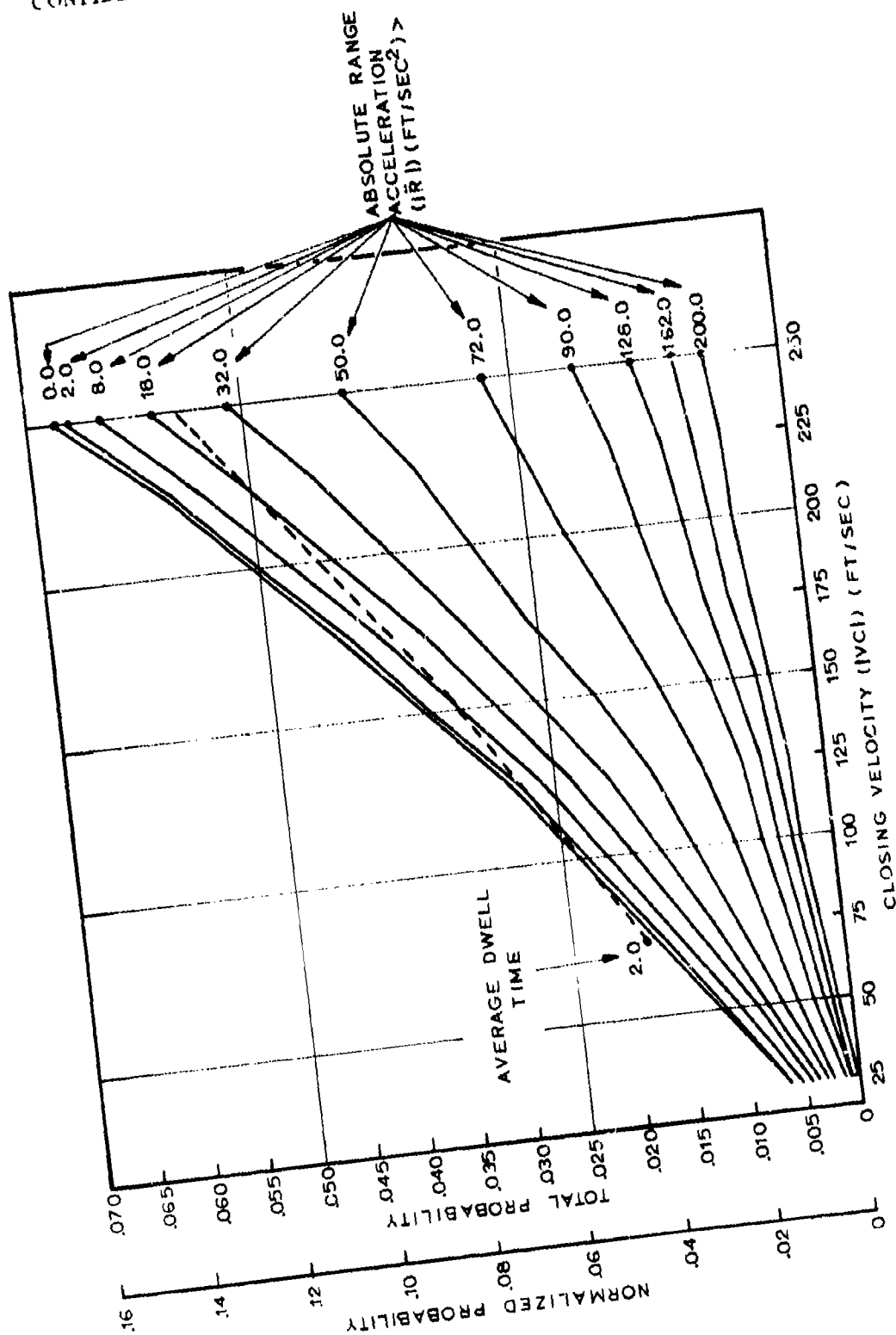


FIG. B-16 - CUMULATIVE PROBABILITY DISTRIBUTION OF CLOSING VELOCITY FOR SEVERAL VALUES OF RANGE ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE = 225 FT

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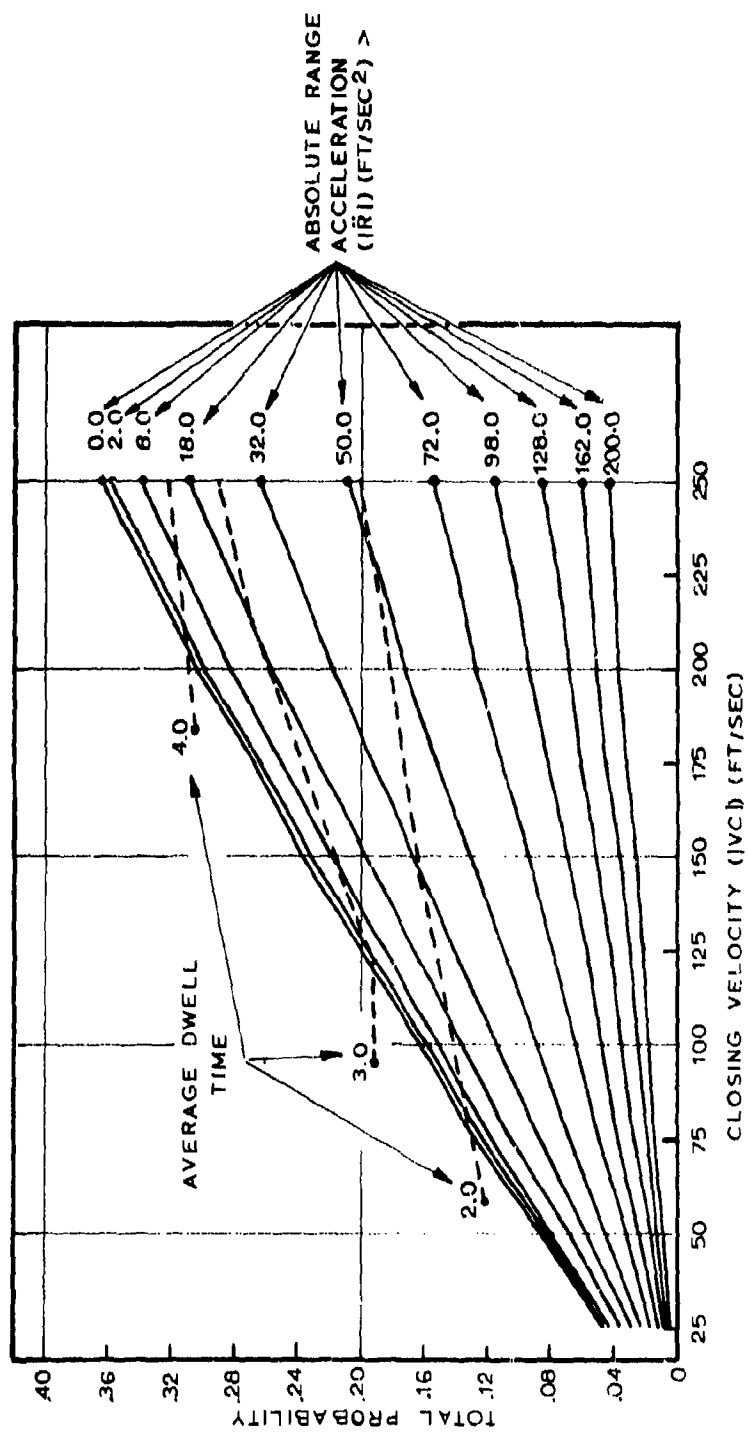


FIG. B-17 - CUMULATIVE PROBABILITY DISTRIBUTION OF CLOSING VELOCITY FOR SEVERAL VALUES OF RANGE ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE = 225 FT

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(C) In the case of full coverage, the range acceleration exceeded 128 ft/sec^2 while in f_0 notch of 5% of the total time for an average duration of 1.2 seconds.

ii. Azimuth line of sight acceleration (Fig. B-18, AI coverage; Fig. B-19, Full coverage.)

(C) In the case of the AI radar coverage, the azimuth line of sight acceleration exceeded $0.3^\circ/\text{sec}^2$ while in f_0 notch 5% of time target was in gimbal limits for an average duration of 1.5 seconds.

iii. Elevations line of sight acceleration (Fig. B-20, AI coverage; Fig. B-21, Full coverage.)

(C) In the case of AI radar coverage, the elevations line of sight acceleration exceeded $.3^\circ/\text{sec}^2$ while in f_0 notch 5% of the time the target was in gimbal limits for an average duration of 1.7 seconds.

(C) In the case of full coverage, the elevations line of sight acceleration exceeded $3^\circ/\text{sec}^2$ while in f_0 notch 5% of the total time for an average duration of 1.3 seconds.

c. Pulse Main Beam Clutter (PMBC)

(C) For analysis in this section, the range gate width is taken as 300 ft. This means that PMBC is defined as occurring if the target is within 300 ft. of the leading edge of the ground return.

(C) For AI radar coverage, the probability that the target is in PMBC is .005 for an average duration of 1.12 seconds. In terms of normalized probability (normalized to the AI radar coverage), the probability of the target in PMBC is .0117. This probability is less than the .05 criterion used in the previous analyses.

(C) For full sphere coverage, the probability of the target being in PMBC is again less than the 0.05 criterion, that is, 0.015 for an average duration of 1.31 seconds.

(C) Analysis of the tracking accelerations for PMBC in the same manner as the PDMBC and f_0 notch is not possible. Analysis using a more stringent criterion could be made. In order to keep the comparison on pulse and pulse doppler clutter on the same level, the PMBC tracking accelerations evaluated with the 5% criteria are zero. The application of a more stringent criterion is left up to the reader and, for that purpose, the graphs of the accelerations are given in Figs. B-22 through B-27.

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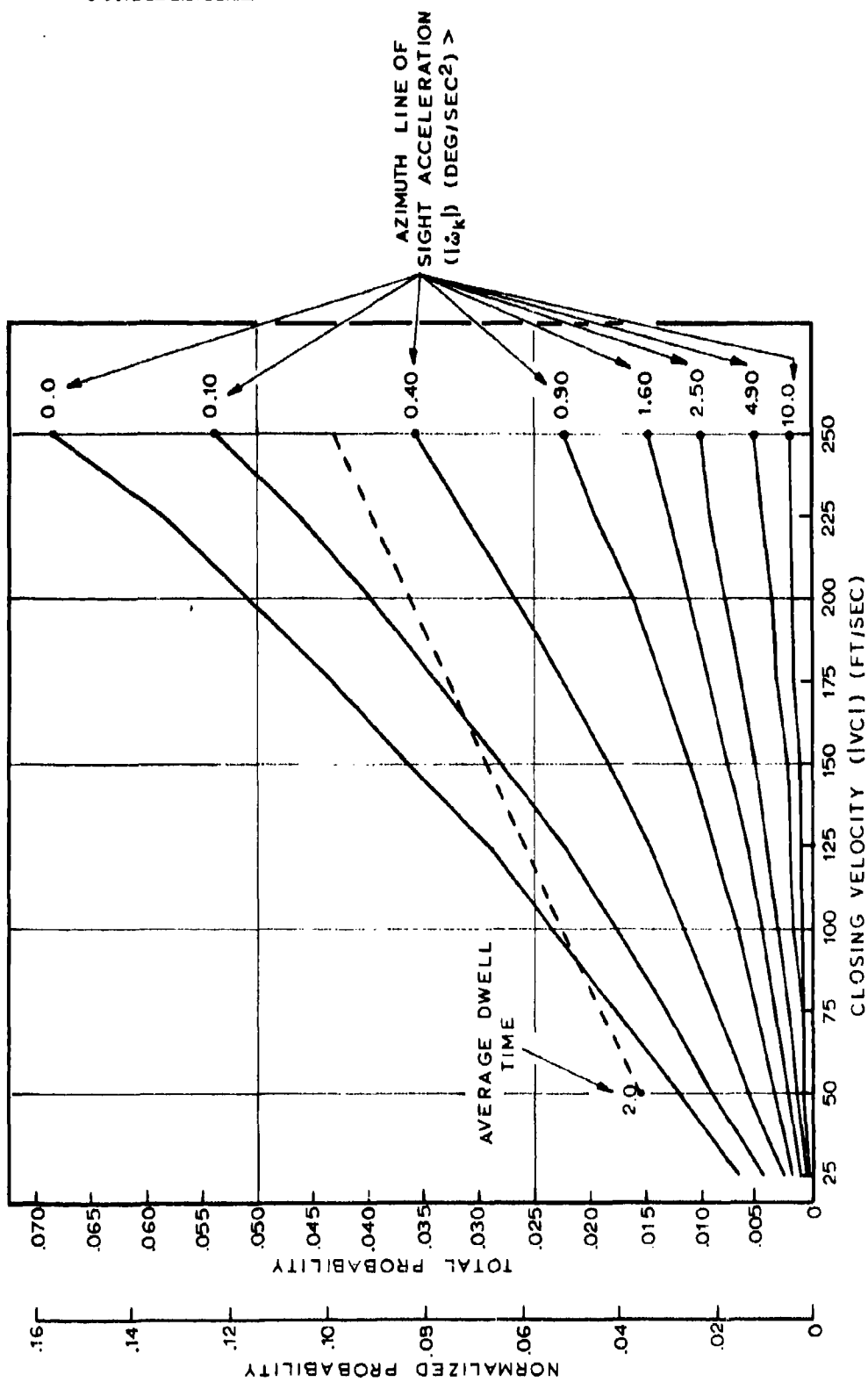


FIG. B-18 - CUMULATIVE PROBABILITY DISTRIBUTION OF CLOSING VELOCITY FOR SEVERAL VALUES OF AZIMUTH LINE OF SIGHT ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE - 225FT

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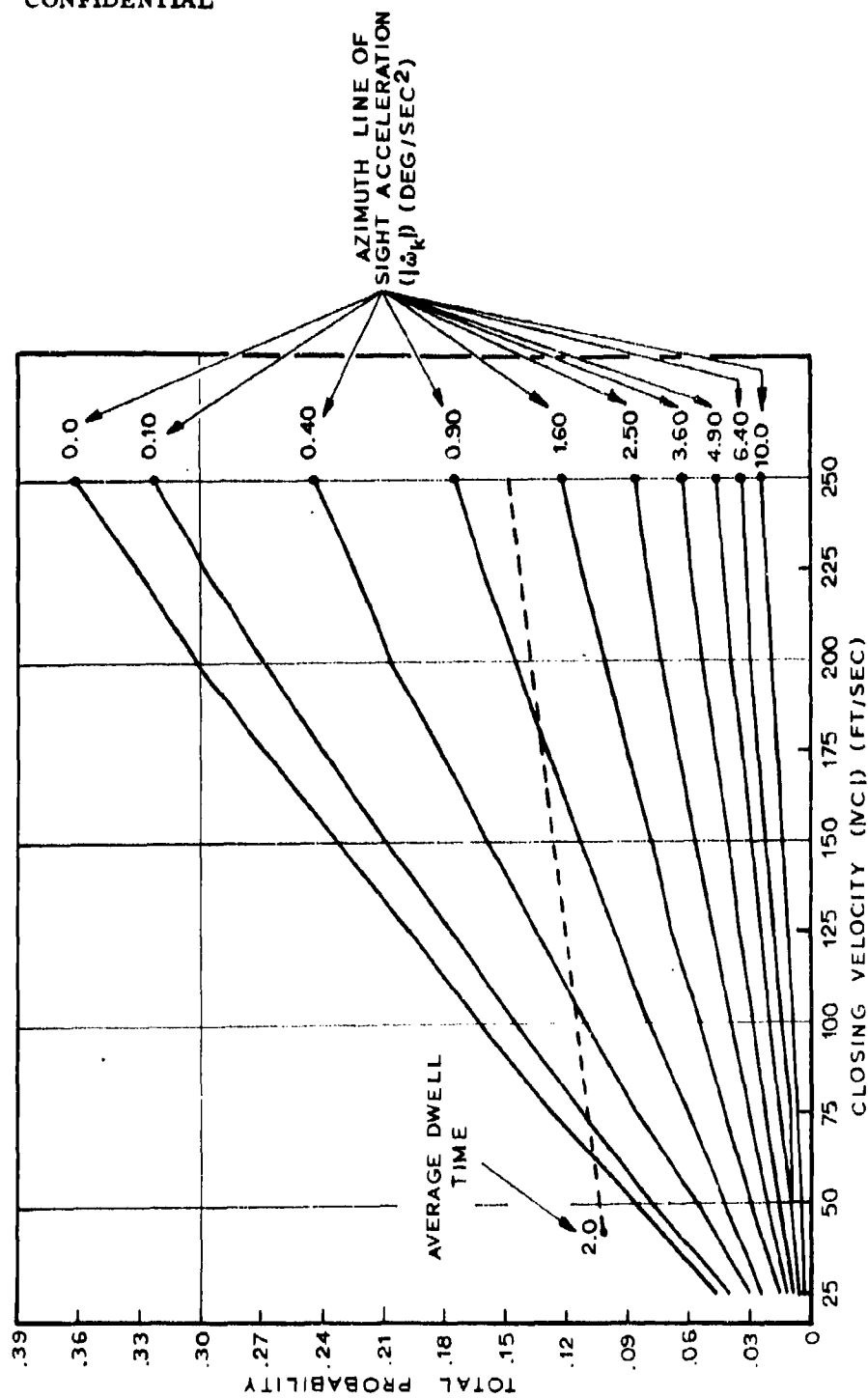


FIG. B-19 - CUMULATIVE PROBABILITY DISTRIBUTION OF CLOSING VELOCITY FOR SEVERAL VALUES OF AZIMUTH LINE OF SIGHT ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE - 225 FT

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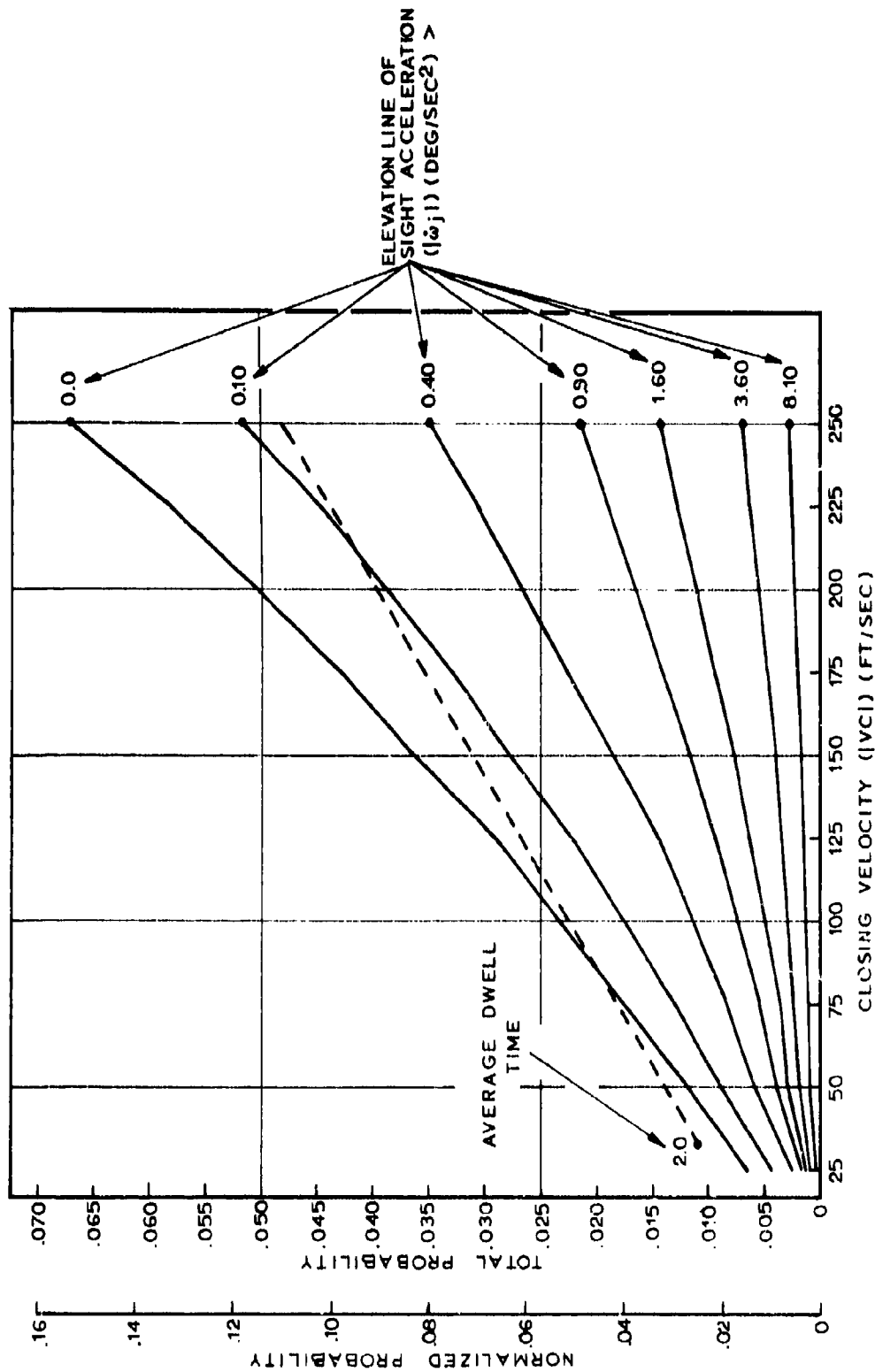


FIG. B-20 - CUMULATIVE PROBABILITY DISTRIBUTION OF CLOSING VELOCITY FOR SEVERAL VALUES OF ELEVATION LINE OF SIGHT ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE = 225 FT

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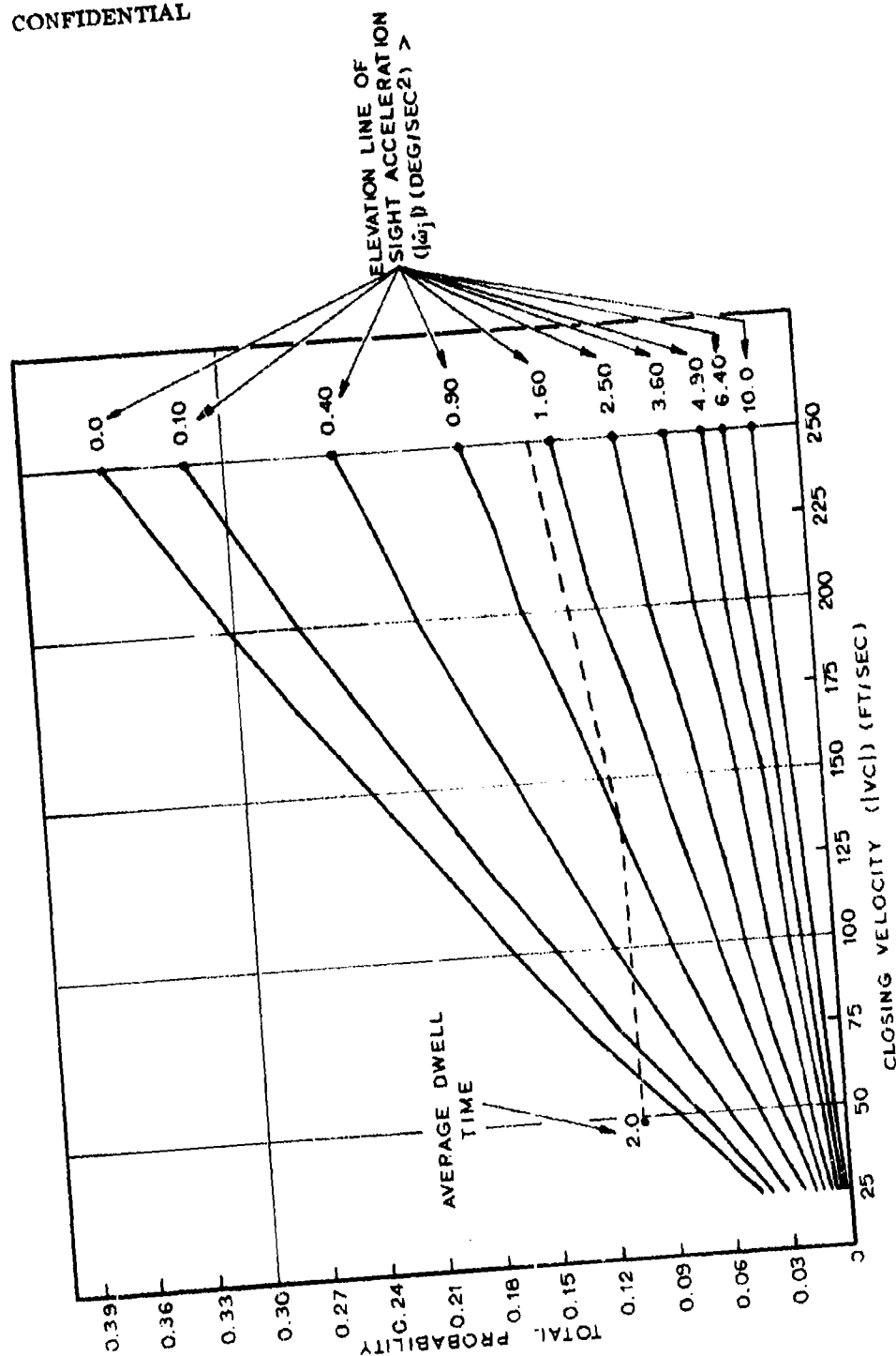


FIG. B-21 - CUMULATIVE PROBABILITY DISTRIBUTION OF CLOSING VELOCITY FOR SEVERAL VALUES OF ELEVATION LINE OF SIGHT ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE - 225 FT

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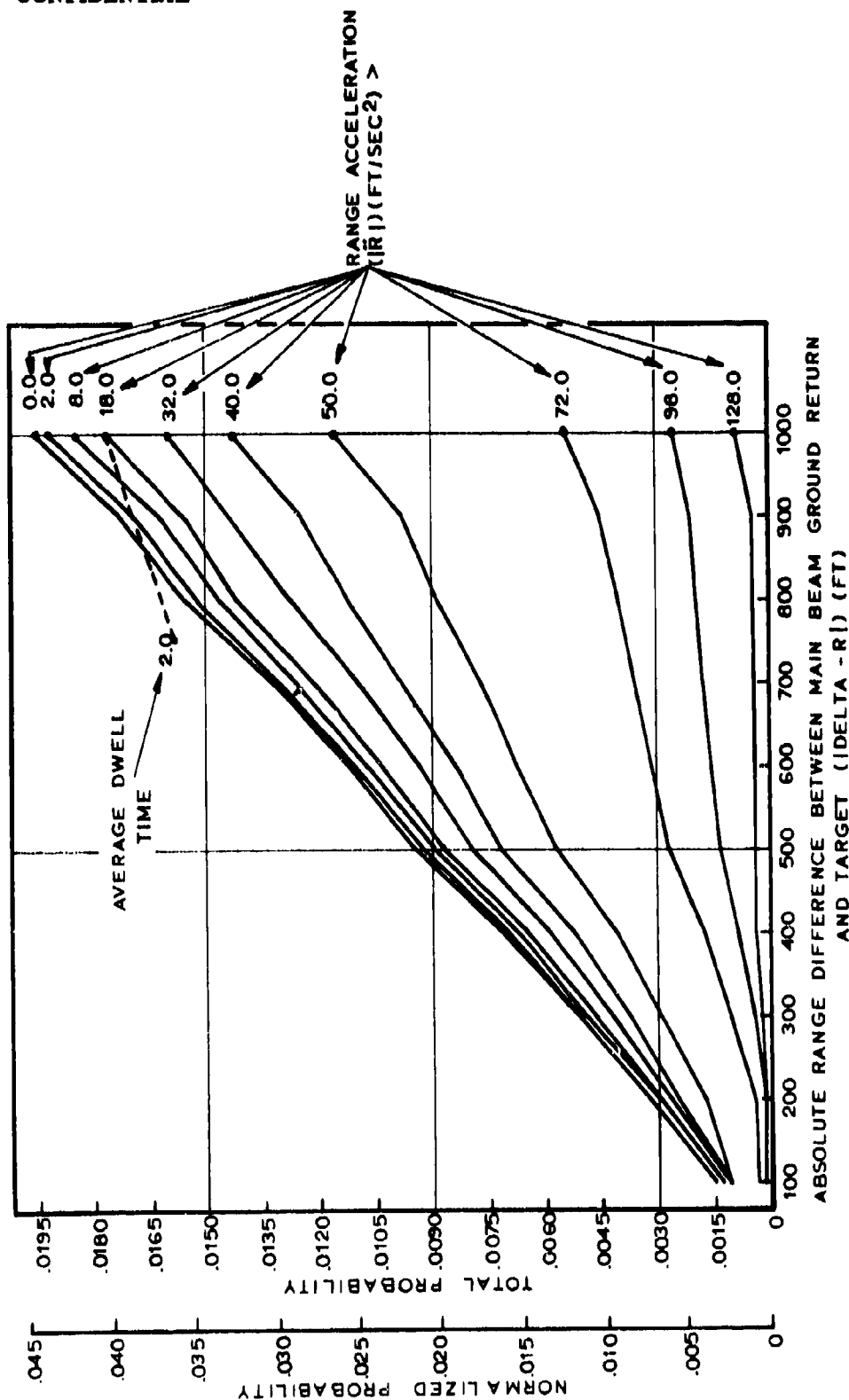


FIG. B-22 - CUMULATIVE PROBABILITY DISTRIBUTION OF RANGE DIFFERENCE BETWEEN MAIN BEAM GROUND RETURN AND TARGET FOR SEVERAL VALUES OF RANGE ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE - 225 FT

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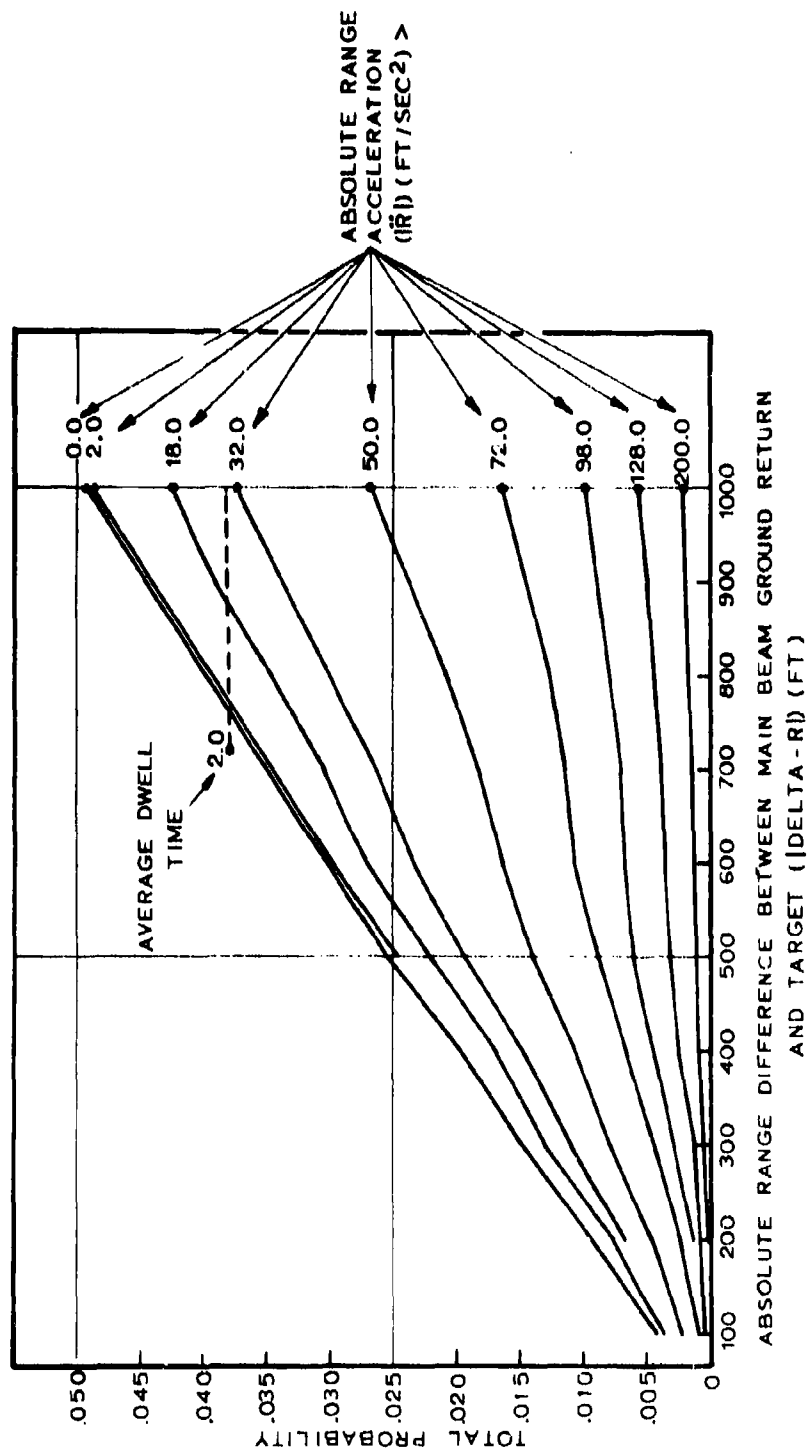


FIG.B-23 - CUMULATIVE PROBABILITY DISTRIBUTION OF RANGE DIFFERENCE BETWEEN MAIN BEAM GROUND RETURN AND TARGET FOR SEVERAL VALUES OF RANGE ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE - 225 FT

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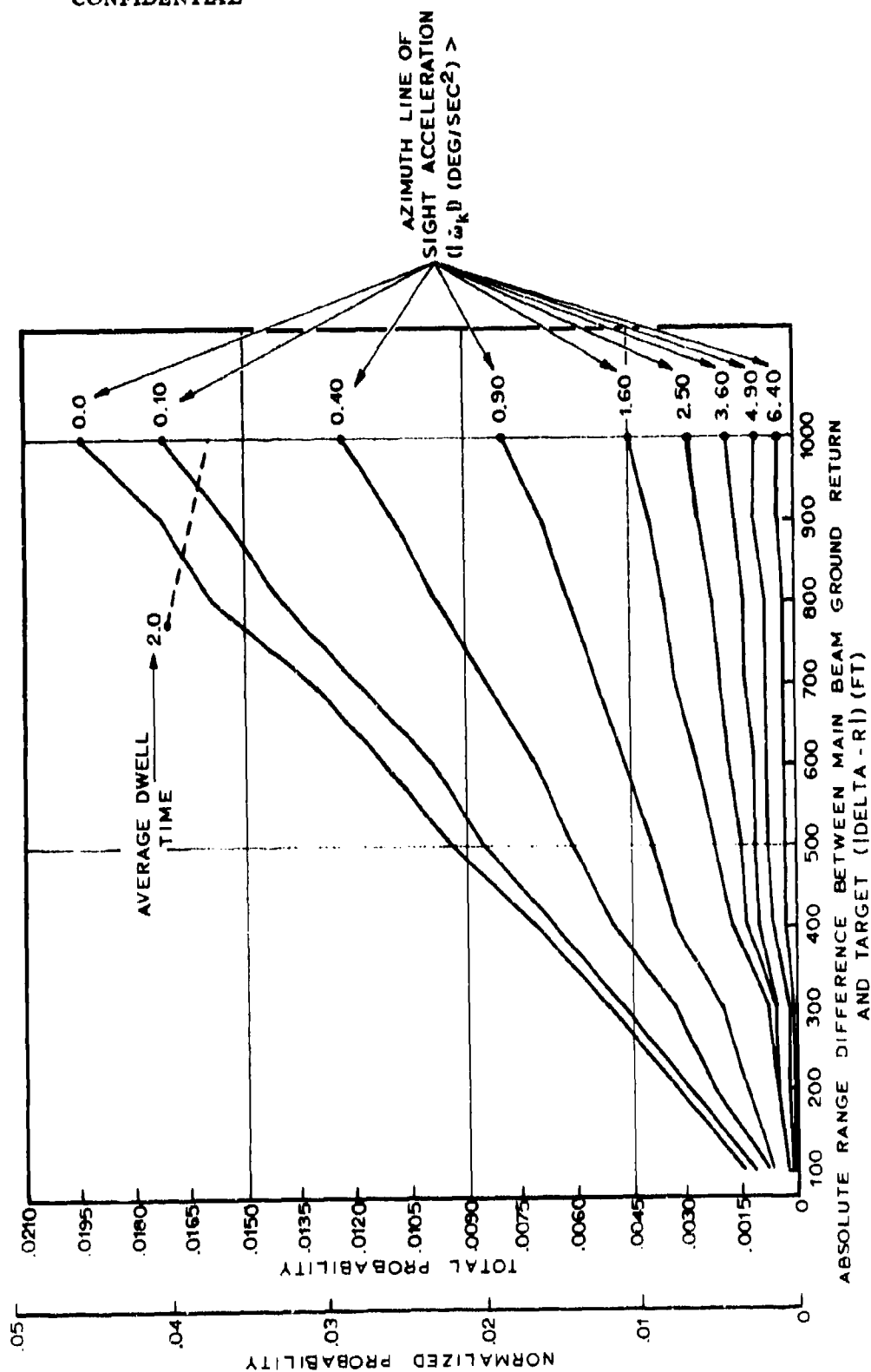


FIG.B-24 - CUMULATIVE PROBABILITY DISTRIBUTION OF RANGE DIFFERENCE BETWEEN MAIN BEAM GROUND RETURN AND TARGET FOR SEVERAL VALUES OF AZIMUTH LINE OF SIGHT ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE - 225 FT

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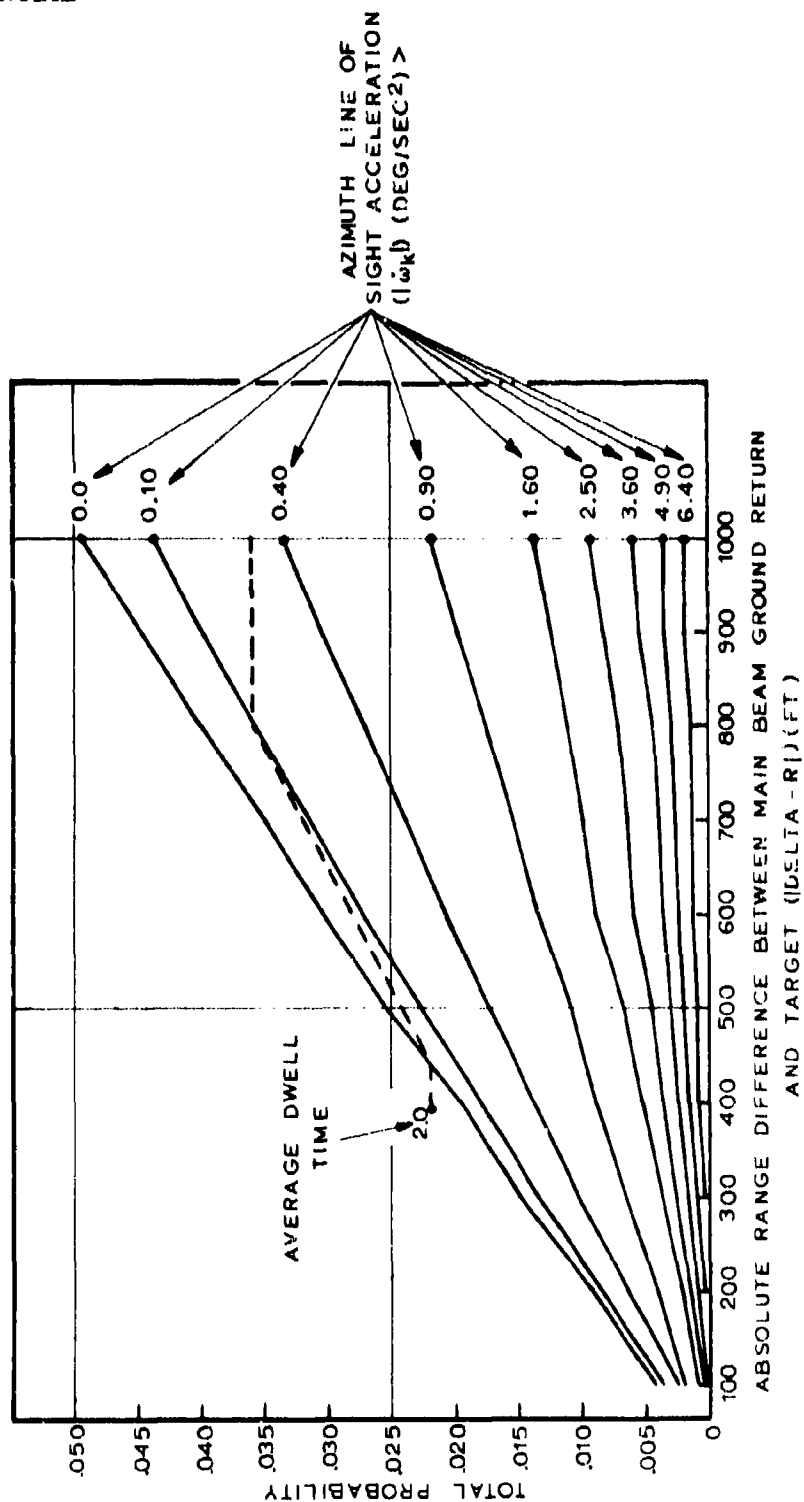


FIG B-25 - CUMULATIVE PROBABILITY DISTRIBUTION OF RANGE DIFFERENCE BETWEEN MAIN BEAM GROUND RETURN AND TARGET FOR SEVERAL VALUES OF AZIMUTH LINE OF SIGHT ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE - 225 FT

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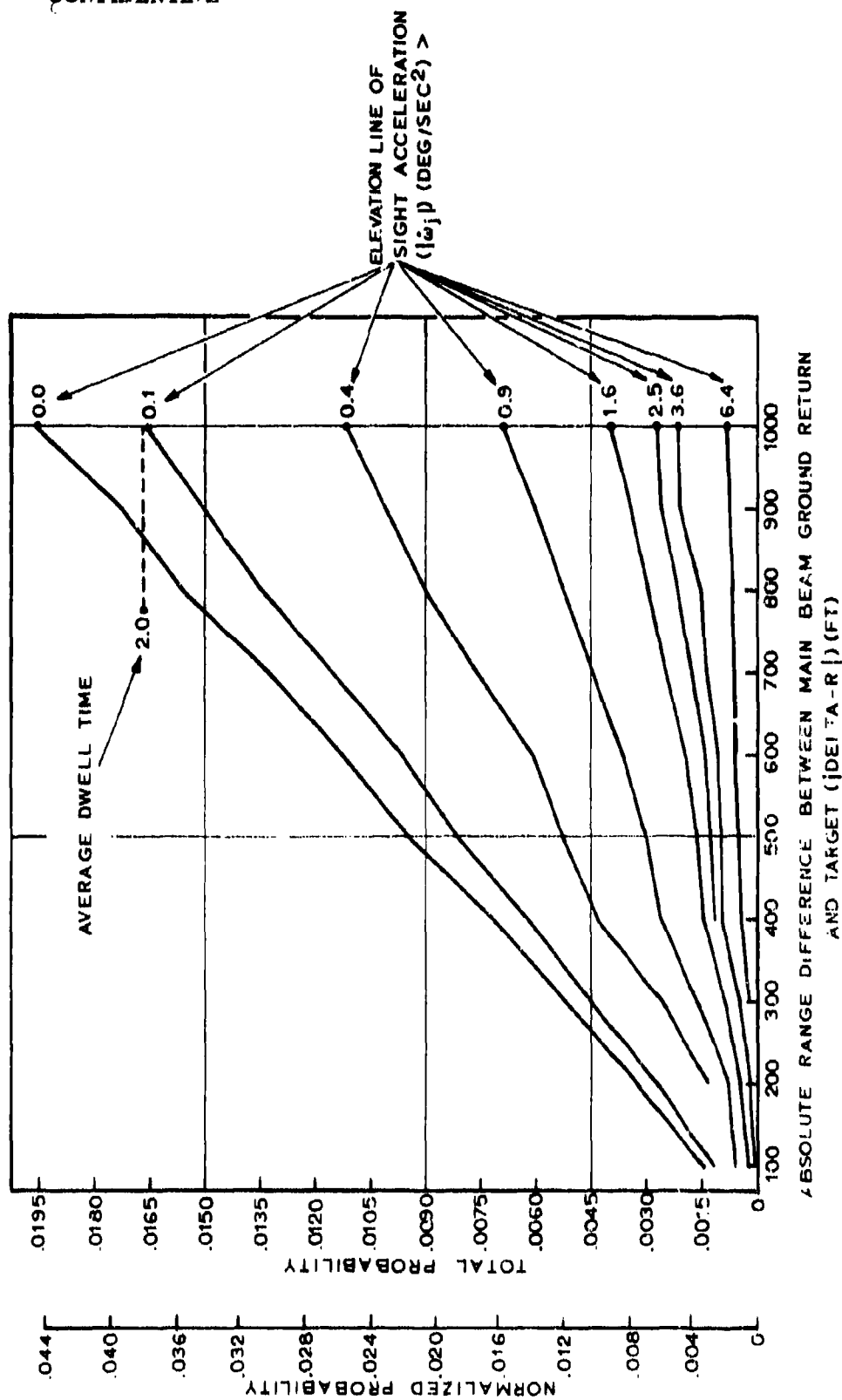


FIG. B-26 - CUMULATIVE PROBABILITY DISTRIBUTION OF RANGE DIFFERENCE BETWEEN MAIN BEAM GROUND RETURN AND TARGET FOR SEVERAL VALUES OF ELEVATION LINE OF SIGHT ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE - 225 FT

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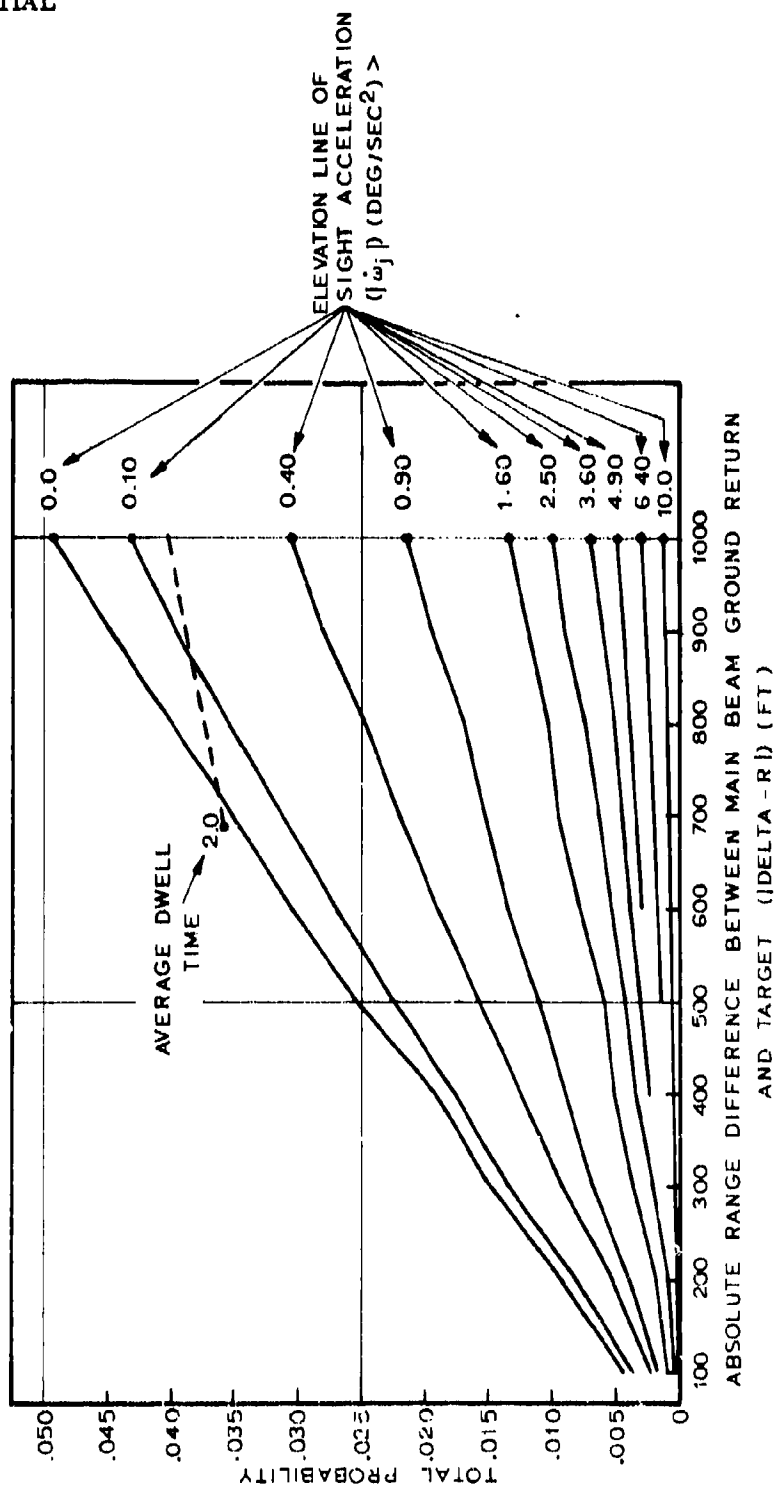


FIG. B-27 - CUMULATIVE PROBABILITY DISTRIBUTION OF RANGE DIFFERENCE BETWEEN MAIN BEAM GROUND RETURN AND TARGET FOR SEVERAL VALUES OF ELEVATION LINE OF SIGHT ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE = 225 FT

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d. Pulse Altitude Line (PAL)

(C) For the purpose of this discussion, the PAL will be taken as having a width of ± 1000 ft, which is typical of the clutter return from the ground below the aircraft. This 1000 ft. altitude return further assumes that the strength of the target return is less than the altitude return. The width and strength of the altitude return is dependent upon the altitude of the fighter, the antenna pattern, the look down angle, and the ground reflectivity. For a given width of the altitudes return calculated by the preceding parameters Fig. B-28 through B-33 are still valid and can be used to calculate the track through capability of a particular radar.

(C) For AI radar coverage, the probability that the target is in PAL is 0.078 for an average duration of 3.9 seconds.

(C) For full coverage, the probability that the target is in PAL is 0.086 for an average duration of 4.8 seconds.

i. Range Acceleration (Fig. B-28, AI coverage; Fig. B-29, Full Coverage.)

(C) In the case of AI radar coverage, the range acceleration exceeded 40 ft/sec^2 while in PAL, 5% of the time the target was in gimbal limits for an average duration of 2.4 seconds.

(C) In the case of full coverage, the range accelerations exceeded 50 ft/sec^2 while in PAL, 5% of the total time for an average duration of 2.4 seconds.

ii. Azimuth Line of sight Acceleration (Fig. B-30, AI coverage, Fig. B-31, Full Coverage.)

(C) In the case of AI radar coverage, the azimuth line of sight acceleration exceeded $.4^\circ/\text{sec}^2$ while in PAL, 5% of the time the target was in gimbal limits for an average duration of 2.8 seconds.

(C) In the full coverage case, the azimuth line of sight acceleration exceeded $0.65^\circ/\text{sec}^2$ while in PAL, 5% of the total time for an average duration of 2.3 seconds.

iii. Elevation Line of Sight Acceleration (Fig. B-32, AI coverage; Fig. B-33, Full Coverage.)

(C) In the case of AI radar coverage, the elevation line of sight acceleration exceeds $0.35^\circ/\text{sec}^2$ while in PAL,

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5% of the time the target was in gimbal limits for an average duration of 2.5 seconds.

(C) In the full coverage case, the elevation line of sight acceleration exceeded $0.7^{\circ}/\text{sec}^2$ while in PAL, 5% of the total time for an average duration of 2.4 seconds.

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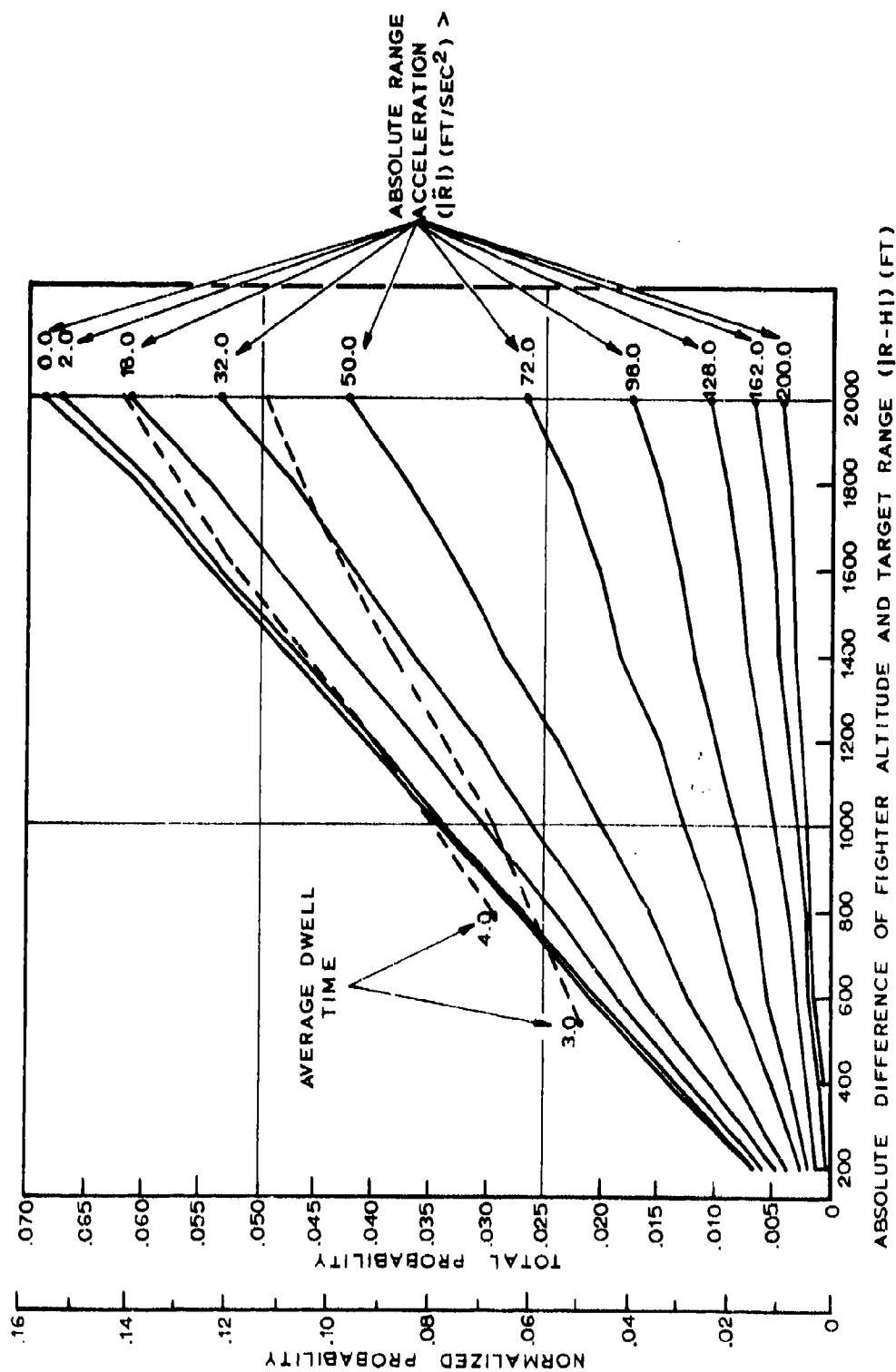


FIG. B-28 - CUMULATIVE PROBABILITY DISTRIBUTION OF DIFFERENCE OF FIGHTER ALTITUDE AND TARGET RANGE FOR SEVERAL VALUES OF RANGE ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE = 225 FT

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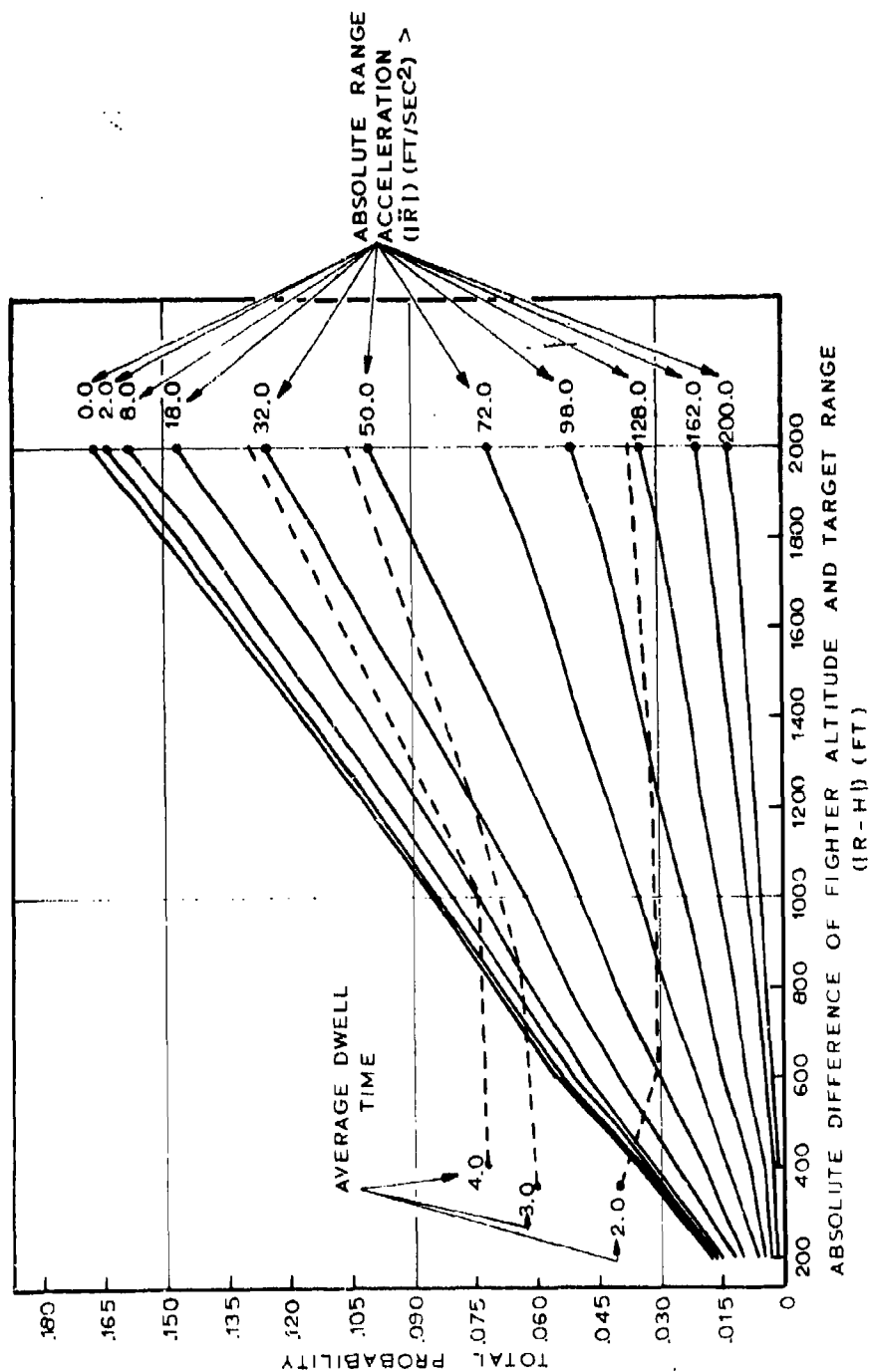


FIG. B-29 - CUMULATIVE PROBABILITY DISTRIBUTION OF DIFFERENCE OF FIGHTER ALTITUDE AND TARGET RANGE FOR SEVERAL VALUES OF RANGE ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE ~ 225 FT

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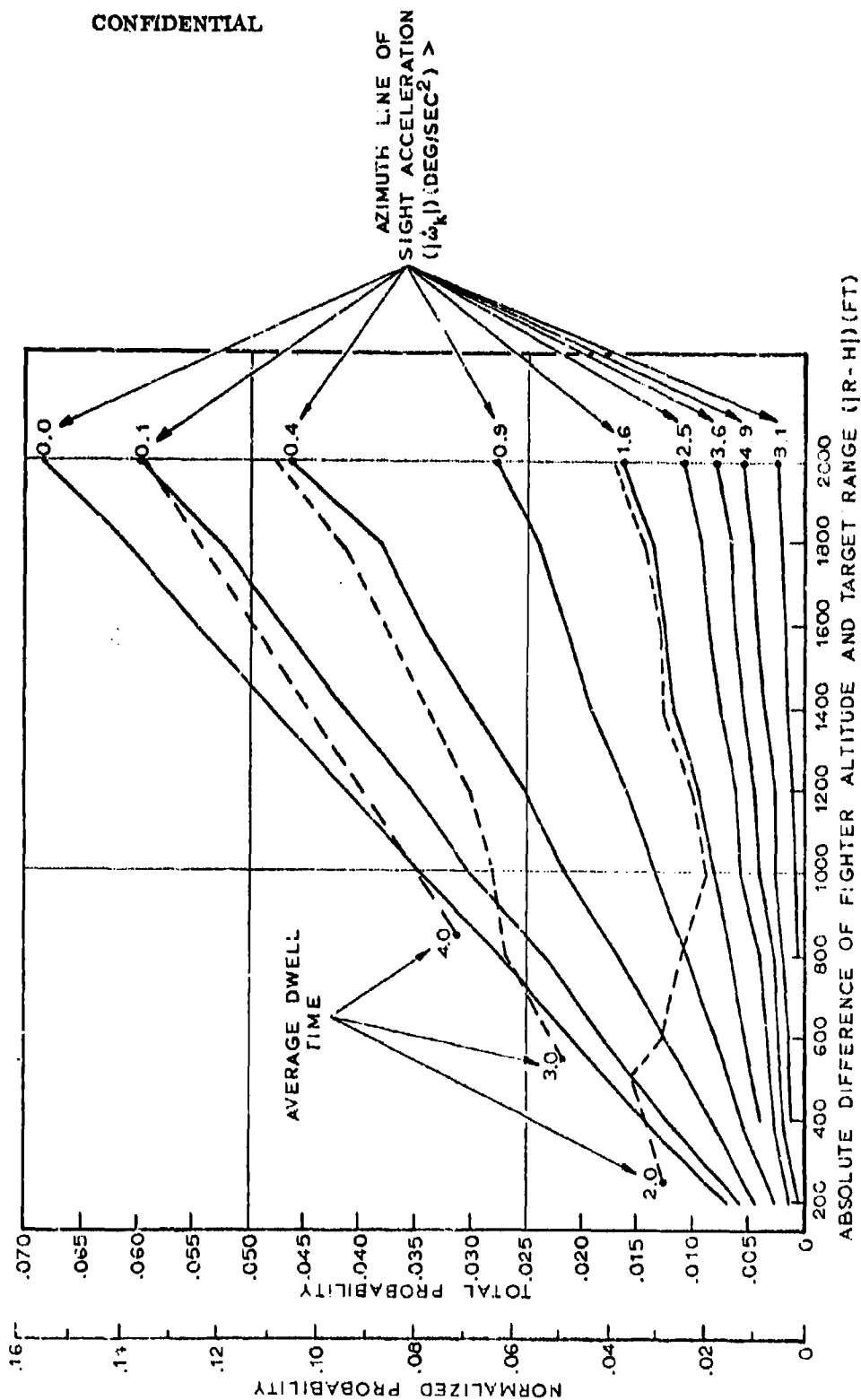


FIG.B-30 - CUMULATIVE PROBABILITY DISTRIBUTION OF ABSOLUTE DIFFERENCE OF FIGHTER ALTITUDE AND TARGET RANGE FOR SEVERAL VALUES OF AZIMUTH LINE OF SIGHT ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE = 225 FT

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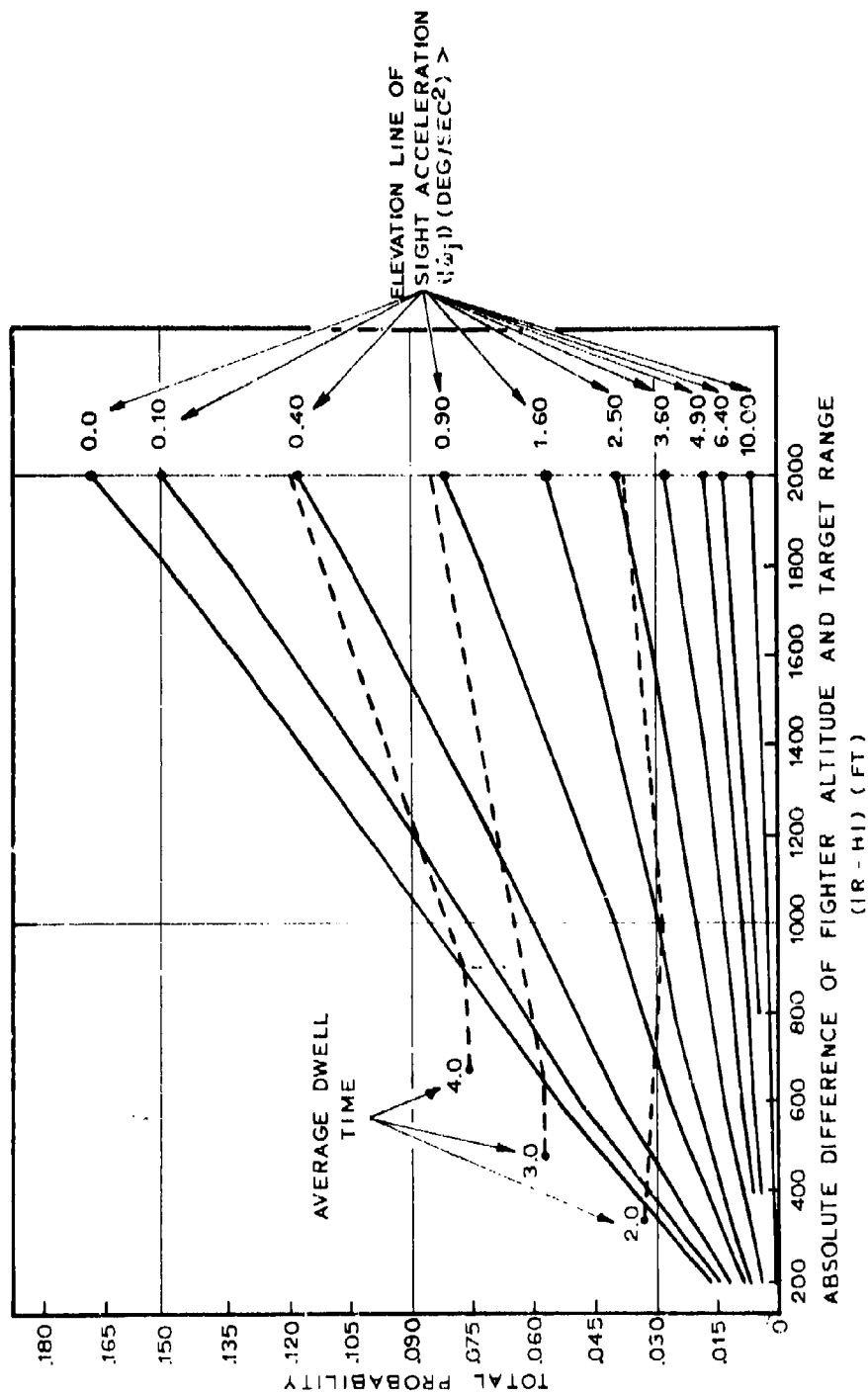


FIG. B-31 - CUMULATIVE PROBABILITY DISTRIBUTION OF DIFFERENCE OF FIGHTER ALTITUDE AND TARGET RANGE FOR SEVERAL VALUES OF ELEVATION LINE OF SIGHT ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE = 225 FT

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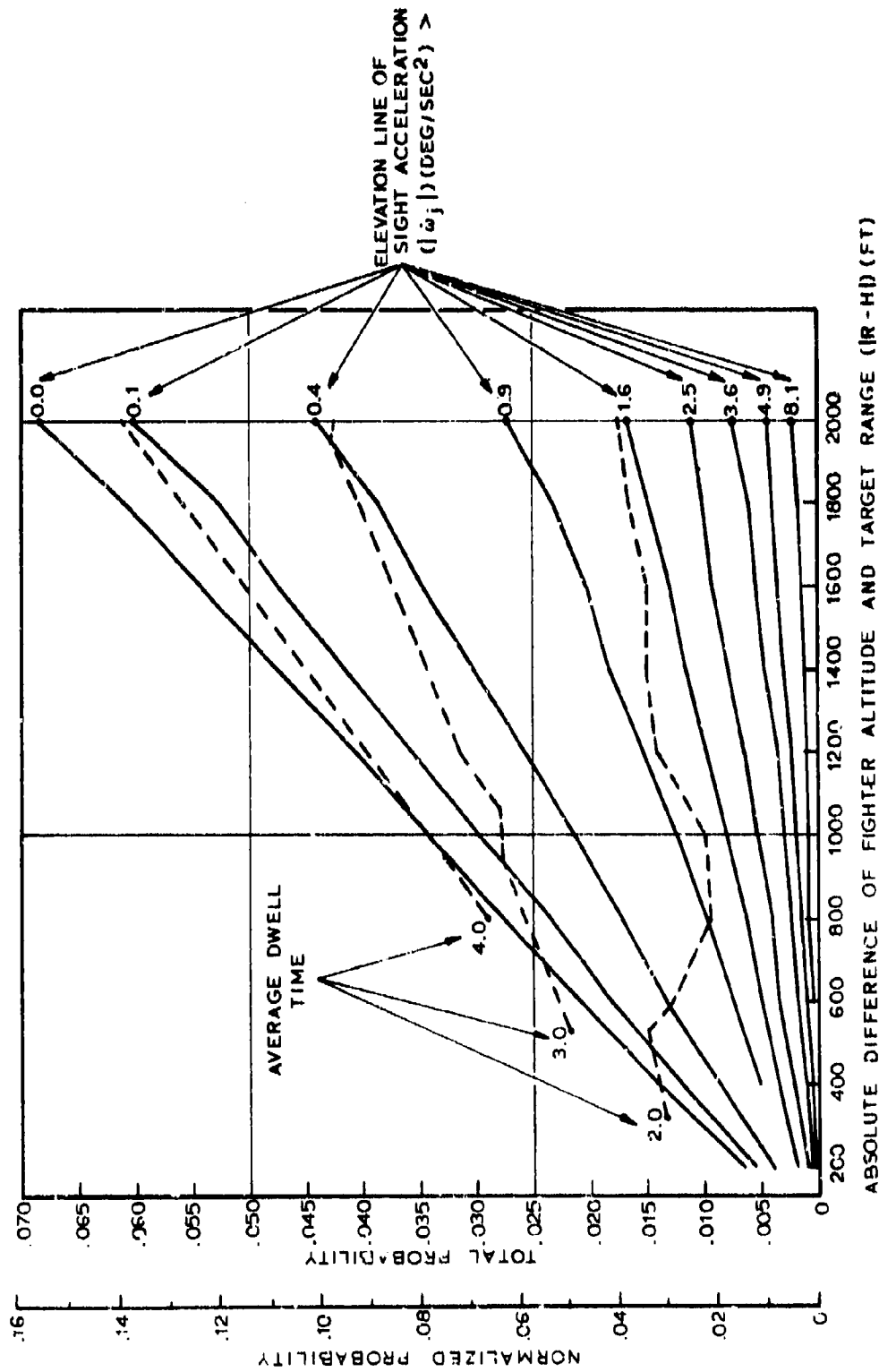


FIG. B-32 - CUMULATIVE PROBABILITY DISTRIBUTION OF ABSOLUTE DIFFERENCE OF FIGHTER ALTITUDE AND TARGET RANGE FOR SEVERAL VALUES OF ELEVATION LINE OF SIGHT ACCELERATION FOR AI RADAR COVERAGE AND MINIMUM RANGE = 225 FT

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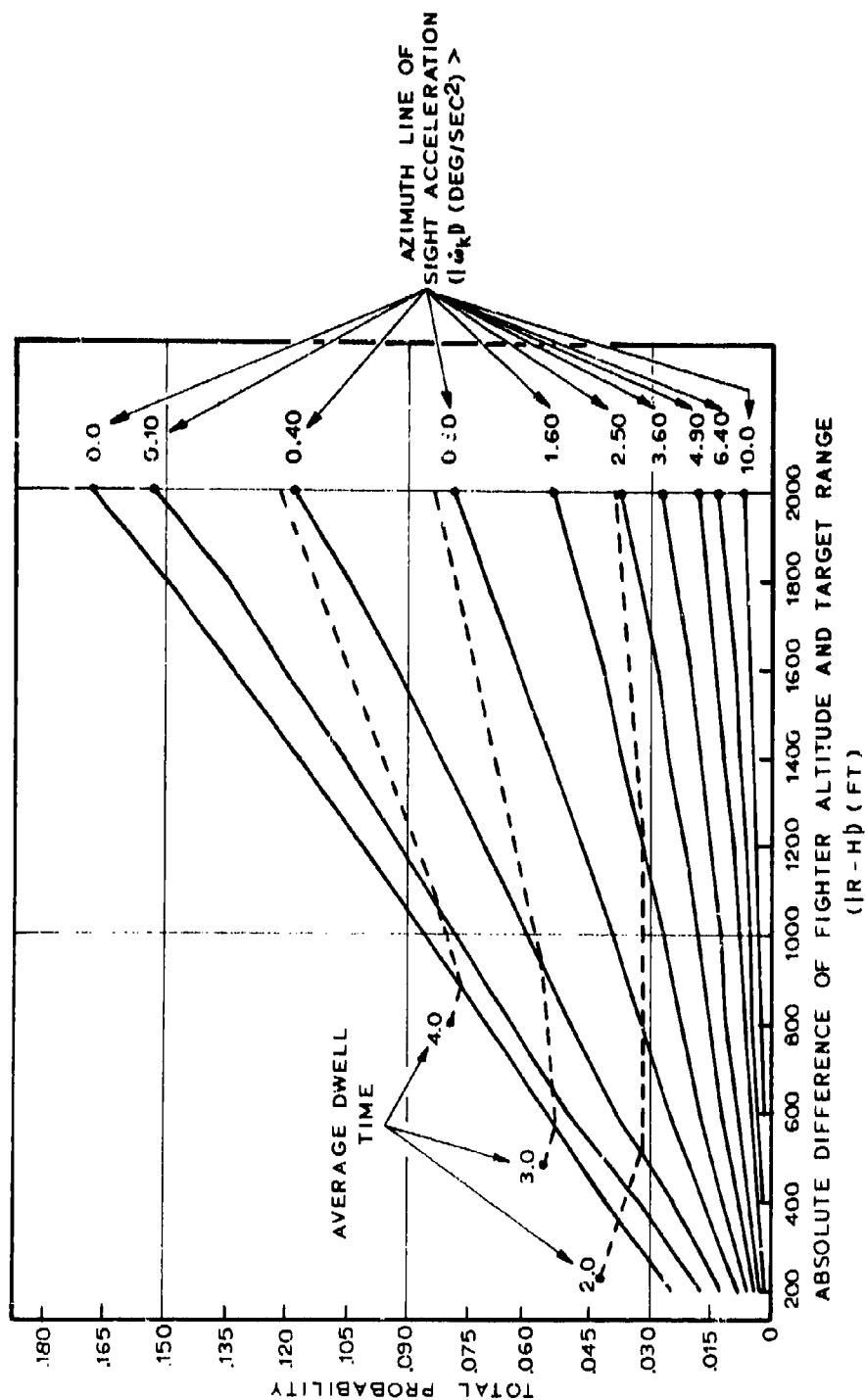


FIG. B-33- CUMULATIVE PROBABILITY DISTRIBUTION OF DIFFERENCE OF FIGHTER ALTITUDE AND TARGET RANGE FOR SEVERAL VALUES OF AZIMUTH LINE OF SIGHT ACCELERATION FOR FULL SPHERE COVERAGE AND MINIMUM RANGE = 225 FT

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5. Tables for clutter track-through requirements

a. Pulse doppler main beam clutter - A VCBT

i. Range Acceleration (ARDDOT)

(a) Nose sector (AI Radar coverage) - Table B-10

(b) Tail sector - Table B-11

(c) Full sphere - Table B-12

ii. Azimuth line of sight acceleration (AWKDF)

(a) Nose sector (AI radar coverage) - Table B-13

(b) Tail sector - Table B-14

(c) Full sphere - Table B-15

iii. Elevations line of sight acceleration (AWJDF)

(a) Nose sector (AI radar coverage) - Table B-16

(b) Tail sector - Table B-17

(c) Full sphere - Table B-18

CONFIDENTIAL

TABLE B-10

Y PARAMETER A VCOT		SUBJECT TO CONDITIONS WHEN #		PARAMETER INTERACTION		OFF NOSE		60.00		X PARAMETER ARDOST	
		TAPE NO. 1		225.00 LAMDA							
		200.00	182.00	128.00	98.00	72.00	50.00	32.00	18.00	2.00	LIMIT
20.00	NO.	0	0	0	0	0	0	0	0	0	0
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.00	NO.	0	0	0	0	0	0	0	0	0	0
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	NO.	0	0	0	0	0	2	2	6	6	7
	PCT.	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.06	0.06	0.06
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.06
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.06
120.00	NO.	2	2	2	5	7	32	20	27	31	28-27 AVG
	PCT.	0.02	0.02	0.02	0.04	0.06	0.13	0.20	0.30	0.34	0.34
	DT.	1.00	1.00	1.00	1.00	1.14	1.33	1.25	1.37	1.35	1.35
	STD.	0.00	0.00	0.00	0.00	0.35	0.47	0.43	0.48	0.54	0.54
160.00	NO.	5	6	11	19	27	45	72	82	85	52-28 AVG
	PCT.	0.04	0.05	0.09	0.13	0.24	0.45	0.73	0.83	1.04	1.04
	DT.	1.00	1.00	1.00	1.00	1.19	1.27	1.28	1.49	1.53	1.53
	STD.	0.00	0.00	0.00	0.00	0.47	0.65	0.63	0.81	0.89	0.91
180.00	NO.	7	11	16	26	41	73	102	117	123	58-48 AVG
	PCT.	0.06	0.09	0.13	0.22	0.38	0.71	1.08	1.37	1.52	1.56
	DT.	1.00	1.00	1.00	1.00	1.17	1.26	1.28	1.47	1.54	1.58
	STD.	0.00	0.00	0.00	0.27	0.44	0.57	0.68	0.87	0.95	1.00
200.00	NO.	12	18	23	37	55	103	139	155	164	60-22 AVG
	PCT.	0.10	0.14	0.18	0.32	0.52	1.02	1.51	2.06	2.15	2.20
	DT.	1.00	1.00	1.00	1.00	1.18	1.24	1.34	1.55	1.65	1.68
	STD.	0.00	0.00	0.00	0.27	0.51	0.58	0.62	0.86	1.04	1.11
220.00	NO.	16	25	34	57	85	145	188	205	212	63-04 AVG
	PCT.	0.14	0.21	0.28	0.52	0.84	1.52	2.14	2.66	2.93	2.98
	DT.	1.06	1.04	1.03	1.14	1.24	1.32	1.43	1.62	1.73	1.76
	STD.	0.24	0.20	0.17	0.44	0.55	0.63	0.68	1.04	1.16	1.22
240.00	NO.	22	32	48	73	115	185	231	247	248	68-01 AVG
	PCT.	0.19	0.27	0.40	0.68	1.17	2.05	2.87	3.76	3.88	3.98
	DT.	1.09	1.06	1.04	1.16	1.27	1.39	1.55	1.77	1.97	2.01
	STD.	0.29	0.24	0.20	0.44	0.59	0.67	0.78	1.14	1.44	1.49
300.00	NO.	39	56	80	125	189	299	353	359	324	69-84 AVG
	PCT.	0.34	0.50	0.75	1.27	2.22	3.65	5.88	6.27	6.56	6.62
	DT.	1.10	1.13	1.17	1.29	1.57	1.84	2.22	2.39	2.54	2.57
	STD.	0.38	0.36	0.41	0.58	0.76	0.88	1.03	1.61	1.89	1.96
LIMIT	NO.	302	393	494	631	792	913	924	611	498	421
	PCT.	3.77	5.38	7.37	10.38	15.08	21.40	28.00	37.40	39.76	40.49
	DT.	2.57	1.72	1.67	2.08	2.42	2.99	3.52	7.20	18.00	12.05
	STD.	0.81	1.00	1.16	1.43	1.80	2.43	3.29	5.45	7.20	9.58
AVG.		542.37	552.25	558.38	554.42	541.14	930.08	530.88	532.92	938.02	530.07

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TABLE B-11

Y PARAMETER A VERY		SUBJECT TO CONDITIONS		PARAMETER INTERACTION		OFF TAIL		X PARAMETER ARDDOT	
		MIN		225.00 LAMDA		60.00			
20.00	NO.	102.00	128.00	96.00	72.00	50.00	32.00	10.00	1
PCT.	0	0	0	0	0	0	1	1	1
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
STD.	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
40.00	NO.	0	0	0	1	2	3	4	4
PCT.	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.03	0.03
DT.	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	NO.	1	1	2	4	6	16	22	23
PCT.	0.01	0.01	0.02	0.02	0.05	0.06	0.15	0.20	0.25
DT.	1.00	1.00	1.00	1.00	1.00	1.00	1.19	1.25	1.41
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.54	0.72
120.00	NO.	3	9	13	24	37	53	67	70
PCT.	0.02	0.03	0.07	0.11	0.22	0.34	0.54	0.73	0.84
DT.	1.00	1.00	1.00	1.00	1.13	1.14	1.20	1.36	1.50
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.66	0.87
160.00	NO.	13	35	54	87	98	116	134	133
PCT.	0.10	0.14	0.20	0.42	0.60	0.87	1.25	1.96	1.74
DT.	1.00	1.00	1.00	1.02	1.12	1.21	1.34	1.46	1.63
STD.	0.00	0.00	0.00	0.14	0.44	0.57	0.71	0.83	1.09
180.00	NO.	17	49	72	94	121	154	171	168
PCT.	0.14	0.21	0.40	0.60	0.87	1.23	1.71	2.35	2.46
DT.	1.00	1.00	1.02	1.04	1.16	1.27	1.59	1.72	1.83
STD.	0.00	0.00	0.14	0.20	0.49	0.67	0.88	1.23	1.39
200.00	NO.	19	59	94	119	150	189	207	202
PCT.	0.15	0.25	0.48	0.77	1.09	1.55	2.13	3.04	3.17
DT.	1.00	1.00	1.02	1.03	1.14	1.29	1.41	1.59	1.67
STD.	0.00	0.00	0.13	0.18	0.49	0.66	0.82	1.01	1.03
220.00	NO.	27	78	116	145	185	229	240	233
PCT.	0.22	0.36	0.64	0.98	1.37	1.92	2.65	3.73	3.86
DT.	1.00	1.00	1.03	1.06	1.19	1.30	1.45	1.66	1.75
STD.	0.00	0.00	0.16	0.24	0.58	0.65	0.85	1.07	1.05
240.00	NO.	34	99	145	179	227	264	273	263
PCT.	0.27	0.47	0.82	1.20	1.71	2.42	3.24	4.42	4.57
DT.	1.00	1.00	1.04	1.09	1.20	1.33	1.54	1.75	1.86
STD.	0.00	0.00	0.20	0.31	0.54	0.71	0.94	1.21	1.19
300.00	NO.	55	150	210	262	316	355	347	331
PCT.	0.46	0.77	1.37	2.04	2.84	3.87	5.09	6.75	7.00
DT.	1.00	1.06	1.15	1.23	1.36	1.53	1.80	2.06	2.05
STD.	0.00	0.21	0.42	0.50	0.67	0.82	1.15	1.45	1.41
400.00	NO.	213	402	500	563	600	593	552	539
PCT.	2.28	3.33	5.26	7.83	10.43	13.53	16.81	21.52	22.76
DT.	1.00	1.04	1.06	1.06	1.06	1.06	1.06	1.06	1.06
STD.	0.00	0.08	0.16	0.24	0.32	0.41	0.53	0.68	0.72
AVG.	472.15	464.99	451.29	453.61	453.31	450.80	446.20	443.60	444.41

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TABLE B-12

PARAMETER INTERACTION 360 DEGS
SUBJECT TO CONDITIONS MIN = 225.00 LAMDA = 60.00

SUBJECT TO CONDITIONS WHEN # 225.00 LAPDA # 60.00									
PARAMETER A VCB		TAPE NO. 1		X PARAMETER ABBODT					
20.00	162.50	128.50	96.00	72.00	50.00	32.00	16.00	0.00	LIMIT
ME.	81	137	201	267	340	453	517	542	533
PCT.	0.07	1.25	1.73	2.43	3.42	4.56	5.72	6.67	7.25
DT.	1.04	1.04	1.06	1.14	1.19	1.26	1.39	1.54	1.75
STD.	0.25	0.23	0.28	0.43	0.46	0.55	0.69	0.91	1.18
83.65 AVG									
40.00	147	188	339	432	523	653	706	677	437
ME.	123	228	315	440	615	811	1000	1145	1249
PCT.	1.05	1.07	1.17	1.28	1.39	1.56	1.77	2.12	2.52
DT.	0.32	0.35	0.45	0.64	0.74	0.89	1.09	1.48	1.85
STD.									
91.18 AVG									
80.00	238	312	551	637	769	825	813	714	636
ME.	203	279	524	755	1046	1355	1646	1840	1951
PCT.	1.07	1.12	1.31	1.49	1.70	2.06	2.34	2.73	3.04
DT.	0.50	0.48	0.54	0.69	1.11	1.62	1.85	2.44	3.15
STD.									
3.42									
120.00	317	416	651	767	892	940	895	770	668
ME.	274	346	593	738	1083	1373	1758	2159	2500
PCT.	1.08	1.16	1.28	1.42	1.64	1.93	2.34	2.95	3.79
DT.	0.48	0.53	0.62	0.77	1.04	1.38	1.64	2.22	2.90
STD.									
4.01									
160.00	383	500	640	779	1022	1047	977	828	707
ME.	348	492	701	930	1317	2172	2546	2815	2961
PCT.	1.14	1.23	1.37	1.53	1.77	2.11	2.60	3.29	5.25
DT.	0.47	0.58	0.73	1.16	1.45	1.85	2.51	3.38	4.61
STD.									
5.72									
180.00	407	533	678	825	1061	1081	998	844	711
ME.	381	547	773	1040	1879	2367	2782	3048	3255
PCT.	1.17	1.29	1.43	1.59	1.86	2.22	2.74	3.49	4.22
DT.	0.52	0.64	0.79	1.21	1.52	1.99	2.67	3.61	4.88
STD.									
5.61									
200.00	640	576	720	878	1107	1121	1027	865	725
ME.	421	600	842	1146	1514	2550	3051	3287	3447
PCT.	1.20	1.31	1.47	1.63	1.91	2.30	2.86	3.76	4.76
DT.	0.55	0.65	0.82	1.06	1.27	1.59	2.09	2.82	3.60
STD.									
5.08									
220.00	681	620	742	918	1149	1154	1090	874	730
ME.	482	577	830	1056	2215	2761	3254	3534	3699
PCT.	1.26	1.37	1.53	1.71	2.02	2.43	2.96	3.65	4.57
DT.	0.59	0.69	0.86	1.06	1.29	1.59	2.28	3.09	3.91
STD.									
5.31									
240.00	510	692	882	965	1186	1208	1079	896	749
ME.	526	729	1044	1308	2382	2975	3448	3788	3968
PCT.	1.40	1.57	1.77	2.08	2.51	3.11	4.03	5.38	6.71
DT.	0.65	0.75	1.11	1.43	1.80	2.32	3.10	4.27	5.01
STD.									
5.01									
300.00	584	728	887	1054	1383	1402	1133	911	741
ME.	634	874	1199	1616	2837	3529	4879	4437	

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TABLE B-13

Y PARAMETER A VCBT				PARAMETER INTERACTION OFF NOSE SUBJECT TO CONDITIONS MIN = 225.00 LAMIN = 60.00				X PARAMETER A WDF			
20.00	NO.	10.00	6.10	6.40	4.90	TAPE NO. 1	2.50	1.00	0.40	0.10	LIMIT
PCT.	0	0	0	0	0	0	0	0	0	0	0
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.00	NO.	0	0	0	0	0	0	0	0	0	0.00 AVG
PCT.	0	0	0	0	0	0	0	0	0	0	0
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80.00	NO.	6	0	0	0	0	1	1	6	6	7
PCT.	0	0	0	0	0	0	0	0	0	0	0
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.00	NO.	1	1	1	1	1	2	5	10	12	21
PCT.	0	0	0	0	0	0	0	0	0	0	0
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160.00	NO.	4	4	6	7	14	17	25	37	48	75
PCT.	0	0	0	0	0	0	0	0	0	0	0
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	NO.	4	4	7	8	16	20	35	53	72	113
PCT.	0	0	0	0	0	0	0	0	0	0	0
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	NO.	6	9	13	14	23	28	51	72	94	149
PCT.	0	0	0	0	0	0	0	0	0	0	0
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220.00	NO.	10	15	21	25	35	42	70	97	133	193
PCT.	0	0	0	0	0	0	0	0	0	0	0
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
240.00	NO.	13	19	28	35	46	57	88	122	159	244
PCT.	0	0	0	0	0	0	0	0	0	0	0
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	NO.	28	35	46	57	79	98	141	181	235	321
PCT.	0	0	0	0	0	0	0	0	0	0	0
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LIMIT	NO.	204	251	295	356	439	524	631	764	870	733
PCT.	0	0	0	0	0	0	0	0	0	0	0
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AVG.	540.00	547.18	539.91	546.1	547.70	540.67	537.47	534.32	530.69	530.07	539.07

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TABLE B-14

Y PARAMETER A VCST				PARAMETER INTERACTION SUBJECT TO CONDITIONS				OFF TAIL 225-66 LAMDA =				X PARAMETER A WDF			
25.00	NO.	10.00	0.10	0.40	4.00	TAPE NO. 1	2.50	1.00	0.90	0.00	0.00	0.40	0.10	LIMIT	
PCT.	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	
													0.00	0.00	
40.00	NO.	0	0	0	0	0	0	0	0	0	0	0	2	1.16	AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
													0.37	0.37	AVG
80.00	NO.	0	0	0	0	0	0	0	0	0	0	0	18	23	
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.26	
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33	1.43	
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.71	
													0.58	0.58	
120.00	NO.	0	0	1	1	3	5	8	16	16	16	37	62	0.31	AVG
PCT.	0.00	0.00	0.00	0.01	0.02	0.02	0.04	0.06	0.13	0.13	0.13	0.34	0.72	0.86	
DT.	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.16	1.45	1.57	
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.92	0.92	
													0.04	0.04	
160.00	NO.	4	4	6	7	11	21	31	53	53	53	86	125	132	
PCT.	0.03	0.03	0.03	0.07	0.10	0.10	0.20	0.29	0.49	0.49	0.49	0.85	1.06	1.06	
DT.	1.00	1.00	1.00	1.20	1.18	1.18	1.19	1.16	1.16	1.16	1.16	1.24	1.61	1.61	
STD.	0.00	0.00	0.00	0.05	0.09	0.09	0.39	0.37	0.41	0.41	0.41	0.61	1.08	1.24	
													1.08	1.08	
180.00	NO.	6	7	10	14	19	31	46	71	71	71	116	161	161	
PCT.	0.05	0.06	0.06	0.13	0.17	0.17	0.29	0.43	0.73	0.73	0.73	1.27	2.22	2.22	
DT.	1.00	1.00	1.00	1.14	1.11	1.11	1.16	1.17	1.38	1.38	1.38	1.37	1.78	1.89	
STD.	0.00	0.00	0.00	0.35	0.31	0.31	0.37	0.38	0.57	0.57	0.57	0.66	1.29	1.47	
													1.24	1.24	AVG
200.00	NO.	6	8	12	17	26	42	64	96	96	96	150	197	200	
PCT.	0.05	0.06	0.06	0.15	0.22	0.22	0.39	0.61	1.01	1.01	1.01	1.72	2.84	3.23	
DT.	1.00	1.00	1.00	1.12	1.08	1.08	1.17	1.19	1.30	1.30	1.30	1.44	1.81	2.02	
STD.	0.00	0.00	0.00	0.32	0.27	0.27	0.37	0.39	0.56	0.56	0.56	0.77	1.43	1.86	
													1.24	1.24	AVG
220.00	NO.	9	12	19	27	36	59	84	127	127	127	168	229	231	
PCT.	0.07	0.10	0.10	0.23	0.31	0.31	0.56	0.82	1.35	1.35	1.35	2.23	3.46	3.94	
DT.	1.00	1.00	1.00	1.07	1.06	1.06	1.19	1.23	1.39	1.39	1.39	1.49	1.88	2.14	
STD.	0.00	0.00	0.00	0.26	0.28	0.28	0.43	0.47	0.63	0.63	0.63	0.89	1.50	2.07	
													1.44	1.44	AVG
240.00	NO.	11	15	24	36	49	80	111	158	158	158	217	256	259	
PCT.	0.09	0.12	0.12	0.30	0.42	0.42	0.75	1.08	1.76	1.76	1.76	2.74	4.09	4.64	
DT.	1.00	1.00	1.00	1.04	1.08	1.08	1.17	1.22	1.39	1.39	1.39	1.58	2.00	2.28	
STD.	0.00	0.00	0.00	0.28	0.27	0.27	0.41	0.47	0.66	0.66	0.66	0.97	1.68	2.24	
													1.55	1.55	AVG
300.00	NO.	17	19	34	61	81	122	166	239	239	239	303	328	321	
PCT.	0.14	0.18	0.18	0.54	0.78	0.78	1.26	1.81	2.94	2.94	2.94	4.45	6.36	7.14	
DT.	1.00	1.00	1.00	1.14	1.21	1.21	1.30	1.37	1.54	1.54	1.54	1.84	2.42	2.79	
STD.	0.24	0.36	0.36	0.46	0.66	0.66	0.61	0.75	0.89	0.89	0.89	1.23	2.16	2.88	
													1.65	1.65	AVG
LIMIT	NO.	128	166	217	291	349	419	448	537	537	537	563	483	349	
PCT.	1.23	1.54	1.54	2.95	3.98	3.98	5.47	7.45	16.62	16.62	16.62	14.56	19.86	22.76	
DT.	1.12	1.16	1.16	1.20	1.43	1.43	1.67	1.99	2.48	2.48	2.48	3.33	5.14	6.17	
STD.	0.36	0.39	0.39	0.42	0.59	0.59	0.80	1.21	1.72	1.72	1.72	2.44	3.98	7.55	
													3.12	3.12	AVG
AVG.	548.20	506.27	506.32	492.71	483.75	465.96	452.44	437.82	428.84	428.84	428.84	444.61	444.61	444.61	

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TABLE B-15

PARAMETER INTERACTION 34C DEGS SUBJECT 10 CONDITIONS RMN = 225.00 LAMDA = 60.00										X PARAMETER A WDF	
Y PARAMETER A VOST		TAPE NO. 1		PARAMETER A WDF		PARAMETER A WDF		PARAMETER A WDF		PARAMETER A WDF	
20.00 NO.	10.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00
PCT.	57	72	85	113	140	169	199	270	366	438	526
DT.	0.50	0.64	0.76	1.00	1.32	1.87	2.85	4.15	6.44	9.95	15.36
STD.	1.11	1.31	1.51	1.81	2.21	2.81	3.61	4.61	5.91	7.51	9.41
STD.	0.36	0.56	0.76	0.96	1.26	1.66	2.16	2.86	3.76	4.86	6.16
40.00 NO.	93	112	136	162	242	313	408	507	585	624	621
PCT.	0.85	1.05	1.30	1.76	2.49	3.43	4.97	7.04	9.45	11.66	13.49
DT.	1.15	1.37	1.60	1.91	2.53	3.37	4.74	6.58	8.92	11.66	13.49
STD.	0.39	0.64	0.87	1.11	1.53	2.07	2.85	3.91	5.24	6.95	9.04
60.00 NO.	144	171	205	264	343	434	536	688	868	1084	1349
PCT.	1.30	1.76	2.12	2.80	3.63	4.57	5.69	7.18	9.04	11.24	13.84
DT.	1.20	1.55	1.90	2.32	2.85	3.44	4.14	4.94	5.84	6.84	7.94
STD.	0.43	0.56	0.68	0.88	1.08	1.28	1.48	1.68	1.88	2.08	2.28
120.00 NO.	179	206	247	316	407	505	613	724	790	827	827
PCT.	1.74	2.11	2.62	3.42	4.78	6.55	9.19	12.82	17.86	22.93	23.00
DT.	1.22	1.28	1.33	1.35	1.47	1.63	1.84	2.22	2.83	3.61	4.01
STD.	0.46	0.58	0.64	0.70	0.79	0.89	1.02	1.16	1.36	1.61	1.77
160.00 NO.	218	247	293	373	473	580	703	827	882	779	654
PCT.	2.16	2.57	3.21	4.21	5.75	7.78	10.83	15.16	21.09	27.44	30.00
DT.	1.24	1.30	1.37	1.41	1.52	1.68	1.93	2.30	3.00	4.41	5.76
STD.	0.49	0.60	0.67	0.75	0.89	1.04	1.29	1.77	2.46	3.95	5.72
180.00 NO.	225	257	306	386	489	621	790	855	910	801	656
PCT.	2.31	2.74	3.42	4.42	6.08	8.20	11.50	16.19	22.63	29.64	32.55
DT.	1.28	1.33	1.40	1.45	1.56	1.71	1.95	2.39	3.12	4.64	6.22
STD.	0.52	0.62	0.68	0.77	0.92	1.06	1.31	1.85	2.57	4.13	6.00
200.00 NO.	236	270	323	408	515	629	779	902	953	829	667
PCT.	2.47	2.94	3.68	4.79	6.49	8.71	12.23	17.17	24.15	31.79	35.80
DT.	1.31	1.36	1.43	1.47	1.58	1.73	1.97	2.39	3.18	4.80	6.57
STD.	0.57	0.65	0.72	0.80	0.94	1.09	1.34	1.86	2.59	4.29	6.25
220.00 NO.	252	290	347	439	544	666	818	952	994	854	671
PCT.	2.71	3.22	4.04	5.24	7.32	9.39	13.14	18.43	25.87	34.03	37.53
DT.	1.35	1.39	1.46	1.50	1.62	1.77	2.01	2.43	3.26	4.99	7.01
STD.	0.60	0.66	0.74	0.82	0.95	1.10	1.35	1.93	2.67	4.44	6.49
240.00 NO.	260	309	368	464	571	705	847	1004	1033	879	676
PCT.	2.90	3.43	4.30	5.59	7.44	9.85	13.97	19.68	27.52	36.38	40.15
DT.	1.39	1.43	1.46	1.51	1.63	1.79	2.02	2.46	3.34	5.19	7.44
STD.	0.59	0.67	0.76	0.84	0.97	1.15	1.32	1.85	2.65	4.85	7.57
300.00 NO.	298	336	406	515	637	782	942	1105	1135	934	670
PCT.	3.39	4.04	5.01	6.52	8.78	11.69	16.09	22.78	32.06	42.51	46.94
DT.	1.43	1.49	1.55	1.61	1.71	1.87	2.10	2.58	3.54	5.70	8.78
STD.	0.68	0.77	0.83	0.92	1.05	1.23	1.42	2.24	3.13	5.57	9.28
LIMIT	472	541	637	790	963	1157	1352	1520	1458	795	11
NO.	7.53	9.01	11.03	14.21	18.79	24.53	33.15	46.41	65.83	87.93	99.92
PCT.	2.80	2.89	2.17	2.23	2.43	2.66	3.07	3.83	5.46	13.86	138.15
DT.	1.09	1.22	1.33	1.50	1.75	2.01	2.59	3.65	5.85	10.51	798.41
STD.	368.73	369.98	362.01	359.87	359.89	350.24	343.05	341.13	344.24	350.25	363.63
AVG.											

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TABLE B-17

Y PARAMETER A VCBT		SUBJECT TO CONDITIONS										PARAMETER INTERACTION										OFF TAIL										225,00 LAMDA =										60,00										X PARAMETER A WJDF																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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TABLE B-18

V PARAMETER A VCST		SUBJECT TO CONDITIONS RMJN = 225.00 LAMDA = 60.00		PARAMETER INTERACTION 360 DEGS		X PARAMETER A WJDF	
20.00	10.00	6.40	4.00	TAPE NO. 1	0.90	0.40	LIMIT
NE	61	94	127	3.60	300	493	0.10
PCY	69	184	235	2.50	307	506	0.20
DT	0.24	0.61	1.09	1.84	3.44	5.83	7.30
STC	1.11	1.07	1.08	1.72	1.53	1.71	1.75
	0.32	0.26	0.27	1.17	0.96	1.00	1.24
				0.42	0.57		3.60 AVG
40.00	102	160	221	294	505	577	618
NE	121	145	202	2.91	7.53	9.62	12.49
PCY	111	114	1.14	1.42	1.07	2.09	2.52
DT	1.10	0.38	0.38	0.74	1.20	1.90	1.96
STC	0.39			0.51			3.78 AVG
							602
80.00	151	233	309	406	643	675	656
NE	180	227	302	4.33	11.19	14.68	18.12
PCY	147	1.75	1.23	1.55	2.18	3.46	4.13
DT	1.22	1.22	0.50	0.95	1.62	2.18	3.42
STC	0.44						3.62 AVG
							627
120.00	184	283	360	477	740	745	722
NE	213	2.79	3.70	5.85	13.45	17.86	22.59
PCY	124	1.24	1.26	1.58	2.28	3.92	5.00
DT	1.22	0.53	0.57	1.02	1.72	2.45	3.39
STC	0.45						3.62 AVG
							654
160.00	228	335	428	542	836	836	795
NE	268	3.38	4.51	6.17	15.79	21.09	26.91
PCY	124	1.27	1.32	1.43	2.37	3.16	4.24
DT	1.24	0.57	0.60	0.79	1.06	2.65	3.76
STC	0.48						3.72 AVG
							656
180.00	235	342	446	567	864	870	817
NE	279	3.62	4.83	6.54	16.77	22.48	29.00
PCY	128	1.30	1.35	1.45	2.43	3.24	4.45
DT	1.24	0.62	0.70	0.82	1.90	2.77	4.02
STC	0.54						3.68 AVG
							667
200.00	246	364	468	592	906	910	848
NE	289	3.68	5.15	6.95	17.08	23.89	31.09
PCY	130	1.34	1.38	1.47	2.44	3.29	4.59
DT	1.20	0.64	0.71	0.82	1.93	2.80	4.14
STC	0.54						3.69 AVG
							671
220.00	264	388	493	628	940	941	884
NE	316	4.23	5.56	7.54	18.79	25.43	33.25
PCY	134	1.37	1.41	1.50	2.51	3.39	4.71
DT	1.23	0.66	0.75	0.87	2.00	2.89	4.26
STC	0.56						3.93 AVG
							676
240.00	276	405	513	658	985	978	919
NE	339	4.48	5.86	7.92	19.96	27.06	35.46
PCY	136	1.39	1.44	1.52	2.54	3.47	4.83
DT	1.23	0.69	0.79	0.89	2.09	3.13	4.68
STC	0.57						3.97 AVG
							670
300.00	306	448	558	711	1077	1072	984
NE	372	4.48	5.78	7.91	22.11	31.24	41.35
PCY	139	1.40	1.45	1.52	2.54	3.47	4.83
DT	1.23	0.69	0.79	0.89	2.09	3.13	4.68
STC	0.64						3.97 AVG
							670
LIMIT	307	720	856	1044	1365	1332	833
NE	312	12.65	15.83	20.34	47.58	65.80	87.89
PCY	139	2.12	2.32	2.44	3.22	4.08	5.19
DT	1.23	1.19	1.33	1.73	2.72	3.77	5.19
STC	0.64						3.93 AVG
							670
400.00	393.66	393.33	376.89	364.64	349.55	353.82	358.56
NE							363.63

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b. f_0 Notch (ABS VC)

i. Range acceleration (ARDDOT)

- (a) Nose sector (AI radar coverage) - Table B-19
- (b) Tail sector - Table B-20
- (c) Full sphere - Table B-21

ii. Azimuth line of sight acceleration (AWKDF)

- (a) Nose sector (AI radar coverage) - Table B-22
- (b) Tail sector - Table B-23
- (c) Full sphere - Table B-24

iii. Elevation line of sight acceleration (AWJDF)

- (a) Nose sector (AI radar coverage) - Table B-25
- (b) Tail sector - Table B-26
- (c) Full sphere - Table B-27

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TABLE B-19

Y PARAMETER ABS VC		PARAMETER INTERACTION OFF NOISE SUBJECT TO CONDITIONS WITHIN 225.00 LAMDA=										X PARAMETER ARDDOT	
		TAPE NO. -0											
		200.00	102.00	128.00	98.00	72.00	50.00	32.00	18.00	8.00	2.00	LIMIT	
25.00	AB.	0.06	0.07	0.09	0.12	0.20	0.24	0.30	0.38	0.46	0.55	43	
	PCT.	1.00	1.00	1.00	1.00	1.00	1.00	1.06	1.15	1.24	1.30	0.57	
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.35	0.47	1.30	1.67	
50.00		20	23	30	36	51	62	68	73	79	75	77.23	AVG
75.00	AB.	0.13	0.13	0.24	0.30	0.42	0.53	0.62	0.73	0.80	1.01	1.03	
	PCT.	1.00	1.00	1.00	1.00	1.02	1.06	1.18	1.25	1.41	1.68	1.79	
	STD.	0.00	0.00	0.00	0.00	0.14	0.30	0.49	0.52	0.74	1.83	1.94	
100.00		27	31	40	52	66	80	85	93	98	95	98.53	AVG
125.00	AB.	0.22	0.25	0.32	0.42	0.57	0.75	0.93	1.07	1.28	1.44	1.48	
	PCT.	1.00	1.00	1.00	1.00	1.08	1.17	1.36	1.44	1.64	1.91	2.02	
	STD.	0.00	0.00	0.00	0.00	0.26	0.44	0.76	0.82	1.07	2.20	3.16	
150.00		33	44	55	65	78	95	107	117	121	114	96.86	AVG
175.00	AB.	0.28	0.36	0.49	0.59	0.76	1.01	1.27	1.47	1.71	1.89	1.93	
	PCT.	1.00	1.02	1.02	1.10	1.22	1.33	1.49	1.57	1.77	2.08	2.18	
	STD.	0.00	0.25	0.23	0.29	0.46	0.61	0.86	0.95	1.24	2.53	3.19	
200.00		38	49	61	71	88	104	116	128	131	123	106.59	AVG
225.00	AB.	0.30	0.40	0.53	0.66	0.94	1.24	1.56	1.80	2.07	2.27	2.32	
	PCT.	1.00	1.02	1.08	1.17	1.34	1.49	1.74	1.94	2.32	2.52	2.40	
	STD.	0.00	0.14	0.33	0.41	0.58	0.84	1.05	1.18	1.45	2.54	3.27	
250.00		46	58	71	87	111	134	148	157	159	150	101.70	AVG
275.00	AB.	0.38	0.50	0.65	0.85	1.21	1.63	2.04	2.31	2.63	2.86	2.91	
	PCT.	1.04	1.10	1.16	1.23	1.37	1.52	1.72	1.85	2.08	2.49	2.49	
	STD.	0.20	0.28	0.40	0.47	0.61	0.84	1.08	1.26	1.60	2.36	3.21	
300.00		58	73	87	107	133	164	177	182	183	172	102.38	AVG
325.00	AB.	0.42	0.64	0.81	1.05	1.46	2.00	2.45	2.79	3.12	3.35	3.41	
	PCT.	1.03	1.10	1.17	1.22	1.38	1.52	1.73	1.82	2.14	2.44	2.54	
	STD.	0.18	0.29	0.40	0.46	0.68	0.91	1.22	1.36	1.91	2.53	3.30	
350.00		64	83	98	123	154	188	208	216	215	204	104.06	AVG
375.00	AB.	0.53	0.73	0.92	1.21	1.70	2.32	2.90	3.32	3.69	3.93	4.00	
	PCT.	1.03	1.10	1.17	1.22	1.36	1.55	1.75	1.85	2.15	2.42	2.49	
	STD.	0.21	0.30	0.43	0.47	0.69	0.91	1.22	1.38	2.22	3.12	4.01	
400.00		67	88	106	134	169	205	230	236	233	221	102.02	AVG
425.00	AB.	0.56	0.78	1.00	1.31	1.92	2.67	3.41	3.91	4.29	4.55	4.62	
	PCT.	1.04	1.11	1.18	1.23	1.43	1.63	1.86	2.08	2.31	2.58	2.67	
	STD.	0.21	0.35	0.45	0.54	0.75	1.02	1.35	1.68	2.28	3.12	4.24	
450.00		72	93	114	145	186	230	266	291	259	248	98.45	AVG
475.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
500.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
525.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
550.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
575.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
600.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
625.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
650.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
675.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
700.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
725.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
750.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
775.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
800.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
825.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
850.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
875.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
900.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
925.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
950.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
975.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
1000.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
1025.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
1050.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
1075.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
1100.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
1125.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
1150.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
1175.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
1200.00		80	103	124	151	192	234	274	301	264	242	96.72	AVG
1225.00	AB.	0.52	0.85	1.11	1.48	2.14	3.03	3.88	4.45	4.82	5.18	5.28	
	PCT.	1.06	1.15	1.22	1.28	1.46	1.65	1.90	2.14	2.38	2.62	2.73	
	STD.	0.28	0.41	0.51	0.59	0.80	1.03	1.34	1.68	2.27	3.07	4.15	
1250.00		80	103	124	151	192</							

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TABLE B-20

PARAMETER INTERACTION GET FAIL

SUBJECT TO CONDITIONS RM 13
PARAMETER INTERSECTION
95% PAY
225.38 LANDS 3 60.60

SUBJECT TO CONDITIONS
PARAMETER INTERACTION
229.38 LANDA 3-

60,000

[illegible]

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TABLE B-21
PARAMETER INTERACTION 300 DEGS
SUBJECT TO CONDITIONS MIN. 225.00 LAMDA = 60.00

Y PARAMETER ABS VC	200.00	162.00	128.00	98.00	72.00	50.00	32.00	18.00	8.00	2.00	LIMIT	X PARAMETER ARDOST
25.00 AB.	68	81	113	135	208	282	369	410	420	414	407	
PCT.	0.54	0.65	0.90	1.24	1.66	2.25	3.04	3.62	4.15	4.45	4.57	
ST.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.11	1.24	1.35	1.41	
STD.	2.00	0.00	0.00	0.00	0.00	0.00	0.18	0.32	0.56	0.83	0.94	
50.00 AB.	132	185	233	316	399	515	686	643	634	618	605	94.69 AVG
PCT.	1.05	1.32	1.86	2.52	3.26	4.45	5.84	6.94	7.94	8.48	8.64	
ST.	1.00	1.00	1.00	1.00	1.00	1.00	1.21	1.35	1.57	1.79	1.79	
STD.	0.00	0.00	0.00	0.00	0.15	0.29	0.47	0.64	1.00	1.30	1.44	
75.00 AB.	198	242	344	455	557	688	756	779	746	705	683	99.10 AVG
PCT.	1.32	1.93	2.78	3.76	4.99	6.86	8.84	10.52	11.86	12.59	12.82	
ST.	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.47	1.99	2.24	2.35	
STD.	0.00	0.00	0.11	0.18	0.34	0.50	0.78	1.02	1.48	1.99	2.33	181.82 AVG
100.00 AB.	228	308	418	530	641	786	880	870	814	755	726	
PCT.	1.82	2.51	3.87	4.74	6.41	8.86	11.54	13.44	15.24	16.15	16.41	
ST.	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.47	1.99	2.24	2.35	
STD.	0.00	0.14	0.26	0.39	0.49	0.66	0.99	1.32	1.85	2.44	2.87	101.30 AVG
125.00 AB.	270	360	479	598	730	877	937	930	856	783	747	
PCT.	2.17	2.99	4.29	5.76	7.91	10.94	14.14	16.44	18.52	19.58	19.91	
ST.	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.47	1.99	2.24	2.35	
STD.	0.00	0.20	0.35	0.46	0.61	0.85	1.16	1.58	2.18	2.86	3.36	100.88 AVG
150.00 AB.	314	417	544	676	821	971	1014	951	904	812	766	
PCT.	2.59	3.63	5.15	6.94	9.47	13.02	16.74	19.69	21.90	23.50	23.50	
ST.	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.47	1.99	2.24	2.35	
STD.	0.10	0.29	0.42	0.54	0.69	0.96	1.38	1.75	2.42	3.02	3.84	101.67 AVG
175.00 AB.	382	498	639	787	930	1070	1102	1055	951	841	795	
PCT.	3.23	4.45	6.20	8.30	11.21	15.20	19.34	22.66	25.13	26.49	26.89	
ST.	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.47	1.99	2.24	2.35	
STD.	0.24	0.34	0.45	0.58	0.79	1.08	1.46	1.97	2.71	3.63	4.22	105.29 AVG
200.00 AB.	431	563	703	853	1012	1153	1180	1117	988	859	807	
PCT.	3.76	5.21	7.12	9.32	12.53	17.28	21.90	24.47	26.38	29.60	30.37	
ST.	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.47	1.99	2.24	2.35	
STD.	0.30	0.38	0.51	0.64	0.86	1.17	1.58	2.18	3.05	4.26	5.02	103.46 AVG
225.00 AB.	453	588	734	894	1066	1202	1217	1131	993	849	791	
PCT.	4.02	5.59	7.67	10.38	14.05	18.93	24.05	28.25	31.21	32.80	33.30	
ST.	1.11	1.19	1.31	1.42	1.65	1.97	2.48	3.13	3.98	4.86	5.27	
STD.	0.32	0.42	0.55	0.69	0.93	1.27	1.75	2.41	3.39	4.70	5.64	106.45 AVG
250.00 AB.	482	621	780	970	1124	1245	1279	1173	1011	866	800	
PCT.	4.44	6.11	8.92	11.55	15.55	20.89	26.38	30.91	34.13	35.88	36.44	
ST.	1.15	1.23	1.37	1.49	1.73	2.17	2.58	3.30	4.23	5.19	5.71	
STD.	0.38	0.47	0.63	0.80	1.03	1.37	1.86	2.58	3.66	5.17	6.43	106.40 AVG
LIMIT	843	1088	1223	1430	1574	1686	1690	1601	1303	1193	111	
PCT.	14.01	18.74	25.24	33.97	44.92	59.31	74.13	86.05	94.40	98.41	99.92	
ST.	2.06	2.30	2.59	2.98	3.58	4.48	6.23	9.79	19.88	63.89	1138.18	
STD.	1.35	1.67	2.61	2.40	3.80	4.12	6.18	9.94	22.55	71.25	798.41	
AVG.	517.30	505.84	394.85	483.37	472.06	463.09	458.88	456.11	453.59	452.01	452.48	

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TABLE B-22
PARAMETER INTERACTION OFF NOSE
SUBJECT TO CONDITIONS: $R_{\text{MIN}} = 225.00$ $\text{LANDA} = 60.00$

Y PARAMETER ARS VC				X PARAMETER A WIDF			
25.00	NO.	10.00	6.10	6.40	4.00	TAPE NO. 1	60.00
	PCT.	0.02	0.02	0.03	0.03	5	0.90
	DT.	1.00	1.00	1.00	1.00	5	16
	STD.	0.00	0.00	0.00	0.00	0.05	0.15
						0.05	0.08
						1.20	1.19
						0.40	0.39
							1.68
							1.02 AVG
							72
							1.03
							0.77
							1.45
							1.70
							1.04
							2.00 AVG
							0.92
							0.88
							1.00
							1.59
							1.12
							3.16
							1.00 AVG
							111
							106
							1.44
							1.93
							2.16
							1.71
							3.19
							2.25 AVG
							121
							117
							1.76
							2.32
							1.52
							1.89
							2.40
							3.27
							1.31
							2.15 AVG
							146
							1.99
							2.84
							2.91
							2.82
							2.49
							3.21
							1.41
							1.90 AVG
							164
							144
							3.41
							2.67
							2.54
							2.84
							1.51
							3.30
							2.20 AVG
							201
							195
							3.12
							4.08
							2.49
							4.81
							1.50
							2.16 AVG
							213
							217
							3.09
							4.62
							2.67
							2.15
							4.24
							1.63
							2.14 AVG
							242
							237
							4.18
							5.28
							2.21
							2.73
							1.69
							4.15
							2.03 AVG
							621
							733
							34.30
							48.49
							12.85
							5.08
							9.58
							5.05
							2.31 AVG
							645.17
							647.90
							643.73
							650.80
							655.36
							663.05
							665.50
							678.20
							685.50
							691.70
							695.17
							698.83

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TABLE B-23

PARAMETER INTERACTION OFF TAIL
SUBJECT TO CONDITIONS RMIN = 223.00 LAMQA =

SUBJECT TO CONDITIONS										225.00										60.00																																																																																																													
PARAMETER ABS VC										LAMBDA										X PARAMETER A WKDF																																																																																																													
TAPE NO.										1																																																																																																																							
10.00										4.00										2.50										1.40										0.90										0.40										0.10										LIMIT																																																											
25.00										8.10										6.40										3.60										1.40										0.90										0.40										0.10										LIMIT																																																	
PCT.										4										6										20										36										43										62										71										83																																																	
DT.										0.03										0.06										0.09										0.12										0.15										0.18										0.24										0.37										0.43										0.63																													
STD.										1.00										1.17										1.10										1.08										1.15										1.25										1.27										1.28										1.28										1.28																													
50.00										0.00										0.37										0.30										0.28										0.36										0.52										0.69										0.65										0.74										0.77										0.77																			
PCT.										4										7										16										25										35										51										65										98										98										98																													
DT.										0.03										0.06										0.11										0.17										0.29										0.42										0.61										1.17										1.33										1.33																													
STD.										1.00										1.14										1.08										1.31										1.44										1.49										1.51										1.49										1.49										1.49																													
75.00										0.00										0.35										0.27										0.58										0.64										1.02										1.07										1.08										1.32										1.32										1.32																			
PCT.										7										11										22										33										46										71										92										115										119										119																													
DT.										0.06										0.10										0.15										0.23										0.40										0.59										1.25										1.62										2.12										2.12										2.12																			
STD.										1.00										1.06										1.12										1.32										1.52										1.61										1.59										1.98										2.24										2.24										2.24																			
100.00										0.00										0.29										0.32										0.55										0.74										1.39										1.66										1.67										1.94										2.53										2.53										2.53									
PCT.										15										23										46										65										98										119										144										148										148										148										148																			
DT.										0.10										0.14										0.22										0.31										0.54										0.81										1.23										1.68										2.39										2.79										2.79										2.79									
STD.										0.59										0.40										0.38										0.59										0.78										1.26										1.48										1.76										2.36										2.88										2.88										2.88									
125.00										0.00										0.36										0.34										0.58										0.73										1.21										1.67										2.06										2.57										2.97										2.97										2.97									
PCT.										13										20										39										56										75										112										141										174										178										178										178																			
DT.										0.11										0.18										0.27										0.40										0.66										0.96										1.45										2.04										3.54										3.54										3.54										3.54									
STD.										0.27										0.36										0.58										0.73										1.21										1.67										2.06										2.57										2.97										2.97										2.97																			
150.00										0.00										0.34										0.32										0.55										0.70										1.17										1.67										2.08										3.05										3.85										3.85										3.85									
PCT.										13										22										45										66										91										135										174										204										281										281										281																			
DT.										0.11										0.20										0.30										0.44										0.75										1.13										1.78										2.55										3.71										4.41										4.41										4.41									
STD.										0.27										0.34										0.55										0.70										1.17										1.67										2.08										3.05										3.85										3.85										3.85																			
175.00										0.00										0.32										0.31										0.53										0.67										1.11										1.67										2.08										3.05										3.85										3.85										3.85									
PCT.										14										25										38										53										76										108										159										201										236										223										223																			
DT.										0.12										0.22										0.34										0.51										0.85										1.33										2.12										3.05										4.41										5.16										5.16																			
STD.										0.27										0.34										0.53										0.67										1.11										1.67										2.08										3.05										3.85										3.85										3.85																			
200.00										0.00										0.31										0.29										0.51										0.65										1.07										1.55										2.07										2.67										3.07										3.07																			
PCT.										17										31										46										63										96										128										182										231										246										246										246																			
DT.										0.14										0.27										0.42										0.61										1.05										1.58										2.51										3.67										5.24										6.87										6.87																			
STD.										0.24										0.30										0.51										0.65										1.07										1.55										2.07										2.67										3.07										3.07										3.07																			
225.00										0.00										0.34										0.33										0.49										0.64										1.05										1.57										2.01										2.62										2.62										2.62																			
PCT.										20										34										55										74										111										146										196										248										281										281										281																			
DT.										0.17										0.30										0.49										0.71										1.21										1.80										2.81										4.15										6.08										6.08										6.08																			
STD.										1.05										1.09										1.13										1.20										1.36										1.54										1.80										2.10										2.64										3.29										3.29										3.29									
250.00										0.00										0.22										0.28										0.49										0.64										1.05										1.57										2.01										2.62										2.62										2.62																			
PCT.										22										38										62										85										128										163										215										261										297										276										276										276									
DT.										0.18										0.34										0.56										0.81										1.40										2.10										3.23										4.74										6.08										6.08										6.08																			
STD.										0.21										0.31										0.51										0.66										1.06										1.51										2.02										2.64										3.07										3.07										3.07																			
LIMIT										138										166										349										419										449										537										563										483										349										1.54										1.54										1.54									
PCT.										1.23										1.54										2.95										3.98										5.47										7.45										10.62										14.94										19.80										22.74										22.74										22.74									
DT.										1.17										1.20										1.43										1.63										1.99										2.45										3.17										3.54										3.54										3.54										3.54																			
STD.										0.34										0.39										0.62										0.80										1.21										1.72										2.44										3.08										3.97										3.97										3.97																			
AVG.										714.33										689.23										630.07										598.55										577.37										531.42										497.60										474.53										465.78										451.57										443.87										443.87									

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TABLE B-24

PARAMETER INTERACTION 240 DEGS

SUBJECT TO CONDITIONS MIN. 5 225.00 LAMBDA - 0 60.00

Y PARAMETER ABS VC				TAPC NO. 1				X PARAMETER A WDF			
25.00	NO.	4.00	2.50	0.00	1.00	0.00	0.00	0.00	0.00	0.00	LIMIT
	PCT.	43	121	95	160	235	303	369	487		
	DT.	0.37	1.12	0.84	1.81	2.31	3.07	4.02	4.37		
	STD.	1.08	1.16	1.10	1.18	1.23	1.27	1.37	1.41		
		0.27	0.39	0.31	0.42	0.85	0.64	0.84	0.94		
50.00	NO.	119	211	173	283	394	491	577	695	3.10 AVG	
	PCT.	87	158	130	209	277	343	411	484		
	DT.	0.65	2.09	1.58	2.89	4.27	5.83	7.77	9.64		
	STD.	1.11	1.24	1.16	1.28	1.39	1.49	1.69	1.79		
		0.25	0.62	0.40	0.62	0.76	0.89	1.04	1.14		
75.00	NO.	144	287	231	377	490	615	676	683	3.12 AVG	
	PCT.	104	3.05	2.27	4.25	6.13	6.66	11.40	18.02		
	DT.	1.17	1.33	1.23	1.41	1.57	1.76	2.13	2.36		
	STD.	0.59	0.75	0.64	0.93	1.13	1.35	1.63	2.33		
100.00	NO.	210	361	293	444	593	708	744	726	3.26 AVG	
	PCT.	142	3.99	2.93	5.99	8.02	11.21	14.70	16.41		
	DT.	1.34	1.39	1.24	1.81	1.69	1.98	2.48	2.83		
	STD.	0.47	0.83	0.68	1.05	1.27	1.55	2.16	2.87		
125.00	NO.	294	416	339	644	645	778	791	747	3.33 AVG	
	PCT.	192	4.83	3.53	9.34	9.70	13.61	17.02	19.01		
	DT.	1.48	1.45	1.30	1.66	1.83	2.21	2.62	3.34		
	STD.	0.49	0.92	0.76	1.12	1.38	1.77	2.56	3.36		
150.00	NO.	291	473	376	644	736	837	838	766	3.42 AVG	
	PCT.	202	5.42	4.05	7.92	11.35	16.08	20.97	23.50		
	DT.	1.25	1.49	1.25	1.64	1.93	2.40	3.17	3.84		
	STD.	0.49	0.96	0.82	1.20	1.49	1.98	2.90	3.82		
175.00	NO.	334	544	431	678	824	924	880	795	3.34 AVG	
	PCT.	258	6.44	4.67	9.89	13.04	18.36	24.87	26.09		
	DT.	1.26	1.56	1.36	1.68	1.94	2.49	3.40	4.24		
	STD.	0.57	0.97	0.81	1.21	1.56	2.12	3.14	4.22		
200.00	NO.	374	606	480	748	886	988	924	807	3.52 AVG	
	PCT.	293	7.48	5.34	10.33	14.76	20.75	27.16	30.37		
	DT.	1.30	1.53	1.39	1.73	2.09	2.65	3.68	4.71		
	STD.	0.64	1.08	0.86	1.27	1.71	2.33	3.44	5.02		
225.00	NO.	437	640	512	795	932	1003	926	791	3.57 AVG	
	PCT.	269	8.06	5.85	11.27	16.15	22.65	29.78	33.30		
	DT.	1.31	1.58	1.43	1.78	2.17	2.83	4.03	5.27		
	STD.	0.56	0.94	0.84	1.33	1.81	2.58	4.07	5.64		
250.00	NO.	439	697	554	848	991	1053	951	800	3.56 AVG	
	PCT.	339	8.48	6.34	12.25	17.01	24.67	32.50	36.44		
	DT.	1.31	1.56	1.43	1.81	2.23	2.94	4.28	5.71		
	STD.	0.64	1.07	0.93	1.37	1.92	2.74	4.47	6.43		
LIMIT	NO.	708	1157	943	1352	1520	1458	795	11	3.48 AVG	
	PCT.	541	25.53	18.70	31.15	46.41	65.83	87.93	99.92		
	DT.	2.01	2.43	2.43	3.87	3.83	5.86	13.86	1130.18		
	STD.	1.22	1.75	1.75	2.59	3.05	5.05	16.51	790.41		
AVG.		513.20	404.01	474.08	447.14	440.02	445.21	449.50	452.08		

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TABLE B-25
PARAMETER INTERACTION REF BASE
SUBJECT TO CONDITIONS RMIN = 225.00 LAMDA =

Y PARAMETER ABS VC	100.00	6.10	6.40	4.00	TYPE NO. 1	2.50	1.00	0.90	0.40	0.10	LIMIT
25.00 NE	1	3	3	7	3, 50	16	13	15	24	35	43
25.00 PCT	0.01	0.02	0.02	0.00	0.08	0.10	0.13	0.14	0.22	0.37	0.57
25.00 EV	1.00	1.00	1.00	1.00	1.11	1.30	1.23	1.20	1.31	1.31	1.37
25.00 STD	0.00	0.00	0.00	0.35	0.31	0.40	0.42	0.40	0.37	1.04	1.68
50.00 NE	0	9	10	19	19	22	27	35	51	65	72
50.00 PCT	0.00	0.09	0.10	0.19	0.19	0.25	0.29	0.35	0.50	0.75	1.03
50.00 EV	1.00	1.22	1.20	1.27	1.26	1.41	1.33	1.26	1.24	1.45	1.79
50.00 STD	0.00	0.63	0.60	0.57	0.55	0.65	0.61	0.55	0.51	1.14	1.94
75.00 NE	9	12	13	18	25	30	35	49	70	85	92
75.00 PCT	0.07	0.11	0.12	0.10	0.24	0.31	0.37	0.49	0.72	1.06	1.48
75.00 EV	1.00	1.17	1.15	1.22	1.30	1.30	1.31	1.24	1.29	1.56	2.02
75.00 STD	0.00	0.55	0.53	0.53	0.49	0.59	0.62	0.55	0.59	1.17	3.16
100.00 NE	12	15	17	24	30	37	45	63	88	105	121
100.00 PCT	0.10	0.14	0.16	0.22	0.30	0.38	0.48	0.65	0.87	1.44	1.93
100.00 EV	1.00	1.20	1.18	1.22	1.30	1.30	1.33	1.30	1.39	1.71	2.18
100.00 STD	0.00	0.54	0.51	0.51	0.62	0.69	0.73	0.66	0.69	1.51	3.19
125.00 NE	13	17	19	29	34	42	53	69	94	110	121
125.00 PCT	0.10	0.16	0.18	0.24	0.33	0.46	0.59	0.77	1.15	1.76	2.32
125.00 EV	1.00	1.24	1.24	1.20	1.38	1.38	1.40	1.41	1.53	1.98	2.40
125.00 STD	0.00	0.51	0.49	0.49	0.58	0.69	0.76	0.67	0.84	1.56	3.27
150.00 NE	14	20	22	30	40	48	61	82	117	141	148
150.00 PCT	0.11	0.18	0.21	0.29	0.38	0.54	0.71	0.99	1.49	2.28	2.91
150.00 EV	1.00	1.15	1.18	1.20	1.20	1.42	1.46	1.51	1.60	1.96	2.49
150.00 STD	0.00	0.48	0.49	0.46	0.56	0.69	0.93	0.90	0.95	1.40	3.21
175.00 NE	17	24	28	38	48	59	76	100	142	182	233
175.00 PCT	0.14	0.22	0.26	0.37	0.47	0.65	0.89	1.20	1.83	2.61	3.41
175.00 EV	1.00	1.13	1.18	1.21	1.23	1.39	1.46	1.50	1.61	2.02	2.54
175.00 STD	0.00	0.44	0.54	0.52	0.68	0.92	0.95	0.93	0.97	1.48	3.30
200.00 NE	17	25	31	42	55	67	90	117	148	199	261
200.00 PCT	0.14	0.23	0.30	0.41	0.53	0.73	1.02	1.39	2.12	3.08	4.00
200.00 EV	1.00	1.10	1.19	1.21	1.22	1.36	1.42	1.49	1.58	1.94	2.49
200.00 STD	0.00	0.46	0.53	0.51	0.65	0.88	0.94	0.98	1.02	1.46	3.30
225.00 NE	19	27	35	47	60	72	96	123	177	215	217
225.00 PCT	0.15	0.25	0.33	0.46	0.60	0.82	1.16	1.60	2.46	3.56	4.42
225.00 EV	1.00	1.15	1.17	1.23	1.25	1.43	1.51	1.63	1.74	2.07	2.67
225.00 STD	0.00	0.45	0.51	0.51	0.65	0.97	1.01	1.11	1.14	1.55	3.24
250.00 NE	19	28	36	49	63	77	102	130	184	235	242
250.00 PCT	0.16	0.26	0.34	0.47	0.62	0.87	1.24	1.73	2.75	4.04	5.28
250.00 EV	1.00	1.14	1.17	1.23	1.24	1.42	1.52	1.67	1.77	2.15	2.73
250.00 STD	0.00	0.44	0.50	0.51	0.64	0.96	1.01	1.21	1.21	1.61	4.15
LIMIT	223	271	331	379	429	503	589	699	783	715	821
25.00 PCT	0.10	0.16	0.18	0.24	0.33	0.46	0.59	0.77	1.15	1.76	2.32
25.00 EV	1.00	1.24	1.24	1.20	1.38	1.38	1.40	1.41	1.53	1.98	2.40
25.00 STD	0.00	0.51	0.49	0.49	0.58	0.69	0.76	0.67	0.84	1.56	3.27
50.00 PCT	0.07	0.11	0.12	0.10	0.24	0.31	0.37	0.49	0.72	1.06	1.48
50.00 EV	1.00	1.17	1.15	1.22	1.30	1.30	1.31	1.24	1.29	1.56	2.02
50.00 STD	0.00	0.55	0.53	0.53	0.49	0.59	0.62	0.55	0.59	1.17	3.16
75.00 PCT	0.10	0.14	0.16	0.22	0.30	0.38	0.48	0.65	0.87	1.44	1.93
75.00 EV	1.00	1.20	1.18	1.22	1.30	1.30	1.33	1.30	1.39	1.71	2.18
75.00 STD	0.00	0.54	0.51	0.51	0.62	0.69	0.73	0.66	0.69	1.51	3.19
100.00 PCT	0.11	0.18	0.21	0.29	0.38	0.54	0.71	0.99	1.49	2.28	2.91
100.00 EV	1.00	1.15	1.18	1.20	1.20	1.42	1.46	1.51	1.60	1.96	2.49
100.00 STD	0.00	0.48	0.49	0.46	0.56	0.69	0.93	0.90	0.95	1.40	3.21
125.00 PCT	0.14	0.22	0.26	0.37	0.47	0.65	0.89	1.20	1.83	2.61	3.41
125.00 EV	1.00	1.13	1.18	1.21	1.23	1.39	1.46	1.50	1.61	2.02	2.54
125.00 STD	0.00	0.44	0.54	0.52	0.68	0.92	0.95	0.93	0.97	1.48	3.30
150.00 PCT	0.14	0.23	0.30	0.41	0.53	0.73	1.02	1.39	2.12	3.08	4.00
150.00 EV	1.00	1.10	1.19	1.21	1.22	1.36	1.42	1.49	1.58	1.94	2.49
150.00 STD	0.00	0.46	0.53	0.51	0.65	0.88	0.94	0.98	1.02	1.46	3.30
175.00 PCT	0.15	0.25	0.33	0.46	0.60	0.82	1.16	1.60	2.46	3.56	4.42
175.00 EV	1.00	1.15	1.17	1.23	1.25	1.43	1.51	1.63	1.74	2.07	2.67
175.00 STD	0.00	0.45	0.51	0.51	0.65	0.97	1.01	1.11	1.14	1.55	3.24
200.00 PCT	0.16	0.26	0.34	0.47	0.62	0.87	1.24	1.73	2.75	4.04	5.28
200.00 EV	1.00	1.14	1.17	1.23	1.24	1.42	1.52	1.67	1.77	2.15	2.73
200.00 STD	0.00	0.44	0.50	0.51	0.64	0.96	1.01	1.21	1.21	1.61	4.15
225.00 PCT	0.15	0.25	0.33	0.46	0.60	0.82	1.16	1.60	2.46	3.56	4.42
225.00 EV	1.00	1.15	1.17	1.23	1.25	1.43	1.51	1.63	1.74	2.07	2.67
225.00 STD	0.00	0.45	0.51	0.51	0.65	0.97	1.01	1.11	1.14	1.55	3.24
250.00 PCT	0.16	0.26	0.34	0.47	0.62	0.87	1.24	1.73	2.75	4.04	5.28
250.00 EV	1.00	1.14	1.17	1.23	1.24	1.42	1.52	1.67	1.77	2.15	2.73
250.00 STD	0.00	0.44	0.50	0.51	0.64	0.96	1.01	1.21	1.21	1.61	4.15
AVG	742.66	724.69	716.29	696.12	694.13	692.05	694.79	691.09	680.84	659.88	639.83

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TABLE B-26

WAVELENGTH	PARAMETER ABS VC	SUBJECT TO CONDITIONS		PARAMETER INTERACTION		OFF TAIL		60.00	PARAMETER A WJDF	
		PARAMETER	INTERACTION	PARAMETER	INTERACTION	PARAMETER	INTERACTION			
25.00	AE	10.00	8.10	6.40	4.08	3.60	2.58	1.60	0.48	0.18
	PCT	5	7	8	13	16	19	19	46	63
	CV	0.95	0.06	0.07	0.11	0.16	0.16	0.16	0.42	0.41
	SIC	1.20	1.13	1.04	1.04	1.05	1.05	1.14	1.15	1.22
50.00	AE	0.40	0.35	0.33	0.27	0.24	0.22	0.22	0.77	0.65
	PCT	5	8	9	17	23	28	33	66	99
	CV	0.85	0.07	0.08	0.14	0.20	0.26	0.32	0.75	1.13
	SIC	1.20	1.13	1.11	1.04	1.09	1.14	1.21	1.42	1.78
75.00	AE	0.40	0.33	0.31	0.24	0.20	0.35	0.39	0.76	1.27
	PCT	5	8	10	21	32	41	48	89	131
	CV	0.85	0.07	0.09	0.16	0.28	0.30	0.46	1.20	1.79
	SIC	1.20	1.13	1.10	1.05	1.17	1.20	1.29	1.69	2.02
100.00	AE	0.40	0.33	0.30	0.21	0.37	0.45	0.44	1.18	2.11
	PCT	6	13	16	27	37	49	64	116	164
	CV	0.84	0.11	0.14	0.22	0.35	0.40	0.68	1.99	2.48
	SIC	1.17	1.06	1.04	1.04	1.19	1.24	1.33	1.72	2.09
125.00	AE	0.40	0.33	0.30	0.21	0.46	0.55	0.71	1.25	2.11
	PCT	6	16	21	39	51	64	80	135	175
	CV	0.87	0.14	0.18	0.29	0.46	0.63	0.87	2.08	3.07
	SIC	1.13	1.06	1.05	1.03	1.14	1.23	1.36	1.85	2.28
150.00	AE	0.40	0.33	0.30	0.21	0.60	0.55	0.73	1.16	2.33
	PCT	10	19	25	42	58	73	91	161	264
	CV	0.89	0.16	0.21	0.35	0.53	0.73	1.08	3.79	4.41
	SIC	1.10	1.04	1.04	1.05	1.16	1.25	1.37	1.98	2.53
175.00	AE	0.40	0.33	0.30	0.21	0.41	0.54	0.72	1.41	2.37
	PCT	14	24	29	49	68	89	108	184	228
	CV	0.92	0.20	0.26	0.42	0.64	0.90	1.33	2.81	4.48
	SIC	1.07	1.04	1.04	1.06	1.18	1.27	1.43	1.98	2.46
200.00	AE	0.40	0.33	0.30	0.21	0.42	0.56	0.76	1.19	2.03
	PCT	16	27	38	56	78	104	126	211	259
	CV	0.94	0.22	0.33	0.50	0.76	1.09	1.47	3.41	5.27
	SIC	1.06	1.04	1.06	1.13	1.22	1.31	1.46	2.02	2.55
225.00	AE	0.40	0.33	0.30	0.21	0.47	0.61	0.81	1.16	2.09
	PCT	21	35	48	66	91	118	142	231	277
	CV	0.98	0.30	0.42	0.61	0.83	1.26	1.68	4.88	5.92
	SIC	1.05	1.06	1.08	1.13	1.21	1.34	1.48	2.08	2.68
250.00	AE	0.40	0.33	0.30	0.21	0.46	0.61	0.81	1.24	2.75
	PCT	22	37	52	72	96	124	152	249	297
	CV	0.94	0.32	0.45	0.65	0.97	1.40	1.86	4.35	6.74
	SIC	1.09	1.08	1.10	1.14	1.26	1.41	1.55	2.19	2.85
LIMIT	AE	176	216	241	310	378	427	466	553	649
	PCT	166	202	272	351	455	587	775	1057	1407
	CV	1.17	1.23	1.31	1.39	1.51	1.72	2.08	2.62	3.17
	SIC	1.27	1.42	1.45	1.57	1.69	1.88	2.12	2.42	2.75
AVERAGE	AE	676.60	631.61	615.60	586.45	551.49	531.19	516.71	476.94	443.87
	CV									

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TABLE B-27

Y PARAMETER ABS VC		SUBJECT TO CONDITIONS		PARAMETER INTERACTION 360 DEGS		TAPE NO. 1		225.00 LANDA =		60.00		X PARAMETER A WJDF	
25.00	NE,	10.00	8.10	6.40	4.98	3.60	2.50	1.60	0.90	0.48	0.18	LIMIT	
	PCV,	36	46	52	79	106	139	175	225	308	374	407	
	DT,	0.22	0.40	0.45	0.69	0.94	1.32	1.78	2.32	3.19	4.00	4.57	
	STP,	0.31	0.28	0.27	0.28	0.32	0.48	0.54	0.66	0.86	1.04	1.41	
50.00	NE,	46	83	99	144	192	247	306	384	488	572	685	3.67 AVG
	PCV,	0.38	0.74	0.89	1.29	1.77	2.49	3.27	4.07	5.19	7.43	8.64	
	DT,	1.11	1.12	1.13	1.16	1.16	1.26	1.34	1.46	1.53	1.70	1.70	
	STP,	0.31	0.36	0.36	0.39	0.38	0.56	0.69	0.88	1.01	1.21	1.44	
75.00	NE,	54	117	143	194	244	337	409	500	684	883	1083	3.39 AVG
	PCV,	0.51	1.02	1.26	1.76	2.31	3.37	4.08	6.51	8.87	11.38	12.82	
	DT,	1.09	1.09	1.10	1.14	1.19	1.33	1.44	1.63	1.84	2.07	2.35	
	STP,	0.28	0.32	0.33	0.36	0.35	0.62	0.81	1.08	1.36	1.74	2.33	
100.00	NE,	117	148	180	237	321	409	502	591	886	1136	1450	3.67 AVG
	PCV,	1.07	1.36	1.67	2.26	3.22	4.55	6.58	8.35	11.36	14.50	18.41	
	DT,	1.15	1.15	1.16	1.19	1.26	1.39	1.52	1.77	2.07	2.43	2.83	
	STP,	0.35	0.39	0.40	0.45	0.55	0.73	0.98	1.24	1.61	2.14	2.87	
125.00	NE,	136	169	211	278	372	466	567	656	942	1246	1566	3.63 AVG
	PCV,	1.26	1.57	2.00	2.71	3.84	5.44	7.29	9.99	13.64	17.91	22.66	
	DT,	1.16	1.17	1.19	1.22	1.29	1.46	1.61	1.91	2.30	2.77	3.34	
	STP,	0.41	0.44	0.48	0.52	0.62	0.87	1.08	1.42	1.86	2.46	3.36	
150.00	NE,	151	199	243	319	419	525	623	714	1002	1302	1616	3.56 AVG
	PCV,	1.50	1.89	2.36	3.19	4.42	6.24	8.38	11.56	15.91	20.69	25.58	
	DT,	1.17	1.19	1.22	1.25	1.32	1.49	1.69	2.03	2.49	3.06	3.84	
	STP,	0.44	0.49	0.54	0.58	0.67	0.89	1.15	1.57	2.05	2.74	3.82	
175.00	NE,	159	235	285	379	490	605	707	805	1081	1396	1735	3.56 AVG
	PCV,	1.74	2.25	2.83	3.82	5.21	7.31	9.73	13.34	18.29	23.72	29.69	
	DT,	1.19	1.20	1.24	1.28	1.33	1.51	1.72	2.08	2.63	3.31	4.24	
	STP,	0.45	0.50	0.57	0.62	0.70	0.94	1.28	1.62	2.23	3.02	4.22	
200.00	NE,	210	264	327	420	557	678	781	869	1140	1455	1795	3.65 AVG
	PCV,	2.10	2.60	3.32	4.48	6.07	8.36	11.04	15.02	20.54	26.80	33.37	
	DT,	1.22	1.23	1.27	1.32	1.36	1.55	1.77	2.17	2.74	3.55	4.71	
	STP,	0.51	0.56	0.62	0.67	0.74	0.98	1.26	1.70	2.41	3.39	4.82	
225.00	NE,	232	292	355	461	595	715	826	914	1186	1496	1833	3.71 AVG
	PCV,	2.28	2.83	3.63	4.88	6.57	9.06	12.08	16.32	22.36	29.33	37.50	
	DT,	1.26	1.26	1.28	1.33	1.38	1.59	1.82	2.24	2.90	3.86	5.27	
	STP,	0.53	0.59	0.64	0.69	0.77	1.03	1.32	1.83	2.58	3.74	5.64	
250.00	NE,	240	301	376	484	627	751	866	966	1233	1543	1885	3.71 AVG
	PCV,	2.45	3.04	3.88	5.10	7.04	9.73	12.94	17.64	24.27	32.05	40.44	
	DT,	1.29	1.27	1.33	1.35	1.41	1.62	1.87	2.29	3.00	4.08	5.71	
	STP,	0.55	0.60	0.65	0.70	0.79	1.05	1.35	1.83	2.69	4.16	6.43	
LIMIT	NE,	507	608	720	850	1044	1222	1365	1463	1832	2233	2688	3.68 AVG
	PCV,	8.30	10.15	12.63	15.83	20.34	26.52	35.85	47.58	65.80	87.89	113.92	
	DT,	2.47	2.42	2.40	2.34	2.44	2.72	3.21	4.08	5.39	7.19	9.92	
	STP,	1.08	1.09	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	
500.00	NE,	532.63	644.92	796.35	994.47	1241.34	1547.21	1924.24	2380.47	2926.97	3574.23	4252.48	4.16 AVG

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c. Pulse main beam clutter (DELTAR)

i. Range acceleration (ARDDOT)

- (a) Nose sector (AI radar coverage) - Table B-28
- (b) Tail sector - Table B-29
- (c) Full sphere - Table B-30

ii. Azimuth line of sight acceleration (AWKDF)

- (a) Nose sector (AI radar coverage) - Table B-31
- (b) Tail sector - Table B-32
- (c) Full sphere - Table B-33

iii. Elevation line of sight acceleration (AWJDF)

- (a) Nose sector (AI radar coverage) - Table B-34
- (b) Tail sector - Table B-35
- (c) Full sphere - Table B-36

TABLE B-28

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TABLE B-29

Y PARAMETER DELTA		SUBJECT TO CONDITIONS				PARAMETER INTERACTION		OFF TAIL		X PARAMETER ARDDOT	
		225.00 LANDA *									
						TAPE NO. 1					
						72.00		50.00		18.00	
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TABLE B-31

PARAMETER INTERACTION OFF NOSE
SUBJECT TO CONDITIONS MIN = 325.00-LANDON

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TABLE B-32

Y PARAMETER DELTAR		PARAMETER INTERACTION OFF TAIL SUBJECT TO CONDITIONS MIN = 225-DE LAMDA =										60.00		X PARAMETER A WIDE	
		10.00	8.10	6.40	4.90	TAPE NO. 1				2.50	1.60	0.90	0.40	0.10	LIMIT
100.00	NO.	0	0	0	1	3	5	7	9	5	5	7	9	11	12
	PCT.	0.00	0.00	0.00	0.01	0.02	0.04	0.06	0.07	0.04	0.04	0.06	0.07	0.10	0.12
	DT.	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.25
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.60
200.00	NO.	1	1	2	3	5	7	9	17	7	9	17	21	24	26
	PCT.	0.01	0.01	0.02	0.02	0.04	0.06	0.07	0.14	0.06	0.07	0.14	0.18	0.26	0.29
	DT.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.33	1.38
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.24	0.29	0.85	0.85
300.00	NO.	1	1	2	6	9	13	18	31	13	18	31	42	44	48
	PCT.	0.01	0.02	0.02	0.06	0.08	0.11	0.15	0.27	0.11	0.15	0.27	0.38	0.49	0.54
	DT.	1.00	2.00	1.50	1.17	1.11	1.08	1.06	1.10	1.08	1.06	1.10	1.32	1.39	1.42
	STD.	0.00	0.00	0.50	0.37	0.31	0.27	0.23	0.30	0.27	0.23	0.30	0.39	1.48	1.47
400.00	NO.	1	1	2	7	10	15	20	34	15	20	34	46	52	57
	PCT.	0.01	0.02	0.02	0.06	0.10	0.14	0.18	0.31	0.14	0.18	0.31	0.45	0.60	0.66
	DT.	1.00	2.00	1.50	1.14	1.20	1.20	1.15	1.24	1.20	1.15	1.24	1.24	1.44	1.46
	STD.	0.00	0.00	0.50	0.35	0.40	0.40	0.36	0.43	0.40	0.36	0.43	0.56	1.41	1.39
500.00	NO.	1	1	2	8	11	16	23	38	16	23	38	54	59	62
	PCT.	0.01	0.02	0.02	0.07	0.11	0.16	0.22	0.37	0.16	0.22	0.37	0.57	0.75	0.83
	DT.	1.00	2.00	1.50	1.13	1.27	1.27	1.22	1.21	1.27	1.22	1.21	1.33	1.59	1.68
	STD.	0.00	0.00	0.50	0.33	0.45	0.56	0.51	0.52	0.56	0.51	0.52	1.32	1.65	1.67
600.00	NO.	2	3	5	12	16	22	30	47	22	30	47	63	67	71
	PCT.	0.02	0.03	0.05	0.10	0.16	0.22	0.30	0.46	0.22	0.30	0.46	0.68	0.87	0.98
	DT.	1.00	1.33	1.20	1.08	1.25	1.27	1.27	1.23	1.27	1.27	1.23	1.35	1.63	1.73
	STD.	0.00	0.47	0.40	0.28	0.56	0.62	0.57	0.55	0.62	0.57	0.55	0.98	1.66	1.74
700.00	NO.	2	3	5	13	17	24	33	51	24	33	51	66	70	75
	PCT.	0.02	0.03	0.05	0.11	0.17	0.24	0.33	0.50	0.24	0.33	0.50	0.73	0.93	1.05
	DT.	1.00	1.33	1.20	1.08	1.24	1.25	1.24	1.24	1.25	1.24	1.24	1.39	1.67	1.76
	STD.	0.00	0.47	0.40	0.27	0.55	0.60	0.55	0.55	0.60	0.55	0.55	0.98	1.66	1.73
800.00	NO.	2	4	6	14	19	27	37	55	27	37	55	69	72	76
	PCT.	0.02	0.04	0.06	0.12	0.18	0.27	0.37	0.57	0.27	0.37	0.57	0.82	1.04	1.17
	DT.	1.00	1.25	1.17	1.07	1.21	1.26	1.24	1.29	1.26	1.24	1.29	1.49	1.81	1.92
	STD.	0.00	0.43	0.37	0.26	0.52	0.58	0.54	0.54	0.58	0.54	0.54	1.00	1.70	1.82
900.00	NO.	2	4	7	16	21	28	39	54	28	39	54	71	75	78
	PCT.	0.02	0.04	0.06	0.14	0.20	0.29	0.40	0.61	0.29	0.40	0.61	0.89	1.12	1.26
	DT.	1.00	1.25	1.14	1.06	1.19	1.29	1.28	1.38	1.29	1.28	1.38	1.56	1.87	2.03
	STD.	0.00	0.43	0.35	0.24	0.50	0.59	0.55	0.67	0.59	0.55	0.67	1.03	1.81	1.94
1000.00	NO.	2	4	7	17	23	31	43	59	31	43	59	73	76	80
	PCT.	0.02	0.04	0.06	0.14	0.22	0.31	0.43	0.65	0.31	0.43	0.65	0.94	1.18	1.33
	DT.	1.00	1.25	1.14	1.06	1.17	1.26	1.26	1.39	1.26	1.26	1.39	1.62	1.95	2.09
	STD.	0.00	0.43	0.35	0.24	0.48	0.57	0.53	0.66	0.57	0.53	0.66	1.06	1.86	2.00
LIMIT	NO.	138	166	217	291	349	419	469	543	419	469	543	543	483	340
	PCT.	1.23	1.54	2.08	2.95	3.98	5.47	7.45	10.62	5.47	7.45	10.62	14.94	19.80	22.76
	DT.	1.12	1.16	1.27	1.43	1.61	1.81	2.04	2.48	1.81	2.04	2.48	3.33	5.14	8.17
	STD.	0.34	0.39	0.42	0.49	0.62	0.80	1.01	1.72	0.80	1.01	1.72	2.44	3.98	7.55
AVG.		427116.62	402182.50	371860.25	342982.59	338067.28	310817.67	299417.92	286069.56	277360.56	277360.56	275311.07	277558.70	3.12	AVG

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TABLE B-33

PARAMETER INTERACTION 360 DEGS SUBJECT TO CONDITIONS: RMIM = 225.00 LAMDA = 60.00										X PARAMETER A WDXF	
Y PARAMETER DELTAR		TAPE NO. 1		TAPE NO. 2		TAPE NO. 3		TAPE NO. 4		LIMIT	
100.00	NO.	10.00	8.10	6.40	4.90	3.60	2.50	1.60	0.90	0.40	0.10
100.00	PCT.	0	9	0	0	5	9	13	23	32	42
100.00	STD.	0.00	0.00	0.00	0.02	0.04	0.07	0.10	0.19	0.26	0.36
100.00	STD.	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.04	1.07	1.13
100.00	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.17	0.26
200.00	NO.	1	2	4	6	12	19	28	50	75	89
200.00	PCT.	0.01	0.02	0.03	0.05	0.10	0.15	0.22	0.43	0.65	0.84
200.00	STD.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.08	1.08	1.20
200.00	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.32	0.61
300.00	NO.	3	4	6	12	19	30	43	76	114	144
300.00	PCT.	0.02	0.04	0.06	0.11	0.17	0.26	0.37	0.67	1.04	1.36
300.00	STD.	1.00	1.25	1.33	1.17	1.11	1.10	1.07	1.11	1.14	1.31
300.00	STD.	0.00	0.43	0.75	0.55	0.45	0.43	0.33	0.38	0.48	1.20
400.00	NO.	5	6	9	19	27	41	57	94	141	163
400.00	PCT.	0.05	0.06	0.10	0.18	0.26	0.36	0.54	0.90	1.39	1.80
400.00	STD.	1.20	1.33	1.33	1.16	1.19	1.17	1.19	1.20	1.23	1.40
400.00	STD.	0.40	0.47	0.67	0.49	0.47	0.44	0.48	0.50	0.58	1.17
500.00	NO.	5	7	11	22	30	45	69	110	163	187
500.00	PCT.	0.05	0.07	0.11	0.21	0.30	0.45	0.68	1.09	1.74	2.28
500.00	STD.	1.20	1.29	1.27	1.18	1.23	1.24	1.23	1.25	1.34	1.53
500.00	STD.	0.40	0.45	0.62	0.49	0.50	0.52	0.51	0.53	0.87	1.38
600.00	NO.	7	10	14	28	37	56	84	126	181	285
600.00	PCT.	0.06	0.10	0.14	0.26	0.37	0.59	0.89	1.36	2.07	2.73
600.00	STD.	1.14	1.20	1.29	1.18	1.24	1.32	1.33	1.35	1.43	1.66
600.00	STD.	0.35	0.40	0.59	0.47	0.59	0.58	0.64	0.63	0.92	1.42
700.00	NO.	7	10	14	30	42	63	92	137	193	214
700.00	PCT.	0.06	0.10	0.14	0.28	0.41	0.65	1.00	1.56	2.37	3.14
700.00	STD.	1.14	1.20	1.29	1.17	1.21	1.30	1.36	1.42	1.54	1.84
700.00	STD.	0.35	0.40	0.59	0.45	0.56	0.68	0.70	0.71	1.01	1.54
800.00	NO.	7	11	15	31	47	70	103	152	224	289
800.00	PCT.	0.06	0.10	0.15	0.29	0.45	0.72	1.12	1.76	2.71	3.58
800.00	STD.	1.14	1.20	1.27	1.16	1.19	1.29	1.36	1.45	1.63	2.00
800.00	STD.	0.35	0.39	0.57	0.45	0.53	0.66	0.74	0.74	1.04	1.65
900.00	NO.	8	14	20	38	55	76	110	161	217	233
900.00	PCT.	0.08	0.14	0.20	0.37	0.54	0.85	1.24	2.00	3.04	4.08
900.00	STD.	1.23	1.21	1.25	1.21	1.24	1.39	1.44	1.56	1.77	2.15
900.00	STD.	0.66	0.56	0.62	0.42	0.57	0.71	0.80	0.84	1.20	1.84
1000.00	NO.	8	14	21	40	59	86	121	166	222	237
1000.00	PCT.	0.08	0.14	0.21	0.38	0.59	0.84	1.40	2.20	3.34	4.37
1000.00	STD.	1.25	1.21	1.24	1.20	1.25	1.37	1.45	1.46	1.69	2.31
1000.00	STD.	0.66	0.56	0.61	0.51	0.57	0.68	0.82	0.90	1.30	1.99
LIMIT	NO.	472	541	637	798	963	1157	1352	1520	1658	1795
LIMIT	PCT.	7.53	9.01	11.03	14.21	18.70	24.53	33.15	40.41	65.83	87.93
LIMIT	STD.	2.00	2.09	2.17	2.23	2.43	2.66	3.03	3.83	5.66	7.86
LIMIT	STD.	1.09	1.22	1.33	1.50	1.75	2.01	2.59	3.65	5.85	8.51
AVG.		424575.81	415075.90	402475.79	387834.31	376537.15	355493.06	340621.07	319932.60	308431.45	297701.02
											302268.66

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TABLE B-34

Y PARAMETER DELTA		SUBJECT TO CONDITIONS WITHIN ± 225.00 LAMDA										60.00		PARAMETER INTERACTION OFF NOSE		TAPE NO. 1		X PARAMETER A WJDF																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

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TABLE B-35

Y PARAMETER DELTA		PARAMETER INTERACTION OFF TAIL SUBJECT 18 CONDITIONS RMN = 225.00 LAMDA = 60.00										X PARAMETER A WJDF	
		TAPE NO. 1											
		10.00	8.10	6.40	4.90	3.60	2.50	1.60	0.90	0.40	0.10	LIMIT	
100.00	NE	0	1	1	3	3	4	5	6	8	10	12	
	PCT	0.00	0.01	0.01	0.02	0.02	0.03	0.04	0.06	0.06	0.08	0.12	
	LT	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.25	
	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	
200.00	NE	0	1	3	5	5	8	11	18	20	25	26	
	PCT	0.00	0.01	0.02	0.04	0.04	0.06	0.09	0.15	0.18	0.24	0.29	
	LT	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.06	1.15	1.20	1.38	
	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.48	0.63	0.88	
300.00	NE	0	3	5	8	10	14	22	34	38	49	48	
	PCT	0.00	0.02	0.04	0.06	0.09	0.12	0.18	0.29	0.34	0.47	0.54	
	LT	0.00	1.00	1.00	1.00	1.10	1.07	1.05	1.06	1.13	1.20	1.42	
	STD	0.00	0.00	0.00	0.00	0.30	0.26	0.21	0.24	0.52	0.70	1.47	
400.00	NE	0	3	5	9	12	17	25	39	45	58	57	
	PCT	0.00	0.03	0.05	0.09	0.12	0.16	0.23	0.35	0.43	0.58	0.66	
	LT	0.00	1.33	1.20	1.22	1.25	1.18	1.16	1.13	1.20	1.26	1.46	
	STD	0.00	0.47	0.40	0.42	0.43	0.38	0.37	0.33	0.58	0.73	1.35	
500.00	NE	1	5	7	12	15	21	29	44	52	64	62	
	PCT	0.01	0.05	0.06	0.11	0.13	0.19	0.26	0.40	0.53	0.71	0.83	
	LT	1.00	1.20	1.14	1.17	1.19	1.14	1.14	1.14	1.27	1.39	1.68	
	STD	0.00	0.40	0.35	0.37	0.39	0.35	0.34	0.34	0.59	0.78	1.67	
600.00	NE	1	6	8	13	18	23	33	50	59	72	71	
	PCT	0.01	0.06	0.07	0.12	0.17	0.23	0.33	0.49	0.63	0.84	0.98	
	LT	1.00	1.17	1.13	1.19	1.17	1.26	1.24	1.22	1.34	1.46	1.73	
	STD	0.00	0.37	0.33	0.36	0.37	0.53	0.49	0.54	0.73	0.96	1.74	
700.00	NE	2	7	9	14	21	26	36	53	62	76	75	
	PCT	0.02	0.06	0.08	0.13	0.19	0.26	0.36	0.52	0.69	0.91	1.05	
	LT	1.00	1.14	1.11	1.14	1.14	1.23	1.25	1.25	1.39	1.50	1.76	
	STD	0.00	0.35	0.31	0.35	0.35	0.50	0.49	0.54	0.73	0.98	1.73	
800.00	NE	2	7	11	17	25	30	37	54	66	80	76	
	PCT	0.02	0.06	0.10	0.15	0.22	0.29	0.40	0.57	0.77	1.01	1.17	
	LT	1.00	1.14	1.09	1.12	1.12	1.20	1.35	1.33	1.47	1.57	1.92	
	STD	0.00	0.35	0.29	0.32	0.32	0.48	0.62	0.67	0.80	1.03	1.82	
900.00	NE	2	7	11	18	27	33	39	55	70	83	78	
	PCT	0.02	0.06	0.10	0.16	0.24	0.32	0.43	0.61	0.83	1.09	1.26	
	LT	1.00	1.14	1.09	1.11	1.11	1.21	1.36	1.36	1.49	1.64	2.03	
	STD	0.00	0.35	0.29	0.31	0.31	0.48	0.66	0.70	0.86	1.13	1.94	
1000.00	NE	3	8	14	21	31	36	43	59	74	85	80	
	PCT	0.02	0.07	0.12	0.18	0.27	0.35	0.47	0.66	0.89	1.15	1.33	
	LT	1.00	1.13	1.07	1.10	1.10	1.22	1.37	1.41	1.51	1.69	2.09	
	STD	0.00	0.33	0.26	0.29	0.30	0.48	0.65	0.74	0.89	1.19	2.00	
LIMIT	NE	172	216	241	316	376	427	466	542	553	488	349	
	PCT	1.00	1.12	1.07	1.10	1.10	1.22	1.37	1.41	1.51	1.69	2.09	
	LT	1.00	1.13	1.07	1.10	1.10	1.22	1.37	1.41	1.51	1.69	2.09	
	STD	0.00	0.33	0.26	0.29	0.30	0.48	0.65	0.74	0.89	1.19	2.00	
	AVG	362405.17	343715.60	324211.75	324379.61	296235.07	286970.52	289359.49	287002.77	294161.63	289583.15	277558.70	

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TABLE B-36

PARAMETER INTERACTION		360 DEGS		225,00 LAMDA =		60,00		X PARAMETER A WJDF	
SUBJECT TO CONDITIONS RPM =		TYPE NO. 1		2,50		1,60		0,90	
PARAMETER A WJDF		LIMIT		0,40		0,20		0,10	
LIMIT		0,40		0,20		0,10		0,05	
100,00	AE	13,00	6,10	4,90	3,60	2,50	1,60	0,90	0,40
100,00	PC	0,00	0,01	0,03	0,03	0,06	0,09	0,16	0,22
100,00	LT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
100,00	ST	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
200,00	AE	4,00	2,00	1,50	1,00	0,75	0,50	0,30	0,15
200,00	PC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
200,00	LT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
200,00	ST	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
300,00	AE	4,00	2,00	1,50	1,00	0,75	0,50	0,30	0,15
300,00	PC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
300,00	LT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
300,00	ST	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
400,00	AE	5,00	2,50	2,00	1,50	1,00	0,75	0,50	0,30
400,00	PC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
400,00	LT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
400,00	ST	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
500,00	AE	6,00	3,00	2,50	2,00	1,50	1,00	0,75	0,50
500,00	PC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
500,00	LT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
500,00	ST	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
600,00	AE	7,00	3,50	3,00	2,50	2,00	1,50	1,00	0,75
600,00	PC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
600,00	LT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
600,00	ST	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
700,00	AE	8,00	4,00	3,50	3,00	2,50	2,00	1,50	1,00
700,00	PC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
700,00	LT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
700,00	ST	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
800,00	AE	9,00	4,50	4,00	3,50	3,00	2,50	2,00	1,50
800,00	PC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
800,00	LT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
800,00	ST	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
900,00	AE	10,00	5,00	4,50	4,00	3,50	3,00	2,50	2,00
900,00	PC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
900,00	LT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
900,00	ST	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
1000,00	AE	11,00	5,50	5,00	4,50	4,00	3,50	3,00	2,50
1000,00	PC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
1000,00	LT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
1000,00	ST	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
LIMIT	AE	12,00	6,00	5,50	5,00	4,50	4,00	3,50	3,00
LIMIT	PC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
LIMIT	LT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
LIMIT	ST	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
AVG	AE	420,00	210,00	180,00	150,00	120,00	100,00	80,00	60,00

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d. Pulse Altitude Line (R-H)

i. Range acceleration (ARDDOT)

- (a) Nose sector (AI radar coverage) - Table B-37
- (b) Tail sector - Table B-38
- (c) Full sphere - Table B-39

ii. Azimuth line of sight acceleration (AWKDF)

- (a) Nose sector (AI radar coverage) - Table B-40
- (b) Tail sector - Table B-41
- (c) Full sphere - Table B-42

iii. Elevation line of sight acceleration (AWJDF)

- (a) Nose sector (AI radar coverage) - Table B-43
- (b) Tail sector - Table B-44
- (c) Full sphere - Table B-45

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TABLE B-37

[illegible]

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TABLE B-38

PARAMETER	INTERACTION	OFF TAIL	
SUBJECT TO CONDITIONS	RAIN	225.00	LAMDA = 60.00

SUBJECT TO CONDITIONS												225.90 LANDS		60.00	
Y. PARAMETER AS P-W												TAPE NO. 1		X. PARAMETER ARDDDET	
200.00	102.00	200.00	120.00	90.00	72.00	50.00	32.05	18.00	8.00	2.00	LIMIT				
200.00	102.00	200.00	120.00	90.00	72.00	50.00	32.05	18.00	8.00	2.00	LIMIT				
0.00	0.01	0.00	0.03	0.10	0.12	0.19	0.25	0.37	0.40	0.48	0.48				
0.00	1.00	0.00	1.00	1.08	1.16	1.16	1.12	0.34	0.37	0.37	0.37				
0.00	0.00	0.00	0.00	0.28	0.28	0.49	0.43	1.14	1.15	1.15	1.15				
								0.61	0.62	0.62	0.62				
400.00											78.47 AVG				
0.00	0.02	0.00	0.08	0.20	0.36	0.45	0.48	0.59	0.59	0.60	0.61				
0.00	1.00	0.00	1.25	1.19	1.32	1.33	1.50	1.48	1.59	1.50	0.77				
0.00	0.00	0.00	0.43	0.39	0.63	0.60	0.91	0.88	1.09	1.16	1.15				
											67.75 AVG				
600.00															
0.02	0.06	0.02	0.18	0.38	0.61	0.76	0.95	1.12	1.26	1.30	1.32				
1.00	0.35	1.00	1.35	1.30	1.81	1.79	1.92	1.97	2.19	2.23	2.26				
0.00	0.00	0.00	0.84	0.94	1.26	1.22	1.31	1.33	1.79	1.43	2.04				
											74.55 AVG				
800.00															
0.00	0.10	0.02	0.29	0.57	0.85	1.04	1.26	1.50	1.66	1.70	1.72				
0.00	1.00	1.00	1.50	1.53	1.93	1.97	2.13	2.24	2.57	2.60	2.65				
0.00	0.40	0.00	0.82	0.96	1.31	1.31	1.36	1.41	1.98	2.09	2.30				
											78.56 AVG				
1000.00															
0.05	0.12	0.05	0.36	0.51	0.59	0.72	0.81	0.90	0.94	0.84	0.83				
1.20	0.36	1.20	1.50	1.65	2.03	2.08	1.48	1.73	1.92	1.97	2.00				
0.40	0.48	0.40	0.95	0.97	1.48	1.39	1.47	1.53	2.07	2.17	2.37				
											79.01 AVG				
1200.00															
0.08	0.17	0.08	0.44	0.78	1.16	1.44	1.82	2.10	2.31	2.39	2.41				
1.25	1.31	1.25	1.97	1.66	2.01	2.21	2.48	2.77	3.22	3.36	3.47				
0.66	0.58	0.66	0.93	0.98	1.40	1.60	1.80	1.89	2.56	2.46	2.63				
											80.38 AVG				
1400.00															
0.10	0.21	0.10	0.40	0.63	0.76	0.90	1.03	1.07	1.02	0.98	0.97				
1.20	1.24	1.20	1.55	1.68	1.24	1.36	2.32	2.35	2.63	2.71	2.74				
0.60	0.53	0.60	0.99	0.99	1.41	1.66	1.76	1.89	3.23	3.46	3.54				
											78.90 AVG				
1600.00															
0.12	0.24	0.12	0.44	0.72	0.90	1.06	1.15	1.18	1.08	1.03	1.01				
1.25	1.29	1.25	1.46	1.71	1.44	1.88	2.40	2.78	3.09	3.17	3.21				
0.60	0.61	0.60	1.04	1.05	1.41	1.70	2.82	2.95	3.58	3.85	3.98				
											79.59 AVG				
1800.00															
0.15	0.30	0.15	0.57	0.85	1.06	1.22	1.28	1.29	1.14	1.09	1.05				
1.33	1.33	1.33	1.58	1.68	1.65	2.12	2.69	3.13	3.46	3.56	3.60				
0.60	0.60	0.60	0.95	1.05	1.39	1.70	2.63	3.04	3.80	4.09	4.30				
											82.58 AVG				
2000.00															
0.16	0.32	0.16	0.57	0.85	1.06	1.22	1.28	1.29	1.14	1.09	1.05				
1.33	1.33	1.33	1.58	1.68	1.65	2.12	2.69	3.13	3.46	3.56	3.60				
0.60	0.60	0.60	0.95	1.05	1.39	1.70	2.63	3.04	3.80	4.09	4.30				
											82.58 AVG				
2000.00															
0.16	0.32	0.16	0.57	0.85	1.06	1.22	1.28	1.29	1.14	1.09	1.05				
1.33	1.33	1.33	1.58	1.68	1.65	2.12	2.69	3.13	3.46	3.56	3.60				
0.60	0.60	0.60	0.95	1.05	1.39	1.70	2.63	3.04	3.80	4.09	4.30				
											82.58 AVG				
LIMIT															
213	208	213	402	500	593	600	593	552	456	389	349				
2.28	1.53	2.28	5.26	7.83	10.43	13.53	16.81	19.44	22.40	22.40	22.76				
1.34	1.34	1.34	1.64	1.96	2.32	2.83	3.55	4.41	5.61	7.22	8.17				
0.80	0.86	0.80	1.16	1.48	1.85	2.26	2.81	3.85	4.68	6.02	7.55				
											95.27 AVG				
7717.02	7325.65	7717.02	6920.55	6704.25	6612.39	6630.39	6738.37	6935.78	6916.54	6928.47	6942.96				

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TABLE B-39
PARAMETER INTERACTION 360 DEGS
SUBJECT TO CONDITIONS: RMIN = 225.00 LANDA = 60.00

	200.00	160.00	120.00	90.00	72.00	54.00	32.00	18.00	0.00	X PARAMETER ARDOST
200.00 NB.	8	17	28	47	65	96	118	137	153	LIMIT
PCT.	0.08	0.15	0.26	0.45	0.65	0.96	1.21	1.48	1.62	156
DT.	1.25	1.12	1.14	1.21	1.25	1.25	1.28	1.35	1.37	1.72
STD.	0.66	0.47	0.44	0.62	0.61	0.56	0.61	0.86	1.03	1.36
400.00 NB.	12	28	53	87	125	160	188	203	210	75.44 AVG
PCT.	0.12	0.25	0.50	0.89	1.38	1.99	2.59	3.12	3.47	211
DT.	1.25	1.11	1.19	1.30	1.38	1.56	1.72	1.93	2.07	3.55
STD.	0.60	0.41	0.46	0.71	0.87	1.04	1.27	1.72	1.89	2.11
600.00 NB.	26	43	79	117	153	182	234	237	226	72.94 AVG
PCT.	0.26	0.47	0.90	1.46	2.18	3.06	4.02	4.78	5.17	225
DT.	1.35	1.37	1.43	1.58	1.78	2.01	2.15	2.53	2.89	5.31
STD.	0.68	0.61	0.71	1.00	1.24	1.50	1.63	2.34	3.02	3.07
800.00 NB.	36	56	93	138	182	231	265	261	237	78.27 AVG
PCT.	0.40	0.65	1.21	1.95	2.89	4.33	5.21	6.17	6.91	226
DT.	1.59	1.46	1.63	1.77	1.99	2.19	2.46	2.96	3.48	7.04
STD.	0.76	0.76	0.89	1.13	1.36	1.62	1.89	2.65	3.51	3.87
1000.00 NB.	43	68	112	163	201	263	285	273	237	80.99 AVG
PCT.	0.53	0.87	1.55	2.43	3.50	4.94	6.30	7.42	8.40	223
DT.	1.83	1.68	1.73	1.87	2.18	2.55	2.77	3.41	4.44	8.55
STD.	0.95	0.93	1.01	1.16	1.50	1.86	2.10	3.06	4.34	4.80
1200.00 NB.	54	84	137	190	232	293	316	286	238	32.56 AVG
PCT.	0.59	1.10	1.92	2.97	4.25	5.93	7.55	8.85	9.55	222
DT.	1.59	1.64	1.75	1.96	2.29	2.54	2.99	3.88	4.60	10.11
STD.	0.97	1.07	1.10	1.31	1.59	1.99	2.28	3.37	4.92	5.71
1400.00 NB.	63	101	153	214	255	321	338	304	241	85.22 AVG
PCT.	0.83	1.56	2.30	3.53	4.96	6.94	8.79	10.24	11.07	224
DT.	1.65	1.68	1.88	2.07	2.44	2.71	3.26	4.22	6.00	11.72
STD.	0.95	1.05	1.22	1.41	1.73	2.08	2.42	3.52	5.12	6.55
1600.00 NB.	72	114	169	240	290	342	376	336	249	84.83 AVG
PCT.	0.97	1.75	2.60	3.96	5.59	7.92	10.04	11.66	12.61	227
DT.	1.69	1.70	1.93	2.17	2.41	2.74	3.35	4.35	6.60	13.36
STD.	0.94	1.03	1.24	1.40	1.71	2.12	2.52	3.44	5.35	7.37
1800.00 NB.	87	135	197	269	331	402	404	358	251	84.88 AVG
PCT.	1.15	1.60	3.00	4.46	6.34	8.96	11.28	13.12	14.14	224
DT.	1.86	1.67	1.91	2.08	2.40	2.79	3.50	4.59	7.33	14.92
STD.	0.97	1.07	1.27	1.45	1.74	2.16	2.61	3.71	6.78	8.35
2000.00 NB.	100	154	218	300	366	432	428	377	254	89.18 AVG
PCT.	1.32	2.10	3.41	5.08	7.17	10.11	12.68	14.70	15.87	225
DT.	1.65	1.71	1.96	2.12	2.46	2.93	3.71	4.89	8.15	16.80
STD.	0.96	1.06	1.29	1.49	1.78	2.21	2.75	3.93	7.60	9.36
LIMIT	643	1020	1223	1430	1574	1658	1490	1101	593	89.93 AVG
PCT.	14.01	18.74	25.24	33.97	44.92	59.31	74.13	86.85	94.18	11
DT.	2.08	2.30	2.59	2.98	3.58	4.48	6.23	9.79	19.88	99.02
STD.	1.35	1.67	2.01	2.48	3.00	4.12	6.18	9.94	22.55	1138.18
AVG.	7194.85	6988.67	6783.98	6639.53	6602.98	6587.66	6686.25	6829.82	6952.37	798.41
										119.44 AVG
										7027.21

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TABLE B-40

Y PARAMETER AS R-M		PARAMETER INTERACTION										SUBJECT TO CONDITIONS		OFF NOSE		60.00		K PARAMETER A WIDF	
		TAPE NO. 1										225.00		LAMDA=					
200.00	NO.	10.00	2.10	6.40	4.00	3.60	2.50	1.60	0.90	0.40	0.10	LIMIT							
PCT.	1	0.01	0.02	0.03	0.03	0.06	0.09	0.14	0.23	0.37	45	55							
DT.	2	0.02	0.02	0.03	0.03	0.06	0.09	0.14	0.23	0.37	45	55							
STD.	3	0.00	0.00	1.00	1.00	0.80	0.76	1.12	0.91	0.76	0.76	0.76							
400.00	NO.	1	1	3	7	12	18	23	39	56	76	81							
PCT.	1	0.01	0.02	0.04	0.07	0.14	0.20	0.30	0.49	0.73	1.06	1.26							
DT.	2	0.02	0.02	0.04	0.07	0.14	0.20	0.30	0.49	0.73	1.06	1.26							
STD.	3	0.00	0.00	0.94	0.70	0.86	0.76	1.37	1.19	1.30	1.31	1.59							
600.00	NO.	1	4	8	14	17	22	33	49	73	89	88							
PCT.	1	0.01	0.04	0.08	0.14	0.20	0.30	0.46	0.73	1.13	1.62	1.88							
DT.	2	0.02	0.04	0.08	0.14	0.20	0.30	0.46	0.73	1.13	1.62	1.88							
STD.	3	0.00	0.43	0.66	0.54	0.98	1.02	1.72	1.53	1.50	1.74	2.27							
800.00	NO.	2	5	9	16	21	29	42	62	84	98	92							
PCT.	1	0.02	0.05	0.09	0.16	0.25	0.38	0.59	0.97	1.49	2.08	2.43							
DT.	2	0.02	0.05	0.09	0.16	0.25	0.38	0.59	0.97	1.49	2.08	2.43							
STD.	3	0.00	0.40	0.63	0.56	1.10	1.06	1.70	1.60	1.73	1.99	2.57							
1000.00	NO.	2	6	10	18	26	37	47	69	91	105	96							
PCT.	1	0.02	0.06	0.10	0.21	0.34	0.49	0.76	1.22	1.90	2.65	3.06							
DT.	2	0.02	0.06	0.10	0.21	0.34	0.49	0.76	1.22	1.90	2.65	3.06							
STD.	3	0.00	0.47	0.64	0.60	1.24	1.14	2.30	2.03	2.22	2.48	2.90							
1200.00	NO.	3	8	12	21	32	45	58	82	106	115	101							
PCT.	1	0.03	0.08	0.12	0.23	0.38	0.56	0.89	1.47	2.24	3.13	3.63							
DT.	2	0.03	0.08	0.12	0.23	0.38	0.56	0.89	1.47	2.24	3.13	3.63							
STD.	3	0.00	0.43	0.60	0.65	1.15	1.07	2.13	2.05	2.29	2.65	3.37							
1400.00	NO.	7	13	20	36	41	57	68	94	122	129	113							
PCT.	1	0.06	0.14	0.20	0.34	0.50	0.71	1.07	1.76	2.66	3.63	4.27							
DT.	2	0.06	0.14	0.20	0.34	0.50	0.71	1.07	1.76	2.66	3.63	4.27							
STD.	3	0.00	0.46	0.54	0.64	1.11	1.04	2.12	2.07	2.34	2.77	3.55							
1600.00	NO.	9	16	23	39	46	61	72	104	135	133	119							
PCT.	1	0.09	0.17	0.23	0.39	0.57	0.79	1.17	1.99	3.04	4.17	4.86							
DT.	2	0.09	0.17	0.23	0.39	0.57	0.79	1.17	1.99	3.04	4.17	4.86							
STD.	3	0.00	0.46	0.53	0.64	1.06	1.03	2.17	2.10	2.47	3.00	3.67							
1800.00	NO.	10	17	25	39	51	67	82	118	150	149	127							
PCT.	1	0.10	0.18	0.26	0.43	0.61	0.86	1.28	2.20	3.48	4.68	5.45							
DT.	2	0.10	0.18	0.26	0.43	0.61	0.86	1.28	2.20	3.48	4.68	5.45							
STD.	3	0.00	0.46	0.53	0.62	1.02	1.01	2.06	2.15	2.45	3.01	3.73							
2000.00	NO.	14	20	29	42	56	76	97	131	167	162	133							
PCT.	1	0.13	0.22	0.31	0.49	0.69	1.01	1.51	2.55	3.91	5.35	6.19							
DT.	2	0.13	0.22	0.31	0.49	0.69	1.01	1.51	2.55	3.91	5.35	6.19							
STD.	3	0.00	0.46	0.54	0.63	1.06	0.99	2.03	2.29	2.69	3.49	4.11							
LIMIT	NO.	204	251	296	356	439	524	631	764	870	733	421							
PCT.	1	1.81	2.39	3.00	4.01	5.62	7.64	10.81	15.95	24.21	34.38	40.49							
DT.	2	1.11	1.20	1.27	1.41	1.60	1.83	2.15	2.62	3.49	5.88	12.05							
STD.	3	0.33	0.42	0.52	0.66	0.86	1.14	1.63	2.18	2.93	5.05	9.58							
AVG.		8956.56	8742.35	8710.69	8448.86	8317.38	8120.88	8013.88	7580.71	7281.09	7281.09	7400.22							

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TABLE B-41

Y PARAMETER AS R-H				PARAMETER INTERACTION				OFF TAIL				X PARAMETER A WKDF			
SUBJECT TO CONDITIONS				RMIN =				225.00 LAMBDA =				60.00			
				TAPE NO. 1											
200.00	NO.	10.00	9.10	6.40	4.00	3.40	2.58	1.68	0.00	0.40	0.10	LIMIT			
PCT.	2	0.02	0.02	0.02	0.03	0.06	0.10	0.17	0.20	0.27	0.36	0.37			
DT.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.15			
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.28	0.30	0.43	0.42			
400.00	NO.	3	3	6	8	15	24	34	36	49	60	2.27 AVG			
PCT.	0.02	0.02	0.05	0.06	0.14	0.23	0.35	0.39	0.39	0.59	0.74	0.77			
DT.	1.00	1.00	1.00	1.00	1.20	1.20	1.29	1.36	1.51	1.59	1.55	1.59			
STD.	0.00	0.00	0.00	0.00	0.54	0.56	0.92	1.05	1.05	1.05	1.07	1.15			
600.00	NO.	4	5	11	15	25	36	45	51	68	71	2.17 AVG			
PCT.	0.04	0.05	0.10	0.13	0.24	0.37	0.53	0.64	0.64	1.02	1.25	1.32			
DT.	1.25	1.20	1.09	1.07	1.26	1.33	1.47	1.57	1.69	1.88	2.20	2.26			
STD.	0.43	0.40	0.29	0.25	0.49	0.51	1.08	1.11	1.35	1.35	1.90	2.04			
800.00	NO.	7	8	14	20	33	45	54	62	79	81	2.68 AVG			
PCT.	0.06	0.07	0.13	0.18	0.31	0.48	0.68	0.84	0.84	1.32	1.63	1.72			
DT.	1.14	1.13	1.14	1.18	1.18	1.33	1.57	1.69	2.10	2.52	2.65	2.63			
STD.	0.35	0.33	0.35	0.30	0.46	0.56	1.08	1.26	1.46	1.46	2.17	2.30			
1000.00	NO.	10	11	17	23	37	49	58	70	83	83	2.62 AVG			
PCT.	0.09	0.10	0.16	0.21	0.36	0.54	0.78	0.97	1.52	1.52	1.88	2.00			
DT.	1.10	1.18	1.10	1.13	1.22	1.39	1.69	1.74	2.29	2.63	3.01	3.01			
STD.	0.30	0.39	0.38	0.34	0.53	0.60	1.16	1.29	1.52	1.52	2.23	2.37			
1200.00	NO.	13	14	18	27	40	55	67	78	91	88	2.63 AVG			
PCT.	0.11	0.13	0.18	0.26	0.42	0.65	0.95	1.21	1.84	2.25	2.41	2.41			
DT.	1.08	1.14	1.28	1.32	1.47	1.78	1.94	2.54	2.54	3.20	3.47	3.47			
STD.	0.27	0.35	0.45	0.42	0.57	0.71	1.23	1.45	1.76	2.47	2.63	2.63			
1400.00	NO.	13	17	21	31	45	61	73	85	101	100	2.61 AVG			
PCT.	0.11	0.15	0.21	0.30	0.48	0.72	1.06	1.37	2.00	2.56	2.74	2.74			
DT.	1.08	1.12	1.24	1.19	1.33	1.48	1.82	2.02	2.58	3.21	3.54	3.54			
STD.	0.27	0.32	0.43	0.40	0.60	0.72	1.32	1.55	1.79	2.44	2.61	2.61			
1600.00	NO.	14	19	23	35	49	66	78	95	107	105	2.51 AVG			
PCT.	0.12	0.17	0.22	0.33	0.53	0.78	1.19	1.68	2.41	2.98	3.21	3.21			
DT.	1.07	1.11	1.22	1.17	1.35	1.48	1.91	2.11	2.82	3.56	3.98	3.98			
STD.	0.26	0.31	0.41	0.38	0.59	0.70	1.32	1.48	1.82	2.47	2.69	2.69			
1800.00	NO.	16	21	25	37	53	70	84	102	111	109	2.38 AVG			
PCT.	0.14	0.19	0.25	0.36	0.57	0.85	1.30	1.76	2.67	3.34	3.60	3.60			
DT.	1.06	1.16	1.24	1.22	1.36	1.53	1.94	2.17	3.01	3.84	4.30	4.30			
STD.	0.24	0.35	0.43	0.41	0.62	0.71	1.37	1.59	1.97	2.67	2.93	2.93			
2000.00	NO.	17	23	29	40	55	72	88	111	121	110	2.34 AVG			
PCT.	0.15	0.22	0.29	0.41	0.63	0.93	1.43	1.97	2.98	3.74	4.04	4.04			
DT.	1.12	1.17	1.24	1.27	1.44	1.61	2.23	3.08	4.26	4.87	5.14	5.14			
STD.	0.32	0.38	0.50	0.50	0.68	0.79	1.40	1.63	2.09	2.90	3.48	3.48			
LIMIT	NO.	138	166	217	291	349	419	469	537	563	483	2.31 AVG			
PCT.	1.23	1.54	2.08	2.95	3.98	5.47	7.45	10.62	14.94	19.80	22.76	22.76			
DT.	1.12	1.16	1.20	1.27	1.43	1.63	1.99	2.48	3.33	4.17	5.14	5.14			
STD.	0.34	0.39	0.42	0.49	0.62	0.80	1.21	1.72	2.44	3.98	7.55	7.55			
AVG.	8650.10	8374.01	8000.06	7748.43	7495.44	7127.42	6768.02	6495.72	6266.95	6942.96	6942.96	6942.96			

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TABLE B-42

Y PARAMETER AS R-H		SUBJECT TO CONDITIONS MINIMUM 225-00 LAMDA °		60-00		X PARAMETER A VEDP	
200.00	NO.	0.10	0.40	1.00	2.50	1.00	0.00
	PCT.	11	15	42	48	84	121
	DT.	0.18	0.25	0.30	0.30	0.44	1.22
	STD.	1.00	1.21	1.15	1.17	1.25	1.30
		0.20	0.54	0.45	0.40	0.60	0.70
400.00	NO.	14	33	75	75	129	174
	PCT.	0.13	0.30	0.80	0.80	1.21	2.44
	DT.	1.14	1.12	1.33	1.33	1.47	1.76
	STD.	0.35	0.44	0.44	0.44	1.00	1.33
600.00	NO.	22	54	97	97	167	221
	PCT.	0.22	0.30	1.18	1.18	2.00	3.00
	DT.	1.23	1.17	1.53	1.53	1.87	2.19
	STD.	0.42	0.44	0.79	0.79	1.33	1.75
800.00	NO.	29	64	127	127	201	263
	PCT.	0.29	0.43	1.01	1.01	2.24	4.06
	DT.	1.24	1.20	1.52	1.52	2.02	2.56
	STD.	0.43	0.47	0.81	0.81	1.49	1.95
1000.00	NO.	39	77	146	146	224	296
	PCT.	0.39	0.54	1.26	1.26	3.93	6.03
	DT.	1.26	1.20	1.60	1.60	2.20	2.95
	STD.	0.44	0.54	0.95	0.95	1.77	2.47
1200.00	NO.	44	84	160	160	248	322
	PCT.	0.49	0.65	1.40	1.40	4.78	7.14
	DT.	1.41	1.42	1.71	1.71	2.30	3.17
	STD.	0.72	0.73	0.89	0.89	1.90	2.66
1400.00	NO.	53	100	180	180	274	397
	PCT.	0.53	0.84	1.80	1.80	5.53	8.28
	DT.	1.45	1.50	1.80	1.80	2.83	3.38
	STD.	0.84	0.93	1.23	1.23	2.19	2.85
1600.00	NO.	60	112	195	195	298	328
	PCT.	0.73	1.38	2.05	2.05	6.33	9.39
	DT.	1.53	1.58	1.67	1.66	3.59	5.36
	STD.	0.92	1.00	1.15	1.31	2.36	3.02
1800.00	NO.	69	132	216	216	326	351
	PCT.	0.85	1.41	2.37	2.37	7.68	10.47
	DT.	1.54	1.54	1.70	1.92	2.72	3.74
	STD.	0.89	0.95	1.20	1.39	2.53	3.20
2000.00	NO.	77	144	234	234	359	385
	PCT.	0.99	1.85	2.64	2.64	8.00	11.04
	DT.	1.61	1.61	1.98	2.12	2.70	4.19
	STD.	0.98	0.97	1.23	1.40	2.59	3.43
LIMIT	NO.	541	798	943	1157	1520	1958
	PCT.	9.01	14.21	10.70	24.53	40.41	65.83
	DT.	2.09	2.23	2.43	2.66	3.83	5.86
	STD.	1.22	1.50	1.75	2.01	2.50	3.45
AVG.		8339.53	7005.07	7682.36	7447.69	7030.11	6827.19
		8130.57	7005.07	7682.36	7447.69	7030.11	6827.19
		8464.47	8130.57	7682.36	7447.69	7030.11	6827.19

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TABLE B-43

Y	PARAMETER	X	SUBJECT	YF	PARAMETER INTERACTION			OFF	NSSE	60.00	X	PARAMETER	A	NJDF
					YF	CONDIT	IONS							
200.00	NS	1	10.00	6.140	4.198	3.600	1	2.500	1.600	0.900	0.400	0.10	LIMIT	
	NS	2	10.02	6.143	4.198	3.606	7	2.510	1.616	0.920	0.340	0.48		
	NS	3	10.04	6.146	4.198	3.612	13	2.520	1.632	0.940	0.330	0.59		
	NS	4	10.06	6.149	4.198	3.618	19	2.530	1.648	0.960	0.320	1.35		
	NS	5	10.08	6.152	4.198	3.624	25	2.540	1.664	0.980	0.310	0.79		
400.00	NS	6	10.10	6.155	4.198	3.630	31	2.550	1.680	1.000	0.300	1.56	AVG	
	NS	7	10.12	6.158	4.198	3.636	37	2.560	1.696	1.020	0.290	0.81		
	NS	8	10.14	6.161	4.198	3.642	43	2.570	1.712	1.040	0.280	1.26		
	NS	9	10.16	6.164	4.198	3.648	49	2.580	1.728	1.060	0.270	1.95		
	NS	10	10.18	6.167	4.198	3.654	55	2.590	1.744	1.080	0.260	1.43	AVG	
600.00	NS	11	10.20	6.170	4.198	3.660	61	2.600	1.760	1.100	0.250	0.88		
	NS	12	10.22	6.173	4.198	3.666	67	2.610	1.776	1.120	0.240	1.68		
	NS	13	10.24	6.176	4.198	3.672	73	2.620	1.792	1.140	0.230	2.68		
	NS	14	10.26	6.179	4.198	3.678	79	2.630	1.808	1.160	0.220	2.27		
	NS	15	10.28	6.182	4.198	3.684	85	2.640	1.824	1.180	0.210	1.46	AVG	
800.00	NS	16	10.30	6.185	4.198	3.690	91	2.650	1.840	1.200	0.200	0.92		
	NS	17	10.32	6.188	4.198	3.696	97	2.660	1.856	1.220	0.190	2.43		
	NS	18	10.34	6.191	4.198	3.702	103	2.670	1.872	1.240	0.180	3.32		
	NS	19	10.36	6.194	4.198	3.708	109	2.680	1.888	1.260	0.170	2.57		
	NS	20	10.38	6.197	4.198	3.714	115	2.690	1.904	1.280	0.160	1.40	AVG	
1000.00	NS	21	10.40	6.200	4.198	3.720	121	2.700	1.920	1.300	0.150	0.96		
	NS	22	10.42	6.203	4.198	3.726	127	2.710	1.936	1.320	0.140	2.96		
	NS	23	10.44	6.206	4.198	3.732	133	2.720	1.952	1.340	0.130	3.06		
	NS	24	10.46	6.209	4.198	3.738	139	2.730	1.968	1.360	0.120	3.99		
	NS	25	10.48	6.212	4.198	3.744	145	2.740	1.984	1.380	0.110	2.96		
1200.00	NS	26	10.50	6.215	4.198	3.750	151	2.750	2.000	1.400	0.100	1.43	AVG	
	NS	27	10.52	6.218	4.198	3.756	157	2.760	2.016	1.420	0.090	1.13		
	NS	28	10.54	6.221	4.198	3.762	163	2.770	2.032	1.440	0.080	4.27		
	NS	29	10.56	6.224	4.198	3.768	169	2.780	2.048	1.460	0.070	4.73		
	NS	30	10.58	6.227	4.198	3.774	175	2.790	2.064	1.480	0.060	4.37		
1400.00	NS	31	10.60	6.230	4.198	3.780	181	2.800	2.080	1.500	0.050	1.43	AVG	
	NS	32	10.62	6.233	4.198	3.786	187	2.810	2.096	1.520	0.040	1.13		
	NS	33	10.64	6.236	4.198	3.792	193	2.820	2.112	1.540	0.030	4.27		
	NS	34	10.66	6.239	4.198	3.798	199	2.830	2.128	1.560	0.020	4.73		
	NS	35	10.68	6.242	4.198	3.804	205	2.840	2.144	1.580	0.010	4.37		
1600.00	NS	36	10.70	6.245	4.198	3.810	211	2.850	2.160	1.600	0.000	1.56	AVG	
	NS	37	10.72	6.248	4.198	3.816	217	2.860	2.176	1.620	0.000	1.27		
	NS	38	10.74	6.251	4.198	3.822	223	2.870	2.192	1.640	0.000	4.54		
	NS	39	10.76	6.254	4.198	3.828	229	2.880	2.208	1.660	0.000	5.45		
	NS	40	10.78	6.257	4.198	3.834	235	2.890	2.224	1.680	0.000	5.38		
1800.00	NS	41	10.80	6.260	4.198	3.840	241	2.900	2.240	1.700	0.000	3.73	AVG	
	NS	42	10.82	6.263	4.198	3.846	247	2.910	2.256	1.720	0.000	1.58	AVG	
	NS	43	10.84	6.266	4.198	3.852	253	2.920	2.272	1.740	0.000	1.33		
	NS	44	10.86	6.269	4.198	3.858	259	2.930	2.288	1.760	0.000	6.19		
	NS	45	10.88	6.272	4.198	3.864	265	2.940	2.304	1.780	0.000	5.83		
2000.00	NS	46	10.90	6.275	4.198	3.870	271	2.950	2.320	1.800	0.000	4.11	AVG	
	NS	47	10.92	6.278	4.198	3.876	277	2.960	2.336	1.820	0.000	1.68		
	NS	48	10.94	6.281	4.198	3.882	283	2.970	2.352	1.840	0.000	1.33		
	NS	49	10.96	6.284	4.198	3.888	289	2.980	2.368	1.860	0.000	6.19		
	NS	50	10.98	6.287	4.198	3.894	295	2.990	2.384	1.880	0.000	5.83		
2200.00	NS	51	11.00	6.290	4.198	3.900	301	3.000	2.400	1.900	0.000	4.11	AVG	
	NS	52	11.02	6.293	4.198	3.906	307	3.010	2.416	1.920	0.000	1.58	AVG	
	NS	53	11.04	6.296	4.198	3.912	313	3.020	2.432	1.940	0.000	1.33		
	NS	54	11.06	6.299	4.198	3.918	319	3.030	2.448	1.960	0.000	6.19		
	NS	55	11.08	6.302	4.198	3.924	325	3.040	2.464	1.980	0.000	5.83		
2400.00	NS	56	11.10	6.305	4.198	3.930	331	3.050	2.480	1.990	0.000	4.11	AVG	
	NS	57	11.12	6.308	4.198	3.936	337	3.060	2.496	2.010	0.000	1.56	AVG	
	NS	58	11.14	6.311	4.198	3.942	343	3.070	2.512	2.030	0.000	1.33		
	NS	59	11.16	6.314	4.198	3.948	349	3.080	2.528	2.050	0.000	6.19		
	NS	60	11.18	6.317	4.198	3.954	355	3.090	2.544	2.070	0.000	5.83		
2800.00	NS	61	11.20	6.320	4.198	3.960	361	3.100	2.560	2.090	0.000	4.11	AVG	
	NS	62	11.22	6.323	4.198	3.966	367	3.110	2.576	2.110	0.000	1.56	AVG	
	NS	63	11.24	6.326	4.198	3.972	373	3.120	2.592	2.130	0.000	1.33		
	NS	64	11.26	6.329	4.198	3.978	379	3.130	2.608	2.150	0.000	6.19		
	NS	65	11.28	6.332	4.198	3.984	385	3.140	2.624	2.170	0.000	5.83		
3200.00	NS	66	11.30	6.335	4.198	3.990	391	3.150	2.640	2.190	0.000	4.11	AVG	
	NS	67	11.32	6.338	4.198	3.996	397	3.160	2.656	2.210	0.000	1.56	AVG	
	NS	68	11.34	6.341	4.198	3.999	403	3.170	2.672	2.230	0.000	1.33		
	NS	69	11.36	6.344	4.198	4.005	409	3.180	2.688	2.250	0.000	6.19		
	NS	70	11.38	6.347	4.198	4.008	415	3.190	2.704	2.270	0.000	5.83		
3600.00	NS	71	11.40	6.350	4.198	4.014	421	3.200	2.720	2.290	0.000	4.11	AVG	
	NS	72	11.42	6.353	4.198	4.020	427	3.210	2.736	2.310	0.000	1.56	AVG	
	NS	73	11.44	6.356	4.198	4.023	433	3.220	2.752	2.330	0.000	1.33		
	NS	74	11.46	6.359	4.198	4.029	439	3.230	2.768	2.350	0.000	6.19		
	NS	75	11.48	6.362	4.198	4.032	445	3.240	2.784	2.370	0.000	5.83		
4000.00	NS	76	11.50	6.365	4.198	4.038	451	3.250	2.800	2.390	0.000	4.11	AVG	
	NS	77	11.52	6.368	4.198	4.044	457	3.260	2.816	2.410	0.000	1.56	AVG	
	NS	78	11.54	6.371	4.198	4.047	463	3.270	2.832	2.430	0.000	1.33		
	NS	79	11.56	6.374	4.198	4.053	469	3.280	2.848	2.450	0.000	6.19		
	NS	80	11.58	6.377	4.198	4.056	475	3.290	2.864	2.470	0.000	5.83		
4400.00	NS	81	11.60	6.380	4.198	4.062	481	3.300	2.880	2.490	0.000	4.11	AVG	
	NS	82	11.62	6.383	4.198	4.065	487	3.310	2.896	2.510	0.000	1.56	AVG	
	NS	83	11.64	6.386	4.198	4.071	493	3.320	2.912	2.530	0.000	1.33		
	NS	84	11.66	6.389	4.198	4.074	499	3.330	2.928	2.550	0.000	6.19		
	NS	85	11.68	6.392	4.198	4.080	505	3.340	2.944	2.570	0.000	5.83		
4800.00	NS	86	11.70	6.395	4.198	4.083	511	3.350	2.960	2.590	0.000	4.11	AVG	
	NS	87	11.72	6.398	4.198	4.089	517	3.360	2.976	2.610	0.000	1.56	AVG	
	NS	88	11.74	6.401	4.198	4.092	523	3.370	2.992	2.630	0.000	1.33		
	NS	89	11.76	6.404	4.198	4.098	529	3.380	3.008	2.650	0.000	6.19		
	NS	90	11.78	6.407	4.198	4.101	535	3.390	3.024	2.670	0.000	5.83		
5200.00	NS	91	11.80	6.410	4.198	4.107	541	3.400	3.040	2.690	0.000	4.11	AVG	
	NS	92	11.82	6.413	4.198	4.110	547	3.410	3.056	2.710	0.000	1.56	AVG	
	NS	93	11.84	6.416	4.198	4.116	553	3.420	3.072	2.730	0.000	1.33		
	NS	94	11.86	6.419	4.198	4.119	559	3.430	3.088	2.750	0.000	6.19		
	NS	95	11.88	6.422	4.198	4.125	565	3.440	3.104	2.770	0.000	5.83		
5600.00	NS	96	11.90	6.425	4.198	4.128	571	3.450	3.120	2.790	0.000	4.11	AVG	
	NS	97	11.92	6.428	4.198	4.134	577	3.460	3.136	2.810	0.000	1.56	AVG	
	NS	98	11.94	6.431	4.198	4.137	583	3.470	3.152	2.830	0.000	1.33		
	NS	99	11.96	6.434	4.198	4.143	589	3.480	3.168	2.850	0.000	6.19		
	NS	100	11.98	6.437	4.198	4.146	595	3.490	3.184	2.870	0.000	5.83		
6000.00	NS	101	12.00	6.440	4.198	4.152	601	3.500	3.200	2.890	0.000	4.11	AVG	
	NS	102	12.02	6.443	4.198	4.155	607	3.510	3.216	2.910	0.000	1.56	AVG	
	NS	103	12.04	6.446	4.198	4.161	613</							

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TABLE B-44

Y PARAMETER AT P-4		SUBJECT IF CONDITIONS		PARAMETER INTERACTION		OFF TAIL		60.00		X PARAMETER A WJDF	
		TAPE 18, 1									

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TABLE B-45

Y PARAMETER AD R-4		PARAMETER INTERACTION 360 DEGS		SUBJECT TO CONDITIONS RMIN = 225.00 LAMDA = 60.00		X PARAMETER A WJDF	
200.00	10.00	6.40	4.90	2.50	1.60	0.90	0.40
MEAN	0	16	26	39	73	86	118
STDEV	0.07	0.14	0.23	0.43	0.69	0.85	1.24
	1.13	1.06	1.04	1.10	1.19	1.20	1.31
	0.33	0.24	0.19	0.30	0.49	0.50	0.94
							2.81 AVG
400.00	11	31	46	84	121	143	176
MEAN	0.10	0.28	0.42	0.85	1.32	1.72	2.50
STDEV	1.10	1.09	1.13	1.23	1.26	1.51	1.86
	0.57	0.42	0.44	0.52	0.54	0.84	1.31
							2.41 AVG
600.00	16	26	56	82	113	147	219
MEAN	0.15	0.40	0.57	0.87	1.33	1.97	2.65
STDEV	1.19	1.19	1.24	1.33	1.48	1.91	2.23
	0.53	0.48	0.54	0.59	0.74	1.38	1.96
							2.22 AVG
800.00	17	30	60	98	130	169	246
MEAN	0.16	0.32	0.50	0.73	1.10	1.67	2.51
STDEV	1.29	1.33	1.31	1.34	1.41	1.61	2.11
	0.57	0.54	0.56	0.59	0.79	1.02	1.40
							2.26 AVG
1000.00	22	36	81	114	146	182	262
MEAN	0.24	0.40	0.64	0.90	1.35	2.01	2.97
STDEV	1.43	1.39	1.36	1.41	1.48	2.04	2.28
	0.57	0.59	0.63	0.62	0.77	1.14	1.40
							2.24 AVG
1200.00	26	41	86	125	166	206	273
MEAN	0.24	0.49	0.76	1.06	1.35	2.01	2.97
STDEV	1.43	1.51	1.51	1.58	1.78	2.10	2.41
	0.57	0.86	0.89	0.89	1.19	1.46	1.61
							2.35 AVG
1400.00	37	51	96	136	182	226	288
MEAN	0.41	0.59	0.89	1.25	1.84	2.75	4.06
STDEV	1.46	1.45	1.54	1.69	1.90	2.52	3.16
	0.75	0.82	0.88	1.07	1.33	1.94	2.84
							2.45 AVG
1600.00	43	59	113	157	201	249	304
MEAN	0.48	0.69	1.05	1.49	2.15	3.13	4.55
STDEV	1.48	1.46	1.52	1.71	1.93	2.58	3.92
	0.64	0.87	0.95	1.12	1.39	1.66	2.02
							2.48 AVG
1800.00	49	68	121	180	228	273	314
MEAN	0.57	0.81	1.18	1.62	2.44	3.54	5.07
STDEV	1.49	1.49	1.57	1.70	2.33	2.71	3.67
	0.61	0.83	0.87	1.09	1.41	2.13	3.25
							2.50 AVG
2000.00	57	83	159	196	243	299	352
MEAN	0.63	0.95	1.36	1.84	2.76	3.95	5.67
STDEV	1.49	1.43	1.57	1.72	2.04	2.38	3.69
	0.77	0.79	0.84	1.04	1.49	2.21	3.38
							2.57 AVG
LIMIT							
	500.34	876.73	6475.06	8121.10	7819.05	7368.05	7182.11
							6976.15
							7044.91

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6. Miscellaneous Interactions

a. Minimum Range

(C) Figure B-34 is a plot of the range versus probability of occurrence for full sphere coverage. If a 0.95 probability of track is desired, 2.5% of the range data at the minimum and maximum ends of the distribution can be eliminated. Using this 2.5% criterion, the minimum range requirement is 765 ft. for a full coverage tracker.

(C) Figure B-35 is a plot of the range versus probability of occurrence for AI radar coverage. Using the same criterion as for the full coverage case, the minimum range requirement is 1200 ft.

b. Aircraft "g" loading.

(C) Figure B-36 is a cumulative probability that the "g" loading was greater than a certain value. As an example, 5% of the time the aircraft was pulling 6 or more "g's".

c. Glint Interaction (Fig. 43)

(C) The parameters interacted in order to give a preliminary look at glint were range versus target rate of rotation for various target aspects for AI radar coverage. Target aspect in this case is referenced to the nose of the target aircraft. The data for the 162° to 180° target aspect case represents a small amount of data. The effect of the small data base can be seen in Fig. 43 as widely varying noise on the average target rate of rotation.

(C) Referring to Fig. B-37, it can be seen that, as the range to the target decreases, the rotational rate of the target increases. This rate increase increases the frequency of the glint, thus lessening the effect on the tracking circuits at close range. This indicates that it is possible to increase the tracking loop's bandwidth at short ranges without worsening the glint problems. A notable exception to this is the head-on case where the target is nonmaneuvering prior to a flyby. In this case, an increase in bandwidth will probably cause an earlier break lock.

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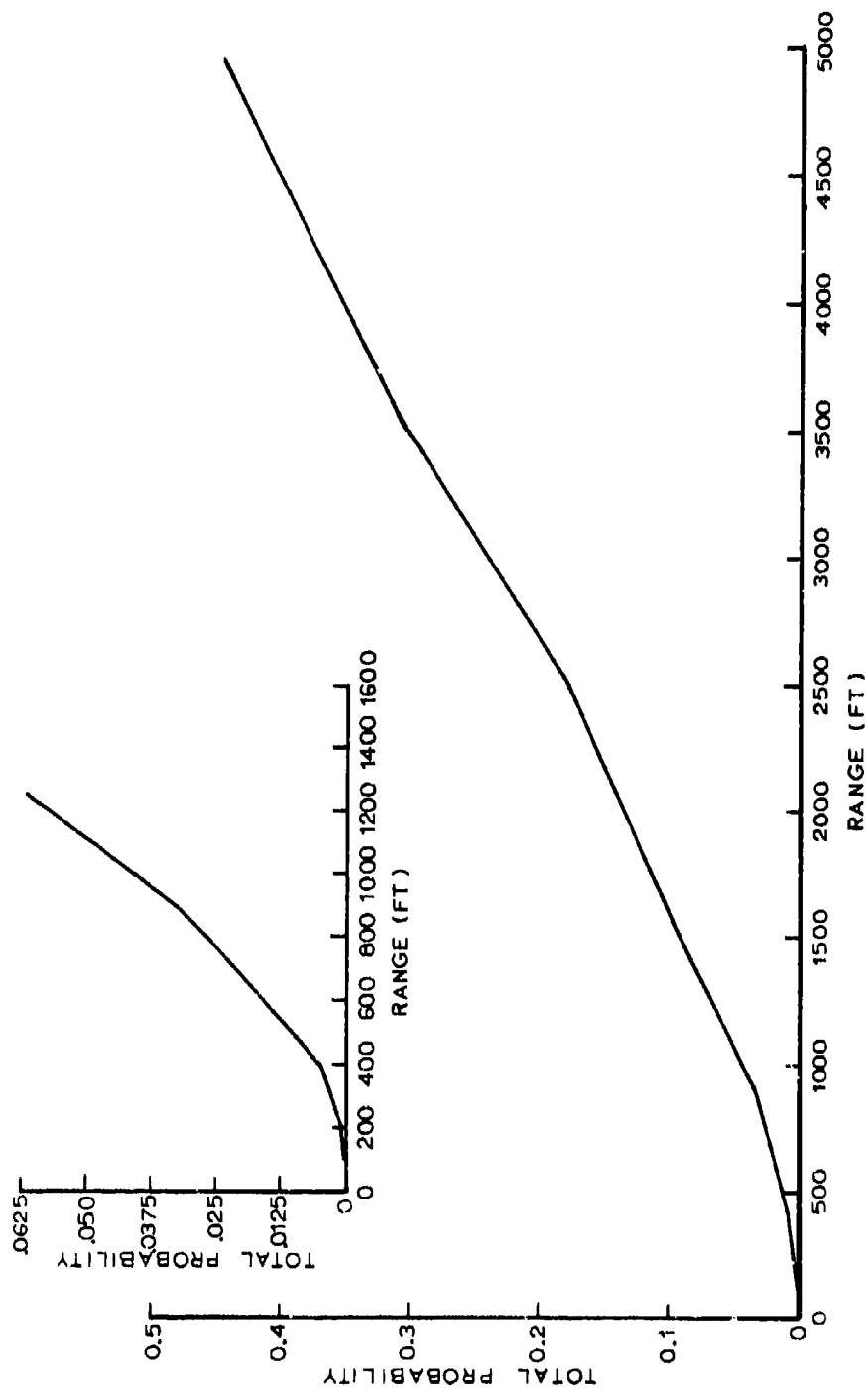


FIG. B-34- CUMULATIVE PROBABILITY DISTRIBUTION OF RANGE FOR FULL SPHERE COVERAGE

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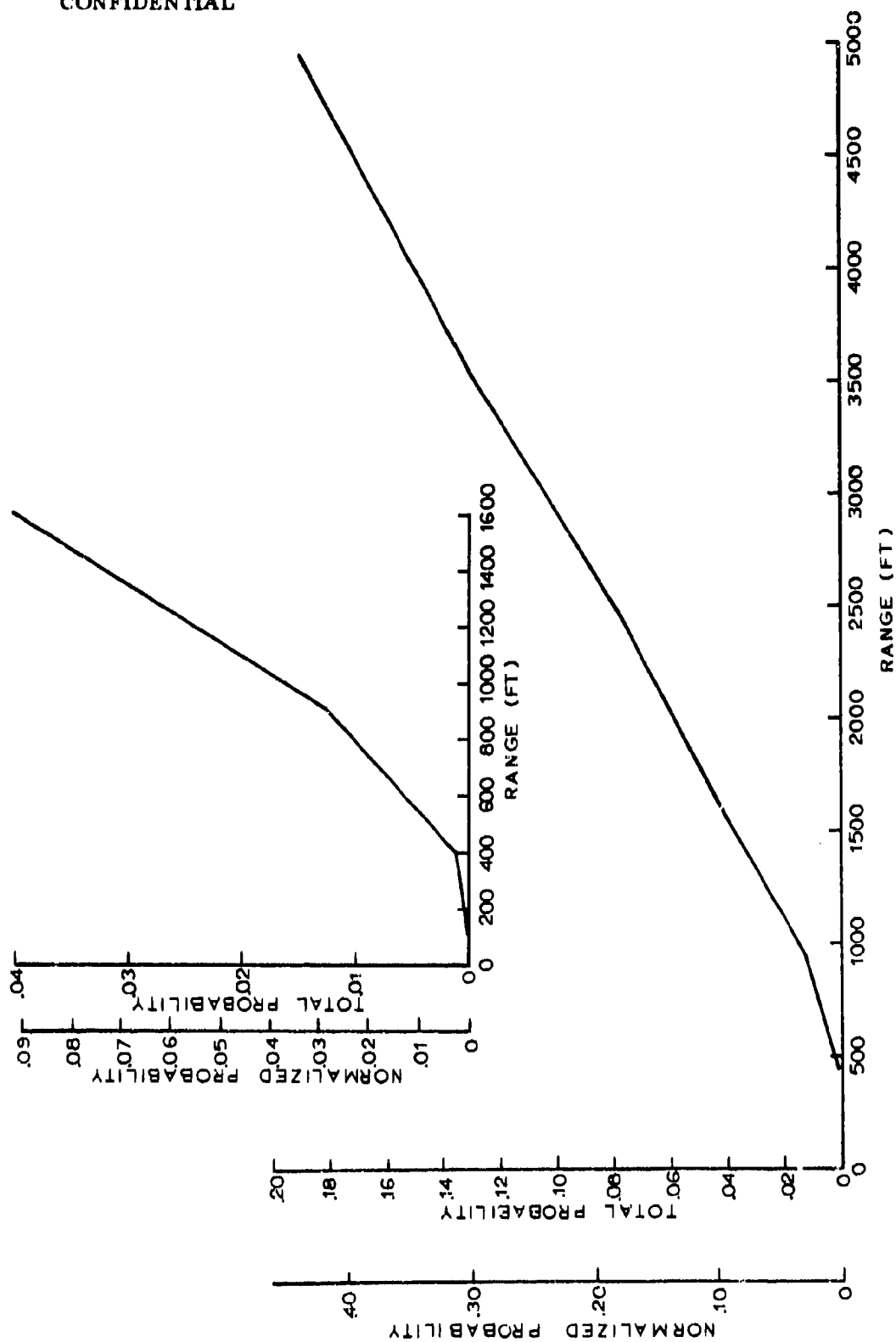


FIG.B-35 - CUMULATIVE PROBABILITY DISTRIBUTION OF RANGE FOR AI RADAR COVERAGE

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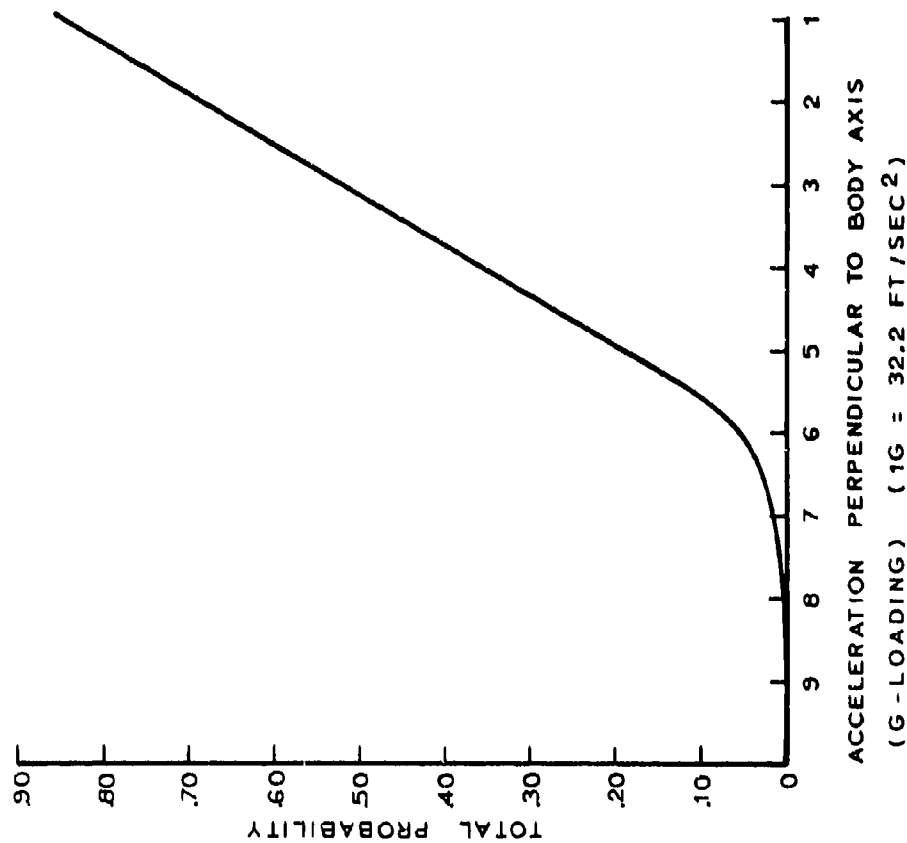


FIG. B-36 - CUMULATIVE PROBABILITY DISTRIBUTION OF ACCELERATION PERPENDICULAR TO BODY AXIS FOR FULL SPHERE COVERAGE AND MINIMUM RANGE = 225 FT

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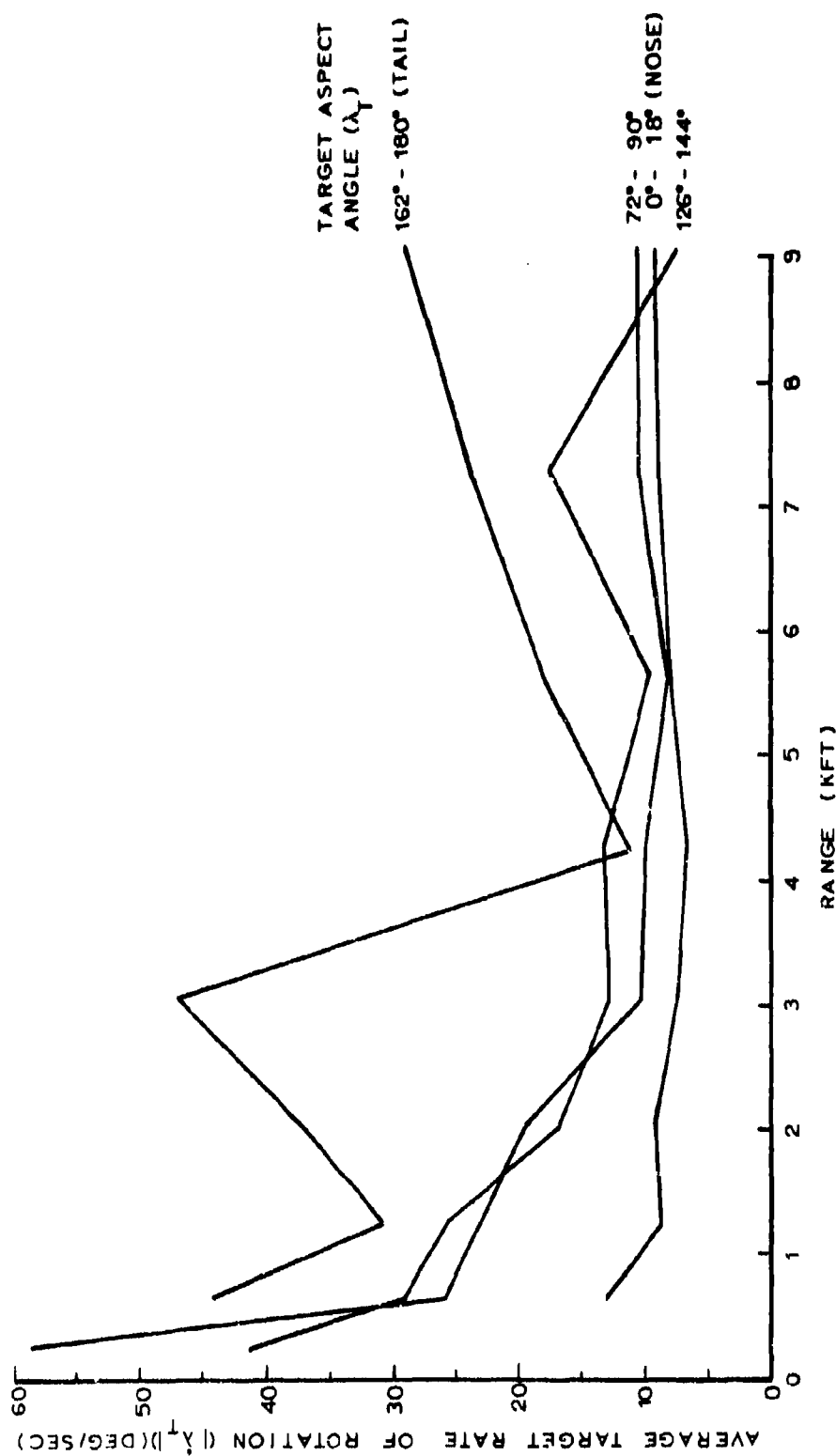


FIG. B-37 - AVERAGE TARGET RATE OF ROTATION AS A FUNCTION OF RANGE AND TARGET ASPECT ANGLE FOR AI RADAR COVERAGE

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7. Data

Tables for Miscellaneous Interactions

a. Minimum Range

i. Nose sector (AI radar coverage) - Table B-46

ii. Tail sector - Table 47

iii. Full sphere - Table B-48

b. Fighter G's

Full sphere - Table B-49

c. Glint

i. Nose sector (AI radar coverage)

(a) Target aspect angle (LAMB-T)	0 to 18°	- Table B-50
(b)	18 to 36°	- Table B-51
(c)	36 to 54°	- Table B-52
(d)	54 to 72°	- Table B-53
(e)	72 to 90°	- Table B-54
(f)	90 to 108°	- Table B-55
(g)	108 to 126°	- Table B-56
(h)	126 to 144°	- Table B-57
(i)	144 to 162°	- Table B-58
(j)	162 to 180°	- Table B-59

ii. Tail sector

(a) Target aspect angle (LAMB-T)	0 to 18°	- Table B-60
(b)	18 to 36°	- Table B-61
(c)	36 to 54°	- Table B-62
(d)	54 to 72°	- Table B-63
(e)	72 to 90°	- Table B-64
(f)	90 to 108°	- Table B-65
(g)	108 to 126°	- Table B-66
(h)	126 to 144°	- Table B-67
(i)	144 to 162°	- Table B-68
(j)	162 to 180°	- Table B-69

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iii. Full sphere

(a)	Target aspect angle (LAMB-T)	0 - 18° - Table B-70
(b)		18 - 36° - Table B-71
(c)		36 - 54° - Table B-72
(d)		54 - 72° - Table B-73
(e)		72 - 90° - Table B-74
(f)		90 - 108° - Table B-75
(g)		108 - 126° - Table B-76
(h)		126 - 144° - Table B-77
(i)		144 - 162° - Table B-78
(j)		162 - 180° - Table B-79

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TABLE B-46
PARAMETER INTERACTION EFF NBSE
SUBJECT TO CONDITIONS RMIN = 6.00 LAMDA =

SUBJECT TO CONDITIONS													X PARAMETER RANGE	
TAPES NO. 1													60.00	
0.00 LARDA=														
3600.00														
4900.00														
6400.00														
8100.00														
10000.00														
LIMIT														
0.50	AE	0	0	0	0	0	5	10	20	73	25	37		
	PCT	0.00	0.00	0.00	0.00	0.02	0.04	0.09	0.17	0.19	0.21	0.31		
	LY	0.00	0.00	0.00	0.00	1.00	1.00	1.10	1.05	1.04	1.04	1.05		
	STC	0.00	0.00	0.00	0.00	0.00	0.30	0.30	0.22	0.20	0.20	0.23		
2.00	AE	0	0	0	0	20	58	104	149	175	195	256		
	PCT	0.00	0.00	0.00	0.04	0.17	0.52	1.09	1.71	2.08	2.30	3.45		
	LY	0.00	0.00	0.00	1.00	1.05	1.12	1.32	1.44	1.49	1.48	1.69		
	STC	0.00	0.00	0.00	0.00	0.22	0.37	0.75	0.99	1.04	1.01	1.41		
4.50	AE	0	0	4	23	80	172	273	349	419	459	555		
	PCT	0.00	0.00	0.03	0.19	0.78	2.10	4.06	6.20	7.73	8.75	12.38		
	LY	0.00	0.00	1.00	1.04	1.23	1.53	1.86	2.23	2.31	2.39	2.79		
	STC	0.00	0.00	0.00	0.20	0.57	0.92	1.33	1.85	1.92	1.97	3.20		
8.00	AE	0	0	13	65	163	287	404	492	580	625	725		
	PCT	0.00	0.00	0.10	0.59	1.95	4.74	8.40	12.41	15.89	18.13	23.75		
	LY	0.00	0.00	1.00	1.14	1.50	2.07	2.60	3.16	3.43	3.64	4.10		
	STC	0.00	0.00	0.00	0.39	0.90	1.51	2.14	2.76	2.98	3.11	4.80		
12.50	AE	0	0	23	124	250	360	457	520	591	635	717		
	PCT	0.00	0.00	0.19	1.21	3.33	7.33	12.20	17.41	21.93	25.16	32.43		
	LY	0.00	0.00	1.04	1.22	1.77	2.55	3.35	4.19	4.65	4.96	5.67		
	STC	0.00	0.00	0.20	0.59	1.05	1.86	2.53	3.31	3.64	3.84	5.54		
18.00	AE	0	1	54	185	308	409	485	531	574	599	665		
	PCT	0.00	0.01	0.46	2.06	5.07	9.46	14.84	20.50	25.52	29.24	37.40		
	LY	0.00	1.00	1.07	1.41	2.06	2.90	3.84	4.84	5.57	6.12	7.05		
	STC	0.00	0.00	0.32	0.81	1.35	2.21	2.98	3.83	4.16	4.47	6.33		
24.50	AE	0	1	74	219	333	423	482	518	555	573	623		
	PCT	0.00	0.01	0.66	2.75	6.03	10.68	16.23	22.04	27.77	31.13	39.55		
	LY	0.00	1.00	1.12	1.57	2.27	3.16	4.22	5.33	6.16	6.81	7.95		
	STC	0.00	0.00	0.40	0.97	1.72	2.50	3.25	4.24	4.62	4.87	6.73		
32.00	AE	0	5	95	240	351	423	478	511	536	551	593		
	PCT	0.00	0.05	0.90	3.33	6.82	11.58	17.24	23.20	28.52	32.42	41.01		
	LY	0.00	1.20	1.19	1.74	2.44	3.43	4.52	5.69	6.67	7.37	8.66		
	STC	0.00	0.40	0.53	1.17	1.87	2.72	3.43	4.42	4.94	5.20	7.10		
40.50	AE	0	8	106	245	349	413	465	495	515	524	561		
	PCT	0.00	0.07	1.08	3.64	7.25	12.13	17.83	23.88	29.27	33.22	41.98		
	LY	0.00	1.13	1.27	1.86	2.60	3.67	4.80	6.04	7.12	7.94	9.38		
	STC	0.00	0.33	0.65	1.30	1.98	2.91	3.61	4.63	5.18	5.43	7.58		
50.00	AE	0	10	111	246	350	409	457	485	500	509	543		
	PCT	0.00	0.09	1.14	3.77	7.49	12.43	18.19	24.29	29.71	33.70	42.52		
	LY	0.00	1.10	1.29	1.92	2.68	3.81	4.99	6.27	7.45	8.29	9.81		
	STC	0.00	0.30	0.65	1.32	2.05	3.02	3.72	4.76	5.38	5.61	7.91		
LIMIT	AE	0	16	120	251	338	376	415	431	435	434	445		
	PCT	0.00	0.14	4.04	7.92	12.59	18.84	25.12	30.70	34.75	37.79	43.79		
	LY	0.00	1.06	1.33	2.02	2.93	4.33	5.69	7.30	8.44	10.03	12.33		
	STC	0.00	0.24	0.66	1.34	2.23	3.56	4.24	5.34	6.02	6.23	9.71		
AVG		0.00	46.39	27.27	22.20	18.93	15.95	13.82	12.52	12.44	12.13	11.64		

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TABLE B-47
PARAMETER INTERACTION OFF TAIL
SUBJECT TO CONDITIONS RMIN = 0.00 LAMDA = 60.00

Y PARAMETER LT-D8Y	X PARAMETER RANGE									
	100.00	400.00	900.00	1500.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00
6.50	NE, 0	0	0	0	0	6	7	10	11	11
	PCT, 0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.08	0.09	0.09
	ET, 0.00	0.00	0.00	0.00	0.00	0.63	1.00	1.00	1.00	1.12
	STD, 0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
										9866.90 AVG
2.00	NE, 0	0	0	0	8	30	57	82	99	108
	PCT, 0.00	0.00	0.00	0.00	0.00	0.29	0.53	0.82	0.99	1.12
	ET, 0.00	0.00	0.00	0.00	1.25	1.18	1.26	1.25	1.30	1.38
	STD, 0.00	0.00	0.00	0.00	0.66	0.54	0.46	0.73	0.76	0.78
										12150.63 AVG
4.50	NE, 0	0	0	6	35	92	157	214	254	269
	PCT, 0.00	0.00	0.00	0.05	0.37	1.17	2.24	3.51	4.37	4.79
	ET, 0.00	0.00	0.00	1.00	1.31	1.59	1.79	2.66	2.15	2.61
	STD, 0.00	0.00	0.00	0.00	0.92	1.07	1.45	1.72	1.09	2.01
										9171.10 AVG
8.00	NE, 0	0	1	18	72	164	243	312	360	386
	PCT, 0.00	0.00	0.01	0.17	0.81	2.53	4.88	7.21	9.84	10.12
	ET, 0.00	0.00	1.00	1.17	1.42	1.92	2.47	2.89	3.15	3.28
	STD, 0.00	0.00	0.00	0.50	0.81	1.73	2.59	3.13	3.40	3.58
										7462.26 AVG
12.50	NE, 0	0	3	36	110	225	311	367	406	428
	PCT, 0.00	0.00	0.03	0.30	1.40	3.89	6.98	10.18	12.61	14.17
	ET, 0.00	0.00	1.33	1.23	1.59	2.17	2.81	3.45	3.80	4.14
	STD, 0.00	0.00	0.47	0.56	1.08	1.94	2.71	3.48	3.81	4.08
										7462.26 AVG
18.00	NE, 0	0	6	45	158	265	339	378	487	451
	PCT, 0.00	0.00	0.06	0.51	2.04	5.07	8.58	12.81	14.74	16.47
	ET, 0.00	0.00	1.17	1.02	1.71	2.43	3.17	3.98	4.94	4.98
	STD, 0.00	0.00	0.37	0.86	1.21	2.16	3.81	3.73	4.14	4.33
										7358.19 AVG
24.50	NE, 0	0	7	64	176	288	356	392	415	425
	PCT, 0.00	0.00	0.06	0.74	2.42	5.81	9.54	13.10	15.91	17.68
	ET, 0.00	0.00	1.14	1.45	1.86	2.53	3.38	4.19	4.80	5.12
	STD, 0.00	0.00	0.35	0.85	1.26	2.20	3.88	3.81	4.24	4.47
										7158.98 AVG
32.00	NE, 0	0	14	87	208	316	368	398	422	429
	PCT, 0.00	0.00	0.13	0.99	3.18	6.62	10.42	14.04	16.98	18.78
	ET, 0.00	0.00	1.14	1.43	1.92	2.62	3.55	4.42	5.82	5.46
	STD, 0.00	0.00	0.35	0.80	1.27	2.19	3.12	3.98	4.32	4.63
										5977.33 AVG
40.50	NE, 0	0	19	103	222	323	358	388	409	417
	PCT, 0.00	0.00	0.18	1.24	3.59	7.21	11.88	14.78	17.69	19.51
	ET, 0.00	0.00	1.21	1.50	2.03	2.88	3.88	4.77	5.42	5.84
	STD, 0.00	0.00	0.41	0.91	1.37	2.33	3.31	4.05	4.46	4.76
										6803.37 AVG
50.00	NE, 0	0	28	117	238	326	355	382	401	409
	PCT, 0.00	0.00	0.27	1.44	3.95	7.61	11.92	15.24	18.18	20.01
	ET, 0.00	0.00	1.21	1.55	2.08	2.92	4.06	5.08	5.68	6.13
	STD, 0.00	0.00	0.41	0.97	1.41	2.36	3.36	4.11	4.54	4.86
										6754.47 AVG
LIMIT	NE, 1	14	98	191	279	322	339	375	376	374
	PCT, 0.01	0.11	0.61	2.04	5.24	8.98	12.95	16.73	19.75	21.62
	ET, 1.00	1.00	1.13	1.88	2.55	3.48	4.79	5.88	6.89	7.24
	STD, 0.00	0.00	0.37	0.89	1.32	2.56	3.52	4.42	5.87	5.37
	AVG, 102.03	108.65	81.12	54.07	37.42	27.19	21.94	19.18	17.66	16.99

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TABLE B-48 PARAMETER INTERACTION 360 DEGS SUBJECT TO CONDITIONS RMN = 0.00 LAMDA = 60.00									
X PARAMETER RANGE	TAPE NO. 1								
	100.00	400.00	900.00	1400.00	2500.00	3600.00	4900.00	6400.00	8100.00
0.50 AC	0	0	0	0	0	2	10	41	48
0.50 PC	0.00	0.00	0.00	0.00	0.02	0.08	0.18	0.34	0.37
0.50 ET	0.00	0.00	0.00	0.00	1.00	1.00	1.05	1.02	1.02
0.50 ST	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.15	0.14
2.00 AC	0	0	0	9	34	106	203	363	400
2.00 PC	0.00	0.00	0.00	0.07	0.30	0.95	2.08	4.33	4.86
2.00 ET	0.00	0.00	0.00	1.00	1.09	1.12	1.29	1.47	1.50
2.00 ST	0.00	0.00	0.00	0.00	0.37	0.41	0.66	1.22	1.27
4.50 AC	0	0	5	37	136	320	528	708	846
4.50 PC	0.00	0.00	0.04	0.33	1.34	4.00	8.06	13.08	16.47
4.50 ET	0.00	0.00	1.00	1.11	1.24	1.57	1.91	2.31	2.44
4.50 ST	0.00	0.00	0.00	0.39	0.67	1.03	1.53	2.19	2.40
8.00 AC	0	0	15	98	272	529	756	946	1084
8.00 PC	0.00	0.00	0.12	0.96	3.22	8.91	16.82	25.97	33.73
8.00 ET	0.00	0.00	1.00	1.22	1.49	2.11	2.79	3.44	3.90
8.00 ST	0.00	0.00	0.00	0.63	0.91	1.82	2.87	3.76	4.36
12.50 AC	0	1	29	179	427	692	866	981	1058
12.50 PC	0.00	0.01	0.27	1.93	6.10	14.22	24.09	36.71	46.98
12.50 ET	0.00	0.00	1.17	1.35	1.79	2.61	3.60	4.69	5.56
12.50 ST	0.00	0.00	0.59	0.92	1.21	2.31	3.84	5.12	6.12
16.00 AC	0	2	65	258	538	763	899	954	997
16.00 PC	0.00	0.02	0.59	3.32	9.30	19.04	31.21	44.30	55.68
16.00 ET	0.00	0.00	1.14	1.61	2.17	3.13	4.35	5.82	7.19
16.00 ST	0.00	0.00	0.49	1.33	1.80	2.93	4.59	6.24	7.52
24.50 AC	0	3	90	333	571	771	864	888	899
24.50 PC	0.00	0.03	0.86	4.70	11.85	22.38	35.12	48.71	60.55
24.50 ET	0.00	0.00	1.20	1.77	2.60	3.64	5.09	6.67	8.43
24.50 ST	0.00	0.07	0.64	1.51	2.31	3.79	5.72	7.88	9.62
32.00 AC	0	7	123	369	587	733	793	792	768
32.00 PC	0.00	0.07	1.26	5.87	13.80	24.86	37.99	51.89	63.95
32.00 ET	0.00	0.00	1.28	1.99	2.95	4.25	6.08	8.21	10.43
32.00 ST	0.00	0.45	0.49	1.70	2.69	4.42	7.00	10.23	12.54
40.50 AC	0	14	140	380	572	691	724	717	674
40.50 PC	0.00	0.13	1.40	6.75	15.07	26.49	39.78	53.89	66.12
40.50 ET	0.00	0.00	1.44	2.23	3.30	4.80	6.88	9.42	12.29
40.50 ST	0.00	0.55	0.58	1.94	3.15	5.33	8.01	11.51	14.50
50.00 AC	0	19	158	372	542	635	651	634	566
50.00 PC	0.00	0.17	1.53	7.41	16.06	27.66	41.07	55.29	67.61
50.00 ET	0.00	0.00	1.53	2.50	3.71	5.46	7.90	10.93	14.55
50.00 ST	0.00	0.52	0.69	2.15	3.54	5.85	8.93	13.83	17.32
LIMIT	2	40	202	317	359	363	345	294	214
AVG	1	173	79.94	71.63	61.63	50.81	44.43	38.99	33.94
100.00	100.00	12530.00	57.90	41.94	25.14	16.14	10.94	7.16	4.94
400.00	55.13	0.00	45.15	28.46	15.76	9.08	5.16	2.86	1.64
900.00	14.10	15.15	16.20	12.30	8.30	5.15	3.15	1.85	1.10

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TABLE B-49
PARAMETER INTERACTION 340 DESS
SUBJECT TO CONDITIONS MIN * 225.00 LANDA * 0.00

Y PARAMETER DESS.P	16.00	36.00	54.00	72.00	90.00	108.00	126.00	144.00	162.00	X PARAMETER LANDA.P	LIMIT
1.00 AB:	137	175	190	213	232	255	283	320	345	100.00	315
PCT:	2.04	3.01	4.73	5.99	7.21	8.56	10.00	11.74	13.66	13.66	13.66
LT:	2.60	2.73	3.52	3.52	3.89	4.21	4.47	4.99	5.43	5.43	5.43
STD:	3.27	3.38	3.87	4.38	4.78	5.11	5.73	6.45	6.83	6.83	6.83
AVG:										80.06	80.06
2.00 AB:	221	262	305	335	387	417	458	442	477	403	403
PCT:	7.20	9.95	12.13	15.12	18.42	21.72	24.65	27.31	29.68	30.43	30.43
LT:	4.06	4.51	4.98	5.06	5.86	6.53	7.41	8.24	8.24	8.24	8.24
STD:	8.11	8.59	8.51	9.25	9.24	9.58	10.31	10.78	11.11	11.46	11.46
AVG:										72.21	72.21
3.00 AB:	267	333	385	425	494	513	543	558	542	520	520
PCT:	10.73	14.99	19.07	23.79	29.48	34.94	39.47	43.53	47.06	48.18	48.18
LT:	5.04	5.80	6.21	7.01	7.48	8.54	9.11	9.92	10.30	11.61	11.61
STD:	7.91	8.36	8.49	9.48	9.96	10.94	11.82	12.55	13.11	14.81	14.81
AVG:										72.19	72.19
4.00 AB:	277	345	401	439	493	495	520	522	491	438	438
PCT:	13.98	20.26	26.14	32.66	40.18	47.01	52.98	58.62	63.23	64.80	64.80
LT:	6.32	7.36	8.17	9.32	10.19	11.90	12.77	14.07	15.47	18.54	18.54
STD:	8.17	8.66	8.97	10.36	11.37	13.19	14.95	17.21	21.17	24.62	24.62
AVG:										71.87	71.87
5.00 AB:	299	361	395	442	471	477	491	478	493	325	325
PCT:	16.29	24.52	32.55	40.61	49.61	57.94	65.59	72.93	78.37	88.97	88.97
LT:	6.83	8.75	10.33	11.51	13.20	15.22	16.74	19.44	24.43	31.22	31.22
STD:	7.98	8.48	8.94	11.05	13.53	16.05	18.69	22.95	31.39	41.25	41.25
AVG:										72.96	72.96
6.00 AB:	314	380	415	451	421	413	401	396	292	141	141
PCT:	17.40	27.18	36.70	46.55	57.08	66.96	76.29	87.15	92.87	94.45	94.45
LT:	6.94	8.96	11.08	12.93	16.99	20.31	23.84	29.97	45.78	83.94	83.94
STD:	7.93	8.41	9.04	10.95	13.95	17.55	23.29	38.95	49.19	107.70	107.70
AVG:										74.33	74.33
7.00 AB:	317	378	408	439	399	383	364	291	173	51	51
PCT:	17.68	27.79	37.59	47.95	58.88	69.23	79.27	88.79	95.35	98.48	98.48
LT:	6.99	9.21	11.58	13.69	18.49	22.65	27.29	36.23	49.49	241.94	241.94
STD:	7.98	8.46	9.06	11.11	14.61	18.21	25.92	39.84	71.35	204.36	204.36
AVG:										75.08	75.08
8.00 AB:	316	375	404	435	393	376	349	271	147	22	22
PCT:	17.76	27.92	37.92	48.38	59.45	69.99	80.18	89.84	97.11	99.66	99.66
LT:	7.04	9.33	11.76	13.94	18.95	23.32	28.79	41.55	82.78	567.59	567.59
STD:	8.00	8.49	9.14	11.27	15.21	18.81	27.13	43.82	82.50	398.07	398.07
AVG:										75.17	75.17
9.00 AB:	316	375	404	435	393	375	346	265	139	11	11
PCT:	17.76	27.92	37.93	48.40	59.50	70.87	80.30	90.06	97.36	99.92	99.92
LT:	7.04	9.33	11.76	13.94	18.97	23.41	28.08	42.58	87.76	1138.18	1138.18
STD:	8.03	8.49	9.14	11.27	15.21	18.82	27.32	44.54	84.31	708.41	708.41
AVG:										75.29	75.29
10.00 AB:	316	375	404	435	393	375	346	265	139	11	11
PCT:	17.76	27.92	37.93	48.40	59.50	70.87	80.30	90.06	97.36	99.92	99.92
LT:	7.04	9.33	11.76	13.94	18.97	23.41	28.08	42.58	87.76	1138.18	1138.18
STD:	8.00	8.49	9.14	11.27	15.21	18.82	27.32	44.54	84.31	708.41	708.41
AVG:										75.29	75.29
LIMIT											
AB:	316	375	404	435	393	375	346	265	139	-11	-11
PCT:	17.76	27.92	37.93	48.40	59.50	70.87	80.30	90.06	97.36	99.92	99.92
LT:	7.04	9.33	11.76	13.94	18.97	23.41	28.08	42.58	87.76	1138.18	1138.18
STD:	8.00	8.49	9.14	11.27	15.21	18.82	27.32	44.54	84.31	708.41	708.41
AVG:	2.65	2.92	3.05	3.11	3.12	3.13	3.16	3.19	3.19	3.19	3.19

CONFIDENTIAL

TABLE B-50
PARAMETER INTERACTION OFF NOSE
SUBJECT TO CONDITIONS: $\theta_{MIN} = 9.30$ LAMDA = 60.00
LAMDA Y 18.00

Y PARAMETER	LT-PT	900.00	1637.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00	LIMIT	X PARAMETER RANGE
0.50	AB.	0.00	0.00	0.00	0.01	0.02	0.03	0.06	0.06	0.06	0
	PT.	0.00	0.00	0.00	0.01	0.02	0.03	0.06	0.06	0.06	0.06
	ST.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4789.34 AVG
2.00	AB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36
	PT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36
	ST.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14
4.50	AB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
	PT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
	ST.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5014.42 AVG
8.00	AB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	PT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	ST.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5219.25 AVG
12.50	AB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	PT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	ST.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5161.94 AVG
18.00	AB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	PT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	ST.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5218.99 AVG
24.00	AB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	PT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	ST.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5328.48 AVG
32.00	AB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	PT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	ST.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5312.06 AVG
40.00	AB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	PT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	ST.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5381.32 AVG
50.00	AB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	PT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	ST.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5289.76 AVG
LIMIT	AB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	PT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	ST.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5283.41 AVG
AVG.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.46

CONFIDENTIAL

TABLE B-51

PARAMETER INTERACTION OFF NOISE
SUBJECT TO CONDITIONS RMV = 0.30 LANDAR 60.00
LAND T 36.00

Y PARAMETER LT-39T	100.00	000.00	1600.00	2500.90	3600.00	4900.00	6400.00	8100.00	10000.00	X PARAMETER RANGE
0.0. VB.	0.00	0.00	0.00	0.01	0.02	0.02	0.03	0.03	0.03	4
PCT.	0.00	0.00	0.00	0.01	0.02	0.02	0.03	0.03	0.03	4
UT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4
2.0. VB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4804.02 AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25
UT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25
4.0. VB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5052.02 AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60
UT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60
8.0. VB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5052.05 AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	134
UT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	134
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	134
12.0. VB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6100.29 AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	209
UT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	209
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	209
16.0. VB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6105.00 AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	248
UT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	248
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	248
24.0. VB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6144.52 AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	297
UT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	297
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	297
32.0. VB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5005.92 AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	267
UT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	267
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	267
40.0. VB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5009.03 AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	294
UT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	294
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	294
50.0. VB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5075.16 AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	295
UT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	295
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	295
LIMIT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5071.19 AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	290
UT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	290
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	290
60.0. VB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5007.11 AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.44
UT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.44
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.44

CONFIDENTIAL

TABLE B-52
PARAMETER INTERACTION EFF. MOSE
SUBJECT TO CONDITIONS RMV = 3.00 LA
LAME Y 54.00

[illegible]

TABLE B-53

PARAMETER INTERACTIVITY OFF %OSE
SUBJECT TO CONDITIONS 3MIN = 0.00 LAMDA=
LAMP T 72.00

[illegible]

CONFIDENTIAL

TABLE B-54

PARAMETER INTERACTION OFF WISE
SUBJECT TO CONDITIONS RMV 5 0.00 LAMDA= 60.00
LAMP Y 90.00

Y PARAMETER LT-DST	X PARAMETER RANGE	TAPE NO. 1									
		400.00	900.00	1600.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00	LIMIT
0.5. NB.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.0L NB.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18122.07 AVG
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49
4.5. NB.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7786.33 AVG
6.0L NB.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	86
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	111
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07
12.5L NB.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.33
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8378.36 AVG
18.0L NB.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	164
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	132
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.77
24.5L NB.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.84
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.97
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.80
32.0L NB.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7688.44 AVG
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	184
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	226
40.5L NB.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.81
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.10
50.0L NB.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7589.37 AVG
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	199
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	244
LIMIT		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	256
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	267
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	273
AVG.		58.72	28.43	24.86	21.53	17.43	14.88	12.94	12.49	12.33	12.31

CONFIDENTIAL

TABLE B-55

PARAMETER INTERACTION OFF NOISE
SUBJECT TO CONDITIONS: RMV = 0.00 LAMDA = 60.00
LAMB Y 108.00

Y PARAMETER LT-05	X PARAMETER RANGE	TAPES NO. 1									
		357.00	1430.00	2507.00	3607.00	4900.00	6400.00	8100.00	10000.00	LIMIT	
0.00	VB	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	3	
0.00	PC	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	3	
0.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	
0.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10577.35	AVG
2.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13	
2.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19	
2.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	
4.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	
4.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31	
4.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	
4.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	
6.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	
6.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10711.83	AVG
6.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57	
6.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	70	
8.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	
8.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	
8.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	
8.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.09	
10.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.65	
10.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	
10.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.65	
10.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8790.09	AVG
12.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18	
12.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.6	
12.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.06	
12.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.47	
14.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.63	
14.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.55	
14.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10	
14.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.23	
16.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7689.69	AVG
16.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	132	
16.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	161	
16.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.42	
18.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.66	
18.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.74	
18.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.68	
18.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.16	
20.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7651.39	AVG
20.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	149	
20.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	182	
20.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82	
22.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.82	
22.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.58	
22.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.22	
22.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7453.51	AVG
24.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160	
24.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	193	
24.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.93	
24.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.62	
26.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	
26.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7241.71	AVG
26.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	172	
26.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	205	
28.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	
28.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.41	
28.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	
28.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.56	
30.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.21	
30.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.06	
30.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7138.30	AVG
30.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	179	
32.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	212	
32.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	205	
32.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.29	
32.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.50	
34.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.53	
34.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	
34.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.53	
34.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	
36.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7076.97	AVG
36.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	185	
36.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	218	
36.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.37	
38.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.51	
38.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	
38.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.51	
38.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.17	
40.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7026.45	AVG
40.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	197	
40.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	232	
40.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.73	
42.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.56	
42.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37	
42.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.46	
42.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	
44.00	VB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6970.44	AVG
44.00	PC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.76	
44.00	ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.76	
44.00	STD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.76	

CONFIDENTIAL

TABLE B-56

SC-60 TO CIGARS ONLY = 0.00 LAMDA =
LAME T 26.00
BATTERY INTERACTY OFF USE

[illegible]

CONFIDENTIAL

CONFIDENTIAL

TABLE B-57

PARAMETER INTERACTION OFF NOISE
SUBJECT TO CONDITIONS: $\lambda_{min} = 6.00$ $\lambda_{max} = 60.00$
LAMBDA 1 144.00

Y	PARAMETER	LT-737	TAPE NO. 1										Y PARAMETER RANGE	
			4000.00	7000.00	10000.00	14000.00	25000.00	36000.00	49000.00	64000.00	81000.00	100000.00	LIMIT	
0.5	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
2.0	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24278.65 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.47
4.5	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20592.83 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.55
8.0	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17190.70 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.16
12.5	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14150.91 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.17
18.0	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13177.17 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.51
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.79
24.0	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11752.47 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.66
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.77
32.0	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11291.31 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	111
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.84
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.96
48.0	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10756.63 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	118
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.93
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.67
50.0	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10670.74 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	125
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.66
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.92
LIMIT	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10428.58 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	137
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30
	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.54
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.71
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10223.31 AVG
	AB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.79
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.87
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.39
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.87

CONFIDENTIAL

TABLE B-58

PARAMETER INTERACTION OFF NOISE
SUBJECT TO CONDITIONS: MIN = 2.00 LAMDA = 60.00
LAMP T 162.00

Y			PARAMETER LT-DBT										LIMIT		PARAMETER RANGE	
			152.00													
			TAPES NO. 1													
			2500.00													
			3600.00													
			4900.00													
			6400.00													
			8100.00													
			10000.00													
			LIMIT													
			11886.09 AVG													
			12045.68 AVG													
			12233.28 AVG													
			12931.68 AVG													
			13579.14 AVG													
			15505.17 AVG													
			18613.35 AVG													
			18193.42 AVG													
			23618.57 AVG													
			23457.77 AVG													
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CONFIDENTIAL

TABLE B-59

Y PARAMETER LT-DOT		PARAMETER INTERACTION OFF NOISE SUBJECT TO CONDITIONS "MIN" 0.00 LAMDA= 60.00 LAMBD Y LIMIT										X PARAMETER RANGE	
		TAPE NO. 1											
		10.00	400.00	900.00	1600.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00	LIMIT	
0.50	NO.											1	
	PCT.											0.01	
	DT.											0.00	
	STD.											1.00	
2.50	NO.											0.00	14387.40 AVG
	PCT.											0.00	4
	DT.											0.00	0.00
	STD.											2.50	0.00
4.50	NO.											1.12	23621.72 AVG
	PCT.											0.00	4
	DT.											0.03	0.13
	STD.											4.00	0.00
8.00	NO.											2.12	18669.01 AVG
	PCT.											0.00	0
	DT.											0.06	0.22
	STD.											1.75	3.00
12.50	NO.											2.45	15992.71 AVG
	PCT.											1.30	5
	DT.											0.06	0.23
	STD.											1.60	2.64
16.00	NO.											1.20	15470.95 AVG
	PCT.											0.08	6
	DT.											1.67	0.26
	STD.											2.46	2.46
24.50	NO.											1.11	14974.16 AVG
	PCT.											0.08	9
	DT.											0.11	0.29
	STD.											1.56	2.25
32.00	NO.											0.96	13741.75 AVG
	PCT.											0.11	11
	DT.											0.13	0.30
	STD.											1.45	2.11
40.50	NO.											0.89	13074.23 AVG
	PCT.											0.15	15
	DT.											0.17	0.35
	STD.											1.40	2.00
50.00	NO.											0.80	12290.91 AVG
	PCT.											0.18	18
	DT.											0.19	0.38
	STD.											1.33	1.80
LIMIT	NO.											0.75	11623.42 AVG
	PCT.											0.22	22
	DT.											0.22	0.41
	STD.											1.27	1.76
AVG.												0.69	1.63
												26.67	11071.77 AVG
												25.34	17.05

CONFIDENTIAL

TABLE B-60
PARAMETER INTERACTION OFF TAIL
SUBJECT TO CONDITIONS: $\text{SMV} = 0.00$ $\text{LAMBDA} = 60.00$
LAMBDA T 10.00

Y PARAMETER LT-DOT		Y PARAMETER RANGE									
		4000.00	5000.00	6000.00	7000.00	8000.00	9000.00	10000.00	11000.00	12000.00	LIMIT
0.50	NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15556.18 AVG
2.00	NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.45
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.53
4.50	NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17333.46 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.72
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.62
6.00	NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14847.45 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.72
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.62
12.50	NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13074.94 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.72
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.62
18.00	NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12313.61 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.72
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.62
24.50	NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11866.25 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.72
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.62
32.00	NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11352.67 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.72
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.62
40.50	NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11366.88 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.72
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.62
50.00	NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11366.88 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.72
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.62
LIMIT	NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.97
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.78
	AVG.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11312.24 AVG

CONFIDENTIAL

TABLE B-61

PARAMETER INTERACTION EFF TAIL
SUBJECT TO CONDITIONS RMV = 0.00 LAMDA = 60.00
LAMP T 36.07

[illegible]

CONFIDENTIAL

TABLE B-62
PARAMETER INTERACTION OFF TAIL
SUBJECT TO CONDITIONS: $\lambda_{MIN} = 0.00$ $\lambda_{MAX} = 60.00$
 $\lambda_{TAP} = 54.00$

Y PARAMETER	LAMB T	TAPES NO. 1										X PARAMETER RANGE	
		400.00	900.00	1400.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00	LIMIT		
0.50	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1		
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2.00	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19		
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
4.00	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12		
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8.00	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16		
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
12.00	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12		
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18.00	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16		
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
24.00	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16		
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
32.00	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16		
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
40.00	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16		
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
50.00	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16		
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
LIMIT	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16		
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AVG.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.40		

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TABLE B-63

PARAMETER INTERACTION OFF TAIL
SUBJECT TO CONDITIONS 2MIN = 0.00 LAMDA = 60.00
LAMB T 72.00

[illegible]

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TABLE B-64

PARAMETER INTERACTION OFF TAIL
SUBJECT TO CONDITIONS $RMV = 9.00$ $LAMDA = 60.00$
 $LAMDA = 90.00$

Y PARAMETER RANGE													
0.5	PCT.	0.00	4.0E-01	200E-01	1600E-01	TYPE	MS.	3500E-01	4900E-01	6400E-01	8100E-01	10000E-01	LIMIT
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>0<td>0<td>0<td>0<td>0<td>0<td>0</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>0<td>0<td>0<td>0<td>0<td>0<td>0</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>0<td>0<td>0<td>0<td>0<td>0<td>0</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>0<td>0<td>0<td>0<td>0<td>0<td>0</td></td></td></td></td></td></td></td>	0 <td>0<td>0<td>0<td>0<td>0<td>0<td>0</td></td></td></td></td></td></td>	0 <td>0<td>0<td>0<td>0<td>0<td>0</td></td></td></td></td></td>	0 <td>0<td>0<td>0<td>0<td>0</td></td></td></td></td>	0 <td>0<td>0<td>0<td>0</td></td></td></td>	0 <td>0<td>0<td>0</td></td></td>	0 <td>0<td>0</td></td>	0 <td>0</td>	0
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00</td></td></td>	0.00 <td>0.00<td>0.00</td></td>	0.00 <td>0.00</td>	0.00
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00</td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00</td></td></td>	0.00 <td>0.00<td>0.00</td></td>	0.00 <td>0.00</td>	0.00
2.5	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>1<td>4<td>6<td>8<td>8<td>12<td>13</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>1<td>4<td>6<td>8<td>8<td>12<td>13</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>1<td>4<td>6<td>8<td>8<td>12<td>13</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>1<td>4<td>6<td>8<td>8<td>12<td>13</td></td></td></td></td></td></td></td>	0 <td>1<td>4<td>6<td>8<td>8<td>12<td>13</td></td></td></td></td></td></td>	1 <td>4<td>6<td>8<td>8<td>12<td>13</td></td></td></td></td></td>	4 <td>6<td>8<td>8<td>12<td>13</td></td></td></td></td>	6 <td>8<td>8<td>12<td>13</td></td></td></td>	8 <td>8<td>12<td>13</td></td></td>	8 <td>12<td>13</td></td>	12 <td>13</td>	13
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.01<td>0.03<td>0.05<td>0.08<td>0.08<td>0.11<td>0.13</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.01<td>0.03<td>0.05<td>0.08<td>0.08<td>0.11<td>0.13</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.01<td>0.03<td>0.05<td>0.08<td>0.08<td>0.11<td>0.13</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.01<td>0.03<td>0.05<td>0.08<td>0.08<td>0.11<td>0.13</td></td></td></td></td></td></td></td>	0.00 <td>0.01<td>0.03<td>0.05<td>0.08<td>0.08<td>0.11<td>0.13</td></td></td></td></td></td></td>	0.01 <td>0.03<td>0.05<td>0.08<td>0.08<td>0.11<td>0.13</td></td></td></td></td></td>	0.03 <td>0.05<td>0.08<td>0.08<td>0.11<td>0.13</td></td></td></td></td>	0.05 <td>0.08<td>0.08<td>0.11<td>0.13</td></td></td></td>	0.08 <td>0.08<td>0.11<td>0.13</td></td></td>	0.08 <td>0.11<td>0.13</td></td>	0.11 <td>0.13</td>	0.13
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.05<td>0.06<td>0.06<td>0.07<td>0.08</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.05<td>0.06<td>0.06<td>0.07<td>0.08</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.05<td>0.06<td>0.06<td>0.07<td>0.08</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.05<td>0.06<td>0.06<td>0.07<td>0.08</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.05<td>0.06<td>0.06<td>0.07<td>0.08</td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.05<td>0.06<td>0.06<td>0.07<td>0.08</td></td></td></td></td></td>	0.03 <td>0.05<td>0.06<td>0.06<td>0.07<td>0.08</td></td></td></td></td>	0.05 <td>0.06<td>0.06<td>0.07<td>0.08</td></td></td></td>	0.06 <td>0.06<td>0.07<td>0.08</td></td></td>	0.06 <td>0.07<td>0.08</td></td>	0.07 <td>0.08</td>	0.08
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.05<td>0.05<td>0.05<td>0.05<td>0.05</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.05<td>0.05<td>0.05<td>0.05<td>0.05</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.05<td>0.05<td>0.05<td>0.05<td>0.05</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.05<td>0.05<td>0.05<td>0.05<td>0.05</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.05<td>0.05<td>0.05<td>0.05<td>0.05</td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.05<td>0.05<td>0.05<td>0.05<td>0.05</td></td></td></td></td></td>	0.00 <td>0.05<td>0.05<td>0.05<td>0.05<td>0.05</td></td></td></td></td>	0.05 <td>0.05<td>0.05<td>0.05<td>0.05</td></td></td></td>	0.05 <td>0.05<td>0.05<td>0.05</td></td></td>	0.05 <td>0.05<td>0.05</td></td>	0.05 <td>0.05</td>	0.05
4.5	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>8<td>18<td>25<td>36<td>44<td>44<td>47</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>8<td>18<td>25<td>36<td>44<td>44<td>47</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>8<td>18<td>25<td>36<td>44<td>44<td>47</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>8<td>18<td>25<td>36<td>44<td>44<td>47</td></td></td></td></td></td></td></td>	0 <td>8<td>18<td>25<td>36<td>44<td>44<td>47</td></td></td></td></td></td></td>	8 <td>18<td>25<td>36<td>44<td>44<td>47</td></td></td></td></td></td>	18 <td>25<td>36<td>44<td>44<td>47</td></td></td></td></td>	25 <td>36<td>44<td>44<td>47</td></td></td></td>	36 <td>44<td>44<td>47</td></td></td>	44 <td>44<td>47</td></td>	44 <td>47</td>	47
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0.01<td>0.08<td>0.21<td>0.36<td>0.50<td>0.60<td>0.68<td>0.81</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.01<td>0.08<td>0.21<td>0.36<td>0.50<td>0.60<td>0.68<td>0.81</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.01<td>0.08<td>0.21<td>0.36<td>0.50<td>0.60<td>0.68<td>0.81</td></td></td></td></td></td></td></td></td>	0.00 <td>0.01<td>0.08<td>0.21<td>0.36<td>0.50<td>0.60<td>0.68<td>0.81</td></td></td></td></td></td></td></td>	0.01 <td>0.08<td>0.21<td>0.36<td>0.50<td>0.60<td>0.68<td>0.81</td></td></td></td></td></td></td>	0.08 <td>0.21<td>0.36<td>0.50<td>0.60<td>0.68<td>0.81</td></td></td></td></td></td>	0.21 <td>0.36<td>0.50<td>0.60<td>0.68<td>0.81</td></td></td></td></td>	0.36 <td>0.50<td>0.60<td>0.68<td>0.81</td></td></td></td>	0.50 <td>0.60<td>0.68<td>0.81</td></td></td>	0.60 <td>0.68<td>0.81</td></td>	0.68 <td>0.81</td>	0.81
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td>	0.03 <td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td>	0.08 <td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td>	0.12 <td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td>	0.15 <td>0.15<td>0.17<td>0.17</td></td></td>	0.15 <td>0.17<td>0.17</td></td>	0.17 <td>0.17</td>	0.17
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td>	0.03 <td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08</td></td></td>	0.08 <td>0.08<td>0.08</td></td>	0.08 <td>0.08</td>	0.08
8.5	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>22<td>38<td>49<td>69<td>80<td>80<td>96</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>22<td>38<td>49<td>69<td>80<td>80<td>96</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>22<td>38<td>49<td>69<td>80<td>80<td>96</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>22<td>38<td>49<td>69<td>80<td>80<td>96</td></td></td></td></td></td></td></td>	0 <td>22<td>38<td>49<td>69<td>80<td>80<td>96</td></td></td></td></td></td></td>	22 <td>38<td>49<td>69<td>80<td>80<td>96</td></td></td></td></td></td>	38 <td>49<td>69<td>80<td>80<td>96</td></td></td></td></td>	49 <td>69<td>80<td>80<td>96</td></td></td></td>	69 <td>80<td>80<td>96</td></td></td>	80 <td>80<td>96</td></td>	80 <td>96</td>	96
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0.02<td>0.24<td>0.57<td>0.83<td>1.19<td>1.56<td>1.92<td>2.38</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.02<td>0.24<td>0.57<td>0.83<td>1.19<td>1.56<td>1.92<td>2.38</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.02<td>0.24<td>0.57<td>0.83<td>1.19<td>1.56<td>1.92<td>2.38</td></td></td></td></td></td></td></td></td>	0.00 <td>0.02<td>0.24<td>0.57<td>0.83<td>1.19<td>1.56<td>1.92<td>2.38</td></td></td></td></td></td></td></td>	0.02 <td>0.24<td>0.57<td>0.83<td>1.19<td>1.56<td>1.92<td>2.38</td></td></td></td></td></td></td>	0.24 <td>0.57<td>0.83<td>1.19<td>1.56<td>1.92<td>2.38</td></td></td></td></td></td>	0.57 <td>0.83<td>1.19<td>1.56<td>1.92<td>2.38</td></td></td></td></td>	0.83 <td>1.19<td>1.56<td>1.92<td>2.38</td></td></td></td>	1.19 <td>1.56<td>1.92<td>2.38</td></td></td>	1.56 <td>1.92<td>2.38</td></td>	1.92 <td>2.38</td>	2.38
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td>	0.03 <td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td>	0.08 <td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td>	0.12 <td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td>	0.15 <td>0.15<td>0.17<td>0.17</td></td></td>	0.15 <td>0.17<td>0.17</td></td>	0.17 <td>0.17</td>	0.17
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td>	0.03 <td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08</td></td></td>	0.08 <td>0.08<td>0.08</td></td>	0.08 <td>0.08</td>	0.08
12.5	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>35<td>57<td>69<td>92<td>104<td>104<td>124</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>35<td>57<td>69<td>92<td>104<td>104<td>124</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>35<td>57<td>69<td>92<td>104<td>104<td>124</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>35<td>57<td>69<td>92<td>104<td>104<td>124</td></td></td></td></td></td></td></td>	0 <td>35<td>57<td>69<td>92<td>104<td>104<td>124</td></td></td></td></td></td></td>	35 <td>57<td>69<td>92<td>104<td>104<td>124</td></td></td></td></td></td>	57 <td>69<td>92<td>104<td>104<td>124</td></td></td></td></td>	69 <td>92<td>104<td>104<td>124</td></td></td></td>	92 <td>104<td>104<td>124</td></td></td>	104 <td>104<td>124</td></td>	104 <td>124</td>	124
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0.02<td>0.46<td>0.97<td>1.30<td>1.81<td>2.27<td>2.78<td>3.37</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.02<td>0.46<td>0.97<td>1.30<td>1.81<td>2.27<td>2.78<td>3.37</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.02<td>0.46<td>0.97<td>1.30<td>1.81<td>2.27<td>2.78<td>3.37</td></td></td></td></td></td></td></td></td>	0.00 <td>0.02<td>0.46<td>0.97<td>1.30<td>1.81<td>2.27<td>2.78<td>3.37</td></td></td></td></td></td></td></td>	0.02 <td>0.46<td>0.97<td>1.30<td>1.81<td>2.27<td>2.78<td>3.37</td></td></td></td></td></td></td>	0.46 <td>0.97<td>1.30<td>1.81<td>2.27<td>2.78<td>3.37</td></td></td></td></td></td>	0.97 <td>1.30<td>1.81<td>2.27<td>2.78<td>3.37</td></td></td></td></td>	1.30 <td>1.81<td>2.27<td>2.78<td>3.37</td></td></td></td>	1.81 <td>2.27<td>2.78<td>3.37</td></td></td>	2.27 <td>2.78<td>3.37</td></td>	2.78 <td>3.37</td>	3.37
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td>	0.03 <td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td>	0.08 <td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td>	0.12 <td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td>	0.15 <td>0.15<td>0.17<td>0.17</td></td></td>	0.15 <td>0.17<td>0.17</td></td>	0.17 <td>0.17</td>	0.17
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td>	0.03 <td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08</td></td></td>	0.08 <td>0.08<td>0.08</td></td>	0.08 <td>0.08</td>	0.08
16.5	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>44<td>65<td>81<td>102<td>114<td>114<td>137</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>44<td>65<td>81<td>102<td>114<td>114<td>137</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>44<td>65<td>81<td>102<td>114<td>114<td>137</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>44<td>65<td>81<td>102<td>114<td>114<td>137</td></td></td></td></td></td></td></td>	0 <td>44<td>65<td>81<td>102<td>114<td>114<td>137</td></td></td></td></td></td></td>	44 <td>65<td>81<td>102<td>114<td>114<td>137</td></td></td></td></td></td>	65 <td>81<td>102<td>114<td>114<td>137</td></td></td></td></td>	81 <td>102<td>114<td>114<td>137</td></td></td></td>	102 <td>114<td>114<td>137</td></td></td>	114 <td>114<td>137</td></td>	114 <td>137</td>	137
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0.02<td>0.66<td>1.20<td>1.50<td>2.13<td>2.61<td>3.17<td>3.80</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.02<td>0.66<td>1.20<td>1.50<td>2.13<td>2.61<td>3.17<td>3.80</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.02<td>0.66<td>1.20<td>1.50<td>2.13<td>2.61<td>3.17<td>3.80</td></td></td></td></td></td></td></td></td>	0.00 <td>0.02<td>0.66<td>1.20<td>1.50<td>2.13<td>2.61<td>3.17<td>3.80</td></td></td></td></td></td></td></td>	0.02 <td>0.66<td>1.20<td>1.50<td>2.13<td>2.61<td>3.17<td>3.80</td></td></td></td></td></td></td>	0.66 <td>1.20<td>1.50<td>2.13<td>2.61<td>3.17<td>3.80</td></td></td></td></td></td>	1.20 <td>1.50<td>2.13<td>2.61<td>3.17<td>3.80</td></td></td></td></td>	1.50 <td>2.13<td>2.61<td>3.17<td>3.80</td></td></td></td>	2.13 <td>2.61<td>3.17<td>3.80</td></td></td>	2.61 <td>3.17<td>3.80</td></td>	3.17 <td>3.80</td>	3.80
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td>	0.03 <td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td>	0.08 <td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td>	0.12 <td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td>	0.15 <td>0.15<td>0.17<td>0.17</td></td></td>	0.15 <td>0.17<td>0.17</td></td>	0.17 <td>0.17</td>	0.17
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td>	0.03 <td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08</td></td></td>	0.08 <td>0.08<td>0.08</td></td>	0.08 <td>0.08</td>	0.08
24.5	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>54<td>74<td>93<td>113<td>125<td>125<td>148</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>54<td>74<td>93<td>113<td>125<td>125<td>148</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>54<td>74<td>93<td>113<td>125<td>125<td>148</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>54<td>74<td>93<td>113<td>125<td>125<td>148</td></td></td></td></td></td></td></td>	0 <td>54<td>74<td>93<td>113<td>125<td>125<td>148</td></td></td></td></td></td></td>	54 <td>74<td>93<td>113<td>125<td>125<td>148</td></td></td></td></td></td>	74 <td>93<td>113<td>125<td>125<td>148</td></td></td></td></td>	93 <td>113<td>125<td>125<td>148</td></td></td></td>	113 <td>125<td>125<td>148</td></td></td>	125 <td>125<td>148</td></td>	125 <td>148</td>	148
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0.02<td>0.79<td>1.36<td>1.78<td>2.34<td>2.82<td>3.38<td>4.04</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.02<td>0.79<td>1.36<td>1.78<td>2.34<td>2.82<td>3.38<td>4.04</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.02<td>0.79<td>1.36<td>1.78<td>2.34<td>2.82<td>3.38<td>4.04</td></td></td></td></td></td></td></td></td>	0.00 <td>0.02<td>0.79<td>1.36<td>1.78<td>2.34<td>2.82<td>3.38<td>4.04</td></td></td></td></td></td></td></td>	0.02 <td>0.79<td>1.36<td>1.78<td>2.34<td>2.82<td>3.38<td>4.04</td></td></td></td></td></td></td>	0.79 <td>1.36<td>1.78<td>2.34<td>2.82<td>3.38<td>4.04</td></td></td></td></td></td>	1.36 <td>1.78<td>2.34<td>2.82<td>3.38<td>4.04</td></td></td></td></td>	1.78 <td>2.34<td>2.82<td>3.38<td>4.04</td></td></td></td>	2.34 <td>2.82<td>3.38<td>4.04</td></td></td>	2.82 <td>3.38<td>4.04</td></td>	3.38 <td>4.04</td>	4.04
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td>	0.03 <td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td>	0.08 <td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td>	0.12 <td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td>	0.15 <td>0.15<td>0.17<td>0.17</td></td></td>	0.15 <td>0.17<td>0.17</td></td>	0.17 <td>0.17</td>	0.17
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td>	0.03 <td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08</td></td></td>	0.08 <td>0.08<td>0.08</td></td>	0.08 <td>0.08</td>	0.08
32.5	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>59<td>79<td>97<td>118<td>130<td>130<td>153</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>59<td>79<td>97<td>118<td>130<td>130<td>153</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>59<td>79<td>97<td>118<td>130<td>130<td>153</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>59<td>79<td>97<td>118<td>130<td>130<td>153</td></td></td></td></td></td></td></td>	0 <td>59<td>79<td>97<td>118<td>130<td>130<td>153</td></td></td></td></td></td></td>	59 <td>79<td>97<td>118<td>130<td>130<td>153</td></td></td></td></td></td>	79 <td>97<td>118<td>130<td>130<td>153</td></td></td></td></td>	97 <td>118<td>130<td>130<td>153</td></td></td></td>	118 <td>130<td>130<td>153</td></td></td>	130 <td>130<td>153</td></td>	130 <td>153</td>	153
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0.02<td>0.86<td>1.45<td>1.80<td>2.44<td>2.93<td>3.50<td>4.24</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.02<td>0.86<td>1.45<td>1.80<td>2.44<td>2.93<td>3.50<td>4.24</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.02<td>0.86<td>1.45<td>1.80<td>2.44<td>2.93<td>3.50<td>4.24</td></td></td></td></td></td></td></td></td>	0.00 <td>0.02<td>0.86<td>1.45<td>1.80<td>2.44<td>2.93<td>3.50<td>4.24</td></td></td></td></td></td></td></td>	0.02 <td>0.86<td>1.45<td>1.80<td>2.44<td>2.93<td>3.50<td>4.24</td></td></td></td></td></td></td>	0.86 <td>1.45<td>1.80<td>2.44<td>2.93<td>3.50<td>4.24</td></td></td></td></td></td>	1.45 <td>1.80<td>2.44<td>2.93<td>3.50<td>4.24</td></td></td></td></td>	1.80 <td>2.44<td>2.93<td>3.50<td>4.24</td></td></td></td>	2.44 <td>2.93<td>3.50<td>4.24</td></td></td>	2.93 <td>3.50<td>4.24</td></td>	3.50 <td>4.24</td>	4.24
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td>	0.03 <td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td>	0.08 <td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td>	0.12 <td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td>	0.15 <td>0.15<td>0.17<td>0.17</td></td></td>	0.15 <td>0.17<td>0.17</td></td>	0.17 <td>0.17</td>	0.17
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td>	0.03 <td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08</td></td></td>	0.08 <td>0.08<td>0.08</td></td>	0.08 <td>0.08</td>	0.08
40.5	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>66<td>85<td>105<td>126<td>138<td>138<td>162</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>66<td>85<td>105<td>126<td>138<td>138<td>162</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>66<td>85<td>105<td>126<td>138<td>138<td>162</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>66<td>85<td>105<td>126<td>138<td>138<td>162</td></td></td></td></td></td></td></td>	0 <td>66<td>85<td>105<td>126<td>138<td>138<td>162</td></td></td></td></td></td></td>	66 <td>85<td>105<td>126<td>138<td>138<td>162</td></td></td></td></td></td>	85 <td>105<td>126<td>138<td>138<td>162</td></td></td></td></td>	105 <td>126<td>138<td>138<td>162</td></td></td></td>	126 <td>138<td>138<td>162</td></td></td>	138 <td>138<td>162</td></td>	138 <td>162</td>	162
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0.02<td>0.98<td>1.57<td>2.01<td>2.58<td>3.06<td>3.64<td>4.44</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.02<td>0.98<td>1.57<td>2.01<td>2.58<td>3.06<td>3.64<td>4.44</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.02<td>0.98<td>1.57<td>2.01<td>2.58<td>3.06<td>3.64<td>4.44</td></td></td></td></td></td></td></td></td>	0.00 <td>0.02<td>0.98<td>1.57<td>2.01<td>2.58<td>3.06<td>3.64<td>4.44</td></td></td></td></td></td></td></td>	0.02 <td>0.98<td>1.57<td>2.01<td>2.58<td>3.06<td>3.64<td>4.44</td></td></td></td></td></td></td>	0.98 <td>1.57<td>2.01<td>2.58<td>3.06<td>3.64<td>4.44</td></td></td></td></td></td>	1.57 <td>2.01<td>2.58<td>3.06<td>3.64<td>4.44</td></td></td></td></td>	2.01 <td>2.58<td>3.06<td>3.64<td>4.44</td></td></td></td>	2.58 <td>3.06<td>3.64<td>4.44</td></td></td>	3.06 <td>3.64<td>4.44</td></td>	3.64 <td>4.44</td>	4.44
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td>	0.03 <td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td>	0.08 <td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td>	0.12 <td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td>	0.15 <td>0.15<td>0.17<td>0.17</td></td></td>	0.15 <td>0.17<td>0.17</td></td>	0.17 <td>0.17</td>	0.17
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td>	0.03 <td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08</td></td></td>	0.08 <td>0.08<td>0.08</td></td>	0.08 <td>0.08</td>	0.08
50.5	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>76<td>99<td>119<td>141<td>153<td>153<td>179</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>76<td>99<td>119<td>141<td>153<td>153<td>179</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>76<td>99<td>119<td>141<td>153<td>153<td>179</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>76<td>99<td>119<td>141<td>153<td>153<td>179</td></td></td></td></td></td></td></td>	0 <td>76<td>99<td>119<td>141<td>153<td>153<td>179</td></td></td></td></td></td></td>	76 <td>99<td>119<td>141<td>153<td>153<td>179</td></td></td></td></td></td>	99 <td>119<td>141<td>153<td>153<td>179</td></td></td></td></td>	119 <td>141<td>153<td>153<td>179</td></td></td></td>	141 <td>153<td>153<td>179</td></td></td>	153 <td>153<td>179</td></td>	153 <td>179</td>	179
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0.02<td>1.13<td>1.75<td>2.29<td>2.79<td>3.38<td>4.04<td>4.94</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.02<td>1.13<td>1.75<td>2.29<td>2.79<td>3.38<td>4.04<td>4.94</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.02<td>1.13<td>1.75<td>2.29<td>2.79<td>3.38<td>4.04<td>4.94</td></td></td></td></td></td></td></td></td>	0.00 <td>0.02<td>1.13<td>1.75<td>2.29<td>2.79<td>3.38<td>4.04<td>4.94</td></td></td></td></td></td></td></td>	0.02 <td>1.13<td>1.75<td>2.29<td>2.79<td>3.38<td>4.04<td>4.94</td></td></td></td></td></td></td>	1.13 <td>1.75<td>2.29<td>2.79<td>3.38<td>4.04<td>4.94</td></td></td></td></td></td>	1.75 <td>2.29<td>2.79<td>3.38<td>4.04<td>4.94</td></td></td></td></td>	2.29 <td>2.79<td>3.38<td>4.04<td>4.94</td></td></td></td>	2.79 <td>3.38<td>4.04<td>4.94</td></td></td>	3.38 <td>4.04<td>4.94</td></td>	4.04 <td>4.94</td>	4.94
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td>	0.03 <td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td>	0.08 <td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td>	0.12 <td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td>	0.15 <td>0.15<td>0.17<td>0.17</td></td></td>	0.15 <td>0.17<td>0.17</td></td>	0.17 <td>0.17</td>	0.17
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td>	0.03 <td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08</td></td></td>	0.08 <td>0.08<td>0.08</td></td>	0.08 <td>0.08</td>	0.08
LIMIT	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>99<td>124<td>141<td>153<td>153<td>153<td>179</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>99<td>124<td>141<td>153<td>153<td>153<td>179</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>99<td>124<td>141<td>153<td>153<td>153<td>179</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>99<td>124<td>141<td>153<td>153<td>153<td>179</td></td></td></td></td></td></td></td>	0 <td>99<td>124<td>141<td>153<td>153<td>153<td>179</td></td></td></td></td></td></td>	99 <td>124<td>141<td>153<td>153<td>153<td>179</td></td></td></td></td></td>	124 <td>141<td>153<td>153<td>153<td>179</td></td></td></td></td>	141 <td>153<td>153<td>153<td>179</td></td></td></td>	153 <td>153<td>153<td>179</td></td></td>	153 <td>153<td>179</td></td>	153 <td>179</td>	179
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0.02<td>1.24<td>1.92<td>2.44<td>2.93<td>3.50<td>4.24<td>5.14</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.02<td>1.24<td>1.92<td>2.44<td>2.93<td>3.50<td>4.24<td>5.14</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.02<td>1.24<td>1.92<td>2.44<td>2.93<td>3.50<td>4.24<td>5.14</td></td></td></td></td></td></td></td></td>	0.00 <td>0.02<td>1.24<td>1.92<td>2.44<td>2.93<td>3.50<td>4.24<td>5.14</td></td></td></td></td></td></td></td>	0.02 <td>1.24<td>1.92<td>2.44<td>2.93<td>3.50<td>4.24<td>5.14</td></td></td></td></td></td></td>	1.24 <td>1.92<td>2.44<td>2.93<td>3.50<td>4.24<td>5.14</td></td></td></td></td></td>	1.92 <td>2.44<td>2.93<td>3.50<td>4.24<td>5.14</td></td></td></td></td>	2.44 <td>2.93<td>3.50<td>4.24<td>5.14</td></td></td></td>	2.93 <td>3.50<td>4.24<td>5.14</td></td></td>	3.50 <td>4.24<td>5.14</td></td>	4.24 <td>5.14</td>	5.14
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td>	0.03 <td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td>	0.08 <td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td>	0.12 <td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td>	0.15 <td>0.15<td>0.17<td>0.17</td></td></td>	0.15 <td>0.17<td>0.17</td></td>	0.17 <td>0.17</td>	0.17
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td>	0.03 <td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08</td></td></td>	0.08 <td>0.08<td>0.08</td></td>	0.08 <td>0.08</td>	0.08
LIMIT	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>114<td>141<td>153<td>153<td>153<td>153<td>179</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>114<td>141<td>153<td>153<td>153<td>153<td>179</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>114<td>141<td>153<td>153<td>153<td>153<td>179</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>114<td>141<td>153<td>153<td>153<td>153<td>179</td></td></td></td></td></td></td></td>	0 <td>114<td>141<td>153<td>153<td>153<td>153<td>179</td></td></td></td></td></td></td>	114 <td>141<td>153<td>153<td>153<td>153<td>179</td></td></td></td></td></td>	141 <td>153<td>153<td>153<td>153<td>179</td></td></td></td></td>	153 <td>153<td>153<td>153<td>179</td></td></td></td>	153 <td>153<td>153<td>179</td></td></td>	153 <td>153<td>179</td></td>	153 <td>179</td>	179
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0.02<td>1.41<td>2.13<td>2.75<td>3.27<td>3.86<td>4.66<td>5.66</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.02<td>1.41<td>2.13<td>2.75<td>3.27<td>3.86<td>4.66<td>5.66</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.02<td>1.41<td>2.13<td>2.75<td>3.27<td>3.86<td>4.66<td>5.66</td></td></td></td></td></td></td></td></td>	0.00 <td>0.02<td>1.41<td>2.13<td>2.75<td>3.27<td>3.86<td>4.66<td>5.66</td></td></td></td></td></td></td></td>	0.02 <td>1.41<td>2.13<td>2.75<td>3.27<td>3.86<td>4.66<td>5.66</td></td></td></td></td></td></td>	1.41 <td>2.13<td>2.75<td>3.27<td>3.86<td>4.66<td>5.66</td></td></td></td></td></td>	2.13 <td>2.75<td>3.27<td>3.86<td>4.66<td>5.66</td></td></td></td></td>	2.75 <td>3.27<td>3.86<td>4.66<td>5.66</td></td></td></td>	3.27 <td>3.86<td>4.66<td>5.66</td></td></td>	3.86 <td>4.66<td>5.66</td></td>	4.66 <td>5.66</td>	5.66
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td>	0.03 <td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td>	0.08 <td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td>	0.12 <td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td>	0.15 <td>0.15<td>0.17<td>0.17</td></td></td>	0.15 <td>0.17<td>0.17</td></td>	0.17 <td>0.17</td>	0.17
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td>	0.03 <td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08</td></td></td>	0.08 <td>0.08<td>0.08</td></td>	0.08 <td>0.08</td>	0.08
LIMIT	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0<td>139<td>170<td>197<td>224<td>244<td>264<td>314</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0<td>139<td>170<td>197<td>224<td>244<td>264<td>314</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0<td>139<td>170<td>197<td>224<td>244<td>264<td>314</td></td></td></td></td></td></td></td></td>	0.00 <td>0<td>139<td>170<td>197<td>224<td>244<td>264<td>314</td></td></td></td></td></td></td></td>	0 <td>139<td>170<td>197<td>224<td>244<td>264<td>314</td></td></td></td></td></td></td>	139 <td>170<td>197<td>224<td>244<td>264<td>314</td></td></td></td></td></td>	170 <td>197<td>224<td>244<td>264<td>314</td></td></td></td></td>	197 <td>224<td>244<td>264<td>314</td></td></td></td>	224 <td>244<td>264<td>314</td></td></td>	244 <td>264<td>314</td></td>	264 <td>314</td>	314
	PCT.	0.00 <td>0.00<td>0.00<td>0.00<td>0.02<td>1.66<td>2.44<td>3.17<td>3.86<td>4.66<td>5.66<td>6.86</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.02<td>1.66<td>2.44<td>3.17<td>3.86<td>4.66<td>5.66<td>6.86</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.02<td>1.66<td>2.44<td>3.17<td>3.86<td>4.66<td>5.66<td>6.86</td></td></td></td></td></td></td></td></td>	0.00 <td>0.02<td>1.66<td>2.44<td>3.17<td>3.86<td>4.66<td>5.66<td>6.86</td></td></td></td></td></td></td></td>	0.02 <td>1.66<td>2.44<td>3.17<td>3.86<td>4.66<td>5.66<td>6.86</td></td></td></td></td></td></td>	1.66 <td>2.44<td>3.17<td>3.86<td>4.66<td>5.66<td>6.86</td></td></td></td></td></td>	2.44 <td>3.17<td>3.86<td>4.66<td>5.66<td>6.86</td></td></td></td></td>	3.17 <td>3.86<td>4.66<td>5.66<td>6.86</td></td></td></td>	3.86 <td>4.66<td>5.66<td>6.86</td></td></td>	4.66 <td>5.66<td>6.86</td></td>	5.66 <td>6.86</td>	6.86
	DET.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td></td>	0.03 <td>0.08<td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td></td>	0.08 <td>0.12<td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td></td>	0.12 <td>0.15<td>0.15<td>0.17<td>0.17</td></td></td></td>	0.15 <td>0.15<td>0.17<td>0.17</td></td></td>	0.15 <td>0.17<td>0.17</td></td>	0.17 <td>0.17</td>	0.17
	STD.	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td></td>	0.00 <td>0.00<td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td></td>	0.00 <td>0.03<td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td></td>	0.03 <td>0.08<td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08<td>0.08</td></td></td></td>	0.08 <td>0.08<td>0.08<td>0.08</td></td></td>	0.08 <td>0.08<td>0.08</td></td>	0.08 <td>0.08</td>	0.08

CONFIDENTIAL

CONFIDENTIAL

TABLE B-65

PARAMETER INTERACTION OFF TAIL
SUBJECT TO CONDITIONS: $\lambda_{MIN} = 0.00$ $\lambda_{MAX} = 60.00$
 $\lambda_{MIN} = 100.00$

Y PARAMETER	L7-097	T	0.0	40.00	90.00	1400.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00	LIMIT	X PARAMETER RANGE
0.50	NB.	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	1	0.01
2.00	NB.	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
4.50	NB.	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
8.00	NB.	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
12.50	NB.	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
18.00	NB.	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
24.50	NB.	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
32.00	NB.	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
40.50	NB.	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
50.00	NB.	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
LIMIT	NB.	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
AVG.	NB.	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00

CONFIDENTIAL

TABLE B-66
PARAMETER INTERACTION OFF TAIL
SUBJECT TO CONDITIONS $\lambda_{MIN} = 0.00$ $\lambda_{MAX} = 60.00$
LAME Y 126.00

Y PARAMETER LT-DGT	X PARAMETER RANGE	TAPE NO. 1									
		400.00	900.00	1600.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00	LIMIT
0.5L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LIMIT		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AVG.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CONFIDENTIAL

TABLE B-67

PARAMETER INTERACTION OFF TAIL

SUBJECT TO CONDITIONS: $\lambda_{MIN} = 144.00$ $\lambda_{MAX} = 60.00$

Y	PARAMETER	LT-DBT	X PARAMETER RANGE									
			400.00	900.00	1500.00	2500.00	3500.00	4900.00	6400.00	8100.00	10000.00	LIMIT
0.5L	NO.	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.0L	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7667.41 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.5L	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4985.57 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.0L	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6820.62 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12.5L	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6147.54 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18.5L	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5978.37 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24.5L	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5936.97 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32.0L	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5737.46 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.5L	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5577.81 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.0L	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5433.57 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LIMIT	NO.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5423.89 AVG
	PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AVG.		0.00	116.49	114.97	67.80	48.08	34.29	27.81	23.47	21.46	21.33	20.52

CONFIDENTIAL

PARAMETER	INTERACTION	OFF YAIL
SUBJECT TO CONDITIONS 2MIN	=	3.00 LAMDA =
LAMDA T		162.00

[illegible]

CONFIDENTIAL

TABLE B-69
PARAMETER INTERACTION OFF TAIL
SUBJECT TO CONDITIONS: $RHIN = 0.08$ $LAMDA = 68.00$
LAMBY LIMIT

Y PARAMETER	LT-DST	400.00	900.00	1600.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00	X PARAMETER RANGE	
		NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	MIN	LIMIT
0.0	NO.	0	0	0	0	0	0	0	0	0	0	0
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.0	NO.	0	0	0	0	0	0	0	0	0	0	0
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.0	NO.	0	0	0	0	0	0	0	0	0	0	0
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.0	NO.	0	0	0	0	0	0	0	0	0	0	0
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12.0	NO.	0	0	0	0	0	0	0	0	0	0	0
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16.0	NO.	0	0	0	0	0	0	0	0	0	0	0
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24.0	NO.	0	0	0	0	0	0	0	0	0	0	0
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32.0	NO.	0	0	0	0	0	0	0	0	0	0	0
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.0	NO.	0	0	0	0	0	0	0	0	0	0	0
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.0	NO.	0	0	0	0	0	0	0	0	0	0	0
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LIMIT	NO.	0	0	0	0	0	0	0	0	0	0	0
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AVG.	NO.	0	0	0	0	0	0	0	0	0	0	0

CONFIDENTIAL

TABLE B-70		
PARAMETER	INTERACTION	360 DESS
SUBJECT	TE CONDITIONS	RMIN = 0.00 LAM
	LAMB T	18.00

[illegible]

CONFIDENTIAL

CONFIDENTIAL

TABLE B-71

PARAMETER INTERACTION 368 DESS
 SUBJECT 16 CONDITIONS $\lambda_{\text{min}} = 36.00$ $\lambda_{\text{max}} = 60.00$
 LAMBDA γ

Y PARAMETER LY-DOT	16.00	400.00	900.00	1600.00	2500.00	3600.00	4900.00	6400.00	8100.00	X PARAMETER RANGE	
										10000.00	LIMIT
0.50 MB.	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.05	0.05	6	6
PCT.	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.05	0.05	6	6
DT.	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.05	0.05	6	6
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	6
2.00 MB.	0.00	0.00	0.00	0.00	0.03	0.03	0.27	0.36	0.38	39	42
PCT.	0.00	0.00	0.00	0.00	0.03	0.03	0.32	0.52	0.57	39	42
DT.	0.00	0.00	0.00	0.00	0.03	0.03	0.32	0.52	0.57	39	42
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
4.50 MB.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
8.00 MB.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
12.50 MB.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
18.00 MB.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
24.50 MB.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
32.00 MB.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
40.50 MB.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
50.00 MB.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
LIMIT	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.08	1.14	1.02	1.08
AVG.	146.4	57.19	31.21	19.96	17.75	16.13	13.97	12.96	12.07	11.78	11.56

CONFIDENTIAL

TABLE B-72
PARAMETER INTERACTION 360 DEGS
SUBJECT TO CONDITIONS $\lambda_{\text{MIN}} = 54.00$ $\lambda_{\text{MAX}} = 60.00$
LAMBDA γ

Y PARAMETER	LAMBDA γ	X PARAMETER RANGE									
		10000.00	8100.00	6400.00	4900.00	3600.00	2500.00	1600.00	900.00	400.00	LIMIT
0.5	NB.										
	PCT.										
	STD.										
2.0	NB.										
	PCT.										
	STD.										
4.0	NB.										
	PCT.										
	STD.										
8.0	NB.										
	PCT.										
	STD.										
12.0	NB.										
	PCT.										
	STD.										
18.0	NB.										
	PCT.										
	STD.										
24.0	NB.										
	PCT.										
	STD.										
32.0	NB.										
	PCT.										
	STD.										
40.0	NB.										
	PCT.										
	STD.										
50.0	NB.										
	PCT.										
	STD.										
LIMIT	NB.										
	PCT.										
	STD.										
LIMIT											

CONFIDENTIAL

TABLE B-73
PARAMETER INTERACTION 360 DEGS
SUBJECT TO CONDITIONS: $\lambda_{\text{MIN}} = 0.00$ $\lambda_{\text{MAX}} = 60.00$
 $\lambda_{\text{MIN}} = 72.00$

Y PARAMETER LT-DST	X PARAMETER RANGES	TYPE NO. 1									
		400.00	900.00	1600.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00	LIMIT
0.50	NO.	0	0	0	0	0	2	4	11	11	11
PCT.		0.00	0.00	0.00	0.00	0.02	0.04	0.10	0.18	0.18	0.18
DT.		0.00	0.00	0.00	0.00	1.00	1.25	1.89	1.89	1.89	1.89
STD.		0.00	0.00	0.00	0.00	0.00	0.43	0.29	0.29	0.29	0.29
2.00	NO.	0	0	2	4	11	29	90	95	57	4743.93 AVG
PCT.		0.00	0.00	0.02	0.03	0.09	0.31	0.61	0.69	0.71	0.91
DT.		0.00	0.00	1.00	1.00	1.00	1.34	1.92	1.96	1.96	1.96
STD.		0.00	0.00	0.00	0.00	0.00	0.71	1.30	1.40	1.38	1.38
4.50	NO.	0	0	6	17	44	75	117	140	126	9974.97 AVG
PCT.		0.00	0.00	0.06	0.19	0.57	1.13	2.27	2.78	3.10	3.78
DT.		0.00	0.00	1.53	1.41	1.64	1.88	2.43	2.49	2.56	2.56
STD.		0.00	0.00	0.75	0.77	1.02	1.32	1.97	2.16	2.14	2.14
8.00	NO.	0	0	15	32	82	135	187	228	261	7787.83 AVG
PCT.		0.00	0.00	0.15	0.42	1.31	2.55	4.35	5.45	6.22	7.83
DT.		0.00	0.00	1.27	1.63	2.00	2.36	2.91	3.08	3.10	3.10
STD.		0.00	0.00	0.77	0.89	1.26	1.62	2.47	2.54	2.52	2.52
12.50	NO.	0	3	25	66	123	189	246	299	334	7428.83 AVG
PCT.		0.00	0.02	0.26	0.50	2.09	3.78	5.98	7.34	8.36	10.33
DT.		0.00	1.00	1.28	1.52	2.13	2.45	3.04	3.18	3.13	3.17
STD.		0.00	0.00	0.66	0.78	1.45	1.84	2.60	2.74	2.78	2.86
18.00	NO.	0	6	35	97	163	230	287	331	383	7291.13 AVG
PCT.		0.00	0.05	0.40	1.18	2.75	4.61	7.09	8.96	9.66	12.19
DT.		0.00	1.00	1.43	1.53	2.11	2.51	3.09	3.14	3.14	3.14
STD.		0.00	0.00	0.93	0.91	1.49	1.89	2.75	2.84	2.79	2.86
24.50	NO.	1	11	54	133	202	271	331	390	429	7189.33 AVG
PCT.		0.01	0.09	0.57	1.54	3.18	5.12	7.47	9.23	10.36	13.15
DT.		1.00	1.00	1.31	1.45	1.97	2.37	2.98	3.04	3.03	3.03
STD.		0.00	0.00	0.81	0.97	1.44	1.87	2.78	2.79	2.75	2.79
32.00	NO.	1	16	68	158	229	297	358	405	454	7810.73 AVG
PCT.		0.01	0.14	0.69	1.81	3.54	5.51	8.13	9.70	10.85	13.74
DT.		1.00	1.00	1.28	1.44	1.94	2.33	2.85	3.00	2.99	2.97
STD.		0.00	0.00	0.76	0.99	1.41	1.84	2.64	2.74	2.71	2.76
40.50	NO.	2	23	82	173	246	314	376	424	472	6985.11 AVG
PCT.		0.02	0.16	0.81	1.96	3.71	5.72	8.38	9.38	10.14	12.88
DT.		1.00	1.00	1.24	1.42	1.89	2.26	2.79	2.96	2.94	2.94
STD.		0.00	0.00	0.71	0.97	1.39	1.82	2.62	2.74	2.72	2.76
50.00	NO.	2	28	88	180	257	326	388	435	484	6834.53 AVG
PCT.		0.02	0.22	0.89	2.04	3.83	5.88	8.55	10.15	11.33	14.31
DT.		1.00	1.00	1.26	1.42	1.87	2.26	2.78	2.92	2.89	2.88
STD.		0.00	0.00	0.72	0.98	1.37	1.81	2.60	2.72	2.70	2.73
LIMIT	NO.	9	50	111	206	286	359	421	473	522	6819.57 AVG
PCT.		0.07	0.41	1.11	2.31	4.15	6.25	8.98	10.65	11.85	14.96
DT.		1.00	1.00	1.25	1.40	1.81	2.18	2.67	2.92	2.84	2.84
STD.		0.00	0.00	0.69	0.86	1.33	1.77	2.54	2.67	2.66	2.69
AVG.		66.96	47.47	31.32	23.93	18.72	16.01	13.89	13.48	13.09	13.18

CONFIDENTIAL

TABLE B-74
PARAMETER INTERACTION 360 DEGS
SUBJECT TO CONDITIONS: $\lambda_{\text{MIN}} = 0.00$ $\lambda_{\text{MAX}} = 60.00$
LAMBDA γ 90.00

Y PARAMETER LT-DBT	10.00	400.00	900.00	1600.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00	X PARAMETER RANGE	
											10000.00	LIMIT
0.50 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	6
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.05
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.05
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
2.00 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	10752.17
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
4.50 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	8245.84
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
8.00 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	8103.23
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
12.50 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	7716.91
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
18.00 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	7476.22
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
24.50 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	7231.91
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
32.00 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	7068.03
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
40.50 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	6998.28
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
50.00 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	6998.28
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
LIMIT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
AVG.	0.00	56.49	45.09	34.02	28.06	22.42	18.03	15.71	14.55	13.92	15.75	15.75

CONFIDENTIAL

TABLE B-75
PARAMETER INTERACTION 360 DEGS
SUBJECT TO CONDITIONS RMN = 0.00 LAMDA = 60.00
LAMR T 168.00

Y PARAMETER LT-D8Y	100.00	400.00	900.00	1600.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00	X PARAMETER RANGE
0.50 MB.	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.03	0.04	5
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.03	0.04	4
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00 MB.	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.21	0.27	0.29	11537.35 AVG
PCT.	0.00	0.00	0.00	0.00	0.02	0.02	0.14	0.25	0.30	0.32	48
DT.	0.00	0.00	0.00	0.00	1.50	1.50	1.31	1.48	1.38	1.38	0.44
STD.	0.00	0.00	0.00	0.00	0.50	0.50	0.61	0.85	0.78	0.76	1.38
4.20 MB.	0.00	0.00	0.00	0.00	0.12	0.12	0.53	0.78	1.01	1.12	9140.78 AVG
PCT.	0.00	0.00	0.00	0.00	0.13	0.13	0.68	1.25	1.58	1.75	133
DT.	0.00	0.00	0.00	0.00	1.33	1.33	1.37	2.61	1.96	1.96	2.17
STD.	0.00	0.00	0.00	0.00	0.52	0.52	0.90	1.59	1.52	1.55	2.05
8.00 MB.	0.00	0.00	0.00	0.00	0.24	0.24	0.93	1.39	1.76	2.05	1.69
PCT.	0.00	0.00	0.00	0.00	0.34	0.34	1.05	2.82	3.70	4.25	7707.08 AVG
DT.	0.00	0.00	0.00	0.00	1.75	1.75	2.23	2.54	2.64	2.68	248
STD.	0.00	0.00	0.00	0.00	0.97	0.97	1.38	2.12	2.18	2.11	5.25
12.50 MB.	0.00	0.00	0.00	0.00	0.53	0.53	1.51	2.07	2.55	2.98	2.65
PCT.	0.00	0.00	0.00	0.00	0.66	0.66	2.60	4.13	5.42	6.28	7.29
DT.	0.00	0.00	0.00	0.00	1.37	1.37	2.16	2.50	2.66	2.61	8.95
STD.	0.00	0.00	0.00	0.00	0.96	0.96	1.55	2.18	2.22	2.16	2.69
18.00 MB.	0.00	0.00	0.00	0.00	0.79	0.79	1.88	2.47	2.99	3.45	2.21
PCT.	0.00	0.00	0.00	0.00	0.93	0.93	2.17	4.95	6.42	7.29	7349.18 AVG
DT.	0.00	0.00	0.00	0.00	1.16	1.16	2.17	2.51	2.60	2.65	417
STD.	0.00	0.00	0.00	0.00	0.37	0.37	1.61	2.21	2.23	2.17	8.95
24.50 MB.	0.00	0.00	0.00	0.00	1.09	1.09	2.27	2.85	3.40	3.87	2.21
PCT.	0.00	0.00	0.00	0.00	1.28	1.28	3.76	5.53	7.05	7.95	7147.81 AVG
DT.	0.00	0.00	0.00	0.00	1.47	1.47	2.07	2.43	2.60	2.57	468
STD.	0.00	0.00	0.00	0.00	0.96	0.96	1.65	2.20	2.24	2.18	9.66
32.00 MB.	0.00	0.00	0.00	0.00	1.39	1.39	2.61	3.17	3.72	4.19	2.63
PCT.	0.00	0.00	0.00	0.00	1.59	1.59	4.20	5.99	7.53	8.44	6984.74 AVG
DT.	0.00	0.00	0.00	0.00	1.43	1.43	2.02	2.37	2.53	2.52	493
STD.	0.00	0.00	0.00	0.00	0.89	0.89	1.61	2.17	2.24	2.18	18.19
40.50 MB.	0.00	0.00	0.00	0.00	1.50	1.50	2.76	3.32	3.98	4.35	2.59
PCT.	0.00	0.00	0.00	0.00	1.70	1.70	4.41	6.20	7.78	8.70	6757.21 AVG
DT.	0.00	0.00	0.00	0.00	1.42	1.42	2.00	2.34	2.51	2.51	509
STD.	0.00	0.00	0.00	0.00	0.91	0.91	1.59	2.15	2.23	2.17	18.48
50.00 MB.	0.00	0.00	0.00	0.00	1.67	1.67	2.92	3.49	4.05	4.53	2.56
PCT.	0.00	0.00	0.00	0.00	1.88	1.88	4.60	6.42	8.00	8.93	6686.86 AVG
DT.	0.00	0.00	0.00	0.00	1.41	1.41	1.98	2.30	2.48	2.47	526
STD.	0.00	0.00	0.00	0.00	0.99	0.99	1.58	2.13	2.21	2.15	18.73
LIMIT MB.	0.00	0.00	0.00	0.00	2.03	2.03	3.33	3.93	4.50	5.03	2.19
PCT.	0.00	0.00	0.00	0.00	2.20	2.20	5.01	6.87	8.49	9.47	6682.39 AVG
DT.	0.00	0.00	0.00	0.00	1.36	1.36	1.89	2.19	2.34	2.34	577
STD.	0.00	0.00	0.00	0.00	0.83	0.83	1.53	2.07	2.15	2.10	11.36
AVG.	102.83	104.14	54.75	38.69	28.86	24.88	19.94	17.30	16.00	15.07	6509.72 AVG

CONFIDENTIAL

TABLE B-76
PARAMETER INTERACTION 360 DEGS
SUBJECT TO CONDITIONS: $\lambda = 126.00$ $\lambda_{\text{LAMB}} = 60.00$

Y PARAMETER LY-087	X PARAMETER RANGE	TAPE NO. 1									
		100.00	400.00	900.00	1400.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00
0.50 PCT. DT. STD.		0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
2.00 PCT. DT. STD.		0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
4.50 PCT. DT. STD.		0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
8.00 PCT. DT. STD.		0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
12.50 PCT. DT. STD.		0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
18.00 PCT. DT. STD.		0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
24.50 PCT. DT. STD.		0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
32.00 PCT. DT. STD.		0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
40.50 PCT. DT. STD.		0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
50.00 PCT. DT. STD.		0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
LIMIT		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CONFIDENTIAL

TABLE B-77

PARAMETER INTERACTION 360 DEGS
SUBJECT TO CONDITIONS $\sin \theta = 0.00$ $\cos \theta = 66.00$
LAMB Y 144.00

Y PARAMETER LT-D8Y	10.00	400.00	900.00	1400.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00	X PARAMETER RANGE	
											10000.00	LIMIT
0.50 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	1	5
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.05
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
2.00 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10741.97	AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18	31
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.51
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	2.86
4.50 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15525.05	AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57	89
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	1.00
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	2.93
8.00 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13920.38	AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	127	145
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.27	3.26
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24	2.78
12.50 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10823.57	AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	192	233
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.54	5.09
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.31	2.74
18.00 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9784.83	AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	247	289
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.36	5.99
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.21	2.68
24.50 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9094.57	AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	267	307
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.08	6.43
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.23	2.43
32.00 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8788.88	AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	2.29
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.24	6.91
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.23	2.48
40.50 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8361.27	AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76	2.35
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.12	3.85
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.51	2.71
50.00 NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8228.27	AVG
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75	2.32
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	3.66
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.72	7.43
LIMIT NB.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	2.94
PCT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75	2.35
DT.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.75	4.17
STD.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.34	8.10
AVG.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.12	2.43
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.73	2.28
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.72	18.08

CONFIDENTIAL

TABLE B-78
PARAMETER INTERACTION 360 DEGS
SUBJECT TO CONDITIONS RMN = 0.00 LAMDA = 60.00
LAMB T 162.00

Y PARAMETER LT-DBT	X PARAMETER RANGE	TAPE NO. 1									
		100.00	400.00	900.00	1600.00	2500.00	3600.00	4900.00	6400.00	8100.00	10000.00
0.5L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.50 NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00 NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12.5L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24.5L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48.5L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.0L NO.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PCT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DT.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STD.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LIMIT		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AVG.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CONFIDENTIAL

(Page B-136 is Blank)

TABLE B-79

PARAMETER INTERACTION 360 DEGS
SUBJECT TO CONDITIONS 2MVC = 0.00 LANDA = 60.00
LAMP Y L1411

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145.00	26190.00	26235.00	26280.00	26325.00	26370.00	26415.00	26460.00	26505.00	26550.00	26595.00	26640.00	26685.00	26730.00	26775.00	26820.00	26865.00	26910.00	26955.00	27000.00	27045.00	27090.00	27135.00	27180.00	27225.00	27270.00	27315.00	27360.00	27405.00	27450.00	27495.00	27540.00	27585.00	27630.00	27675.00	27720.00	27765.00	27810.00	27855.00	27900.00	27945.00	27990.00	28035.00	28080.00	28125.00	28170.00	28215.00	28260.00	28305.00	28350.00	28395.00	28440.00	28485.00	28530.00	28575.00	28620.00	28665.00	28710.00	28755.00	28800.00	28845.00	28890.00	28935.00	28980.00	29025.00	29070.00	29115.00	29160.00	29205.00	29250.00	29295.00	29340.00	29385.00	29430.00	29475.00	29520.00	29565.00	29610.00	29655.00	29700.00	29745.00	29790.00	29835.00	29880.00	29925.00	29970.00	30015.00	30060.00	30105.00	30150.00	30195.00	30240.00	30285.00	30330.00	30375.00	30420.00	30465.00	30510.00	30555.00	30600.00	30645.00	30690.00	30735.00	30780.00	30825.00	30870.00	30915.00	30960.00	31005.00	31050.00	31095.00	31140.00	31185.00	31230.00	31275.00	31320.00	31365.00	31410.00	31455.00	31500.00	31545.00	31590.00	31635.00	31680.00	31725.00	31770.00	31815.00	31860.00	31905.00	31950.00	31995.00	32040.00	32085.00	32130.00	32175.00	32220.00	32265.00	32310.00	32355.00	32400.00	32445.00	32490.00	32535.00	32580.00	32625.00	32670.00	32715.00	32760.00	32805.00	32850.00	32895.00	32940.00	32985.00	33030.00	33075.00	33120.00	33165.00	33210.00	33255.00	33300.00	33345.00	33390.00	33435.00	33480.00	33525.00	33570.00	33615.00	33660.00	33705.00	33750.00	33795.00	33840.00	33885.00	33930.00	33975.00	34020.00	34065.00	34110.00	34155.00	34200.00	34245.00	34290.00	34335.00	34380.00	34425.00	34470.00	34515.00	34560.00	34605.00	34650.00	34695.00	34740.00	34785.00	34830.00	34875.00	34920.00	34965.00	35010.00	35055.00	35100.00	35145.00	35190.00	35235.00	35280.00	35325.00	35370.00	35415.00	35460.00	35505.00	35550.00	35595.00	35640.00	35685.00	35730.00	35775.00	35820.00	35865.00	35910.00	35955.00	36000.00	36045.00	36090.00	36135.00	36180.00	36225.00	36270.00	36315.00	36360.00	36405.00	36450.00	36495.00	36540.00	36585.00	36630.00	36675.00	36720.00	36765.00	36810.00	36855.00	36900.00	36945.00	36990.00	37035.00	37080.00	37125.00	37170.00	37215.00	37260.00	37305.00	37350.00	37395.00	37440.00	37485.00	37530.00	37575.00	37620.00	37665.00	37710.00	37755.00	37800.00	37845.00	37890.00	37935.00	37980.00	38025.00	38070.00	38115.00	38160.00	38205.00	38250.00	38295.00	38340.00	38385.00	38430.00	38475.00	38520.00	38565.00	38610.00	38655.00	38700.00	38745.00	38790.00	38835.00	38880.00	38925.00	38970.00	39015.00	39060.00	39105.00	39150.00	39195.00	39240.00	39285.00	39330.00	39375.00	39420.00	39465.00	39510.00	39555.00	39600.00	39645.00	39690.00	39735.00	39780.00	39825.00	39870.00	39915.00	39960.00	40005.00	40050.00	40095.00	40140.00	40185.00	40230.00	40275.00	40320.00	40365.00	40410.00	40455.00	40500.00	40545.00	40590.00	40635.00	40680.00	40725.00	40770.00	40815.00	40860.00	40905.00	40950.00	40995.00	41040.00	41085.00	41130.00	41175.00	41220.00	41265.00	41310.00	41355.00	41400.00	41445.00	41490.00	41535.00	41580.00	41625.00	41670.00	41715.00	41760.00	41805.00	41850.00	41895.00	41940.00	41985.00	42030.00	42075.00	42120.00	42165.00	42210.00	42255.00	42300.00	42345.00	42390.00	42435.00	42480.00	42525.00	42570.00	42615.00	42660.00	42705.00	42750.00	42795.

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13. ABSTRACT (U) The primary objective of this study is to define the dogfight environment in terms of a tracking system. The secondary objective is the apply this dogfight definition to present AI radars. (U) This study is divided into two efforts, a determination of the primary weapon con- trol requirements and a parameter interaction study. The purpose of the primary weapon control requirements study is to define the dogfight environment and to investigate the relationship of aircraft, tactics, weapons, and the available data base. The purpose of the parameter interaction study is to define the dogfight environment more precisely in terms of tracking loop requirements, clutter problems, and glint.		

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-- THIS STUDY IS DIVIDED INTO TWO EFFORTS, A DETERMINATION OF THE
-- PRIMARY WEAPON CONTROL REQUIREMENTS AND A PARAMETER INTERACTION
-- STUDY. THE PURPOSE OF THE PRIMARY WEAPON CONTROL REQUIREMENTS STUDY
-- IS TO DEFINE THE DOGFIGHT ENVIRONMENT AND TO INVESTIGATE THE
-- RELATIONSHIP OF AIRCRAFT, TACTICS, WEAPONS, AND THE AVAILABLE DATA
-- BASE. THE PURPOSE OF THE PARAMETER INTERACTION STUDY IS TO DEFINE
-- THE DOGFIGHT ENVIRONMENT MORE PRECISELY IN TERMS OF TRACKING LOOP
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