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JOINT ARMY-NAVY AIRCRAFT INSTRUMENTATION RESEARCH

RESULTS OF MAIN ROTOR RADAR BLADE FLIGHT TESTS, MODEL UH-1B, S/N AF622023

REPORT NO. 204-100-113

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FORT WORTH, TEXAS

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MODEL UH-1B

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TABLE OF CONTENTS

	<u>Page No.</u>
LIST OF FIGURES AND TABLES	iii
SUMMARY	iv
INTRODUCTION	1
DESCRIPTION OF TEST EQUIPMENT	2-4
DESCRIPTION OF TESTS	5
INSTALLATION AND TEST RESULTS	6-8
CONCLUSIONS AND RECOMMENDATIONS	9-10
APPENDIX A - PHOTOGRAPHS	11-16
APPENDIX B - BLOCK DIAGRAM OF GROUND STATION EQUIPMENT	17-19
APPENDIX C - INSTRUMENT CALIBRATIONS AND OSCILLOGRAPH SETUP SHEETS	20-24
APPENDIX D - VIBRATION AND LOAD PLOTS	25-93
APPENDIX E - TABULATED LOAD LEVEL DATA	94-162
APPENDIX F - FLIGHT LOG OF EQUIPMENT	163-165
APPENDIX G - PILOT REPORTS	166-177
LIST OF REFERENCES	178
DISTRIBUTION LIST	178

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RPT 204-100-113LIST OF TABLES & FIGURES

<u>Figure</u>		<u>Page No.</u>
1-5	Photographs of the Main Rotor Blade Installation and Associated Ground Test Equipment	12-16
6	Block Diagram of Ground Test Equipment	18
7	Block Diagram of Electronic Equip- ment Mounted in UH-1 Helicopter	19
8-10	Instrumentation Calibrations	21-23
11	Oscillograph Setup Sheet	24
12-79	Load Level Time Histories	25-93
80-140	Tabulated Load Level Data	94-162
<u>Table</u>		
I	Flight Log of Equipment	163

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MODEL UH-1B PAGE iv

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SUMMARY

Main rotor blades configured with leading edge radar antennas were installed on a Model UH-1B Helicopter, S/N AF 62-2023, Bell No. 543, for both ground and flight tests. At the conclusion of the flight test program, 0.7 hour of ground run time and 16.7 hours of flight time had been logged on the helicopter. The first phase of a two phase major test program was performed during these flights. Load level tests and basic electromagnetic radiation pattern tests comprise Phase I and both were successfully completed.

Load level tests confirmed previous measurements. All measured loads and vibrations were identical to production 204 blades. Flight characteristics are identical to a production UH-1B Helicopter. Radiation pattern tests were very successful and proved that the use of rotor blade antennas as a radar transmitting device is feasible.

Based on preliminary analysis of flight test data, it is concluded that use of the main rotor blades for radar transmissions is practical and warrants further study and tests to determine specific configurations for use in production operations. Final analysis of radiation test data (photographs) were performed by David W. Young & Associates, consultants for this development program.

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INTRODUCTION

The feasibility of using a helicopter main rotor blade as a radar antenna has, for a long period of time, been a question involving application of a practical design. Bell Helicopter Company, in conjunction with David W. Young & Associates, consulting engineers, entered a design study and hardware development program which would ultimately result in a flyable system for flight test evaluation. This program was divided into two phases. Phase I consisted of modification of the leading edges of two standard Model 204 main rotor blades to house a 173-inch leaky waveguide antenna for pattern flight tests. Phase II will be the flight test of a special set of Bell funded blades designed to incorporate both a leading and a trailing edge antenna.

A set of limited life, 44-foot diameter blades from a Model UH-1B were modified for flight tests. The initial set of blades were installed on Bell Model UH-1B, S/N AF 62-2023. Following ground checks, edge bonding of the erosion boot protecting the waveguide antenna failed during the first flight. The blades were returned to the Bonding Department and a new erosion material applied. The blades were reinstalled on the helicopter and used for the remainder of the test program.

Hardware for the blade-to-cabin installation was delivered to Flight Test Engineering for installation on 20 August 1965. Pattern transmission tests were completed on 3 September 1965 and the configuration was removed following Flight 151 on 9 September 1965. At the time of removal, the blades had accumulated 0.7 hour ground run and 16.7 flight hours.

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MODEL UH-1B PAGE 2
RPT. 204-100-113

DESCRIPTION OF TEST EQUIPMENT

HELICOPTER INSTALLATIONS

Blade Waveguide Installation

Two 44-foot diameter blades, P/N 204-011-001-15, S/N's A-2-247 and A2-836, were modified to accept the leading edge radar antennas. The leading edge antenna installation was protected by a vinyl tape installation approximately 4 inches total width (2 inches on top of blade and 2 inches on the bottom) for the full span of each blade. Details of the antenna installation are shown on Drawing No. 299-018-001.

Hub Waveguide Installation

An installation consisting of both fixed and flexible waveguide was made on the standard UH-1B hub as shown on drawing number 299-760-003 and the photograph of Figure 1.

Mast Installation

The main rotor mast was used as a waveguide for this specific installation, drawing number 299-760-003. The main parts of this installation are the upper and lower cones which transition the signal from the standard rectangular waveguide cross section to the circular section of the main rotor mast. The upper mast installation can be seen in Figure 1 with the lower mast installation shown in Figure 2. The upper cone adapter installation was made through use of the special mast nut which was a standard instrumentation nut modified at the top to accept the cone adapter.

Cabin Installation

A Klystron transmitter (emitting CW, K_u band microwave energy) was installed on the instrumentation table in the passenger compartment. This installa-

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DESCRIPTION OF TEST EQUIPMENT - (cont)

tion is shown in Figure 4 and includes the power supply, transmitter, and waveguide attached to the bulkhead. On the rear of the bulkhead, a flexible waveguide (TL-57-4-B-12N) was installed between the lower mast cone and the transmitter waveguide as shown in Figure 2.

INSTRUMENTATION

Load Level Tests

Standard blade instrumentation was used for these tests. All load level data was recorded on two oscillographs. Setup and calibration sheets are shown in Appendix C.

Transmission Tests

No special helicopter instrumentation was used for transmission tests since all signal data was recorded at the ground receiving station. Normal pilot and copilot instrument panel data was recorded using airspeed, altitude, and heading instruments. Calibration data for these instruments are shown in Appendix C.

GROUND RECEIVING INSTALLATIONS

The ground receiving equipment, located in the Flight Test Hangar at the Globe facility is shown in Figure 5.

Parabolic Disk

A 42-inch parabolic reflector, Ainslie 444020-33, with a one degree beamwidth was used to receive the signal from the helicopter. A four power 4.6 degree field of view sighting telescope was attached to, and boresighted with, the dish. This enabled the ground station to determine when the helicopter

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MODEL UH-1B PAGE 4

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DESCRIPTION OF TEST EQUIPMENT - (cont)

Parabolic Disk - (cont)

was on the point of test.

Preamplifier

An LEL KBH-2 low noise preamp and mixer together with a Hewlett Packard 628A signal generator was used to amplify and heterodyne the incoming signal to IF frequency.

Attenuator

A precision attenuator FXR Model Y164-A was inserted between the receiving antenna and the pre-amp for calibration of the data equipment.

Oscilloscopes

Two Tektronix Model 545B oscilloscopes were used to display the received patterns for photographic analysis. Two recording type Poloroid cameras were used to photograph the displayed images.

Communications

A Bayside portable transceiver was used to communicate with the helicopter.

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MODEL UH-1B PAGE 5

RPT 204-100-113

DESCRIPTION OF TESTS

Initial test plans and procedures were drawn in the report of Reference 1.

A major check point of the test program was to determine installation convenience of the modified blades and waveguide hardware. This was accomplished in two phases, first, during the blade installation for the load level flight, and second, prior to the pattern test flights when the aircraft was in work status for the waveguide installation. Results of installation discrepancies are discussed in the test results section.

Load level tests were performed with standard Model 204 blades and with radar blades for comparison purposes. Ground tests for blade balancing and tracking checks preceded flight tests. Flight test conditions checked were hover, climb, and level flight. Records were obtained in each condition using the instrumentation listed in Appendix C.

Transmission tests were performed at Bell Helicopter's Globe facility. A ground receiving station complete with instrumentation and photographic facilities was set up in the flight test hangar. Figure 5 shows the ground station setup. Three basic check points over the terrain were chosen to accommodate the positioning of the helicopter in the fixed parabolic reflector cone. The parabolic reflector sighting telescope was used to position the helicopter in hover, and to mark the point of photography during fly-by's through the point on other maneuvers. Three points were checked: 800, 1800, and 2500 feet above the ground. Flight conditions performed at these points were hover, level flight up to 120 knots IAS, vertical climb, vertical descent, angular climb, and angular descent. Photographs were obtained "on the point" during each maneuver. Level flight points were performed at compass headings of 0, 45, 90, 135, 180, 225, 270 and 315 degrees.

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INSTALLATION AND TEST RESULTS

Load Level Tests

Prior to flight with the radar blade configuration, a base data flight was made using the production 204 configuration. A standard 204 hub installation was used for both blade configurations. For comparative purposes, the data from the base flight is shown in conjunction with the radar blade data in Appendices D and E.

When the radar blades were installed, a ground run was made to check tracking and balance. The blades were trimmed out and two disc weights were removed from each side. Flight with these blades was very good from a vibration standpoint. Handling characteristics were normal for a UH-1B. Load level data was obtained on two flights, 143A and 143B, with center of gravity locations of 125.4 F.S. and 133.2 F.S., respectively. Figures 11 through 78 of Appendix D present the plots of these two flights. Tabular data is shown in Figures 85 through 136 in Appendix E. For all practical purposes, the radar blades are identical to the production 204 blades used for base data.

Installation Trials

Following the load level tests, the helicopter was configured with the necessary waveguide hardware and associated equipment to permit transmission of electromagnetic signals to a ground station. The specific installations are discussed in a previous section of this report. Since this was the first installation of its kind in a helicopter, a discussion of its adaptability to the helicopter is of prime importance.

Generally speaking, the waveguide installation on the hub was performed with relative ease. The only discrepancy encountered in installation was the necessity of drilling oversize holes in the retaining cap (299-760-001-15) which holds the "T" waveguide to the upper mast adapter cone. The holes were opened up with a #26 drill. This operation permitted an eleven degree offset of the "T" waveguide to the main rotor centerline.

INSTALLATION AND TEST RESULTS - (cont)

Installation of main rotor mast hardware was also relatively easy. The purpose of this hardware is to convert the mast to a waveguide link between the blade and the cabin transmitter equipment. This is the point where blade rotation is accommodated through use of the lower cone installation. The first piece of equipment installed was the lower cone. This was made using a special tool which allows the cone to be lowered to its position in the bottom of the mast. Two discrepancies occurred during this operation. First, the special tool failed, and second, the lower cone was accidentally lowered too far into the mast.

The special tool failed when the retaining ring holding the small Teflon cone slipped out of place. This was caused by the extremely high force required to freeze the adapter cone to the tool cone in order to rotate the adapter in the mast for insertion of the set screw (204-010-224-1). This problem was alleviated through use of a very tight fitting washer between the Teflon surface (which had a radius) and the locking ring.

The lower cone was accidentally pushed out of the bottom of the mast causing the Teflon bearing surface to strike the transmission case (see drawing 299-760-003). Fortunately, no damage was done to the Teflon bearing, although this could easily occur in a field installation when maintenance personnel are trying to locate the set screw hole in the lower cone. A fix for this discrepancy is discussed in the recommendations of this report. A photograph of the lower cone following removal at the conclusion of flight tests is shown in Figure 3. Note the Teflon dust worn from the seal as it worked into its seated position.

The upper cone adapter installation was very easily installed.

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MODEL UH-1B PAGE 9

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INSTALLATION AND TEST RESULTS -(cont)

Electromagnetic Radiation Tests

Results of the transmission tests are being analyzed by David W. Young and Associates, Inc. and will be published in a report on JANAIR Contract Nonr 4148(00). The final report will combine this flight test report and the analytical report of David W. Young and Associates.

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MODEL UH-1B PAGE 9

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CONCLUSIONS AND RECOMMENDATIONS

From the installation and tests of the main rotor radar blades performed on the UH-1B Helicopter, S/N AF 62-2023, the following conclusions can be drawn:

1. The installation is relatively easy from a maintenance standpoint.
2. The helicopter flying characteristics with this installation is identical to a production type 204 rotor blade installation.
3. The life of the flexible waveguides (used to connect the blade waveguide to the hub waveguide) is unsatisfactory for blade to hub use. These guides failed after 17.4 hours total time. The pylon to bulkhead flexible waveguide was satisfactory for this same period of time.
4. The leading edge protective coat bonding is unsatisfactory. The best time was approximately 15 hours of flight, which is unsatisfactory for a production configuration.

The following recommendations are made from operational experience gained on these tests and are applicable to the specific configuration of hardware tested on this program:

1. A very tight fitting washer be installed on the special "T" handle installation tool used to position the lower mast cone.
2. The design of the lower mast cone should be changed to prevent damage to the Teflon bearing surface during installation. A collar should be made as part of the lower mast cone. The collar centerline should be approximately 4.5 inches above the bottom edge of the cone. The outside diameter should be of sufficient dimension to rest on the inside lip of the mast, thus preventing the cone from slipping down the shaft to a point

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MODEL UH-1B PAGE 10

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CONCLUSIONS AND RECOMMENDATIONS - (cont)

where the Teflon bearing surface would be damaged.

3. A new type of hub-to-blade flexible wave-guide should be researched.
4. A new type (or method of attaching the old type) of main rotor blade leading edge protective coating should be researched.

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APPENDIX A

Photographs

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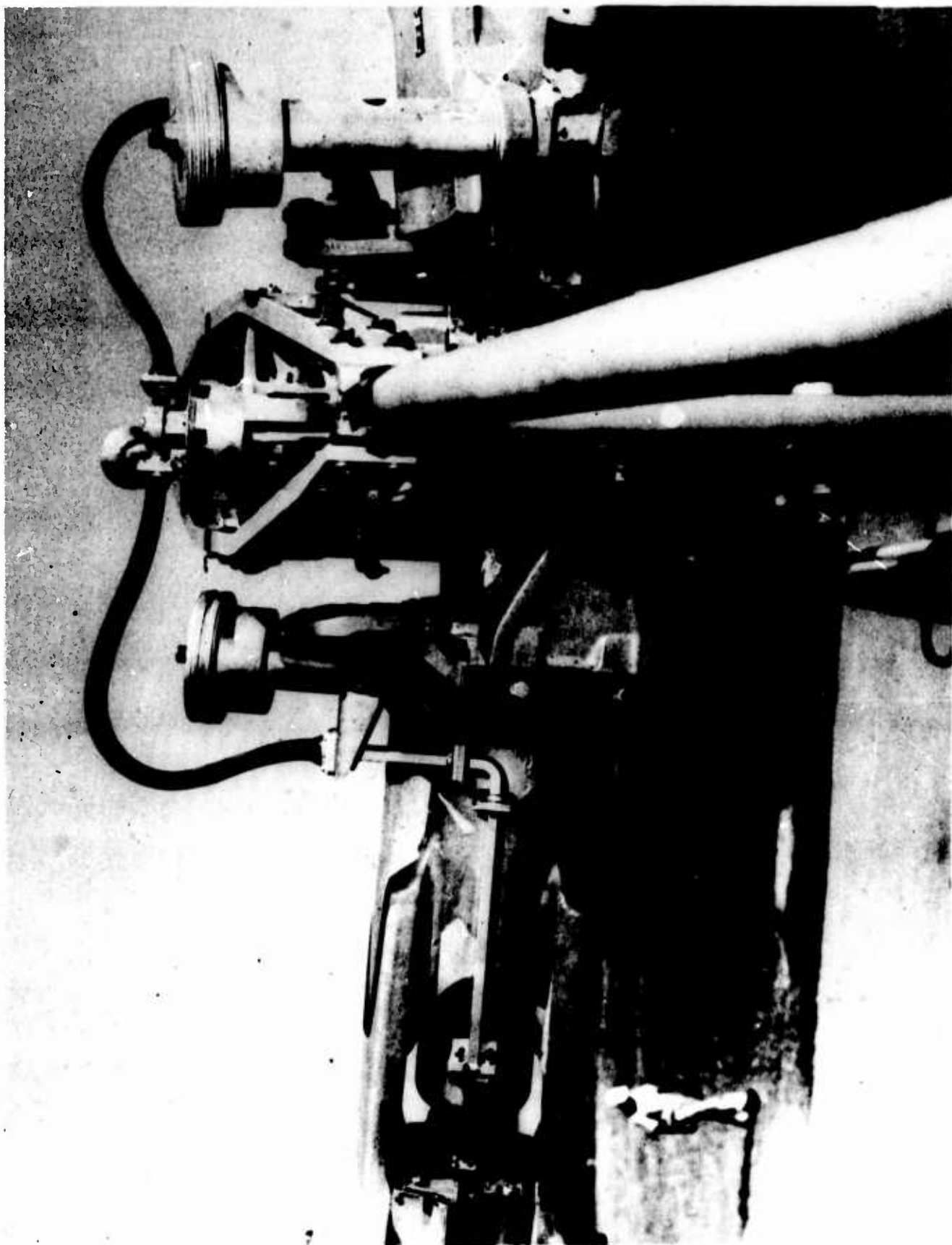


Fig. 1 - Model UH-1B, S/N AF 62-023; Main Rotor Blade
Radar - Upper Mast Assembly Installation

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MODEL UH-1B PAGE 13
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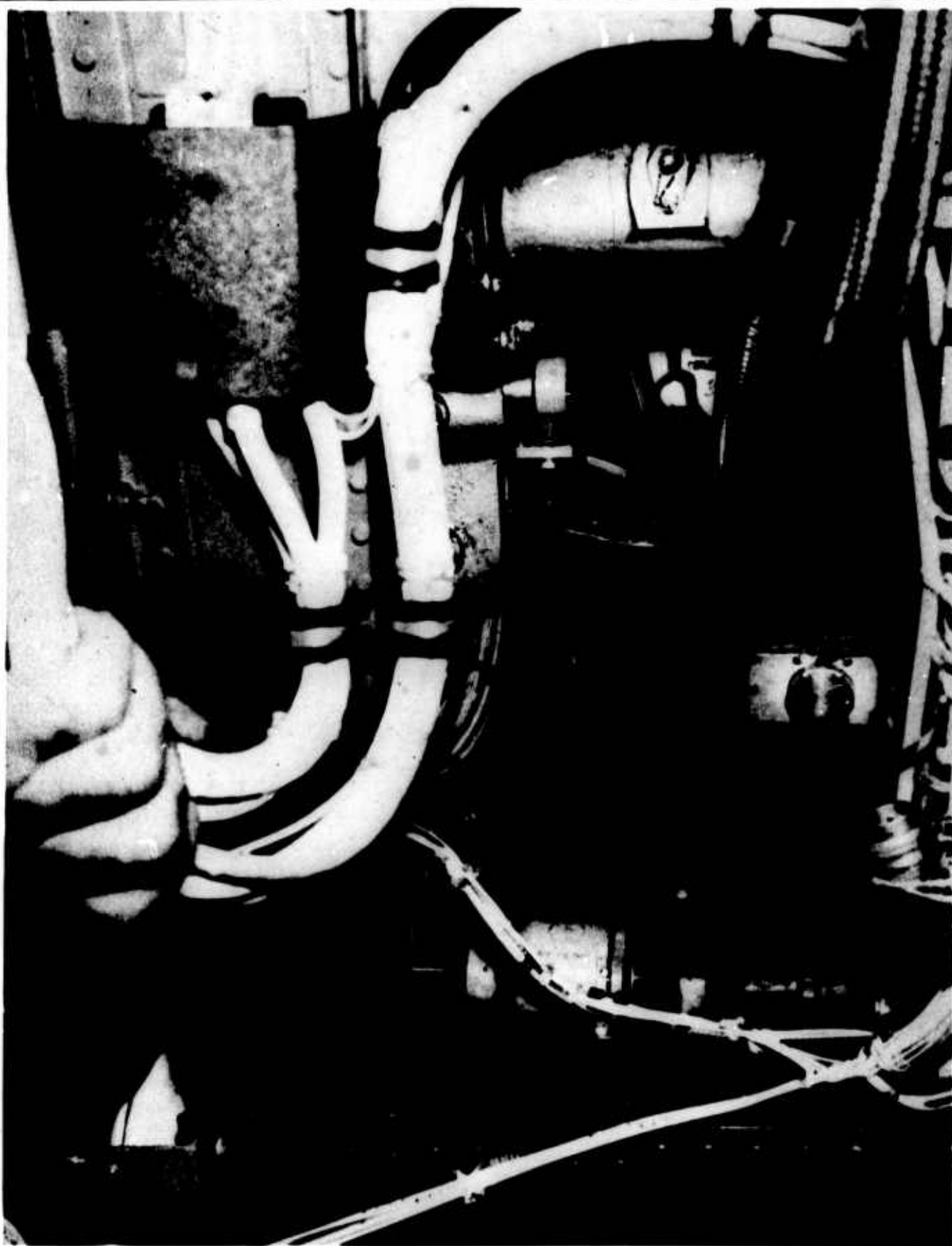


Fig. 2 - Model UH-1B, S/N AF 62-023; Main Rotor Blade
Radar Installation - Lower Mast Assembly

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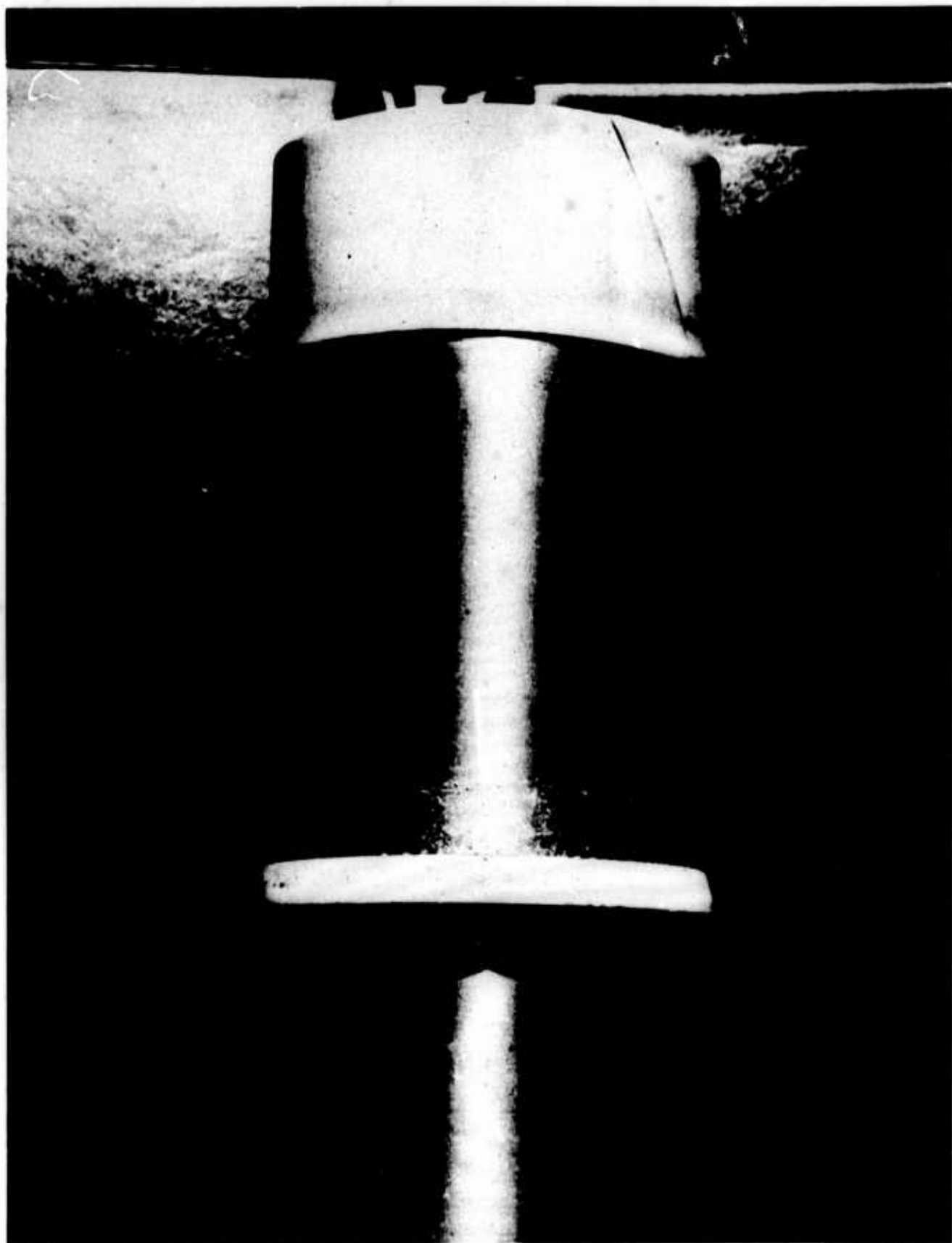


Fig. 3 - Model UH-1B, S/N AF 62 023; Main Rotor Blade
Radar Installation - Lower Mast Cone Removal
From Helicopter Following 16.1 Total Operating Hours.

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MODEL UH-1B PAGE 15
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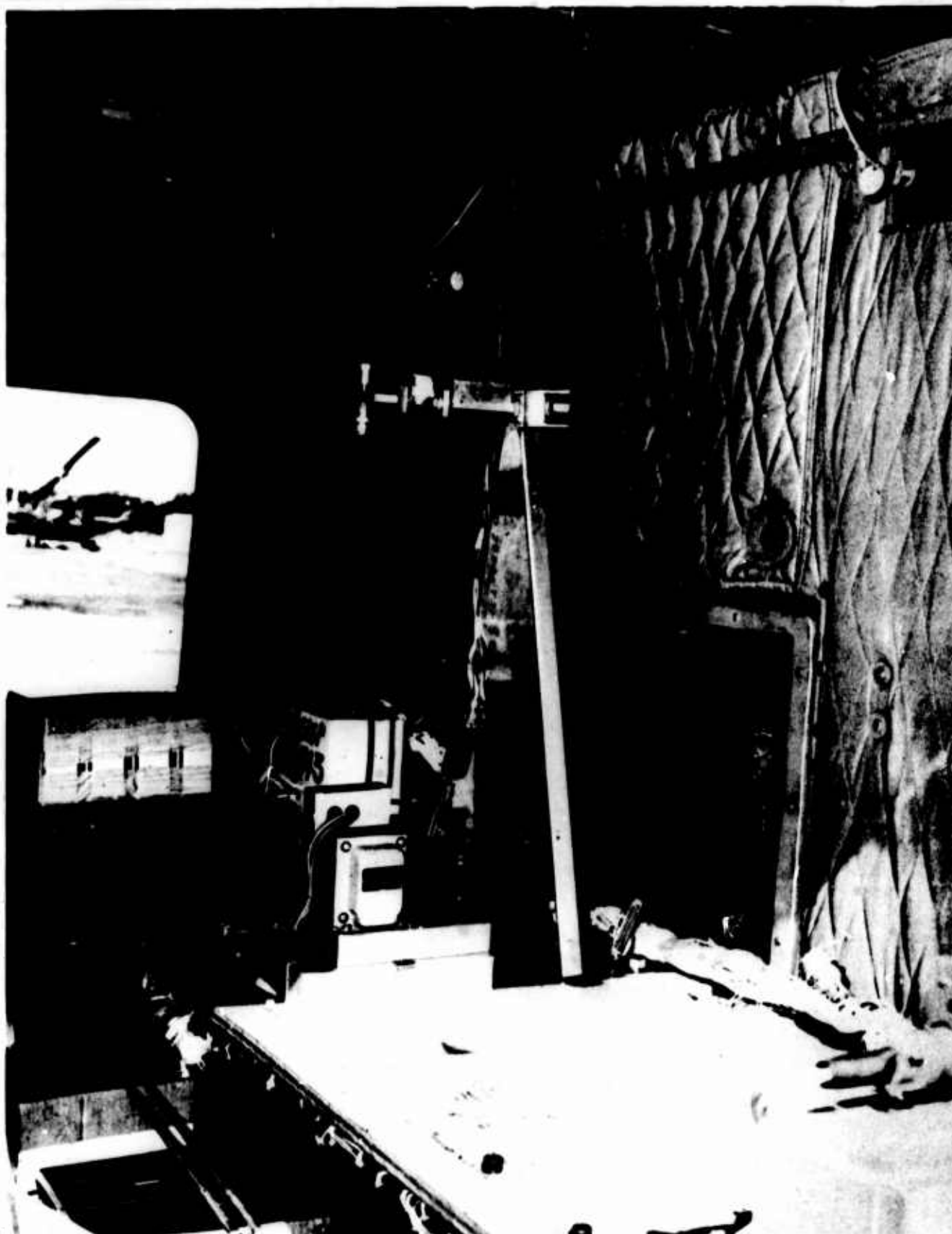


Fig. 4 - Model UH-1B, S/N AF 62 023; Main Rotor
Blade Radar Installation - Transmitter
& Power Supply Mounted in Cabin

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MODEL UH-1B PAGE 16
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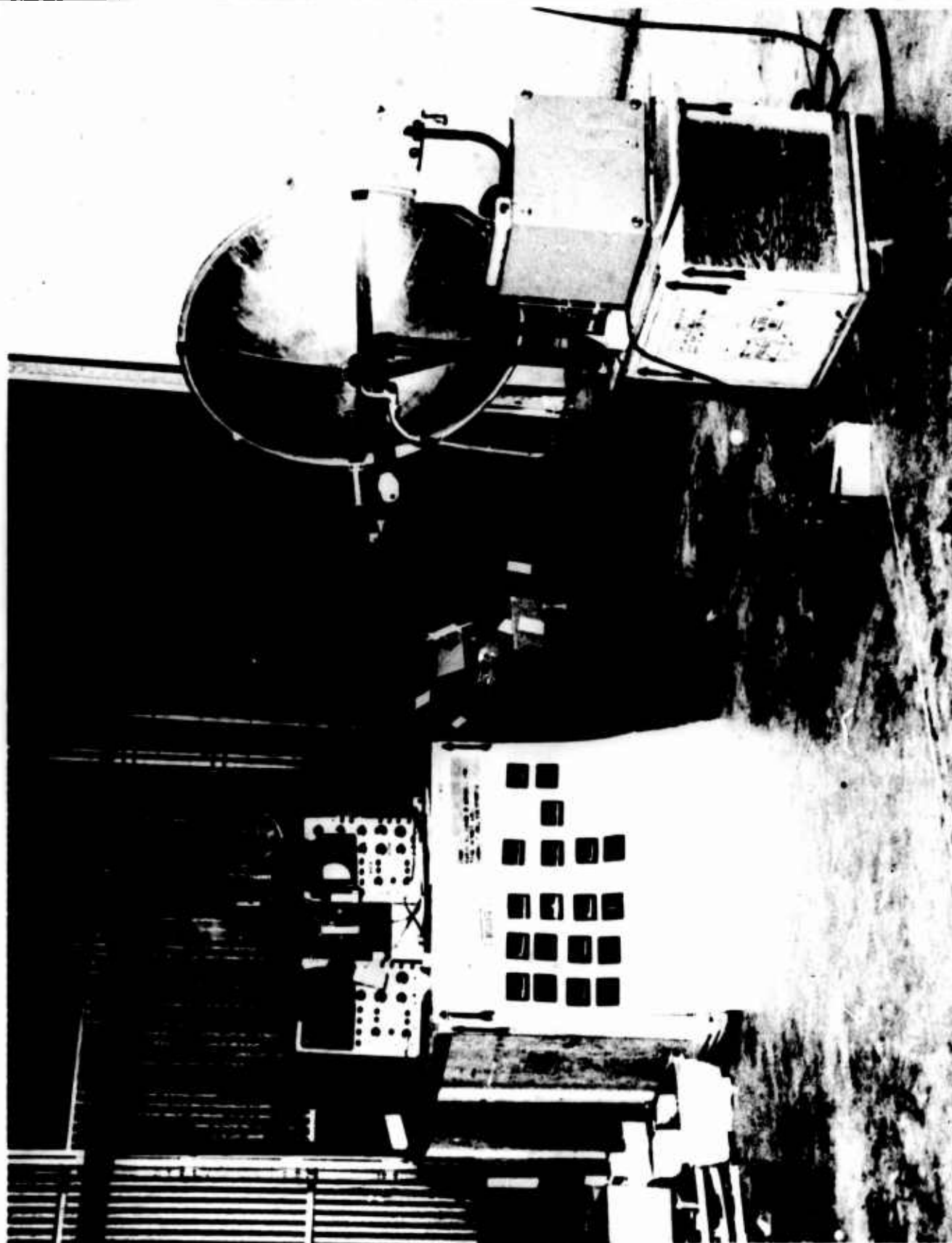


Fig. 5 - Ground Station Equipment for Model UH-1B Flight Tests of Main Rotor Blade Radar Installation (299-760-003)

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APPENDIX B

Block Diagrams of Electronic
Equipment Used in Helicopter
and Ground Station Installations.

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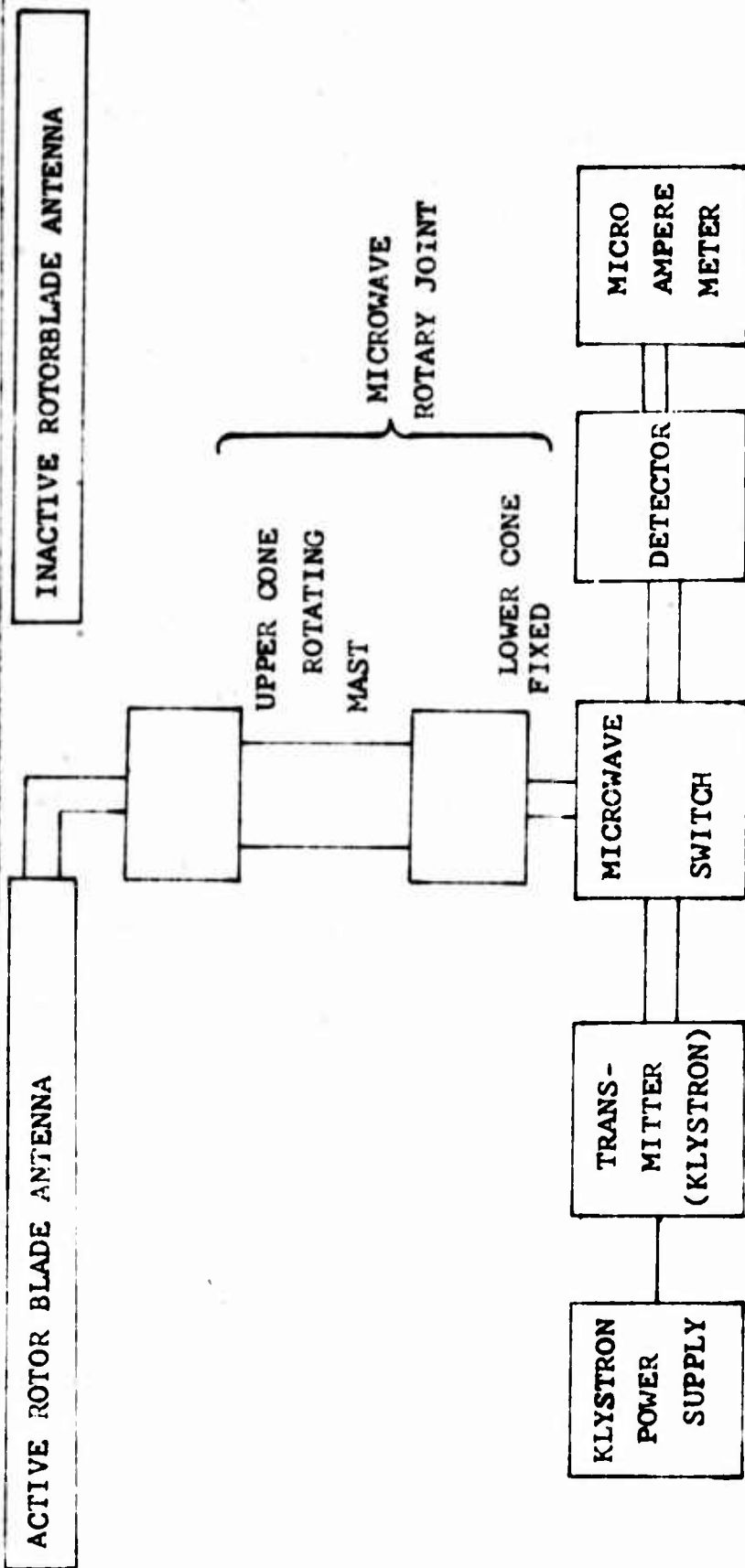


FIGURE 6

ELECTRONIC EQUIPMENT MOUNTED
IN UH-1 HELICOPTER
FOR
ROTOR BLADE ANTENNA PATTERN FLIGHT TESTS
LEADING & TRAILING EDGE ANTENNAS

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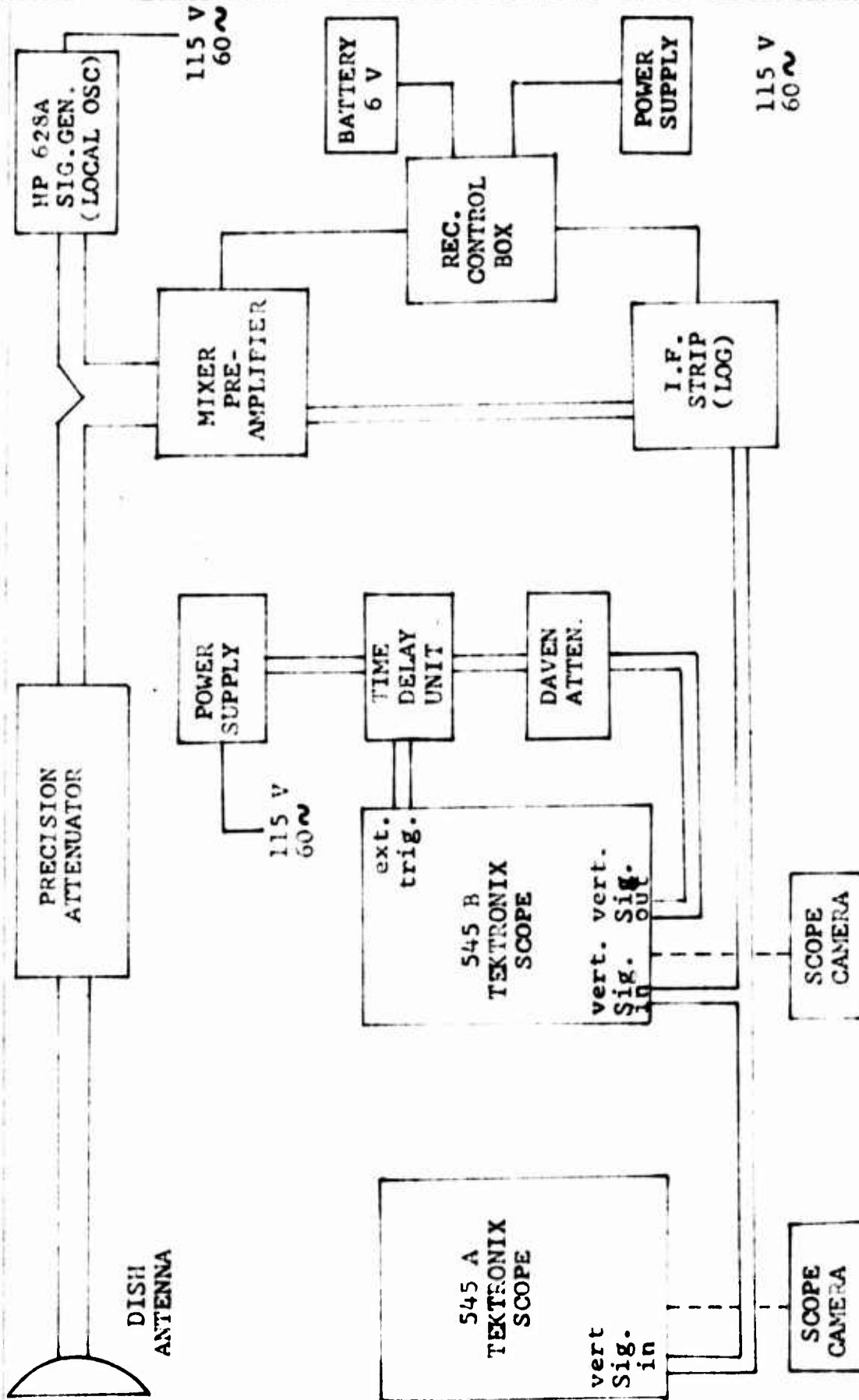


FIGURE 7

ELECTRONIC GROUND EQUIPMENT
FOR ROTOR BLADE ANTENNA PATTERN
FLIGHT TESTS (LEADING & TRAILING
EDGE ANTENNAS)

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APPENDIX C

Instrument Calibrations and
Oscillograph Set-Up Sheets

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MODEL UH-1B PAGE 21CHECKED R.H. WheelockRPT. 204-100-113STANDARDS AND CALIBRATION SECTION DATA SHEETDESCRIPTION Airspeed DATE CALIBRATED 4/14/65MODEL/TYPE MS-28-45-WI CALIBRATION PERIOD 7/14/65RANGE Aerosonic Corp.MFG, 5799SERIAL NO 727 EMC NO. _____LAB. NO. _____ CALIBRATED BY: E. R.

STD.	INDICATED
KNOTS	KNOTS
0	0
10	10
20	17
30	27
40	37
50	48
60	61
70	70
80	80
90	89
100	100
110	110
120	120
130	131
140	141
150	149

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STANDARDS AND CALIBRATION SECTION DATA SHEET

DESCRIPTION Altimeter DATE CALIBRATED 4/14/65

MODEL/TYPE A-80-AAU-8 A/A CALIBRATION PERIOD 7/14/65

RANGE 80,000 Ft.

MFG. Kollsman Inst. Corp.

SERIAL NO. 30891

BHC NO. _____

LAB. NO. 1029

CALIBRATION BY: E.K.

STD. ALT. PRESS. FT.	IND. ALT. PRESS. FT.
0	-20
500	500
1000	1000
1500	1500
2000	2000
2500	2500
3000	3000
3500	3500
4000	4000
4500	4500
5000	5000
6000	6000
7000	7010
8000	8020
9000	9020
10000	10020
11000	11000
12000	12000
13000	13000
14000	14000

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MODEL UH-1B PAGE 23CHECKED R.H. WheelockRPT 204-100-113STANDARDS AND CALIBRATION SECTION DATA SHEETDESCRIPTION Tachometer DATE CALIBRATED 4/14/65MODEL/TYPE YDJ67-FBC-1 CALIBRATION PERIOD 7/14/65RANGE ENG 0-7200 Rotor 0-360MFG. General ElectricSERIAL NO. W11695 BHC NO. _____LAB. NO. 1028 CALIBRATED BY E.K.

STD RPM ENGINE ROTOR

2 Pole Gen. RPM RPM

0 0 0800 1250 611600 2525 1222400 3825 1833200 5100 2453800 6025 2904000 6325 3054200 6625 3204400 6925 3354600 7225 350

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MODEL UH-1B PAGE 24
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INSTRUMENTATION OSCILLOGRAPH SET-UP

ENGR. Goodman MODEL UH-1B SHIP NO. 543 DATE 8-18-65 SER. NO. 513

TECH. Wakefield Osc. No. 1 of 1 Flt. 142A

PURPOSE OF FLIGHT Rotor Blade Antenna G/Run 37

ITEM MEASURED	LAB. NO.	GALVO	UNITS	STA NO.	100K C.E.	REF. VALUE	Sig Swt Pos	Ship Cable No.	Bal. Box Chan
1 M/R Blade Bm	3709TP	312	IN/LBS	140	11,413	5,005	R	53	1
2		312		84	14,733	10,202	R	49	2
3		312		60	22,323	12,825	R	54	3
4		312		35	35,745	16,340	R	48	4
5 Pitch Link 1588TP		339	LBS		4,455		0	50	5
6 Drag Brace 1577TP		312	LBS		12,600		0	51	6
7 Yoke Bm 1576TP		312	IN/LBS	6.0	135,360	21,024	R	47	7
8 Blade Ch. 3709TP		315		140	52,800		R	52	8
9		315		60	130,150		R	55	9
10 Yoke 1576TP		315		6.0	73,720		R	46	10
11 Flapping		315	Full % Throw				0	68	11
12 Pilots Seat Vert Accel 374		325	G's		1.81		0	11	12
13 Copilots Seat Vert Accel 345		325			1.83		0	15	13
14 C.G. Vert Accel 348		325			1.80		R	21	14
15 R/H Cyc. Boost Tube 1583TP		315	LBS		2,650		0	23	15
16 L/H Cyc. Boost Tube 1582TP		315	LBS		2,625		0	24	16
17 Collective Boost T. 1581TP		339	LBS		2,500		0	25	17
18 M/R Azimuth		323							18

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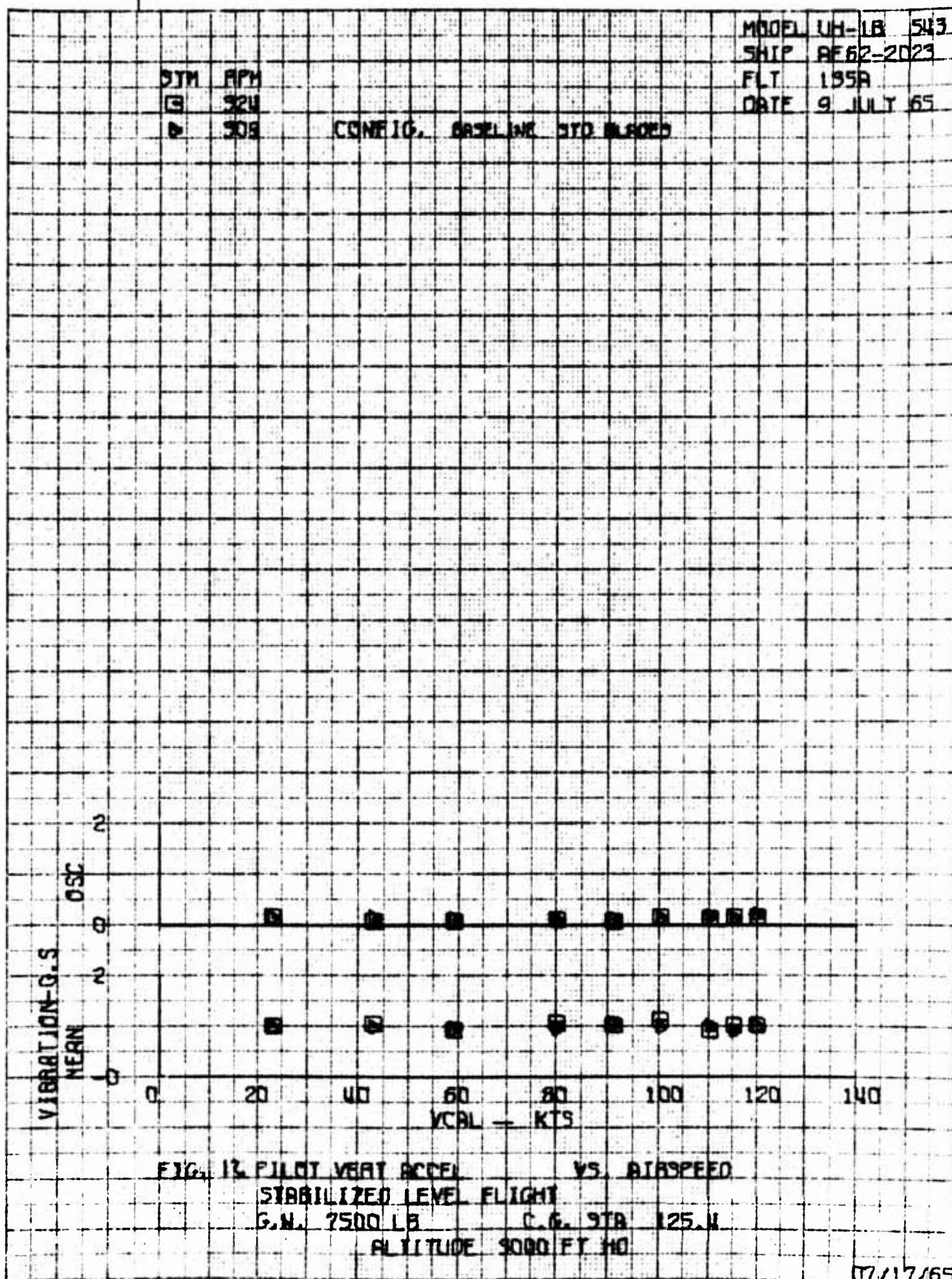
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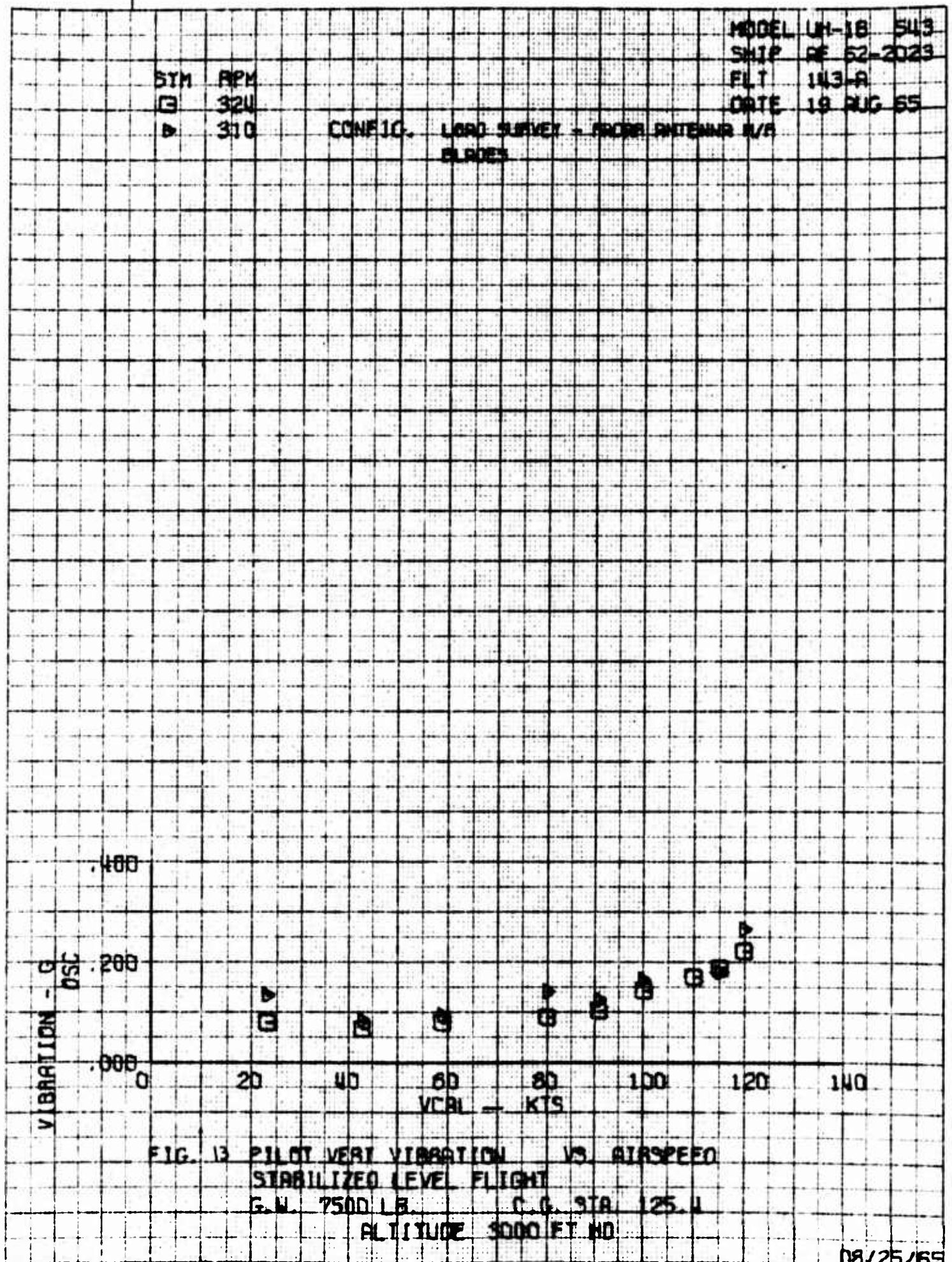
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APPENDIX D

Vibration and Load Plots





MODEL UH-1B 543
SHIP RF62-2023
FLT 135A
DATE 9 JULY 65

DTM MPH
E 324
D 309

CONFIG. BASELINE STD CLOSED

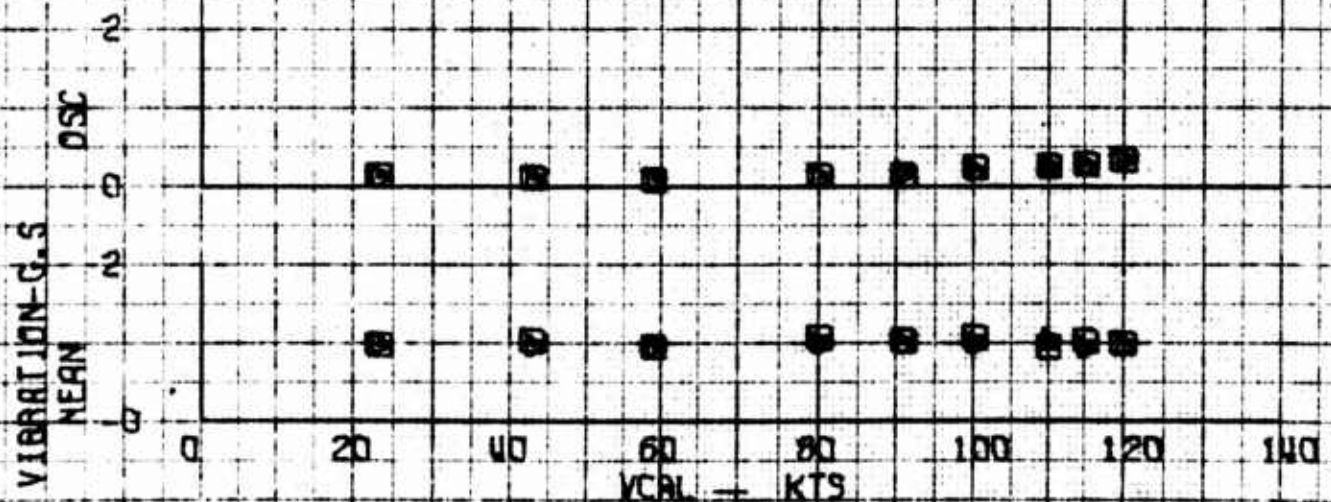


FIG. 14 CO-PILOT VERT ACCEL VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB C.G. STA 125.1
ALTITUDE 9000 FT MO

07/17/65

SYM RPM
E 320
D 310

CONFIG. UH-1B HELICOPTER - 1000A ANTENNA W/A
BLADES

MODEL UH-1B 543
SHIP OF 52-2023
FLT 143-A
DATE 19 AUG 65

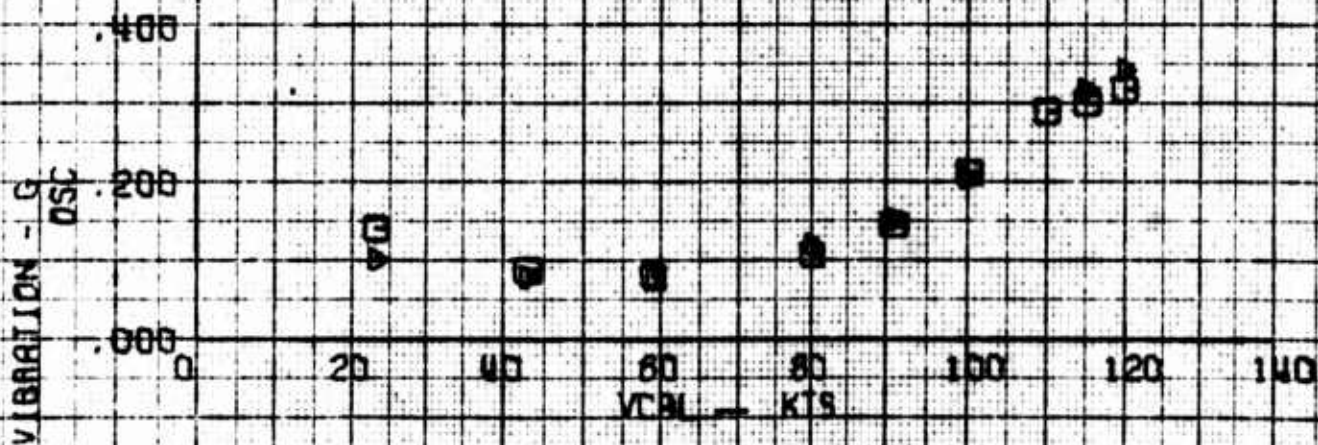
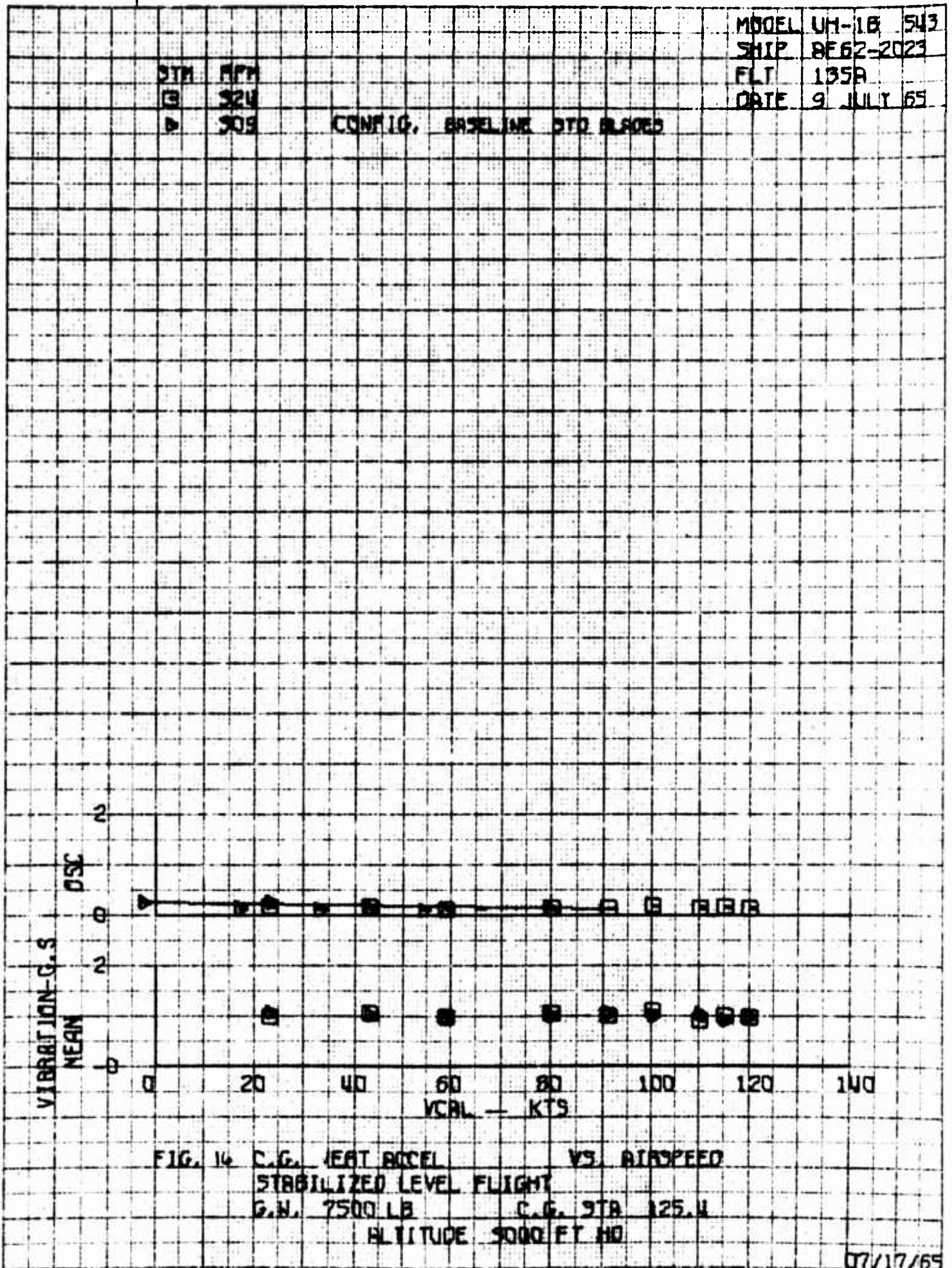


FIG. 15. CO-PILOT VERT VIBR VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA 125.4
ALTITUDE 3000 FT MO

08/25/65



MODEL UM-18 543
SHIP RE 52-2023
FLT 143-A
DATE 19 AUG 65

SYM RPM
G 320
A 310

CONF 10. LOAD SURVEY - PROBE ANTENNA W/A
BLADES

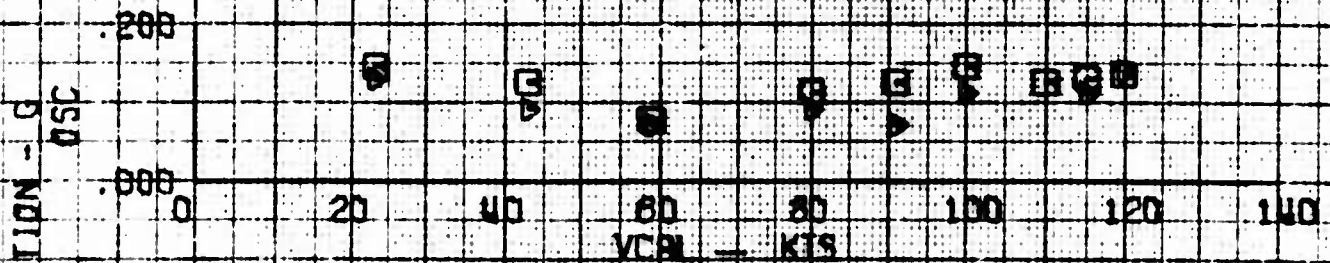


FIG. 11 CG VERT VIBRATION VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA 125.4
ALTITUDE 3000 FT MO

08/25/65

SYM APM
G 324
D 309

CONFIG. BASELINE STD BLADES

MODEL UH-1B 5A3
SHIP AF62-2023
FLT 135A
DATE 9 JULY 65

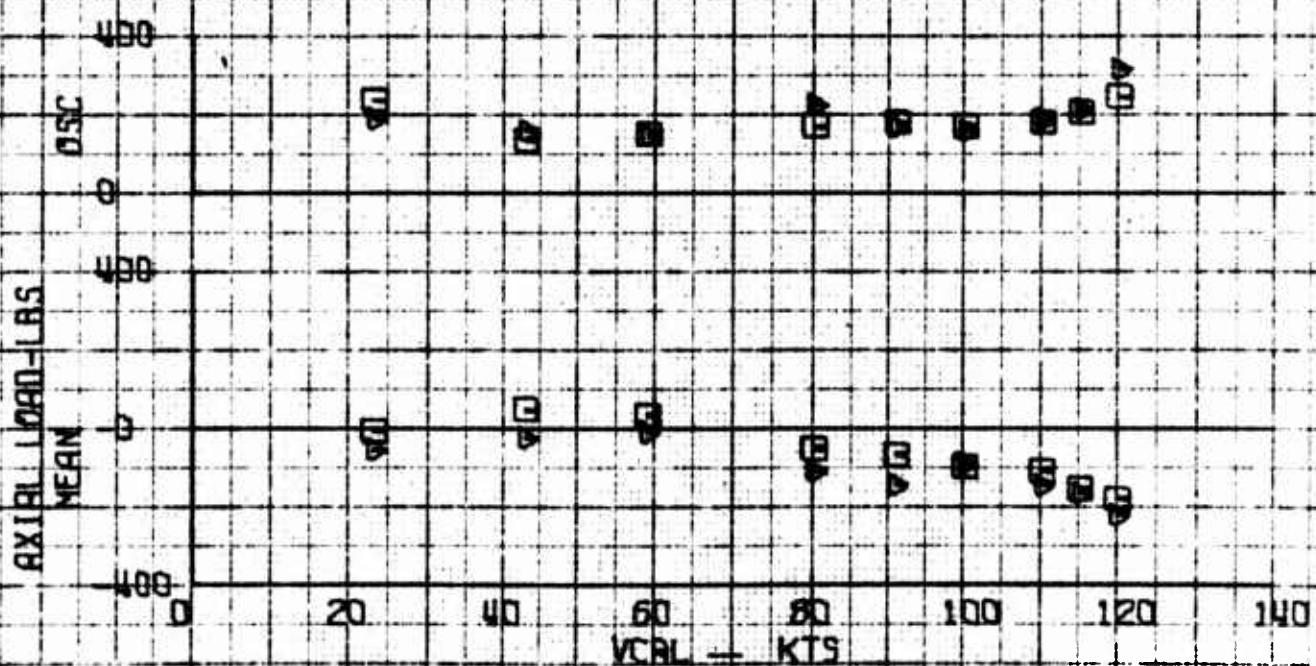


FIG. 8 L/H CTC BOOST TUBE VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB C.G. STA 125.4
ALTITUDE 9000 FT MO

07/17/65

SYM RPM
E 324
B 310

CONF IG. LOAD SURVEY - RADAR ANTENNA R/A
BLADES

MODEL UN-18 SU3
SHIP DE 52-2023
FLT 143-A
DATE 19 AUG 65

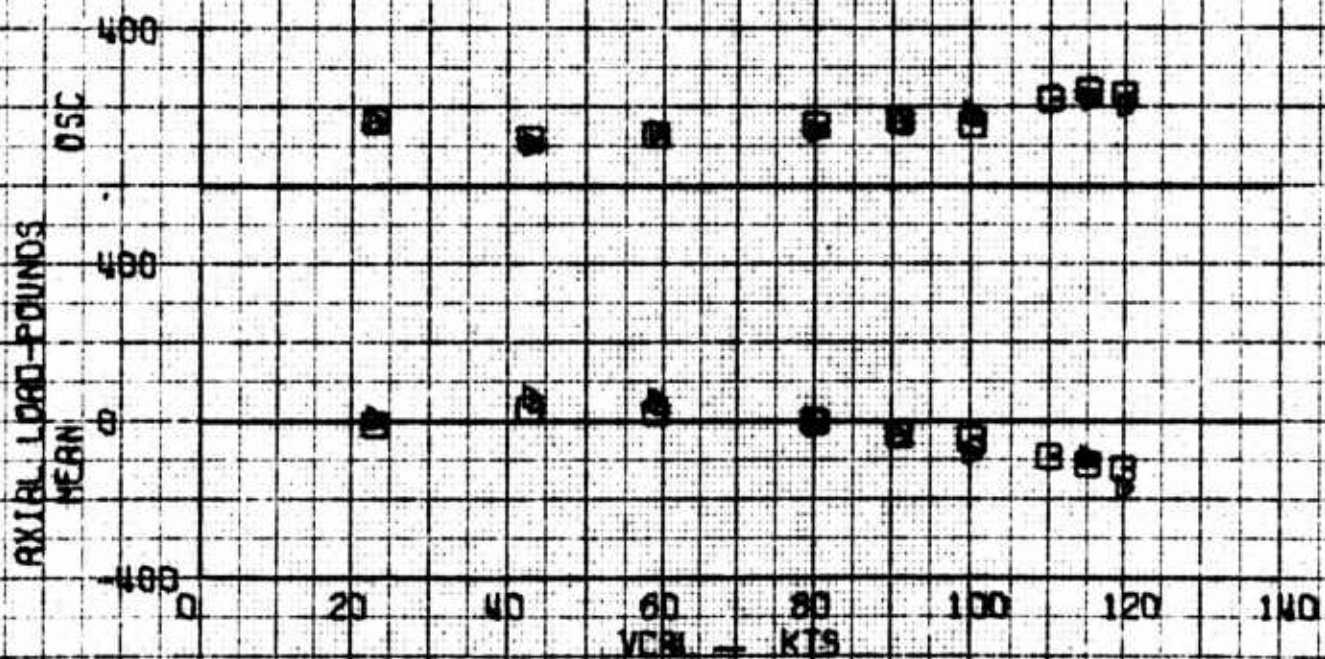
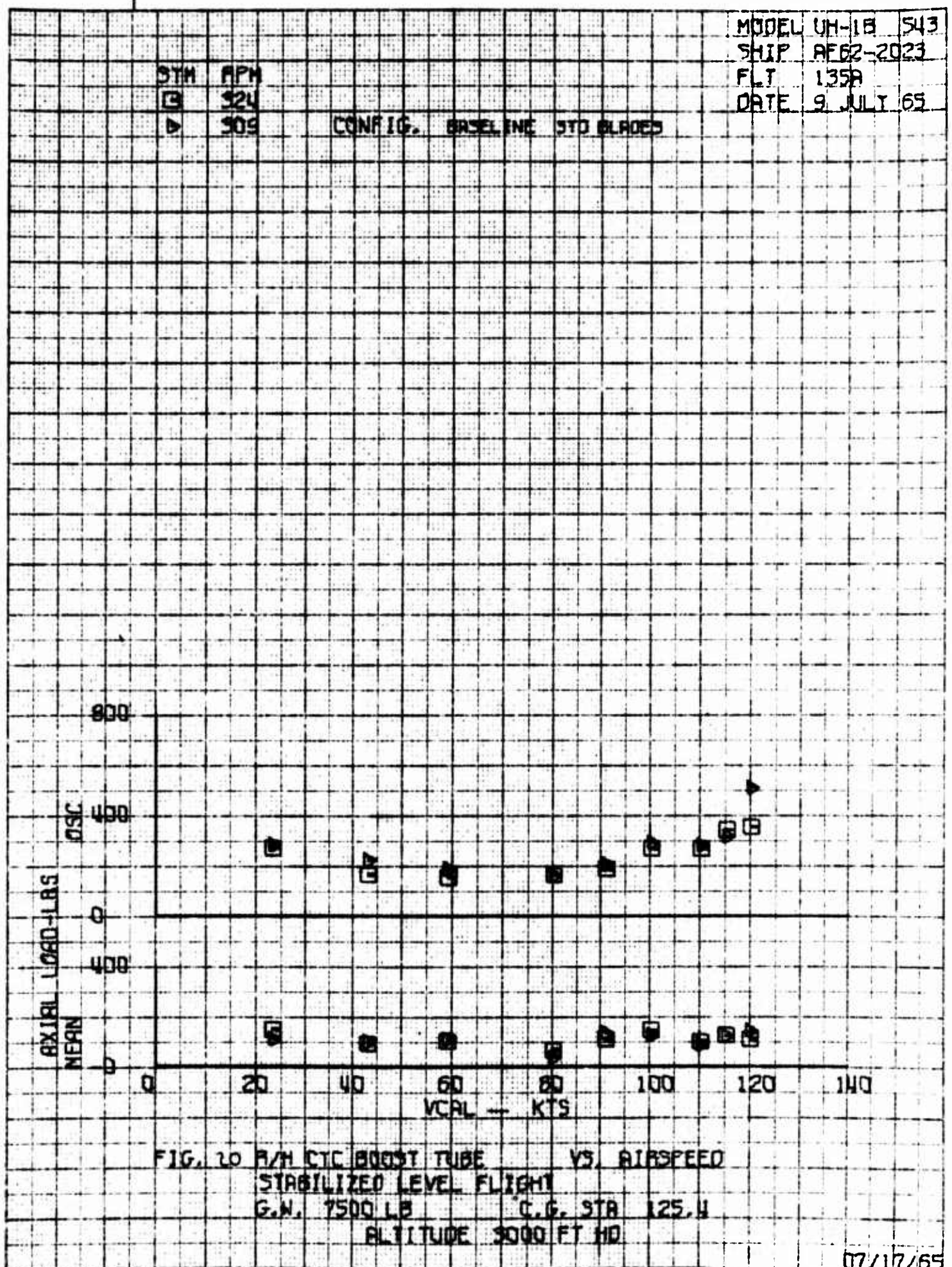
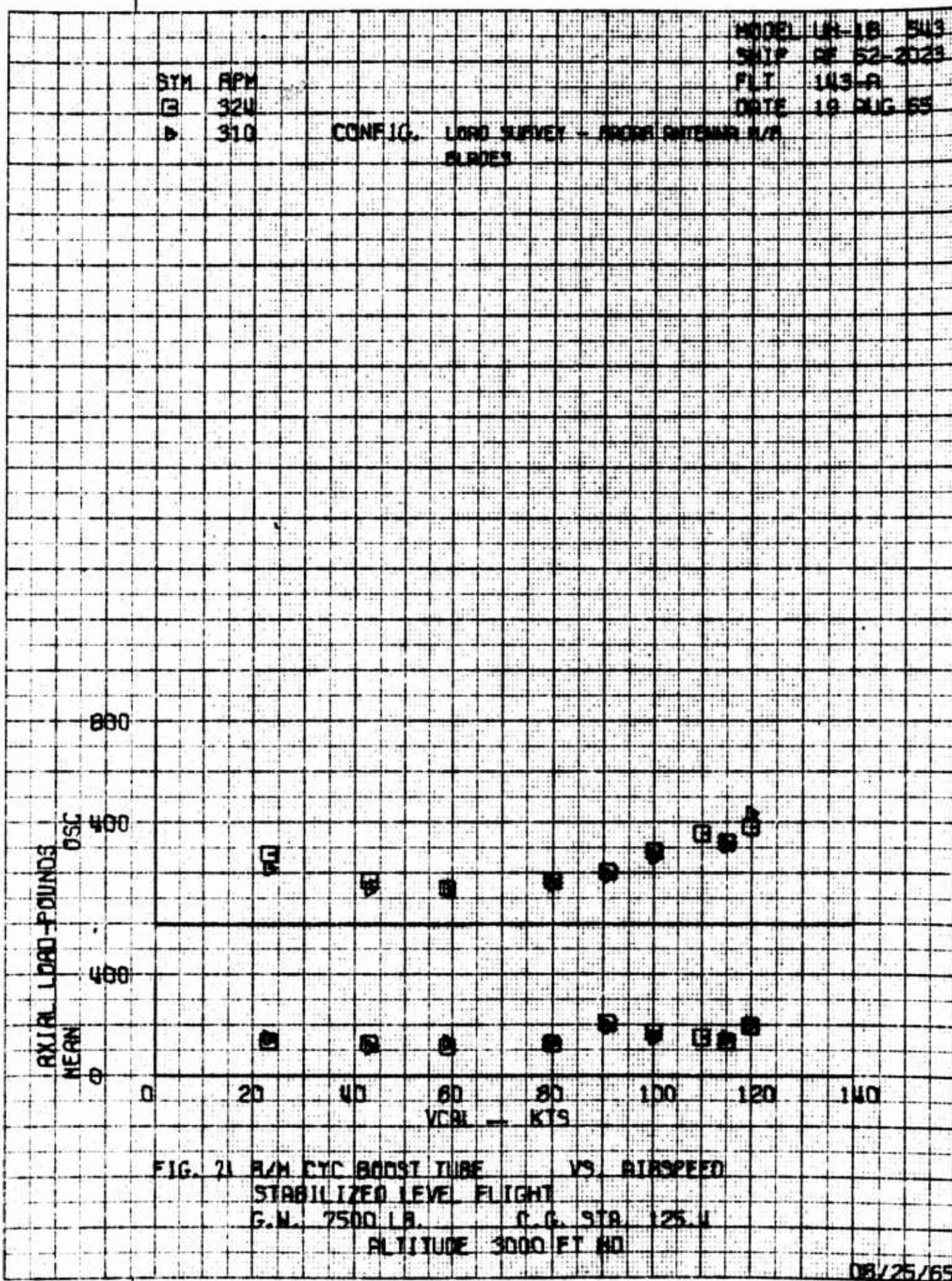
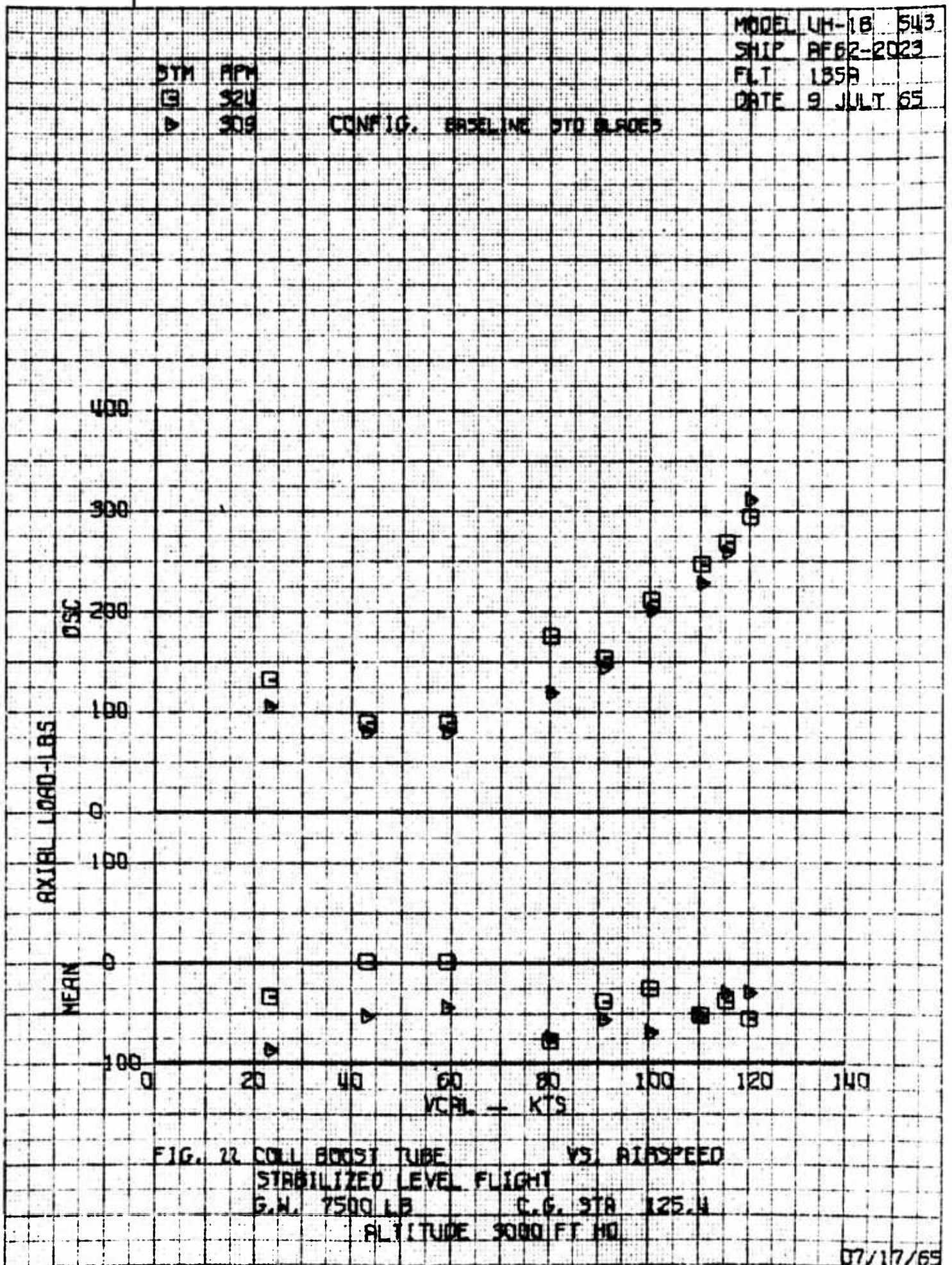


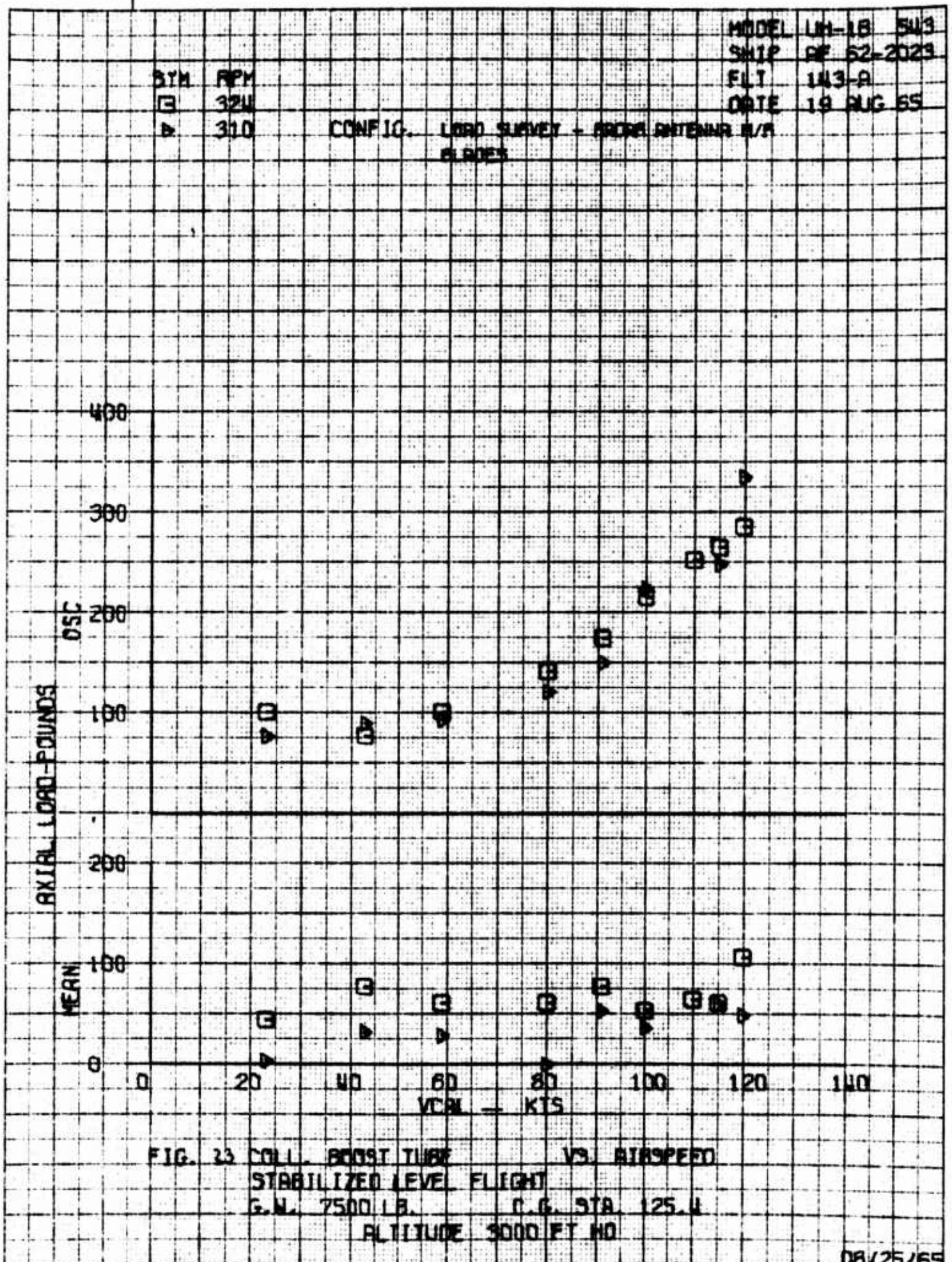
FIG. 19 1/4 CTC BOOST TUBE VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA 125.4
ALTITUDE 3000 FT MO

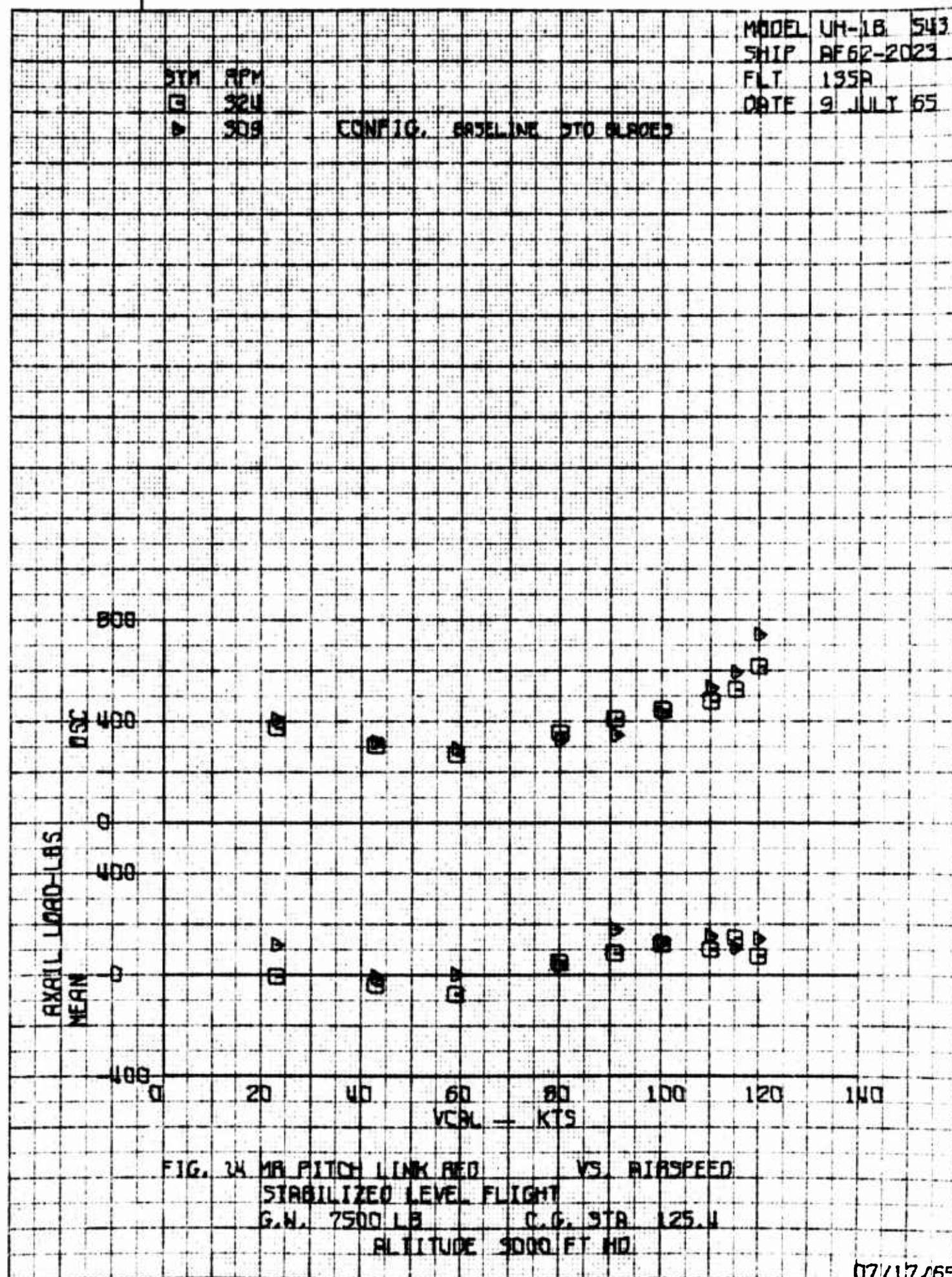
08/25/65











07/17/65

MODEL LH-18 543
SHIP AF 52-2029
FLT 143-A
DATE 19 AUG 55

SYM RPM
E 320
B 310

CONFIG. LOAD SURVEY - RADAR ANTENNA R/A
BLADES

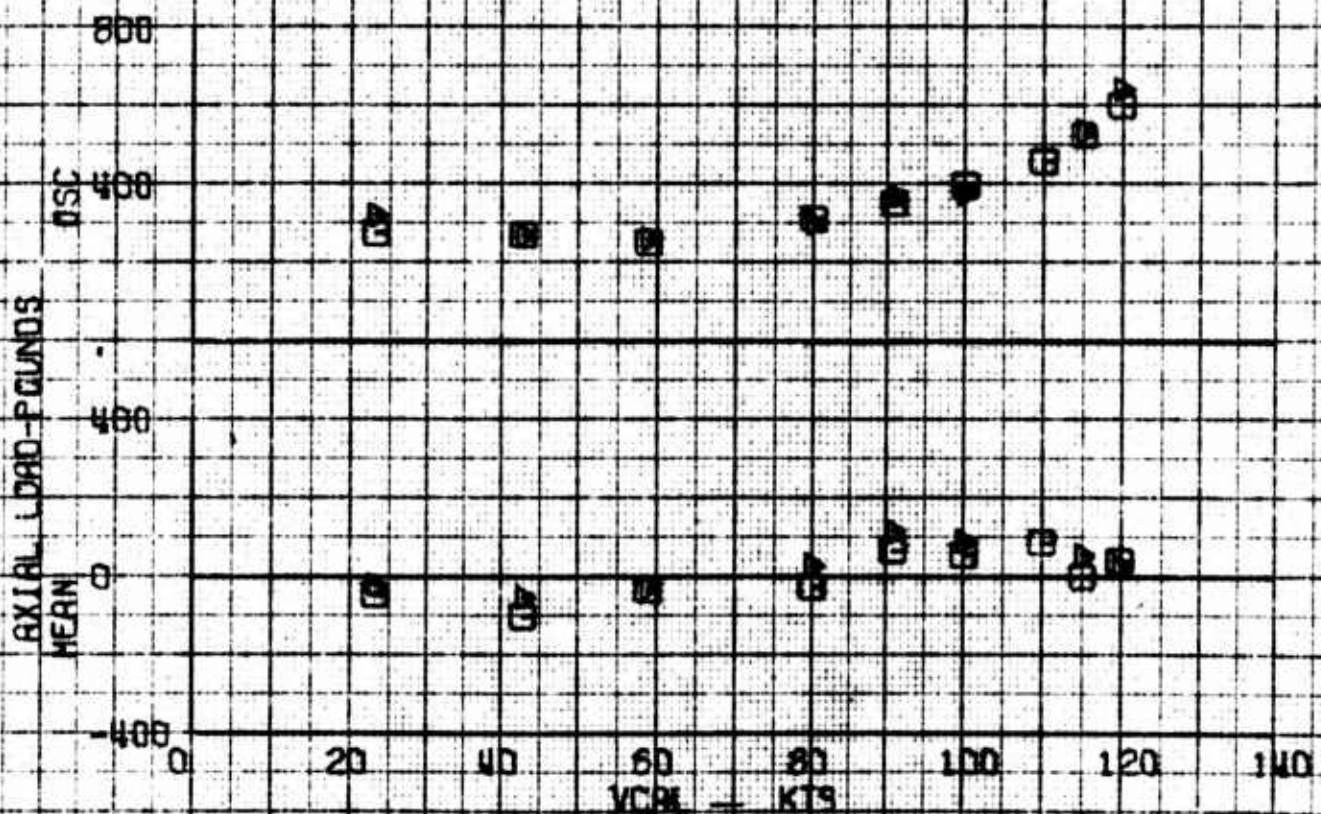
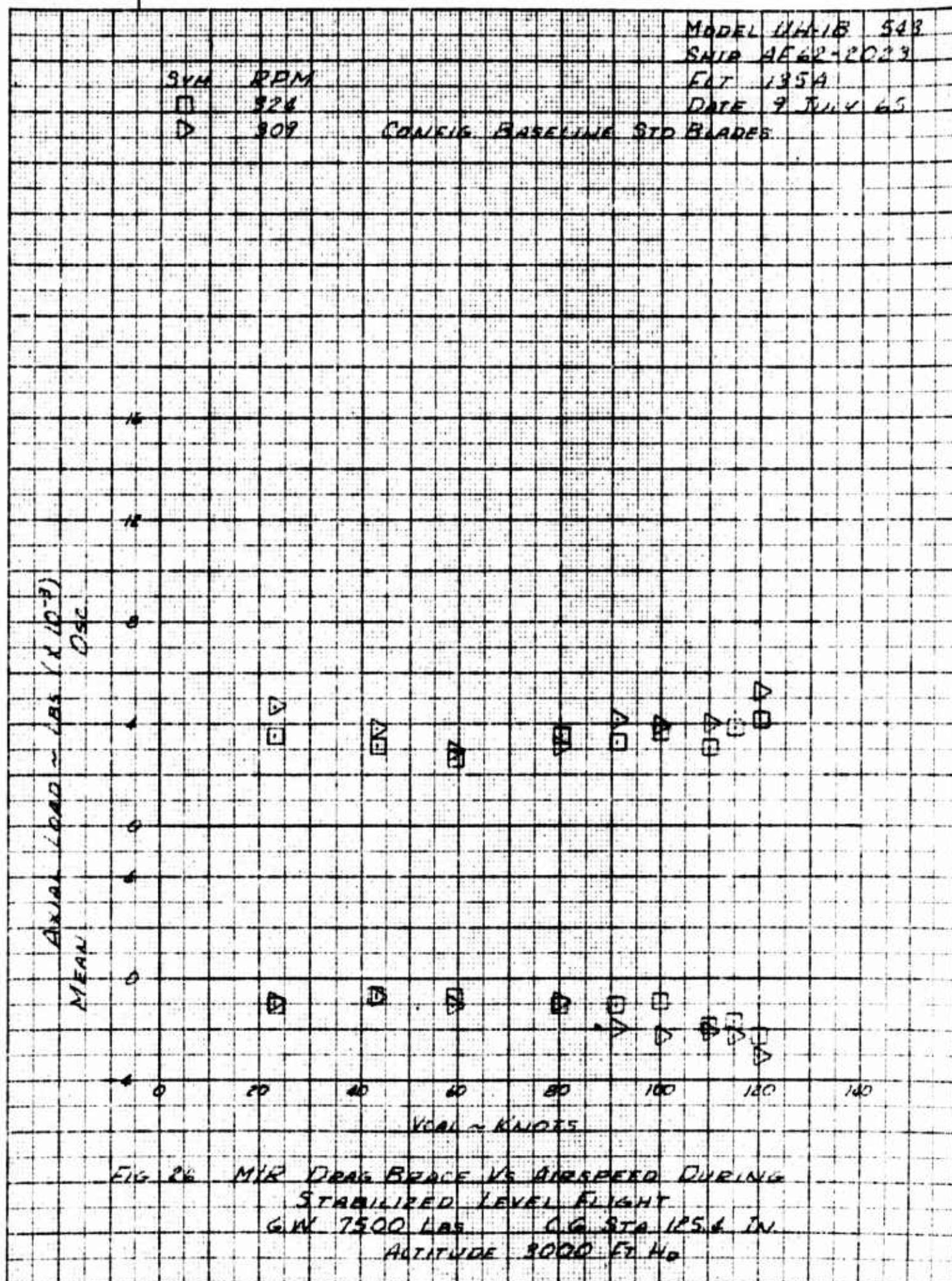
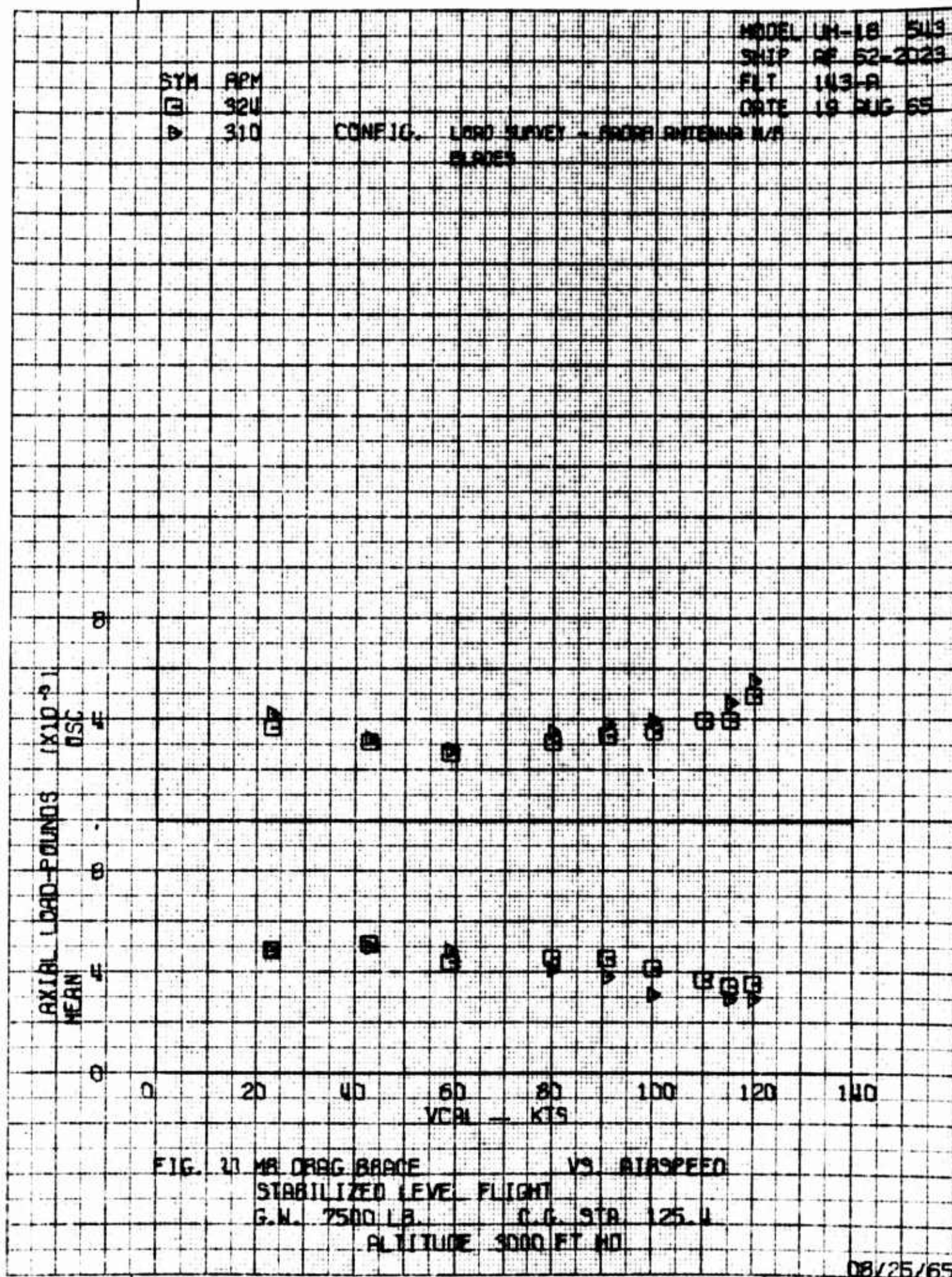


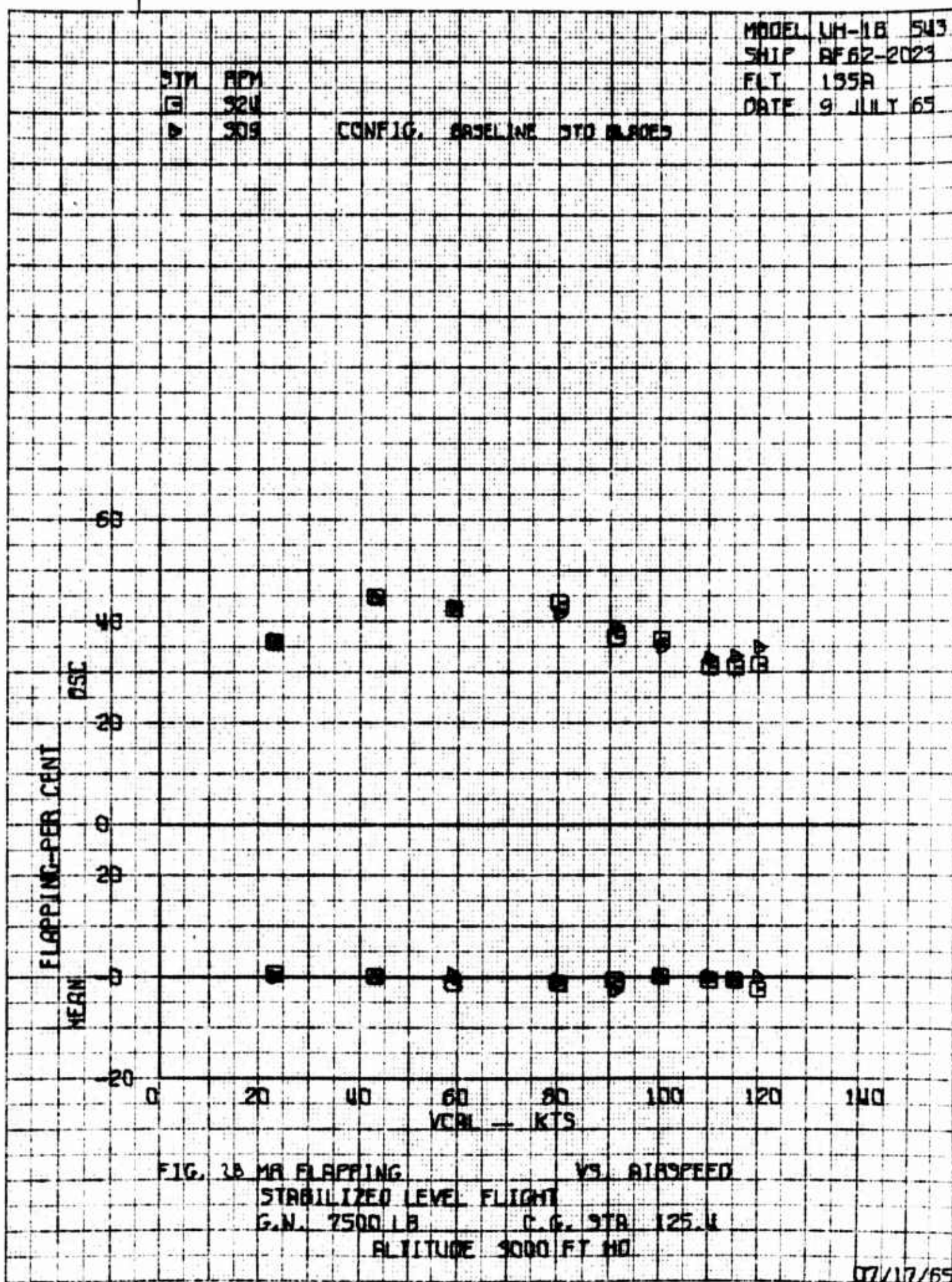
FIG. 25 MA PITCH LINK RED VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA 125.4
ALTITUDE 3000 FT MO

08/25/55





08/25/65



MODEL UM-18 543
SHIP AF 62-2023
FLT 143-A
DATE 18 AUG 65

SYM RPM
□ 320
▷ 310

CONFIG. LOAD SURVEY - PROBE ANTENNA A/A
BLADES

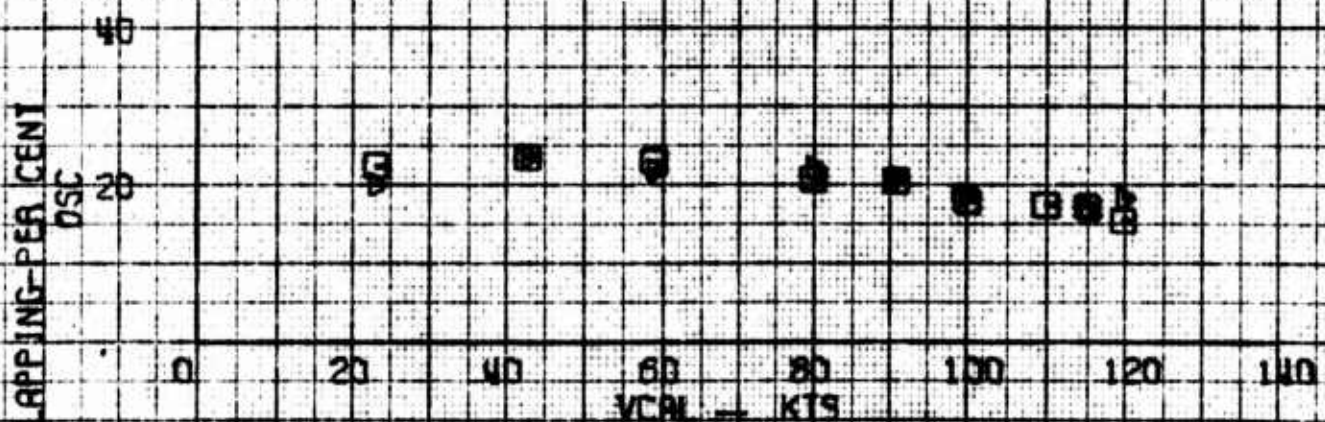
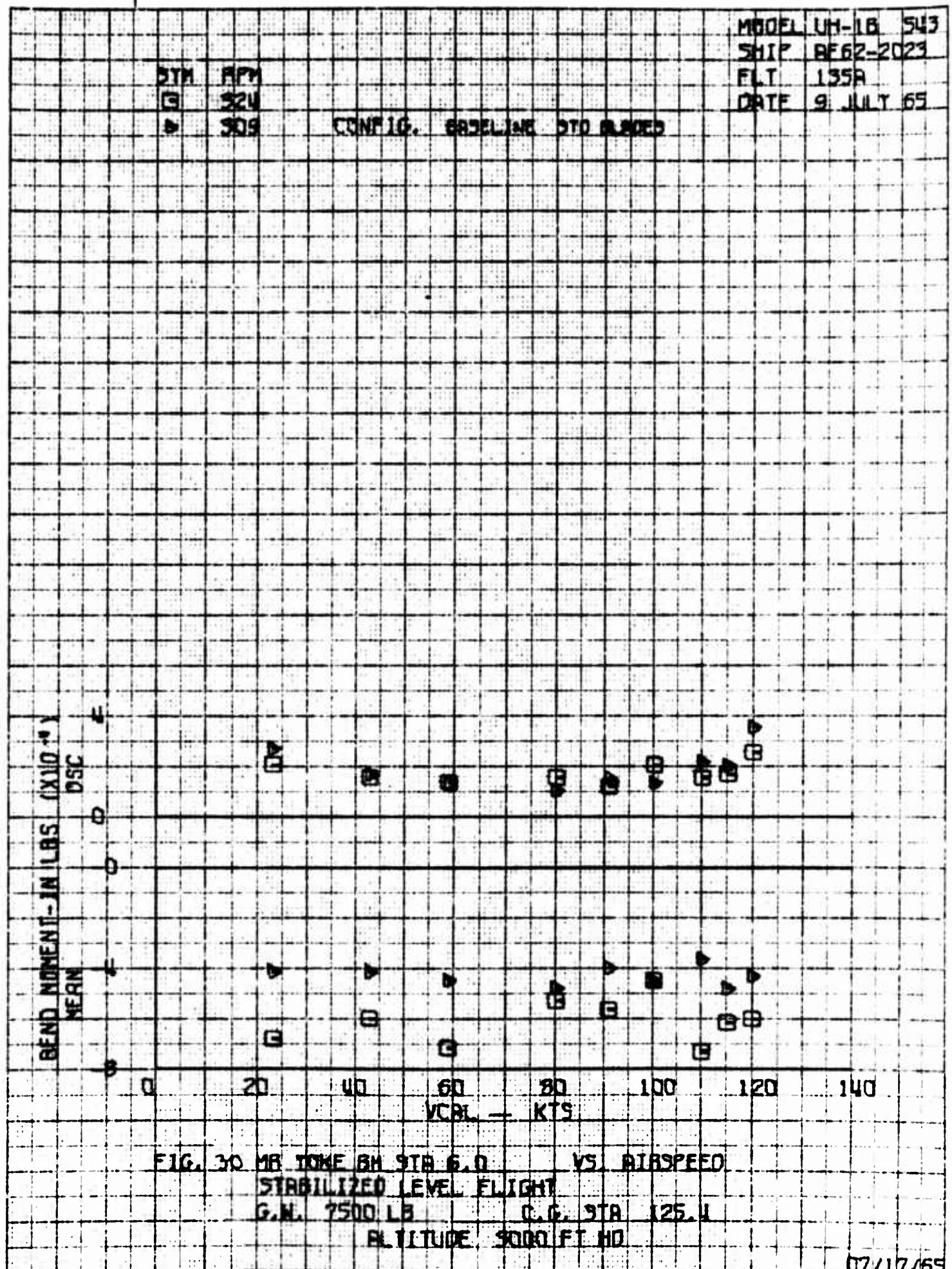


FIG. 19 MB FLAPPING VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA 125.4
ALTITUDE 3000 FT MO

08/25/65



07/17/65

SYM RPM
□ 320
△ 310

CONFIG. LOAD SURVEY - REAR ANTENNA R/A
BLADES

MODEL UH-1B 503
SHIP RE 62-2023
FLT 143-A
DATE 19 AUG 65

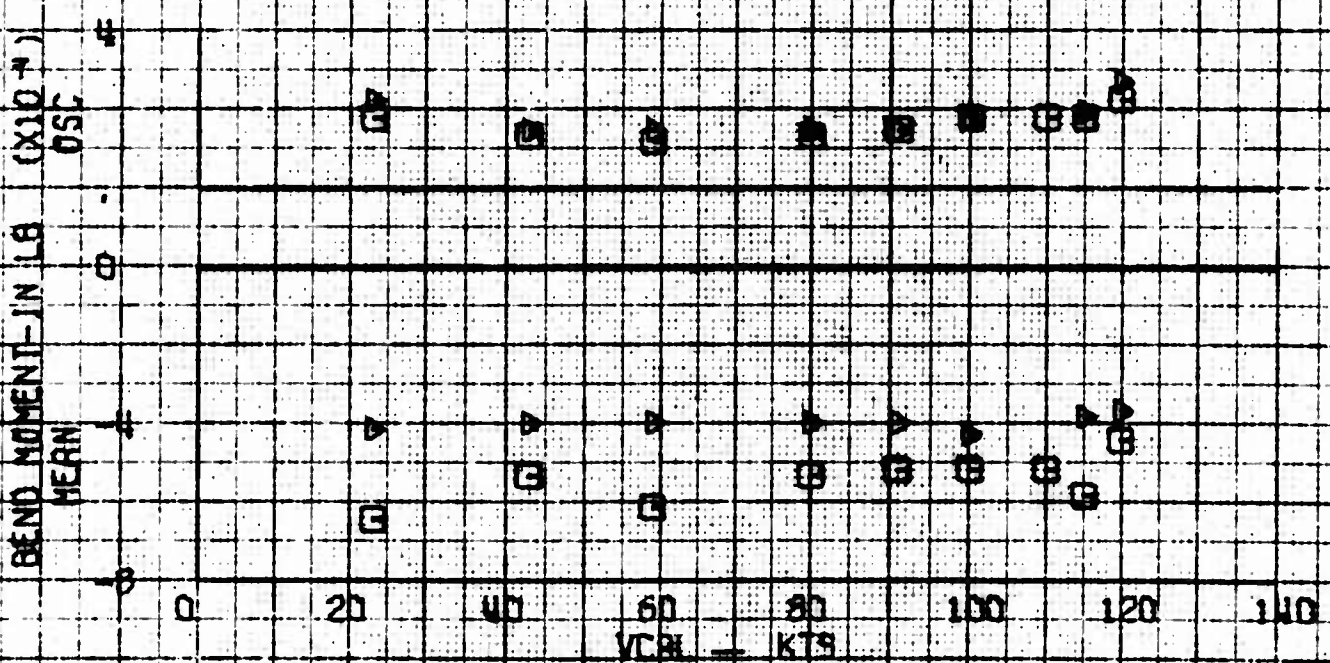
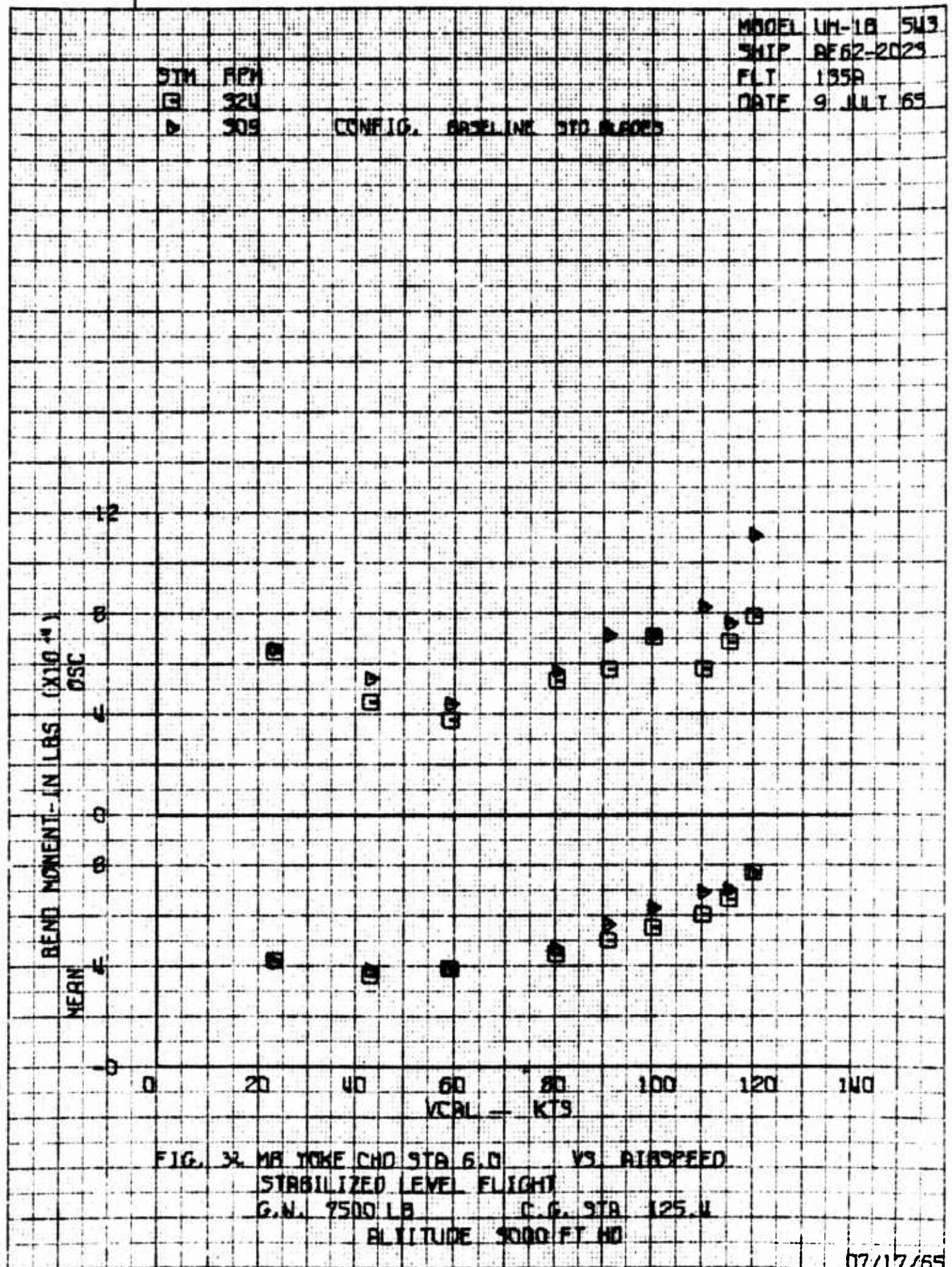
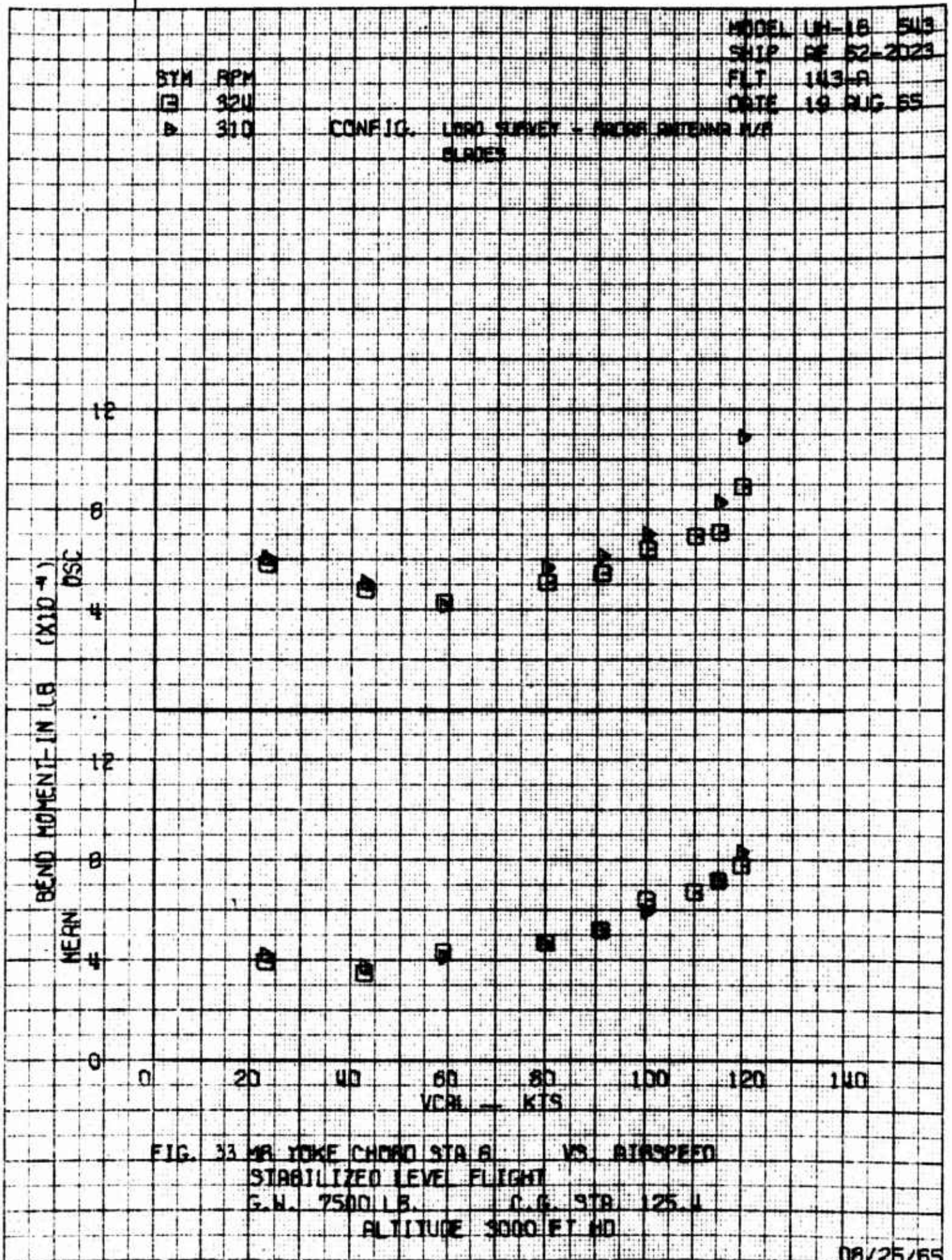
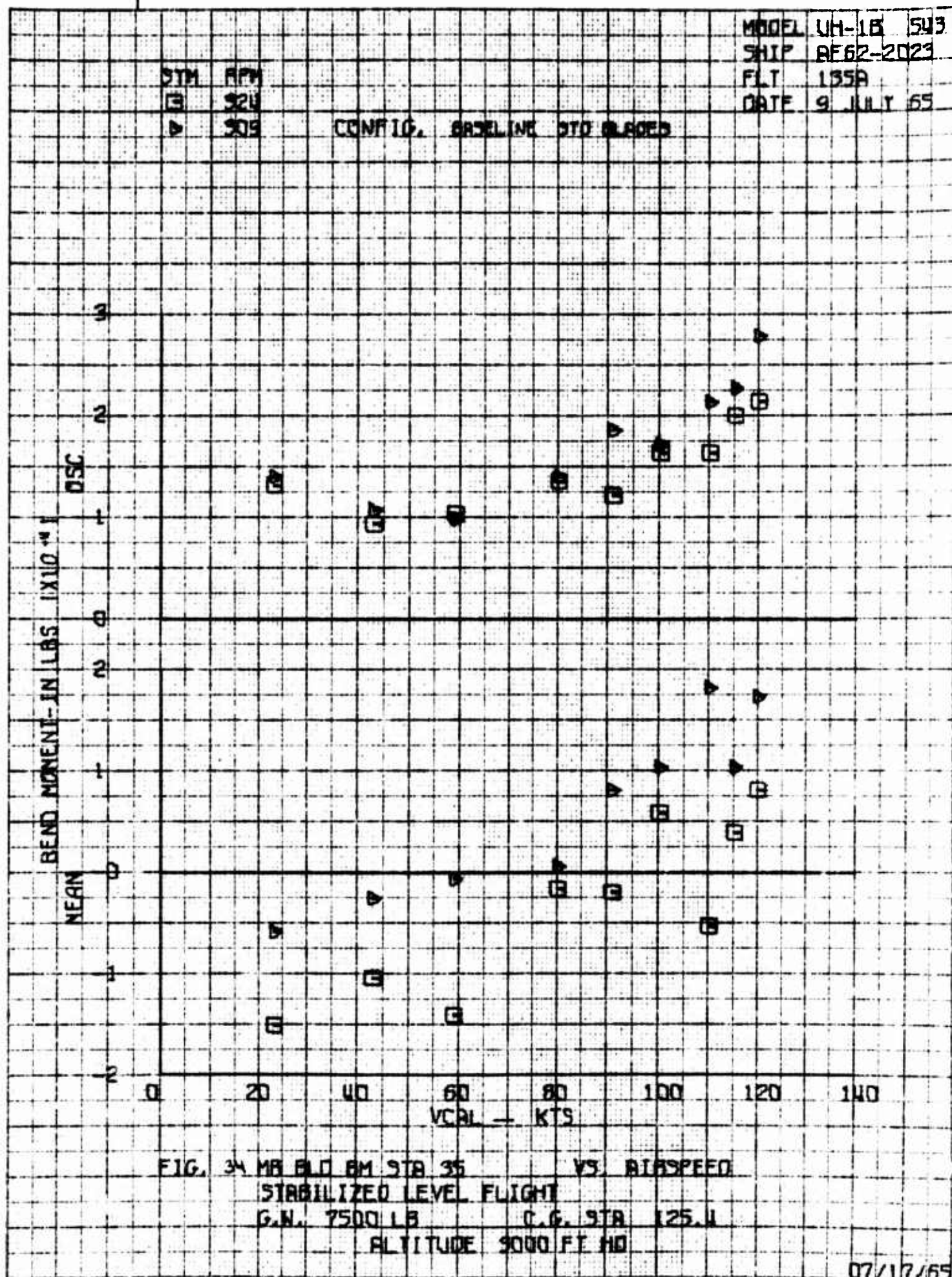


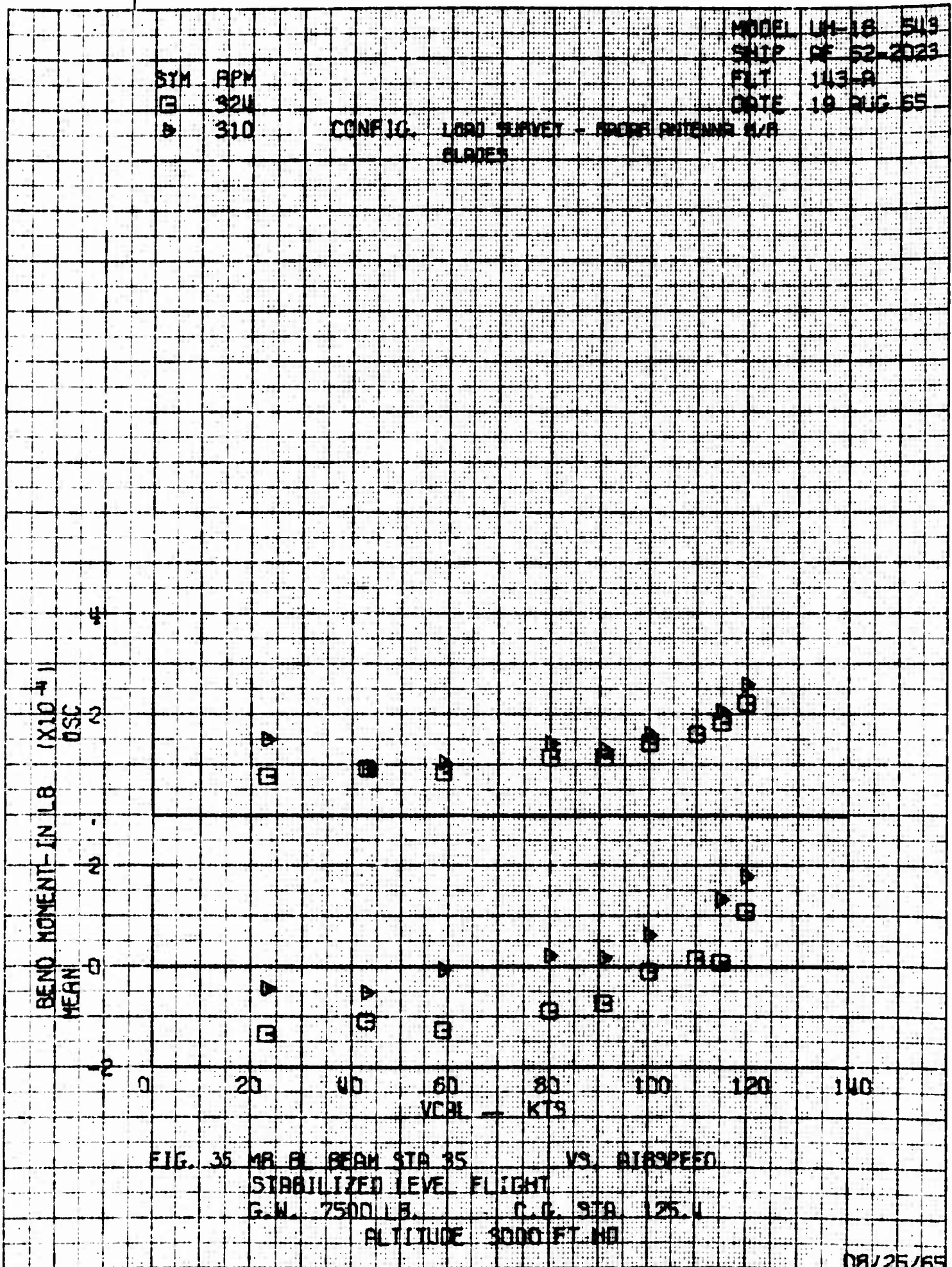
FIG. 31 MB YAKE BEAM STA 6 VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA 125.4
ALTITUDE 3000 FT MO

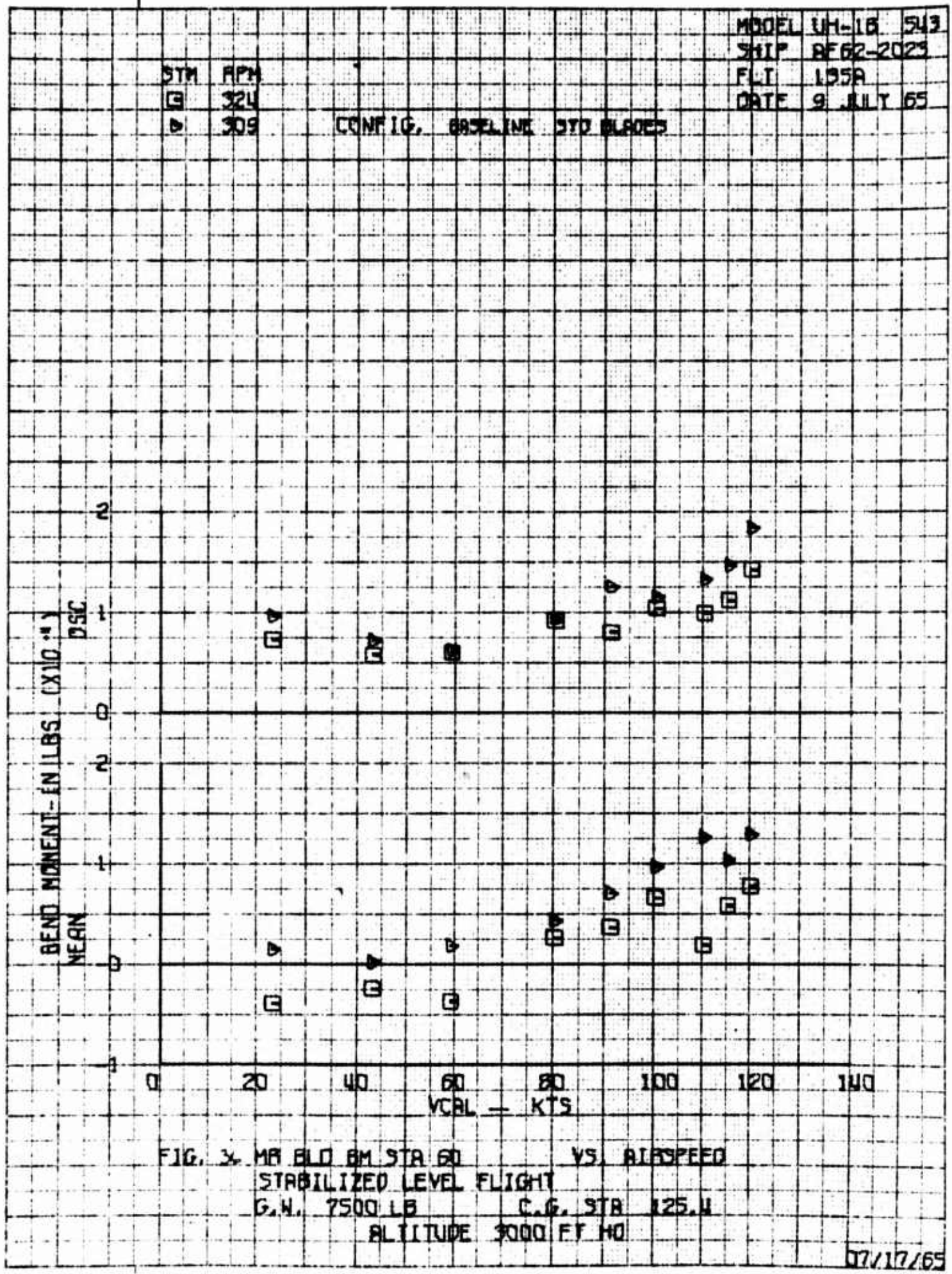
08/25/65











SYM RPM
□ 320
△ 310

CONFIG. LOAD SURVEY - REAR ANTENNA W/A
BLADES

MODEL UH-1B 543
SHIP AF 52-2023
FLT 143-A
DATE 19 AUG 65

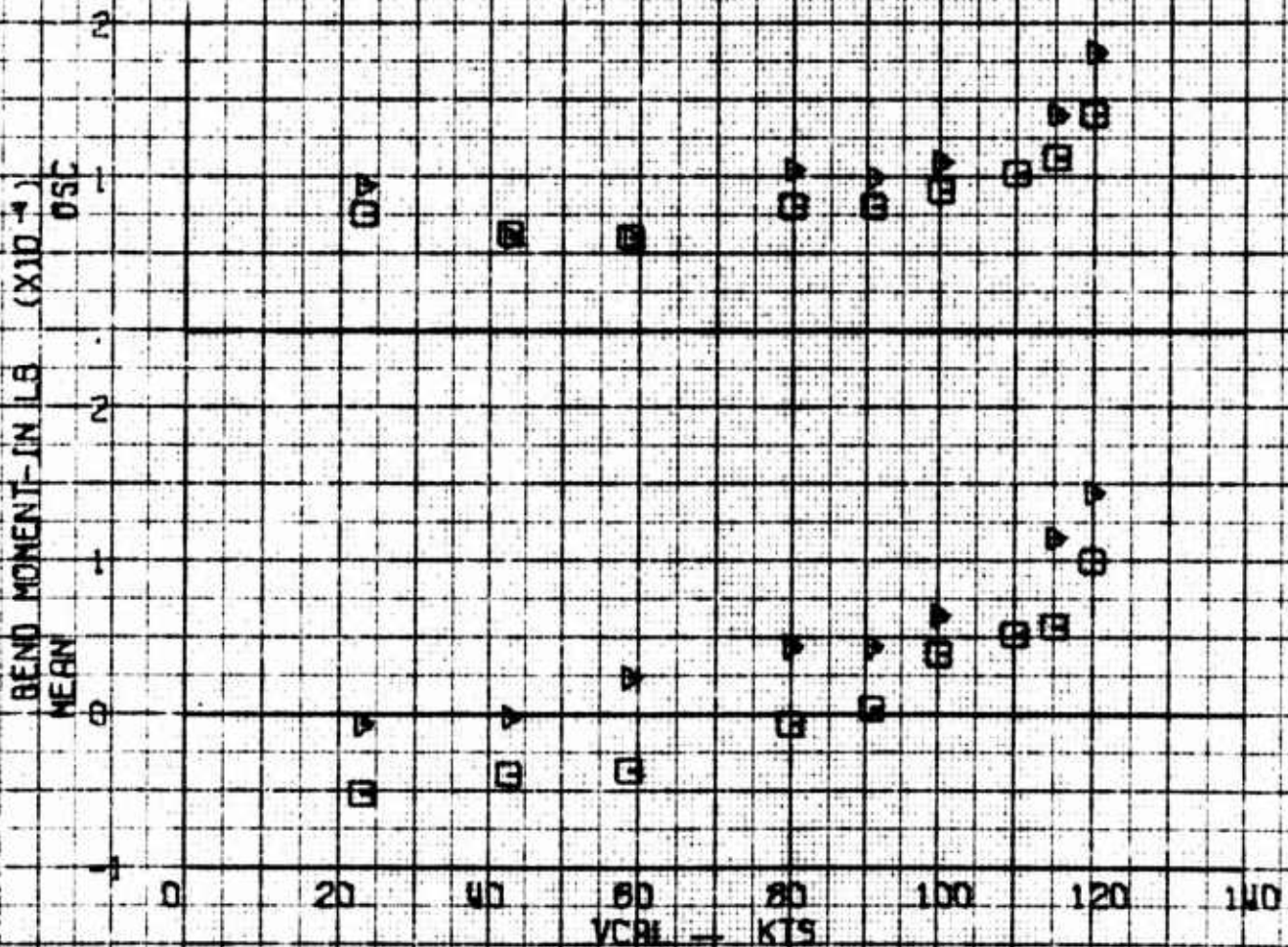
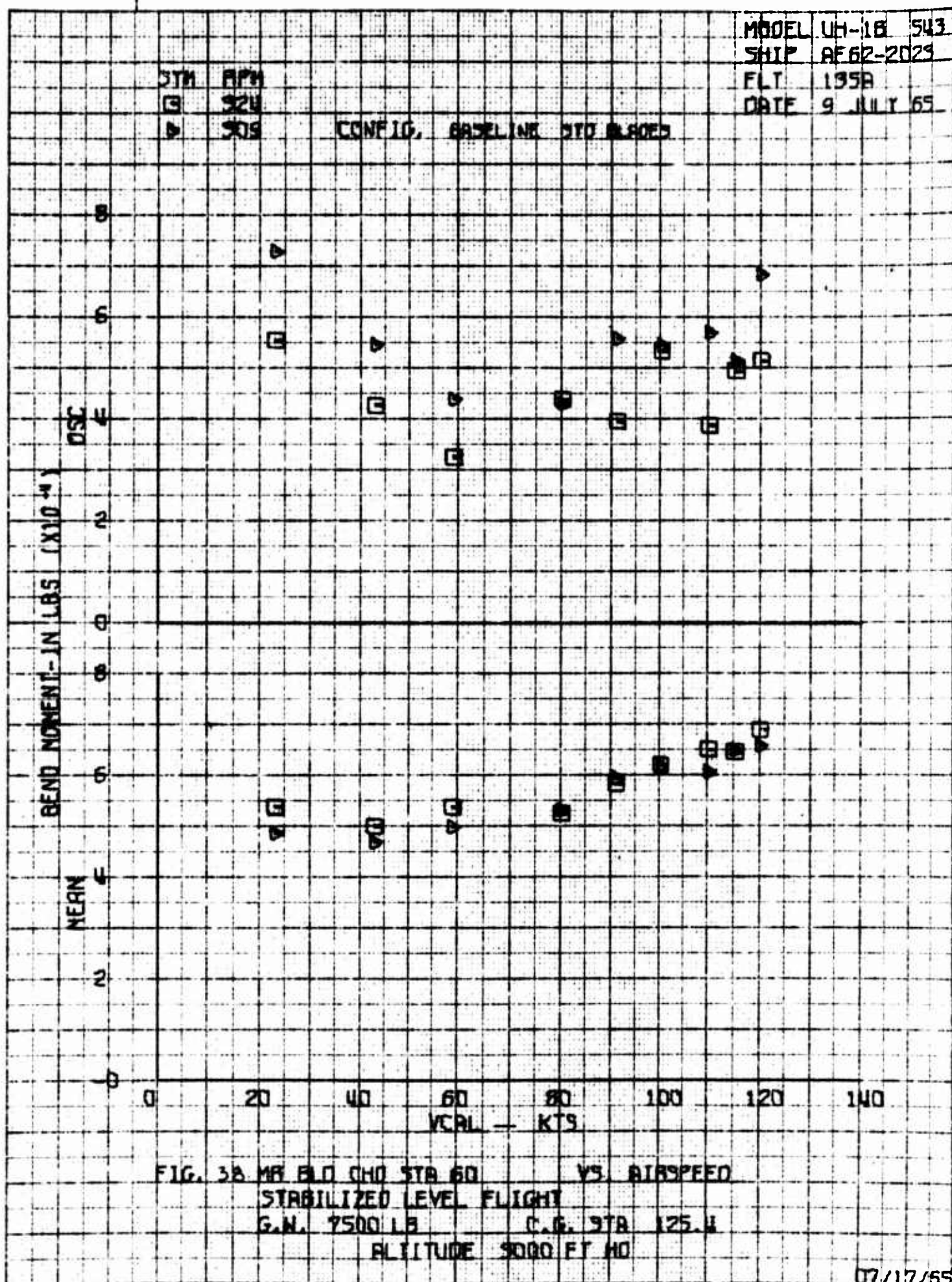
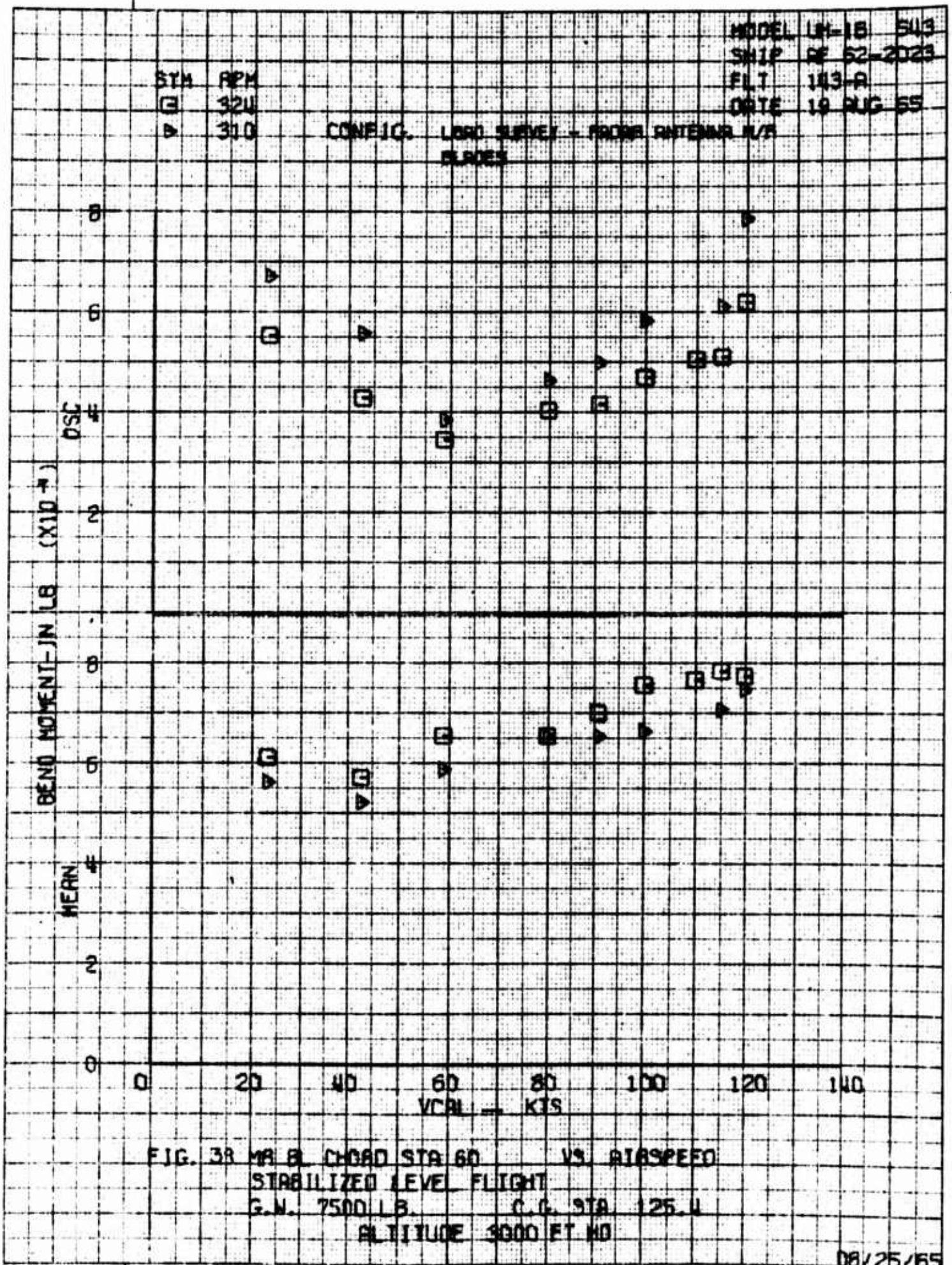


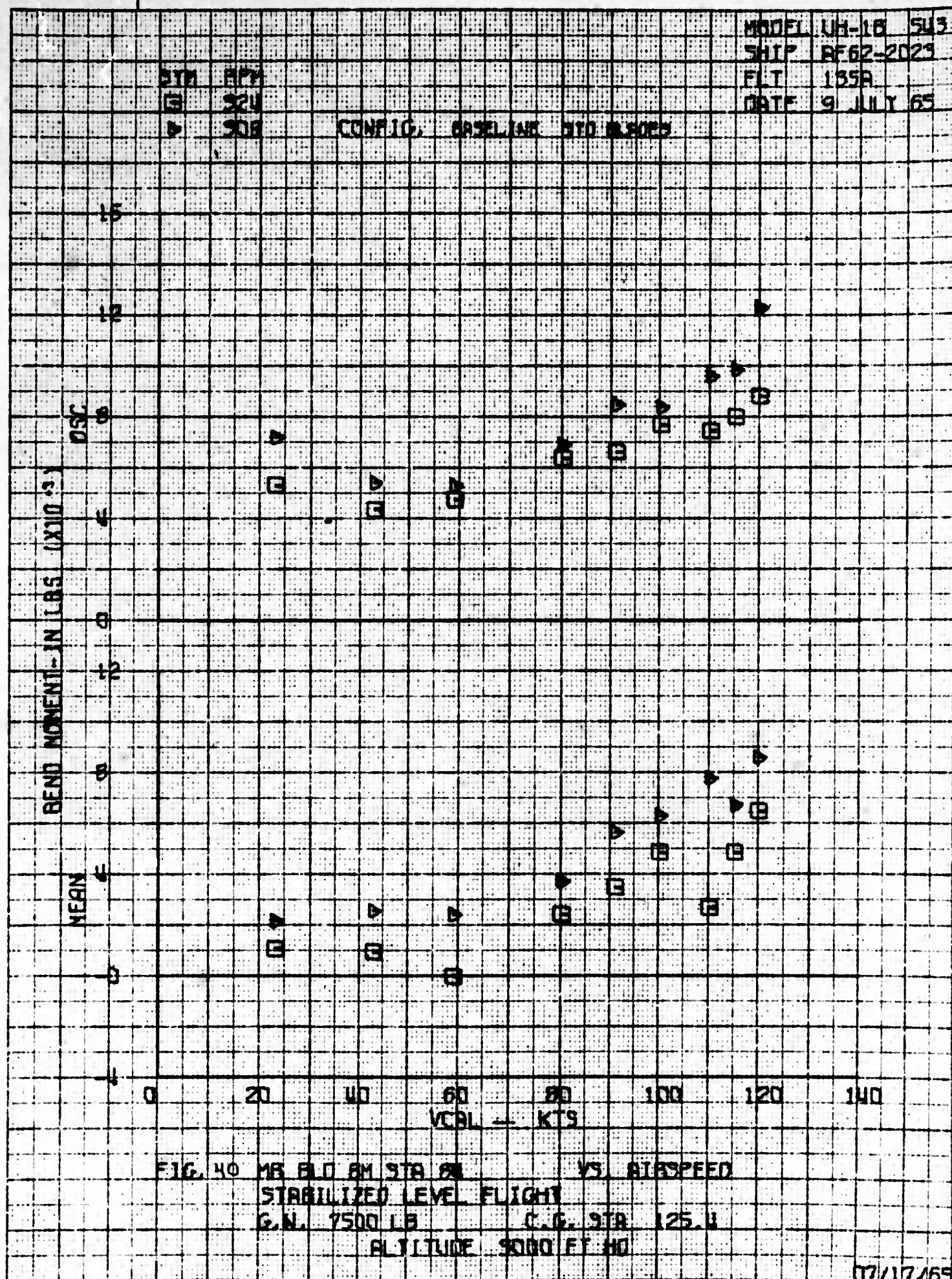
FIG. 31 MR BL BEAM STA 60 VS AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA 125.4
ALTITUDE 3000 FT MO

08/26/65



07/17/65





MODEL LH-1A 503
SHIP DE 52-2029
FLT 143-A
DATE 19 AUG 65

SYM RPM
E 320
D 310

CONF 1.0 LOAD 5.0000 - 5.0000 0.0000 0.0000
0.0000

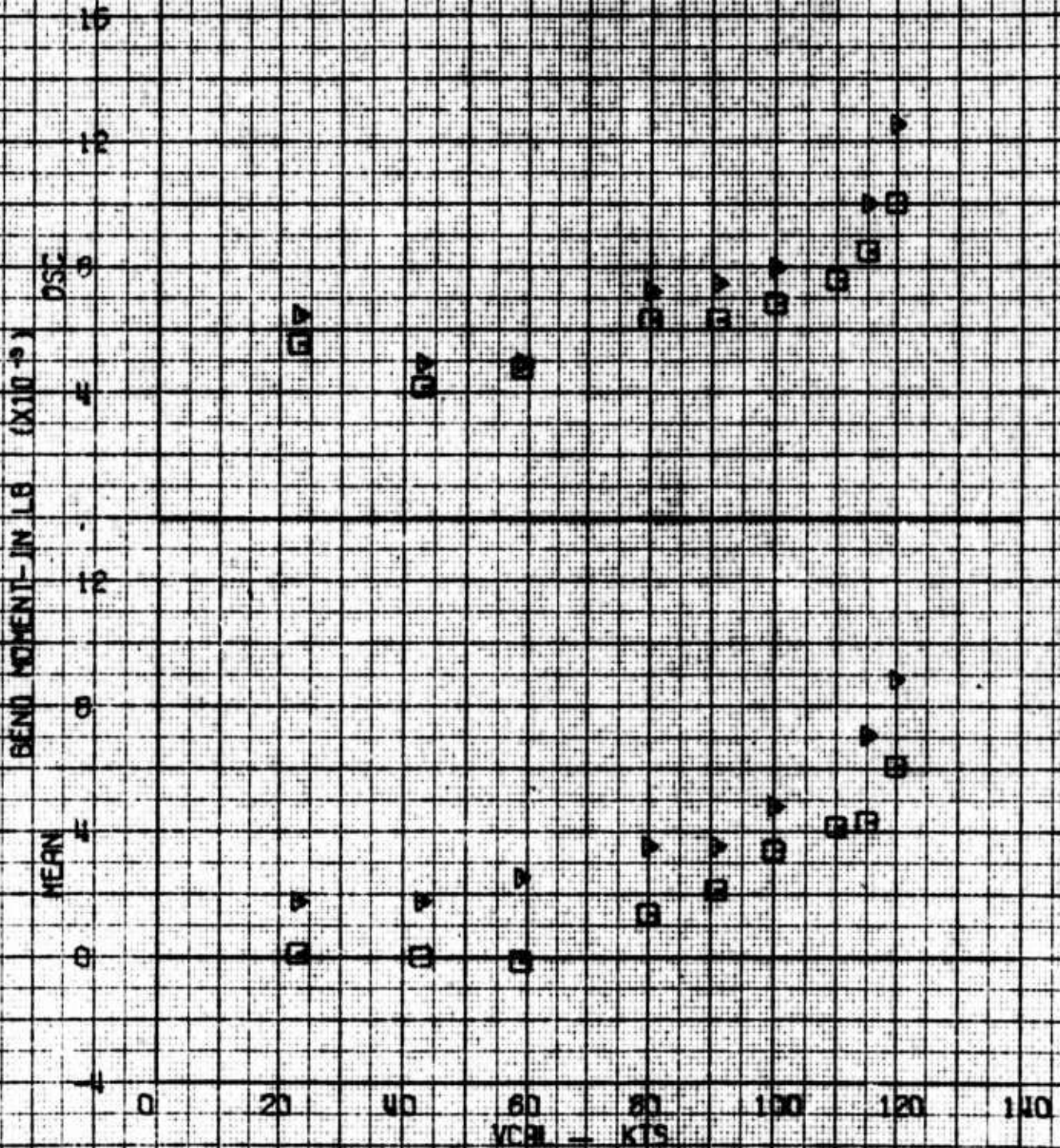


FIG. 40 MEAN BEAM STRESS VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 2500 LB. C.G. STA 125.0
ALTITUDE 3000 FT MO

08/25/65

MODEL UH-1B 543
SHIP AF62-2023
FLT 135A
DATE 9 JULY 65

STA 180
CG 125.1
W 7500

CONFIG. BASELINE DTG 06053

BEND MOMENT - IN LBS. (X10⁻³)

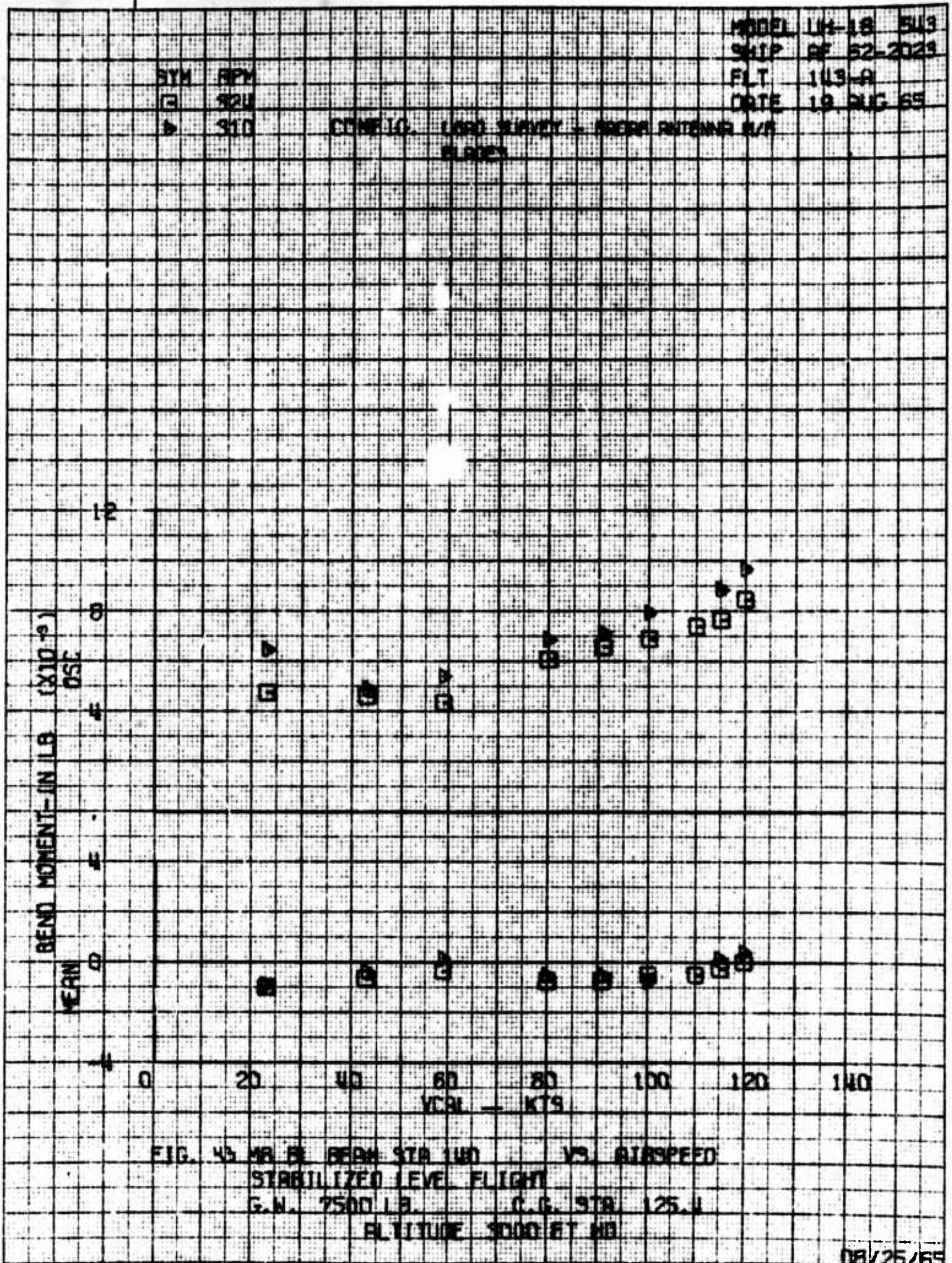
DSC

MEAN

0 20 40 60 80 100 120 140
VCRL - KTS

FIG. 41. MA BLD RM STA 180 VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB C.G. STA 125.1
ALTITUDE 3000 FT MO

07/17/65



08/25/65

MODEL UH-1B 543
 SHIP RF62-2023
 FLT 135A
 DATE 9 JULY 65

STA 874
 324
 303

CONFIG. BASELINE STD BLADES

BEND MOMENT - IN LBS (X10⁻⁴)
 OSC
 MEAN

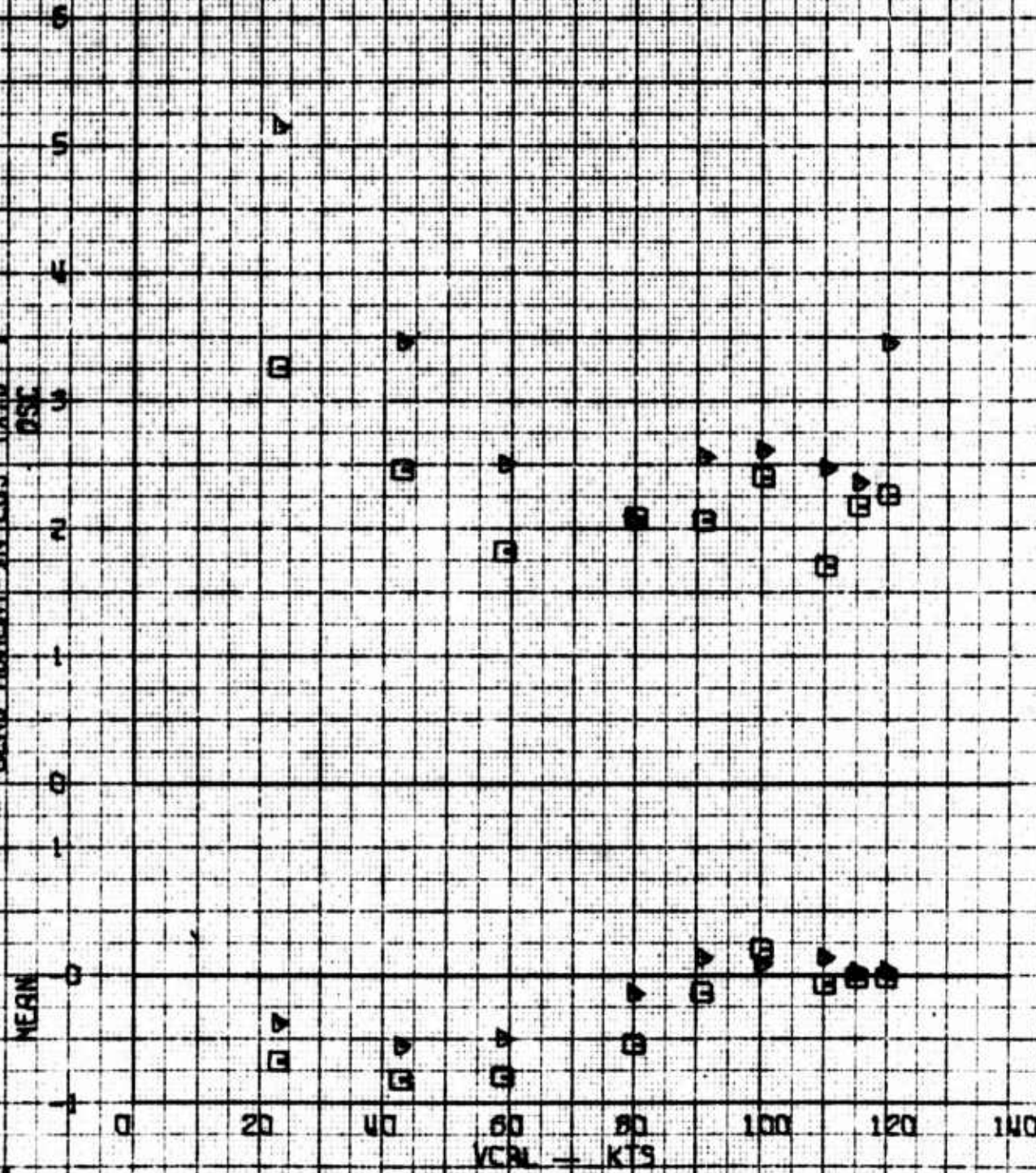
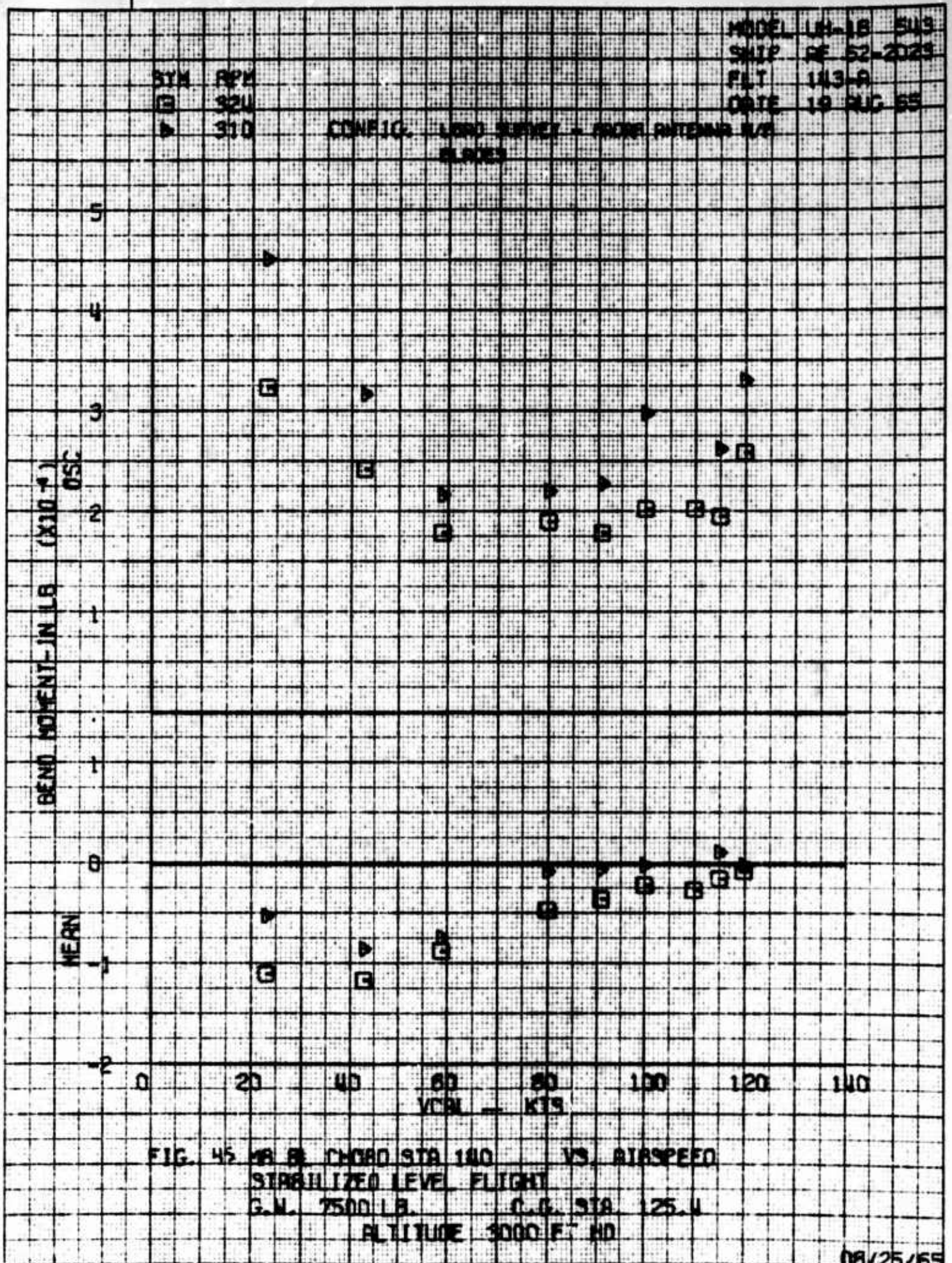


FIG. 44 MB BLD CHD STA 140 VS AIRSPEED
 STABILIZED LEVEL FLIGHT
 G.W. 7500 LB C.G. STA 125.4
 ALTITUDE 3000 FT MO

07/17/65



SYM RPM
G 324
D 309

CONFIG. BASELINE STD BLADES

MODEL UH-1B 543
SHIP AF62-2023
FLT 135B
DATE 9 JULY 65

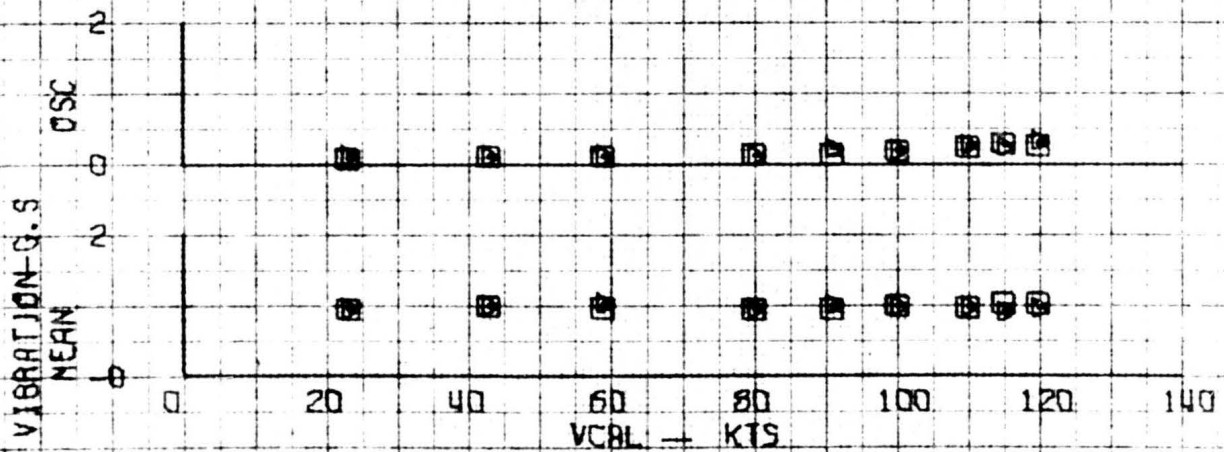


FIG. 46 PILOT VERT ACCEL VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB C.G. STA 133.2
ALTITUDE 3080 FT MD

07/17/65

SYM RPM
E 324
D 310

CONFIG. LONG SURVEY - RADAR ANTENNA R/A
CLOSED

MODEL IN-1A 543
SHIP ST 52-2023
FLT 143-A
DATE 18 AUG 65

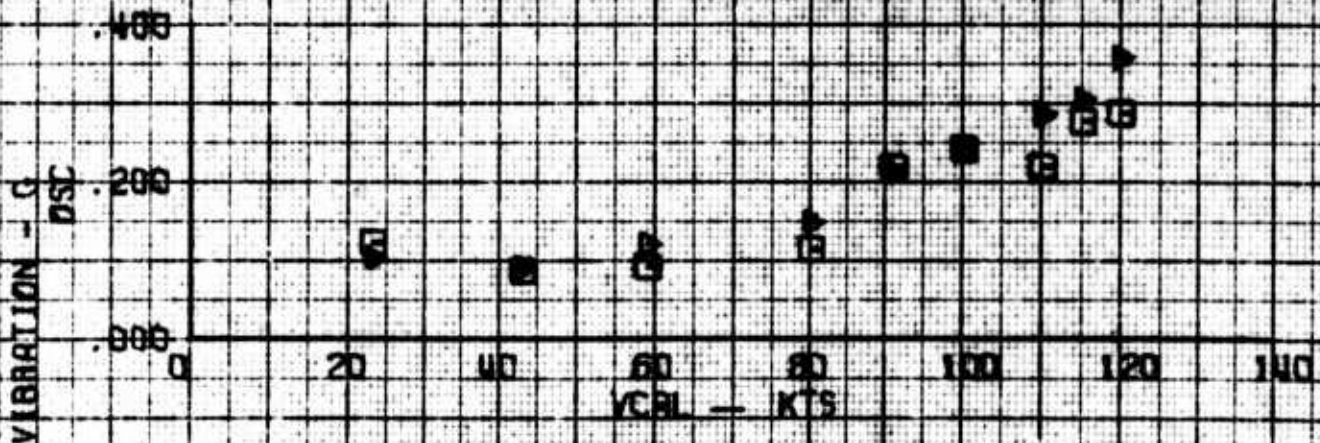


FIG. 47 PILOT VIB VIBRATION VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA. 139.2
ALTITUDE 3000 FT MO

08/25/65

MODEL UH-1B 503
SHIP BF62-2023
FLT 1358
DATE 9 JUL 55

STN RPM
G 320
B 308

CONFIG. BASELINE 310 BLADES

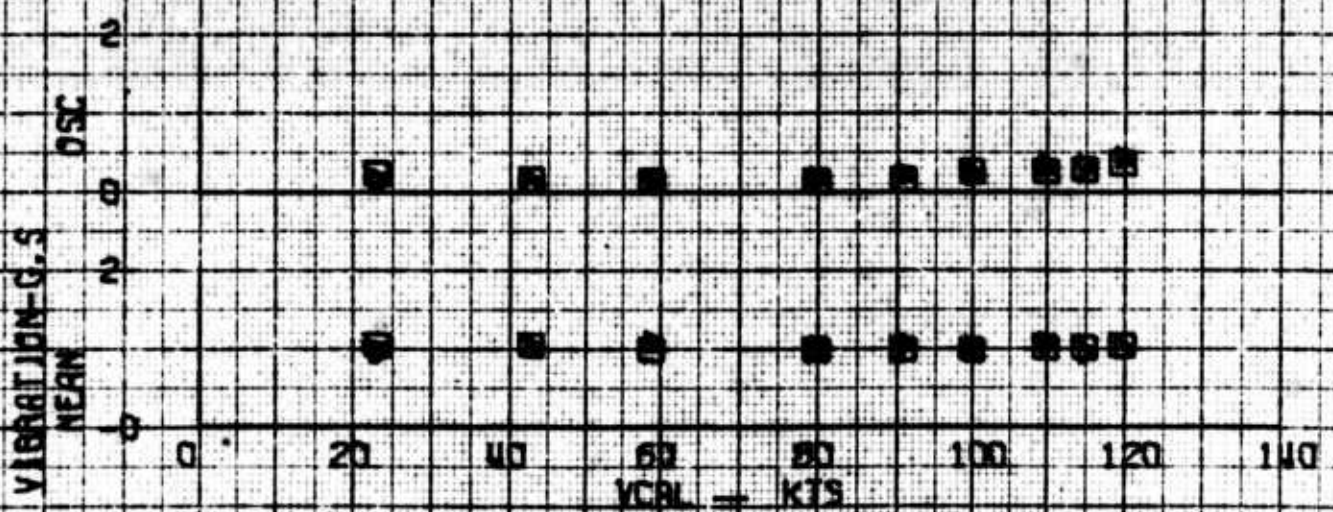


FIG. 48 CO-PILOT VERT ACCEL VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB C.G. STA 155.2
ALTITUDE 5000 FT MO

07/17/55

MODEL UH-1B 543
SHIP SF 82-2025
FLT 113-B
DATE 18 AUG 65

SYM RPM
G 920
D 910

CONF IG. 1000 LB WT - 10000 FT ALT
ALONE

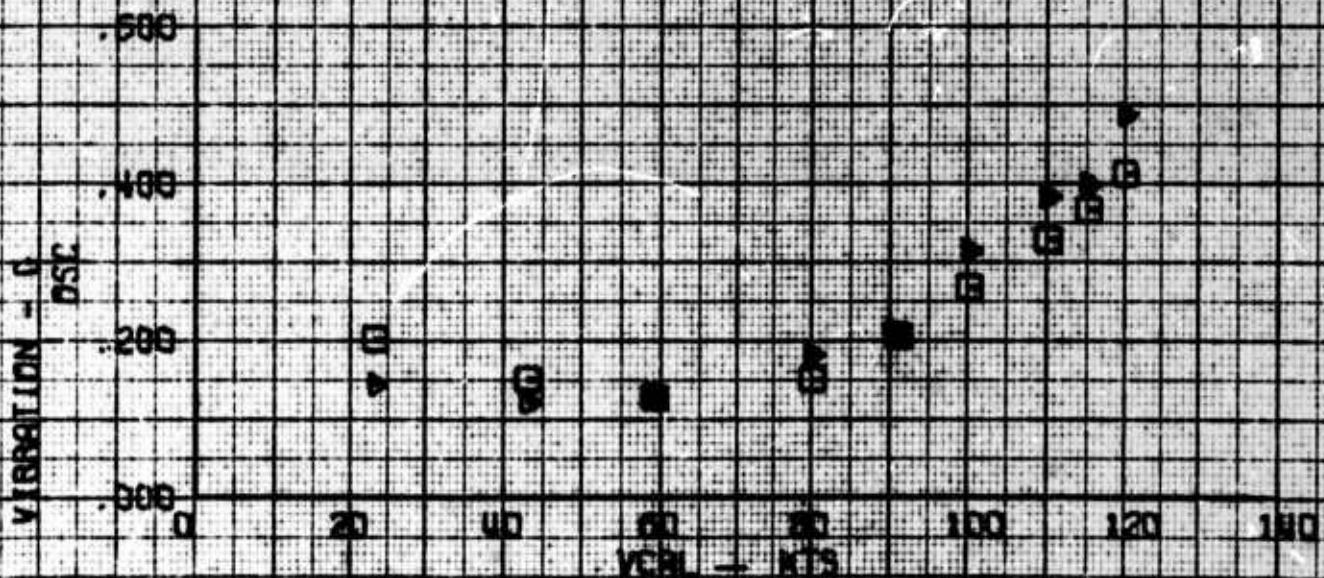


FIG. 49 CO-PILOT VERT VIBR VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA 133.2
ALTITUDE 5000 FT MO

08/25/65

MODEL UH-1B 503
SHIP BF62-2029
FLT 135B
DATE 9 JULY 55

STA 170
LG 320
S 309

CONFIG. BASELINE DTG 06023

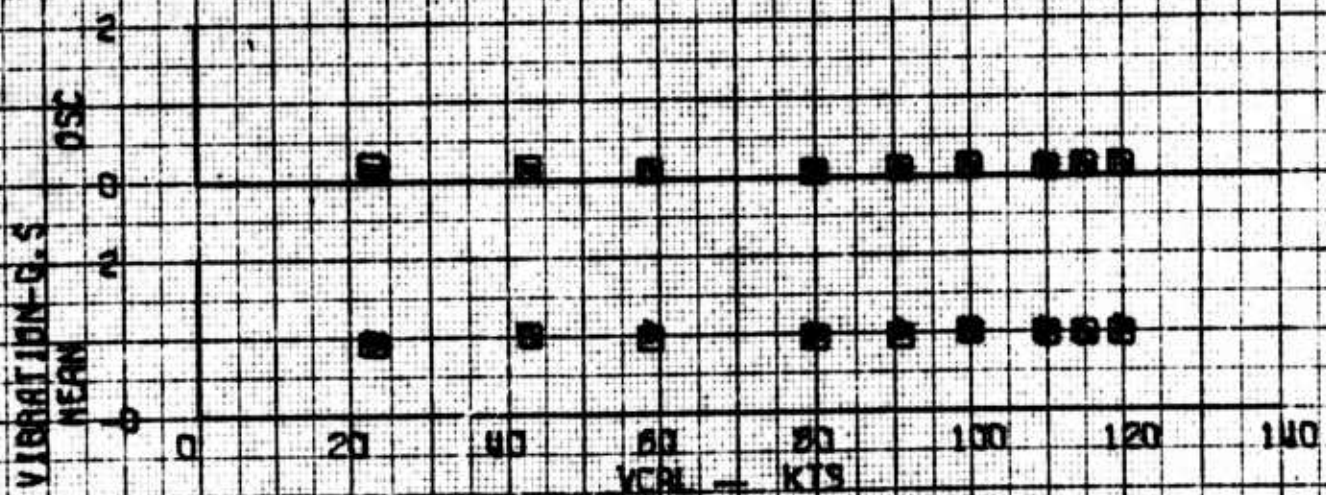


FIG. 50 C.G. VERT ACCEL VS AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB C.G. STA 155.2
ALTITUDE 3000 FT NO

07/17/65

SYM RPM
E 320
D 310

CONF IG. 1000 SURVEY - ANOMAL ANTENNA 4/8
A 0023

MODEL UH-1B 543
SHTF DT 52-2020
FLT 143-8
DATE 19 AUG 85

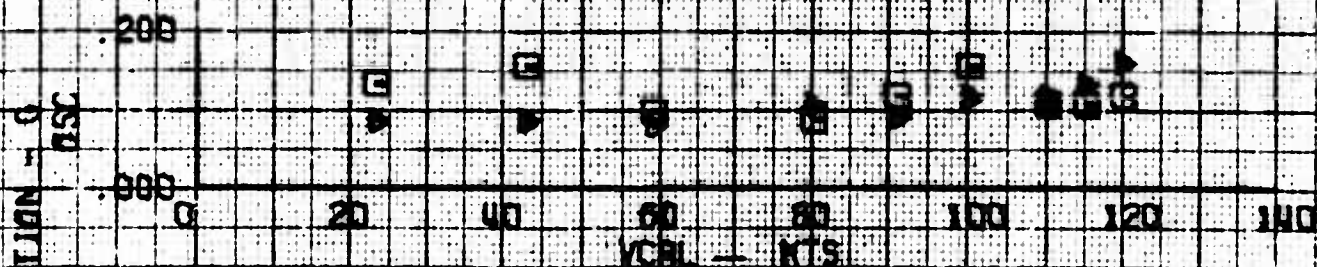
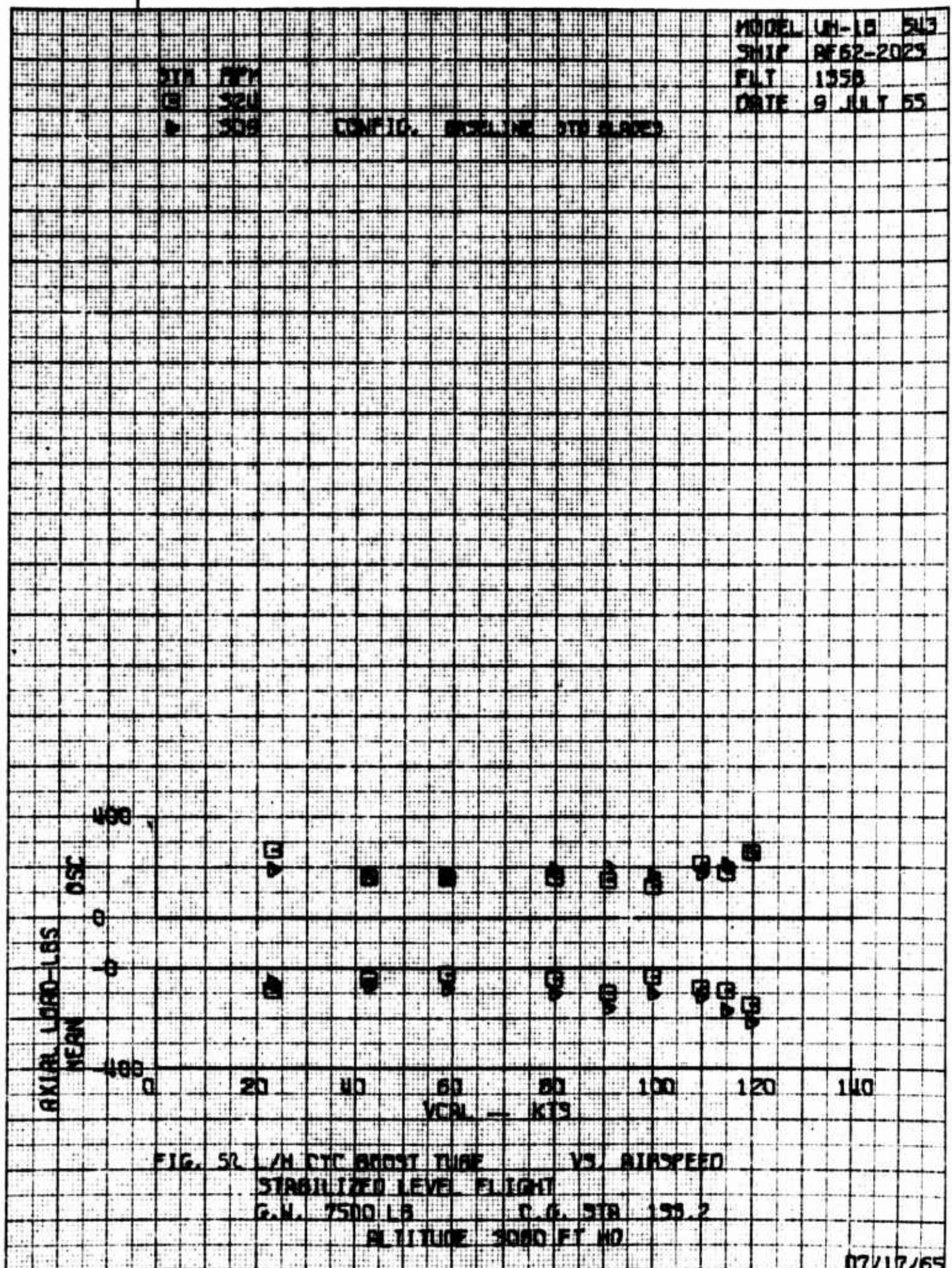


FIG. 5 CG VERT VIBRATION VS AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA 133.2
ALTITUDE 3000 FT MO

08/25/85



07/17/65

SYM RPM
G 920
D 910

CONF IG. 1000 SURVEY - RECORD ANTENNA 1/1
AL 2023

MOON LH-1B 543
SHIP DF 52-2029
FLT 143-B
DATE 18 AUG 65

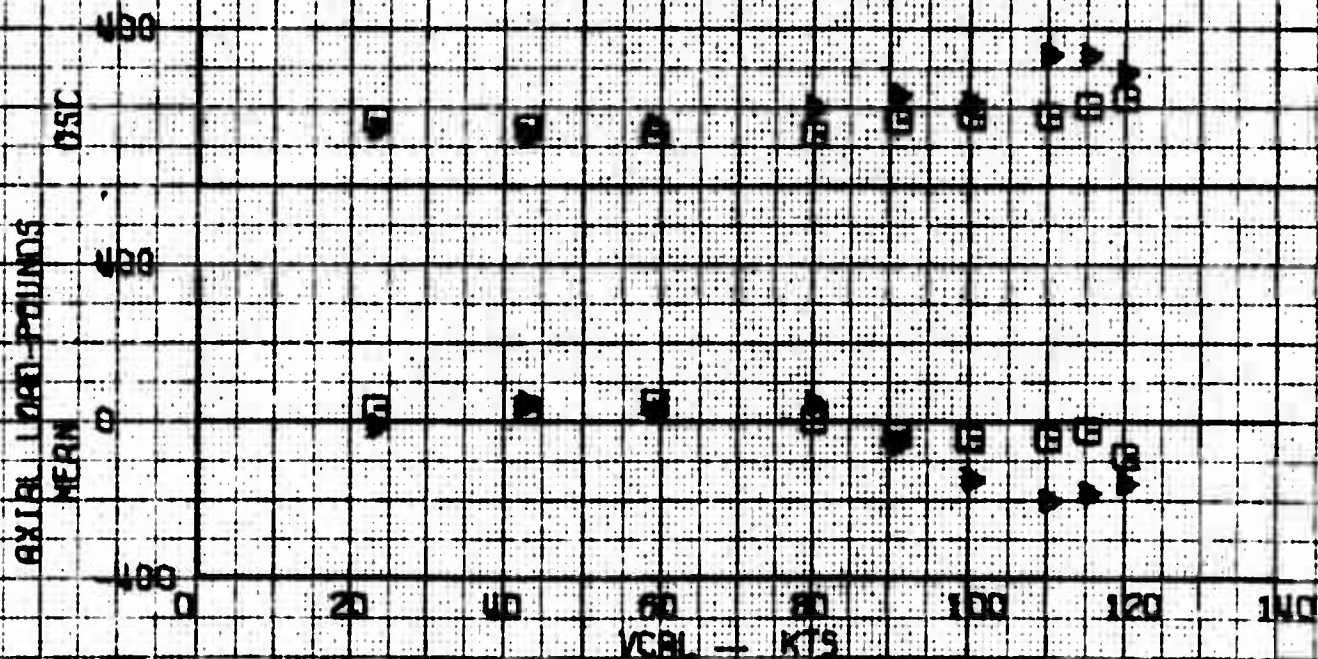


FIG. 33 L/H CIC BOOST TUBE VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA. 193.2
ALTITUDE 9000 FT MO

08/25/65

MODEL UH-1B 543
SHIP AF62-2023
FLT 1356
DATE 9 JUL 55

STA 324
324
309

CONFIG. BASELINE 010 BLADES

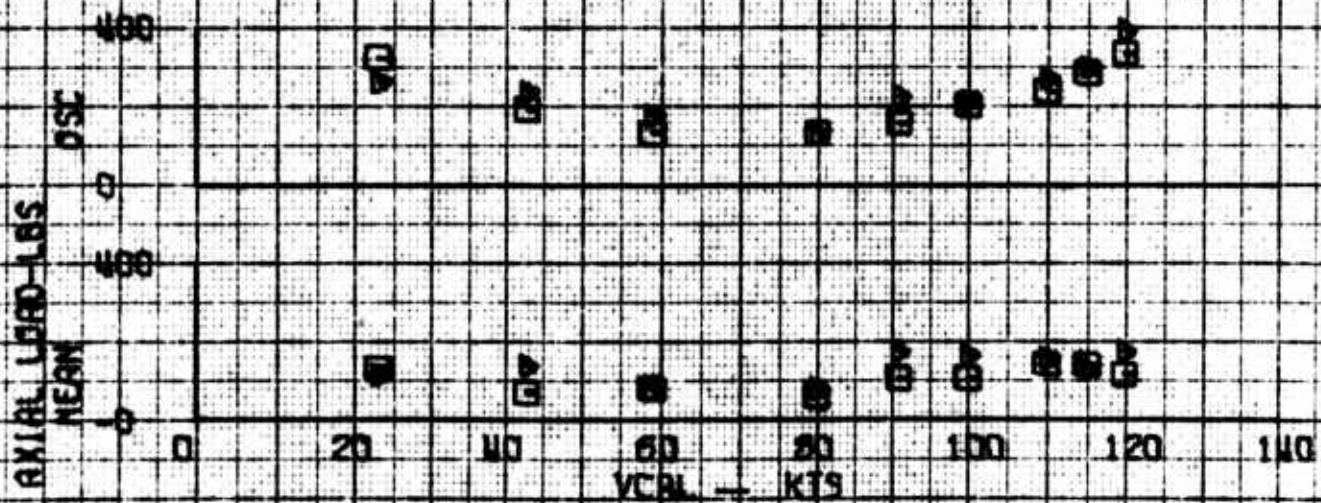


FIG. 54 A/H CTC BOOST TIME VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB C.G. STA 193.2
ALTITUDE 5000 FT MO

07/17/65

SYM RPM
G 320
D 310

CONFIG. 1000 SURVEY - ACROSS ANTENNA 8/0
SLIPDS

MODEL UH-1B 543
SHIP BF 52-2029
FLT 143-B
DATE 18 AUG 65

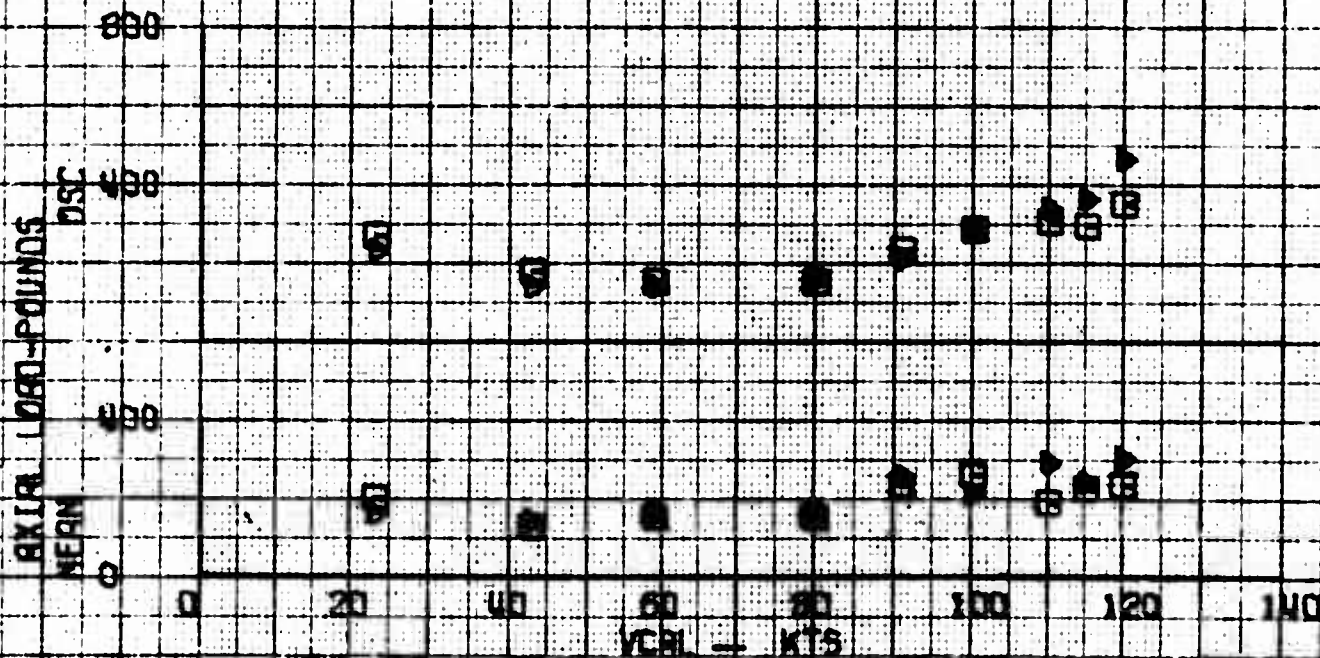
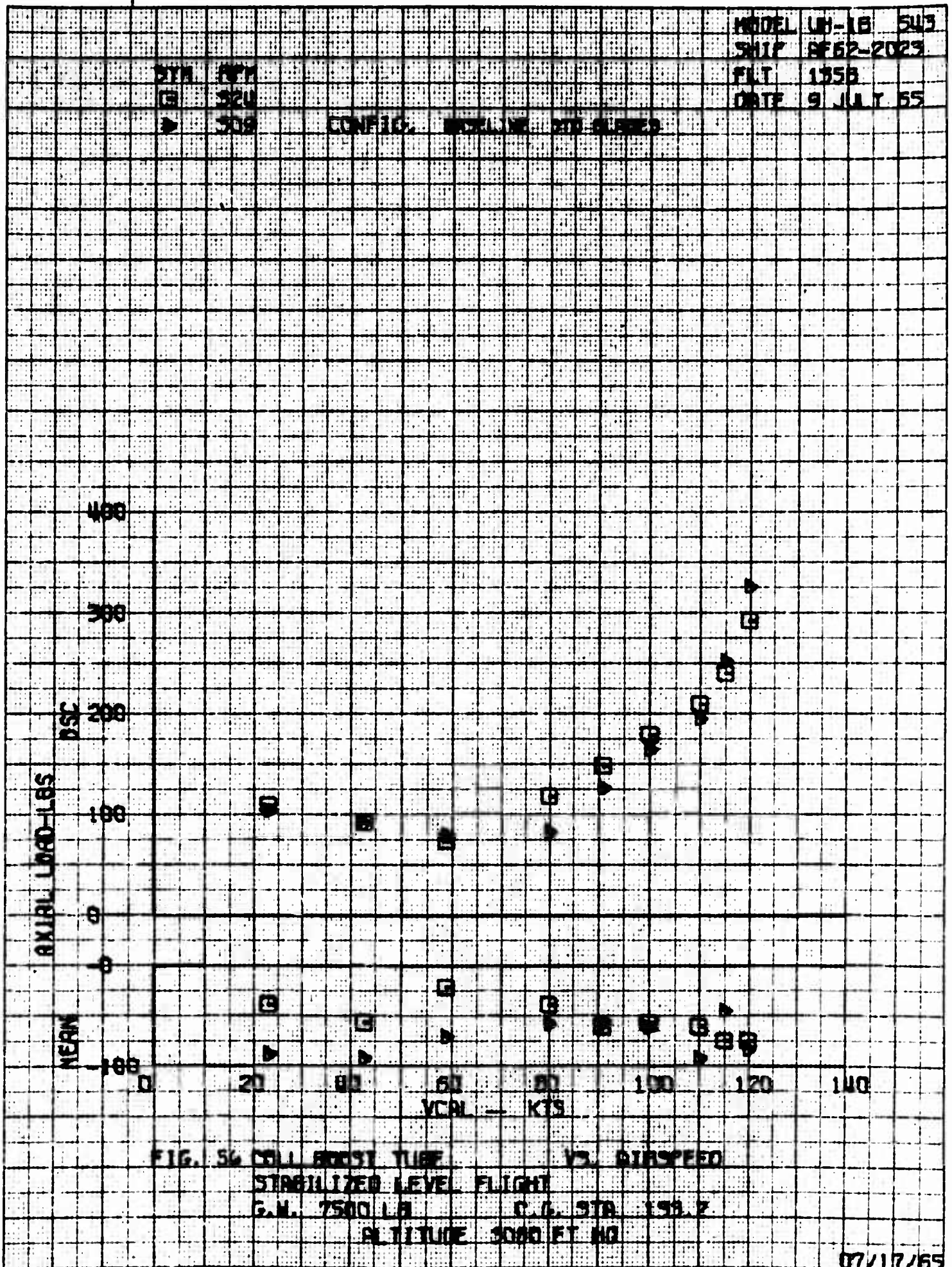
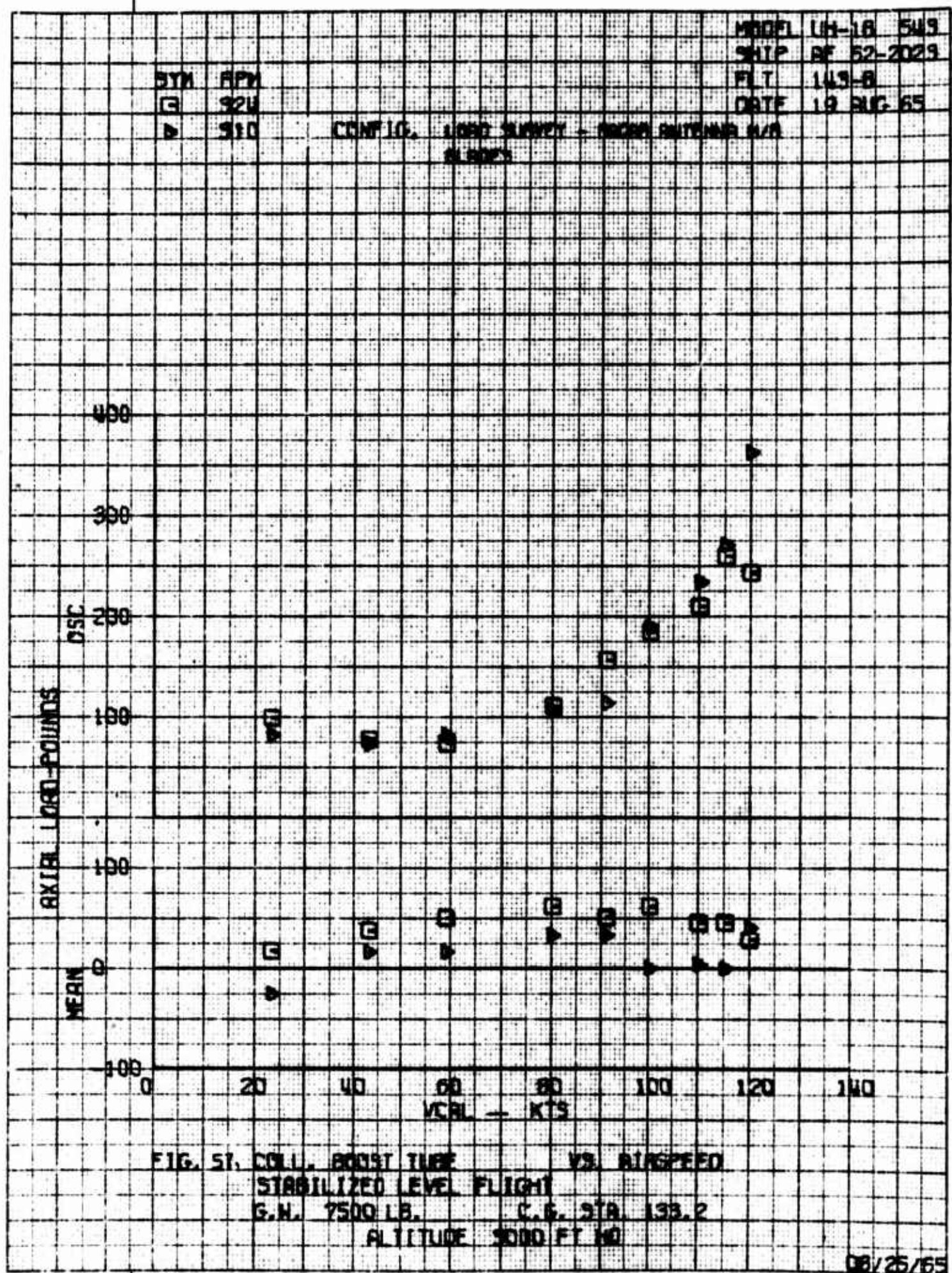


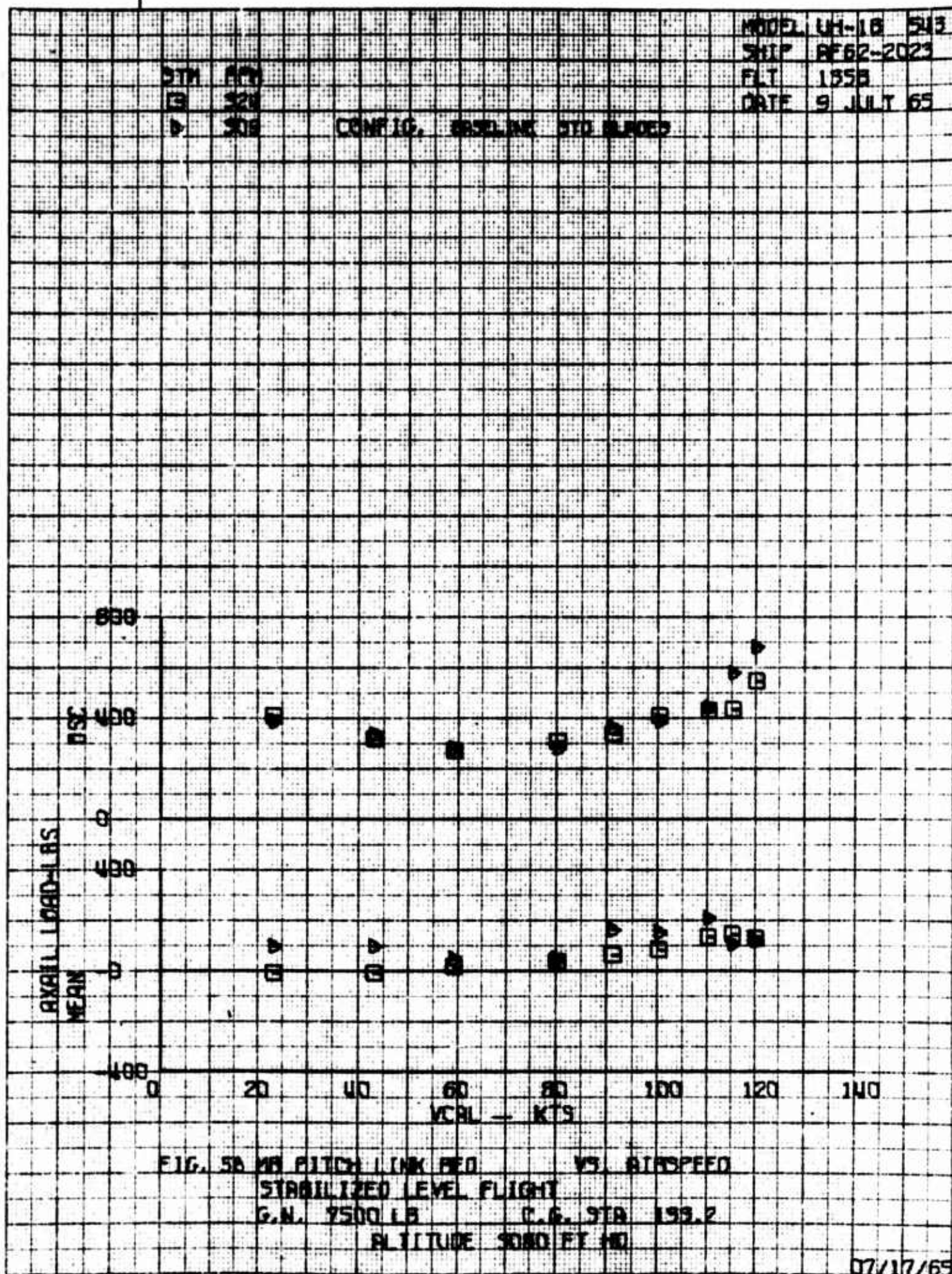
FIG. 55 A/H CTC BOOST TUBE VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA. 133.2
ALTITUDE 3000 FT MO

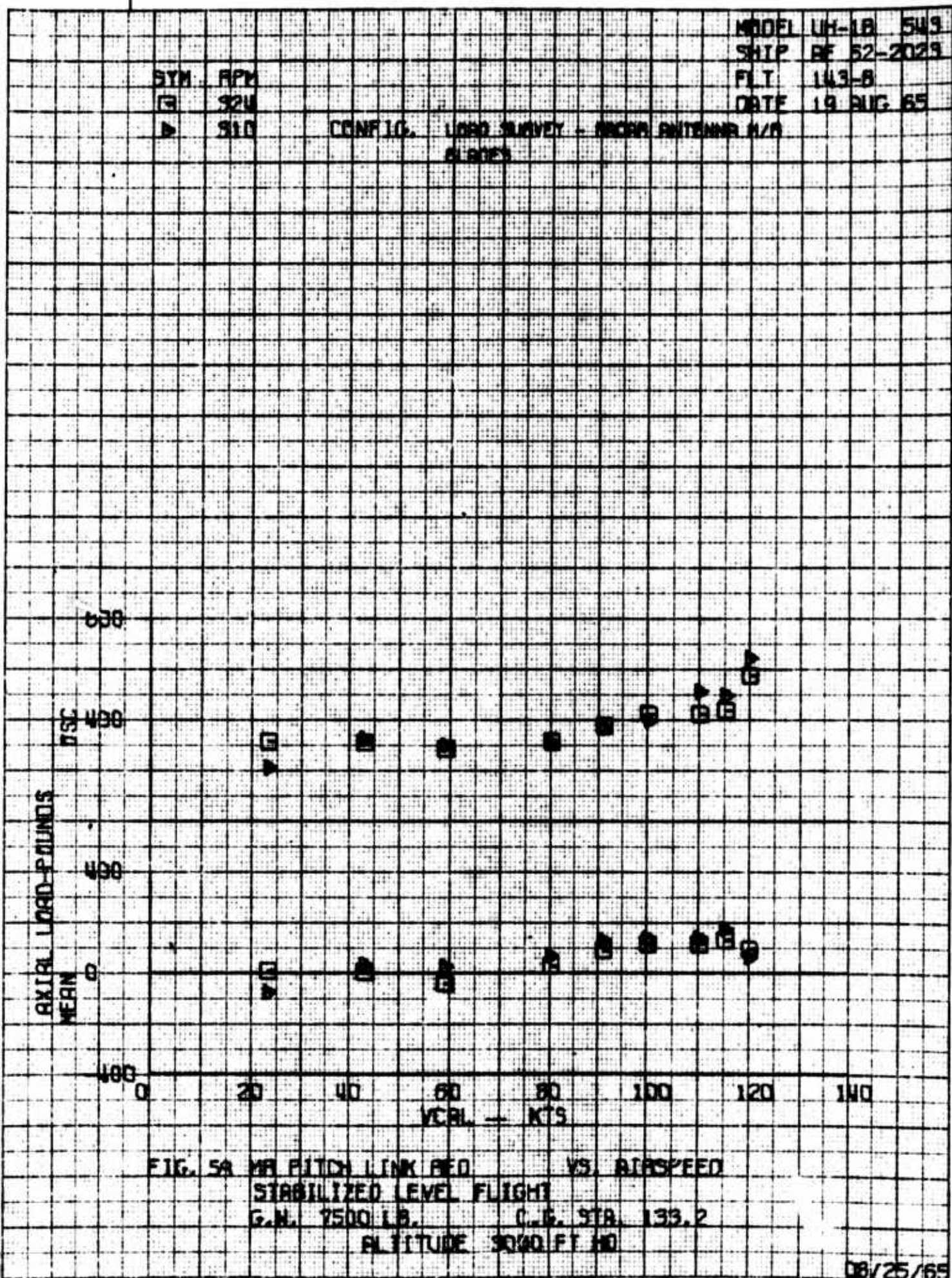
08/25/65

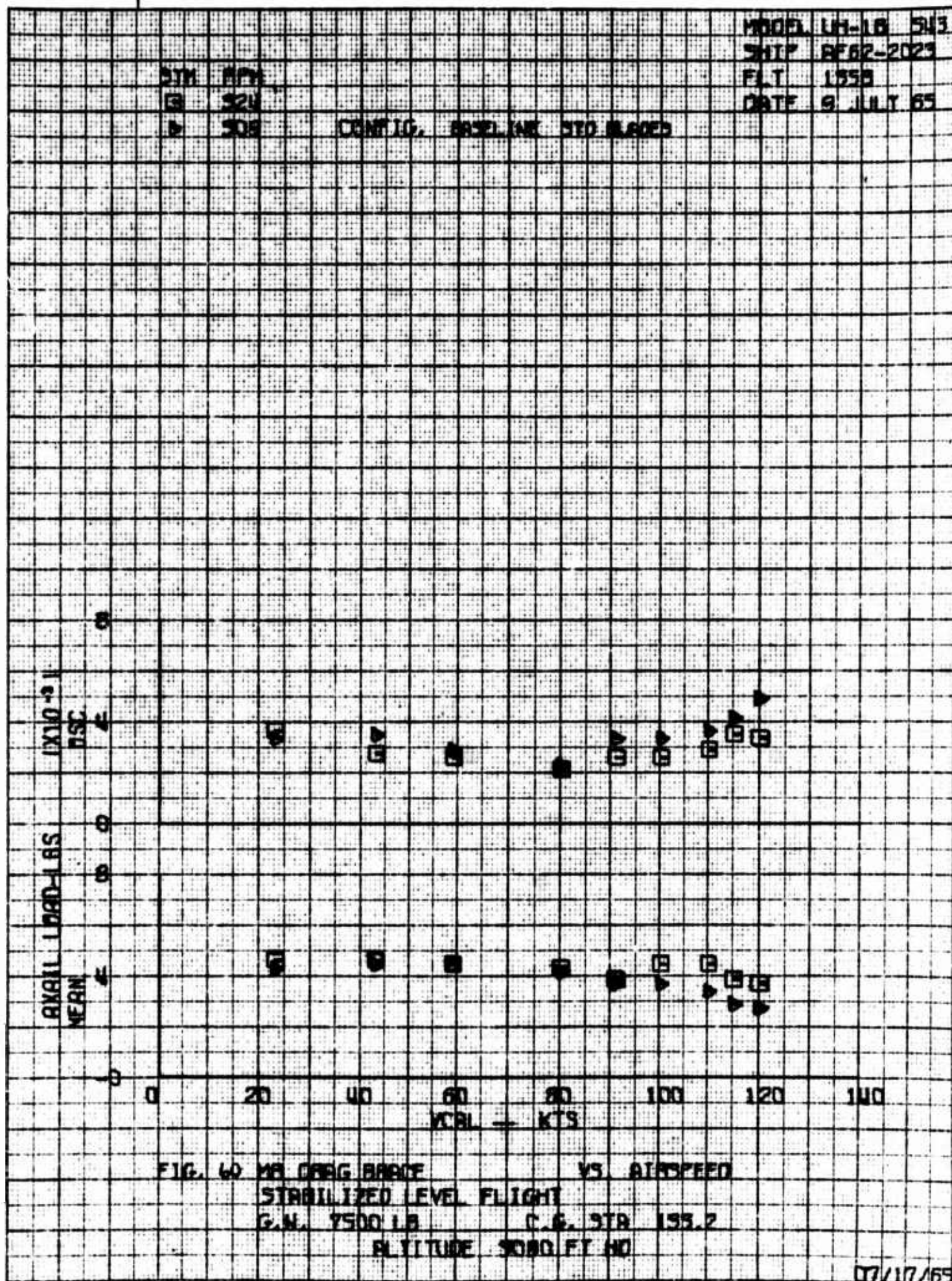


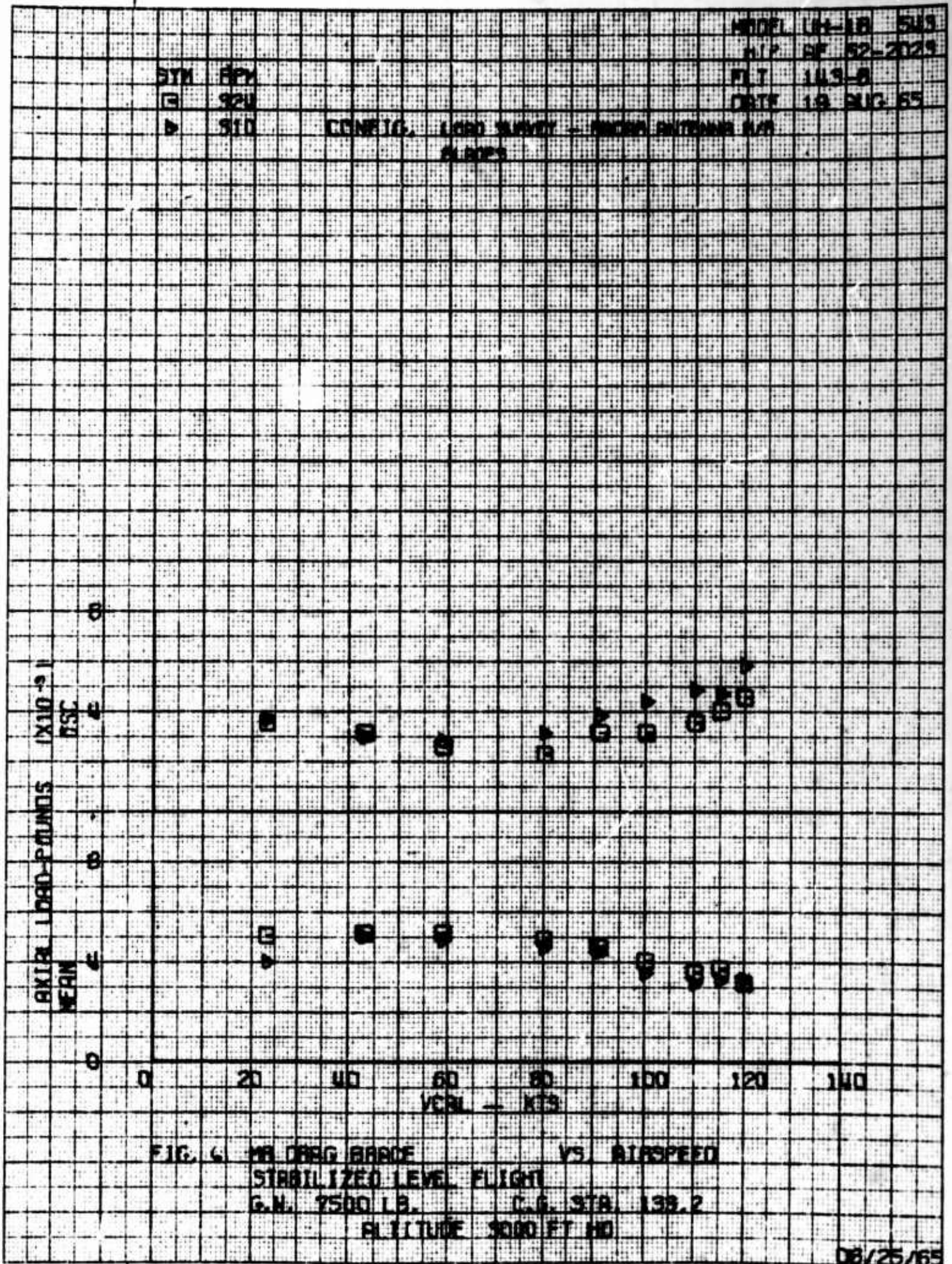


08/25/65









STA RPM
IG 320
B 309

CONFIG. MICELINE DTD 0.0000

MODEL UH-1B 543
SHIP AF62-2023
FLT 1358
DATE 9 JULY 65

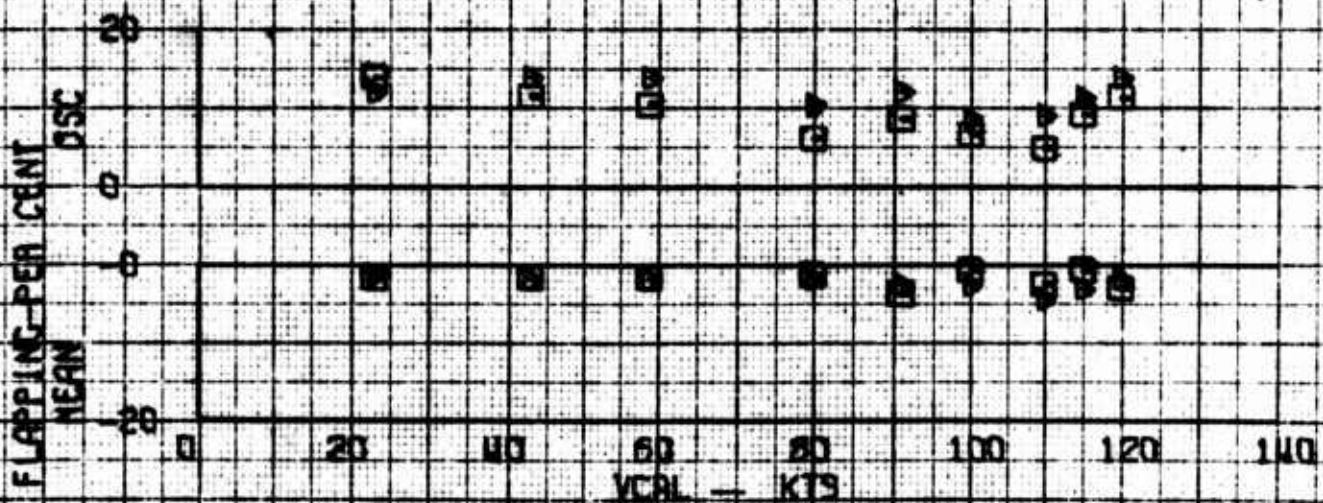
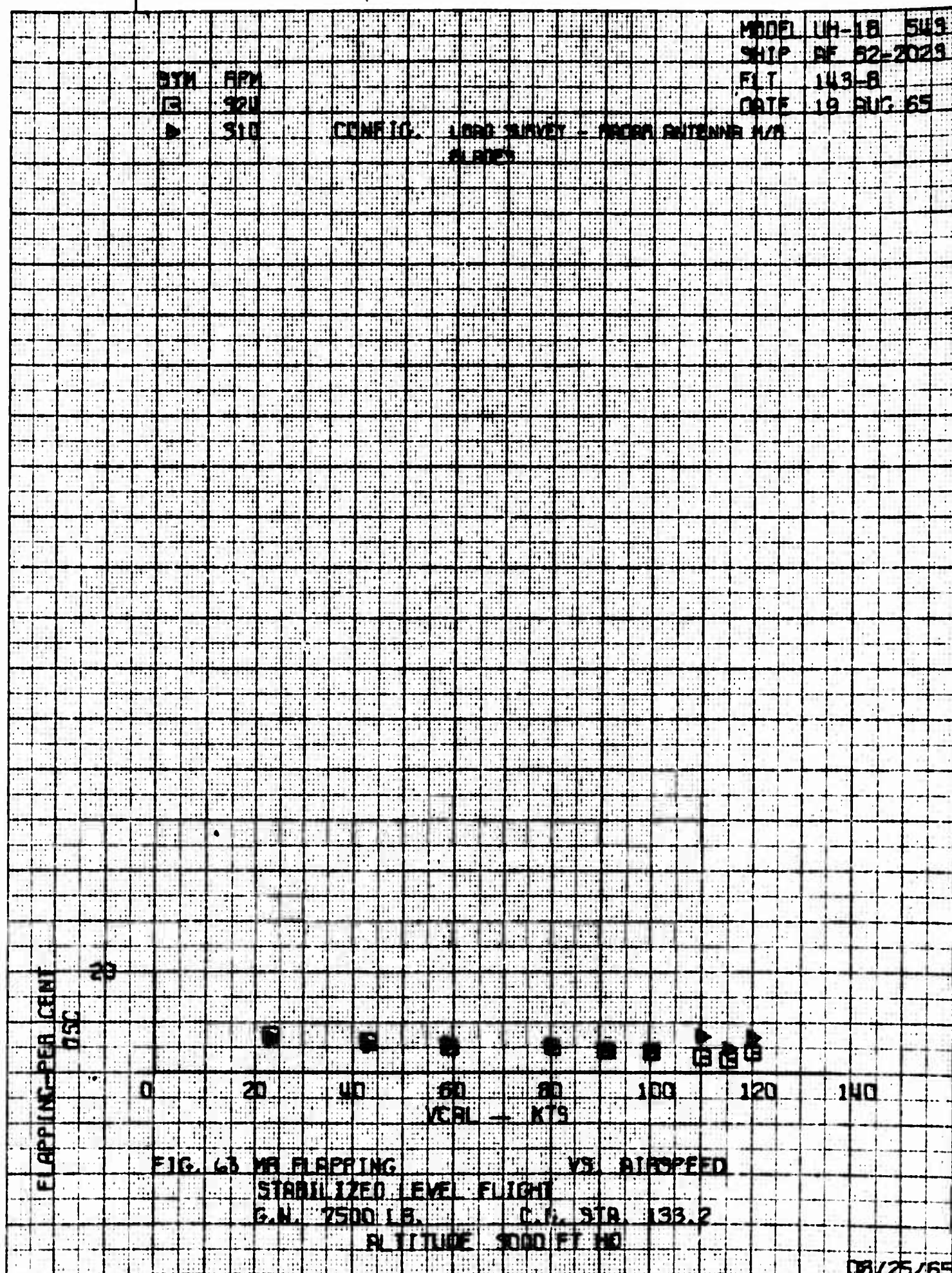
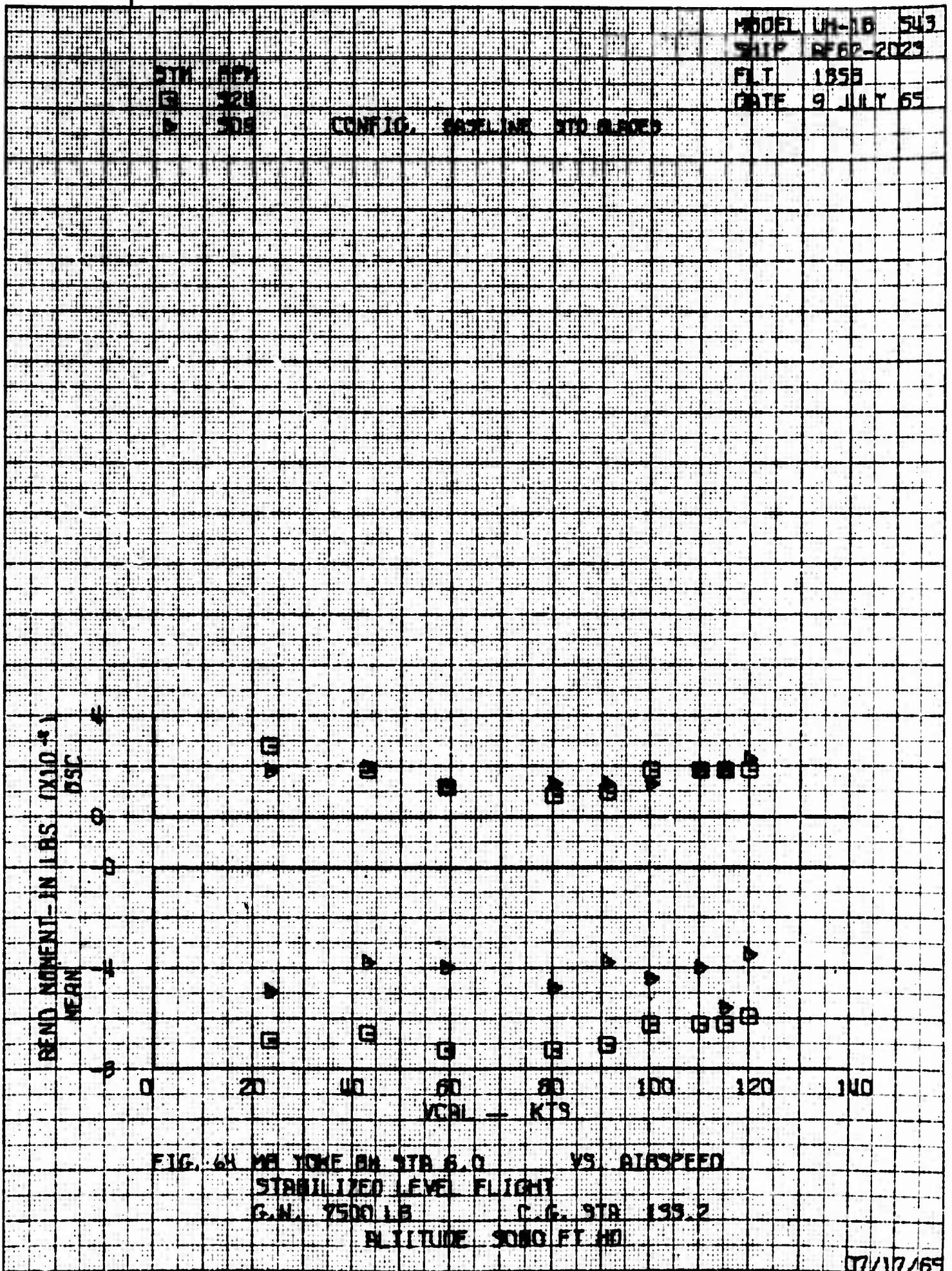


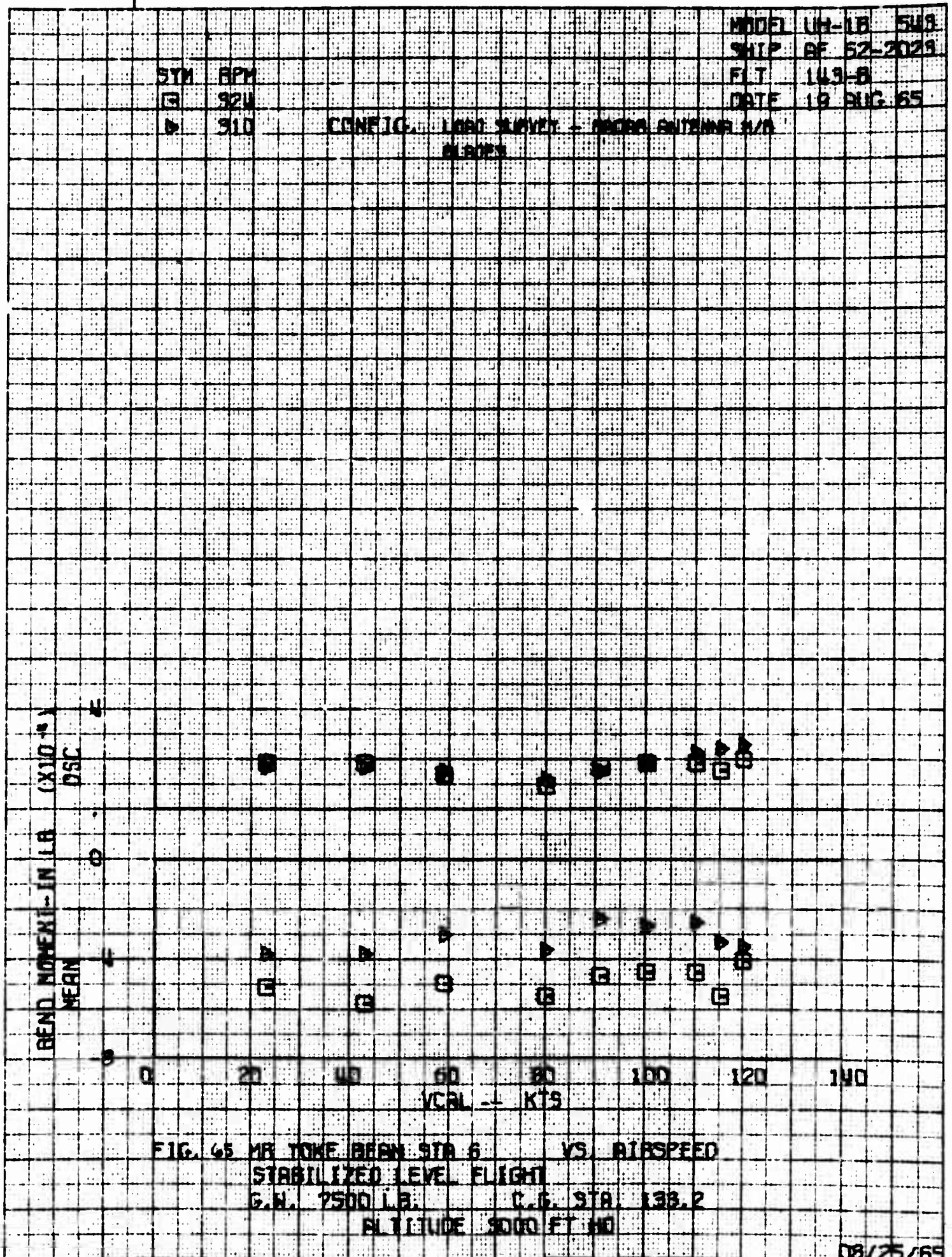
FIG. 42. H8 FLAPPING VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB C.G. STA 193.2
ALTITUDE 3000 FT MO

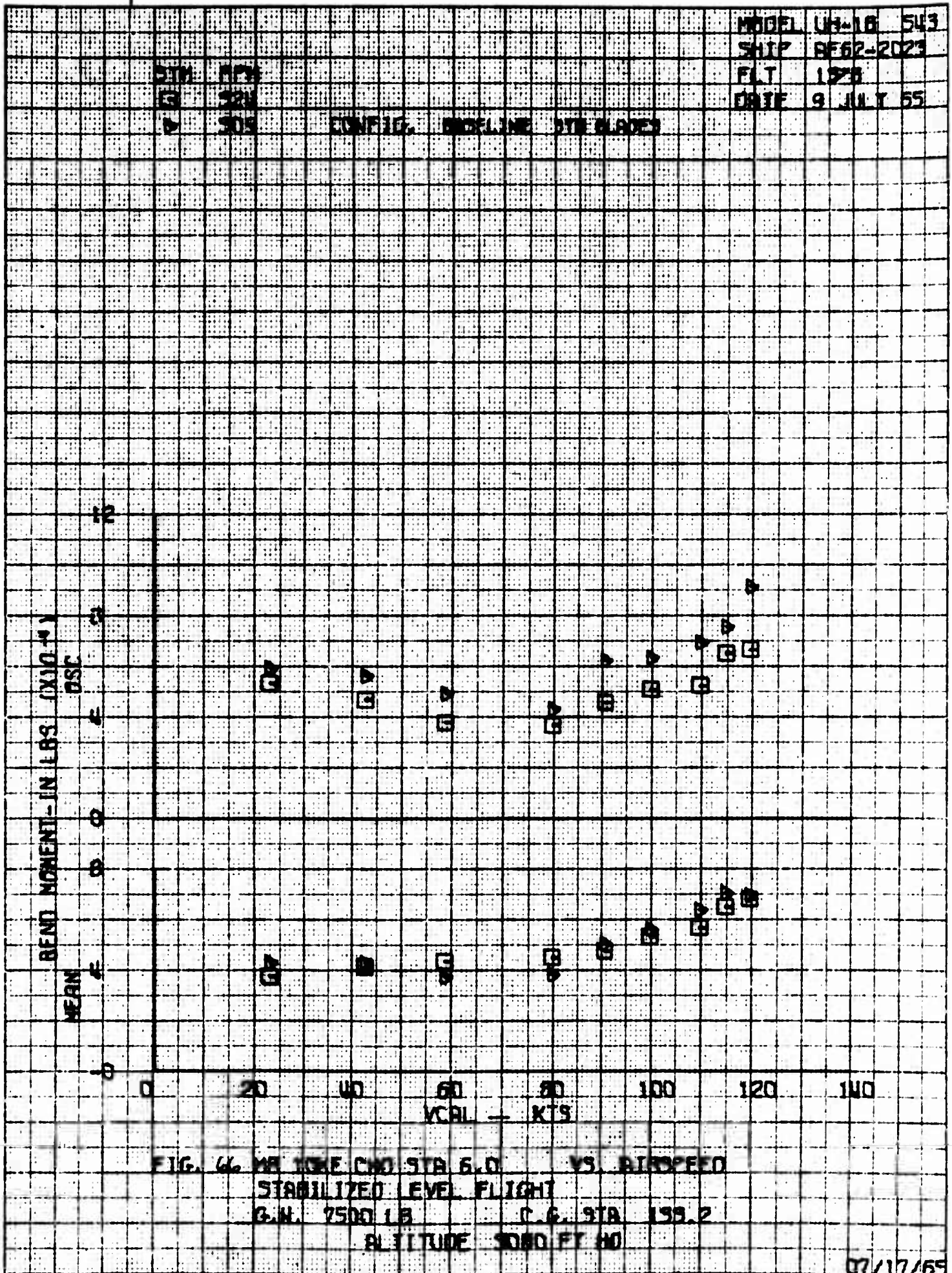
07/17/65

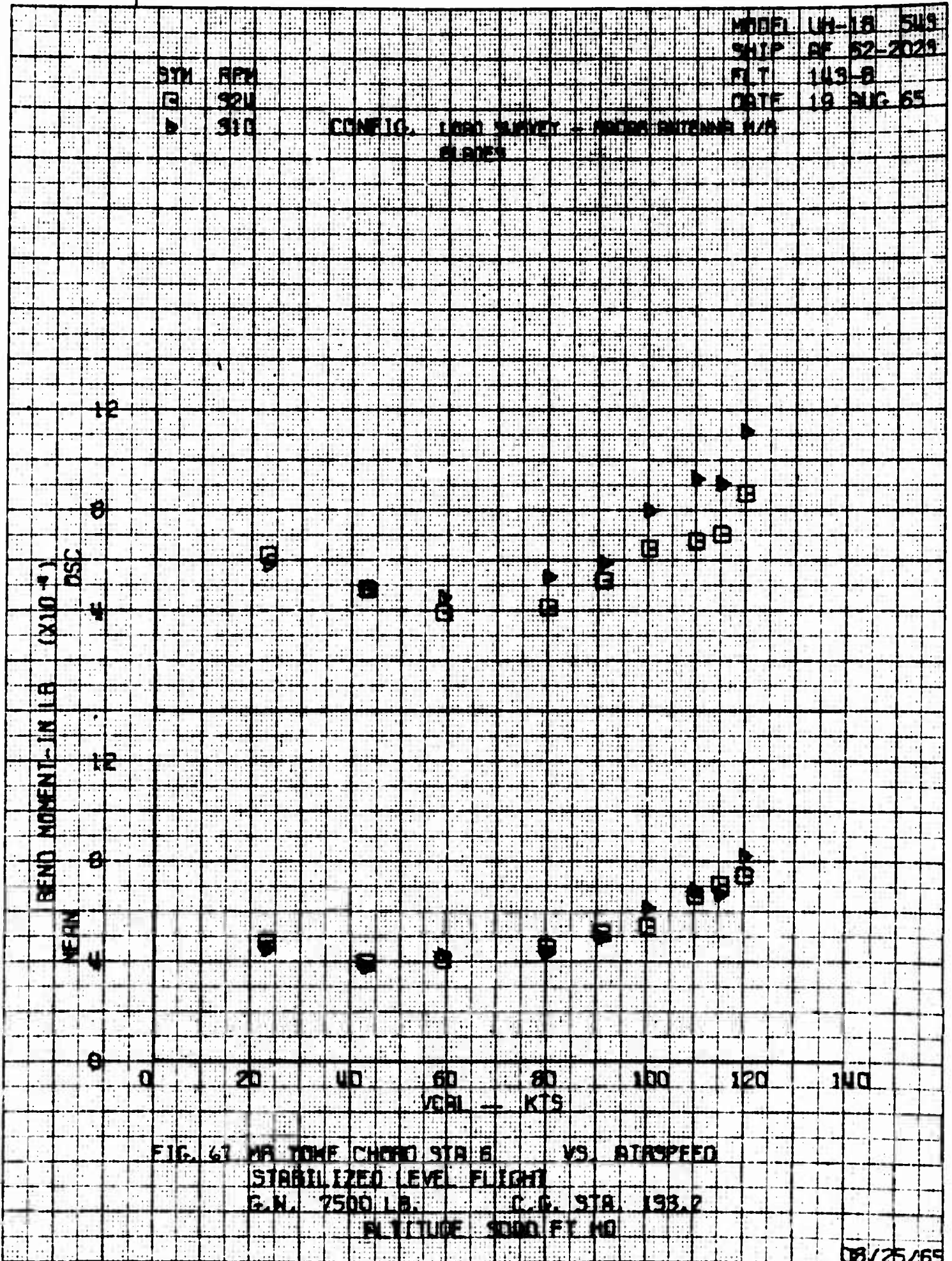


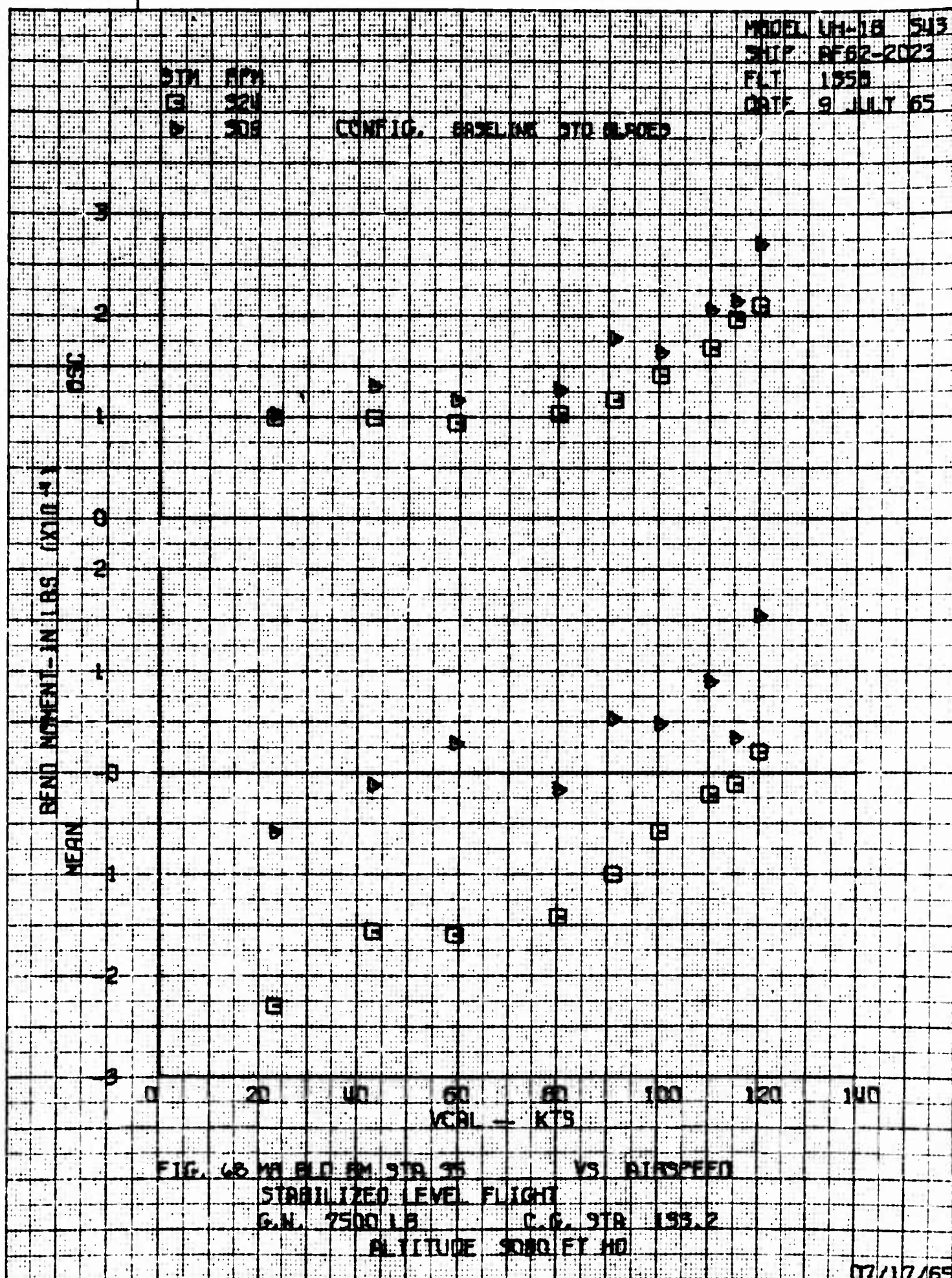


07/17/65









07/17/65

SYM RPM
G 320
D 310

CONFIG. LOAD SURVEY - RADOM ANTENNA N/A
BLADES

MODEL UH-1B 543
SHIP BE 52-2029
FLT 149-B
DATE 13 AUG 65

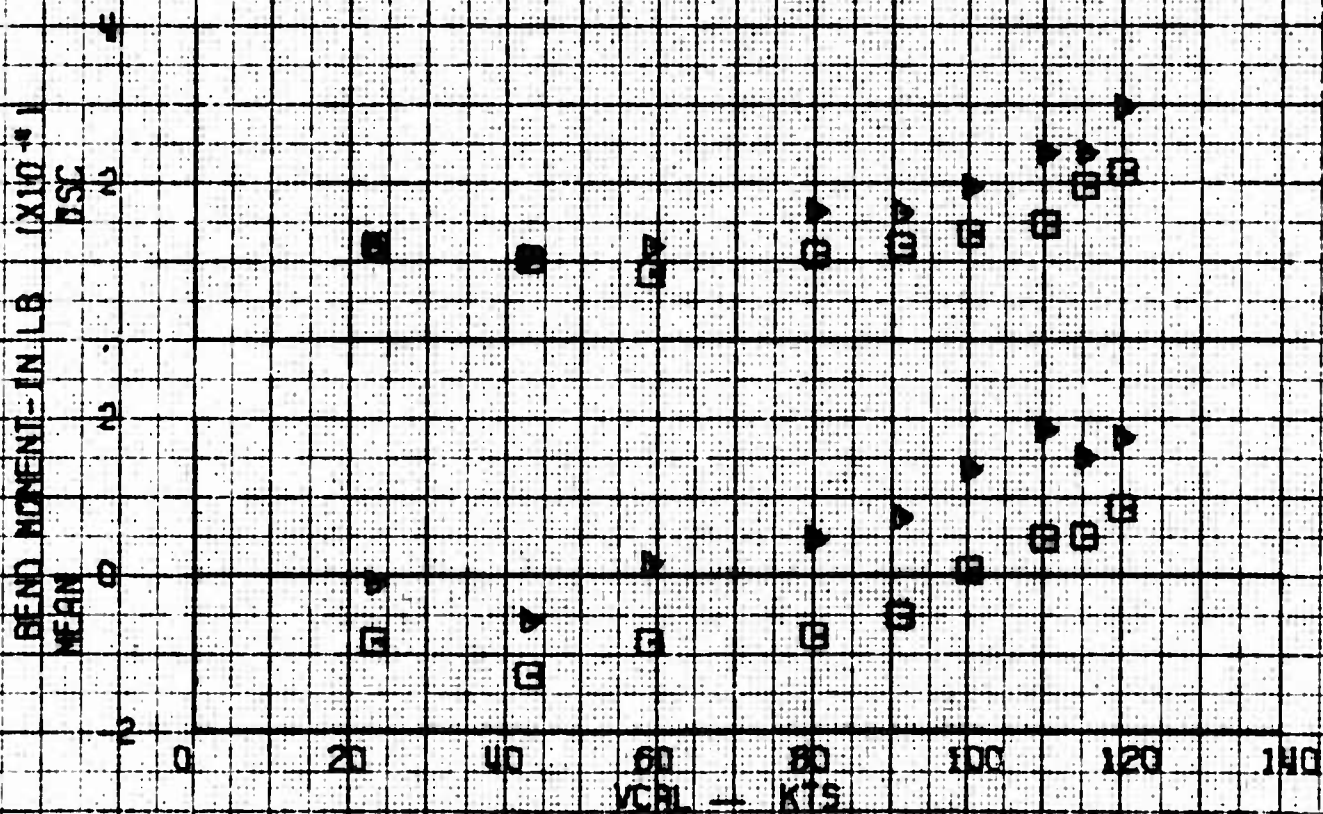
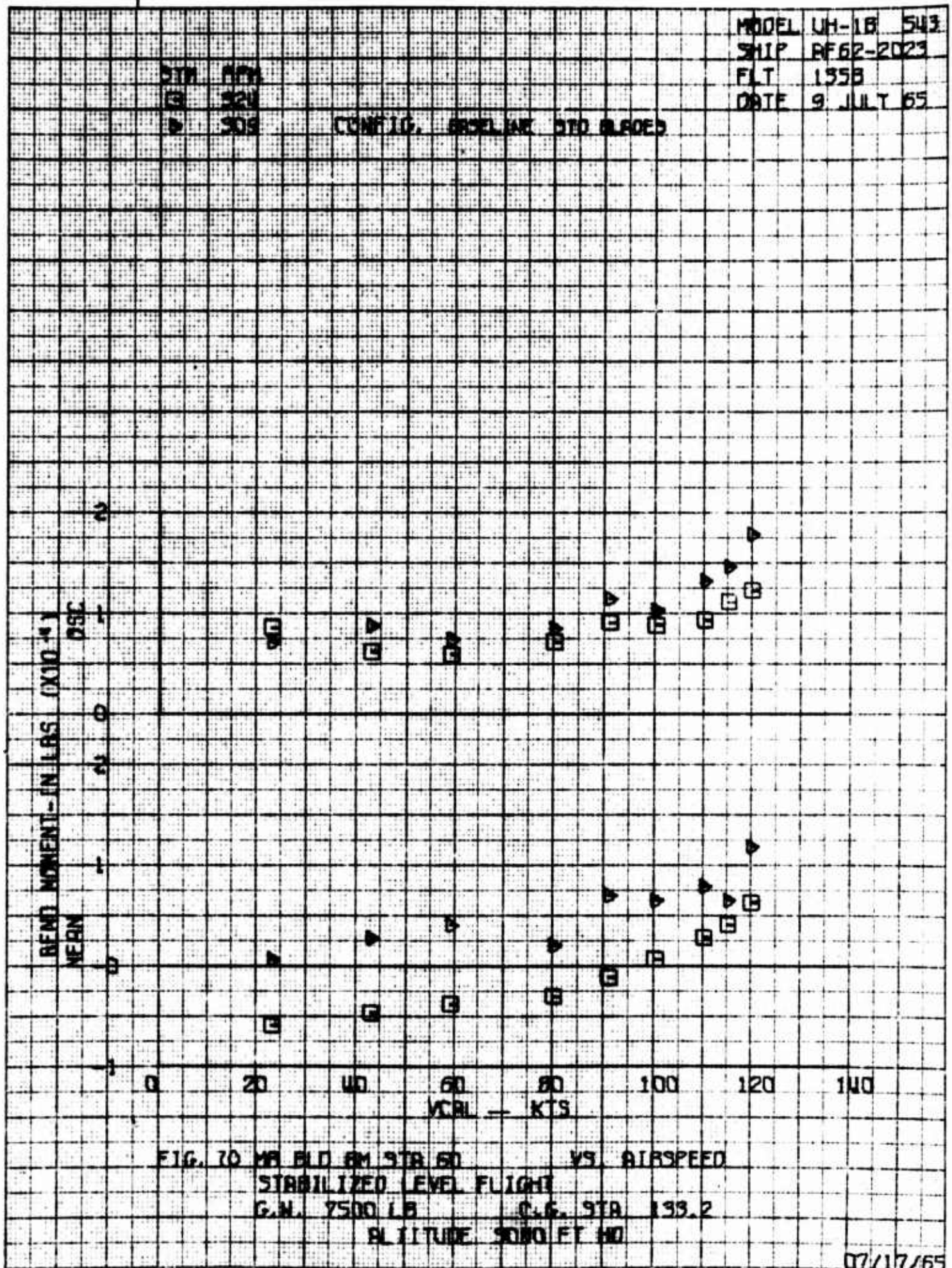
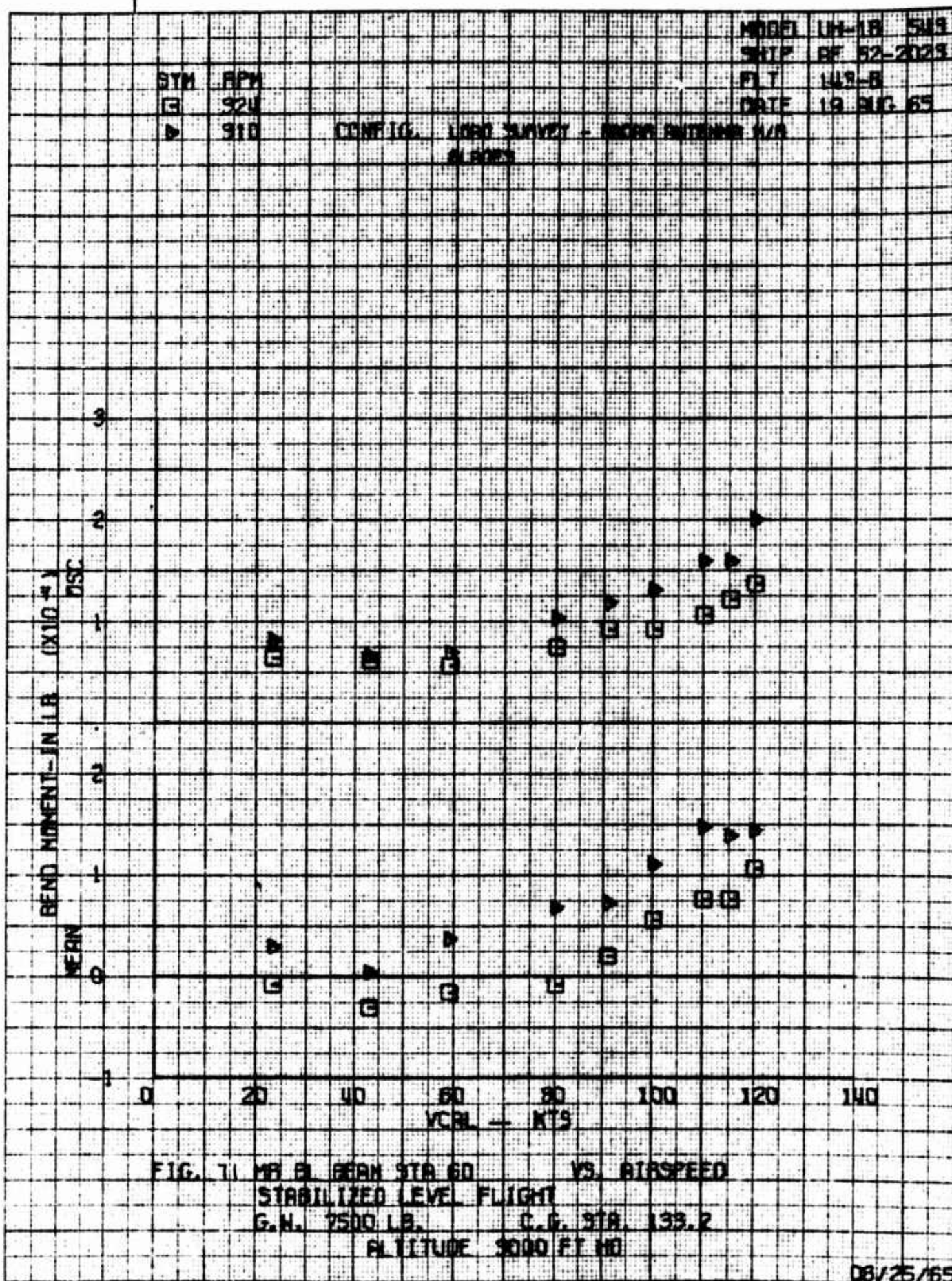


FIG. 69 MB EL BEAM STA 35 VS AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB. C.G. STA 133.2
ALTITUDE 3000 FT MO

08/25/65



07/17/65



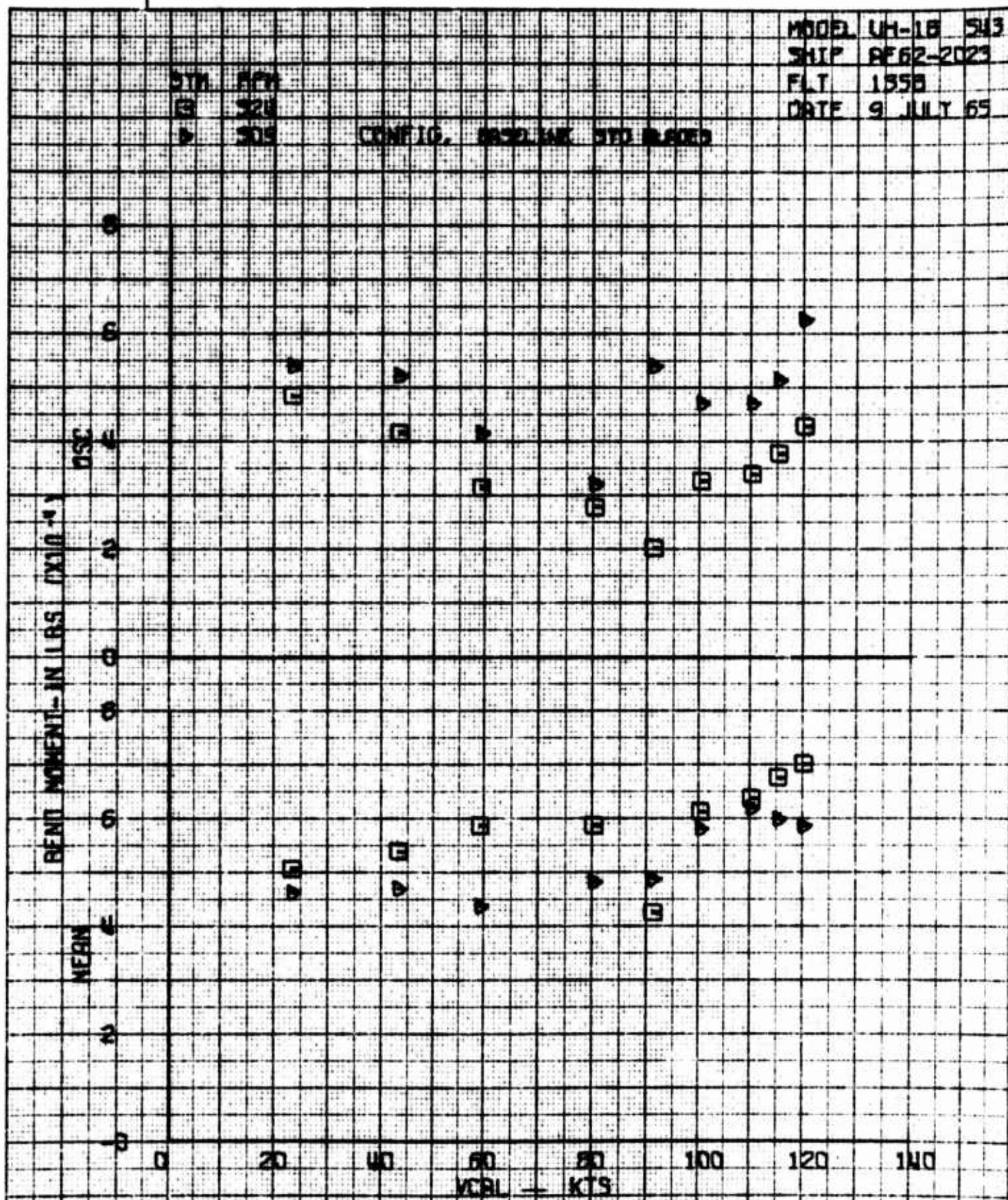
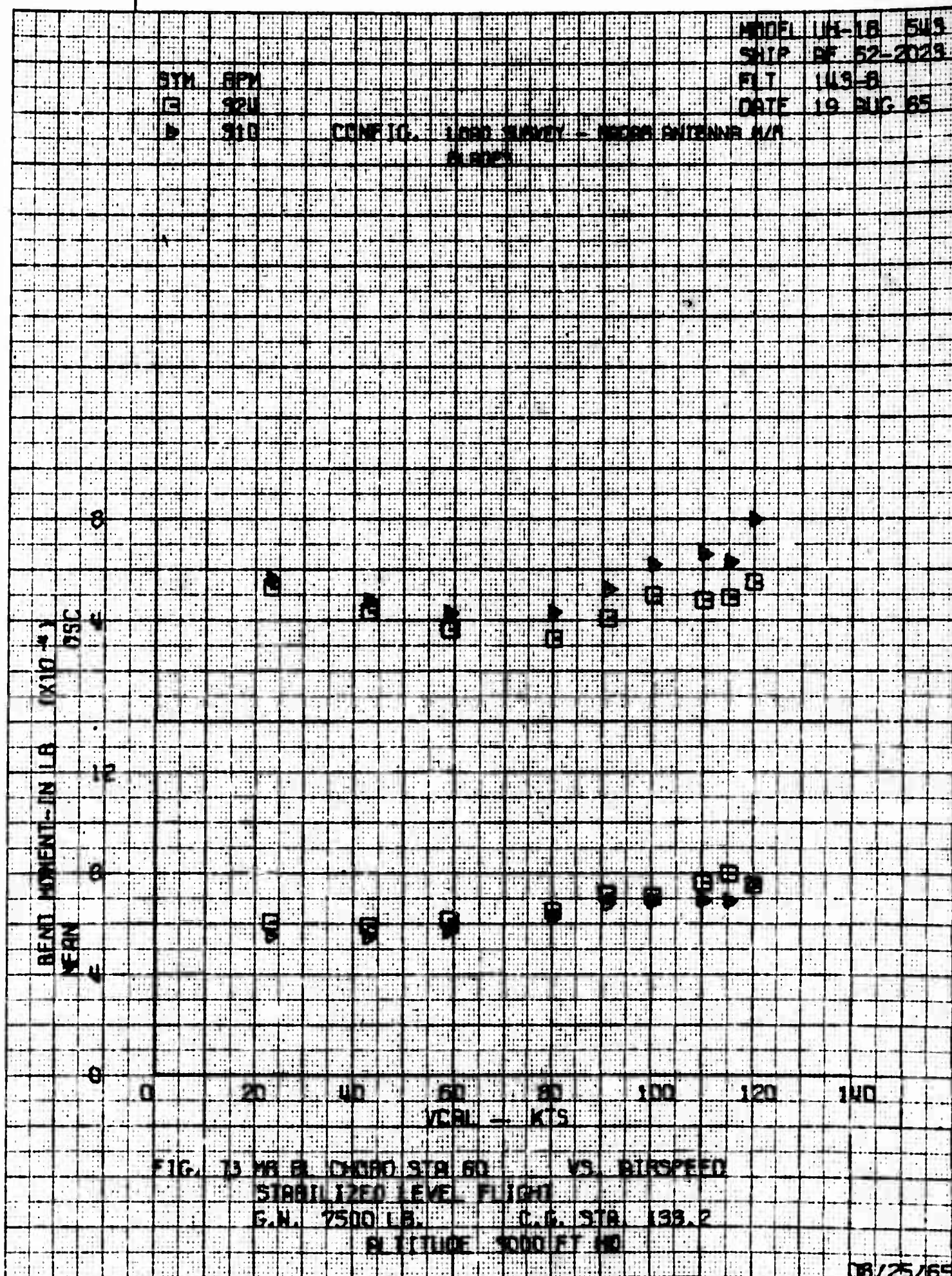
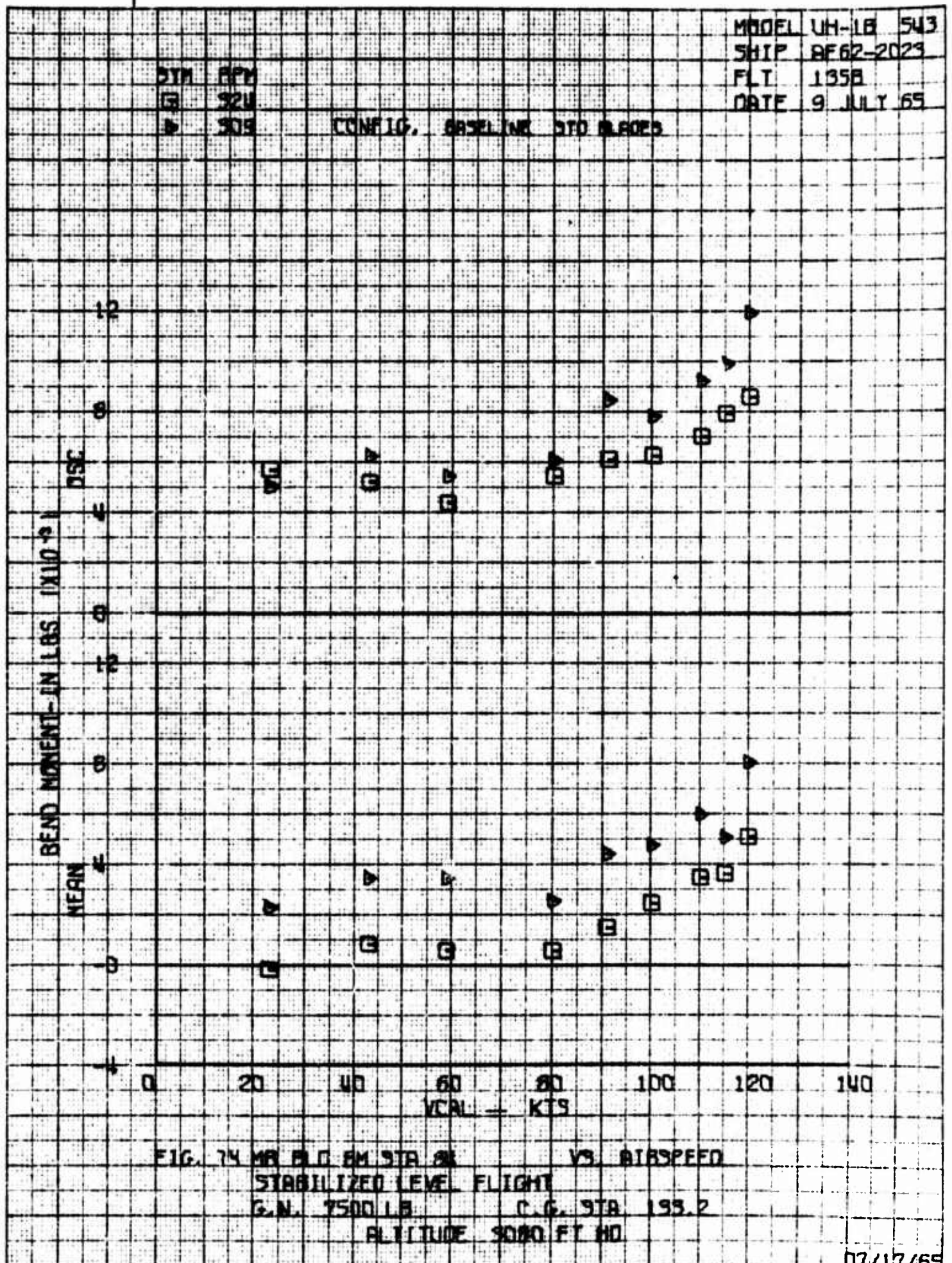


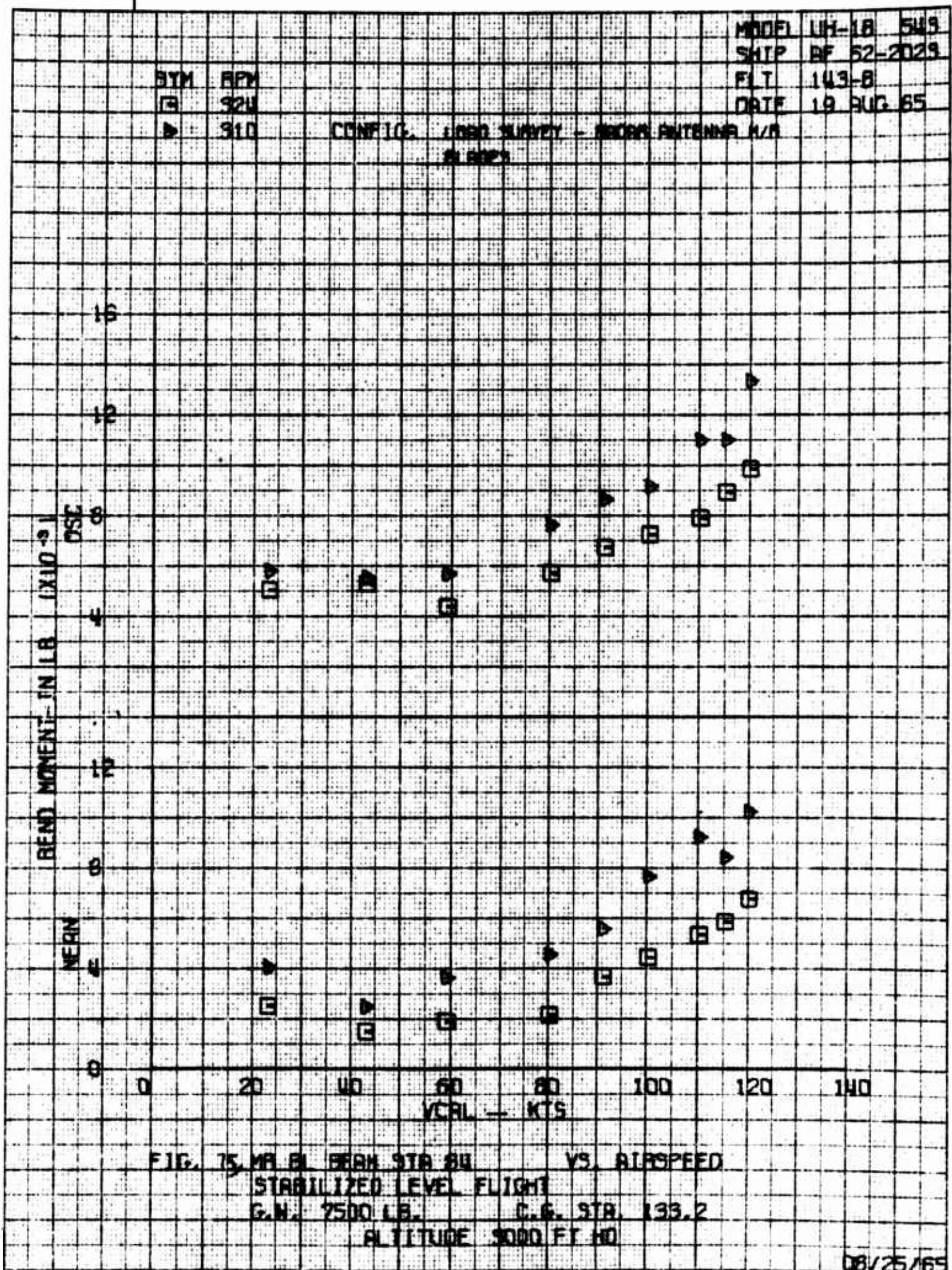
FIG. 12 ME BLD CHD STR 60 VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB C.G. STR 153.2
ALTITUDE 5000 FT 50

07/17/65





07/17/65



DTM RPM
13 324
4 309

CONFIG. BASELINE STO BLADED

MODEL UH-1B 543
SHIP AF62-2023
FLT 135B
DATE 9 JUL 65

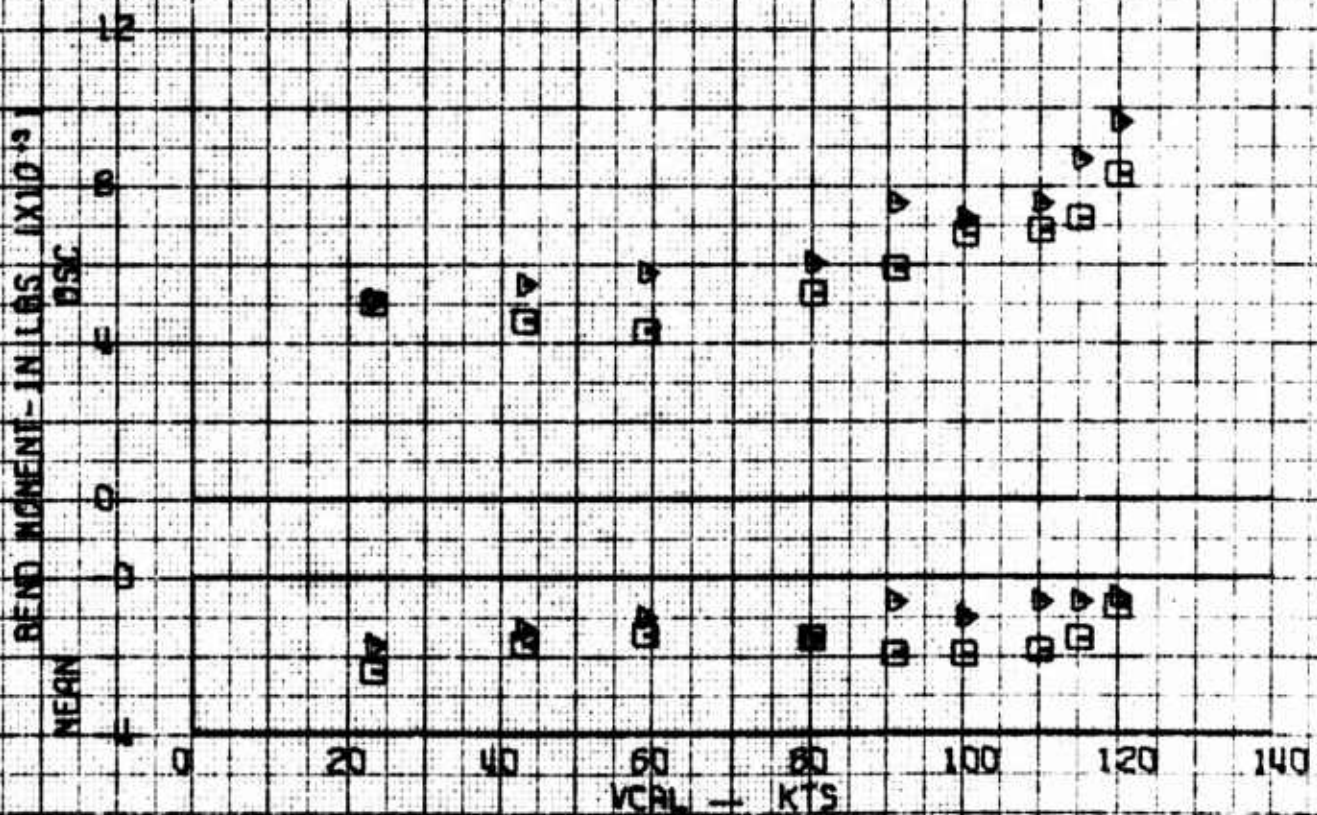
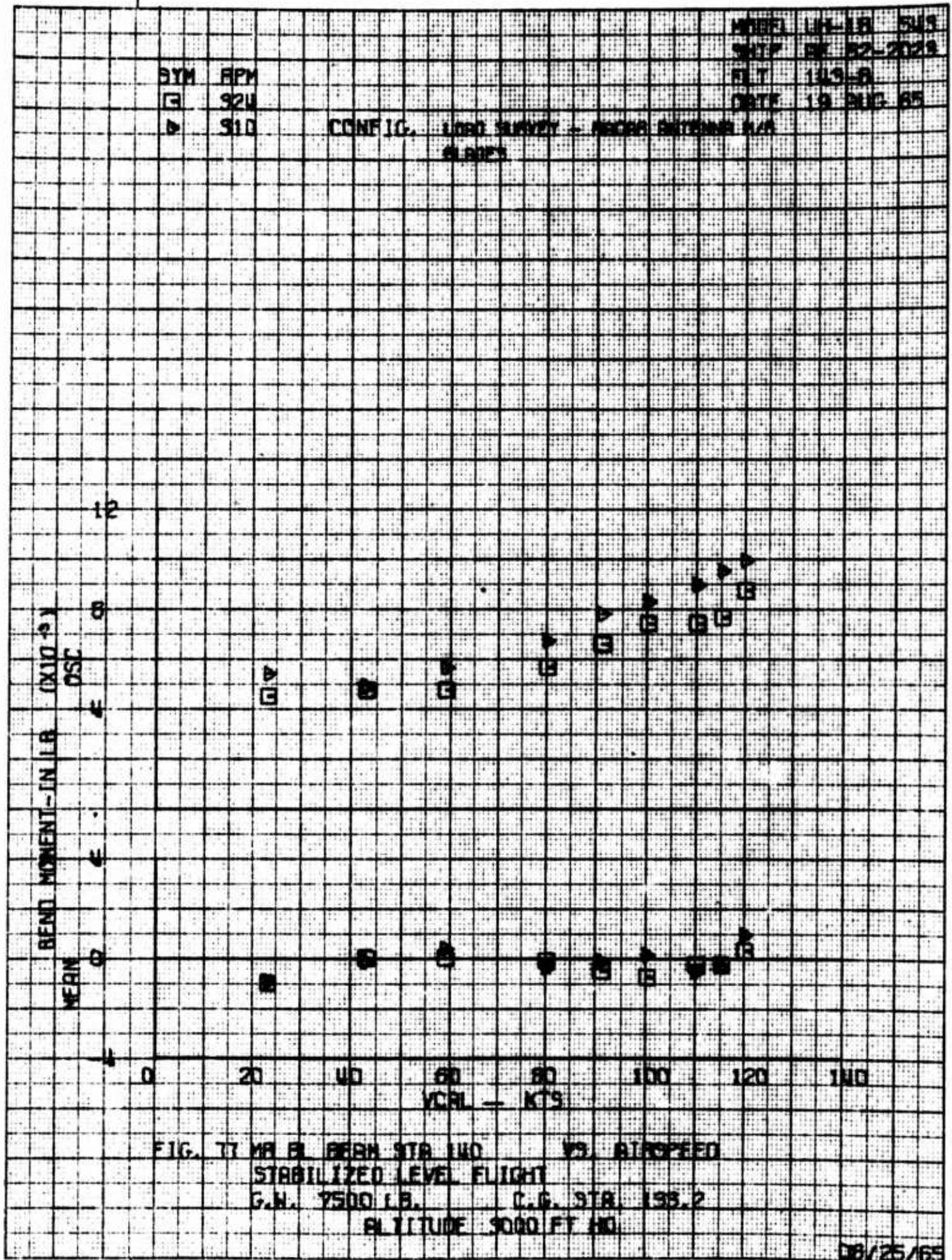
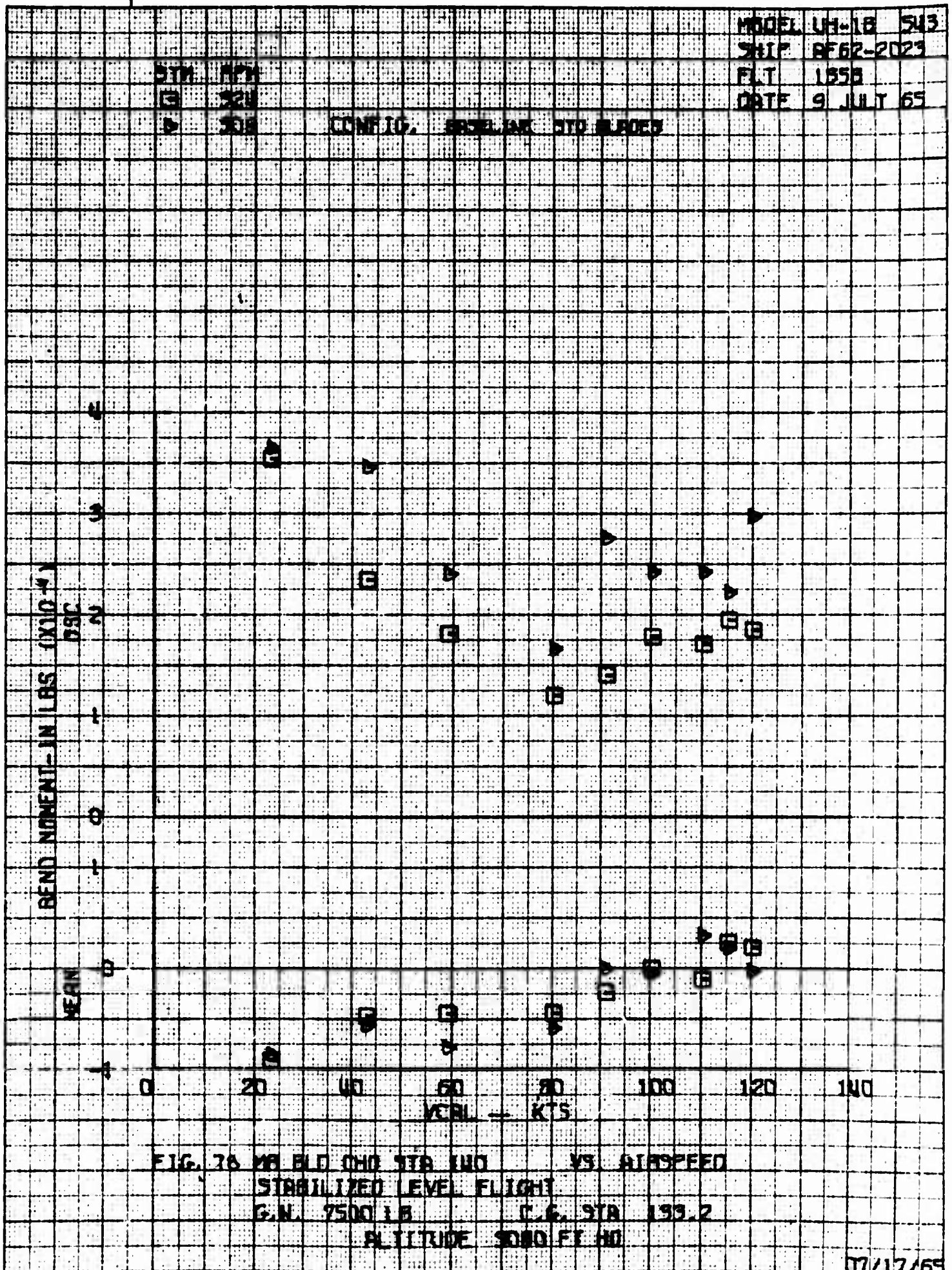


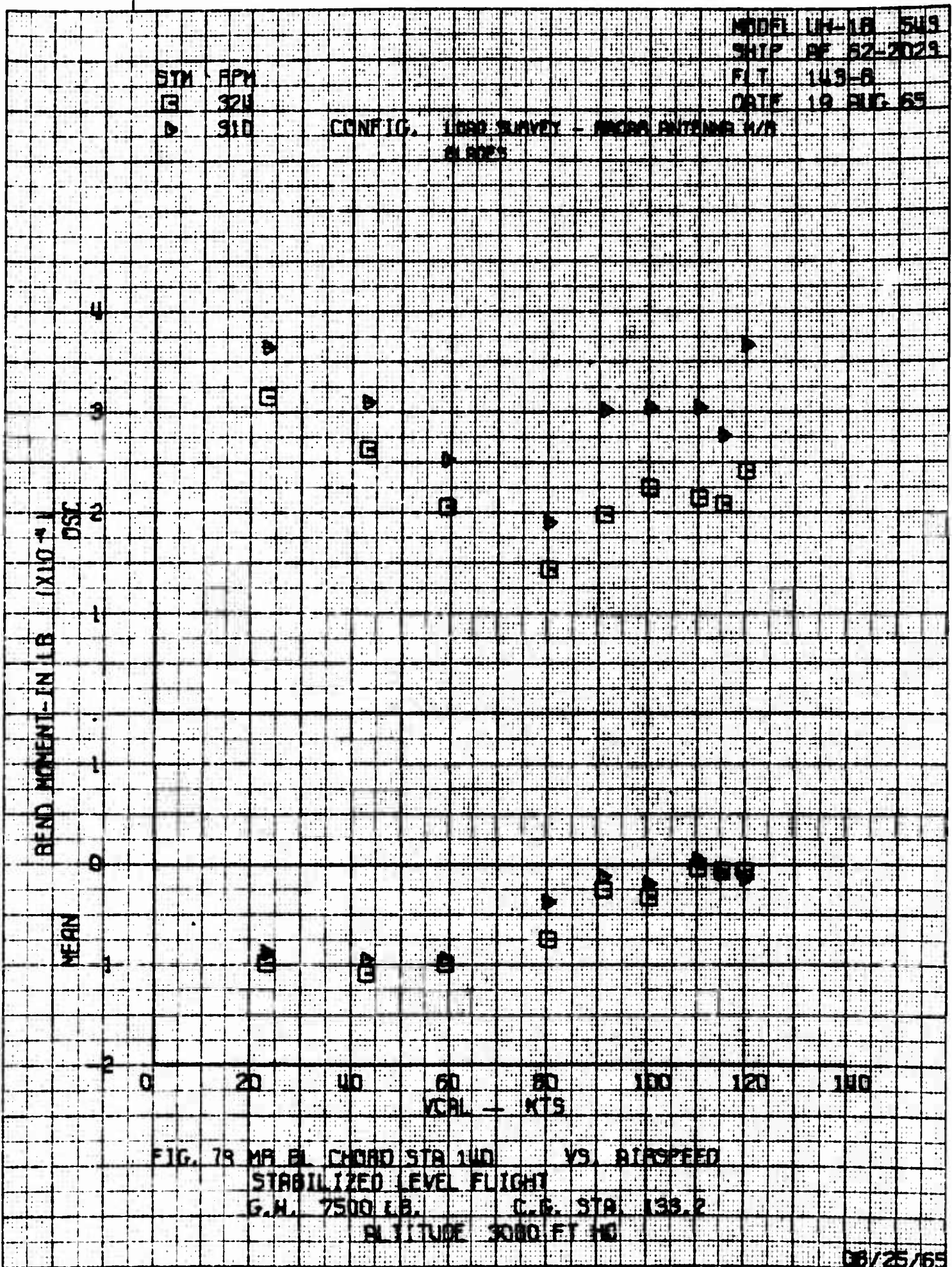
FIG. 76 MA BLD RM STA 140 VS. AIRSPEED
STABILIZED LEVEL FLIGHT
G.W. 7500 LB C.G. STA 133.2
ALTITUDE 3000 FT MO

07/17/65





07/17/65



BY J. Mangum

CHECKED R.H.Wheelock

BELL HELICOPTER COMPANY
POST OFFICE BOX 407 FORT WORTH, TEXAS

MODEL UH-1B PAGE 94

RPT 204-100-113

APPENDIX E

Tabulated Load Level Data

BASELINE STD BLADES

MODEL UM-18 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT HD
SHIP AF62-2023 DATE 9 JULY 63 C.G. STA 125.4 OSC. NO. 1

CTR WG.	TEST CONDITION	RPM	VCAL KTS	MR BLD BM STA 140 MEAN	OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	-1712.500	6187.500
496	STABILIZED LEVEL FLIGHT	309	43.0	-1162.500	4812.500
497	STABILIZED LEVEL FLIGHT	309	59.0	-1162.500	5362.500
498	STABILIZED LEVEL FLIGHT	309	80.0	-887.500	6462.500
499	STABILIZED LEVEL FLIGHT	309	91.0	-750.000	7425.000
500	STABILIZED LEVEL FLIGHT	309	100.0	-750.000	7425.000
501	STABILIZED LEVEL FLIGHT	309	110.0	-750.000	8525.000
502	STABILIZED LEVEL FLIGHT	309	115.0	-612.500	8387.500
503	STABILIZED LEVEL FLIGHT	309	120.0	-750.000	9900.000
504	STABILIZED LEVEL FLIGHT	324	23.0	-1712.500	4812.500
505	STABILIZED LEVEL FLIGHT	324	43.0	-887.500	4262.500
506	STABILIZED LEVEL FLIGHT	324	59.0	-1437.500	4537.500
507	STABILIZED LEVEL FLIGHT	324	80.0	-887.500	5912.500
508	STABILIZED LEVEL FLIGHT	324	91.0	-1712.500	6737.500
509	STABILIZED LEVEL FLIGHT	324	100.0	-1575.000	7150.000
510	STABILIZED LEVEL FLIGHT	324	110.0	-1712.500	6737.500
511	STABILIZED LEVEL FLIGHT	324	115.0	-1712.500	7562.500
512	STABILIZED LEVEL FLIGHT	324	120.0	-1162.500	8112.500

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT MD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR BLD BM STA 94 MEAN	OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	2129.880	7138.040
496	STABILIZED LEVEL FLIGHT	309	43.0	2533.920	5387.200
497	STABILIZED LEVEL FLIGHT	309	59.0	2399.240	5252.520
498	STABILIZED LEVEL FLIGHT	309	80.0	3746.040	6868.680
499	STABILIZED LEVEL FLIGHT	309	91.0	5631.560	8484.840
500	STABILIZED LEVEL FLIGHT	309	100.0	6304.960	8350.160
501	STABILIZED LEVEL FLIGHT	309	110.0	7786.440	9562.280
502	STABILIZED LEVEL FLIGHT	309	115.0	6709.000	9831.640
503	STABILIZED LEVEL FLIGHT	309	120.0	8594.520	12255.880
504	STABILIZED LEVEL FLIGHT	324	23.0	1052.440	5252.520
505	STABILIZED LEVEL FLIGHT	324	43.0	917.760	4309.760
506	STABILIZED LEVEL FLIGHT	324	59.0	-25.000	4713.800
507	STABILIZED LEVEL FLIGHT	324	80.0	2399.240	6329.960
508	STABILIZED LEVEL FLIGHT	324	91.0	3476.680	6599.320
509	STABILIZED LEVEL FLIGHT	324	100.0	4823.480	7676.760
510	STABILIZED LEVEL FLIGHT	324	110.0	2668.600	7407.400
511	STABILIZED LEVEL FLIGHT	324	115.0	4823.480	7946.120
512	STABILIZED LEVEL FLIGHT	324	120.0	6439.640	8754.200

BASELINE STD BLADES

MODEL UN-16 543 FLI. 135A G.W. 7500 LB ALT. 3000 FT HD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR BLD BM STA 60 MEAN	OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	1488.400	9567.900
496	STABILIZED LEVEL FLIGHT	309	43.0	159.525	7175.925
497	STABILIZED LEVEL FLIGHT	309	59.0	1754.175	6112.825
498	STABILIZED LEVEL FLIGHT	309	80.0	4411.925	9302.125
499	STABILIZED LEVEL FLIGHT	309	91.0	7069.675	12491.425
500	STABILIZED LEVEL FLIGHT	309	100.0	9727.425	11428.325
501	STABILIZED LEVEL FLIGHT	309	110.0	12650.950	13288.750
502	STABILIZED LEVEL FLIGHT	309	115.0	10258.975	14617.625
503	STABILIZED LEVEL FLIGHT	309	120.0	12916.725	18338.475
504	STABILIZED LEVEL FLIGHT	324	23.0	-4092.875	7175.925
505	STABILIZED LEVEL FLIGHT	324	43.0	-2498.225	5581.275
506	STABILIZED LEVEL FLIGHT	324	59.0	-3827.100	5847.050
507	STABILIZED LEVEL FLIGHT	324	80.0	2551.500	9036.350
508	STABILIZED LEVEL FLIGHT	324	91.0	3614.600	7973.250
509	STABILIZED LEVEL FLIGHT	324	100.0	6538.125	10365.225
510	STABILIZED LEVEL FLIGHT	324	110.0	1754.175	9833.675
511	STABILIZED LEVEL FLIGHT	324	115.0	5740.800	11162.550
512	STABILIZED LEVEL FLIGHT	324	120.0	7601.225	14086.075

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT MD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR BLD BM STA 35 MEAN	OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	-5858.600	13908.000
496	STABILIZED LEVEL FLIGHT	309	43.0	-2613.401	10662.800
497	STABILIZED LEVEL FLIGHT	309	59.0	-759.000	9735.600
498	STABILIZED LEVEL FLIGHT	309	80.0	631.800	13908.000
499	STABILIZED LEVEL FLIGHT	309	91.0	8049.400	18544.000
500	STABILIZED LEVEL FLIGHT	309	100.0	10367.400	17153.200
501	STABILIZED LEVEL FLIGHT	309	110.0	18248.599	21325.600
502	STABILIZED LEVEL FLIGHT	309	115.0	10367.399	22716.400
503	STABILIZED LEVEL FLIGHT	309	120.0	17321.399	27816.000
504	STABILIZED LEVEL FLIGHT	324	23.0	-15130.600	12980.800
505	STABILIZED LEVEL FLIGHT	324	43.0	-10494.600	9272.000
506	STABILIZED LEVEL FLIGHT	324	59.0	-14203.400	10199.200
507	STABILIZED LEVEL FLIGHT	324	80.0	-1686.200	13444.400
508	STABILIZED LEVEL FLIGHT	324	91.0	-2149.800	12053.599
509	STABILIZED LEVEL FLIGHT	324	100.0	5731.400	16226.000
510	STABILIZED LEVEL FLIGHT	324	110.0	-5395.000	16226.009
511	STABILIZED LEVEL FLIGHT	324	115.0	3877.000	19934.800
512	STABILIZED LEVEL FLIGHT	324	120.0	2049.400	21325.600

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A C.W. 7500 LB ALT. 3000 FT MD
 SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR PITCH MEAN	LINK RED OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	117.715	407.475
496	STABILIZED LEVEL FLIGHT	309	43.0	-9.055	316.925
497	STABILIZED LEVEL FLIGHT	309	59.0	-0.000	289.760
498	STABILIZED LEVEL FLIGHT	309	80.0	36.220	325.980
499	STABILIZED LEVEL FLIGHT	309	91.0	181.100	344.090
500	STABILIZED LEVEL FLIGHT	309	100.0	126.770	434.640
501	STABILIZED LEVEL FLIGHT	309	110.0	153.935	534.245
502	STABILIZED LEVEL FLIGHT	309	115.0	108.660	597.630
503	STABILIZED LEVEL FLIGHT	309	120.0	144.880	742.510
504	STABILIZED LEVEL FLIGHT	324	23.0	-9.055	371.255
505	STABILIZED LEVEL FLIGHT	324	43.0	-45.275	298.815
506	STABILIZED LEVEL FLIGHT	324	59.0	-81.495	262.595
507	STABILIZED LEVEL FLIGHT	324	80.0	45.275	353.145
508	STABILIZED LEVEL FLIGHT	324	91.0	81.495	407.475
509	STABILIZED LEVEL FLIGHT	324	100.0	117.715	443.695
510	STABILIZED LEVEL FLIGHT	324	110.0	99.605	479.915
511	STABILIZED LEVEL FLIGHT	324	115.0	144.880	525.190
512	STABILIZED LEVEL FLIGHT	324	120.0	72.440	615.740

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALI. 3000 FT HD
 SHIP AF52-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. MC. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR DRAG BRACE MEAN	GSC
495	STABILIZED LEVEL FLIGHT	309	23.0	-001.000	4609.800
496	STABILIZED LEVEL FLIGHT	309	43.0	-002.000	3841.500
497	STABILIZED LEVEL FLIGHT	309	55.0	-005.000	2919.540
498	STABILIZED LEVEL FLIGHT	309	80.0	-021.000	000.440
499	STABILIZED LEVEL FLIGHT	309	91.0	-007.500	4148.020
500	STABILIZED LEVEL FLIGHT	309	100.0	-0304.000	3841.500
501	STABILIZED LEVEL FLIGHT	309	110.0	-0151.000	3995.160
502	STABILIZED LEVEL FLIGHT	309	115.0	-0304.000	4456.140
503	STABILIZED LEVEL FLIGHT	309	120.0	-0073.000	5224.440
504	STABILIZED LEVEL FLIGHT	324	23.0	-005.000	3534.180
505	STABILIZED LEVEL FLIGHT	324	43.0	-014.000	3073.200
506	STABILIZED LEVEL FLIGHT	324	53.0	-008.300	2612.220
507	STABILIZED LEVEL FLIGHT	324	80.0	-0075.000	3534.180
508	STABILIZED LEVEL FLIGHT	324	91.0	-0075.000	3226.860
509	STABILIZED LEVEL FLIGHT	324	100.0	-021.000	3687.840
510	STABILIZED LEVEL FLIGHT	324	110.0	-0443.000	3073.200
511	STABILIZED LEVEL FLIGHT	324	115.0	-0000.000	3841.500
512	STABILIZED LEVEL FLIGHT	324	120.0	-0000.000	4148.020

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT HD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR YOKE BM MEAN	STA 6.0 OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	-41328.000	27071.999
496	STABILIZED LEVEL FLIGHT	309	43.0	-41327.999	16920.000
497	STABILIZED LEVEL FLIGHT	309	59.0	-44712.000	13536.000
498	STABILIZED LEVEL FLIGHT	309	80.0	-48096.000	10151.999
499	STABILIZED LEVEL FLIGHT	309	91.0	-39636.000	15228.000
500	STABILIZED LEVEL FLIGHT	309	100.0	-44712.000	13536.000
501	STABILIZED LEVEL FLIGHT	309	110.0	-36252.000	21995.999
502	STABILIZED LEVEL FLIGHT	309	115.0	-48096.000	20304.000
503	STABILIZED LEVEL FLIGHT	309	120.0	-43020.000	35532.000
504	STABILIZED LEVEL FLIGHT	324	23.0	-68400.000	20304.001
505	STABILIZED LEVEL FLIGHT	324	43.0	-59940.000	15228.000
506	STABILIZED LEVEL FLIGHT	324	59.0	-71783.999	13536.000
507	STABILIZED LEVEL FLIGHT	324	80.0	-53172.000	15227.999
508	STABILIZED LEVEL FLIGHT	324	91.0	-56556.000	11844.000
509	STABILIZED LEVEL FLIGHT	324	100.0	-44712.000	20304.001
510	STABILIZED LEVEL FLIGHT	324	110.0	-73476.000	15228.000
511	STABILIZED LEVEL FLIGHT	324	115.0	-61632.000	16920.000
512	STABILIZED LEVEL FLIGHT	324	120.0	-59940.000	25380.000

BASELINE STO BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT MD
 SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR BLD CHD MEAN	STA 140 OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	-3740.000	51425.000
496	STABILIZED LEVEL FLIGHT	309	43.0	-5610.001	34595.000
497	STABILIZED LEVEL FLIGHT	309	59.0	-4908.751	25011.250
498	STABILIZED LEVEL FLIGHT	309	80.0	-1402.500	20570.000
499	STABILIZED LEVEL FLIGHT	309	91.0	1402.499	25712.500
500	STABILIZED LEVEL FLIGHT	309	100.0	935.000	26180.000
501	STABILIZED LEVEL FLIGHT	309	110.0	1402.500	24777.500
502	STABILIZED LEVEL FLIGHT	309	115.0	233.750	23608.750
503	STABILIZED LEVEL FLIGHT	309	120.0	467.500	34595.000
504	STABILIZED LEVEL FLIGHT	324	23.0	-6778.750	32491.250
505	STABILIZED LEVEL FLIGHT	324	43.0	-8181.250	24543.750
506	STABILIZED LEVEL FLIGHT	324	59.0	-7947.500	18232.500
507	STABILIZED LEVEL FLIGHT	324	80.0	-5376.251	20803.750
508	STABILIZED LEVEL FLIGHT	324	91.0	-1402.500	20570.000
509	STABILIZED LEVEL FLIGHT	324	100.0	2103.750	24076.250
510	STABILIZED LEVEL FLIGHT	324	110.0	-701.251	17063.750
511	STABILIZED LEVEL FLIGHT	324	115.0	-233.750	21738.749
512	STABILIZED LEVEL FLIGHT	324	120.0	-233.750	22673.750

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT HC
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 CSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCLAL KTS	MR BLD CHD MEAN	STA 60 USC
495	STABILIZED LEVEL FLIGHT	309	23.0	48640.900	72645.500
496	STABILIZED LEVEL FLIGHT	309	43.0	46745.800	54326.201
497	STABILIZED LEVEL FLIGHT	309	59.0	49904.301	43587.300
498	STABILIZED LEVEL FLIGHT	309	80.0	53062.801	42955.600
499	STABILIZED LEVEL FLIGHT	309	91.0	59379.799	55589.600
500	STABILIZED LEVEL FLIGHT	309	100.0	61906.601	54326.201
501	STABILIZED LEVEL FLIGHT	309	110.0	60643.200	56853.000
502	STABILIZED LEVEL FLIGHT	309	115.0	65065.101	51167.700
503	STABILIZED LEVEL FLIGHT	309	120.0	65696.801	68223.598
504	STABILIZED LEVEL FLIGHT	324	23.0	53694.501	54957.900
505	STABILIZED LEVEL FLIGHT	324	43.0	49904.301	42323.901
506	STABILIZED LEVEL FLIGHT	324	59.0	53694.501	32216.699
507	STABILIZED LEVEL FLIGHT	324	80.0	52431.103	43587.300
508	STABILIZED LEVEL FLIGHT	324	91.0	58116.400	39165.400
509	STABILIZED LEVEL FLIGHT	324	100.0	61906.601	53062.798
510	STABILIZED LEVEL FLIGHT	324	110.0	65065.102	38533.701
511	STABILIZED LEVEL FLIGHT	324	115.0	64433.400	49272.600
512	STABILIZED LEVEL FLIGHT	324	120.0	68855.300	51167.700

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT HD
SHIP AF62-2023 DATE 7 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR YOKE CHD STA 6.0 MEAN OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	41710.215 66283.675
496	STABILIZED LEVEL FLIGHT	309	43.0	38476.865 54643.615
497	STABILIZED LEVEL FLIGHT	309	59.0	39123.536 44296.895
498	STABILIZED LEVEL FLIGHT	309	80.0	47206.910 57553.630
499	STABILIZED LEVEL FLIGHT	309	91.0	56906.959 71780.369
500	STABILIZED LEVEL FLIGHT	309	100.0	63696.997 71457.035
501	STABILIZED LEVEL FLIGHT	309	110.0	69840.360 82773.759
502	STABILIZED LEVEL FLIGHT	309	115.0	70487.031 76307.059
503	STABILIZED LEVEL FLIGHT	309	120.0	77277.065 111550.575
504	STABILIZED LEVEL FLIGHT	324	23.0	42033.551 64667.000
505	STABILIZED LEVEL FLIGHT	324	43.0	35890.185 44943.564
506	STABILIZED LEVEL FLIGHT	324	59.0	39123.535 37830.194
507	STABILIZED LEVEL FLIGHT	324	80.0	44943.566 53350.276
508	STABILIZED LEVEL FLIGHT	324	91.0	50116.926 57876.964
509	STABILIZED LEVEL FLIGHT	324	100.0	55290.285 70810.363
510	STABILIZED LEVEL FLIGHT	324	110.0	60463.645 57876.963
511	STABILIZED LEVEL FLIGHT	324	115.0	66607.010 68547.020
512	STABILIZED LEVEL FLIGHT	324	120.0	77277.065 78570.404

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT HD
 SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR FLAPPING MEAN	OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	0.000	36.360
496	STABILIZED LEVEL FLIGHT	309	43.0	-0.000	44.844
497	STABILIZED LEVEL FLIGHT	309	59.0	0.606	43.026
498	STABILIZED LEVEL FLIGHT	309	80.0	-0.606	41.814
499	STABILIZED LEVEL FLIGHT	309	91.0	-2.424	38.784
500	STABILIZED LEVEL FLIGHT	309	100.0	0.000	35.148
501	STABILIZED LEVEL FLIGHT	309	110.0	0.000	32.724
502	STABILIZED LEVEL FLIGHT	309	115.0	-0.606	33.330
503	STABILIZED LEVEL FLIGHT	309	120.0	0.000	35.148
504	STABILIZED LEVEL FLIGHT	324	23.0	0.606	35.754
505	STABILIZED LEVEL FLIGHT	324	43.0	-0.000	44.844
506	STABILIZED LEVEL FLIGHT	324	59.0	-1.212	42.420
507	STABILIZED LEVEL FLIGHT	324	80.0	-1.212	43.632
508	STABILIZED LEVEL FLIGHT	324	91.0	-0.606	36.966
509	STABILIZED LEVEL FLIGHT	324	100.0	0.000	36.360
510	STABILIZED LEVEL FLIGHT	324	110.0	-0.606	30.906
511	STABILIZED LEVEL FLIGHT	324	115.0	-0.606	30.906
512	STABILIZED LEVEL FLIGHT	324	120.0	-2.424	31.512

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT HD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	PILOT VERT ACCEL MEAN	OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	0.994	0.152
496	STABILIZED LEVEL FLIGHT	309	43.0	0.982	0.140
497	STABILIZED LEVEL FLIGHT	309	59.0	0.976	0.122
498	STABILIZED LEVEL FLIGHT	309	80.0	0.963	0.110
499	STABILIZED LEVEL FLIGHT	309	91.0	1.031	0.128
500	STABILIZED LEVEL FLIGHT	309	100.0	1.000	0.146
501	STABILIZED LEVEL FLIGHT	309	110.0	1.012	0.171
502	STABILIZED LEVEL FLIGHT	309	115.0	0.915	0.159
503	STABILIZED LEVEL FLIGHT	309	120.0	1.006	0.238
504	STABILIZED LEVEL FLIGHT	324	23.0	0.988	0.146
505	STABILIZED LEVEL FLIGHT	324	43.0	1.030	0.079
506	STABILIZED LEVEL FLIGHT	324	59.0	0.909	0.079
507	STABILIZED LEVEL FLIGHT	324	80.0	1.073	0.098
508	STABILIZED LEVEL FLIGHT	324	91.0	1.012	0.085
509	STABILIZED LEVEL FLIGHT	324	100.0	1.116	0.140
510	STABILIZED LEVEL FLIGHT	324	110.0	0.921	0.116
511	STABILIZED LEVEL FLIGHT	324	115.0	1.018	0.152
512	STABILIZED LEVEL FLIGHT	324	120.0	1.012	0.159

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALI. 3000 FT MD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	CO-PILOT MEAN	VERT ACCEL OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	0.988	0.132
496	STABILIZED LEVEL FLIGHT	309	43.0	0.970	0.090
497	STABILIZED LEVEL FLIGHT	309	59.0	0.964	0.072
498	STABILIZED LEVEL FLIGHT	309	80.0	1.000	0.120
499	STABILIZED LEVEL FLIGHT	309	91.0	1.000	0.180
500	STABILIZED LEVEL FLIGHT	309	100.0	0.988	0.192
501	STABILIZED LEVEL FLIGHT	309	110.0	1.042	0.246
502	STABILIZED LEVEL FLIGHT	309	115.0	0.940	0.288
503	STABILIZED LEVEL FLIGHT	309	120.0	0.982	0.354
504	STABILIZED LEVEL FLIGHT	324	23.0	0.976	0.132
505	STABILIZED LEVEL FLIGHT	324	43.0	1.012	0.096
506	STABILIZED LEVEL FLIGHT	324	59.0	0.928	0.084
507	STABILIZED LEVEL FLIGHT	324	80.0	1.066	0.126
508	STABILIZED LEVEL FLIGHT	324	91.0	1.024	0.132
509	STABILIZED LEVEL FLIGHT	324	100.0	1.060	0.216
510	STABILIZED LEVEL FLIGHT	324	110.0	0.952	0.240
511	STABILIZED LEVEL FLIGHT	324	115.0	1.024	0.276
512	STABILIZED LEVEL FLIGHT	324	120.0	0.982	0.330

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT HD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	C.G. VERT MEAN	ACCEL OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	1.060	0.250
496	STABILIZED LEVEL FLIGHT	309	43.0	1.018	0.137
497	STABILIZED LEVEL FLIGHT	309	59.0	0.994	0.101
498	STABILIZED LEVEL FLIGHT	309	80.0	1.000	0.107
499	STABILIZED LEVEL FLIGHT	309	91.0	1.042	0.113
500	STABILIZED LEVEL FLIGHT	309	100.0	0.994	0.125
501	STABILIZED LEVEL FLIGHT	309	110.0	1.048	0.143
502	STABILIZED LEVEL FLIGHT	309	115.0	0.923	0.173
503	STABILIZED LEVEL FLIGHT	309	120.0	0.988	0.179
504	STABILIZED LEVEL FLIGHT	324	23.0	0.958	0.161
505	STABILIZED LEVEL FLIGHT	324	43.0	1.054	0.149
506	STABILIZED LEVEL FLIGHT	324	59.0	0.958	0.089
507	STABILIZED LEVEL FLIGHT	324	80.0	1.042	0.125
508	STABILIZED LEVEL FLIGHT	324	91.0	0.988	0.131
509	STABILIZED LEVEL FLIGHT	324	100.0	1.083	0.167
510	STABILIZED LEVEL FLIGHT	324	110.0	0.853	0.119
511	STABILIZED LEVEL FLIGHT	324	115.0	0.994	0.149
512	STABILIZED LEVEL FLIGHT	324	120.0	0.970	0.137

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT HD
 SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 USC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCL KTS	R/H CYC BOOST TUBE MEAN	OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	108.405	277.035
496	STABILIZED LEVEL FLIGHT	309	43.0	96.360	216.810
497	STABILIZED LEVEL FLIGHT	309	59.0	108.405	180.675
498	STABILIZED LEVEL FLIGHT	309	80.0	36.135	156.585
499	STABILIZED LEVEL FLIGHT	309	91.0	132.495	204.765
500	STABILIZED LEVEL FLIGHT	309	100.0	120.450	289.060
501	STABILIZED LEVEL FLIGHT	309	110.0	84.315	277.035
502	STABILIZED LEVEL FLIGHT	309	115.0	120.450	313.170
503	STABILIZED LEVEL FLIGHT	309	120.0	144.540	505.890
504	STABILIZED LEVEL FLIGHT	324	23.0	144.540	264.990
505	STABILIZED LEVEL FLIGHT	324	43.0	84.315	156.585
506	STABILIZED LEVEL FLIGHT	324	59.0	96.360	144.540
507	STABILIZED LEVEL FLIGHT	324	80.0	60.225	156.585
508	STABILIZED LEVEL FLIGHT	324	91.0	108.405	160.675
509	STABILIZED LEVEL FLIGHT	324	100.0	144.540	264.990
510	STABILIZED LEVEL FLIGHT	324	110.0	96.360	264.990
511	STABILIZED LEVEL FLIGHT	324	115.0	120.450	337.260
512	STABILIZED LEVEL FLIGHT	324	120.0	108.405	349.305

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT HD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	L/H CYC BOOST MEAN	TUBE OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	-56.100	190.740
496	STABILIZED LEVEL FLIGHT	309	43.0	-22.440	157.080
497	STABILIZED LEVEL FLIGHT	309	59.0	-11.220	145.860
498	STABILIZED LEVEL FLIGHT	309	80.0	-112.200	224.400
499	STABILIZED LEVEL FLIGHT	309	91.0	-145.660	168.300
500	STABILIZED LEVEL FLIGHT	309	100.0	-89.760	157.080
501	STABILIZED LEVEL FLIGHT	309	110.0	-145.860	190.740
502	STABILIZED LEVEL FLIGHT	309	115.0	-168.300	213.180
503	STABILIZED LEVEL FLIGHT	309	120.0	-224.400	314.160
504	STABILIZED LEVEL FLIGHT	324	23.0	-11.220	235.620
505	STABILIZED LEVEL FLIGHT	324	43.0	44.880	134.640
506	STABILIZED LEVEL FLIGHT	324	59.0	33.660	145.860
507	STABILIZED LEVEL FLIGHT	324	80.0	-56.100	168.300
508	STABILIZED LEVEL FLIGHT	324	91.0	-67.320	179.520
509	STABILIZED LEVEL FLIGHT	324	100.0	-100.980	168.300
510	STABILIZED LEVEL FLIGHT	324	110.0	-112.200	179.520
511	STABILIZED LEVEL FLIGHT	324	115.0	-157.080	201.960
512	STABILIZED LEVEL FLIGHT	324	120.0	-179.520	246.840

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135A G.W. 7500 LB ALT. 3000 FT HD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	COLL BOOST TUBE MEAN	OSC
495	STABILIZED LEVEL FLIGHT	309	23.0	-87.400	104.880
496	STABILIZED LEVEL FLIGHT	309	43.0	-52.440	78.660
497	STABILIZED LEVEL FLIGHT	309	59.0	-43.700	78.660
498	STABILIZED LEVEL FLIGHT	309	80.0	-74.290	117.990
499	STABILIZED LEVEL FLIGHT	309	91.0	-56.810	144.210
500	STABILIZED LEVEL FLIGHT	309	100.0	-69.920	201.020
501	STABILIZED LEVEL FLIGHT	309	110.0	-52.440	227.240
502	STABILIZED LEVEL FLIGHT	309	115.0	-30.590	257.830
503	STABILIZED LEVEL FLIGHT	309	120.0	-30.590	310.270
504	STABILIZED LEVEL FLIGHT	324	23.0	-34.960	131.100
505	STABILIZED LEVEL FLIGHT	324	43.0	0.000	87.400
506	STABILIZED LEVEL FLIGHT	324	59.0	0.000	87.400
507	STABILIZED LEVEL FLIGHT	324	80.0	-78.660	174.800
508	STABILIZED LEVEL FLIGHT	324	91.0	-39.330	152.950
509	STABILIZED LEVEL FLIGHT	324	100.0	-26.220	209.760
510	STABILIZED LEVEL FLIGHT	324	110.0	-52.440	244.720
511	STABILIZED LEVEL FLIGHT	324	115.0	-39.330	266.570
512	STABILIZED LEVEL FLIGHT	324	120.0	-56.810	292.790

BASELINE STD BLADES.

MODEL UH-1B 543 FLT. 1358 G.W. 7500 LB ALI. 3080 FT MD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CIR NO.	TEST CONDITION	RPM	VCAL KTS	MR BLD BN STA 140 MEAN	OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	-1712.500	5087.500
531	STABILIZED LEVEL FLIGHT	309	43.0	-1300.000	5500.000
532	STABILIZED LEVEL FLIGHT	309	59.0	-1025.000	5775.000
533	STABILIZED LEVEL FLIGHT	309	80.0	-1575.000	6050.000
534	STABILIZED LEVEL FLIGHT	309	91.0	-612.500	7562.500
535	STABILIZED LEVEL FLIGHT	309	100.0	-1025.000	7150.000
536	STABILIZED LEVEL FLIGHT	309	110.0	-612.500	7562.500
537	STABILIZED LEVEL FLIGHT	309	115.0	-612.500	8662.500
538	STABILIZED LEVEL FLIGHT	309	120.0	-475.000	9625.000
539	STABILIZED LEVEL FLIGHT	324	23.0	-2400.000	4950.000
540	STABILIZED LEVEL FLIGHT	324	43.0	-1712.500	4537.500
541	STABILIZED LEVEL FLIGHT	324	59.0	-1437.500	4262.500
542	STABILIZED LEVEL FLIGHT	324	80.0	-1575.000	5225.000
543	STABILIZED LEVEL FLIGHT	324	91.0	-1987.500	5912.500
544	STABILIZED LEVEL FLIGHT	324	109.0	-1987.500	6737.500
545	STABILIZED LEVEL FLIGHT	324	110.0	-1850.000	6875.000
546	STABILIZED LEVEL FLIGHT	324	115.0	-1575.000	7150.000
547	STABILIZED LEVEL FLIGHT	324	120.0	-750.000	8250.000

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 1358 G.W. 7500 LB ALT. 3080 FT HD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR BLD BM STA 84 MEAN	CSC
530	STABILIZED LEVEL FLIGHT	309	23.0	2299.390	5023.030
531	STABILIZED LEVEL FLIGHT	309	43.0	3489.055	6212.695
532	STABILIZED LEVEL FLIGHT	309	59.0	3489.055	5419.585
533	STABILIZED LEVEL FLIGHT	309	80.0	2563.760	6080.510
534	STABILIZED LEVEL FLIGHT	309	91.0	4414.350	8459.840
535	STABILIZED LEVEL FLIGHT	309	100.0	4810.905	7798.915
536	STABILIZED LEVEL FLIGHT	309	110.0	6000.570	9252.950
537	STABILIZED LEVEL FLIGHT	309	115.0	5075.275	9913.875
538	STABILIZED LEVEL FLIGHT	309	120.0	8115.530	11896.650
539	STABILIZED LEVEL FLIGHT	324	23.0	-212.125	5683.955
540	STABILIZED LEVEL FLIGHT	324	43.0	843.355	5155.215
541	STABILIZED LEVEL FLIGHT	324	59.0	580.985	4362.105
542	STABILIZED LEVEL FLIGHT	324	80.0	580.985	5419.585
543	STABILIZED LEVEL FLIGHT	324	91.0	1506.280	6080.510
544	STABILIZED LEVEL FLIGHT	324	100.0	2431.575	6212.695
545	STABILIZED LEVEL FLIGHT	324	110.0	3489.055	7005.805
546	STABILIZED LEVEL FLIGHT	324	115.0	3621.240	7931.100
547	STABILIZED LEVEL FLIGHT	324	120.0	5075.275	8592.025

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135B C.W. 7500 LB ALT. 3080 FT MD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	PR BLD BM STA 60 MEAN	OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	691.074	7175.924
531	STABILIZED LEVEL FLIGHT	309	43.0	2817.275	8770.575
532	STABILIZED LEVEL FLIGHT	309	59.0	4146.150	7441.700
533	STABILIZED LEVEL FLIGHT	309	80.0	2019.950	6504.800
534	STABILIZED LEVEL FLIGHT	309	91.0	7069.674	11428.325
535	STABILIZED LEVEL FLIGHT	309	100.0	6538.124	10365.225
536	STABILIZED LEVEL FLIGHT	309	110.0	7866.999	13288.750
537	STABILIZED LEVEL FLIGHT	309	115.0	6538.124	14617.625
538	STABILIZED LEVEL FLIGHT	309	120.0	11853.625	17806.925
539	STABILIZED LEVEL FLIGHT	324	23.0	-5953.301	8504.800
540	STABILIZED LEVEL FLIGHT	324	43.0	-4624.425	6112.826
541	STABILIZED LEVEL FLIGHT	324	59.0	-3827.100	5847.050
542	STABILIZED LEVEL FLIGHT	324	80.0	-3029.775	7175.924
543	STABILIZED LEVEL FLIGHT	324	91.0	-1169.351	9036.349
544	STABILIZED LEVEL FLIGHT	324	100.0	691.074	8770.574
545	STABILIZED LEVEL FLIGHT	324	110.0	2817.274	9302.125
546	STABILIZED LEVEL FLIGHT	324	115.0	4146.149	11162.550
547	STABILIZED LEVEL FLIGHT	324	120.0	6272.349	12225.650

BASLINE STD BLADES

MODEL UH-1B 543 FLT. 1358 G.W. 7500 LB ALI. 3080 FT MD
 SHIP AFS2-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CIR NO.	TEST CONDITON	RPM	VCAL KTS	MR BLD BN MEAN	STA 35 GSC
530	STABILIZED LEVEL FLIGHT	309	23.0	-5858.601	10199.200
531	STABILIZED LEVEL FLIGHT	309	43.0	-1222.600	12980.800
532	STABILIZED LEVEL FLIGHT	309	55.0	2949.800	11590.000
533	STABILIZED LEVEL FLIGHT	309	80.0	-1686.199	12517.200
534	STABILIZED LEVEL FLIGHT	309	91.0	5267.801	17616.600
535	STABILIZED LEVEL FLIGHT	309	100.0	4804.200	16226.000
536	STABILIZED LEVEL FLIGHT	309	110.0	8976.600	20398.400
537	STABILIZED LEVEL FLIGHT	309	115.0	3413.400	21325.599
538	STABILIZED LEVEL FLIGHT	309	120.0	15466.999	26688.799
539	STABILIZED LEVEL FLIGHT	324	23.0	-23011.801	9735.600
540	STABILIZED LEVEL FLIGHT	324	43.0	-15594.200	9735.600
541	STABILIZED LEVEL FLIGHT	324	59.0	-16057.801	9271.999
542	STABILIZED LEVEL FLIGHT	324	80.0	-14203.401	10199.200
543	STABILIZED LEVEL FLIGHT	324	91.0	-10031.001	11590.000
544	STABILIZED LEVEL FLIGHT	324	100.0	-5858.600	13908.000
545	STABILIZED LEVEL FLIGHT	324	110.0	-2149.800	16689.601
546	STABILIZED LEVEL FLIGHT	324	115.0	-1222.600	19471.199
547	STABILIZED LEVEL FLIGHT	324	120.0	2022.600	20862.001

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135R G.W. 7500 LB ALT. 3080 FT HD
 SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 USC. NO. 1

CTR NO.	TEST CONDITION	PPH	VCAL KTS	MR PITCH LINK RED MEAN	OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	99.605	389.365
531	STABILIZED LEVEL FLIGHT	309	43.0	99.605	335.035
532	STABILIZED LEVEL FLIGHT	309	59.0	45.275	280.705
533	STABILIZED LEVEL FLIGHT	309	80.0	45.275	280.705
534	STABILIZED LEVEL FLIGHT	309	91.0	162.990	362.200
535	STABILIZED LEVEL FLIGHT	309	100.0	153.935	389.365
536	STABILIZED LEVEL FLIGHT	309	110.0	208.265	443.695
537	STABILIZED LEVEL FLIGHT	309	115.0	108.660	579.520
538	STABILIZED LEVEL FLIGHT	309	120.0	117.715	679.125
539	STABILIZED LEVEL FLIGHT	324	23.0	-9.055	407.475
540	STABILIZED LEVEL FLIGHT	324	43.0	-9.055	316.925
541	STABILIZED LEVEL FLIGHT	324	59.0	18.110	271.650
542	STABILIZED LEVEL FLIGHT	324	80.0	36.220	307.870
543	STABILIZED LEVEL FLIGHT	324	91.0	63.385	335.035
544	STABILIZED LEVEL FLIGHT	324	100.0	91.495	407.475
545	STABILIZED LEVEL FLIGHT	324	110.0	135.825	425.585
546	STABILIZED LEVEL FLIGHT	324	115.0	144.880	434.640
547	STABILIZED LEVEL FLIGHT	324	120.0	126.770	543.300

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 1358 C.W. 7500 LB ALT. 3080 FT HD
 SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL NTS	MR DRAG BRACE MEAN	OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	302.480	3300.520
531	STABILIZED LEVEL FLIGHT	309	43.0	4456.140	3534.180
532	STABILIZED LEVEL FLIGHT	309	59.0	4456.140	2919.540
533	STABILIZED LEVEL FLIGHT	309	80.0	4148.820	2304.900
534	STABILIZED LEVEL FLIGHT	309	91.0	3687.840	3380.520
535	STABILIZED LEVEL FLIGHT	309	100.0	3687.840	3380.520
536	STABILIZED LEVEL FLIGHT	309	110.0	3380.520	3687.840
537	STABILIZED LEVEL FLIGHT	309	115.0	2919.540	4148.820
538	STABILIZED LEVEL FLIGHT	309	120.0	2765.880	4917.120
539	STABILIZED LEVEL FLIGHT	324	23.0	4609.800	3687.840
540	STABILIZED LEVEL FLIGHT	324	43.0	4609.800	2765.880
541	STABILIZED LEVEL FLIGHT	324	59.0	4456.140	2612.220
542	STABILIZED LEVEL FLIGHT	324	80.0	4302.490	2151.240
543	STABILIZED LEVEL FLIGHT	324	91.0	3841.500	2612.220
544	STABILIZED LEVEL FLIGHT	324	100.0	4456.140	2612.220
545	STABILIZED LEVEL FLIGHT	324	110.0	4456.140	2919.540
546	STABILIZED LEVEL FLIGHT	324	115.0	3841.500	3534.180
547	STABILIZED LEVEL FLIGHT	324	120.0	3687.840	3380.520

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 1358 G.W. 7500 LB ALT. 3080 FT MD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR YOKE BM STA 6.0 MEAN	OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	-49086.410	18158.030
531	STABILIZED LEVEL FLIGHT	309	43.0	-37531.300	19808.760
532	STABILIZED LEVEL FLIGHT	309	59.0	-39182.031	11555.110
533	STABILIZED LEVEL FLIGHT	309	80.0	-47435.681	13205.841
534	STABILIZED LEVEL FLIGHT	309	91.0	-37531.300	13205.841
535	STABILIZED LEVEL FLIGHT	309	100.0	-44134.220	13205.840
536	STABILIZED LEVEL FLIGHT	309	110.0	-39182.030	18158.030
537	STABILIZED LEVEL FLIGHT	309	115.0	-55689.331	18158.030
538	STABILIZED LEVEL FLIGHT	309	120.0	-34229.839	23110.220
539	STABILIZED LEVEL FLIGHT	324	23.0	-68895.170	28062.410
540	STABILIZED LEVEL FLIGHT	324	43.0	-65593.706	18158.030
541	STABILIZED LEVEL FLIGHT	324	59.0	-72196.628	11555.109
542	STABILIZED LEVEL FLIGHT	324	80.0	-72196.629	8253.649
543	STABILIZED LEVEL FLIGHT	324	91.0	-70545.899	9904.379
544	STABILIZED LEVEL FLIGHT	324	100.0	-62292.250	18158.030
545	STABILIZED LEVEL FLIGHT	324	110.0	-62292.250	18158.030
546	STABILIZED LEVEL FLIGHT	324	115.0	-62292.250	18158.030
547	STABILIZED LEVEL FLIGHT	324	120.0	-58990.791	18158.030

BASLINE STD BLADES

MODEL UH-1B 543 FLT. 1350 G.W. 7500 LB ALT. 3080 FT HD
 SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 CSC. NO. 1

CTR NO.	TEST CONDITION	RPM	V CAL KTS	MR BLD CHD STA 140 MEAN	OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	-8415.000	36465.000
531	STABILIZED LEVEL FLIGHT	309	43.0	-5610.000	34595.000
532	STABILIZED LEVEL FLIGHT	309	59.0	-7713.750	24076.250
533	STABILIZED LEVEL FLIGHT	309	80.0	-5843.750	16596.249
534	STABILIZED LEVEL FLIGHT	309	91.0	-0.000	27582.500
535	STABILIZED LEVEL FLIGHT	309	100.0	-467.500	24310.000
536	STABILIZED LEVEL FLIGHT	309	110.0	3272.500	24310.000
537	STABILIZED LEVEL FLIGHT	309	115.0	2103.750	22206.250
538	STABILIZED LEVEL FLIGHT	309	120.0	-232.750	29686.250
539	STABILIZED LEVEL FLIGHT	324	23.0	-9116.250	35296.250
540	STABILIZED LEVEL FLIGHT	324	43.0	-4675.000	23375.000
541	STABILIZED LEVEL FLIGHT	324	59.0	-4441.250	17998.750
542	STABILIZED LEVEL FLIGHT	324	80.0	-4441.250	11921.250
543	STABILIZED LEVEL FLIGHT	324	91.0	-2337.500	14025.000
544	STABILIZED LEVEL FLIGHT	324	100.0	-0.000	17765.000
545	STABILIZED LEVEL FLIGHT	324	110.0	-1168.750	17063.750
546	STABILIZED LEVEL FLIGHT	324	115.0	2571.250	19401.250
547	STABILIZED LEVEL FLIGHT	324	120.0	2103.750	18466.250

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135B G.W. 7500 LB ALT. 3080 FT HD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL		MR BLD CHD		STA 60	
			KTS	MEAN			OSC	
530	STABILIZED LEVEL FLIGHT	309	23.0	46268.500			53771.500	
531	STABILIZED LEVEL FLIGHT	309	43.0	46893.750			51895.749	
532	STABILIZED LEVEL FLIGHT	309	59.0	43767.500			41266.500	
533	STABILIZED LEVEL FLIGHT	309	80.0	48144.249			31887.749	
534	STABILIZED LEVEL FLIGHT	309	91.0	48769.500			53771.499	
535	STABILIZED LEVEL FLIGHT	309	100.0	58148.250			46893.750	
536	STABILIZED LEVEL FLIGHT	309	110.0	61899.750			46893.750	
537	STABILIZED LEVEL FLIGHT	309	115.0	60023.999			51270.500	
538	STABILIZED LEVEL FLIGHT	309	120.0	58773.500			62525.000	
539	STABILIZED LEVEL FLIGHT	324	23.0	50645.250			48144.249	
540	STABILIZED LEVEL FLIGHT	324	43.0	53771.499			41266.500	
541	STABILIZED LEVEL FLIGHT	324	59.0	58773.500			31262.500	
542	STABILIZED LEVEL FLIGHT	324	80.0	58773.500			27511.000	
543	STABILIZED LEVEL FLIGHT	324	91.0	42517.000			20008.000	
544	STABILIZED LEVEL FLIGHT	324	100.0	61274.499			32513.000	
545	STABILIZED LEVEL FLIGHT	324	110.0	63775.500			33763.499	
546	STABILIZED LEVEL FLIGHT	324	115.0	67527.000			37515.000	
547	STABILIZED LEVEL FLIGHT	324	120.0	70027.999			42517.000	

BASLINE STD BLADES

MODEL UH-1B 543 FLT. 1358 G.W. 7500 LB ALT. 3060 FT HD
 SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. ND. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR VOKE CHD STA 6.0 MEAN	OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	43057.740	59367.490
531	STABILIZED LEVEL FLIGHT	309	43.0	43383.936	56431.735
532	STABILIZED LEVEL FLIGHT	309	59.0	37838.622	49581.640
533	STABILIZED LEVEL FLIGHT	309	80.0	38491.010	43057.740
534	STABILIZED LEVEL FLIGHT	309	91.0	50886.421	62629.439
535	STABILIZED LEVEL FLIGHT	309	100.0	56431.736	63608.025
536	STABILIZED LEVEL FLIGHT	309	110.0	64260.415	69479.534
537	STABILIZED LEVEL FLIGHT	309	115.0	70458.120	75677.239
538	STABILIZED LEVEL FLIGHT	309	120.0	69805.730	91334.599
539	STABILIZED LEVEL FLIGHT	324	23.0	37838.622	53495.980
540	STABILIZED LEVEL FLIGHT	324	43.0	41426.766	46645.885
541	STABILIZED LEVEL FLIGHT	324	59.0	43710.129	37838.620
542	STABILIZED LEVEL FLIGHT	324	80.0	45341.105	36860.034
543	STABILIZED LEVEL FLIGHT	324	91.0	47950.665	45993.495
544	STABILIZED LEVEL FLIGHT	324	100.0	53495.981	50886.420
545	STABILIZED LEVEL FLIGHT	324	110.0	56757.931	52191.200
546	STABILIZED LEVEL FLIGHT	324	115.0	64912.805	64912.805
547	STABILIZED LEVEL FLIGHT	324	120.0	68174.753	66869.974

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 1358 C.W. 7500 LB ALT. 3080 FT HD
 SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCLAL KTS	MR FLAPPING MEAN	OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	-1.212	12.120
531	STABILIZED LEVEL FLIGHT	309	43.0	-1.818	13.938
532	STABILIZED LEVEL FLIGHT	309	59.0	-1.818	13.938
533	STABILIZED LEVEL FLIGHT	309	80.0	-1.818	10.302
534	STABILIZED LEVEL FLIGHT	309	91.0	-2.424	12.120
535	STABILIZED LEVEL FLIGHT	309	100.0	-2.424	8.484
536	STABILIZED LEVEL FLIGHT	309	110.0	-4.242	9.090
537	STABILIZED LEVEL FLIGHT	309	115.0	-3.030	11.514
538	STABILIZED LEVEL FLIGHT	309	120.0	-1.618	13.938
539	STABILIZED LEVEL FLIGHT	324	23.0	-1.818	13.938
540	STABILIZED LEVEL FLIGHT	324	43.0	-1.818	11.514
541	STABILIZED LEVEL FLIGHT	324	59.0	-1.818	10.302
542	STABILIZED LEVEL FLIGHT	324	80.0	-1.212	6.060
543	STABILIZED LEVEL FLIGHT	324	91.0	-3.636	8.484
544	STABILIZED LEVEL FLIGHT	324	100.0	-0.606	6.666
545	STABILIZED LEVEL FLIGHT	324	110.0	-2.424	4.848
546	STABILIZED LEVEL FLIGHT	324	115.0	-0.606	9.090
547	STABILIZED LEVEL FLIGHT	324	120.0	-3.030	11.514

BASELINE STD BLADES

MODEL UH-1B. 543 FLT. 1358 G.W. 7500 LB ALT. 3080 FT HC
 SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	PILGT MEAN	VFRT ACCEL	OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	0.976		0.133
531	STABILIZED LEVEL FLIGHT	309	43.0	1.024		0.121
532	STABILIZED LEVEL FLIGHT	309	59.0	1.030		0.127
533	STABILIZED LEVEL FLIGHT	309	80.0	0.976		0.133
534	STABILIZED LEVEL FLIGHT	309	91.0	1.024		0.230
535	STABILIZED LEVEL FLIGHT	309	100.0	0.982		0.212
536	STABILIZED LEVEL FLIGHT	309	110.0	0.988		0.266
537	STABILIZED LEVEL FLIGHT	309	115.0	0.903		0.242
538	STABILIZED LEVEL FLIGHT	309	120.0	0.976		0.327
539	STABILIZED LEVEL FLIGHT	324	23.0	0.939		0.085
540	STABILIZED LEVEL FLIGHT	324	43.0	0.982		0.091
541	STABILIZED LEVEL FLIGHT	324	59.0	0.958		0.091
542	STABILIZED LEVEL FLIGHT	324	80.0	0.946		0.115
543	STABILIZED LEVEL FLIGHT	324	91.0	0.939		0.133
544	STABILIZED LEVEL FLIGHT	324	100.0	0.994		0.175
545	STABILIZED LEVEL FLIGHT	324	110.0	0.976		0.230
546	STABILIZED LEVEL FLIGHT	324	115.0	1.018		0.272
547	STABILIZED LEVEL FLIGHT	324	120.0	1.006		0.260

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 1358 G.W. 7500 LB ALT. 3080 FT HD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	CO-PILOT VERT ACCEL	
				MEAN	OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	0.970	0.162
531	STABILIZED LEVEL FLIGHT	309	43.0	1.042	0.114
532	STABILIZED LEVEL FLIGHT	309	59.0	1.084	0.144
533	STABILIZED LEVEL FLIGHT	309	80.0	1.012	0.168
534	STABILIZED LEVEL FLIGHT	309	91.0	1.066	0.234
535	STABILIZED LEVEL FLIGHT	309	100.0	1.024	0.228
536	STABILIZED LEVEL FLIGHT	309	110.0	1.066	0.330
537	STABILIZED LEVEL FLIGHT	309	115.0	0.970	0.318
538	STABILIZED LEVEL FLIGHT	309	120.0	1.024	0.432
539	STABILIZED LEVEL FLIGHT	324	23.0	1.036	0.228
540	STABILIZED LEVEL FLIGHT	324	43.0	1.042	0.150
541	STABILIZED LEVEL FLIGHT	324	59.0	0.982	0.114
542	STABILIZED LEVEL FLIGHT	324	80.0	0.954	0.126
543	STABILIZED LEVEL FLIGHT	324	91.0	1.000	0.156
544	STABILIZED LEVEL FLIGHT	324	100.0	0.994	0.246
545	STABILIZED LEVEL FLIGHT	324	110.0	1.024	0.252
546	STABILIZED LEVEL FLIGHT	324	115.0	1.012	0.276
547	STABILIZED LEVEL FLIGHT	324	120.0	1.030	0.342

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 1358 G.W. 7500 LB ALT. 3080 FT HD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CIR NO.	TEST CONDITION	RPM	VCAL KTS	C.G. VERT MEAN	ACCEL	DSC
530	STABILIZED LEVEL FLIGHT	309	23.0	0.964		0.108
531	STABILIZED LEVEL FLIGHT	309	43.0	1.018		0.102
532	STABILIZED LEVEL FLIGHT	309	59.0	1.066		0.090
533	STABILIZED LEVEL FLIGHT	309	80.0	1.012		0.096
534	STABILIZED LEVEL FLIGHT	309	91.0	1.066		0.090
535	STABILIZED LEVEL FLIGHT	309	100.0	1.066		0.102
536	STABILIZED LEVEL FLIGHT	309	110.0	1.030		0.138
537	STABILIZED LEVEL FLIGHT	309	115.0	0.958		0.102
538	STABILIZED LEVEL FLIGHT	309	120.0	1.072		0.120
539	STABILIZED LEVEL FLIGHT	324	23.0	0.922		0.210
540	STABILIZED LEVEL FLIGHT	324	43.0	1.006		0.162
541	STABILIZED LEVEL FLIGHT	324	59.0	0.970		0.102
542	STABILIZED LEVEL FLIGHT	324	80.0	0.970		0.066
543	STABILIZED LEVEL FLIGHT	324	91.0	0.958		0.090
544	STABILIZED LEVEL FLIGHT	324	100.0	1.006		0.114
545	STABILIZED LEVEL FLIGHT	324	110.0	0.988		0.108
546	STABILIZED LEVEL FLIGHT	324	115.0	0.982		0.114
547	STABILIZED LEVEL FLIGHT	324	120.0	1.000		0.120

BASELINE STD BLADES

MODEL UH-1B 543 FLT. 135R G.W. 7500 LB ALT. 3080 FT HD
SNIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	R/H CYC BOOST TUBE MEAN	OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	119.350	262.570
531	STABILIZED LEVEL FLIGHT	309	43.0	143.220	238.700
532	STABILIZED LEVEL FLIGHT	309	59.0	83.545	179.025
533	STABILIZED LEVEL FLIGHT	309	80.0	83.545	131.285
534	STABILIZED LEVEL FLIGHT	309	91.0	179.025	226.765
535	STABILIZED LEVEL FLIGHT	309	100.0	167.090	214.830
536	STABILIZED LEVEL FLIGHT	309	110.0	155.155	274.505
537	STABILIZED LEVEL FLIGHT	309	115.0	131.285	298.375
538	STABILIZED LEVEL FLIGHT	309	120.0	179.025	393.855
539	STABILIZED LEVEL FLIGHT	324	23.0	131.285	322.245
540	STABILIZED LEVEL FLIGHT	324	43.0	71.610	190.960
541	STABILIZED LEVEL FLIGHT	324	59.0	83.545	131.285
542	STABILIZED LEVEL FLIGHT	324	80.0	59.675	131.285
543	STABILIZED LEVEL FLIGHT	324	91.0	107.415	155.155
544	STABILIZED LEVEL FLIGHT	324	100.0	107.415	202.895
545	STABILIZED LEVEL FLIGHT	324	110.0	143.220	238.700
546	STABILIZED LEVEL FLIGHT	324	115.0	143.220	286.440
547	STABILIZED LEVEL FLIGHT	324	120.0	119.350	334.100

EASELINE STD BLADES

MODEL UH-1E 543 FLT. 1358 G.W. 7500 LB ALT. 3060 FT HD
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	L/H CYC BOOST MEAN	TURE OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	-56.100	190.740
531	STABILIZED LEVEL FLIGHT	309	43.0	-67.320	157.080
532	STABILIZED LEVEL FLIGHT	309	59.0	-78.540	168.300
533	STABILIZED LEVEL FLIGHT	309	80.0	-100.980	190.740
534	STABILIZED LEVEL FLIGHT	309	91.0	-157.080	201.960
535	STABILIZED LEVEL FLIGHT	309	100.0	-100.980	168.300
536	STABILIZED LEVEL FLIGHT	309	110.0	-112.200	179.520
537	STABILIZED LEVEL FLIGHT	309	115.0	-168.300	213.180
538	STABILIZED LEVEL FLIGHT	309	120.0	-213.180	258.060
539	STABILIZED LEVEL FLIGHT	324	23.0	-89.760	269.280
540	STABILIZED LEVEL FLIGHT	324	43.0	-44.880	157.080
541	STABILIZED LEVEL FLIGHT	324	59.0	-22.440	157.080
542	STABILIZED LEVEL FLIGHT	324	80.0	-44.880	157.080
543	STABILIZED LEVEL FLIGHT	324	91.0	-100.980	145.860
544	STABILIZED LEVEL FLIGHT	324	100.0	-33.660	123.420
545	STABILIZED LEVEL FLIGHT	324	110.0	-78.540	213.180
546	STABILIZED LEVEL FLIGHT	324	115.0	-89.760	179.520
547	STABILIZED LEVEL FLIGHT	324	120.0	-145.860	258.060

BASELINE STD BLADES

MODEL UH-1H 543 FLT. 1358 G.W. 7500 LB ALT. 3080 FT MO
SHIP AF62-2023 DATE 9 JULY 65 C.G. STA 133.2 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	COLL BOOST TUBE MEAN	OSC
530	STABILIZED LEVEL FLIGHT	309	23.0	-87.100	104.520
531	STABILIZED LEVEL FLIGHT	309	43.0	-91.455	91.455
532	STABILIZED LEVEL FLIGHT	309	59.0	-69.620	78.390
533	STABILIZED LEVEL FLIGHT	309	80.0	-56.615	82.745
534	STABILIZED LEVEL FLIGHT	309	91.0	-56.615	126.295
535	STABILIZED LEVEL FLIGHT	309	100.0	-60.970	165.490
536	STABILIZED LEVEL FLIGHT	309	110.0	-91.455	195.975
537	STABILIZED LEVEL FLIGHT	309	115.0	-43.550	252.590
538	STABILIZED LEVEL FLIGHT	309	120.0	-82.745	326.625
539	STABILIZED LEVEL FLIGHT	324	23.0	-39.195	108.875
540	STABILIZED LEVEL FLIGHT	324	43.0	-56.615	91.455
541	STABILIZED LEVEL FLIGHT	324	59.0	-21.775	74.035
542	STABILIZED LEVEL FLIGHT	324	80.0	-39.195	117.585
543	STABILIZED LEVEL FLIGHT	324	91.0	-60.970	148.070
544	STABILIZED LEVEL FLIGHT	324	100.0	-56.615	178.555
545	STABILIZED LEVEL FLIGHT	324	110.0	-60.970	209.040
546	STABILIZED LEVEL FLIGHT	324	115.0	-74.035	239.525
547	STABILIZED LEVEL FLIGHT	324	120.0	-74.035	291.785

SECRET

LOAD SURVEY - RADAR ANTENNA M/R BLACES

MODEL UH-1B 343 FLT. 143-A G.M. 7500 LB. ALT. 3000 FT MO
SNIP AF 62-2023 DATE 19 AUG 69 C.G. STA. 125.4 OSC. NG. 1

CTR	TEST CONDITION	RPM	VCAL KTS	MR BL BEAM MEAN	STA 140 LSC
799	STABILIZED LEVEL FLIGHT	310	23.0	-851.145	6502.545
800	STABILIZED LEVEL FLIGHT	310	43.0	-360.325	4510.085
801	STABILIZED LEVEL FLIGHT	310	55.0	170.455	5440.905
802	STABILIZED LEVEL FLIGHT	310	80.0	-453.030	6900.660
803	STABILIZED LEVEL FLIGHT	310	91.0	-453.030	7166.070
804	STABILIZED LEVEL FLIGHT	310	100.0	-758.440	7962.300
805	STABILIZED LEVEL FLIGHT	310	115.0	170.455	8851.215
806	STABILIZED LEVEL FLIGHT	310	120.0	435.905	9687.465
807	STABILIZED LEVEL FLIGHT	324	23.0	-1023.650	4777.390
808	STABILIZED LEVEL FLIGHT	324	43.0	-625.735	4644.675
809	STABILIZED LEVEL FLIGHT	324	55.0	-360.325	4375.265
810	STABILIZED LEVEL FLIGHT	324	80.0	-758.440	6104.430
811	STABILIZED LEVEL FLIGHT	324	91.0	-758.440	6635.250
812	STABILIZED LEVEL FLIGHT	324	100.0	-493.030	6900.660
813	STABILIZED LEVEL FLIGHT	324	110.0	-453.030	7431.480
814	STABILIZED LEVEL FLIGHT	324	115.0	-227.620	7696.890
815	STABILIZED LEVEL FLIGHT	324	120.0	37.750	8453.120

LOAD SURVEY - RADAR ANTENNA H/R

MODEL UN-10 543 FLT. 143-A G.W. 75CC GR. ALT. 3000 FT HC
SNIP 46 62-2023 DATE 19 AUG 63 C.G. STA. 129.4 CSC. HG. 1

CTR NO.	TEST CONDITION	RPM	VCLAL KTS	PR BL BEAM STA 84	
				MEAN	CSC
799	STABILIZED LEVEL FLIGHT	310	23.0	1773.475	6477.255
800	STABILIZED LEVEL FLIGHT	310	43.0	1773.475	4953.195
801	STABILIZED LEVEL FLIGHT	310	59.0	2535.505	4853.195
802	STABILIZED LEVEL FLIGHT	310	80.0	3551.545	7239.285
803	STABILIZED LEVEL FLIGHT	310	91.0	3551.545	7493.295
804	STABILIZED LEVEL FLIGHT	310	100.0	4821.359	8001.319
805	STABILIZED LEVEL FLIGHT	310	115.0	7107.685	10033.355
806	STABILIZED LEVEL FLIGHT	310	120.0	8865.755	12573.495
807	STABILIZED LEVEL FLIGHT	324	23.0	122.410	5926.220
808	STABILIZED LEVEL FLIGHT	324	43.0	-4.559	4191.109
809	STABILIZED LEVEL FLIGHT	324	59.0	-131.600	4326.190
810	STABILIZED LEVEL FLIGHT	324	80.0	1392.400	6390.250
811	STABILIZED LEVEL FLIGHT	324	91.0	2154.490	6350.250
812	STABILIZED LEVEL FLIGHT	324	100.0	3424.540	6858.270
813	STABILIZED LEVEL FLIGHT	324	110.0	4186.570	7626.300
814	STABILIZED LEVEL FLIGHT	324	115.0	4313.575	8505.335
815	STABILIZED LEVEL FLIGHT	324	120.0	6091.645	10033.355

LOAD SURVEY - RADAR ANTENNA M/R BLADES

MODEL UH-1B 343 FLT. 143-A C.M. 75CC LB. ALT. 3000 FT ME
SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA: 125.4 OSC. NG. 1

CTR	TEST CONDITION	RPM	VCAL KTS	MR BL BEAM MEAN	STA 6C
NC.					CSC
799	STABILIZED LEVEL FLIGHT	310	23.0	-647.020	9640.221
800	STABILIZED LEVEL FLIGHT	310	43.0	-140.500	6088.560
801	STABILIZED LEVEL FLIGHT	310	55.0	2356.400	6088.559
802	STABILIZED LEVEL FLIGHT	310	80.0	4425.919	10654.580
803	STABILIZED LEVEL FLIGHT	310	91.0	4425.919	10147.600
804	STABILIZED LEVEL FLIGHT	310	100.0	6455.440	11162.360
805	STABILIZED LEVEL FLIGHT	310	115.0	11525.239	14206.640
806	STABILIZED LEVEL FLIGHT	310	120.0	14573.520	18265.680
807	STABILIZED LEVEL FLIGHT	324	23.0	-5214.300	7610.700
808	STABILIZED LEVEL FLIGHT	324	43.0	-3945.891	6342.250
809	STABILIZED LEVEL FLIGHT	324	55.0	-3652.160	6088.559
810	STABILIZED LEVEL FLIGHT	324	80.0	-647.020	8118.081
811	STABILIZED LEVEL FLIGHT	324	91.0	366.879	8118.080
812	STABILIZED LEVEL FLIGHT	324	100.0	3918.540	9132.840
813	STABILIZED LEVEL FLIGHT	324	110.0	5166.950	10401.290
814	STABILIZED LEVEL FLIGHT	324	115.0	5694.370	11416.050
815	STABILIZED LEVEL FLIGHT	324	120.0	10007.059	14206.640

00131

PAGE

REPORT 204-100-113

LEAD SURVEY - RADAR ANTENNA M/R BLADES

MODEL UH-1H 543 FLT. 143-A G.W. 7500 LBS ALT. 3000 FT HD
 SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA 125.4 CSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	MR BL BEAM STA 35	MEAN	CSC
799	STABILIZED LEVEL FLIGHT	310	23.0	-4286.585	15378.494	
800	STABILIZED LEVEL FLIGHT	310	43.0	-5117.855	9555.684	
801	STABILIZED LEVEL FLIGHT	310	55.0	-545.870	10806.910	
802	STABILIZED LEVEL FLIGHT	310	80.0	2363.574	14547.226	
803	STABILIZED LEVEL FLIGHT	310	91.0	1547.540	13300.320	
804	STABILIZED LEVEL FLIGHT	310	100.0	4519.924	16205.766	
805	STABILIZED LEVEL FLIGHT	310	115.0	12585.719	20781.750	
806	STABILIZED LEVEL FLIGHT	310	120.0	18157.704	26185.005	
807	STABILIZED LEVEL FLIGHT	324	23.0	-13430.555	7897.065	
808	STABILIZED LEVEL FLIGHT	324	43.0	-10936.745	9555.606	
809	STABILIZED LEVEL FLIGHT	324	55.0	-12599.285	8728.335	
810	STABILIZED LEVEL FLIGHT	324	80.0	-8858.571	11637.780	
811	STABILIZED LEVEL FLIGHT	324	91.0	-7196.030	11637.780	
812	STABILIZED LEVEL FLIGHT	324	100.0	-961.506	14547.225	
813	STABILIZED LEVEL FLIGHT	324	110.0	1532.305	16209.764	
814	STABILIZED LEVEL FLIGHT	324	115.0	701.035	18703.576	
815	STABILIZED LEVEL FLIGHT	324	120.0	11091.910	22444.290	

MODEL UM-10 543 FLT. 143-A G.M. 7500 L.P. ALI. 3000 FT MD
 SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA. 125.4 CSC. NO. 1

LOAD SURVEY - RADAR ANTENNA M/R BLADES

CTR	TEST CONDITION	RPM	VCAL KTS	NR PITCH LINK RED MEAN	CSC
799	STABILIZED LEVEL FLIGHT	310	23.0	-17.060	324.140
800	STABILIZED LEVEL FLIGHT	310	43.0	-51.160	272.960
801	STABILIZED LEVEL FLIGHT	310	59.0	-25.590	264.430
802	STABILIZED LEVEL FLIGHT	310	80.0	34.120	307.080
803	STABILIZED LEVEL FLIGHT	310	91.0	119.420	375.320
804	STABILIZED LEVEL FLIGHT	310	100.0	93.630	303.850
805	STABILIZED LEVEL FLIGHT	310	115.0	59.710	537.390
806	STABILIZED LEVEL FLIGHT	310	120.0	34.120	648.280
807	STABILIZED LEVEL FLIGHT	324	23.0	-42.050	281.490
808	STABILIZED LEVEL FLIGHT	324	43.0	-102.360	272.960
809	STABILIZED LEVEL FLIGHT	324	59.0	-34.120	259.900
810	STABILIZED LEVEL FLIGHT	324	80.0	-25.590	315.610
811	STABILIZED LEVEL FLIGHT	324	91.0	68.240	358.200
812	STABILIZED LEVEL FLIGHT	324	100.0	99.710	400.910
813	STABILIZED LEVEL FLIGHT	324	110.0	65.300	460.620
814	STABILIZED LEVEL FLIGHT	324	115.0	-0.000	520.860
815	STABILIZED LEVEL FLIGHT	324	120.0	42.650	605.630

LOAD SURVEY - RADAR ANTENNA M/R BLADES

MODEL UM-18 543 FLT. 143-A G.W. 7500 LBS ALT. 3000 FT MC
SHIP AF 62-2023 DATE 19 AUG 63 C.G. STA. 125.4 CSC. NO. 1

CTR	TEST CONDITION	RPM	VCAL KTS	MR DRAC BRACE		CSC
				MEAN		
799	STABILIZED LEVEL FLIGHT	310	23.0	4868.120		4255.400
800	STABILIZED LEVEL FLIGHT	310	43.0	5011.300		3253.140
801	STABILIZED LEVEL FLIGHT	310	55.0	4868.120		2863.600
802	STABILIZED LEVEL FLIGHT	310	80.0	4152.220		3579.500
803	STABILIZED LEVEL FLIGHT	310	91.0	3865.860		3865.800
804	STABILIZED LEVEL FLIGHT	310	100.0	3149.960		4009.040
805	STABILIZED LEVEL FLIGHT	310	113.0	3056.780		4724.940
806	STABILIZED LEVEL FLIGHT	310	120.0	3006.780		5584.020
807	STABILIZED LEVEL FLIGHT	324	23.0	4868.120		3722.680
808	STABILIZED LEVEL FLIGHT	324	43.0	5154.480		3149.960
809	STABILIZED LEVEL FLIGHT	324	59.0	4438.580		2720.420
810	STABILIZED LEVEL FLIGHT	324	80.0	4581.760		3149.960
811	STABILIZED LEVEL FLIGHT	324	91.0	4581.760		3436.320
812	STABILIZED LEVEL FLIGHT	324	100.0	4152.220		3579.500
813	STABILIZED LEVEL FLIGHT	324	110.0	3722.680		4009.040
814	STABILIZED LEVEL FLIGHT	324	119.0	3436.321		4009.040
815	STABILIZED LEVEL FLIGHT	324	120.0	3579.500		5011.300

LOAD SURVEY - RADAR ANTENNA M/R BLADES

PCOEL UM-1B 543 FLY. 143-A G.W. 7500 LB. ALT. 3000 FT MC
SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA: 125.4 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	PR YCKE BEAM STA 6	
				MEAN	OSC
799	STABILIZED LEVEL FLIGHT	310	23.0	-41020.330	23072.700
800	STABILIZED LEVEL FLIGHT	310	43.0	-39482.159	15381.800
801	STABILIZED LEVEL FLIGHT	310	55.0	-35482.159	15381.800
802	STABILIZED LEVEL FLIGHT	310	80.0	-39482.159	15381.800
803	STABILIZED LEVEL FLIGHT	310	51.0	-35482.159	15381.800
804	STABILIZED LEVEL FLIGHT	310	100.0	-42958.919	18458.159
805	STABILIZED LEVEL FLIGHT	310	115.0	-37943.979	19996.340
806	STABILIZED LEVEL FLIGHT	310	120.0	-36405.758	27687.240
807	STABILIZED LEVEL FLIGHT	324	23.0	-64093.039	18458.159
808	STABILIZED LEVEL FLIGHT	324	43.0	-52325.779	13843.620
809	STABILIZED LEVEL FLIGHT	324	55.0	-61016.678	12305.440
810	STABILIZED LEVEL FLIGHT	324	80.0	-53325.779	13843.620
811	STABILIZED LEVEL FLIGHT	324	91.0	-51787.559	15381.800
812	STABILIZED LEVEL FLIGHT	324	100.0	-51787.559	18458.159
813	STABILIZED LEVEL FLIGHT	324	110.0	-51787.559	18458.159
814	STABILIZED LEVEL FLIGHT	324	115.0	-57940.319	18458.161
815	STABILIZED LEVEL FLIGHT	324	120.0	-44096.700	23072.700

LOAD SURVEY - RADAR ANTENNA 4/R BLADES

MODEL UH-1B 543 FLY. 143-A G.W. 7500 LB. ALT. 3000 FT +0
SHIP AF 62-2023. DATE 19 AUG 65 C.G. STA. 125.4 CSC. NO. 1

CTR	TEST CONDITION	RPM	VCAL	MEAN	STDEV
799	STABILIZED LEVEL FLIGHT	310	23.0	56716.424	67462.694
800	STABILIZED LEVEL FLIGHT	310	43.0	52537.319	56119.410
801	STABILIZED LEVEL FLIGHT	310	59.0	55104.493	32805.975
802	STABILIZED LEVEL FLIGHT	310	20.0	65671.647	46567.168
803	STABILIZED LEVEL FLIGHT	310	91.0	65671.648	50149.260
804	STABILIZED LEVEL FLIGHT	310	100.0	66865.676	58507.469
805	STABILIZED LEVEL FLIGHT	310	119.0	71044.782	61452.545
806	STABILIZED LEVEL FLIGHT	310	120.0	75223.008	78605.979
807	STABILIZED LEVEL FLIGHT	324	23.0	61492.542	95522.395
808	STABILIZED LEVEL FLIGHT	324	43.0	57313.437	42985.080
809	STABILIZED LEVEL FLIGHT	324	59.0	65671.647	34626.869
810	STABILIZED LEVEL FLIGHT	324	80.0	65671.646	40597.020
811	STABILIZED LEVEL FLIGHT	324	91.0	70447.765	41751.049
812	STABILIZED LEVEL FLIGHT	324	100.0	75620.903	47164.186
813	STABILIZED LEVEL FLIGHT	324	110.0	77014.931	50746.272
814	STABILIZED LEVEL FLIGHT	324	119.0	78805.578	51343.291
815	STABILIZED LEVEL FLIGHT	324	120.0	77611.940	62609.559

REPORT CO. NO. 4 F C/ CE 165 2 10

LOAD SURVEY - RADAR ANTENNA M/R PLACES

MODEL UM-18 543 FLT. 143-A G.M. 7500 LB. ALL. 3000 FT MO
SNIP AF 62-2029 DATE 19 AUG 63 C.G. STA: 125.4 OSC. MC. 1

CTR	NO.	TEST CONDITION	RPM	VCL		NR VEKE CHORD STA 6	
				KTS	MEAN	OSC	OSC
799		STABILIZED LEVEL FLIGHT	310	23.C	42556.43C	61321.470	
800		STABILIZED LEVEL FLIGHT	310	43.C	38200.255	51603.050	
801		STABILIZED LEVEL FLIGHT	310	59.C	41086.250	42550.429	
802		STABILIZED LEVEL FLIGHT	310	80.C	46912.60C	57635.479	
803		STABILIZED LEVEL FLIGHT	310	91.C	52274.039	62326.739	
804		STABILIZED LEVEL FLIGHT	310	100.C	59901.109	70703.989	
805		STABILIZED LEVEL FLIGHT	310	115.C	72044.349	83431.409	
806		STABILIZED LEVEL FLIGHT	310	120.C	83772.459	109239.338	
807		STABILIZED LEVEL FLIGHT	324	23.C	39875.711	58640.751	
808		STABILIZED LEVEL FLIGHT	324	43.C	35104.450	48508.049	
809		STABILIZED LEVEL FLIGHT	324	59.C	43896.790	43226.610	
810		STABILIZED LEVEL FLIGHT	324	80.C	47247.65C	51200.771	
811		STABILIZED LEVEL FLIGHT	324	91.C	52274.041	54954.76C	
812		STABILIZED LEVEL FLIGHT	324	100.C	64672.37C	64672.37C	
813		STABILIZED LEVEL FLIGHT	324	110.C	67353.069	70033.809	
814		STABILIZED LEVEL FLIGHT	324	115.C	72044.347	71374.168	
815		STABILIZED LEVEL FLIGHT	324	120.C	78411.059	89804.119	

BLADES

ALT. 3000 FT MO
OSC. NC. 1

N	VERY VIBRATION	OSC
0000		C-130
0006		C-086
0006		C-098
0054		C-144
0088		C-126
0090		C-167
0054		C-184
0000		C-270
0111		C-030
0024		C-069
0077		C-080
0112		C-092
0077		C-104
0006		C-144
0005		C-172
0048		C-190
0006		C-224

LEAD SURVEY - MACAN ANTENNA M/R BLADES

MODEL UH-1B 543 FLT 143-A G.N. 7500 LB. ALT. 3000 FT MC
SHIP AF 62-2023 DATE 19 AUG 65 C.G. STAJ 125.4 CSC. NC. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	CO-PILOT VERT VIEW	
				MEAN	CSC
799	STABILIZED LEVEL FLIGHT	310	23.0	1.027	0.105
800	STABILIZED LEVEL FLIGHT	310	43.0	1.027	0.082
801	STABILIZED LEVEL FLIGHT	310	59.0	1.016	0.082
802	STABILIZED LEVEL FLIGHT	310	80.0	1.000	0.121
803	STABILIZED LEVEL FLIGHT	310	91.0	0.976	0.154
804	STABILIZED LEVEL FLIGHT	310	100.0	0.956	0.209
805	STABILIZED LEVEL FLIGHT	310	115.0	0.945	0.319
806	STABILIZED LEVEL FLIGHT	310	120.0	0.950	0.346
807	STABILIZED LEVEL FLIGHT	324	23.0	0.978	0.143
808	STABILIZED LEVEL FLIGHT	324	43.0	1.022	0.088
809	STABILIZED LEVEL FLIGHT	324	59.0	0.972	0.082
810	STABILIZED LEVEL FLIGHT	324	80.0	1.022	0.110
811	STABILIZED LEVEL FLIGHT	324	91.0	0.983	0.149
812	STABILIZED LEVEL FLIGHT	324	100.0	0.954	0.215
813	STABILIZED LEVEL FLIGHT	324	110.0	0.954	0.292
814	STABILIZED LEVEL FLIGHT	324	115.0	0.917	0.303
815	STABILIZED LEVEL FLIGHT	324	120.0	1.000	0.319

LOAD SURVEY - RADAR ANTENNA M/R BLADES

MODEL UM-10 543 FLY. 143-A G.W. 7500 LB. ALT. 3000 FT MD
 SWIP AF 62-2023 DATE 19 AUG 65 C.G. STA. 125.4 USC. NG. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	L/H CYC MEAN	BOCST CSC	TUBE
799	STABILIZED LEVEL FLIGHT	310	23.0	11.125	166.075	
800	STABILIZED LEVEL FLIGHT	310	43.0	60.750	111.250	
801	STABILIZED LEVEL FLIGHT	310	59.0	55.625	144.625	
802	STABILIZED LEVEL FLIGHT	310	80.0	-11.125	144.625	
803	STABILIZED LEVEL FLIGHT	310	91.0	-33.375	166.075	
804	STABILIZED LEVEL FLIGHT	310	100.0	-77.075	129.125	
805	STABILIZED LEVEL FLIGHT	310	115.0	-89.000	222.500	
806	STABILIZED LEVEL FLIGHT	310	120.0	-166.075	211.375	
807	STABILIZED LEVEL FLIGHT	324	23.0	-11.125	166.075	
808	STABILIZED LEVEL FLIGHT	324	43.0	33.375	122.375	
809	STABILIZED LEVEL FLIGHT	324	59.0	22.250	133.500	
810	STABILIZED LEVEL FLIGHT	324	80.0	-0.000	155.750	
811	STABILIZED LEVEL FLIGHT	324	91.0	-33.375	166.075	
812	STABILIZED LEVEL FLIGHT	324	100.0	-44.500	159.750	
813	STABILIZED LEVEL FLIGHT	324	110.0	-89.000	222.500	
814	STABILIZED LEVEL FLIGHT	324	115.0	-111.250	244.750	
815	STABILIZED LEVEL FLIGHT	324	120.0	-122.375	233.625	

00144

PAGE
 REPORT 204-100-113

LOAD SURVEY - RACAR ANTENNA M/R BLADES

MODEL UH-1B 543 FLT. 143-B C.W. 7900 LB. ALT. 3000 FT MD
SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA: 133.2 CSC. NC. 1

CTR	TEST CONDITION	RPM	VCAL KTS	MR BL BEAM STA 84 MEAN	CSC
833	STABILIZED LEVEL FLIGHT	310	23.0	4054.750	5810.250
834	STABILIZED LEVEL FLIGHT	310	43.0	2503.750	5557.750
835	STABILIZED LEVEL FLIGHT	310	59.0	3667.000	5687.000
836	STABILIZED LEVEL FLIGHT	310	80.0	4571.750	7629.750
837	STABILIZED LEVEL FLIGHT	310	91.0	5603.750	8659.750
838	STABILIZED LEVEL FLIGHT	310	100.0	7673.750	9176.750
839	STABILIZED LEVEL FLIGHT	310	110.0	9224.750	10986.250
840	STABILIZED LEVEL FLIGHT	310	115.0	8449.250	10986.250
841	STABILIZED LEVEL FLIGHT	310	120.0	10228.750	12312.750
842	STABILIZED LEVEL FLIGHT	324	23.0	2503.750	5040.750
843	STABILIZED LEVEL FLIGHT	324	43.0	1469.750	5259.250
844	STABILIZED LEVEL FLIGHT	324	59.0	1857.500	4394.500
845	STABILIZED LEVEL FLIGHT	324	80.0	2116.000	5667.000
846	STABILIZED LEVEL FLIGHT	324	91.0	3667.000	6721.000
847	STABILIZED LEVEL FLIGHT	324	100.0	4442.500	7238.000
848	STABILIZED LEVEL FLIGHT	324	110.0	5347.250	7884.250
849	STABILIZED LEVEL FLIGHT	324	115.0	5064.250	8518.250
850	STABILIZED LEVEL FLIGHT	324	120.0	6765.000	9823.000

00147

LOAD SURVEY - RACAR ANTENNA M/R BLADES

MODEL UH-1B 543 FLT. 143-E G.N. 750C LG. ALT. 3000 FT MO
SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA: 133.2 CSC. NO. 1

CTR	TEST CONDITION	RPM	VCAL KTS	MR BL BEAM MEAN	STA 6C CSC
833	STABILIZED LEVEL FLIGHT	310	23.0	2904.395	8118.401
834	STABILIZED LEVEL FLIGHT	310	43.0	367.359	6596.200
835	STABILIZED LEVEL FLIGHT	310	59.0	3665.459	6649.899
836	STABILIZED LEVEL FLIGHT	310	80.0	6709.899	10401.700
837	STABILIZED LEVEL FLIGHT	310	91.0	7217.300	11923.900
838	STABILIZED LEVEL FLIGHT	310	100.0	11022.759	13152.400
839	STABILIZED LEVEL FLIGHT	310	110.0	14828.259	15583.100
840	STABILIZED LEVEL FLIGHT	310	115.0	13813.459	15983.100
841	STABILIZED LEVEL FLIGHT	310	120.0	14320.899	20042.300
842	STABILIZED LEVEL FLIGHT	324	23.0	-901.101	6342.500
843	STABILIZED LEVEL FLIGHT	324	43.0	-3184.401	6088.799
844	STABILIZED LEVEL FLIGHT	324	59.0	-1662.201	5581.400
845	STABILIZED LEVEL FLIGHT	324	80.0	-901.101	7357.301
846	STABILIZED LEVEL FLIGHT	324	91.0	1889.559	9133.200
847	STABILIZED LEVEL FLIGHT	324	100.0	5441.359	5133.200
848	STABILIZED LEVEL FLIGHT	324	110.0	7471.000	10655.400
849	STABILIZED LEVEL FLIGHT	324	115.0	7470.959	12177.600
850	STABILIZED LEVEL FLIGHT	324	120.0	10515.400	13655.800

LOAD SURVEY - RADAR ANTENNA M/R ELACES
 PCDEL UH-1B 543 FLY. 143-2 G.W. 7500 LG. ALT. 3000 FT MO
 SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA. 123.2 CSC. NO. 1

CTR	TEST CONDITION	RPM	VCAL KTS	NR BL BEAM MEAN	STA 35 CSC
833	STABILIZED LEVEL FLIGHT	310	23.0	-1020.201	11915.400
834	STABILIZED LEVEL FLIGHT	310	43.0	-5701.250	10638.750
835	STABILIZED LEVEL FLIGHT	310	55.0	1533.059	11915.400
836	STABILIZED LEVEL FLIGHT	310	80.0	4511.550	10556.449
837	STABILIZED LEVEL FLIGHT	310	91.0	7490.800	16170.900
838	STABILIZED LEVEL FLIGHT	310	100.0	13448.251	19575.300
839	STABILIZED LEVEL FLIGHT	310	110.0	18555.100	23830.800
840	STABILIZED LEVEL FLIGHT	310	115.0	15150.700	23830.800
841	STABILIZED LEVEL FLIGHT	310	120.0	17704.000	29788.499
842	STABILIZED LEVEL FLIGHT	324	23.0	-6661.098	11915.400
843	STABILIZED LEVEL FLIGHT	324	43.0	-12935.595	10213.199
844	STABILIZED LEVEL FLIGHT	324	55.0	-8680.100	8510.999
845	STABILIZED LEVEL FLIGHT	324	80.0	-7826.999	11064.301
846	STABILIZED LEVEL FLIGHT	324	91.0	-5275.659	11915.400
847	STABILIZED LEVEL FLIGHT	324	100.0	682.000	13617.601
848	STABILIZED LEVEL FLIGHT	324	110.0	4511.950	14894.251
849	STABILIZED LEVEL FLIGHT	324	115.0	4937.501	19575.300
850	STABILIZED LEVEL FLIGHT	324	120.0	8341.899	21277.500

LOAD SURVEY - RACAR ANTENNA M/R BLADES

MODEL UN-18 543 FLY. 143-B G.W. 7500 LB. ALT. 3000 FT HD
SHIP AF 62-2023 DATE 19 AUG 65 C.G. STAD 123.2 OSC. NG. 1

CTR NO.	TEST CONDITION	RPM	VCAL		MR PITCH LINK RED	
			KTS	MEAN	CSC	
833	STABILIZED LEVEL FLIGHT	310	23.0	-77.400	215.000	
834	STABILIZED LEVEL FLIGHT	310	43.0	34.400	326.000	
835	STABILIZED LEVEL FLIGHT	310	59.0	25.800	301.000	
836	STABILIZED LEVEL FLIGHT	310	80.0	88.800	309.600	
837	STABILIZED LEVEL FLIGHT	310	91.0	129.000	369.800	
838	STABILIZED LEVEL FLIGHT	310	100.0	137.800	399.600	
839	STABILIZED LEVEL FLIGHT	310	110.0	137.600	916.000	
840	STABILIZED LEVEL FLIGHT	310	119.0	172.000	496.800	
841	STABILIZED LEVEL FLIGHT	310	120.0	60.200	645.000	
842	STABILIZED LEVEL FLIGHT	324	23.0	8.600	318.200	
843	STABILIZED LEVEL FLIGHT	324	43.0	-0.000	309.600	
844	STABILIZED LEVEL FLIGHT	324	59.0	-43.000	283.800	
845	STABILIZED LEVEL FLIGHT	324	80.0	25.800	318.200	
846	STABILIZED LEVEL FLIGHT	324	91.0	86.000	376.400	
847	STABILIZED LEVEL FLIGHT	324	100.0	111.800	421.400	
848	STABILIZED LEVEL FLIGHT	324	110.0	111.800	421.400	
849	STABILIZED LEVEL FLIGHT	324	119.0	129.000	438.600	
850	STABILIZED LEVEL FLIGHT	324	120.0	94.600	576.200	

LCAD SURVEY - RACAR ANTENNA M/R BLADES

MODEL UM-1B 543 FLI. 143-B G.W. 7500 LB. ALT. 3000 FT HD
 SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA 133.2 OSC. NO. 1

CTR	TEST CONDITION	RPM	VCAL KTS	MR DRAG BRACE MEAN	OSC
NO.					
833	STABILIZED LEVEL FLIGHT	310	23.0	4009.600	3723.200
834	STABILIZED LEVEL FLIGHT	310	43.0	5012.000	3007.200
835	STABILIZED LEVEL FLIGHT	310	59.0	4868.800	2864.000
836	STABILIZED LEVEL FLIGHT	310	80.0	4582.400	3150.400
837	STABILIZED LEVEL FLIGHT	310	91.0	4439.200	3866.400
838	STABILIZED LEVEL FLIGHT	310	100.0	3580.000	4439.200
839	STABILIZED LEVEL FLIGHT	310	110.0	3150.400	4868.800
840	STABILIZED LEVEL FLIGHT	310	115.0	3293.600	4725.600
841	STABILIZED LEVEL FLIGHT	310	120.0	3293.600	5271.200
842	STABILIZED LEVEL FLIGHT	324	23.0	5012.000	3580.000
843	STABILIZED LEVEL FLIGHT	324	43.0	5155.200	3150.400
844	STABILIZED LEVEL FLIGHT	324	55.0	5155.200	2577.600
845	STABILIZED LEVEL FLIGHT	324	80.0	4868.800	2291.200
846	STABILIZED LEVEL FLIGHT	324	91.0	4582.400	3150.400
847	STABILIZED LEVEL FLIGHT	324	100.0	4009.600	3150.400
848	STABILIZED LEVEL FLIGHT	324	110.0	3580.000	3590.000
849	STABILIZED LEVEL FLIGHT	324	115.0	3723.200	4009.600
850	STABILIZED LEVEL FLIGHT	324	120.0	3150.400	4582.400

00151

PAGE
REPORT 204-107-113

LOAD SURVEY - RADAR ANTENNA 4/R BLADES

MODEL UM-10	543	FLY. 143-E	G.W. 7500 LB.	ALT. 3000 FT HD
SHIP AP 62-2023		DATE 19 AUG 65	C.G. STA. 133.2	CSC. NC. 1

CTR NG.	TEST CONDITION	RPM	VCAL KTS	NR YOKE BEAM STA 6 MEAN	CSC
833	STABILIZED LEVEL FLIGHT	310	23.0	-37944.200	16920.200
834	STABILIZED LEVEL FLIGHT	310	42.0	-37944.200	16920.200
835	STABILIZED LEVEL FLIGHT	310	55.0	-30253.159	15302.000
836	STABILIZED LEVEL FLIGHT	310	80.0	-36405.959	12305.000
837	STABILIZED LEVEL FLIGHT	310	91.0	-24100.358	15382.000
838	STABILIZED LEVEL FLIGHT	310	100.0	-27176.795	18458.401
839	STABILIZED LEVEL FLIGHT	310	110.0	-25038.559	23073.000
840	STABILIZED LEVEL FLIGHT	310	115.0	-32329.558	24611.200
841	STABILIZED LEVEL FLIGHT	310	120.0	-34267.799	26149.400
842	STABILIZED LEVEL FLIGHT	324	23.0	-51787.599	18458.399
843	STABILIZED LEVEL FLIGHT	324	43.0	-57940.798	18458.401
844	STABILIZED LEVEL FLIGHT	324	55.0	-50249.756	13843.759
845	STABILIZED LEVEL FLIGHT	324	80.0	-54864.358	9225.159
846	STABILIZED LEVEL FLIGHT	324	91.0	-47173.356	16920.200
847	STABILIZED LEVEL FLIGHT	324	100.0	-45625.158	18458.399
848	STABILIZED LEVEL FLIGHT	324	110.0	-45635.158	18458.399
849	STABILIZED LEVEL FLIGHT	324	115.0	-54864.358	15382.000
850	STABILIZED LEVEL FLIGHT	324	120.0	-41020.359	19956.599

LEAD SURVEY - RADAR ANTENNA M/M ELACES

MODEL UH-1B 543 FLT. 143-B G.W. 7500 LB. ALT. 3000 FT HD
SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA. 133.2 OSC. NO. 1

CTR	TEST CONDITION	RPM	VCAL XTS	MR BL CHORD MEAN	STA 140 OSC
MC.					
033	STABILIZED LEVEL FLIGHT	310	23.0	-8800.450	36391.050
034	STABILIZED LEVEL FLIGHT	310	43.0	-9514.000	30920.500
035	STABILIZED LEVEL FLIGHT	310	59.0	-9514.000	25212.100
036	STABILIZED LEVEL FLIGHT	310	80.0	-3805.600	15028.000
037	STABILIZED LEVEL FLIGHT	310	91.0	-1189.250	30206.950
038	STABILIZED LEVEL FLIGHT	310	100.0	-1902.800	30444.800
039	STABILIZED LEVEL FLIGHT	310	110.0	475.700	30444.800
040	STABILIZED LEVEL FLIGHT	310	115.0	-951.400	27590.600
041	STABILIZED LEVEL FLIGHT	310	120.0	-1427.100	36828.900
042	STABILIZED LEVEL FLIGHT	324	23.0	-9589.700	31356.200
043	STABILIZED LEVEL FLIGHT	324	43.0	-10941.100	26163.500
044	STABILIZED LEVEL FLIGHT	324	59.0	-9989.700	20455.100
045	STABILIZED LEVEL FLIGHT	324	80.0	-7611.200	14271.000
046	STABILIZED LEVEL FLIGHT	324	91.0	-2616.350	19741.550
047	STABILIZED LEVEL FLIGHT	324	100.0	-3329.900	22357.900
048	STABILIZED LEVEL FLIGHT	324	110.0	-475.700	21406.500
049	STABILIZED LEVEL FLIGHT	324	115.0	-713.550	20652.949
050	STABILIZED LEVEL FLIGHT	324	120.0	-713.550	24022.850

LEAD SURVEY - RADAR ANTENNA M/R BLACES

MODEL UH-1B 543 FLT, 143-B C.N. 7500 LB. ALT. 3000 FT HQ
 SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA. 133.2 OSC. NC. 1

CTR	TEST CONDITION	RPM	VCAL KTS	PR BL CPORC STA 60	MEAN	CSC
033	STABILIZED LEVEL FLIGHT	310	23.0	55521.000	56714.999	
034	STABILIZED LEVEL FLIGHT	310	43.0	54923.559	47755.992	
035	STABILIZED LEVEL FLIGHT	310	55.0	57312.000	42584.000	
036	STABILIZED LEVEL FLIGHT	310	80.0	62684.959	43580.999	
037	STABILIZED LEVEL FLIGHT	310	91.0	66057.958	52556.000	
038	STABILIZED LEVEL FLIGHT	310	100.0	69252.000	62085.001	
039	STABILIZED LEVEL FLIGHT	310	110.0	65848.999	60266.999	
040	STABILIZED LEVEL FLIGHT	310	115.0	65252.000	63262.000	
041	STABILIZED LEVEL FLIGHT	310	120.0	76415.559	75998.000	
042	STABILIZED LEVEL FLIGHT	324	23.0	60256.559	53132.999	
043	STABILIZED LEVEL FLIGHT	324	43.0	59102.998	43580.999	
044	STABILIZED LEVEL FLIGHT	324	55.0	61491.000	36416.999	
045	STABILIZED LEVEL FLIGHT	324	80.0	65073.000	32834.999	
046	STABILIZED LEVEL FLIGHT	324	91.0	71639.958	40556.000	
047	STABILIZED LEVEL FLIGHT	324	100.0	70445.958	50148.000	
048	STABILIZED LEVEL FLIGHT	324	110.0	76416.000	47760.000	
049	STABILIZED LEVEL FLIGHT	324	115.0	75557.958	48954.000	
050	STABILIZED LEVEL FLIGHT	324	120.0	75221.997	54923.999	

100

LEAD SURVEY - RACAR ANTENNA H/R

ALL. 3000 FT 40

MR FLAPPING,

LOAD SURVEY - RADAR ANTENNA M/R BLACES

MC0EL UH-1B 543 FLT. 143-2 G.W. 7500 LB. ALT. 3000 FT HD
SHIP AF 62-2023 DATE 19 AUG 65. C.G. STA: 133.2 CSC. NO. 1

CTR	TEST CONDITION	RPM	VCAL KTS	PILOT VERT VIERATION MEAN	CSC
033	STABILIZED LEVEL FLIGHT	310	23.0	0.565	0.104
034	STABILIZED LEVEL FLIGHT	310	43.0	0.577	0.092
035	STABILIZED LEVEL FLIGHT	310	59.0	1.017	0.121
036	STABILIZED LEVEL FLIGHT	310	80.0	1.025	0.150
037	STABILIZED LEVEL FLIGHT	310	91.0	1.052	0.213
038	STABILIZED LEVEL FLIGHT	310	100.0	1.058	0.242
039	STABILIZED LEVEL FLIGHT	310	110.0	1.046	0.288
040	STABILIZED LEVEL FLIGHT	310	115.0	1.029	0.306
041	STABILIZED LEVEL FLIGHT	310	120.0	0.988	0.357
042	STABILIZED LEVEL FLIGHT	324	23.0	0.963	0.121
043	STABILIZED LEVEL FLIGHT	324	43.0	0.994	0.086
044	STABILIZED LEVEL FLIGHT	324	59.0	1.023	0.092
045	STABILIZED LEVEL FLIGHT	324	80.0	1.058	0.115
046	STABILIZED LEVEL FLIGHT	324	91.0	1.023	0.219
047	STABILIZED LEVEL FLIGHT	324	100.0	1.058	0.242
048	STABILIZED LEVEL FLIGHT	324	110.0	1.058	0.219
049	STABILIZED LEVEL FLIGHT	324	115.0	0.977	0.277
050	STABILIZED LEVEL FLIGHT	324	120.0	1.046	0.288

00157

PAGE
REPORT 204-100-113

LOAD SURVEY - RACAR ANTENNA M/R PLACES

MODEL UH-1C	543	FLY. 143-B	G.W. 7500 LB.	ALT. 3000 FT HC
SHIP AF 62-2023	GATE 19 AUG 65	C.G. STA: 133.2	DSC. NC.	1

CTR	TEST CONDITION	RPM	VCAL KTS	CO-PILOT MEAN	VERT	VIBR
833	STABILIZED LEVEL FLIGHT	310	23.0	1.011		0.144
834	STABILIZED LEVEL FLIGHT	310	43.0	1.011		0.122
835	STABILIZED LEVEL FLIGHT	310	55.0	1.044		0.133
836	STABILIZED LEVEL FLIGHT	310	80.0	1.039		0.133
837	STABILIZED LEVEL FLIGHT	310	91.0	1.067		0.211
838	STABILIZED LEVEL FLIGHT	310	100.0	1.116		0.316
839	STABILIZED LEVEL FLIGHT	310	110.0	1.061		0.333
840	STABILIZED LEVEL FLIGHT	310	115.0	1.044		0.399
841	STABILIZED LEVEL FLIGHT	310	120.0	0.945		0.424
842	STABILIZED LEVEL FLIGHT	324	23.0	1.067		0.200
843	STABILIZED LEVEL FLIGHT	324	43.0	1.061		0.150
844	STABILIZED LEVEL FLIGHT	324	59.0	1.039		0.128
845	STABILIZED LEVEL FLIGHT	324	80.0	1.072		0.150
846	STABILIZED LEVEL FLIGHT	324	91.0	1.039		0.205
847	STABILIZED LEVEL FLIGHT	324	100.0	1.123		0.266
848	STABILIZED LEVEL FLIGHT	324	110.0	1.083		0.327
849	STABILIZED LEVEL FLIGHT	324	115.0	1.055		0.366
850	STABILIZED LEVEL FLIGHT	324	120.0	1.111		0.410

LCAD SURVEY - RACAR ANTENNA M/R BLADES

MODEL UH-1B 543 FLT. 143-8 G.W. 7500 LB. ALI. 3000 FT HD
SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA 133.2 CSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	CG VERT VIBRATION MEAN	CSC
833	STABILIZED LEVEL FLIGHT	310	23.0	1.000	0.085
834	STABILIZED LEVEL FLIGHT	310	43.0	0.979	0.085
835	STABILIZED LEVEL FLIGHT	310	59.0	1.027	0.080
836	STABILIZED LEVEL FLIGHT	310	80.0	1.043	0.107
837	STABILIZED LEVEL FLIGHT	310	91.0	1.059	0.091
838	STABILIZED LEVEL FLIGHT	310	106.0	1.085	0.117
839	STABILIZED LEVEL FLIGHT	310	110.0	1.107	0.117
840	STABILIZED LEVEL FLIGHT	310	115.0	1.069	0.133
841	STABILIZED LEVEL FLIGHT	310	120.0	1.021	0.160
842	STABILIZED LEVEL FLIGHT	324	23.0	0.995	0.133
843	STABILIZED LEVEL FLIGHT	324	43.0	0.995	0.154
844	STABILIZED LEVEL FLIGHT	324	59.0	1.032	0.096
845	STABILIZED LEVEL FLIGHT	324	80.0	1.064	0.065
846	STABILIZED LEVEL FLIGHT	324	91.0	1.043	0.117
847	STABILIZED LEVEL FLIGHT	324	100.0	1.069	0.154
848	STABILIZED LEVEL FLIGHT	324	110.0	1.053	0.106
849	STABILIZED LEVEL FLIGHT	324	115.0	1.000	0.106
850	STABILIZED LEVEL FLIGHT	324	120.0	1.064	0.117

LOAD SURVEY - RADAR ANTENNA H/R BLADES

MODEL UN-18 543 FLI. 143-B G.W. 7500 LB. ALI. 3000 FT MD
SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA: 133.2 OSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL KTS	R/W CYC BOOST TUBE	
				MEAN	OSC
833	STABILIZED LEVEL FLIGHT	310	23.0	164.150	234.500
834	STABILIZED LEVEL FLIGHT	310	42.0	140.700	140.700
835	STABILIZED LEVEL FLIGHT	310	55.0	164.150	140.700
836	STABILIZED LEVEL FLIGHT	310	80.0	164.150	164.150
837	STABILIZED LEVEL FLIGHT	310	91.0	257.950	211.050
838	STABILIZED LEVEL FLIGHT	310	100.0	211.050	281.400
839	STABILIZED LEVEL FLIGHT	310	110.0	293.125	340.025
840	STABILIZED LEVEL FLIGHT	310	115.0	246.225	363.475
841	STABILIZED LEVEL FLIGHT	310	120.0	304.850	466.000
842	STABILIZED LEVEL FLIGHT	324	23.0	199.325	266.675
843	STABILIZED LEVEL FLIGHT	324	43.0	128.975	175.875
844	STABILIZED LEVEL FLIGHT	324	59.0	152.425	152.425
845	STABILIZED LEVEL FLIGHT	324	80.0	152.425	152.425
846	STABILIZED LEVEL FLIGHT	324	91.0	234.500	234.500
847	STABILIZED LEVEL FLIGHT	324	100.0	257.950	281.400
848	STABILIZED LEVEL FLIGHT	324	110.0	127.600	304.850
849	STABILIZED LEVEL FLIGHT	324	115.0	222.775	293.125
850	STABILIZED LEVEL FLIGHT	324	120.0	234.500	351.750

00160

LOAD SURVEY - RADAR ANTENNA M/R BLADES

MODEL UH-1B 543 FLT. 143-B G.W. 7500 LB. ALT. 3000 FT HD
SHIP AF 62-2023 DATE 19 AUG 65 C.G. STAB 133.2 CSC. NO. 1

CTX	TEST CONCIT ION	RPM	VCAL KTS	L/H CYC BOOST TUBE MEAN	CSC
NC.					
833	STABILIZED LEVEL FLIGHT	310	23.0	-11.225	145.925
834	STABILIZED LEVEL FLIGHT	310	43.0	44.900	134.700
835	STABILIZED LEVEL FLIGHT	310	59.0	22.450	157.150
836	STABILIZED LEVEL FLIGHT	310	80.0	44.900	202.050
837	STABILIZED LEVEL FLIGHT	310	91.0	-56.125	235.725
838	STABILIZED LEVEL FLIGHT	310	100.0	-145.925	213.275
839	STABILIZED LEVEL FLIGHT	310	110.0	-202.050	336.750
840	STABILIZED LEVEL FLIGHT	310	115.0	-179.600	336.750
841	STABILIZED LEVEL FLIGHT	310	120.0	-157.150	291.850
842	STABILIZED LEVEL FLIGHT	324	23.0	33.675	168.375
843	STABILIZED LEVEL FLIGHT	324	43.0	33.675	145.925
844	STABILIZED LEVEL FLIGHT	324	59.0	44.900	134.700
845	STABILIZED LEVEL FLIGHT	324	80.0	-0.000	134.700
846	STABILIZED LEVEL FLIGHT	324	91.0	-33.675	168.375
847	STABILIZED LEVEL FLIGHT	324	100.0	-44.900	179.600
848	STABILIZED LEVEL FLIGHT	324	110.0	-44.900	179.600
849	STABILIZED LEVEL FLIGHT	324	115.0	-22.450	202.050
850	STABILIZED LEVEL FLIGHT	324	120.0	-89.800	224.500

LOAD SURVEY - RADAR ANTENNA W/R ELACES

MODEL UN-18 543 FLT. 143-2 G.M. 7500 LB. ALY. 3000 FT MD
SHIP AF 62-2023 DATE 19 AUG 65 C.G. STA. 133.2 CSC. NO. 1

CTR NO.	TEST CONDITION	RPM	VCAL		COLL. BOOST TIME	
			KTS	MEAN	CSC	
833	STABILIZED LEVEL FLIGHT	310	23.0	-24.66C	82.200	
834	STABILIZED LEVEL FLIGHT	310	43.0	16.440	73.930	
835	STABILIZED LEVEL FLIGHT	310	55.0	16.440	82.200	
836	STABILIZED LEVEL FLIGHT	310	80.0	32.880	106.860	
837	STABILIZED LEVEL FLIGHT	310	91.0	32.880	115.080	
838	STABILIZED LEVEL FLIGHT	310	100.0	0.000	185.060	
839	STABILIZED LEVEL FLIGHT	310	110.0	4.110	234.270	
840	STABILIZED LEVEL FLIGHT	310	115.0	0.000	271.260	
841	STABILIZED LEVEL FLIGHT	310	120.0	41.100	361.680	
842	STABILIZED LEVEL FLIGHT	324	23.0	16.440	58.640	
843	STABILIZED LEVEL FLIGHT	324	43.0	36.950	78.090	
844	STABILIZED LEVEL FLIGHT	324	55.0	49.320	73.960	
845	STABILIZED LEVEL FLIGHT	324	80.0	61.650	110.970	
846	STABILIZED LEVEL FLIGHT	324	91.0	49.320	156.180	
847	STABILIZED LEVEL FLIGHT	324	100.0	61.650	184.950	
848	STABILIZED LEVEL FLIGHT	324	110.0	45.210	205.610	
849	STABILIZED LEVEL FLIGHT	324	115.0	45.210	258.930	
850	STABILIZED LEVEL FLIGHT	324	120.0	28.770	242.490	

BY J.A. Mangum

CHECKED R.H. Wheelock

BELL HELICOPTER COMPANY
POST OFFICE BOX 402 • FORT WORTH 1, TEXAS

MODEL UH-1B PAGE 163

RPT 204-100-113

APPENDIX F
Flight Log of Equipment

TABLE I
MAIN ROTOR RADAR BLADE FLIGHT LOG

BY <u>J.A. Mangum</u>		BELL HELICOPTER COMPANY POST OFFICE BOX 407 • POST WORTH, TEXAS		MODEL <u>UH-1B</u> PAGE <u>164</u>
CHECKED <u>R.H. Wheelock</u>				RPT <u>204-100-113</u>
<u>Flight Number</u>	<u>Flight Time</u>	<u>Date</u>	<u>Changes In Configuration</u>	<u>Purpose of Flight & Remarks</u>
GR37	.3	8-18-65	Radar Blades Installed No Wave Guides to Cabin	Shakedown; Tracking & Balance Check
142	.2	8-18-65	None	Flight Shakedown
143A	.4	8-19-65	Ballasted to C.G. of 125.40 inches	Load Level Survey
143B	.4	8-19-65	Ballasted to C.G. of 133.2 inches	Load Level Survey
144	.3	8-26-65	Wave Guides to Cabin Installed. Transmitter Installed. Ballasted to 131.59 inches.	Electromagnetic Radiation Tests
145	2.2	8-27-65	None	Electromagnetic Radiation Tests
146	1.1	8-30-65	None	Electromagnetic Radiation Tests Tape failed on white blade leading edge after 4.9 hours
147	2.9	8-31-65	White Blade Retaped	Electromagnetic Radiation Tests Tape failed on white blade after 2.9 hours.
148	1.9	9-1-65	White Blade Retaped	Electromagnetic Radiation Tests Tape bulged but not replaced. Mask- ing tape used to patch bulges.
149	3.6	9-2-65	None	Electromagnetic Radiation Tests Tape failed but patched on both blades.
150	2.4	9-3-65	None	Electromagnetic Radiation Tests Tape failed but patched on both blades.

TABLE I - (Cont)

MAIN ROTOR RADAR BLADE FLIGHT LOG- (cont)

<u>Flight Number</u>	<u>Flight Time</u>	<u>Date</u>	<u>Changes In Configuration</u>	<u>Purpose of Flight & Remarks</u>
GR38	.4	9-8-65	None (Bladewise)	Shakedown of Heater Mixing Valve
151	1.3	9-9-65	None (Bladewise)	Shakedown of Instrumentation; Heater Valve Tests. Flex Wave Guides (on Hub) Failed Both Sides. No more deterioration on Blade Tape.
17.4 Hours Total Time				

BY J. MangumCHECKED R.H. WheelockBELL HELICOPTER COMPANY
POST OFFICE BOX 402 • FORT WORTH, TEXASMODEL UH-1B PAGE 165RPT 204-100-113

BY J. A. Mangum

CHECKED R.H. Wheelock

BELL HELICOPTER COMPANY
POST OFFICE BOX 402 • FORT WORTH, TEXAS

MODEL UH-1B PAGE 166

RPT 204-100-113

APPENDIX G

Pilot Reports

BY 8-24-65 DATE		BELL HELICOPTER COMPANY POST OFFICE BOX 607 • POST OFFICE L 1000		MODEL		PAGE	
L. Hartwig				UH-1B		1	
CHECKED		DATE		HELICOPTER NUMBER			
				543 (62-2023)			
PILOT		PILOT REPORT		PLACE			
Hartwig				Southwest			
CREW				FLIGHT NO.		GROUND RUN NO.	
				142 8-18-65			
WEATHER				PRESSURE ALT.		O. A. T.	
						WIND	
PURPOSE							
Radar Blade Shakedown							
ENG. REPORT NO.		TIME TAKE OFF		TIME LANDING		DURATION	
						.2	
C.G. FROM STA. O.		G.W.		TOTAL FLIGHT TIME TO DATE		TOTAL ENGINE TIME TO DATE	
133.05		6505 LBS.		192.1			
CHANGES SINCE LAST FLIGHT							
1. Removed tiedown assembly. 2. Removed two washers from each main rotor balance weight. 3. Safetied main rotor pitch link assembly.							
The purpose of this flight was to shakedown the rotor installation. Track and balance was very good at all times. Oscillograph records were secured at 80, 100 and 120 Knots to check the instrumentation. Post flight inspection of the leading edge covering indicated that it was still bonded to the blade very securely. 86:LWH:bt-2509							

SV 8-24-65 DATE L. Hartwig		BELL HELICOPTER COMPANY POST OFFICE BOX 407 • POST ROAD 1, TUSKALOOGA, ALA. 35688		MODEL UH-1B		PAGE 1		
CHECKED DATE				HELICOPTER NUMBER 543 (62-2023)				
PILOT Hartwig		PILOT REPORT		PLACE Southwest				
CREW				FLIGHT NO. 143 8-19-65		GROUND RUN NO.		
WEATHER			PRESSURE ALT.		O. A. T.		WIND	
PURPOSE Radar Blade Load Level								
ENG. REPORT NO.		TIME TAKE OFF		TIME LANDING		DURATION A: .4 - B: .4		
C.G. FROM STA. O. 125.4(B) 133.29		G.W. 7550 LBS.		TOTAL FLIGHT TIME TO DATE 192.0		TOTAL ENGINE TIME TO DATE		
CHANGES SINCE LAST FLIGHT A: 1. Installed 1050# ballast at Sta. 78. 2. Daily inspection completed. B: 1. Ballast as follows: 275# at 185 and 775# at 117. 2. Fueled to capacity.								
The purpose of these flights was to secure a load level survey on the radar antenna blades. Flights were made at 7500 pounds and at both C.G. extremes. Standard load level maneuvers were flown and the loads recorded. The light weight rubber covering on the leading edge appears to be holding up real good. Refer to the engineering flight test report for the results of the records. 86:LWH:bt-2517								

BY L. Hartwig 8-24-65		DATE 8-24-65		MODEL UH-1B		PAGE 1	
CHECKED		DATE		BELL HELICOPTER COMPANY POST OFFICE BOX 401 • FORT WORTH, TEXAS			
PILOT Hartwig		PILOT REPORT				HELICOPTER NUMBER	
CREW		PLACE Southwest				FLIGHT NO.	
WEATHER		PRESSURE ALT.		O. A. T.		GROUND RUN NO. 37 8-18-65	
PURPOSE Radar Blade Checks Ground Run							
ENG. REPORT NO.		TIME TAKE OFF		TIME LANDING		DURATION .3	
C.G.		FROM STA. O.		G.W.		TOTAL FLIGHT TIME TO DATE	
				LBS.		TOTAL ENG. H. TIME TO DATE 111.4	

CHANGES SINCE LAST FLIGHT

- A: 1. Daily inspection completed.
2. Removed main rotor and removed blades.
3. Installed main rotor blades S/N A2-247 and A2-836 (radar blades).
4. Aligned and balanced main rotor assembly and installed to B/P.
5. Installed main rotor standpipe and slip ring.
6. Reinstalled stabilizer bar assembly to B/P same.
7. Replaced starter-generator with S/N 1332 Lear Siegler.
8. Removed ballast from Sta. 116.
9. Installed tiedown link.
10. Reweighed ship with 1150# fuel aboard.
11. Repaired leading edge of radar blade S/N A2-836 per Jan Powell.
- B: 1. Rolled white blade 3/4 flat.

The purpose of this ground run was to shakedown the rotor installation. The thick rubber covering on the leading edge was removed and a thin light weight material was bonded on. On the previous flight, the thick covering peeled off, resulting in a very heavy one per rev.

An RPM and power sweep was run and there appeared to be no problem. Boost off check revealed the collective forces were excessive on the positive side so two washers were removed from the chinese weights. This balanced the force out to an acceptable level.

Oscillograph records were secured of the RPM and power sweep. Refer to the Engineering Flight Test Report for the results of the data recorded on this run.

A post run inspection of the leading edge covering revealed no evidence of the tape becoming loosened.

86:LWH:bt-2510

BY 8-31-65 DATE L. Hartwig	BELL HELICOPTER COMPANY POST OFFICE BOX 407 • POST OFFICE L. TEXAS		MODEL UH-1B	PAGE 1
CHECKED DATE			HELICOPTER NUMBER 543 (62-2023)	
PILOT Hartwig	PILOT REPORT		PLACE Southwest	
CREW			FLIGHT NO. 144 8-26-65	GROUND RUN NO.
WEATHER		PRESSURE ALT.	O. A. T.	WIND
PURPOSE Radar Blade Installation Shakedown				
ENG. REPORT NO.	TIME TAKE OFF	TIME LANDING	DURATION	
G.O. 131.57	FROM STA. O.	G.W. 6597 LBS.	TOTAL FLIGHT TIME TO DATE 193.2	TOTAL ENGINE TIME TO DATE
CHANGES SINCE LAST FLIGHT A. 1. Daily inspection completed 2. Ballast 200# at Sta. 83 (observer seat). 3. Removed all ballast from Sta. 117 and 185. 4. Installed radar-antenna blade system, Ref. 299-760-003 and Engineering Instructions.				
The purpose of this flight was to shakedown the radar antenna rotor blades after all the electrical connections were completed. A run up on the ground with high rotor RPM and a lot of flapping by stirring the cyclic was made. An inspection revealed no evidence of the hardware shifting from centrifugal force or from flapping and feather motions. A flight was made up to 125 Knots. Post flight inspection revealed no evidence of hardware shift. The installation appears to be airworthy.				
86:LWH:bt-2530				

BY 9-2-65 L. Hartwig	DATE	BELL HELICOPTER COMPANY POST OFFICE BOX 487 • POST WORTH, TEXAS		MODEL UH-1B	PAGE 1
CHECKED	DATE	HELICOPTER NUMBER 543 (62-2023)			
PILOT Hartwig	PILOT REPORT			PLACE Southwest	
CREW			FLIGHT NO. 145	GROUND RUN NO. 8-27-65	
WEATHER		PRESSURE ALT.	G.A.T.	WIND	
PURPOSE Radar Blade Radiation					
ENG. REPORT NO.	TIME TAKE OFF	TIME LANDING	DURATION 2.2		
C.G. 131.59	FROM STA. O.	G.W. 6597 LBS.	TOTAL FLIGHT TIME TO DATE 195.4	TOTAL ENGINE TIME TO DATE	
CHANGES SINCE LAST FLIGHT 1. Daily inspection completed. (No changes).					

The purpose of this flight was to ferry to Globe and to fly at and over a target 5000' north of Globe 800' high to measure antenna pattern and signal strength from the signal generating from the blades.

David Young, the consulting engineer, was very pleased with the results of the data recorded on this flight.

Refer to the Engineering Flight Test Report for the results of the data recorded on this flight.

LWH:bt-2546

BY 9-2-65 L. Hartwig	DATE	BELL HELICOPTER COMPANY POST OFFICE BOX 407 • POST ROUTE 1 10000	MODEL UH-1B	PAGE 1
CHECKED	DATE		HELICOPTER NUMBER 543(62-2023-)	
PILOT Hartwig			PLACE Southwest	
CREW			FLIGHT NO. 146 8-30-65	GROUND RUN NO.
WEATHER		PRESSURE ALT.	O. A. T.	WIND
PURPOSE Radar Blade Transmission Flight				
ENG. REPORT NO.	TIME TAKE OFF	TIME LANDING	DURATION 1.1	
C.G. 131.59	FROM STA. O.	G.W. 6597 LBS.	TOTAL FLIGHT TIME TO DATE 196.5	TOTAL ENGINE TIME TO DATE

CHANGES SINCE LAST FLIGHT

1. Daily inspection completed.

The purpose of this flight was to secure data on the radar antenna blades.

A number of test points were secured using a marker 5000' horizontally from Globe and 800' above the ground. A signal was transmitted from the blades to a ground recorder that measured the signal on an oscilloscope. A photograph was made for a permanent record.

The plastic tape material used to cover the antenna area in the nose section of the blades started to come off so the data flights were terminated.

Refer to the Engineering Report for the data recorded on this flight. The Engineers were pleased with the results of the raw data obtained to date.

86:LWH:bt-2547

BY 9-2-65	DATE	BELL HELICOPTER COMPANY POST OFFICE BOX 602 • POST WORTH, TEXAS		MODEL	UH-1B	PAGE	1	
L. Hartwig	CHECKED			DATE	HELICOPTER NUMBER 543 (62-2023)			
PILOT	Hartwig			PLACE				
CREW				FLIGHT NO.		GROUND RUN NO.		
Magnum				147 8-31-65				
WEATHER			PRESSURE ALT.	G. A. T.		WIND		
PURPOSE								
Radar Blade Transmissions								
ENG. REPORT NO.		TIME TAKE OFF		TIME LANDING		DURATION		
						2.9		
C.G. FROM STA. O.		G.W.		TOTAL FLIGHT TIME TO DATE		TOTAL ENGINE TIME TO DATE		
131.95		6597 LBS.		199.4				
CHANGES SINCE LAST FLIGHT								
1. Recovered leading edge of main rotor blade. 2. Daily inspection completed.								

The purpose of these flights was to ferry the helicopter to and from Globe and to secure radar antenna blade signal data.

A number of data points were recorded using the same location north of Globe as on previous flights. The surface winds were 15 to 20 Knots preventing any hover flight dat . The Engineering people running the recording equipment appear to be happy with the data recorded. The plastic covering over the antenna blade that is being used came loose in about one hour. The other blade still looks good.

Refer to the Engineering Flight Test Report for the results of the data recorded on these flights.

86:LWH:bt-2550

BY 9-2-65 DATE		BELL HELICOPTER COMPANY POST OFFICE BOX 401 • POST WORTH, TEXAS		MODEL UH-1B		PAGE 1
L. Hartwig				HELICOPTER NUMBER Southwest		
CHECKED DATE				PLACE		
PILOT Hartwig		PILOT REPORT				
CREW				FLIGHT NO. 148 9-1-65	GROUND RUN NO.	
WEATHER			PRESSURE ALT.	O. A. T.	WIND	
PURPOSE Radar Blade Transmissions						
ENG. REPORT NO.		TIME TAKE OFF	TIME LANDING	DURATION 1.9		
C.G. 131.59	FROM STA. O.	G.W. 6597 LBS.	TOTAL FLIGHT TIME TO DATE 101.3	TOTAL ENGINE TIME TO DATE		
CHANGES SINCE LAST FLIGHT 1. Replaced tape on white main rotor blade leading edge. 2. Reworked wave guide at top of mast. 3. Daily inspection completed. 4. Topped off fuel.						
The purpose of this flight was to ferry the helicopter to and from Globe and to secure data on the signal strength being transmitted from the radar antenna installed in the blades. The wave guides were changed over so the antenna on the other blade was tested. Only one blade at a time is used as an antenna on these tests. The plastic tape on the leading edge of the blades held up much better than the previous flights. On this flight the tape wrinkled up over the antenna but it did not come loose. Data was recorded over the same target as on the previous flights. Refer to the Engineering Flight Test Report for the results of the data recorded on this flight.						
86:LWH:bt-2553						

BY L. Hartwig	DATE 9-7-65	BELL HELICOPTER COMPANY POST OFFICE BOX 402 • POST WORTH L 10060		MODEL UH-1B	PAGE 1
CHECKED	DATE			HELICOPTER NUMBER 543(42-2023)	
PILOT Hartwig		PILOT REPORT		PLACE Southwest	
CREW				FLIGHT NO. 149 9-2-65	GROUND RUN NO.
WEATHER		PRESSURE ALT.	G. A. T.	WIND	
PURPOSE Radar Blade Transmissions					
ENG. REPORT NO.	TIME TAKE OFF	TIME LANDING	DURATION 3.6		
C.G. 131.59	FROM STA. O.	G.W. 6597 LBS.	TOTAL FLIGHT TIME TO DATE 104.9	TOTAL ENGINE TIME TO DATE	
CHANGES SINCE LAST FLIGHT					
- Daily inspection completed. - Added one wrap of 2" masking tape to each main rotor blade 13½" from tips. - Swapped pilot and co-pilot's altimeters.					
The purpose of this flight was to ferry to and from the Globe plant and to secure data on the signal strength being transmitted from the radar antenna installed in the blade. Data was recorded by the Engineering people at the ground station. Refer to the Engineering Flight Test Report for the results of the data recorded on this flight.					
86:LWH:bt-2560					

BY L. Hartwig DATE 9-8-65		BELL HELICOPTER COMPANY POST OFFICE BOX 602 • POST WORTH, TEXAS		MODEL UH-1B		PAGE 1	
CHECKED _____ DATE _____				HELICOPTER NUMBER 543 (62-2023)			
PILOT Hartwig				PLACE Southwest			
CREW				FLIGHT NO. 150 9-3-65		GROUND RUN NO.	
WEATHER			PRESSURE ALT.	G. A. T.	WIND		
PURPOSE Radar Blade Transmission							
ENG. REPOR. NO.		TIME TAKE OFF	TIME LANDING	DURATION 2.4			
C.G. 131.59	FROM STA. O.	G.W. 6597 LBS.	TOTAL FLIGHT TIME TO DATE 107.3	TOTAL ENGINE TIME TO DATE			

CHANGES SINCE LAST FLIGHT

1. Daily inspection completed.
2. Refueled to full capacity.
3. Reinforced radar antenna leading edge cover on main rotor blades with masking tape per Engineering Instructions.

The purpose of this flight was to ferry to and from Globe and to record data of the signal strength being transmitted from the radar antenna blades.

The plastic tape covering the antenna on the leading edge of the blades came loose in several places. Masking tape was put over the loose areas to prevent further peeling. All data points were completed on this flight completing the current program.

Refer to the Engineering Flight Test Report for the results of the data recorded on this flight.

86:LWH:bt-2568

BY 9-14-65 DATE		BELL HELICOPTER COMPANY POST OFFICE BOX 402 • POST WORTH, L. TEXAS		MODEL UH-1B		PAGE 1		
A. Averill				HELICOPTER NUMBER 543 (62-2023)				
CHECKED DATE				PLACE				
PILOT Averill		PILOT REPORT		FLIGHT NO. 151 9-9-65				GROUND RUN NO.
CREW		WEATHER		PRESSURE ALT.		O. A. T.		WIND
PURPOSE Instrumentation Shakedown								
ENG. REPORT NO.		TIME TAKE OFF		TIME LANDING		DURATION 1.3		
C.G. FROM STA. O. 131.25		G.W. 6910 LBS.		TOTAL FLIGHT TIME TO DATE 208.6		TOTAL ENGINE TIME TO DATE		
CHANGES SINCE LAST FLIGHT								
- Daily inspection completed. - Topped off fuel.								
The purpose of this flight was threefold: to check out instrumentation, to accumulate flight time on the "radar" main rotor blades and to checkout bleed air heater mixing valve. The instrumentation checked out O.K. The upper flexible wave guides (radar blade installation) failed during this flight. They did not fail completely in that the outer rubber tubing kept the metal part in place. The inner metal structure did fail, however. The bleed air heater mixing valve functioned in a satisfactory manner and the desired heat rise was attained. See Flight Test Engineering for additional data.								
86:AA:bt-2587								

BY J.A. Mangum

CHECKED R.H. Wheelock

BELL HELICOPTER COMPANY
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MODEL UH-1B PAGE 178

RPT 204-100-113

LIST OF REFERENCES

- 1 Helicopter Rotor Blade Antenna Radiation
Pattern - Phase I Flight Plan and Procedures;
prepared by: David W. Young & Associates
April 23, 1965

DISTRIBUTION LIST

- 1 - Kelley/Mackenzie/Library
- 1 - UH-1 Project
- 1 - Structures Group
- 2 - Electronics Group
- 2 - Flight Test Group
- 1 - Development Group
- 1 - Preliminary Design
- 1 - David W. Young & Associates