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Sikorsky Aircraft DIVISION OF UNITED AIRCRAFT CORPORATION

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Final Report

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This document is applicable to the following aircraft model(s) and contract(s):

MODEL	CONTRACT
S-72(RSRA)	NAS1-13000

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Approved by G. B. Chesley

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SUMMARY

Wind tunnel tests of the sixth scale model of the Sikorsky/NASA/Army Rotor Systems Research Aircraft (RSRA) were conducted in the United Aircraft Research Laboratories (UARL) large subsonic wind tunnel during the periods of May 22 through June 29, 1974, and August 12 through October 4, 1974. The objectives of these tests were to determine, in forward flight, aerodynamic characteristics and fuselage surface pressure distributions in both the helicopter and full compound configurations. Particular attention was given to wing inboard fairing configuration, powered TF-34 cant and incidence angles, TF-34 support fairing shape, and empennage configuration. Neither a main nor a tail rotor was tested.

This report documents test results and is supplemented by UARL Report N-432377-1, Reference 1, and UARL Report N-432409-1, Reference 2.

These wind tunnel tests resulted in an RSRA configuration that differed from the March 1974 design primarily in the areas of the wing-fuselage junction and the empennage. Wing fuselage seals were incorporated at the junction with the side of the fuselage and aft of the wing center box. Numerous tail iterations resulted in a compound empennage configuration with the vertical tail extended to waterline 360, a rectangular planform, 98.1 square foot, lower horizontal tail, and a 17.2 square foot upper horizontal tail. The helicopter configuration used the same vertical tail with a 35.4 square foot upper horizontal tail and no lower tail.

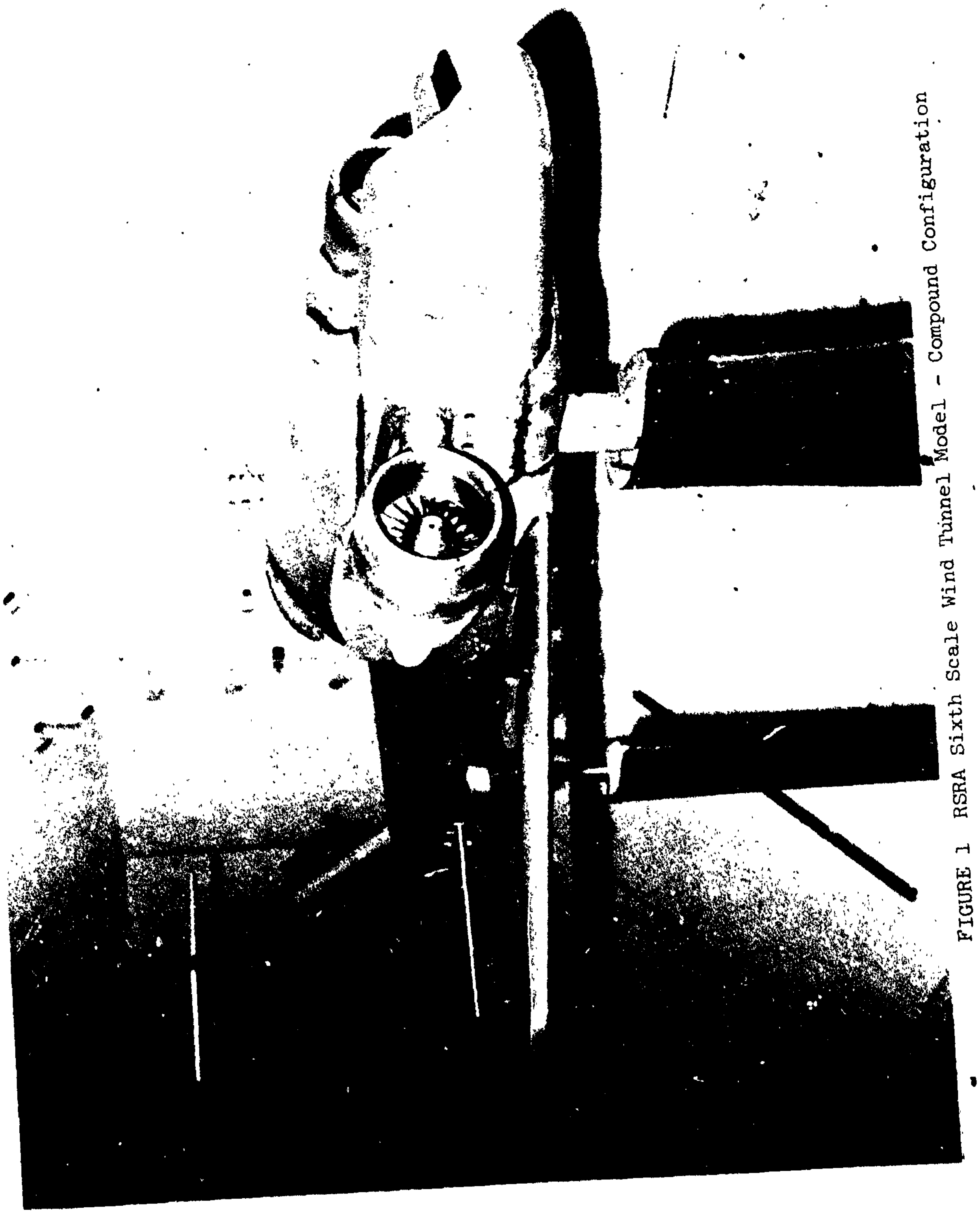

FIGURE 1 RSRA Sixth Scale Wind Tunnel Model - Compound Configuration

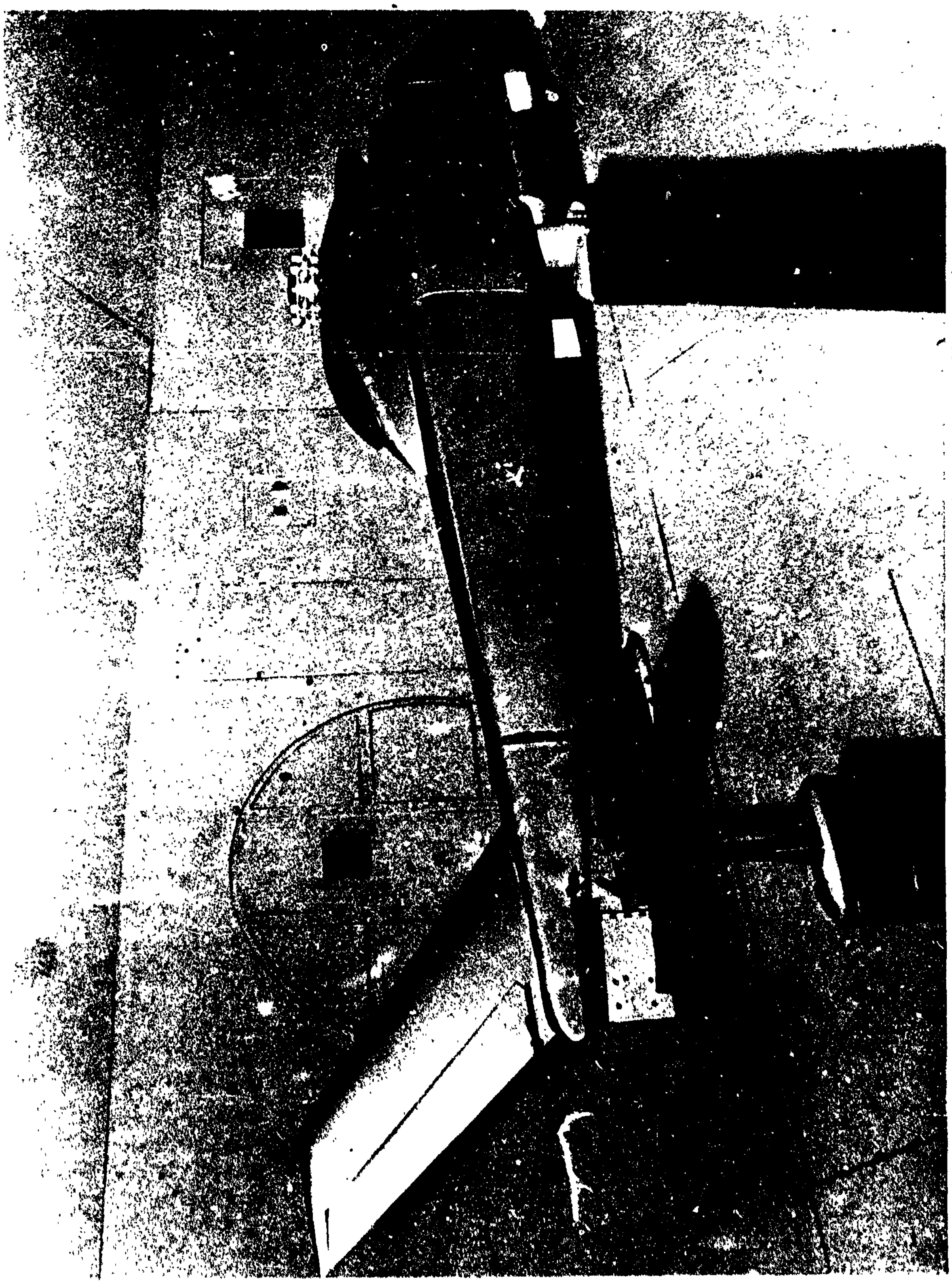

FIGURE 2 RSRA Sixth Scale Wind Tunnel Model - Helicopter Configuration-Phase I

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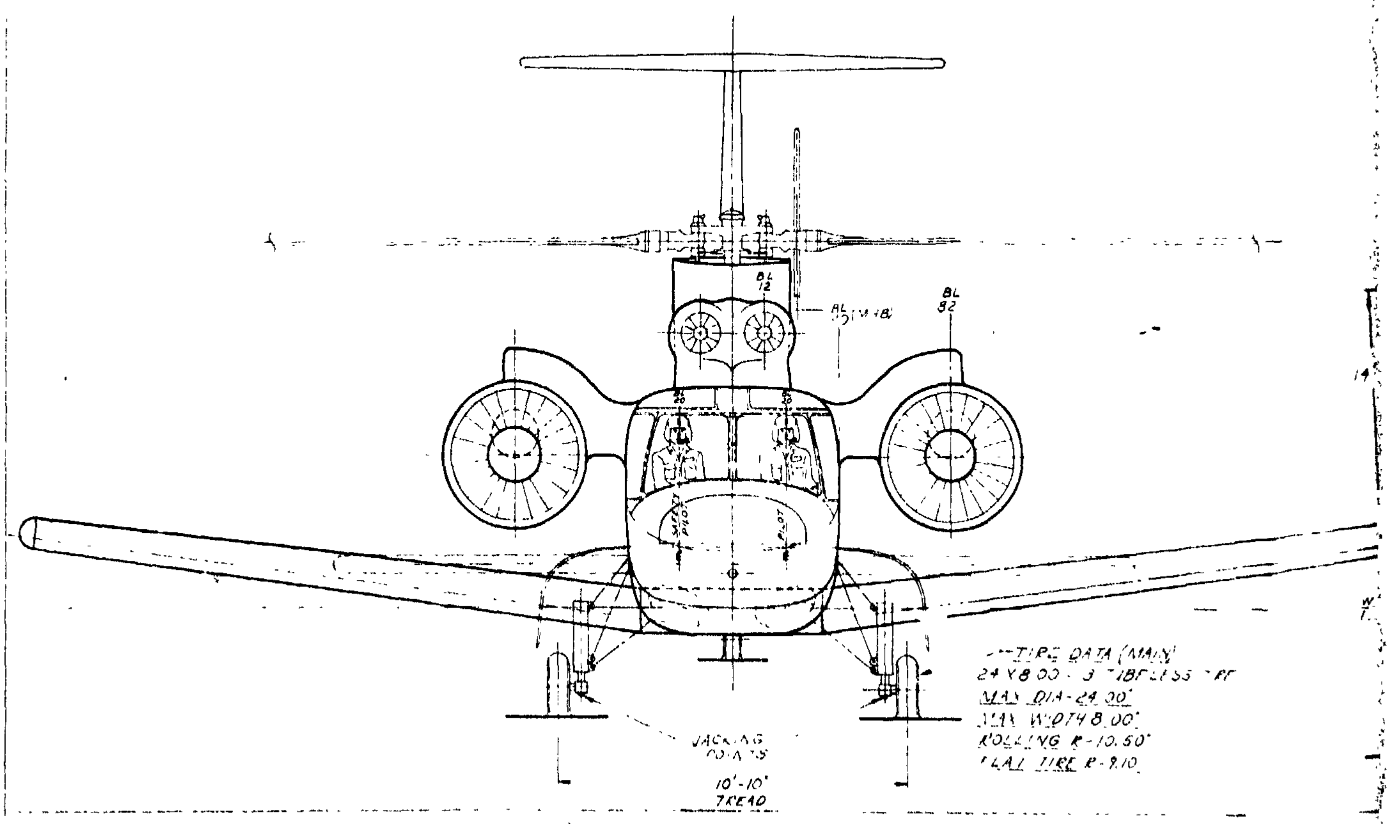

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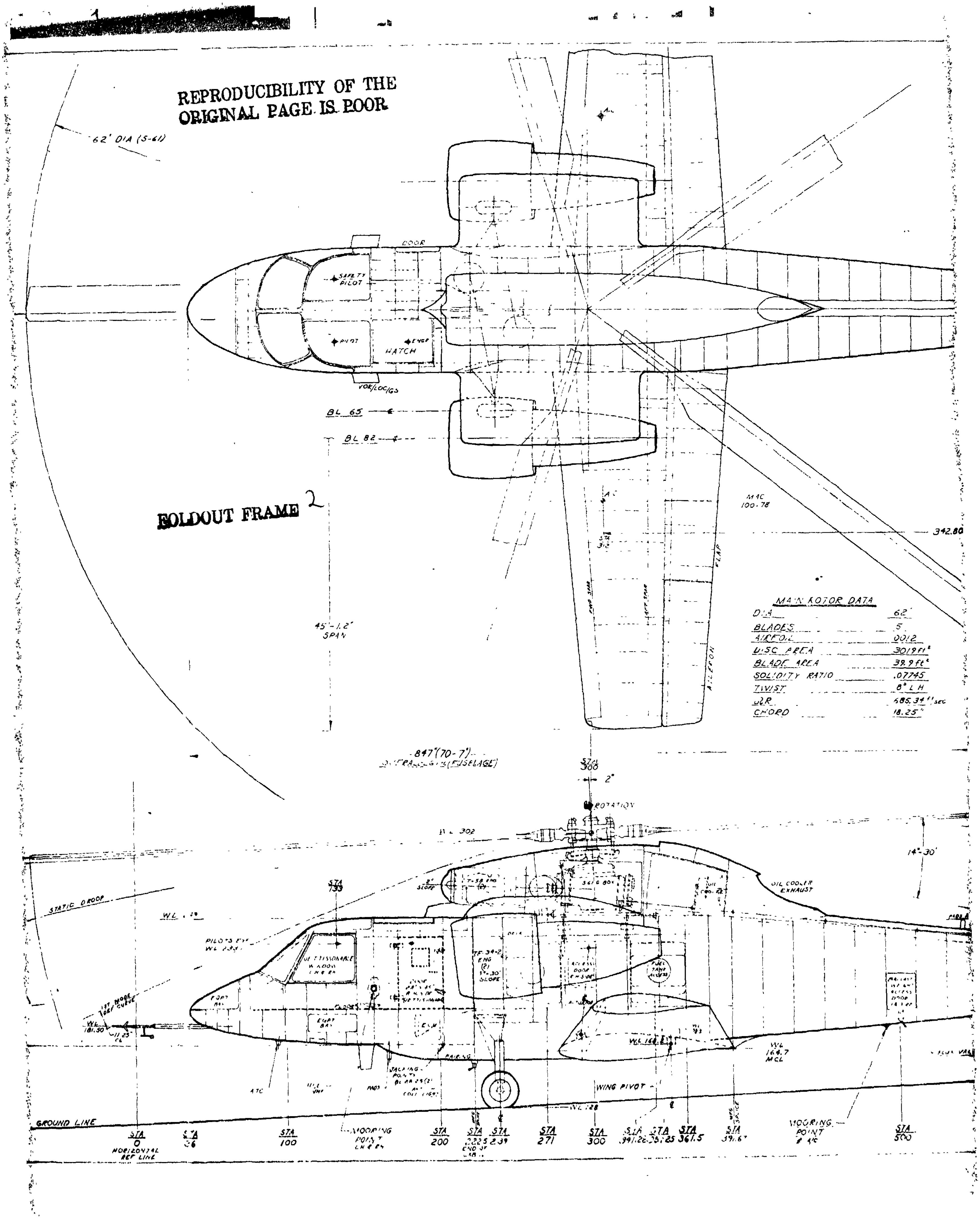
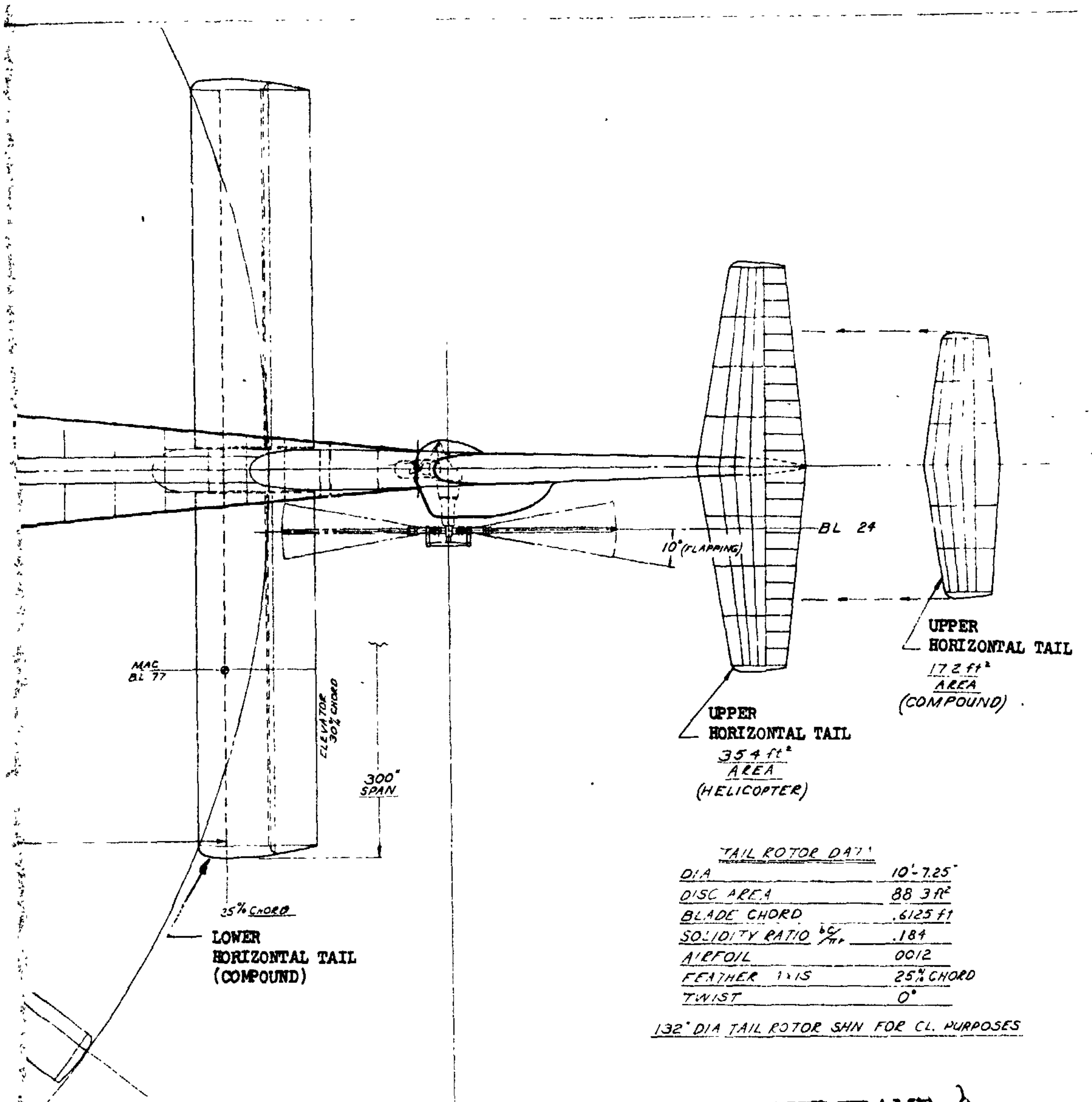




WING DATA

AIRFOIL (ROOT)	63_2 415
AIRFOIL (TIP)	63_2 415
INCIDENCE (VARIABLE)	+15° -9°
ROOT CHORD	115.24"
TIP CHORD	76.85"
25% CHORD SWEEP	3°
FWD SPAR	10% CHORD
AFT SPAR	54% CHORD
PROJECTED AREA TOT	370 ft²
TAPER RATIO	.66
ASPECT RATIO	5.52
DIHEDRAL	7°
FLAP DEFLECTION	+25°
AILERON DEFLECTION	+5°-15°
FLAP AREA (TOT PROJ)	57.8 ft²
AILERON AREA (TOT PROJ)	35.7 ft²

STABILIZER DATA

ROOT CHORD	
TIP CHORD	
TAPER RATIO	
INCIDENCE (VARIABLE)	
AREA (TOT)	
ASPECT RATIO	
AIRFOIL (ROOT)	
AIRFOIL (TIP)	
ELEVATOR HINGE LINE	
AREA	
DEFLECTION ANGLE	

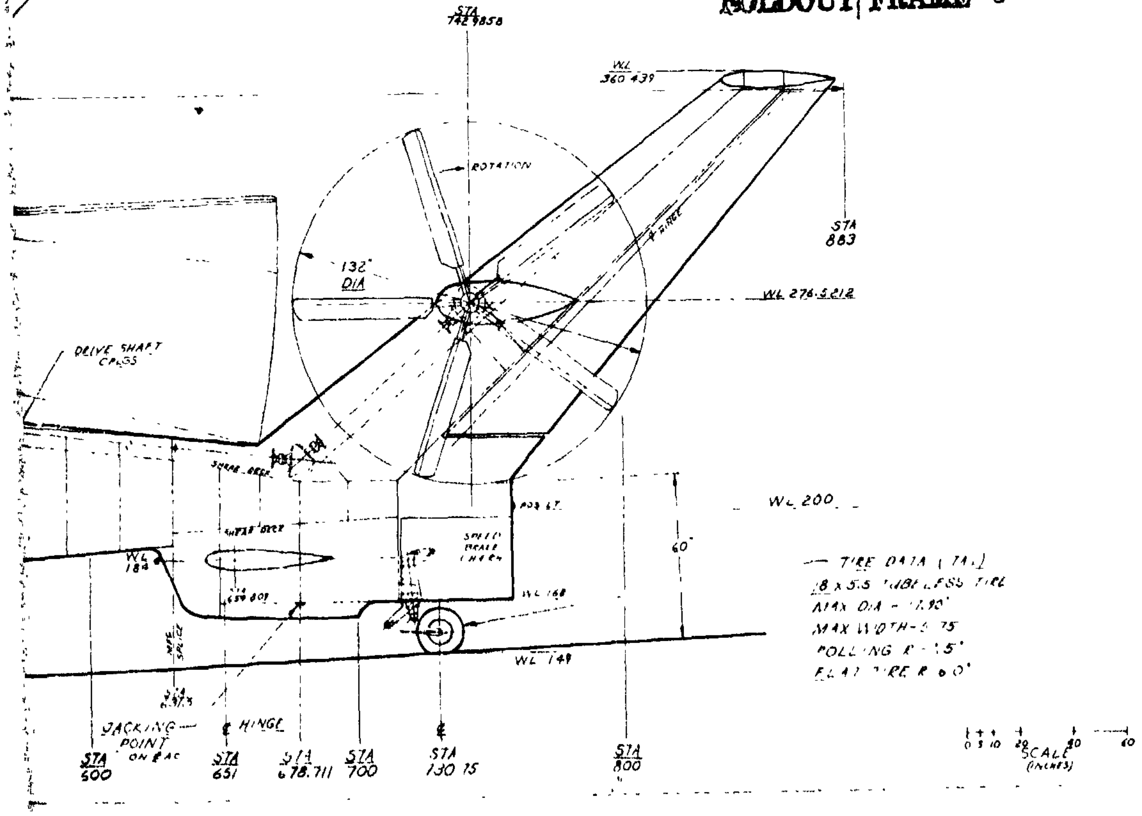
VERTICAL FIN DATA

ROOT CHORD WL 212.439	112.50"
TIP CHORD (LOWER) WL 68.439	112.50
TAPER RATIO (LOWER)	1.0
TAPER RATIO (UPPER)	—
AREA TOTAL (EXPOSED)	
ASPECT RATIO	
AIRFOIL TIP (LOWER)	.0015 NACA
AIRFOIL TIP (UPPER)	.0015 NACA
TIP CHORD (UPPER)	
AIRFOIL ROOT	.0015 NACA
SPEED BRAKE AREA	8 ft² PER SIDE
RUDDER AREA	
SPAN	
25° CHORD SWEEP (UPPER)	48°

TAIL ROTOR DATA

DIA	10'-7.25"
DISC AREA	88.3 ft²
BLADE CHORD	.6125 ft
SOLIDITY RATIO $bc/\pi r$	.184
AIRFOIL	0012
FEATHER AXIS	25% CHORD
TWIST	0°

FOLDOUT FRAME 3



TIRE DATA (TAIL)
18 x 5.5 TUBELESS TIRE
MAX DIA - 17.90"
MAX WIDTH - 5.75
ROLLING R - 7.5"
FLAT TIRE R 6.0"

DRAWING LIST

GENERAL ARRANGEMENT	DS-72A-01-01
ROTOR HEADS	DS-72A-10-01
ROTOR BLADES	DS-72A-15-01
AIRFRAME (MULTI SHT)	DS-72A-20-01
LANDING GEAR (MULTI SHT)	DS-72A-25-01
PRIMARY POWER	DS-72A-30-01
DRIVE SYSTEM	DS-72A-35-01
FLIGHT CONTROLS	DS-72A-40-01
INSTRUMENTS	DS-72A-45-01
INTERIOR FURNISHINGS	DS-72A-50-01
ELECTRICAL WIRING	DS-72A-55-01
AVIONICS	DS-72A-60-01
HYDRAULICS	DS-72A-65-01
GROUND SUPPORT EQPT	DS-72A-70-01
EMERGENCY ESCAPE	DS-72A-75-01
WING	DS-72A-80-01
ONBOARD RESEARCH INSTR	DS-72A-90-01
ACTIVE ROTOR BAL. ISO. SYS	DS-72A-95-01

DRAWN BY			AC & SS		
DESIGNER			AD & D		
SYS DESIGN			STRUCT & MATL		
SYS ENGINEER			AERO MECHANICS		
ACFT DESIGN			SD & E		
F DESIGN			CHIEF TEST ENGR		
TASK MANAGER			CHIEF ENGINEER		
			ENGRG MANAGER		
			MFG/MFG ENGRG		
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REPORT No. | PAGE NO | FIGURE NO

GENERAL ARRANGEMENT
ROTOR SYSTEMS RESEARCH
AIRCRAFT

Sikorsky Aircraft | CODE IDENT NUMBER 78286 | DS-72A-01-01
SCALE 1/20 | SHEET 1 OF 1 | REV C

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LIST OF SYMBOLS

b	Wing Span - ft
c	Wing Chord - ft
$\bar{c}$	Mean Aerodynamic Chord - ft
C_D	Drag Coefficient, Wind Axis
C_{DS}	Drag Coefficient, Stability Axis
C_L	Lift Coefficient, Wind Axis
C_{LS}	Lift Coefficient, Stability Axis
$C_{\mathcal{L}}$	Rolling Moment Coefficient, Wind Axis
$C_{\mathcal{L}S}$	Rolling Moment Coefficient, Stability Axis
C_{m}	Pitching Moment Coefficient, Wind Axis
C_{mS}	Pitching Moment Coefficient, Stability Axis
C_{n}	Yawing Moment Coefficient, Wind Axis
C_{nS}	Yawing Moment Coefficient, Stability Axis
C_P	Pressure Coefficient
C_Y	Side Force Coefficient, Wind Axis
C_{YS}	Side Force Coefficient, Stability Axis
CG	Aircraft Center of Gravity
i_{HT}	Horizontal Tail Incidence - deg
i_N	Nacelle Incidence Angle - deg
i_{VT}	Vertical Tail Incidence - deg
i_W	Wing Incidence - deg
M	$\partial(M/q)/\partial\alpha$, Pitching Moment Slope - Ft^3/deg
P_N	Local Static Pressure - [illegible]

LIST OF SYMBOLS (Cont'd.)

P_o	Tunnel Static Pressure - psf
q	$\frac{1}{2}\rho V^2$, Dynamic Pressure - psf
q_o	Wind Tunnel Dynamic Pressure - psf
q_T	Tail Dynamic Pressure - psf
V	Free Stream Velocity, fps
α	Angle of Attack - deg
δ_a	Aileron Deflection - deg
δ_e	Elevator Deflection - deg
δ_F	Flap Deflection - deg
δ_r	Rudder Deflection - deg
δ_{SB}	Speed Brake Deflection - deg
ϵ	Downwash Angle - deg
ρ	Density - Slugs/Ft^3
σ	Sidewash Angle - deg
χ_N	Nacelle Cant Angle - deg
ψ	Angle of Yaw - deg

Configuration Nomenclature

B	Main Rotor Hub
B_T	Tail Rotor Hub
F	Fuselage
F_2	Fuselage with Landing Gear Fairing Removed
L	Landing Gear

LIST OF SYMBOLS

N	Unpowered Nacelles
N_P	Powered Nacelles
N_{P1}	Powered Nacelles and Aft Pylon Fairings and Forward Pylon Fairings
N_{P2}	Powered Nacelles and Aft Pylon Fairings (Plate Only)
N_{P3}	N_{P1} and Nose Plug
N_{P4}	N_{P1} and Nose and Tail Plug
N_{P5}	Powered Nacelles with Full Support Fairing
N_{P6}	N_{P5} With Vented Fairing (1/4 inch holes)
N_{P7}	N_{P6} With Leading Edge Off and Trailing Edge Truncated
N_{P8}	N_{P5} With Trailing Edge Truncated
N_{R1}	Large Ring Nacelles
N_{R2}	Small Ring Nacelles
P	Main Rotor Pylon
T_{XX}	See Tables I, II, and III, and Figures 9 and 10 for Tail Identification Nomenclature
W	Wing
W_1	Wing and End Plates on Flaps
W_2	Wing and 10 inch long fences located 12 and 17 inches Outboard of Wing Root
W_3	Wing and 10 inch long fences located 4 and 12 inches Outboard of Wing Root
W_4	W_3 and W_1
W_5	W_3 and root plate fairings extending from wing leading edge to leading edge of flaps

LIST OF SYMBOLS (Cont'd.)

W_6	W_5 and W_1
W_7	Wing at Phase II location with fences and root fairings
W_8	W_7 Without fences

INTRODUCTION

The sixth scale model of the Sikorsky/NASA/Army RSRA was tested in the 18-foot section of the United Aircraft Research Laboratories (UARL) Large Subsonic Wind Tunnel for the purpose of obtaining basic data for the RSRA program in the areas of performance, stability, and body surface loads. These data are required to substantiate and update current analytical estimates. This report is the final report documenting the data and test procedures of Phases I and II of the RSRA wind tunnel testing.

The model was mounted in the tunnel on the struts arranged in tandem. Basic testing was limited to forward flight with angles of yaw from -20 to +20 degrees and angles of attack from -20 to +25 degrees. Tunnel test speeds were varied up to 172 knots (q = 96 psf). Interference data were derived from the tenth scale Utility Tactical Transport Aircraft System (UTTAS) wind tunnel testing, Reference 3, and Sikorsky S-67 data, Reference 4. Test data was monitored through a high speed static data acquisition system (STADAS), linked to a PDP-6 computer. This system provided immediate records of angle of attack, angle of yaw, six component force and moment data, and static and total presssure information. The test parameters were stored on magnetic tape for off-line processing.

The wind tunnel model was constructed of aluminum structural members with aluminum, fiberglass, and wood skins. Included in the test program were tip driven fans to simulate airflow through the RSRA's TF-34 thrust engines.

This report includes tabulated force and moment data, flow visulation photographs, tabulated surface pressure data for the basic helicopter and compound configurations, and limited discussions of the results of the test.

In addition to the authors the following personnel were major contributors to the wind tunnel test program:

R. Blauch - Test Operations
B. Goldiez - Test Operations and Report Preparation
D. Clark and R. Moffitt - Hot Wire Anemometer Operation
J. Rorke, R. Monteleone, N. Heslin - Test Supervision
F. Moore, R. Satterthwaite, J. Hassel - NASA/Army Representation

DESCRIPTION OF TEST FACILITY

Large Subsonic Wind Tunnel

The Large Subsonic Wind Tunnel is a single-return, closed-throat facility with interchangeable 18 and 8-foot octagonal test sections. The tunnel is adaptable to testing models and components of airplanes and helicopters, full-scale and model missiles, propellers and helicopter rotors, powerplant installations engine inlets and exhaust nozzles, and air induction systems. Maximum tunnel velocities are approximately 200 mph for the 18 foot test section. Tunnel stagnation pressure equals atmospheric pressure, and the stagnation temperature of the airstream can be held constant in the 60° to 150°F range by means of air exchanger valves. Vacuum and 40, 100, and 400-psig air supplies are available to use in inlet and nozzle testing. Electric power may be supplied to the test model by motor generator sets which develop a maximum of 750 hp at frequencies up to 400 Hz. Balance, support, and control mechanisms permit a wide range of test installations. Model installation, access to the model, and visual observation of the test from the control room are facilitated by the design of the test sections. The installed model is shown in Figures 1 and 2 and the test facility is shown in Figure 4.

For this test the tunnel was configured to permit a tandem two strut mounting system consisting of a main forward strut and an aft pitch strut. Both struts were surrounded by self-aligning airfoil shaped fairings (see Figure 1). Separation between strut centers was 70 inches in Phase I and 57 inches in Phase II. The angle of attack range was -20 to +25 degrees and the angle of yaw range was -20 to + 20 degrees.

Tail alone testing was made possible by attaching a structural forebody to the aircraft empennage components. Strut arrangement is shown in Figure 5. Strut separation was 38.875 inches and permitted an angle of attack range of -30 to + 30 degrees with an angle of yaw range from -30 to +30 degrees.

Computer Facilities

A high speed static data acquisition system (STADAS), located in the Large Subsonic Wind Tunnel control room, recorded six component force and moment balance data and static and total pressure data. This data system is linked to a PDP-6 computer located in the UARL computation laboratory and provides immediate on-line data monitoring capability. In addition, data were recorded on magnetic tape to provide a permanent test record, and for off-line computer processing on the UNIVAC 1110 computer.

DESCRIPTION OF WIND TUNNEL MODEL

Aerodynamic Model

The sixth scale wind tunnel model was designed by Sikorsky Aircraft and fabricated from aluminum, fiberglass, steel, and wood materials. Design restrictions for the model were dictated by the air loads expected at wind tunnel speeds of 175 knots in forward flight and by the safety factors required by the test facility. The model weight is 749 pounds (configuration $FPBW_5TB_T$). Physical dimensions of the RSRA aircraft are shown in Figure 3. Basic model configurations are shown in Figures 6 through 10.

The cockpit section was constructed of molded fiberglass contoured to form the outer forward surface of the model. The interior was hollow to permit installation of static pressure taps and the powered nacelle air supply plenum chamber and control system. The cockpit section was bolted to the forward bulkhead of the cabin section. The cabin, transition, and tailcone sections contained the main aluminum structural members of the body including nacelle and wing attachment points. Three sets of aluminum cabin skins were fabricated for the various wing on/off and nacelle on/off configurations. The transition and tailcone skins were fiberglass. The main rotor pylon, which includes the T58-GE-5 engines was also fiberglass.

Two sets of TF-34 engine nacelles were used for this test. The first was of solid wood with inlet and exhaust fairings to simulate airflow around the nacelle. The second set of nacelles were tip driven 8 inch fan units supplied by NASA and manufactured by Tech Development, Inc., Dayton, Ohio. These were driven by 400 psig air, brought into the model through the forward strut. These nacelles are 4.8 scale or 25% oversize for the sixth scale model. Powered nacelle configurations are shown in Figure 7.

The RSRA model wing incorporates variable incidence, and includes a slotted flap and ailerons. The incidence and deflection angle ranges are shown below. All surfaces were manufactured from solid aluminum and wood. Wing fences and root seals are shown in Figure 8.

The baseline empennage consisted of a vertical tail with a movable rudder, a variable incidence horizontal tail with movable elevators, and a speed brake. Control ranges are shown below. Empennage configurations are shown in Figures 9 and 10, with dimensional data presented in Table I. Tables II and III provide cross reference indeces to aid in identifying the components for each tail number.

	Airfoil Section	Incidence deg	Control Deflection deg
Wing	63_2415	-9 to +15	0 to +40, Flaps -20 to +20, Ailerons
Vertical Tail	0015	0 to 4.5	-25 to +25
Baseline Horizontal Tail	63,A212	-9 to +9	-25 to +25
Speed Brakes	-	-	0 to +55

Additional components built for the RSRA model, shown in Figure 6 and defined in the list of symbols are:

Rotor Heads (B & B_T) - A main rotor head and a tail rotor head were designed to simulate rotor head wakes. Rotor downwash was not simulated during this test.

Landing Gear and Oleo Struts (L) - The extended main landing gear and its structural members. The tail gear was not tested because of its proximity to the pitch strut attachment point of the model.

The following table presents basic model dimensions, supplementing the data shown in Figure 3.

LENGTH	
Fuselage	120.3 in.
Overall (nose to aft point on stabilizer)	141.2 in.
WIDTH	
Cabin Section	13.33 in.
Overall (Horizontal stabilizer span)	50.00 in.
HEIGHT	
Cabin Section	15.1 in.
Overall (Vertical Stabilizer to wheels)	38.8 in.

MODEL RESOLVING CENTER	
Fuselage Station (A/C dimension)	309 in.
Waterline (A/C dimension)	223 in.
Buttline (A/C dimension)	0 in.
BALANCE RESOLVING CENTER	
Fuselage Station (A/C dimension)	265.5 in.
Waterline (A/C dimension)	208.0 in.
PIVOT CENTER	
Fuselage Station (A/C dimension)	265.5 in.
Waterline (A/C dimension)	178.0 in.
REFERENCE LENGTHS, AREAS, AND VOLUMES	
Model Volume (used for tunnel blockage correction)	
Fuselage	7.16 cu. ft.
Wing	1.10 cu. ft.
Nacelles	1.80 cu. ft.
Empennage	.62 cu. ft.
Main Rotor Pylon	.89 cu. ft.
Cross Sectional Area	1.85 sq. ft.
Reference Span	7.472 ft.
Reference Chord	1.400 ft.

The tail alone configuration utilized the UTTAS mounting system with a strut separation of 38.875 inches. This installation has a pivot center as follows:

Fuselage Station (A/C dimension)	452.8 in.
Waterline (A/C dimension)	182.0 in.
Model Volume	
Empennage and Forebody (T_3)	.95 cu. ft.
Forebody (T_4)	.53 cu. ft.

The wind tunnel model was equipped with 163 pressure taps to measure pressure distributions on the right side of the cockpit, cabin, transition and tailcone sections, and the main rotor pylon. The taps consist of stainless steel tubing bonded flush to the surface and connected by flexible plastic tubing (Geon) to four 48-tap Scanivalve units mounted in the forward part of the cabin. Each Scanivalve unit converted the pressure to an electrical signal which was recorded by STADAS. Only nine lead lines from the model were required for pressure readings, and since these lines were enclosed within the strut fairings, they did not affect model aerodynamic forces. Pressure data were therefore acquired during stability test runs without the need for separate pressure test runs. Components having pressure taps were removed from the model by uncoupling the Scanivalve connectors at the Scanivalve or by removing the tubing on each component. The locations of the fuselage pressure taps are given in Table IV.

BALANCE DATA ANALYSIS

Test Procedure

The RSRA wind tunnel test procedure was arranged to provide data in four main areas of interest. These areas consisted of model buildup, wing performance, empennage studies, and model component interference effects. Model components, including main and tail rotor heads, wing, nacelles, main rotor pylon, and landing gear, were added to the model individually provide incremental effects. Data were taken for a maximum angle of attack range of -20 to +25 degrees, and a maximum angle of yaw range of ± 20 degrees. The tunnel was operated at a dynamic pressure of 55 psf (about 130 knots) except for Reynolds number and nacelle thrust studies.

The tunnel balance data were recorded on magnetic tape using the STADAS data reduction system, and immediately reduced using the UARL PDP-6 computer and printed on-line. The amount of output printed on-line was controlled to obtain only those values necessary for data checks. These data were monitored during each run and questionable points rerun. Final data were compiled from the tapes on the UNIVAC 1110 computer. The data presented in this report are in full scale parametric form, i.e., normalized by the dynamic pressure, q, and in coefficient form, non-dimensionalized by q and wing area and chord or span.

In addition to force and moment data, flow visualization studies were made on the aerodynamic model using tufts and oil. Tufts were used to determine surface flow characteristics on the forward sections, main rotor pylon, engines, wing, and empennage. Photographs were taken over a range of forward flight attitudes. A tuft rake was used to investigate three-dimensional flow around the empennage at a low tunnel speed. Oil flow studies were conducted by dissolving lamp black in SAE 30 oil and placing the solution on critical surface areas of the model. Normal tunnel q was then maintained for approximately 5 minutes with the model in a fixed flight attitude. After shutdown the model surface could be photographed to record flow patterns.

Flow conditions at the empennage were measured using two types of velocity measurement apparatus. A total pressure rake was mounted on the model to survey the flow dynamic pressure. A tri-axial hot wire probe was mounted behind the model to measure flow dynamic pressure and local flow angles. This equipment and resulting data are discussed in a later section of this report.

Data Presentation

Aerodynamic force and moment data have been reduced from encoder values to parametric or coefficient values in the wind axis system, Figure 11, and coefficient values in the stability axis system. The steps in the data reduction process are listed below:

1. Convert encoder forces to forces and moments in units of pounds or foot-pounds.

2. Correct forces and moments for start zeros and static moment variations.

3. Transfer moments to the model resolving center (Fuselage station 309, waterline 223, and buttline 0).

4. Correct forces and moments for aerodynamic tare and interference.

5. Compute forces and moments in parametric form by dividing by dynamic pressure, q, and correct for model scale using a factor of 36 for forces and 216 for moments.

Data is presented in parametric form throughout this volume and in Volume II.

Force and moment data were also computed in wind axis and stability axis coefficient form using the following equations:

WIND AXIS

$$C_L = L/qS$$

$$C_D = D/qS$$

$$C_{\mathcal{M}} = \mathcal{M}/qS\bar{c}$$

$$C_{\mathcal{N}} = \mathcal{N}/qSb$$

$$C_{\mathcal{L}} = \mathcal{L}/qSb$$

$$C_Y = Y/qS$$

STABILITY AXIS

$$C_{LS} = C_L$$

$$C_{DS} = C_D \cos\Psi - C_Y \sin\Psi$$

$$C_{\mathcal{m}S} = C_{\mathcal{m}} \cos\Psi - (b/\bar{c})\, C_{\mathcal{l}} \sin\Psi$$

$$C_{\mathcal{n}S} = C_{\mathcal{n}}$$

$$C_{\mathcal{l}S} = C_{\mathcal{l}} \cos\Psi + (\bar{c}/b)\, C_{\mathcal{m}} \sin\Psi$$

$$C_{YS} = C_Y \cos\Psi + C_D \sin\Psi$$

Table VII has been prepared to assist in the location of data runs among the plotted data. Only these runs whose data are presented in plotted form are listed.

Balance Data Precision

During the course of the test, data runs were repeated to establish the confidence level of the balance data. In addition to repeated runs, the static start and end zeros, and data points at zero pitch and yaw angles provide repeatability information.

UARL established the static data accuracy for a 95% confidence level for Phases I & II tests in References 1 & 2. This information is reproduced in Table VIII, which also includes the accuracy ranges for tests reported in References 3 and 5. Variations due to the flow of compressed air through the crossover system from air supply to the balance influenced the accuracy of powered nacelle balance data, especially the pitching moment component. While tunnel and nacelle run-ups can reduce the pitching moment shifts, the shifts do not affect data slopes and the displacement is small relative to the range of pitching moment measured.

Figures 12 and 13 show the data repeatability for all six force and moment parameters for configurations $FPBN_{P5}W_7T_{10}B_T$ and $FPBN_{P5}W_7T_2$, respectively.

Aerodynamic Tare and Interference

The force and moment data were corrected for derived tare and interference effects, since model construction did not provide for model inversion to generate tare and interference data. To define tare and interference (T&I) corrections in the helicopter mode a comparison was made between the uncorrected RSRA data and the 1/12 scale S-67 wind tunnel test results (Reference 4). For lift, side force, rolling moment and yawing moment the data were similar and therefore the tare and interference contribution to the data should be relatively insignificant. There was a measurable change in pitching moment, where the application of T&I's would produce a more stable slope, and therefore pitching moment T&I's were conservatively not applied. Drag tare and interference corrections are significant, and were the only ones applied to the helicopter data. The drag T&I was determined by forcing the drag of the Phase I fuselage alone configuration at zero angle of attack and yaw equal to the estimated fuselage drag (3.10 sq. ft.). The shape of the drag T&I curve as a function of angle of attack and yaw was then developed from the 1/12 scale S-70 pilot tunnel test results (Reference 3). Fuselage aerodynamic tare and interference corrections are shown in Figure 14.

For the compound configuration a survey was made of the tare and interference contribution for several compound configurations previously tested by Sikorsky Aircraft. The results of this survey indicated the T&I contribution is similar to that discussed for the helicopter configuration.

A tare correction corresponding to the force and moments of the forebody and aft tailcone (Configuration T_4) was applied to the tail alone data. These tare corrections are presented in Figure 15.

Reynolds Number Effects

The effect of tunnel speed was investigated early in the test to provide information that led to the selection of a dynamic pressure of 55 psf for normal running. The trend of drag with tunnel speed is shown in Figure 16a in terms of Reynolds number per foot, where a Reynolds number of 1.28×10^6 corresponds to a dynamic pressure of 55 psf. The Reynolds number values presented are not corrected for the Large Subsonic Wind Tunnel turbulence factor which is approximately 1.14. The Reynolds numbers presented herein should be multiplied by the factor prior to any comparisons with corrected data. Figure 16b shows the effect of Reynolds number on lift and drag for compound configurations. Included is the effect of leading edge roughness on the wing and tails (grit size 150).

Helicopter Buildup and Stability - Final Configuration

Helicopter performance and stability parameters for the final Phase II configuration, and the component buildup to this configuration, are presented in Figures 17 through 29. The RSRA helicopter meets or exceeds the pitching moment criteria established for this test of -40 cu. ft/deg with the 35.4 square foot upper horizontal tail.

Figures 17 and 18 show the effect of individual components during a helicopter buildup. The addition of the main rotor head and pylon do not have a significant impact on longitudinal stability, but does reduce lateral stability for angles of yaw less than ± 8 degrees, as shown in Figure 18b.

The parasite drag of several RSRA components can be evaluated from the wind tunnel results. To establish incremental drag levels the measured drag at zero angles of attack and yaw were listed and averaged. Analysis of incremental drag is then possible by subtracting the averaged drag for two configurations, one with and the second without the component.

Since the drag tare and interference value was derived by adjusting the tested fuselage (FT_2 - Phase I) drag to an estimated value of 3.10 square feet, the test cannot be used to confirm this value. Modifications made to the fuselage and main strut for Phase II testing increased the fuselage drag by 2.61 square feet to 5.71 square feet (based on configurations FT_2, $FPBT_2$ - Phase I, and $FPBT_2$ - Phase II). The source of this difference has not been determined.

The main rotor pylon contributes 2.23 square feet of drag, compared to the estimated value of 1.50 square feet. The tested main and tail rotor heads, do not fully represent the actual RSRA configuration. The main rotor head tested and predicted drags were 3.73 and 8.93 square feet, respectively. The tail rotor head tested and predicted drags were 1.64 and 1.76 square feet.

The drag of empennage components was derived from tail alone D/q data multiplied by the dynamic pressure ratio at the tail surface in the following manner:

<u>Vertical Tail</u>

$$\left\{\left[T_{65}B_T - (T_{63}B_t - T_{64}B_T)\right] - B_T\right\} q_T/q$$

$$= \left\{\left[3.60 - (4.90 - 4.21)\right] - 1.64\right\} q_T/q$$

Where q_T/q = 0.68 for the helicopter (Figure 152)

and = 0.86 for the compound(trim power)

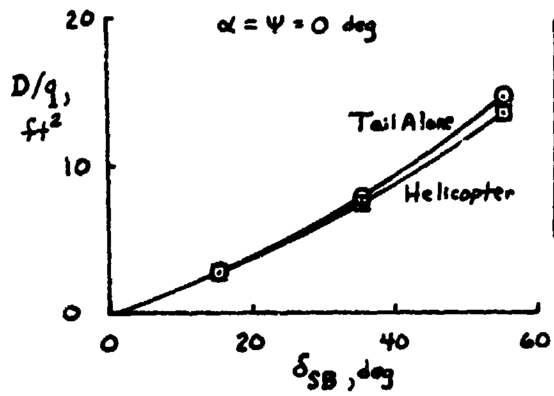
This calculation results in vertical tail parasite drags of 0.86 and 1.09 square feet for the helicopter and compound configurations, respectively, compared to a predicted value of 0.96 square feet for the unextended vertical tail, or 1.10 square feet for the extended vertical tail.

The drag of each horizontal tail is calculated as above:

Horizontal Tail	Tail Alone Drag	q_T/q	Component Parasite Drag
17.2 sq. ft. Upper	0.69	0.97(Compound)	0.67
35.5 sq. ft. Upper	0.72	0.97(Helicopter)	0.70
98.1 sq. ft. Lower	1.30	0.81(Compound)	1.05

The predicted drag of the original 110 square foot horizontal tail was 1.02 square feet. It should be noted, however, that none of the tail surfaces tested were exactly as defined for the RSRA; the final tail surfaces should have a lower parasite drag.

The effectiveness of the speed brakes is a function of the dynamic pressure in proximity to the tailcone. Detailed measurements in this region were not taken, although a measure of the helicopter q_T/q can be determined from speed brake data from helicopter and tail alone configurations. These data are presented below.



δ_{SB}	Tail Alone	Helicopter	q_T/q
15	2.24	2.23	1.00
35	7.71	7.34	.95
55	14.45	13.39	.93

Compound dynamic pressure loss is expected to be higher than that for the helicopter.

Figures 19 and 20 present the effect of angle of attack on lateral and directional characteristics. Figure 19 shows the effect of the main rotor pylon on the vertical tail due to positive body attitude. At α = -10 degrees the yawing moment slope is constant at -86 cu ft/deg. At α = 0 degrees the slope is reduced to -24 cu ft/deg. for $-8 < \Psi < 8$ degrees, and at α = +10 degrees the slope is neutral to slightly unstable.

Figures 21 and 22 show the effects of horizontal and vertical tail incidence, which appear nearly symetrical. These data were used in the calculation of downwash and sidewash angles (see Figure 10).

Figure 23 presents the effects of rudder deflection. The rudder effectiveness, $\partial N/q / \partial \delta_r$, is 37 cu ft/deg at α = 0 degrees. Isolated tail data (Tail Alone) is presented in Figures 24-29, and includes the impact of the speed brakes on drag (Figures 28 and 29). Comparisons with compound tail alone data may be found in Figures 91 and 92.

Compound Buildup and Stability - Final Configuration

The effects of the wing and nacelle wakes on the empennage forced a two-tail solution for the compound to meet a longitudinal stability criteria used for this test of -6 cu ft/deg. for the full range of wing incidences. The performance and stability parameters for the final Phase II compound configuration are presented in Figures 30 through 99.

Critical to the evaluation of compound performance and stability is the proper assessment of nacelle forces. Provisions were not made to perform an isolated calibration of each nacelle, but the thrust was measured with the nacelles installed on the model, both statically and at a dynamic pressure of 55 psf. The resulting data is shown in Figure 30. On Figure 30a the measured thrust at q =55 psf has been adjusted by the drag of the configuration without nacelles, $FPBW_7T_{60}B_T$, which is 26.4 square feet, or approximately 40.3 pounds. The nacelle thrust presented is therefore the net thrust of the nacelle/nacelle fairing system. In this form, the thrust at q =55 psf is on a closely comparable base to the static thrust. Actual measured thrust is shown in Figure 30b in terms of the thrust parameter.

The thrust produced is a function of wing lift and nacelle fairing contours. Wing/nacelle separation is very important, and there are indications that small differences in the internal contours of the nacelle fairing (N_{P5}) may have caused flow disturbances to produce nacelle lift at a zero nacelle angle of attack. Variation of total lift, for the nacelles at an attack of zero, is shown in Figure 30b for the range of fan speeds tested.

The effects of the compound component buildup, beyond that of the helicopter configuration, are shown in Figures 31 and 32 for tail off configurations, and 33 and 34 with the tail on. Each powered nacelle run consisted of a "windmill" data point at $\alpha = \Psi = 0$ degrees, normally taken prior to the data for either "trim thrust" or "maximum thrust," or with one engine inoperative (OEI). Individual windmill points, when available, are shown with solid symbols. The "trim thrust" condition was defined as the fan speed necessary to balance the total drag of the model and support struts at $\alpha = \Psi = 0$ degrees. "Windmill" RPM was the fan speed resulting from the force of tunnel air. "Maximum thrust", 23,000 RPM on these fans, resulted in a scaled thrust equal to 70% of the actual TF-34 maximum thrust. OEI corresponds to maximum thrust on the right fan, with the left fan windmilling. Unless otherwise noted on the figures, the nacelle incidence is -3.5 degrees and the cant angle is zero. All control surface deflections are zero unless noted.

The drag of several nacelle and nacelle fairing configurations was determined. The basic nacelle configuration, N_{P5} at $i_N = -3.5$ degrees, had very good drag characteristics. Either an increase or decrease in nacelle incidence increase the zero angle of attack drag by about 0.3 square feet/degree of nacelle incidence. The only fuselage/nacelle fairing that had less drag was the small airfoil-shaped fairing around the powered nacelle air supply pipe (N_P). The vented fairing N_{P6} had the same drag as N_{P5}. Truncation of the trailing edge (Plus venting) increased drag by an an additional 3.0 square feet. The breakdown of nacelle, nacelle fairing, and windmill drag is not possible using tunnel data, but it can be estimated analytically. Using coefficients and values from the estimated drag, the following nacelle drag breakdown is assumed for configuration N_{P5} and N_P.

Nacelle Parasite Drag

Item	RSRA Design	N_{P5}	N_P	Remarks
Isolated TF-34, sq. ft.	2.00	3.13	3.13	Scale correction
Support Fairing, sq. ft.	0.64	0.96	0.13	Size and shape corrections
Interference, sq. ft.	1.78	1.78	1.33	
Sub-Total, sq. ft.	4.42	5.87	4.59	
Windmilling Drag, sq. ft.	not applicable	5.96	5.96	
Total	4.42	11.83	10.55	

Figure 35 presents limited tail rotor hub effect data. The tail rotor hub is the only component of the RSRA wind tunnel model that is, by design, not symmetric. Since the data for configurations without the tail rotor are not symmetric, the model component construction must not be symmetric. Examination of the wing shows that the left wing flap is slightly warped upward, resulting in delayed stall on the left wing.

Early in the test it was determined that the required lift could not be achieved in the landing configuration (15 degree wing incidence). Flow visualization identified the source of the reduced lift, and wing fences were added to the wing with a resultant increase in lift to the required value. (See Flow Visualization section for further discussion.) Additional fence studies were performed at the beginning of Phase II testing, and again showed the fences were necessary on the model to obtain the required lift. At a 15 degree wing incidence, the fences produce a 15% increase in maximum lift without the flaps deflected, and a 24% increase in maximum lift with the flaps deflected to 30 degrees.

Figure 36 presents the effects of wing incidence and angle of attack on lift, drag, and pitching moment for the baseline configuration, with the original 110 square foot horizontal tail and extended span and chord vertical tail. The longitudinal instabilities, with trim thrust on the powered nacelles, are clearly shown in Figure 36c.

Figures 37 and 38 present the tail off data for the compound configuration at trim thrust, while Figures 39 - 41 show similar information for the compound with the final Phase II tail (T_{60}) installed. The RSRA has longitudinal stability with this tail for -15 to +17 degrees fuselage angle of attack, except for the -9 degree incidence wing which is neutrally stable from +10 to +15 degrees fuselage angle of attack and unstable at higher attitudes. Figure 40a shows directional stability for $-20^\circ < \Psi < +20^\circ$ at zero angle of attack. Figure 40b shows directional stability for $0^\circ < \Psi < 5^\circ$ for angles of attack from -20° to $+11^\circ$, where the yawing moment increment becomes positive at a wing incidence of zero degrees. Other tested wing incidences remain stable to beyond +17 degrees. Figures 42-44 present additional stability trends.

Nacelle thrust level impacts on all force and moment parameters. Figures 45 - 49 present these effects versus angle of attack for wing incidences of -9°, 0°, 7.5°, and 15°, and for the 15 degree wing with 30 degrees of flap deflection, all with the tail off. Figures 50 - 54 present similar data versus angle of yaw. Tail on data comparable to Figures 45-49 are shown in Figures 55-59.

The effect of nacelle incidence and cant angle was investigated during the test. As can be seen in Table IX at a zero wing incidence a small stabilizing effect is realized by changing engine incidence to -7° or 0°. However, this effect is reversed at high wing incidence ($i_W = 15^{\circ}$). An increase to positive engine incidence (5°) results in a de-stabilizing effect for both wing incidences. The baseline nacelle incidence of -3.5° yields minimum drag with a drag penalty of up to 1.7 ft^2 by either increasing or decreasing nacelle incidence from this point.

Canting the engine tailpipe outboard ($\chi_N = -5^{\circ}$) produced a relatively large de-stabilizing effect along with a reduction in parasite drag (see Table X). Inboard cant of the engine tailpipe ($\chi_N = +5^{\circ}$) did show a significant improvement in stability but also produced a significant drag penalty.

Based on these results an engine cant angle of 0° and incidence of -3.5° were selected as optimum.

The nacelles tested on this model were oversized by 25%. The fans that were used later in the Langley Research Center testing of this model permit proper scaling of the nacelles. These were not available to Sikorsky Aircraft for the test documented herein. To get an indication of the scale effect, ring nacelles (see Figures 9t - w) were fabricated and tested. Results of these runs indicate that a properly scaled nacelle will have a stabilizing pitching moment increment of from -22 to -30 cu ft/deg.

The RSRA's slotted flaps worked well on the model, as evidenced by Figures 60-65. Additional flap comparisons can be found in Figures 36-44, 45, 54, and 59. Figure 60 shows the effect of flap deflection for a zero wing incidence. Figure 61 presents the same information in terms of lift-drag ratio, derived with corrections for powered nacelle lift and net propulsive force.

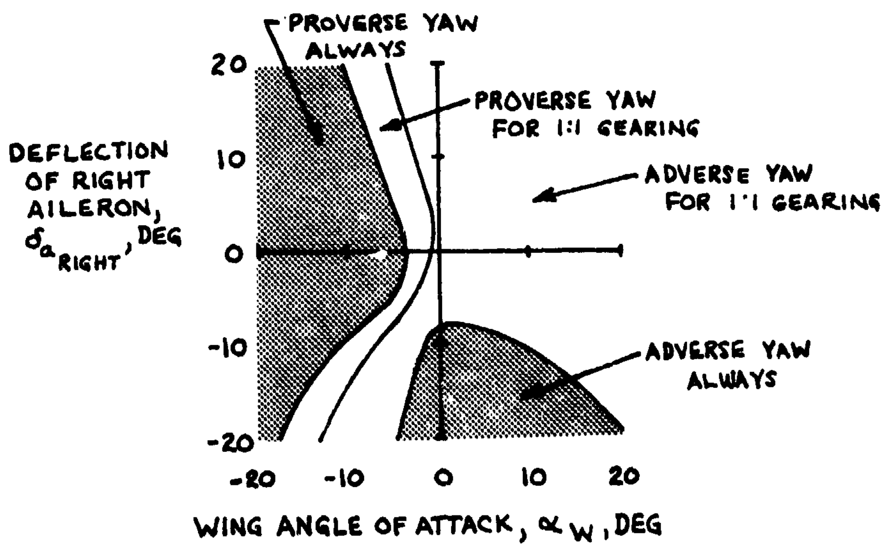
Aileron control power was evaluated for wing incidences of zero and 15 degrees, and at an incidence of 15 degrees with 30 degrees of flaps. These data are presented in Figures 66 through 75.

Only the right aileron was deflected during the Phase II test, and the data on the aileron figures are for only right aileron deflections. To obtain complete aircraft rolling moment, add the rolling moment caused by a deflection of the right aileron to the rolling moment for a deflection of the opposite sign times a gearing ratio (if different than 1:1). For example:

$$\text{Total } \mathcal{L}/q = (\mathcal{L}/q \text{ @ } \delta_a = 10^\circ) + (\mathcal{L}/q \text{ @ } \delta_a = -10^\circ \text{x gearing ratio})$$

Figure 66 shows the effect of the empennage on aileron control. While there are shifts in the rolling moment when the tail is added to the model, the change in rolling moment with respect to aileron deflection increments ($\partial\mathcal{L}/q/\partial\delta_a$) remains basically unchanged. Since $\partial\mathcal{L}/q/\partial\delta_a$ should not be affected by the empennage, the aileron trend runs were made with the tail off. The aileron rolling moment increments are uniform except near positive and negative wing stall, where the disymmetry in wing construction can cause a non-uniform rolling moment.

The aileron data have been summarized for all conditions tested in Figure 75 in terms of the change in rolling moment from the $\delta_a = 0$ degree case to the deflected aileron cases. The abscissa in Figure 75a is wing angle of attack which effectively combines the wing incidence and fuselage angle of attack into one variable. No control reversals exist for the range of angle of attack tested. Figure 75b shows the effect of right aileron deflection on yawing moment. Using this data the aileron deflection angles that result in adverse or proverse yaw at each angle of attack can be determined. The sketch below shows the aileron deflection angles and angles of attack where adverse and proverse yaw exist, and shows those areas where aileron gearing can reverse the sign of the yawing moment. Figure 75c shows the effect of angle of yaw on the rolling moment increment.



The effects of tail incidence were determined for all tail surfaces to permit the calculation of integrated sidewash and downwash angles, and to show any undesirable tail characteristics. So that one horizontal tail did not bias the true characteristics of the other, the lower horizontal tails and upper horizontal tails were run separately.

Figure 76 shows the characteristics of the lower horizontal tail, T_{61}, for ranges of wing incidence and flap deflection. These curves were used to derive Figures 103 and 104, discussed later. Similar information for the compound upper horizontal tail is presented in Figure 77, and results in Figure 106.

Figures 78-81 compare the pitching moment contributions of the lower and upper horizontal tails. The dashed line on each of these figures represents the summation of the pitching moment increment between T_{41} and T_2 and the pitching moment of T_{61}, and should approximate the data for the complete tail T_{60}. Good agreement is seen in Figures 78-80, and the differences between the derived and tested lines appears to be a function of experimental accuracy, not inter-tail interference. Figure 81 does not demonstrate this agreement, but a comparison with other data indicates that there is probably a data shift in either the T_{60} or T_{61} data, or possibly both sets of data, at this wing incidence.

Figure 82 shows the effect of vertical tail incidence on yawing moment for trim and OEI thrust levels. The sidewash trends resulting from these data are presented later.

Only the original 110 square foot lower horizontal tail was equipped with moveable elevators. To obtain an approximation of elevator effects on the family of smaller surfaces, a split flap elevator was fabricated and installed on tail T_{40} (see Figures 9C and 9D). The resulting data are presented in Figure 83.

Rudder effectiveness in the compound configuration (Figure 84) is comparable to that of the helicopter discussed earlier. Rudder data for the isolated tail is presented in Figure 87.

Figures 85-92 present tail alone data for the compound tail. The effects of yaw angle for a range of angles of attack are shown in Figure 85, with the effects of angle of attack on yaw angle shown in Figure 86. Rudder performance is presented in Figures 87 and 88, and speed brake drag is shown in Figures 89-90. The performance of all "solution" tails is summarized in Figures 91-92.

A limited amount of compound data with the landing gear extended was acquired during the test to represent the landing configuration. A sampling of this data is shown in Figures 92 - 99. The landing gear is shown to impact on the lift, drag, and pitching moment, but some of the trends, especially drag, indicate significant tare and interference effects due to the gear's proximity to the main strut. Therefore, all landing gear data should be used with caution.

Compound Nacelle Fairing Configuration Selection

Five basic powered nacelle fairings were studied during this test (N_P, N_{P5}, N_{P6}, N_{P7}, N_{P8}). Of these only four are practical for use with the TF-34-2 engines. Configuration N_P, which shows the best stability, is not a practical solution.

The nacelle fairing configuration did not significantly affect aircraft lift, but does impact on drag and pitching moment. This information is presented in Figure 100 for the complete compound configuration with the original 110 square foot tail. Venting the fairing does not affect the pitching moment slope or drag. The minimum fairing (N_{P7}) improved the pitching moment slope by -15 cu ft/deg., but at the expense of 4.6 sq. feet of drag. The fairing with the truncated trailing edge (N_{P8}) did not affect the pitching moment, but did increase drag by 1.6 sq. feet. Of the fairings tested the existing fairing provides the best overall solution.

Helicopter and Compound Empennage Downwash and Sidewash

Downwash and sidewash angles at the empennage may be calculated using balance data or directly using velocity or angle data. Only limited velocity data is available for these calculations, and therefore the balance data has been used exclusively in the derivation of these angles in this section.

Figure 101 shows the changes in sidewash angle versus angle of yaw, and downwash angle versus angle of attack for the helicopter configuration. The sidewash curve should be symmetric and pass through the origin of the curve. The shift in the curve cannot be explained by reference to tail rotor hub effects and therefore it is recommended that the curve be translated up to the origin. The sidewash characteristics of the compound are similar (Figure 102) and it is recommended that this curve also be translated through the origin. Figure 102 shows that the one engine inoperative (OEI) condition does not have a significant impact on sidewash angles.

Figure 103 shows the downwash angles for the compound configuration for angles of wing incidence and flap deflection. The wing downwash dominates the downwash trends, and results in a $1 - \partial\epsilon/\partial\alpha$ of .45 for angles of attack in the range of ± 5 degrees, improving for angles outside of this range. The downwash information found in Figure 103 was replotted in Figure 104 versus lift coefficient. The use of lift coefficient as the abscissa tends to collapse the data into one line, but the body and nacelle contributions to downwash prohibit complete generalization. Installation of the landing gear reduces the downwash angles as shown in Figure 105.

Figure 106 clearly shows that the compound upper horizontal tail is not effective at high positive attitudes, and is de-stabilizing beyond $\alpha = 12^{\circ}$ for many combinations of wing and flap angles. The upper horizontal tail is effective in the angle of attack range of ± 5 degrees (with $1 - \partial\epsilon/\partial\alpha$ ranging in general from .55 to .70), and can therefore provide the margin of stability necessary in that range.

Helicopter and Compound Empennage Selection

A total of 65 empennage configurations were evaluated during the test program. In addition to special configurations for tail alone testing and tail flow environment surveys, many combinations of vertical tails, lower horizontal tails, and upper horizontal tails were assembled and tested. Representative configurations are shown in Figures 9 and 10.

To evaluate the relative merit of each tail surface, an effectiveness coefficient, approximating the stabilizer lift coefficient, was defined as a function of the change in pitching moment between tail on and tail off configurations, the distance from the CG to the tail, and the tail area.

This effectiveness coefficient was then evaluated for general slope characteristics in the angle of attack range of ± 10 degrees, where tail performance at a wing incidence of 0 degrees, is critical. For the latter case the change in α from -10 degrees to + 10 degrees was used for a relative comparison.

To isolate individual tail surface effects, tail configurations that consisted of only lower horizontal tails or of upper horizontal tails were used where possible. When necessary combined tail configurations were used, but this should have little effect on individual tail performance as shown in Figure 79.

The ratings presented below illustrate the portions of the airstream at the empennage that provide air at more optimum dynamic pressures and downwash angles. While airfoil construction techniques varied from tail to tail, variations due to airfoil shape seemed only significant for the upper horizontal tails.

The following table shows the effectiveness rating of each lower horizontal tail in the compound configuration:

Lower Horizontal Tail Designation (See Table I)	Effectiveness (From -10° to $+10^\circ$)	Rating (% of Tail VIII (T_{61}))
I	.441 to .502	74
II	(.639)*	99
III	.621 to .645	98
IV	.647	101
V	(.526)*	82
VI	.639	99
VII	.624	97
VIII(T_{61})	.644	100
IX	.407	63
X	.571	89
XI	(.582)*	90
XII	.468	73
XIII	.643	100
XIV	.482	75

* Based on data with both a lower and upper horizontal tail.

Comparison of ratings for these tails results in consistent trends for the effect of span, chord variations, and anhedral angle. The above table shows the selected compound lower tail is among the best of the tail configurations tested. Span increases from 250 to 300 inches improves the effectiveness by 26%. Examination of Figure 154 shows that the airflow becomes more uniform for span segments at buttlines in excess of 110 inches.

Use of the good flow in the area of the tail tip can be made by increasing tip chord, although the effectiveness of the increase is only slightly (less than 2%) improved (i.e., the lift increase is nearly proportional to the stabilizer area increase). Root chord reductions remove ineffective portions of the stabilizer. The change from tail III to IV resulted in a 3% improvement in effectiveness. In general chord extensions over the full tail span degrade effectiveness by .5 to .7 percent for each percent increase in chord.

Lower horizontal tail anhedral improves effectiveness by 10 - 11% for a 10° anhedral angle. Anhedral has two beneficial effects on the RSRA. First, it increases the difference between the wing and stabilizer axes beyond the existing angle of seven degrees (resulting from wing dihedral) so that smaller segments of the tail are in the adverse flow field of the wing at any one angle of attack. Second, anhedral keeps the tip segments of the stabilizer farther from the engine efflux in the flight attitudes where reduced effectiveness due to wing downwash and engine efflux on the inboard tail exist. Assuming that the effects of anhedral and span are linear, a five degree anhedral angle would save 5% of the tail area or 5 square feet, if chord were reduced, or 3.5% (3.5 square feet) if span were reduced.

Increased size, in general, seems to improve the effectiveness of upper horizontal tails, but construction techniques may be the dominant item influencing effectiveness. The small upper tail (T_{41}) is simply a 1/4 inch aluminum plate with rounded leading edges. This "airfoil" has poor drag characteristics (see Figure 91b) which enhance its effectiveness by increasing the pitching moment. Stall occurs on this "airfoil" at ± 9 degrees angle of attack, but because of the high downwash angle for the compound configuration, stall is experienced only for negative angles.

The geometrically similar 40, 80, and 120 square foot upper tails have similar characteristics, with effectiveness increasing about 9% between the 40 and 120 square foot designs. The upper tails with areas between 30 and 36 sqaure feet were fabricated by cutting back the trailing edge and reducing span of the 40 square foot tail. This cut-back increased the trailing edge angle and increased the thickness ratio which might be responsible for the 30% reduction in effectiveness experienced between the 30 and 40 square foot upper horizontal tails.

Increased span and end plating improved the effectiveness of the vertical tail significantly. The effectiveness of each configuration was compared in the angle of yaw range of ± 5 degrees, where tail performance is reduced by large main rotor pylon interference effects, and in the range of ± 10 degrees, representing a normal operating range for the tail.

The 40 inch extension improved the effectiveness by 33% in the ±5 degree range and 11% in the ± 10 degree range. The large improvement in the smaller yaw range indicates that a major portion of the original tail is in disturbed air around $\Psi = 0°$, but gets into "cleaner" air for angles of yaw beyond 5 degrees. This effect was apparent in all of the modified vertical tails. A further 10 inch extension improves the effectiveness by 8 and 7 percent for the above ranges. Since the effectiveness is only slightly improved by the 10 inch extension at larger yaw angles, the vertical tail must be in relatively clean air above waterline 360.

The large chord rudder improved effectiveness by 7 percent (for the ± 5 degree yaw range). Vertical end plates mounted at the tips of the lower horizontal tail improved effectiveness by 16 percent in the range of ± 5 degrees, but detracted from the effectiveness outside of this range. The ventral fin extension was not effective, and even reduced stability for angles of yaw less than 5 degrees, probably due in part to model strut interference.

The horizontal tails contribute to directional stability in two ways. First, the drag on the horizontals is stabilizing, with the extensions of the lower horizontal tails contributing about 8 percent to vertical stabilizer effectiveness. The upper tails not only provide this increment to stability, but also provide end plating for the vertical tail. These result in an overall improvement in vertical tail effectiveness of 16 and 10 percent for the ± 5 and ± 10 degrees yaw ranges, respectively, if the area of the upper tail is not included in the vertical tail area. Unless the upper horizontal tail is needed for longitudinal stability, end plating would not be an effective means of achieving directional stability. Including the upper horizontal tail area as part of the vertical area reduces the net effectiveness of the vertical tail.

FLOW VISUALIZATION

Four methods of flow visualization were used throughout this test to get a pictoral view of flow on and around the model. These methods were:

1. Oil
2. Tufts
3. Tuft Rake
4. Smoke

Oil flow, using a mixture of SAE 30 oil and lamp black, was used to show the effects of nacelles and fences on wing flow, as shown in Figures 107 - 111.

Figure 107 shows the flow separation patterns on the wing surface for runs with and without the solid nacelles. The adverse effects of the nacelle are apparent, with the formation of vortices on the aft wing surface. Closing the gap between the fuselage and wing improves the flow, but a vortex still is present when the nacelles are installed. Landing gear and nacelle fairing spoilers have little effect on the wing upper surface flow. Figure 108 shows the flow straightening effects of wing fences.

Figure 109 presents similar flow studies with the powered nacelles installed in place of the solid nacelles. These photographs show that the nacelle fairing has an impact on the wing surface flow. The air supply pipe fairing configuration (N_P) has little impact on the flow patterns, but the simulation of the full fairing resulted in flow patterns similar to those seen in Figure 107. Installation of fences helps to straighten the flow. Figures 109i and j show the impact of fences located at the flap mid-span and 5 inches further outboard. Moving the outboard fence to a location 7.5 inches inboard of the flap mid-span fence further improves the flow.

Figure 110 shows the wing flow pattern without fences for the Phase II wing location with nacelle fairing N_{P5}. Figure 111 shows the flow improvements due to the fences for similar conditions.

Figures 112 - 118 show the nacelle and wing flow patterns using tufts. Figure 112 illustrates the flow for wing W, at an incidence of 15 degrees. Inboard sections of the wing can be seen to stall prior to the tip sections. Figure 113 shows flow patterns for a zero degree wing incidence with the nacelles off. The effect of the wing flow on the fuselage is apparent, and shows that an object such as the nacelles must have an impact if placed near the upper surface of the wing. The wing stalls more uniformally with the nacelles off. Figure 114 shows the effect of the nacelles at a zero degree wing incidence.

Figures 115 and 116 show the effects of an angle of yaw variation with the nacelle off and on. No unusual effects are evident.

Figure 117 shows the wing flow with the powered nacelles installed. Figures 118 - 121 illustrate the flow conditions on the tail surfaces. Figure 118 shows that the lower horizontal tail stalls about α = 17.5 degrees, while Figure 119 shows that the upper horizontal tail does not stall at high positive angles, which is explained by examination of the high downwash angle at the tail at those angles (see Figure 106). Figures 120 and 121 show similar results.

The tuft rake, Figure 122, shows the flow directions in the vicinity of the empennage. Areas of high downwash can be seen and the nacelle fairing vortex flow, quantified in the anemometer testing, appears on the rake as blurred tufts (inboard in tuft rows 10 - 13).

The use of smoke confirmed the flow patters described above. Tunnel conditions did not permit clear photographs of smoke flow, but basic observations are listed below:

1. Good flow around wing except where nacelle interference caused inboard flow separation.
2. Flow around the nacelle and nacelle fairing is good. Flow upwash due to nacelle incidence (i_N = -3.5 degrees) was visible.
3. The disturbance from the main rotor head is large and extends about two feet above the model.
4. No flow separator vortices could be distinguished.
5. Upper horizontal tail is in a high downwash field at angles of attack greater than 0 degrees, but the flow is otherwise undisturbed.

SURFACE PRESSURE DATA

Test Procedure

The RSRA model was instrumented with 163 pressure taps on the right side of the aircraft. The pressure taps on the fuselage and main rotor pylon were arranged in a matrix form which lends itself to crossplotting and interpolation.

Pressure data were acquired for a limited number of representative configurations. The installation of the model and the placement of electrical leads for the pressure transducers made it possible to obtain pressure data at the same time as model forces were measured. The use of Scanivalves incorporating a pressure transducer allowed on-line data processing as well as off-line output. Each static pressure transducer had a range of ± 7.5 psi.

Data Presentation

Pressure data is presented in terms of pressure coefficient where

$$C_P = \frac{P_N - P_0}{q_0}$$

The precision of the pressure data was evaluated for configurations without nacelles at dynamic pressures of 80 and 55 psf. For a 95% confidence level, the C_P precision is ± .025 at a dynamic pressure of 80 psf based on the analysis of 82 pressures at $\alpha = \Psi = 0$ degrees on the cockpit section for configuration $FPBTB_T$. Similarly, the C_P precision is ± .035 based on the analysis of 108 pressures at a q = 55 psf for configurations FPBT, $FBPBT_2$ and $FPBWT_2$. These tolerances compare favorably with those of the YUH-60A tests, Reference 3.

Tables XI through XIV present surface pressure data for the helicopter configuration $FPBTB_T$ for the following aircraft attitudes:

Table XI	$\Psi = 0^\circ$, $\alpha = \pm 20^\circ$
Table XII	$\alpha = 0^\circ$, $\Psi = \pm 20^\circ$
Table XIII	$\alpha = -10^\circ$, $\Psi = \pm 20^\circ$
Table XIV	$\alpha = +10^\circ$, $\Psi = \pm 20^\circ$

Figures 123 - 127 are representative samples of plotted pressure data at buttline zero and waterline 190. Figure 123 includes the results of a potential flow calculation using computer program Y179 (Reference 6).

Tables XV through XVII present surface pressure data for compound configurations, with and without the powered nacelles.

EMPENNAGE TOTAL PRESSURE DATA

The flow at the empennage (fuselage station 664) was surveyed during Phase I of the test to determine the dynamic pressure environment for the vertical tail, and for a range of three horizontal tail locations. The total pressure rake designed to survey the empennage was attached to the model in place of the tail surfaces as shown in Figure 9i - 9k. The pressure tubes of the rake were .063 hypo connected to a manometer board in the control room by plastic tubing. Tube locations, in the full scale coordinate system, are shown in Figure 128. Polaroid photographs of the manometer board at each test point were taken to obtain a permanent record of the data.

Empennage total pressure data was acquired for a range of wing incidences for model configurations $FPBW_5T_9$ and $FPBN_{P1}W_5T_9$. Variables included angle of attack, angle of yaw, flap deflection angle, and nacelle thrust (the latter two at i_W = 15 degrees only). Manometer board photographs, showing tunnel total and static pressure, and local empennage total pressures are shown in Figures 129 through 148. This data can be converted to a dynamic pressure ratio using the following relationship:

$$\left.{q_T}/{q}\right)_{local} = 1 + \frac{H - H_T}{PS - H}$$

where

$\left.{q_T}/{q}\right)_{local}$	is the local dynamic pressure ratio
H	is the tunnel total pressure
PS	is the tunnel static pressure
H_T	is the measured total pressure for each positive tap

The result of this calculation is presented, for example, in Figure 149 for configuration $FPBN_{P1}W_5T_9$, $i_W = 0°$, Trim Thrust, $\psi = 0°$ for a range of angles of attack. Dynamic pressure losses near the tailcone can be seen in this figure. Also evident is the impact of the jet efflux at $\alpha = -8$ degrees.

The spanwise integration of the dynamic pressure ratio at each tail surface location is used in the simulation of helicopter flight using "tail alone" and "tail off" balance data. The total pressure ratio, q_t/q, has been calculated for all RSRA tails. The results are presented in Figures 150 to 152 for each tail surface. The data is presented as measured; no adjustments have been made to linearize or shift data fairings.

EMPENNAGE ANEMOMETER DATA

The flow velocity magnitude and angularity were measured in the vicinity of the RSRA horizontal tails with a triaxial hot wire probe anemometer system. The probe location was remotely controlled with a traversing mechanism which permitted the probe to be positioned within a 30" x 30" vertical plane located at fuselage station 664 (at an angle of attack of 0 degrees). For each data condition evaluated, the axial velocity, the vertical velocity, and the sidewash velocity were measured within the traversing grid. All velocity measurements were performed without the horizontal tails (Configurations $FPEN_{P5}W_7T_{11}$ and $FPBW_7T_{11}$).

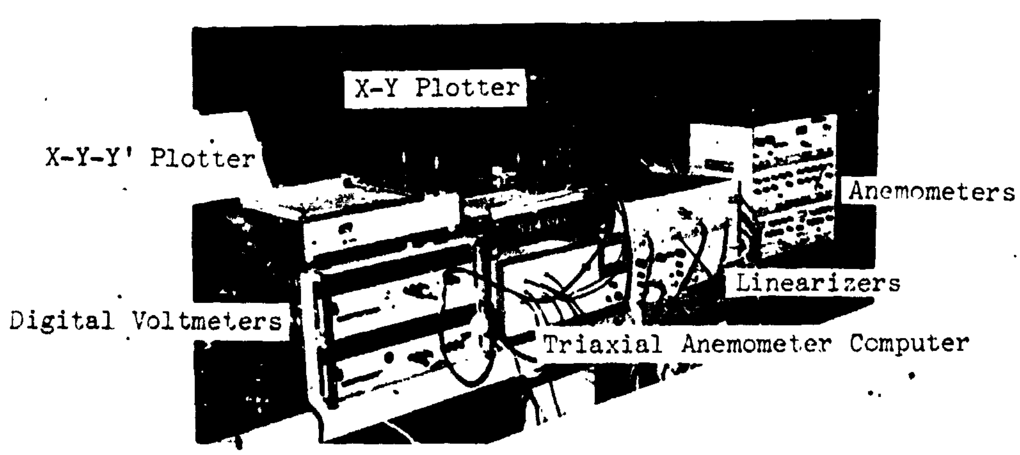
Analysis of the resulting data indicated the presence of a destabilizing downwash region over a substantial portion of the lower horizontal tail. The interfering downwash is created by a strong vortex trailing from the junction of the nacelle pylon and the nacelle body. The strength of the interferring vortex did not vary appreciably as the nacelle fairing was modified.

Flow surveys without the nacelle and nacelle fairing indicated only minor flow distortion at the lower tail location due to wing lift induced downwash.

Instrumentation

The triaxial hot wire probe, which was used to measure the flow velocities, contained three orthogonal wire elements. Each element had

ANEMOMETER INSTUMENTATION



a sensitive wire length of 1.25 millimeters and a diameter of five microns. The flow sensitive wire length was limited by gold plating which covered the end of the wire support prongs and a small segment of each wire end. The plating reduces the interference among the three wires, and between the support prongs and wires. This interference is sometimes experienced in a skewed flow field.

The probe wires were heated by three constant temperature anemometers. The voltages required to maintain the constant temperature of the wires, a measure of the velocity normal to each wire, were passed through signal linearizers to a specialized analogue computer. This computer circuit transferred the linearized voltages for the three wires from the probe coordinate system to the wind tunnel coordinate system. These final velocity voltages were then used to drive the velocity ordinate on X-Y plotters. The conversion from the probe coordinate system to the tunnel coordinate system was required since the probe wire triad formed a 54.7° cone with respect to the tunnel axis system.

The traverse mechanism was driven by two ½ horsepower electric motors which were mounted on the traverse frame and operated remotely from the wind tunnel control room. Probe position was monitored by two potentiometers geared to the drive mechanism. The output voltage signals from these potentiometers were wired directly to the plotters recording the velocities and used to drive the position axis.

Test Procedure

The instrumentation set-up permitted continuous data acquisition as the probe was traversed parallel to the horizontal tail plane. For each model data condition(body attitude, and nacelle configuration), horizontal data sweeps were obtained at various vertical probe heights in order to define the flow conditions which would be encountered at different horizontal tail mounting positions. Since the mechanism was positioned during this test to traverse to the right and up from fuselage station 209 at zero angle of attack, velocity data below the fuselage could only be obtained at negative body attitudes.

The on-line velocity data was continuously monitored for significant trending information and data quality during acquisition. As a result of this inspection, it became apparent that the calibration of the hot wire elements were slowly drifting with time. Since the sensitivity of hot wire probes is susceptable to drift from oil contamination, and because the model apparatus showed evidence of surface oil, it was concluded that the wire calibration shift was probably due to oil film build-up. The problem was corrected by periodically traversing the probe to a position outside the model flow interference area and readjusting the wire overheat ratio's until the original calibrations were matched. The original calibrations were performed by the probe supply vendor. As a result of the overheat ratio adjustments, slight velocity scaling errors were introduced in the data. For most run conditions, the error does not exceed ± 5% of q. The flow angularity data was not effected by the calibration shift.

Additional error may be introduced by the traverse system and its support structure. Figure 153 shows the effects of the traverse on lift, drag, and pitching moment. The effect on drag is significant. The anemometer data itself showed a decrease in flow velocity beyond buttline 130, or within 8 inches of the traverse supports.

Data Analysis

The velocity data from selected conditions were reduced to yield plots of local downwash (ϵ), sidewash (σ), and dynamic pressure ratio (q_T/q) versus full scale buttline. These data are presented in Figures 154 through 156 . The fuselage stations corresponding to the data varies slightly with body attitude since the probe was translated in the horizontal/vertical tunnel axis plane. The probe, however, was located at the fuselage station of quarter chord of the baseline lower horizontal tail at zero degrees of body attitude.

A large portion of the on-line data obtained was not reduced due to the large quantity recorded and the fact that the major trends were not substantially altered as nacelle fairing configurations were changed. The specific run conditions selected for analysis were chosen to illustrate the major characteristics of the wing-fuselage-nacelle interference in the vicinity of the horizontal tail. The data, reduced to q_T/q, ϵ , and σ , are presented in Figures 154 - 156. In these figures, sidewash is positive to the right, and the normal flow, labeled downwash- is positive up. This is indicated on Figure 154a.

This data consists of Run 527 ($FPBN_{P8}W_7T_{11}$ at $\alpha = 0^{\circ}, -5^{\circ}, -10^{\circ}$), Run 528 ($FPBN_PW_7T_{11}$ at $\alpha = -5^{\circ}$) and Run 535 ($FPBW_7T_{11}$ at $\alpha = 0^{\circ}, -5^{\circ}, -10^{\circ}$). Runs 527 and 535 contrast the flow environment obtained with and without nacelles while runs 527 and 528 contrast the maximum variation in the nacelle interference experienced between the tested configurations.

The flow interference measured for the no nacalle configuration, Figure 156, indicates only minor distortion in flow angularity in the vicinity of the horizontal tail. Furthermore, the downwash which is present is fairly constant throughout the buttline variation of the lower baseline stabilizer span and assumes the characteristic $\partial\epsilon/\partial\alpha$ associated with wing induced downwash. There is no indication of discrete vortex flow patterns eminating from the upstream body structure. With this flow environment, only minor pitch stability washout from the wing induced flow would be expected.

In contrast, the data obtained with the N_{P8} nacelle fairing configuration, presented in Figure 154, displays classic vortex interference over the inner 50% of the lower horizontal tail position. The position of the interfering vortex, approximately buttline 60, indicates upstream formation at the junction of the nacelle fairing and nacelle. The fact that the vorticity is being shed from the outer end of the nacelle fairing rather than the root junction of the pylon and fuselage, can also be confirmed from the sense of rotation of the trailing vortex filament. For negative body attitudes, and zero degrees of wing incidence, the vortex induced velocities are negative on the outboard side of the vortex core and positive on the inboard wide indicating a clockwise rotation which is consistant with outboard shedding from the nacelle pylon. The data examined shows that the waterline location of the upper tail configurations (360) is above the nacelle fairing interference region.

Inspection of the data obtained with N_{P8} for angles of attack of 0°, -5°, and -10° reveals that the strength of the interfering vortex increases significantly as the body attitude becomes more nose down. Because of the vortex location and rotation sense, a large $\partial\epsilon/d\alpha$ is present over the inner 50% of the baseline horizontal stabilizer which would seriously degrade the stabilizer effectiveness.

Data presented in Figure 155 for the N_P nacelle pylon configuration at -5° body attitude is similar to that obtained with the N_{P8} pylon and illustrates the consistancy of the interference despite substantial variation in the detailed pylon geometry.

Flow data from all of the surveyed nacelle pylons showed large dynamic pressure increases as the probe entered the nacelle flow region. Peak dynamic pressures up to 2.2 times the free stream q were measured at the center of the nacelle efflux. Figures 157 - 159 are contour maps of q_m/q for angles of attack of 0°, -5°, and -10°. As discussed in the following paragraphs, the q variation partially negated the flow downwash effects and augmented the pitch stability when the nacelle flow impinged on the lower horizontal stabilizer.

Figures 160 through 162 were constructed from the flow data obtained with the N_{P8} nacelle fairing to evaluate the degree of stabilizer lift washout due to the vortex induced flow generated by the pylon. Figure 160 shows the true spanwise angle of attack distribution of the stabilizer at body attitudes of 0°, -5°, and -10°. Inspection of Figure 160 indicates that two distinct flow regimes are experienced by the inner and outer portions of the tail. Outboard, flow interference due to wing downwash (upwash at $\alpha = -5^{\circ}$ and -10°) is present. Inboard, however, severe upflow occurs, further reversing the true angle of attack gradient from that of the geometric stabilizer angle for angles of attack of -5 and -10 degrees. For clarity, the planform and position of the baseline stabilizer is noted on the plot. It can be seen that the tapered planform of this stabilizer with inboard area weighting serves to exaggerate the adverse pitch stability effect of the nacelle fairing interference.

Figure 161 illustrates the relative integrated lift of the stabilizer as a function of body attitude. Figure 162 shows the relationship between the mean stabilizer downwash (ϵ) and the stabilizer angle of attack for negative body attitudes between 0° and -10°, calculated from velocity integrations over the baseline lower tail planform. Data is presented with and without consideration of the q effects from the nacelle flow. The mean upwash flow angles were calculated with an area weighted integration of the flow angularity over the stabilizer span. For the constant q case, the axial flow was assumed equal to the free stream velocity; whereas the data with dynamic pressure variations was calculated with q weighting in addition to the stabilizer area weighting. While both trend lines indicate increasing upwash between 0° and -8°, the effect of the additional nacelle flow dynamic pressure is sufficient to eliminate the net stabilizer lift washout at -10°. The figure indicates that approximately 73% of the tail effectiveness ($1 - \partial\epsilon/\partial\alpha = .27$) is washed out by wing nacelle interference between 0° and -5°. Included on Figure 162 is the downwash computed from Phase I balance data, and shows excellent correlation with the anemometer data.

The downwash calculated from the anemometer data does not include the effects of induced flow generated by the tail. An additional downwash component will be caused by the tail's tip vortex and the non-uniform lift distribution on the tail. The magnitude of these effects has not been computed.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. The RSRA empennage must be modified to provide the desired stability levels. The directional stability is best improved by increasing vertical tail span, since this places the added area in a more optimum flow environment. Longitudinal stability is improved significantly by increases in lower horizontal tail span. Horizontal tail anhedral improves longitudinal stability. The inboard sections of the tail tend to degrade stability and therefore area in this region should be minimized.

2. An upper horizontal tail improves both direction and longitudinal stability and,without an anhedral lower horizontal, is necessary for stability between angles of attack of ± 5 degrees.

3. The powered nacelles cause a de-stabilizing pitching moment. Properly scaled nacelles will reduce this effect.

4. The data presented is sufficient to further analyze tail design if necessary.

5. The baseline nacelle fairing (N_{P5}) had the best overall characteristics of those tested.

6. Model disymmetry has caused some discrepancies in the test data, especially the rolling moment parameter for angles near wing stall.

Recommendations

1. The test data from the Langley Research Center testing of this model should be compared with the data presented herein. The pitching moment trend with nacelle size should be carefully analyzed.

2. The flow behind the nacelle support fairing impacts on tail performance and should be further studied in order to minimize the fairing's impact on the aircraft.

3. Define model disymmetry and evaluate the resulting effects on balance data.

4. Evaluate data trends with solid, powered, and ring nacelles and determine for most representative configuration for use in future testing.

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TABLES AND FIGURES

TABLE I
EMPENNAGE CONFIGURATIONS

LOWER HORIZONTAL STABILIZERS

TAIL	USED IN TAIL NO.:	ILLUSTRATED IN FIG. 9, PART:	AREA	SPAN	AR	DESCRIPTION
I	19-21, 33, 35-37, 46, 48, 49	A, I	74.99	254	5.98	75 FT^2 BASIC
II	27	V	84.63	300	7.39	BASIC + EXTENDED SPAN
III	28, 31, 32, 51-53, 57	w, x, y	90.58	303	7.04	BASIC + CONSTANT CHORD EXT
IV	38, 39, 43, 45	B, G	85.50	303	7.46	III + REDUCED INBD. CHORD
V	40, 42	C, D	72.14	254	6.21	BASIC - CONSTANT CHORD
VI	55, 59	K	98.10	303	6.50	III + EXTENDED CHORD
VII	56, 58	Similar to K	110.88	300	5.64	111 FT^2 CONSTANT CHORD
VIII	60, 61, 63, 64	L	98.10	300	6.37	BASIC + CONSTANT CHORD EXT
IX	1, 3, 5, 8, 10, 12-14	a, c, l, n	109.46	250	3.97	110 FT^2 BASIC
X	6, 23	d, e, r	126.85	317	5.50	110 FT^2 BASIC + EXTENSION
XI	7	f, g	139.54	317	5.00	X + 10% CHORD EXTENSION
XII	22, 29, 30	q	107.71	246	3.91	110 FT^2 ANHEDRAL
XIII	24	s, t	124.95	312.5	5.43	ANHEDRAL + EXTENSION
XIV	16-18, 34, 54	z	150.25	294	4.00	150 FT^2 BASIC

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TABLE I (CONCLUDED)

VERTICAL STABILIZERS

TAIL	USED IN TAIL NO.:	ILLUSTRATED IN FIG.9, PARTS	AREA	SPAN	AR	DESCRIPTION
A	1,3,5-8	a,c,d,e	99.54	152	1.61	BASIC
B	10,12-34	l,n,o,p,s,u,v,x,y,z	125.69	192	2.04	150% RUDDER, 40" EXT.
C	35	A	135.07	204	2.14	ABOVE WITH EXT. VENTRAL
D	36-44,46-53,58-65	B,E,F,H,I,J,L,M	113.92	192	2.25	BASIC WITH 40" EXT.
E	45, 54-57	G,K	116.69	202	2.43	BASIC WITH 50" EXT.
F	5	c	22.56	54	—	VERTICAL END PLATES(2)

UPPER HORIZONTAL STABILIZERS

TAIL	USED IN TAIL No.:	ILLUSTRATED IN FIG.9, PARTS	AREA	SPAN	AR	DESCRIPTION
1	8,39,41,42,52,58-60,63,65	h, E, L, M	17.16	103	4.29	COMPOUND TAIL
2	12,18,19,26-29,35,36,40,43,44	p,v,x, F	40.00	152	4.00	
3	13,17,20,25,30,31	n, u	80.00	216	4.00	
4	14-16,21	o	120.00	264	4.00	
5	46,47	H	30.00	132	4.00	CUT DOWN 40FT^2 TAIL
6	48	Similar to I,J	32.70	144	4.40	30FT^2 T-TAIL+EXTENSION
7	49,50,53,62	I,J	35.41	159	5.15	HELICOPTER TAIL

TABLE II: TAIL COMPONENT IDENTIFICATION INDEX

TAIL DESCRIPTION	VERTICAL STABILIZERS	LOWER HORIZONTAL STABILIZERS	T-TAILS	TAIL DESCRIPTION	VERTICAL STABILIZERS	LOWER HORIZONTAL STABILIZERS	T-TAILS	TAIL DESCRIPTION	VERTICAL STABILIZERS	LOWER HORIZONTAL STABILIZERS	T-TAILS
1	A	IV	—	23	B	X	—	45	E	IV	—
2	(Tail Off)	—	—	24		XIII	—	46	D	I	5
3	A	IX	—	25		—	3	47		—	5
4	(Tail Alone)	—	—	26		—	2	48		I	6
5	A,F	IX	—	27		II	2	49		I	7
6	A	X	—	28		III	2	50		—	7
7	A	XI	—	29		XII	2	51		III	—
8	A	IX	1	30		XII	3	52		III	1
9	(Press. Rake)	—	—	31		III	3	53		III	7
10	B	IX	—	32		III	—	54	E	XIV	—
11	(Anemometer)	—	—	33		I	—	55		XI	—
12	B	IX	2	34		XIV	—	56		VII	—
13		IX	3	35	C	I	2	57		III	—
14		IX	4	36	D	I	2	58	D	VIII	1
15		—	4	37		I	—	59		VI	1
16		XIV	4	38		IV	—	60		VIII	1
17		XIV	3	39		IV	1	61		VIII	—
18		XIV	2	40		V	2	62		—	7
19		I	2	41		—	1	63		VIII	1
20		I	3	42		V	1	64		VIII	—
21		I	4	43		IV	2	65		—	1
22		XII	—	44		—	2				

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TABLE III: TAIL COMPONENT MATRIX

Vertical Stabilizers →	A (Basic Vertical Stabilizer)		B (Ext. Rudder By 50%, Ext. Span By 40")				C (Tail B + Ext. Ventral)	D (Basic Vert. Tail + 40" Ext. Span)						E (Basic + 50" Ext. Span)	A,F (Basic + 2 Vert. End Plates)
Lower Horizontal Tails ↓ / T-Tails →	—	1	—	2	3	4	2	—	1	2	5	6	7	—	—
None				26	25	15			41,65	44	47		50,62		
I (75 FT² Basic).			33	19	20	21	35	37		36	46	48	49		
II (75 FT² Basic + Extended Span).				27											
III (75 FT² Basic + Constant Chord Extension)			32	28	31			51	52				53	57	
IV (III + Reduced Inboard Chord).								38	39	43				45	
V (75 FT² Basic - Constant Chord).									42	40					
VI (III + Extended Chord).									59					55	
VII (111 FT² Constant Chord).									58					56	
VIII (Basic + Constant Chord Extension).								61,64	60,63						
IX (110 FT² Basic)	1,3	8	10	12	13	14									5
X (110 FT² Basic + Extension).	6		23												
XI (X + 10% Chord Extension).	7														
XII (110 FT² Anhedral).			22	29	30										
XIII (110 FT² Anhedral + Extension).			24												
XIV (150 FT² Basic).			34	18	17	16								54	

TABLE IV

Cockpit

Tap No.	FS	BL	WL	Tap No.	FS	BL	WL
103	35.9	0	190.0				
104	61.5	0	177.0	132	125.7	0	169.5
105		14.0	178.5	133		14.0	170.0
106		25.0	190.0	134		27.5	173.0
107		14.0	205.5	135		35.5	180.0
108		0	207.0	136		39.0	190.0
109	84.0	0	177.0	137		39.0	216.0
110		14.0	178.5	138		36.0	231.0
111		27.5	180.0	139		27.5	244.5
112		32.5	190.0	140		14.0	246.2
113		27.5	209.0	141		0	246.5
114		14.0	215.5	142	146.0	0	169.0
115		0	218.0	143		14.0	169.5
116	99.1	0	171.5	144		27.5	172.0
117		14.0	172.3	145		36.5	180.0
118		27.5	176.5	146		39.0	190.0
119		35.5	190.0	147		39.8	216.0
120		27.5	221.5	148		36.8	231.0
121		14.0	229.3				
122		0	230.3	203		27.5	246.5
123	113.0	0	170.3	204		14.0	248.1
124		14.0	171.0	205		0	248.3
125		27.5	174.5	206	OPEN		
126		34.0	180.0	207			
127		37.5	190.0	208			
128		37.0	216.0	209			
129		27.5	236.0	210			
130		14.0	241.0				
131		0	241.0				

TABLE IV (continued)

Fuselage

Tap No.	FS	BL	WL	Tap No.	FS	BL	WL
211 ◔ *	173.0	0	163.6	237 *	234.5	0	159.0
212 ◑ *	↓	14.0	164.1	238 *	242.0	14.0	159.0
213 ◑ *	↓	27.5	169.5	239 *	↓	27.5	161.2
214	↓	36.8	180.0	240	↓	36.8	180.0
215	↓	39.0	190.0	241	↓	39.0	190.0
216	↓	40.0	216.0	242	↓	40.0	216.0
217	↓	39.0	231.0	243	↓	39.0	231.0
218	↓	27.5	247.0	244	↓	27.5	247.0
219 ◓	↓	14.0	249.0				
221 ◔ *	206.0	0	159.0	403	OPEN		
222 *	↓	14.0	159.0	404	282.8	14.0	169.0
223 ◔ *	↓	27.5	161.2	405	↓	27.5	172.0
224	↓	36.8	180.0	406	↓	36.8	180.0
225	↓	39.0	190.0	407 ◓	↓	39.0	190.0
226	↓	40.0	216.0	408	282.8	40.0	216.0
227	↓	39.0	231.0	409	↓	39.0	231.0
228	↓	27.5	247.0	410	↓	27.5	247.0
229 *	222.5	0	159.0	411	323.3	0	169.0
230 *	↓	14.0	159.0	412 ◔	↓	14.0	169.0
231 *	↓	27.5	161.2	413	↓	27.5	172.0
232	↓	36.8	180.0	414	↓	36.8	180.0
233	↓	39.0	190.0	415	↓	39.0	190.0
234	↓	40.0	216.0	416	↓	40.0	216.0
235	↓	39.0	231.0	417	↓	39.0	231.0
236	↓	27.5	247.0	418	↓	27.5	247.0

* On Landing Gear Fairing

◔ Blocked - Runs 7-10
◑ Blocked - Runs 95,96
◓ Blocked - Run 138

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TABLE IV(continued)

Tailcone

Tap No.	FS	BL	WL	Tap No.	FS	BL	WL
342	361.5	0	169.0	322	411.6	35.5	190.0
303		14.0	169.0	323		36.5	216.0
304		27.5	172.0	324		35.5	231.0
305		36.8	180.0	325		27.5	243.5
306		39.0	190.0	326		14.0	245.5
307		40.0	216.0	327	431.6	0	173.5
308		39.0	231.0	328		14.0	174.0
309		27.5	247.0	329		27.5	178.0
310	391.7	0	170.5	330		33.5	190.0
311		14.0	171.0	331		34.5	216.0
312		27.5	173.5	332		33.5	231.0
313		34.5	180.0	333		27.5	241.5
314		37.5	190.0	334		14.0	244.0
315		38.2	216.0	335	491.6	0	178.0
316		37.5	231.0	336		14.0	179.0
317		27.5	245.5	337		28.0	190.0
318	411.6	0	172.0	338		29.0	216.0
319		14.0	172.5	339		27.5	231.0
320		27.[illegible]	173.5	340		14.0	239.0
321		[illegible]	180.0	341		0	239.5

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TABLE IX (concluded)

Main Rotor Pylon

Tap No.	FS	BL	WL	Tap No.	FS	BL	WL
420	200.0	0	268.5	434	323.3	0	293.7
421	201.5	0	270.0	435	↓	12.0	293.0
422	OPEN	12.0	270.0	436	↓	21.7	269.0
423	212.0	0	280.0	437	361.5	0	286.7
424	↓	12.0	280.0	438	↓	12.0	283.0
425	222.5	0	283.0	439	↓	18.0	269.0
426	↓	12.0	280.5	440	↓	19.1	255.0
427	↓	23.0	269.0	441	391.7	0	275.0
428	242.0	0	286.3	442	↓	11.0	269.0
429	↓	12.0	281.0	443	↓	11.5	255.0
430	↓	23.0	269.0	444	OPEN	0	264.0
431	282.8	0	292.0	445	↓	6.0	255.0
432	↓	12.0	291.0	446	↓	0	251.5
433	↓	23.0	269.0				

TABLE V
WIND TUNNEL RUN LOG

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
1	$FPBTB_T$	α	—	2.5	0	—		SMV
2		ψ						SMV
3		$\psi\ \alpha=\pm10$						SMV
4		$\psi, \alpha=\pm10$ $\alpha, \psi=0$						SMV
5		0						REYNOLDS No. SWEEP, PRESSURE DATA
6		α						NO GOOD
7		α						PRESSURE DATA
8		ψ						
9		$\psi, \alpha=10$						
10		$\psi, \alpha=-10$						
11		α		7.5				
12		α		12.5				
13		α		-7.5				
14		α		-2.5				
15		α		2.5			$\delta_e = 10$	
16		α					$\delta_e = 20$	NO GOOD
17		α					$\delta_e = 20$	
18		α					$\delta_e = -10$	REDUCE q FROM 80 TO 55 PSF
19		0						REYNOLDS No. SWEEP
20		0						REYNOLDS No. SWEEP
21		α					$\delta_e = -20$	
22		ψ					$\delta_R = 10$	
23		ψ					$\delta_R = 20$	
24		ψ					$\delta_R = -10$	
25		ψ					$\delta_R = -20$	
26		α					$\delta_{SB} = 15$	

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_W	CONTROLS	REMARKS
27	$FPBTB_T$	α	–	2.5	0	–	$\delta_{SB} = 35$	
28		$\alpha, \psi=10$					$\delta_{SB} = 35$	
29		$\alpha, \psi=10$					$\delta_{SB} = 55$	
30		α					$\delta_{SB} = 55$	
31	FPBT	α						PRESSURE DATA
32		ψ						
33	$FPBT_2$	α		–	–			
34		ψ						SMV
35		ψ						PRESSURE DATA
36		$\psi, \alpha=10$						
37		$\psi, \alpha=-10$						
38	FPT_2	α						
39		ψ						
40	FT_2	α						
41		ψ						
42		0						REYNOLDS No. SWEEP
43	$FPBWT_2$	α				0		
44		ψ						PRESSURE DATA
45	$FPBWNT_2$	0						REYNOLDS No. SWEEP
46		α						
47		ψ						
48		α						V = 80 KT
49		α						V = 120 KT
50		α						V = 160 KT
51		$\psi, \alpha=10$						
52		$\psi, \alpha=18$						YAW AT α_{STALL}

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TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
53	$FPBWNT_2$	$\psi, \alpha = -10$	—	—	—	0		
54		$\psi, \alpha = -15$						NO GOOD
55		$\psi, \alpha = -15$						REPEAT 54
56		α					$\delta_f = 5$	RUN ABORT, COMPUTER FAILURE
57		α					$\delta_f = 5$	REPEAT 56
58		ψ					$\delta_f = 5$	
59		ψ					$\delta_f = 10$	
60		α					$\delta_f = 10$	
61		α				15	$\delta_f = 10$	
62		ψ					$\delta_f = 10$	
63		ψ					$\delta_f = 25$	
64		α					$\delta_f = 25$	
65		α					$\delta_f = 25$	V = 80, 125, 170 DATA SHIFT AT 170
66		α					$\delta_f = 25$	REPEAT 170 KTS OF RUN 65
67		α					$\delta_f = 25, \delta_a = 18$	BOTH AILERONS DOWN
68		ψ					$\delta_f = 25, \delta_a = 18$	
69		α						
70		ψ						
71		$\psi, \alpha = 4$						
72		$\psi, \alpha = -10$						
73		α				10		
74		ψ						
75		ψ					$\delta_f = 5$	
76		α					$\delta_f = 5$	
77		0						OIL FLOW, $\alpha = 5$, NO BALANCE DATA
78	$FPBWT_2$	0						OIL FLOW, $\alpha = 5$

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN NO	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
79	FPBWT$_2$	0	—	—	—	15		OIL FLOW, $\alpha = 5$, NO BALANCE DATA
80	FPBW$_1$NT$_2$	0						OIL FLOW, $\alpha = 0$
81	FPBW$_1$T$_2$	0						OIL FLOW, $\alpha = 0$
82		α						
83		0						OIL FLOW, $\alpha = 2.5$, NO BALANCE DATA
84		α					$\delta_f = 25$	
85		α					$\delta_f = 30$	
86		0					$\delta_f = 30$	OIL FLOW, $\alpha = 2.5$, NO BALANCE DATA
87	FPBW$_1$NT$_2$	α					$\delta_f = 30$	
88		α				5	$\delta_f = 5$	
89		ψ					$\delta_f = 5$	
90		ψ						
91		α						OIL FLOW, $\alpha = 0$, NO BALANCE DATA
92		0				15		FILLED AFT PORTION OF NACELLE FAIRING, NO BALANCE DATA
93		0						TUFTS ON NACELLE, $\alpha = 0$ NO BALANCE DATA
94		α						TUFTS ON NACELLE & WING
95		α				-9		PRESSURE DATA
96		ψ						PRESSURE DATA
97	FPBW$_1$NT$_2$L	0				15		OIL FLOW, $\alpha = 0$, NO BALANCE DATA
98		α						NO GOOD
99		α						REPEAT 98
100		ψ						
101		α					$\delta_f = 25$	
102	FPBW$_1$T$_2$L	α					$\delta_f = 25$	SMV
103		0					$\delta_f = 25$	OIL FLOW, $\alpha = 0$, NO BALANCE DATA
104		α					$\delta_f = 25$	

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN NO	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
105	$F_2PBW_1T_2$	α	–	–	–	15	$\delta_f = 25$	
106	$FPBW_1NTB_T$	α		2.5	0	↓		
107	↓	ψ		↓	↓	↓		ABORTED ~ LOST STRUT FAIRIN.
108	↓	ψ		↓	↓	↓		
109	$FPBW_1NTB_T$ (+NACELLE SPOILER)	0		↓	↓	↓		OIL FLOW, α=0 NO BALANCE DATA
110	$FPBW_1TB_T$	α		↓	↓	↓		
111	↓	ψ		↓	↓	↓		
112	↓	α		7.5	↓	↓		
113	↓	α		12.5	↓	↓		
114	↓	α		-6.5	↓	↓		
115	↓	α		-2.5	↓	↓		
116	↓	α		2.5	↓	0		
117	↓	ψ		↓	↓	↓		
118	$FPBWTB_T$	ψ		↓	↓	↓		
119	↓	ψ		↓	↓	15		
120	↓	α		↓	↓	↓		
121	$FPBW_1N_PTB_T$	α		↓	↓	↓		SMV
122	↓	–	–	↓	↓	↓		POWERED NACELLE CHECK OUT
123	↓	–	–	↓	↓	↓		↓
124	↓	0	W. M.	↓	↓	15		OIL FLOW, α = 0, NO BALANCE DATA
125	↓	0	TRIM	↓	↓	↓		OIL FLOW, α = 0, ↓
126	$FPBW_1N_{P2}TB_T$	0	W. M.	↓	↓	↓		OIL FLOW, α = 0, ↓
127	↓	0	TRIM	↓	↓	↓		OIL FLOW, α = 0, ↓
128	↓	–	–	↓	↓	↓		SMV CHECKS OF
129	↓	–	–	↓	↓	↓		SYSTEM, PRESSURIZED
130	↓	–	–	↓	↓	↓		AND UN PRESSURIZED

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN NO.	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
131	$FPBW_1 N_{P2} TB_T$	α	—	2.5	0	15		SMV
132	↓	α	TRIM	↓	↓	↓		PRESSURE DATA
133	↓	α	↓				$\delta_f = 25$	↓
134	$FPBW_1 N_P TB_T$	α	↓				$\delta_f = 25$	↓
135	↓	—	—				$\delta_f = 25$	ENG CALIB, $\alpha = 0.0$
136	$FPBW_1 N_{P1} TB_T$	—	—				$\delta_f = 25$	ENG CALIB, $\alpha = 3.5$
137	↓	—	—				$\delta_f = 25$	ENG CALIB, $\alpha = 3.5$
138		α	TRIM				$\delta_f = 25$	PRESSURE DATA
139		0	↓				$\delta_f = 25$	OIL FLOW, $\alpha = 0$, NO BALANCE DATA
140		α				↓	$\delta_f = 30$	PRESSURE DATA
141		α				12	$\delta_f = 30$	
142	↓	α		↓		↓	$\delta_f = 30, \delta_a = 5$	AILERON DROOP
143	$FPBW N_{P1} TB_T$	α					$\delta_f = 30, \delta_a = 5$	WRONG δ
144	↓	α		−7.5			$\delta_f = 30, \delta_a = 5$	ABORTED, WRONG δ
145		α		−7.5			$\delta_f = 30, \delta_a = 5$	
146		α	↓	−2.5		↓	$\delta_f = 30, \delta_a = 5$	
147	↓	α	MAX	2.5			$\delta_f = 30, \delta_a = 5$	
148	$FPBW N_{P1} TB_T$ + SPLITTER	0	TRIM	↓		15		OIL FLOW, $\alpha = 0$, NO BALANCE DATA
149	$FPBW_2 N_{P1} TB_T$	0	↓			↓		OIL FLOW, $\alpha = 0$ ↓
150	↓	α						
151	↓	α					$\delta_f = 25$	
152	$FPBW_3 N_{P1} TB_T$	0					$\delta_f = 25$	OIL FLOW, $\alpha = 0$, NO BALANCE DATA
153	↓	α					$\delta_f = 25$	
154		α					$\delta_f = 30$	
155	↓	0						OIL FLOW, $\alpha = 0$, NO BALANCE DATA
156	$FPBW_1 N_{P1} TB_T$	α	↓	↓	↓	↓	$\delta_f = 30, \delta_a = 5$	AILERON DROOP

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
157	$FPBW_3N_{P_1}TB_T$	α	TRIM	2.5	0	15	$\delta_f=30, \delta_a=5$	AILERON DROOP
158		ψ					$\delta_f=30, \delta_a=5$	
159		ψ	W.M					
160		ψ	TRIM					
161		ψ	MAX					
162		ψ	OEI					
163		$\psi, \alpha=2.5$	TRIM					
164		α	W.M.					
165		α	TRIM					
166		α	MAX					
167		α	OEI					
168		α	TRIM	7.5				
169		α		11.5				
170		α		-2.5				
171		α		-6.5				
172		$\psi, \alpha=2.5$		2.5			$\delta_f=30$	SMV
173	$FPBW_4N_{P_1}TB_T$	α					$\delta_f=30, \delta_a=5$	AILERON DROOP
174		α					$\delta_f=40$	
175		α					$\delta_f=40$	$q = 55$ AND 80
176		α					$\delta_f=40, \delta_a=10$	AILERON DROOP, $q = 55$ & 80
177		α	IDLE				$\delta_f=30$	
178		$\alpha, \psi=5$	TRIM				$\delta_f=30$	
179		$\alpha, \psi=15$					$\delta_f=30$	
180		α					$\delta_f=30$	
181		α					$\delta_f=30$	REPEATABILITY OF $C_{L_{MAX}}$
182	$FPBW_5N_{P_1}TB_T$	α					$\delta_f=30$	

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
183	$FPBW_5N_{P_1}TB_T$	α	TRIM	2.5	0	15	$\delta_f=30$	REPEAT 182, VERIFY C_L MAX
184		$\psi, \alpha=2.5$					$\delta_f=30$	
185		α		7.5			$\delta_f=30$	
186		α		11.5			$\delta_f=30$	
187		α		-2.5			$\delta_f=30$	
188		α		-6.5			$\delta_f=30$	
189		α		2.5			$\delta_f=30, \delta_e=10$	
190		α					$\delta_f=30, \delta_e=20$	
191		α					$\delta_f=30, \delta_e=-10$	NO GOOD, ELEVATOR SLIPPED
192		α					$\delta_f=30, \delta_e=-10$	REPEAT 191
193		α					$\delta_f=30, \delta_e=-20$	NO GOOD, ZERO SHIFT
194		α					$\delta_f=30, \delta_e=-20$	REPEAT 193
195		ψ					$\delta_f=30, \delta_R=10$	
196		ψ					$\delta_f=30, \delta_R=20$	
197		ψ					$\delta_f=30, \delta_R=-10$	
198		ψ					$\delta_f=30, \delta_R=-20$	
199		ψ					$\delta_f=30$	
200		α					$\delta_f=30$	
201	$FPBW_5N_{P_1}TB_TL$	α					$\delta_f=30$	
202		α	MAX				$\delta_f=30$	
203		α	OEI				$\delta_f=30$	
204		α	IDLE				$\delta_f=30$	
205		α	W.M.				$\delta_f=30$	
206		ψ	MAX				$\delta_f=30$	
207		ψ	OEI				$\delta_f=30$	
208		ψ	IDLE				$\delta_f=30$	

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
209	$FPBW_5 N_{P_1} TB_T L$	ψ	W.M.	2.5	0	15	$\delta_f = 30$	
210		α	TRIM	-6.5			$\delta_f = 30$	
211		α	TRIM	11.5			$\delta_f = 30$	
212		$\alpha, \psi = 5$		2.5			$\delta_f = 30$	
213		$\alpha, \psi = 15$					$\delta_f = 30$	
214		α						
215		ψ						
216	$FPB W_5 N_{P_1} TB_T$	α		7.5				
217		α		11.5				
218		α		11.5		0		
219		α		7.5				
220		α		7.5				REPEAT 219
221		α		-2.5				
222		α		-6.5				NACELLE FAIRING LOOSE
223		α		-6.5				REPEAT 222
224		α		2.5				
225		α	MAX					
226		α	OEI					
227		α	W.M.					
228		ψ	W.M.					
229		ψ	OEI					
230		ψ	TRIM					NO GOOD
231		ψ	MAX					
232	F[illegible] $N_{P_1} TB_T$	α	TRIM			-		
233		α	MAX					
234		α	W.M					

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{Vt}	I_W	CONTROLS	REMARKS
235	$FPBN_P TB_T$	α	TRIM	11.5	0	1		
236		α		3.5				
237		ψ		2.5				
238	$FPBW_5N_{P1}TB_T$	ψ				0		REPEAT 230
239		$\psi, \alpha=10$						
240		ψ				-1		
241		α						NACELLE FAIRING LOOSE
242		α						REPEAT 241
243 a	$FPBW_5N_{P1}T_2$	α	W.M.	1	1	0		
243 b		α	TRIM					
243 c		α	MAX					
243 d		α	OEI					
244 a		ψ	W.M.					
244 b		ψ	OEI					
244 c		ψ	MAX					
244 d		ψ	TRIM					
245		ψ				-9		
246		α						
247		α				15		
248		ψ						
249		—						STATIC CHECK PITCHING MOMENT
250		α					$\delta_f = 30$	
251		ψ					$\delta_f = 30$	
252	$FPBW_5N_{P1}T_2L$	α					$\delta_f = 30$	
253		α	MAX				$\delta_f = 30$	
254		α	OEI				$\delta_f = 30$	

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_t	CONTROLS	REMARKS
255	$FPBW_5Np_1T_2L$	α	W.M	—	—	15	$\delta_f=30$	
256		ψ	W.M				$\delta_f=30$	
257		ψ	TRIM				$\delta_f=30$	
258		ψ	MAX				$\delta_f=30$	
259		ψ	OEI				$\delta_f=30$	
260		ψ	TRIM					
261		α	TRIM					
262	$FPBNp_1T_2$	α	W.M.			—		
263		α	TRIM					
264		α	MAX					
265		ψ	TRIM					
266	$FPBNpT_2$	ψ	TRIM					
267		α	W.M.					
268		α	TRIM					
269		α	MAX					
270	$FPBNW_5T_2$	ψ	—			15		
271		α						
272		α					$\delta_f=10$	
273		ψ					$\delta_f=10$	
274		ψ					$\delta_f=30$	NO GOOD STRUT FOULING
275		ψ					$\delta_f=30$	NO GOOD STRUT FOULING
276		ψ					$\delta_f=30$	NO GOOD STRUT FOULING
277		ψ					$\delta_f=30$	REPEAT 274-276
278		α					$\delta_f=30$	
279		α				10		
280		ψ						

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
281	$FPBNW_5T_2$	α	—	—	—	15	$\delta_f = 30$	
282		0					$\delta_f = 30$	OIL FLOW, $\alpha = 0$ NO BALANCE DATA
283	$FPBNW_6T_2$	α					$\delta_f = 30$	
284	$FPBNW_5T_2$	α					$\delta_f = 40$	
285		α				0		
286		ψ						
287		ψ					$\delta_f = 10$	
288		α					$\delta_f = 10$	
289		α				5		
290		ψ						
291		ψ				-9		
292		α						
293	$FPBNW_5TB_T$	α		2.5	0	0		
294		ψ						
295		α				15		
296		α					$\delta_f = 30$	
297	$FPBN_{P_1}W_5TB_T$	α	W.M.				$\delta_f = 30$	TUFT RAKE, $V = 25$ KT, NO BALANCE DATA
298		α	W.M.				$\delta_f = 30$	
299		α	W.M.			0		TUFT RAKE, $V = 50$ KT
300		α	TRIM					TUFT RAKE, $V = 25$ KT, NO BALANCE DATA
301		α	TRIM					TUFT RAKE, $V = 25$ KT, NO BALANCE DATA
302	$FPBN_{P_3}W_5TB_T$	α	—					
303	$FPBN_{P_4}W_5TB_T$	α	—					
304		ψ	—					
305	$FPBN_{P_1}W_5TB_T$	ψ	W.M				$\delta_a = -10$	
306		α					$\delta_a = -10$	

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
307	$FPBN_{P1}W_5T\,B_T$	α	W, M	2.5	0	0	$\delta_a=-18$	
308		ψ					$\delta_a=-18$	
309		ψ					$\delta_a=10$	
310		α					$\delta_a=10$	
311		α					$\delta_a=20$	
312		ψ					$\delta_a=20$	
313		ψ				15	$\delta_f=30, \delta_a=20$	
314		α					$\delta_f=30, \delta_a=20$	
315		α					$\delta_f=30, \delta_a=10$	
316		ψ					$\delta_f=30, \delta_a=10$	
317		ψ					$\delta_f=30, \delta_a=-10$	
318		α					$\delta_f=30, \delta_a=-10$	
319		α					$\delta_f=30, \delta_a=-18$	
320		ψ					$\delta_f=30, \delta_a=-18$	
321		α	TRIM			0		REPEAT OF 224
322		α		4.5				
323		α		-3.5				
324		α		-1.5				
325		α		.5				
326	$FPBN_{P1}W_5T_5B_T$	α		2.5				
327		ψ						ABORTED, JAMMED YAW CONTROL
328		ψ						REPEAT 327
329		α				-9		
330		α				15		
331		α					$\delta_f=30$	
332	$FPBN_{P1}W_5T_6B_T$	α					$\delta_f=30$	

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{VT}	I_w	CONTROLS	REMARKS
333	$FPBN_{P1} W_5 T_6 B_T$	α	TRIM	2.5	0	15		
334		α				0		
335		α				-9		
336	↓	α				15		REPEAT 333
337	$FPBN_{P1} W_5 T_7 B_T$	α						
338		α				↓	$\delta_f = 30$	
339		α				0		
340	↓	α				-9		
341	$FPBN_{P1} W_5 T_8 B_T$	α		↓	↓			
342	$FPBN_{P1} W_5 T_9 B_T$	—		—	—			CHECK OUT RAKE
343		α						V=100 KTS, NO BALANCE DATA
344		ψ						ABORTED
345		ψ				↓		
346		α				0		
347		ψ						
348		$\psi, \alpha=10$				↓		
349		α				15		
350		ψ	↓					
351		α	W.M.				$\delta_f = 30$	
352		ψ	↓				$\delta_f = 30$	
353		α	TRIM				$\delta_f = 30$	
354	↓	ψ		↓	↓		$\delta_f = 30$	↓
355	$FPBN_{P1} W_5 T_8 B_T$	α		2.5	0		$\delta_f = 30$	
356		α				↓		
357		α				0		
358	↓	ψ	↓	↓	↓	↓		

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
359	$FPBN_P, W_5 TB_T$	α	TRIM	2.5	0	15		
360		α		-2.5				
361		α		-6.5				
362		α		-6.5		-9		
363		α		-2.5				
364		α		7.5				
365		α		11.5				
366		α		11.5		7.5		
367		α		7.5				
368		α		2.5				
369		α		-2.5				
370		α		-6.5				
371		ψ		2.5		0	$\delta_P = 10$	
372		ψ					$\delta_R = 20$	
373		α	W.M.					NACELLE SPOILERS INSTALLEL
374	$FPBN_P, W_5 T_2$	α	TRIM	—	—	7.5		
375	$FPBW_5 T_9$	α	—			15	$\delta_f = 30$	V = 100 KTS, No BALANCE DATA
376		ψ					$\delta_f = 30$	
377		α						
378		ψ						
379		α				0		
380		ψ						
381		$\psi, \alpha = 10$						
382		α				-9		
383		ψ						
384	$FPBV_5 T_2$	α						

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
385	$FPBW_5T_2$	α	—	—	—	0		
386		ψ						
387		α				15		
388		α					$\delta_f=30$	
389	$FPBNW_5T_2$	α					$\delta_f=30$	REPEAT OF 281
390		α						REPEAT OF 271
391	$FPBNT_2$	α				—		
392		ψ						
393	$FPBNTB_T$	α		2.5	0			ABORTED, BAD START ZERO
394		α		2.5				REPEAT 393
395		α		7.5				
396		α		-2.5				
397		α		-6.5				
398		α		0				
399		α		-2.5				CHECK RUN 396 PITCH MOMENT
400	$FPBNW_5TB_T$	α		-3.5		0		
401		α		-1.5				
402		α		.5				
403		α		2.5				REPEAT OF 393
404		α				-9		
405	$FPBW_5TB_T$	α						
406		α				0		
407		α		-6.5				
408		α		-2.5				
409		α		7.5				
410		ψ		2.5				

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN NO	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{VE}	I_W	CONTROLS	REMARKS
411	VARIABLE	–	–	–	–	–	–	WIND TUNNEL MOVIES
412	$FPBNW_5TB_T$	ψ		2.5	0	0		TUFT FLOW STUDIES, NO BALANCE DATA
413		α						
414		α						
415	$FPBW_5TB_T$	ψ						
416		α						
417		α				15		
418		α					$\delta_f = 30$	
419	T_H	α		–	–	–		NO GOOD, BALANCE FOULING
420		α						
421		–						
422		ψ						
423		ψ						
424		ψ						
425		ψ						
426		$\psi, \alpha = -10$						
427		α						
428		$\psi, \alpha = 10$						
429		$\psi, \alpha = 10$						
430		$\psi, \alpha = 10$						
431		$\psi, \alpha = -10$						
432		$\psi, \alpha = -10$						SM ✓
433		ψ						SM ✓
434		ψ						
435		α						NO GOOD, WRONG ZERO
436		α						

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{VT}	I_W	CONTROLS	REMARKS
437	$T_3 B_T$	ψ	–	2.5	0	–		ABORTED, ENCODER PROBLEM
438		ψ						ABORTED, STRUT FOULING
439		ψ						REPEAT 437, 438
440		α						
441		$\psi, \alpha = 10$						
442		$\psi, \alpha = -10$						
443		$\alpha, \psi = 5$						
444		$\alpha, \psi = 15$						
445		α					$\delta_e = 10$	
446		α					$\delta_e = 15$	
447		α					$\delta_e = 20$	
448		α					$\delta_e = 25$	
449		α					$\delta_e = 29$	
450		α					$\delta_e = -10$	
451		α					$\delta_e = -15$	
452		α					$\delta_e = -20$	
453		α					$\delta_e = -25$	
454		ψ					$\delta_R = 10$	
455		ψ					$\delta_R = 15$	
456		ψ					$\delta_R = 20$	
457		ψ					$\delta_R = 25$	
458		ψ					$\delta_R = -10$	
459		ψ					$\delta_R = -15$	
460		ψ					$\delta_R = -20$	
461		ψ					$\delta_R = -25$	
462		α					$\delta_{SB} = 55$	ABORTED, PITCH INDICATOR FAILED

TABLE V
WIND TUNNEL RUN LOG (CONTINUED)

RUN NO	CONFIGURATION	RUN TYPE	POWER	I_{ht}	I_{vt}	I_w	CONTROLS	REMARKS
463	$T_3 B_T$	α	—	2.5	0	—	$\delta_{SB} = 55$	REPEAT 462
464	↓	α	↓	↓	↓	↓	$\delta_{SB} = 35$	
465	↓	α	↓	↓	↓	↓	$\delta_{SB} = 15$	
466	↓	ψ	↓	↓	↓	↓	$\delta_{SB} = 15$	

TABLE VI
WIND TUNNEL RUN LOG

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
467	$FPBN_{PS}W_8T_{10}B_T$	α	TRIM	0	0	0		SMV
468		α						PITCHING MOMENT OFF SCALE
469		α						REPEAT OF 468
470		α				14.3		ABORTED, COMPUTER DOWN
471		α						RUN TERMINATED TO CHECK WING
472		α				15		REPEAT OF 471
473		$\alpha=2.5°$						FLOW VIZ, NO BALANCE DATA
474		α					$\delta_F=30°$	ABORTED, COMPUTER DOWN
475		$\alpha=2.5°$					$\delta_F=30°$	FLOW VIZ, NO BALANCE DATA
476		α					$\delta_F=30°$	
477		α				0		REPEAT OF 469
478		$\alpha=10°$						FLOW VIZ, NO BALANCE DATA
479		$\alpha=15°$						FLOW VIZ, NO BALANCE DATA
480		ψ						SMV
481		0						STATIC LOADING
482		ψ						
483	$FPBN_{PS}W_7T_{10}B_T$	α						
484		$\alpha=0,15$						FLOW VIZ, NO BALANCE DATA
485		ψ						ZERO SHIFT
486		ψ						REPEAT OF 485
487		α				-9		
488		α				15		
489		$\alpha=2.5°$						FLOW VIZ, NO BALANCE DATA
490		$\alpha=2.5°$					$\delta_F=30°$	FLOW VIZ, NO BALANCE DATA
491		α					$\delta_F=30°$	
492		α				0		$i_N=0°$

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
493	FPB N_{PS} W_7 T_{10} B_T	$\alpha = 15°$	TRIM	0	0	0	$i_N = 0°$	FLOW VIZ, NO BALANCE DATA
494		α						$i_N = 5°$
495		$\alpha = 15°$				↓	$i_N = 5°$	FLOW VIZ, NO BALANCE DATA
496		α				15		$i_N = 5°$
497		α						$i_N = 0°$
498	↓	α						REPEAT OF 488
499	FPB N_P W_7 T_{10} B_T	α				↓		
500	↓	α		↓	↓	0		
501	FPB N_P W_7 T_2	α		—	—			
502	FPB N_{PS} W_7 T_2	0		—	—			ZERO SHIFT CHECK
503	↓	α		—	—			
504	FPB N_{P6} W_7 T_2	α		—	—			ABORTED
505	↓	α		—	—			REPEAT OF 504
506	FPB N_{P6} W_7 T_{10} B_T	α		0	0			
507	FPB N_{PS} W_7 T_{22} B_T	α						
508	FPB N_{P7} W_7 T_{22} B_T	α						
509	FPB N_{P7} W_7 T_{10} B_T	α		↓	↓			
510	FPB N_{P7} W_7 T_2	α	↓	—	—			
511	FPB N_{P7} W_7 T_{11}	$\alpha = 0$	WINDMILL	—	—			COLD WIRE CALIB.
512		$\alpha = 0$	TRIM	—	—			COLD WIRE CALIB.
513		$\alpha = 0$	↓	—	—			COLD WIRE CALIB
514		$\alpha = 0$	MAX	—	—			COLD WIRE CALIB.
515		$\alpha = 0$	WINDMILL	—	—			TUNNEL WARMUP
516		$\alpha = 0$		—	—			PROBE CALIB.
517		$\alpha = 0$		—	—			PROBE CALIB. + BALANCE DATA
518	↓	$\alpha = 0$	↓	—	—	↓		TUNNEL SPEED CHECK

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
519	FPB N_{P7} W_7 T_{11}	$\alpha=0$	WINDMILL	—	—	0		PROBE CALIB.
520	↓	$\alpha=0$		—	—	↓		PROBE CALIB.
521	↓	$\alpha=0$	TRIM	—	—	↓		NO BALANCE DATA
522	↓	$\alpha=0$	↓	—	—	↓		
523	↓	α	↓	—	—	↓		
524	↓	α	↓	—	—	↓		
525	↓	α	↓	—	—	↓		ABORTED
526	↓	α	↓	—	—	↓		
527	FPB N_{P8} W_7 T_{11}	α	↓	—	—	↓		
528	FPB N_P W_7 T_{11}	α	↓	—	—	↓		
529	FPB N_{P5} W_7 T_{11}	α	↓	—	—	↓		BENT PROBE
530	FPB W_7 T_{11}	α	—	—	—	↓		PROBE CALIB.
531	↓	α	—	—	—	↓		PROBE CALIB.
532	↓	α	—	—	—	↓		BAD ANEMOMETER DATA
533	↓	α	—	—	—	↓		BAD ANEMOMETER DATA
534	↓	α	—	—	—	↓		$\psi=-5$ + REPEAT OF 533
535	↓	α	—	—	—	↓		TRAVERSE FAILURE
536	↓	α	—	—	—	↓		TRAVERSE REMOVED
537	FPB W_7 T_2	α	—	—	—	↓		
538	↓	ψ	—	—	—	↓		
539	FPB N_{P5} W_7 T_{10} B_T	α	TRIM	0	0	↓		$i_N=-7°$, ABORTED, P.M. OFF SCALE
540	↓	α	↓	↓	↓	↓		$i_N=-7°$ REPEAT OF 539
541	↓	α	↓	↓	↓	15		$i_N=-7°$
542	FPB N_{P5} W_7 T_{22} B_T	α	↓	↓	↓	↓		$i_N=-7°$
543	↓	α	↓	↓	↓	0		$i_N=-7°$
544	↓	α	↓	↓	↓	↓		$i_N=0°$

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
545	$FPBN_{P8}W_7T_{22}B_T$	α	TRIM	0	0	0		$i_N=-7°$
546	↓	α				15		$i_N=-7°$
547	$FPBN_{P8}W_7T_{10}B_T$	α				↓		$i_N=-7°$
548		α				0		$i_N=-7°$
549		α				↓		
550	↓	α				15		
551	$FPBN_PW_7T_{10}B_T$	α				0		REPEAT OF 500
552	$FPBN_{P5}W_7T_{10}B_T$	α						REPEAT OF 493 (BASELINE)
553	$FPBN_{P5}W_7T_{23}B_T$	α				↓		
554	↓	α				15		
555	$FPBN_{P5}W_7T_{24}B_T$	α				↓		
556		α				0		
557		$\alpha, \psi=-5°$						ABORTED
558		$\alpha, \psi=-5°$				↓		REPEAT OF 557
559	↓	α				-9		
560	$FPBN_PW_7T_{24}B_T$	α				0		
561		α						$\chi_N=5°$
562		$\alpha, \psi=5°$						SMV
563		$\alpha, \psi=5°$						$\chi_N=5°$
564		$\alpha, \psi=5°$						$\chi_N=-5$, ABORTED
565		$\alpha, \psi=5°$						REPEAT OF 564, ABORTED
566		$\alpha, \psi=5°$						REPEAT OF 564
567	↓	α						$\chi_N=-5°$
568	$FPBN_{P5}W_7T_{15}B_T$	α						ABORTED
569	↓	α						REPEAT OF 568
570	$FPBN_{P5}W_7T_{25}B_T$	α	↓	↓	↓			

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TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
571	$FPBN_{PS}W_7T_{26}B_T$	α	TRIM	0	0	0		
572	$FPBN_{PS}W_7T_{19}B_T$	α						
573	$FPBN_{PS}W_7T_{27}B_T$	α						
574	$FPBN_{PS}W_7T_{28}B_T$	α						
575	$FPBN_{PS}W_7T_{12}B_T$	α						
576	$FPBN_{PS}W_7T_{29}B_T$	α						
577	$FPBN_{PS}W_7T_{30}B_T$	α						
578	$FPBN_{PS}W_7T_{13}B_T$	α						
579	$FPBN_{PS}W_7T_{31}B_T$	α						
580	$FPBN_{PS}W_7T_{17}B_T$	α						
581		α						SMV CHECK
582	↓	α						COMPLETION OF 580
583	$FPBN_{PS}W_7T_{18}B_T$	α						
584	$FPBN_{PS}W_7T_{32}B_T$	α						
585	$FPBN_{PS}W_7T_{33}B_T$	α						
586	$FPBN_{PS}W_7T_{34}B_T$	α						
587	$FPBN_{PS}W_7T_{10}B_T$	α		↓				REPEAT OF 483, 552
588	$FPBN_{PS}W_7T_{28}B_T$	α		-5° / 0°				
589	↓	α		5° / 0°				
590	$FPBN_{PS}W_7T_{19}B_T$	α		5° / 0°				SMOKE
591		α		-5° / 0°				
592		α		0° / -5°				
593		α		0° / 5°				
594		ψ		0° / 5°				ABORTED
595		ψ		0°				
596	↓	ψ	↓	↓	↓	↓	$\delta_R = -20°$	

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TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

Run No	Configuration	Run Type	Power	I_{HT}	I_{VT}	I_W	Controls	Remarks
597	$FPBN_{PS}W_7T_{19}B_T$	ψ	TRIM	0°	0°	0°	$\delta_R=-10°$	ABORTED
598	↓	ψ	↓	↓	↓	↓	$\delta_R=-10°$	REPEAT OF 597
599	↓	ψ	↓	↓	↓	↓	$\delta_R=10°$	
600	↓	ψ	↓	↓	↓	↓	$\delta_R=20°$	
601	↓	$\psi, \alpha=10°$	↓	↓	↓	↓		SMV
602	↓	$\psi, \alpha=10°$	↓	↓	↓	↓		ABORTED
603	↓	$\psi, \alpha=10°$	↓	↓	↓	↓		REPEAT OF 602
604	↓	$\psi, \alpha=-10°$	↓	↓	↓	↓		
605	$FPBN_{PS}W_7T_{35}B_T$	ψ	↓	↓	↓	↓		
606	$FPBN_{PS}W_7T_2$	α	WINDMILL	–	–	↓		
607	↓	α	TRIM	–	–	↓		REPEAT OF 503
608	↓	α	23000	–	–	↓		
609	↓	ψ	WINDMILL	–	–	↓		
610	↓	ψ	TRIM	–	–	↓		
611	↓	ψ	23000	–	–	↓		
612	↓	ψ	OEI	–	–	↓		
613	$FPBN_{PS}W_7T_{36}B_T$	ψ	TRIM	0°	0°	↓		
614	↓	$\psi, \alpha=10°$	↓	↓	↓	↓		WRONG TRIM POWER
615	↓	ψ	↓	↓	↓	↓	$\delta_R=-10°$	
616	↓	ψ	↓	↓	↓	↓	$\delta_R=-20°$	
617	↓	ψ	↓	↓	↓	↓	$\delta_R=10°$	
618	↓	ψ	↓	↓	↓	↓	$\delta_R=20°$	
619	↓	$\psi, \alpha=-10°$	↓	↓	↓	↓		
620	↓	ψ	↓	↓	↓	↓	$\delta_R=-30°$	
621	↓	$\alpha=0°$, $\psi=0°$	WINDMILL	↓	↓	↓		SPEED VARIATION
622	↓	$\psi, \alpha=10°$; $\psi=0, \alpha=0$	TRIM; WINDMILL	↓	↓	↓		REPEAT OF 614, REPEAT OF 621

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

Run No	Configuration	Run Type	Power	I_{HT}	I_{VT}	I_W	Controls	Remarks
623	$FPBN_{PS}W_7T_{36}B_T$	$\alpha=0$, $\psi=0$	WINDMILL	0°	0°	0°		LER 150, SPEED VARIATION
624		$\alpha=0$, $\psi=0$	23000					LER 150, SPEED VARIATION
625	$FPBN_{PS}W_7T_{37}B_T$	ψ	TRIM					
626		$\psi, \alpha=10°$						TRIM @ $\alpha=10°$
627		$\psi, \alpha=10°$						TRIM @ $\alpha=0°$
628		ψ					$\delta_R=-10°$	
629		ψ					$\delta_R=-20°$	
630	$FPBN_{PS}W_7T_{36}B_T$	α						$q=40$ PSF
631		α	WINDMILL					$q=40$ PSF
632		α	23000					$q=40$ PSF
633		ψ						$q=40$ PSF
634		$\psi, \alpha=10°$						$q=40$ PSF
635		ψ					$\delta_R=-20°$	$q=40$ PSF
636		ψ					$\delta_R=-10°$	$q=40$ PSF
637		ψ					$\delta_R=10°$	$q=40$ PSF
638		ψ					$\delta_R=20°$	$q=40$ PSF
639	$FPBN_{PS}W_7T_{36}$	ψ	WINDMILL					$q=40$ PSF
640		ψ	23000					$q=40$ PSF
641	$FPBN_{PS}W_7T_{36}B_T$	$\alpha=0°, 10°$	WINDMILL + 7000					$q=30$ PSF, SMOKE
642		α	23000			15°	$\delta_F=30°$	$q=40$ PSF
643		ψ					$\delta_F=30°$	$q=40$ PSF
644		α					$\delta_F=30°$	REPEAT OF 642, $q=40$ PSF
645		α	TRIM				$\delta_F=30°$	
646		ψ	OEI				$\delta_F=30°$, $\delta_R=10°$	$q=40$ PSF
647		ψ					$\delta_F=30°$, $\delta_R=20°$	$q=40$ PSF
648		ψ					$\delta_F=30°$, $\delta_R=25°$	$q=40$ PSF

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TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
649	$FPBN_{PS}W_7T_{37}B_T$	ψ	TRIM	0°	0°	15°	$\delta_F=30°$	
650	↓	α				0°		FLOW VIZ, NO BALANCE DATA
651	$FPBN_{PS}W_7T_{36}B_T$	α						FLOW VIZ, NO BALANCE DATA
652	$FPBN_{PS}W_7T_{29}B_T$	α						FLOW VIZ, NO BALANCE DATA
653	$FPBN_{PS}W_7T_{28}B_T$	α		↓	↓			SPOILER ON STABILIZER
654	$FPBN_{PS}W_7T_2$	$\psi, \alpha=10°$		–	–			
655		$\psi, \alpha=10°$		–	–			REPEAT OF 654, CHECK BALANCE
656		$\psi, \alpha=10°$	↓	–	–			REPEAT OF 654, 655
657		α	WINDMILL	–	–			REPEAT OF 606
658		α	OEI	–	–			
659		ψ		–	–			SMV
660		ψ		–	–			BALANCE REPEATABILITY CHEC
661		ψ	↓	–	–			REPEAT OF 612
662		$\psi, \alpha=-10°$	TRIM	–	–			
663		α		–	–	↓		REPEAT OF 503, 607
664		ψ		–	–	-9°		
665		α		–	–	↓		
666		α		–	–	7.5°		
667		ψ		–	–	↓		
668		ψ		–	–	15°		
669		α		–	–			
670		α		–	–		$\delta_F=30°$	
671		ψ		–	–	↓	$\delta_F=30°$	
672	↓	α		–	–	0°	$\delta_F=15°$	
673	$FPBN_{PS}W_7T_{10}B_T$	α		0°	0°	↓		REPEAT OF 483, 552, 587
674	$FPBN_{PS}T_2$	α	↓	–	–	–		

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
675	$FPBN_{PS}T_2$	ψ	TRIM	–	–	–		
676	$FPBN_{PS}W_7T_{38}B_T$	α	↓	0°	0°	0°		
677	↓	α	23000	↓	↓	↓		$q = 40$ PSF, ZERO SHIFT
678	↓	α	↓	↓	↓	↓		$q = 40$ PSF, REPEAT OF 677
679	$FPBN_{PS}W_7T_{39}B_T$	α	TRIM	↓	↓	↓		
680	↓	α	23000	↓	↓	↓		$q = 40$ PSF
681	↓	ψ	TRIM	↓	↓	↓		
682	↓	ψ	23000	↓	↓	↓		$q = 40$ PSF
683	↓	$\alpha, \psi = 5°$	TRIM	↓	↓	↓		
684	$FPBN_{PS}W_7T_{41}B_T$	α	↓	↓	↓	↓		
685	$FPBN_{PS}W_7T_{42}B_T$	α	↓	↓	↓	↓		
686	$FPBN_{PS}W_7T_{40}B_T$	α	↓	↓	↓	↓		
687	↓	α	23000	↓	↓	↓		ABORTED, $q = 40$ PSF
688	$FPBN_{PS}W_7T_{43}B_T$	α	↓	↓	↓	↓		$q = 40$ PSF
689	↓	α	TRIM	↓	↓	↓		
690	↓	$\alpha, \psi = 5°$	↓	↓	↓	↓		
691	$FPBT_{43}B_T$	α	–	↓	↓	–		
692	$FPBT_{44}B_T$	α	–	↓	↓	–		
693	↓	$\psi, \alpha = 10°$	–	↓	↓	–		
694	$FPBT_{38}B_T$	α	–	↓	↓	–		
695	↓	$\psi, \alpha = 10°$	–	↓	↓	–		
696	$FPBT_{44}B_T$	ψ	–	↓	↓	–		
697	↓	$\psi, \alpha = -10°$	–	↓	↓	–		
698	↓	α	–	-10°	↓	–		
699	↓	α	–	-5°	↓	–		
700	↓	α	–	5°	↓	–		

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TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
701	$FPBT_{44}B_T$	ψ	—	0°	4.5°	—		
702	↓	ψ	—	↓	2.5°	—		
703	↓	ψ	—	↓	0°	—	$\delta_R=10°$	
704	↓	ψ	—	↓	↓	—	$\delta_R=20°$	
705	$FPBT_{45}B_T$	ψ	—	↓	↓	—		
706	↓	$\psi, \alpha=-10°$	—	↓	↓	—		
707	↓	$\psi, \alpha=10°$	—	↓	↓	—		
708	↓	α	—	-10°	↓	—		
709	↓	α	—	-5°	↓	—		
710	↓	α	—	5°	↓	—		
711	↓	α	—	10°	↓	—		
712	↓	ψ	—	0°	↓	—	$\delta_R=10°$	
713	↓	ψ	—	↓	↓	—	$\delta_R=20°$	
714	$FT_{38}B_T$	α	—	↓	↓	—		
715	↓	ψ	—	↓	↓	—		
716	$FPBT_2$	ψ	—	—	—	—		
717	↓	α	—	—	—	—		
718	$FPBN_{R1}W_7T_2$	α	—	—	—	0°		
719	↓	ψ	—	—	—	↓		
720	$FPBN_{R1}W_7T_{43}B_T$	α	—	0°	0°	↓		
721	↓	ψ	—	↓	↓	↓		
722	$FPBN_{R2}W_7T_{43}B_T$	α	—	↓	↓	↓		
723	↓	ψ	—	↓	↓	↓		
724	$FPBN_{PS}W_7T_{40}B_T$	α	TRIM	↓	↓	↓	$\delta_E=25°$	SPLIT FLAP ELEVATOR
725	↓	α	↓	↓	↓	↓	$\delta_E=-21°$	SPLIT FLAP ELEVATOR
726	$FPBN_{PS}W_7T_2$	α	↓	—	—	↓	$\delta_A=-10°$	

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

Run No	Configuration	Run Type	Power	I_{HT}	I_{VT}	I_W	Controls	Remarks
727	$FPBN_{PS}W_7T_2$	α	TRIM	–	–	0°	$\delta_A = -20°$	
728		α		–	–		$\delta_A = 10°$	
729		α		–	–		$\delta_A = 20°$	
730		$\alpha, \psi = 5°$		–	–		$\delta_A = 20°$	
731		ψ		–	–		$\delta_A = 20°$	
732		$\psi, \alpha = 10°$		–	–		$\delta_A = 20°$	
733		$\psi, \alpha = 10°$		–	–		$\delta_A = -10°$	
734		ψ		–	–		$\delta_A = -10°$	
735		$\alpha, \psi = 5°$		–	–		$\delta_A = -10°$	
736		α		–	–		$\delta_F = 10°$	
737		α		–	–		$\delta_F = 20°$	
738		α		–	–		$\delta_F = 40°$	
739		α	↓	–	–	↓	$\delta_F = 30°$	
740		α	WINDMILL	–	–	15°	$\delta_F = 30°$	
741		ψ	↓	–	–		$\delta_F = 30°$	
742		ψ	23000	–	–		$\delta_F = 30°$	
743		α	↓	–	–		$\delta_F = 30°$	
744		α	OEI	–	–		$\delta_F = 30°$	
745		ψ	↓	–	–		$\delta_F = 30°$	
746		ψ	TRIM	–	–		$\delta_F = 30°$ $\delta_A = -10°$	
747		α		–	–		$\delta_F = 30°$ $\delta_A = -10°$	
748		α		–	–		$\delta_F = 30°$ $\delta_A = 10°$	
749		ψ		–	–		$\delta_F = 30°$ $\delta_A = 10°$	
750		ψ		–	–		$\delta_F = 30°$ $\delta_A = 20°$	
751		α		–	–		$\delta_F = 30°$ $\delta_A = 20°$	
752	↓	ψ	↓	–	–	↓	$\delta_F = 30°$	REPEAT OF 671

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN NO	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
753	$FPBN_{PS}W_7T_2$	ψ	TRIM	–	–	15°	$\delta_A = 20°$	
754	↓	α	↓	–	–	↓	$\delta_A = 20°$	
755	↓	α	↓	–	–	↓	$\delta_A = 10°$	
756	↓	ψ	↓	–	–	↓	$\delta_A = 10°$	
757	↓	ψ	↓	–	–	↓	$\delta_A = -10°$	
758	↓	α	↓	–	–	↓	$\delta_A = -10°$	
759	↓	α	WINDMILL	–	–	↓		
760	↓	α	23000	–	–	↓		
761	↓	α	TRIM	–	–	0°		REPEAT OF 503,607,663
762	↓	$\alpha, \psi = 5°$	↓	–	–	↓		
763	$FPBT_{47}B_T$	α	–	0°	0°	–		
764	↓	ψ	–	↓	↓	–		
765	↓	$\psi, \alpha = 10°$	–	↓	↓	–		
766	↓	$\psi, \alpha = -10°$	–	↓	↓	–		
767	↓	α	–	5°	↓	–		
768	↓	α	–	-10°	↓	–		
769	↓	α	–	-5°	↓	–		
770	↓	ψ	–	0°	↓	–	$\delta_R = 10°$	
771	↓	ψ	–	↓	↓	–	$\delta_R = 20°$	
772	$FT_{47}B_T$	ψ	–	↓	↓	–		
773	↓	α	–	↓	↓	–		
774	$FPBN_{PS}W_7T_{46}B_T$	α	TRIM	↓	↓	0°		
775	$FPBN_{PS}W_7T_{37}B_T$	α	↓	↓	↓	↓		
776	$FPBN_{PS}W_7T_{46}B_T$	α	↓	↓	↓	↓		FLOW VIZ, NO BALANCE DATA
777	$FPBN_{PS}W_7T_{48}B_T$	α	↓	↓	↓	↓		
778	$FPBN_{PS}W_7T_{49}B_T$	α	↓	↓	↓	↓		

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN NO	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
779	$FPBN_{PS}W_7T_{49}B_T$	ψ	TRIM	0°	0°	0°		
780	$FPBN_{PS}W_7T_{37}B_T$	α		-10°				
781		α		-5°				
782		α		5°				
783		α		9°				
784	$FPBN_{PS}W_7T_{50}B_T$	α		-10°				
785		α		5°				
786		α		-5°				
787		α		0°				
788	$FPBN_{PS}W_7T_{49}B_T$	α	WINDMILL					
789		α	23000					
790		α	OEI					
791		ψ	WINDMILL					
792		ψ	23000					
793		ψ	OEI					
794		ψ	WINDMILL			-9°		
795		α						
796		α	TRIM					
797		α	23000					
798		α	OEI					ENCODER PROBLEM
799		α						ENCODER PROBLEM
800		α						REPEAT OF 798,799
801		α				7.5°		
802		α	TRIM					
803		α	23000					
804		α	WINDMILL					

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
805	$FPBN_{PS}W_7T_{49}B_T$	α	WINDMILL	0°	0°	15°		
806		α	TRIM					
807		α	23000					
808		α	OEI					
809		α	OEI				$\delta_F = 30°$	
810		α	TRIM				$\delta_F = 30°$	
811		α	23000				$\delta_F = 30°$	
812		α	WINDMILL				$\delta_F = 30°$	
813	$FPBN_{PS}W_7T_{37}B_T$	α	TRIM	-10°			$\delta_F = 30°$	
814		α		-5°			$\delta_F = 30°$	
815		α		5°			$\delta_F = 30°$	
816		α		10°			$\delta_F = 30°$	
817		α		10°				
818		α		5°				
819		α		-5°				
820		α		-10°				
821		α		-10°		-9°		
822		α		-5°				
823		α		0°				
824		α		5°				
825		α		10°				
826		α		0°		15°		
827		α					$\delta_F = 3C$	
828		α				7.5°		
829		α		10°				
830		α		5°				

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
831	$FPBN_{PS}W_7T_{37}B_T$	α	TRIM	-5°	0°	7.5°		
832	↓	α		-10°				
833	$FPBN_{PS}W_7T_{50}B_T$	α		0°				
834		α		5°				
835		α		-5°				
836		α		-10°		↓		
837		α		↓		-9°		
838		α		5°				
839		α		0°				
840		α		-5°				ENCODER PROBLEM
841		α				↓		REPEAT OF 840
842		α				15°		ENCODER PROBLEM
843		α		↓				REPEAT OF 842
844		α		0°				
845		α		5°				
846		α		-10°				
847		α		↓			$\delta_F = 30°$	
848		α		5°			$\delta_F = 30°$	
849		α		0°			$\delta_F = 30°$	
850	↓	α		-5°			$\delta_F = 30°$	
851	$FPBN_{PS}W_7T_{51}B_T$	α		0°		↓		
852	↓	α				-9°		
853	$FPBN_{PS}W_7T_{52}B_T$	α				↓		
854		α				0°		
855	↓	α				15°		
856	$FPBN_{PS}W_7T_{53}B_T$	α	↓	↓	↓	↓		

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN NO	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
857	$FPBN_{PS}W_7T_{53}B_T$	α	TRIM	0°	0°	0°		
858	↓	α				-9°		
859	$FPBN_{PS}W_7T_{54}B_T$	α				↓		
860		α				0°		
861		α				15°		
862		α				↓	$\delta_F=30°$	
863		$\psi, \alpha=10°$				0°		
864	↓	$\alpha, \psi=5°$						
865	$FPBN_{PS}W_7T_{55}B_T$	α				↓		
866		α				-9°		
867		α				15°		
868		$\alpha, \psi=5°$		↓		0°		
869		α		-5°				
870		α		-10°				
871		α		-2.5°		↓		
872		α		-5°		-9°		
873	↓	$\alpha, \psi=5°$		↓				
874	$FPBN_{PS}W_7T_{56}B_T$	α		0°				
875		α		-5°		↓		
876	↓	α		0°		0°		
877	$FPBN_{PS}W_7T_{57}B_T$	α				↓		
878		α				-9°		
879		α		-2.5°				
880		α		-5°		↓		
881		α		2.5°		7.5°		
882	↓	α	↓	0°	↓	0°		REPEAT OF 877

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
883	$FPBN_{PS}W_7T_{57}B_T$	$\psi, \alpha=10°$	TRIM	0°	0°	0°		
884		ψ						
885		$\psi, \alpha=-10°$						
886	↓	$\alpha, \psi=5°$						
887	$FPBN_{PS}W_7T_{51}B_T$	ψ						
888	↓	$\psi, \alpha=10°$		↓				
889	$FPBN_{PS}W_7T_{56}B_T$	α		5°				
890		α		10°				
891		α		-5°		↓		
892		α		-10°		-9°		
893		α		5°		↓		
894		α		↓		7.5°		
895		α		0°				
896		α		-5°				
897		$\psi, \alpha=10°$		0°				
898		$\alpha, \psi=5°$						
899		α				↓	$\delta_F=30°$	
900	↓	α				15°	$\delta_F=30°$	
901	$FPBN_{PS}W_7T_{58}B_T$	α		↓		7.5°	$\delta_F=30°$	
902		α		-4°		-9°		
903		α		0°		0°		
904		α		2.5°		15°		
905		α		0°		↓	$\delta_F=30°$	
906	↓	α		5°		7.5°	$\delta_F=30°$	
907	$FP3N_{PS}W_7T_{59}B_T$	α		↓			$\delta_F=30°$	
908	↓	α	↓	0°	↓	↓	$\delta_F=30°$	

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
909	$FPBN_{PS}W_7T_{59}B_T$	α	TRIM	$-4°$	$0°$	$-9°$		
910	$FPBN_{PS}W_7T_2$	α		—	—	$0°$		REPEAT OF 503,607,663,761
911	$FPBN_{PS}W_7T_{59}B_T$	α		$0°$	$0°$			
912	$FPBN_{PS}W_7T_{60}B_T$	α						
913		α		$-5°$				
914		α		$-4°$		$-9°$		
915		$\alpha, \psi=5°$		$0°$				
916		$\alpha, \psi=5°$				$0°$		
917		$\alpha, \psi=5°$				$7.5°$		
918		$\alpha, \psi=5°$				$7.5°$	$\delta_F=30°$	
919		$\alpha, \psi=5°$				$15°$	$\delta_F=30°$	
920		$\alpha, \psi=5°$						
921		α		$2.5°$				
922		α		$0°$			$\delta_F=30°$	
923		α				$7.5°$		
924		α	WINDMILL					
925		α	23000					
926		α	OEI					
927		α	TRIM	$2.5°$		$15°$		
928		α					$\delta_F=30°$	
929	$FPBN_{PS}W_7T_{61}B_T$	α					$\delta_F=30°$	
930		α		$5°$			$\delta_F=30°$	
931		α		$10°$			$\delta_P=30°$	
932		α		$0°$			$\delta_F=30°$	
933		α		$-5°$			$\delta_F=30°$	
934		α						

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
935	$FPBN_{PS}W_7T_{61}B_T$	α	TRIM	0°	0°	15°		
936	↓	α	↓	5°				
937	$FPBN_{PS}W_7T_{60}B_T$	α	WINDMILL	0°				
938		α	23000					
939		α	OEI					
940		ψ	TRIM					
941		ψ					$\delta_F = 30°$	GROUNDED PITCH STRUT
942		ψ					$\delta_F = 30°$	REPEAT OF 941
943		$\psi, \alpha = 10°$					$\delta_F = 30°$	
944		$\psi, \alpha = -10°$	↓				$\delta_F = 30°$	
945		α	23000				$\delta_F = 30°$	
946		α	WINDMILL				$\delta_F = 30°$	
947		α	OEI				$\delta_F = 30°$	
948		α	TRIM				$\delta_F = 30°$ $\delta_A = 10°$	
949		ψ					$\delta_F = 30°$ $\delta_A = 10°$	
950		α					$\delta_F = 30°$ $\delta_A = -10°$	
951		α				↓		
952		α				0°	$\delta_A = 10°$	
953		α					$\delta_A = -10°$	
954		ψ					$\delta_A = -10°$	
955	↓	ψ				↓	$\delta_A = 20°$	
956	$FPBN_{PS}W_7T_{41}B_T$	α		↓		15°	$\delta_F = 30°$	
957		α		5°			$\delta_F = 30°$	
958		α		-5°			$\delta_F = 30°$	
959		α		↓				
960	↓	α	↓	0°	↓	↓		

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
961	$FPBN_{PS}W_7T_{41}B_T$	α	TRIM	5°	0°	15°		
962		α		↓		7.5°		
963		α		0°				
964	↓	α		-5°				
965	$FPBN_{PS}W_7T_{60}B_T$	α		0°			$\delta_F = 30°$	
966		α	↓				$\delta_F = 15°$	
967		α	23000				$\delta_F = 30°$	$q = 50$ PSF
968		α	TRIM					REPEAT OF 923
969	↓	ψ						
970	$FPBN_{PS}W_7T_{61}B_T$	α		↓				
971		α		5°				
972		α		-5°				
973		α		↓			$\delta_F = 30°$	
974		α		0°			$\delta_F = 30°$	
975	↓	α		5°		↓	$\delta_F = 30°$	
976	$FPBN_{PS}W_7T_{60}B_T$	α		-4°		-9°	$\delta_F = 10°$	
977	↓	α		0°		0°	$\delta_F = 10°$	
978	$FPBN_{PS}W_7T_{61}B_T$	α		-5°				
979		α		-10°				
980		α		0°				
981		α		5°				
982		α		↓			$\delta_F = 10°$	
983		α		0°			$\delta_F = 10°$	
984		α		-5°		↓	$\delta_F = 10°$	
985		α		↓		-9°	$\delta_F = 10°$	
986	↓	α	↓	0°	↓	↓	$\delta_F = 10°$	

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

Run No	Configuration	Run Type	Power	I_{HT}	I_{VT}	I_W	Controls	Remarks
987	$FPBN_{PS}W_7T_{61}B_T$	α	TRIM	5°	0°	−9°	$\delta_F = 10°$	
988		α						
989		α		0°				
990		α		−5°				
991		α		−10°				
992	$FPBN_{PS}W_7T_2$	α	WINDMILL	–	–			
993		α	23000	–	–			
994		α	TRIM	–	–		$\delta_F = 10°$	
995		α		–	–	0°		REPEAT OF 503, 607, 663, 761, 910
996		α		–	–	7.5°	$\delta_F = 30°$	
997	$FPBN_{PS}W_7T_{41}B_T$	α		5°	0°		$\delta_F = 30°$	
998		α		0°			$\delta_F = 30°$	
999		α		−5°			$\delta_F = 30°$	
1000		α				0°		
1001		α		0°				REPEAT OF 684
1002		α		5°				
1003		α					$\delta_F = 10°$	
1004		α		0°			$\delta_F = 10°$	
1005		α		−5°			$\delta_F = 10°$	
1006		α				−9°	$\delta_F = 10°$	
1007		α		0°			$\delta_F = 10°$	
1008		α		5°			$\delta_F = 10°$	
1009		α						
1010		α		0°				ABORTED
1011		α		−5°				
1012		α						REPEAT OF 1011

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN NO	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
1013	$FPBN_{PS}W_7T_{60}B_T$	α	WINDMILL	0°	0°	−9°		
1014		α	TRIM					
1015		α	23000					
1016		α	OEI					
1017		ψ	TRIM					
1018		$\psi, \alpha=10°$						
1019		$\alpha, \psi=5°$						REPEAT OF 915
1020		$\psi, \alpha=10°$				0°		
1021		$\psi, \alpha=-10°$						
1022		ψ						
1023		ψ					$\delta_R=-10°$	
1024		ψ					$\delta_R=-20°$	
1025		ψ					$\delta_R=10°$	
1026		ψ					$\delta_R=20°$	
1027		ψ			2.5°			
1028		ψ	OEI					
1029		ψ			4.5°			
1030		ψ	TRIM					
1031		$\alpha=3.5°$, $\psi=0°$	VARIABLE		0°			
1032		α	WINDMILL					
1033		α	23000					
1034		α	OEI					
1035		α	TRIM				$\delta_F=30°$	
1036	$FPBN_{PS}W_7T_{61}B_T$	α		10°		7.5°	$\delta_F=30°$	
1037	$FPBN_{PS}W_7T_2$	α	WINDMILL	–	–			
1038		α	23000	–	–			

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

Run No	Configuration	Run Type	Power	I_{HT}	I_{VT}	I_W	Controls	Remarks
1039	$FPBN_{PS}W_7T_2$	ψ	23000	–	–	7.5°		
1040		ψ	WINDMILL	–	–			
1041		ψ		–	–	-9°		
1042		ψ	23000	–	–			
1043		ψ	WINDMILL	–	–	15°		
1044		ψ	23000	–	–			
1045	$FPBN_{PS}W_7T_2L$	α	TRIM	–	–		$\delta_F=30°$	MODEL VIBRATION, $-\alpha$'s ONLY
1046		α		–	–		$\delta_F=30°$	MODEL VIBRATION, ABORTED
1047		α		–	–		$\delta_F=30°$	REPEAT OF 1045
1048		ψ		–	–		$\delta_F=30°$	
1049		ψ		–	–	7.5°	$\delta_F=30°$	
1050		α		–	–		$\delta_F=30°$	
1051	$FPBN_{PS}W_7T_{60}B_TL$	α		0°	0°		$\delta_F=30°$	
1052		ψ					$\delta_F=30°$	
1053		α				15°	$\delta_F=30°$	
1054		ψ					$\delta_F=30°$	
1055	$FPBN_{PS}W_7T_{61}B_TL$	α					$\delta_F=30°$	
1056		α				7.5°	$\delta_F=30°$	
1057		α		5°			$\delta_F=30°$	
1058		α		10°			$\delta_F=30°$	
1059		α		-5°			$\delta_F=30°$	
1060		$\psi, \alpha=10°$		0°			$\delta_F=30°$	
1061		$\psi, \alpha=-10°$					$\delta_F=30°$	
1062		$\alpha, \psi=5°$					$\delta_F=30°$	
1063	$FPBN_{PS}T_{60}B_T$	α				–		
1064		ψ				–		

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TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
1065	FPB$N_{PS}W_7T_{60}B_T$	α	WINDMILL	0°	0°	15°	$\delta_F=30°$	REPEAT OF 946
1066		α				7.5°	$\delta_F=30°$	
1067		α		↓		10°	$\delta_F=30°$	$i_W=10°$ SET USING AFT SPAR
1068	↓	α	↓	5°		↓	$\delta_F=30°$	ADJUSTMENT ONLY
1069	FPB$W_7T_{60}B_T$	α	—	0°		0°		
1070	↓	ψ	—			↓		
1071	FPB$N_{PS}T_{60}B_T$	α	WINDMILL			—		
1072		ψ				—		
1073	↓	α	↓			—		REPEAT OF 1071
1074	FPB$T_{60}B_T$	α	—			—		
1075	↓	ψ	—			—		
1076	FPB$T_{50}B_T$	α	—			—		
1077		ψ	—			—		
1078		$\psi, \alpha=10°$	—			—		
1079		$\psi, \alpha=-10°$	—			—		
1080		$\alpha=0°$ $\psi=0°$	—			—		SPEED VARIATION
1081		$\alpha, \psi=5°$	—	↓		—		
1082		α	—	5°		—		
1083		α	—	−11°		—		
1084	↓	α	—	−5°		—		
1085	$T_{62}B_T$	α	—	0°		—		
1086		$\alpha=0°$ $\psi=0°$	—			—		SPEED VARIATION
1087		ψ	—			—		
1088		$\psi, \alpha=10°$	—			—		
1089		α	—			—		REPEAT OF 1085
1090	↓	$\psi, \alpha=-10°$	—	↓	↓	—		

TABLE VI
WIND TUNNEL RUN LOG (CONTINUED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
1091	$T_{62}B_T$	$\alpha, \psi = 5°$	—	0°	0°	—		
1092		$\alpha, \psi = 20°$	—			—		
1093		ψ	—			—	$\delta_R = 10°$	
1094		ψ	—			—	$\delta_R = 15°$	
1095		ψ	—			—	$\delta_R = 20°$	
1096		ψ	—			—	$\delta_R = 25°$	
1097		ψ	—			—	$\delta_R = 30°$	
1098		ψ	—			—	$\delta_R = -30°$	
1099		ψ	—			—	$\delta_R = -25°$	
1100		ψ	—			—	$\delta_R = -20°$	
1101		ψ	—			—	$\delta_R = -15°$	
1102		ψ	—			—	$\delta_R = -10°$	
1103		ψ	—			—	$\delta_{SB} = 55°$	
1104		ψ	—			—	$\delta_{SB} = 35°$	
1105		ψ	—			—	$\delta_{SB} = 15°$	
1106		α	—			—	$\delta_{SB} = 15°$	
1107	$T_{63}B_T$	α	—			—	$\delta_{SB} = 15°$	
1108		ψ	—			—	$\delta_{SB} = 15°$	
1109		ψ	—			—	$\delta_{SB} = 35°$	
1110		ψ	—			—	$\delta_{SB} = 55°$	
1111		ψ	—			—		
1112		ψ, $\alpha = 10°$	—			—		
1113		ψ, $\alpha = -10°$	—			—		
1114		α	—			—		
1115		α, $\psi = 5°$	—			—		
1116		α, $\psi = 20°$	—			—		

TABLE VI
WIND TUNNEL RUN LOG (CONCLUDED)

RUN No	CONFIGURATION	RUN TYPE	POWER	I_{HT}	I_{VT}	I_W	CONTROLS	REMARKS
1117	$T_{63}B_T$	ψ	–	0°	0°	–	$\delta_R = 10°$	
1118		ψ	–			–	$\delta_R = 20°$	
1119		ψ	–			–	$\delta_R = 25°$	
1120		ψ	–			–	$\delta_R = 30°$	
1121		ψ	–			–	$\delta_R = -30°$	
1122		ψ	–			–	$\delta_R = -25°$	
1123		ψ	–			–	$\delta_R = -20°$	
1124		ψ	–			–	$\delta_R = -15°$	
1125		ψ	–			–	$\delta_R = -10°$	
1126	$T_{64}B_T$	α, ψ	–			–		SMV
1127		ψ	–			–		
1128		α	–			–		
1129	$T_{65}B_T$	α	–			–		
1130		ψ	–			–		

TABLE VII

RUN NUMBER / FIGURE NUMBER INDEX

Run	Figures
5	16
19	16
20	16
33	17
35	18
38	17
39	18
40	17
41	18
42	16
45	16
135	30
136	30
137	30
483	12, 36, 100
487	36
488	36
491	36
498	36
500	100
503	13
506	100
509	100

Run	Figures
527	154
528	155
534	153
535	153, 156
536	153
537	31, 153
538	32
549	100
551	100
552	12
587	12
606	46
607	13, 31, 37, 46, 60, 66, 67
608	46
609	51
610	32, 38, 51, 66, 69, 82
611	51
612	51, 82
621	16
622	16
623	16
633	35
639	35
640	35
654	70
655	70
656	70
657	46
658	46

Run	Figures
661	51, 82
663	13, 37, 60
664	38, 50
665	37, 45, 76, 77, 78
666	37, 47, 76, 77, 80
667	38, 52
668	38, 53, 72
669	37, 48, 71, 76, 77, 81
670	37, 49, 66, 73, 76, 77
671	54, 66, 74
672	60
673	12
674	31
675	32
686	83
696	22, 23
701	22
702	22
703	23
704	23
716	18, 22, 32
717	17, 21, 31
724	83
725	83
726	66, 67
727	67
728	66, 67
729	67
730	68

TABLE VII (CONT) SER-72011

Run	Figures	Run	Figures	Run	Figures
731	66,69	772	18	940	41
732	70	773	17		
733	70			942	41,64,65,66
734	66,69	791	34	943	64,65
735	68			944	64,65
736	50,76,77,60	793	82	945	59
737	50 ,60			946	59
738	50 ,60	910	13,76,77,79	947	59
739	50 ,60			948	66
740	49	912	33,39,44,56,66,79	949	66
741	54			950	66
742	54			951	58,39,81
743	49	915	40	952	66
744	49	916	40,44	953	66
745	54	917	40	954	66
746	74	918	40	955	66
747	66,73	919	40	956	77
748	66 73	920	40	957	77
749	66,74			958	77
750	74	922	59,63,66	959	77
751	73	923	39,57,62,80	960	77 ,81
752	54,66,74	924	57	961	77
753	72	925	57	962	77
754	71	926	57	963	77,80
755	71			964	77
756	72	929	76	965	62,63
757	72	930	76	966	62
758	71	931	76		
759	48	932	76	968	39,62
760	48	933	76	969	41
	13	934	76	970	76,80
762	68	935	76,81	971	76
763	17	936	76	972	76
764	18	937	58	973	76
		938	58	974	76
		939	58	975	76

TABLE VII (CONT)

Run	Figures	Run	Figures	Run	Figures
978	76	1014	39, 55, 78	1050	93, 99
979	76	1015	55	1051	98, 95
980	76, 79	1016	55	1052	97, 96
981	76	1017	41, 42	1053	95
982	76	1018	42	1054	96
983	76	1019	40	1055	95
984	76	1020	43	1056	95, 98, 99
985	76	1021	43	1057	99
986	76	1022	34, 41, 43, 66, 82, 84	1058	99
987	76	1023	84	1059	99
988	76	1024	84	1060	97
989	76, 78	1025	84	1061	97
990	76	1026	84	1062	98
991	76	1027	82	1063	33
992	45	1028	82	1064	34
993	45	1029	82	1065	59
994	76, 77	1030	82		
995	13	1031	30	1069	33
996	76, 77, 99	1032	33, 56	1070	34
997	77	1033	56	1071	33
998	77	1034	56	1072	34
999	77	1035	63	1073	33
1000	77	1036	76	1074	33
1001	77, 79	1037	47	1075	34
1002	77	1038	47	1076	21
1003	77	1039	52	1077	19, 20, 22, 23
1004	77	1040	52	1078	19, 20
1005	77	1041	50	1079	19, 20
1006	77	1042	50	1080	16
1007	77	1043	53		
008	77	1044	53	1082	21
1009	77	1045	93	1083	21
1010	77, 78			1084	21
		1047	93	1085	24, 28, 91
1012	77	1048	94	1086	16
1013	55	1049	94	1087	25, 26, 29, 92

TABLE VII (CONT) SER-72011

Run	Figures
1088	25
1089	24, 28
1090	25
1091	24
1092	24
1093	26
1094	26
1095	26
1096	26
1097	26
1098	26
1099	26
1100	26
1101	26
1102	26
1103	29
1104	29
1105	29
1106	28
1107	89
1108	90
1109	90
1110	90
1111	86, 87, 90, 92
1112	86
1113	86
1114	85, 89, 91
1115	85
1116	85
1117	87
1118	87
1119	87
1120	87
1121	87
1122	87
1123	87
1124	87
1125	87
1127	92
1128	91
1129	91
1130	92

TABLE VIII
STATIC DATA ACCURACY

Without High Pressure Air

Balance Component	Ref. 3 Pitch & Yaw Runs	Ref. 5 Pitch & Yaw Runs	lbs or ft-lbs Pitch Runs Phase I	lbs or ft-lbs Pitch Runs Phase II	lbs or ft-lbs Yaw Runs Phase I	lbs or ft-lbs Yaw Runs Phase II	Parametric Form (Q=55 psf) Pitch Runs Phase I	Parametric Form (Q=55 psf) Yaw Runs Phase I
L, lb	1.3	3.9	0.6	0.5	0.7	0.5	0.4 ft^2	0.5 ft^2
D, lb	0.5	0.4	0.2	0.2	0.3	0.5	0.1 ft^2	0.2 ft^2
SF, lb	0.3	0.6	0.4	0.2	0.3	0.2	0.3 ft^2	0.2 ft^2
PM, ft-lb	2.4	2.3	1.5	1.2	4.1	4.8	5.8 ft^3	16.2 ft^3
RM, ft-lb	4.8	9.9	5.1	2.4	7.6	7.6	20.0 ft^3	29.5 ft^3
YM, ft-lb	7.4	2.4	0.9	0.8	0.9	1.4	3.4 ft^3	3.6 ft^3

With High Pressure Air

Balance Component	Previous UARL Test Pitch & Yaw Runs	Pitch Runs I	Pitch Runs II	Yaw Runs I	Yaw Runs II	Pitch Runs	Yaw Runs
L, lb	1.0	0.7	0.8	0.6	0.7	0.5 ft^2	0.4 ft^2
D, lb	0.5	0.4	0.3	0.3	0.3	0.2 ft^2	0.2 ft^2
SF, lb	0.5	0.9	0.2	0.5	0.3	0.6 ft^2	0.3 ft^2
PM, ft-lb	7.7	6.6	3.7	7.1	5.8	25.9 ft^3	27.8 ft^3
RM, ft-lb	9.5	5.3	7.4	8.0	8.4	20.5 ft^3	31.1 ft^3
YM, ft-lb	2.4	1.1	1.3	1.4	1.4	4.2 ft^3	5.5 ft^3

TABLE IX
EFFECT OF POWERED NACELLE INCIDENCE

BASELINE CONFIGURATION: $FPBN_{P5}W_7T_{10}B_T$

$i_N = -3.5°$

CONFIGURATION i_N ~ DEG	PITCHING MOMENT SLOPE CHANGE, Δm_α ~ FT^3/DEG		DRAG INCREMENT, Δf ~ FT^2, $i_W = 0°$
	$i_W = 0°$	$i_W = 15°$	
-7	-3	14	1.3
0	-3	4	1.1
5	4	27	1.6

TABLE X
EFFECT OF POWERED NACELLE CANT

BASELINE CONFIGURATION: $FPBN_{P5}W_7T_{10}B_T$

$i_N = -3.5°$, $\chi_N = 0°$, $i_W = 0°$

CONFIGURATION χ_N ~ DEG	PITCHING MOMENT SLOPE CHANGE, Δm_α ~ FT^3/DEG	DRAG INCREMENT Δf ~ FT^2
-5	26	-1.5
5	-13	2.7

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

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TABLE XI

RUN 7

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = -20 DEG, PSI = 0 DEG

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.00980	211	.98074	342	-.16562	420	.89920
104	-.37636	212	.07361	303	-.21675	421	.10618
105	-.49650	213	.11003	304	-.24534	423	-.18275
106	-.69098	214	-.00184	305	-.15956	424	-.23139
107	.47672	215	-.11979	306	-.28000	425	.05151
108	.67292	216	-.20738	307	-.30686	426	-.07082
109	-.22857	217	-.29411	308	-.32245	427	-.32591
110	-.27697	218	-.18397	309	-.11970	428	.16171
111	-.58294	219	.18201	310	-.08158	429	-.13503
112	-.64863	221	.89488	311	-.15956	430	-.32249
113	-.30722	222	-.00705	312	-.10411	431	.45497
114	.56747	223	.95125	313	-.21241	432	.11312
115	.75935	224	-.24294	314	-.21588	433	-.30248
116	-.15078	225	-.16055	315	-.23667	434	-.37623
117	-.19226	226	-.26115	316	-.25574	435	-.38409
118	-.43687	227	-.37910	317	-.06945	436	-.20531
119	-.65640	228	-.44674	318	-.11450	437	-.09251
120	-.36686	229	-.21952	319	-.12230	438	-.17060
121	.53117	230	.00856	320	-.09804	439	-.14457
122	.63835	231	-.13280	321	-.08764	440	-.16540
123	-.14127	232	-.23687	322	-.13183	441	-.14631
124	-.12571	233	-.23340	323	-.22108	442	-.10553
125	-.26832	234	-.26028	324	-.23321	443	.03329
126	-.43255	235	-.39297	325	-.06771	344	-.26099
127	-.52416	236	-.68003	326	-.03912	345	-.24539
128	-.87421	237	-.23340	327	-.12403	346	-.24539
129	-.23634	238	-.28457	329	-.04779		
130	.16470	239	-.23947	330	1.11588		
131	.10160	240	.62604	331	-.14916		
132	-.00644	241	-.23080	332	-.24274		
133	-.03150	242	-.27242	333	-.12230		
134	-.15078	243	-.35568	334	.03193		
135	-.31068	244	-.25248	335	-.09457		
136	-.36254	404	-.36495	336	-.03825		
137	-.63480	405	-.29728	337	-.05905		
138	-.69962	406	-.23914	338	-.18209		
139	-.25190	407	-.27645	339	-.22714		
140	-.07904	408	-.27125	340	-.02092		
141	-.07039	409	-.33198	341	.00680		
142	.03937	410	-.07516				
143	.13964	411	-.29814				
144	-.06607	412	-.28339				
145	-.14991	413	-.27472				
146	-.22943	414	-.31897				
147	-.39538	415	-.28079				
148	-.52243	416	-.25216				
203	-.15188	417	-.32591				
204	-.00098	418	-.08318				
205	.01723						

PSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = -15 DEG, PSI = 0 DEG

RUN 7

COCKPIT TAP NO.	COCKPIT CP	FUSELAGE TAP NO.	FUSELAGE CP	TAILCONE TAP NO.	TAILCONE CP	MAIN ROTOR PYLON TAP NO.	MAIN ROTOR PYLON CP
103	.35447	211	.95708	342	-.16439	420	.88871
104	-.31010	212	.00898	303	-.17665	421	-.11681
105	-.41839	213	.11150	304	-.11537	423	-.29219
106	-.46992	214	.0089[illegible]	305	-.17665	424	-.29302
107	.43918	215	-.09792	306	-.22830	425	-.03440
108	.59637	216	-.17591	307	-.25369	426	-.11944
109	-.21754	217	-.23023	308	-.26857	427	-.36052
110	-.27517	218	-.15751	309	-.14776	428	.10060
111	-.45070	219	.13954	310	-.09261	429	-.13347
112	-.47865	221	.85544	311	-.11012	430	-.25707
113	-.21142	222	.00723	312	-.10136	431	.41795
114	.54747	223	.90012	313	-.04358	432	.12778
115	.69418	224	-.23199	314	-.15476	433	-.29219
116	-.17562	225	-.13998	315	-.19153	434	-.38682
117	-.19570	226	-.21884	316	-.18365	435	-.40698
118	-.36338	227	-.28193	317	-.09786	436	-.21938
119	-.54240	228	-.37832	318	-.07772	437	-.09061
120	-.32408	229	-.23987	319	-.06021	438	-.18168
121	.46887	230	-.09003	320	-.05759	439	-.17467
122	.54747	231	-.12771	321	-.06697	440	-.19045
123	-.15466	232	-.24601	322	-.08910	441	-.12908
124	-.12497	233	-.20395	323	-.14864	442	-.11506
125	-.24810	234	-.20307	324	-.13288	443	.02871
126	-.33456	235	-.32312	325	-.07947	344	-.23356
127	-.42800	236	-.64382	326	-.01381	345	-.21867
128	-.76946	237	-.22673	327	-.04008	346	-.24669
129	-.23849	238	-.29771	329	-.07247		
130	.01738	239	-.18379	330	1.12078		
131	-.07519	240	.54875	331	-.09261		
132	-.03414	241	-.22060	332	-.16352		
133	-.03938	242	-.21271	333	-.10311		
134	-.12933	243	-.27580	334	.03959		
135	-.25334	244	-.27668	335	-.04446		
136	-.29526	404	-.32195	336	-.05934		
137	-.55463	405	-.25620	337	-.03045		
138	-.64982	406	-.22551	338	-.08560		
139	-.32408	407	-.22814	339	-.15739		
140	-.21754	408	-.20710	340	-.02782		
141	-.21055	409	-.27461	341	.00107		
142	.03310	410	-.08963				
143	.14401	411	-.35350				
144	-.00794	412	-.27548				
145	-.12933	413	-.30091				
146	-.17562	414	-.29915				
147	-.32495	415	-.24584				
148	-.43761	416	-.23866				
203	-.16977	417	-.25970				
204	-.07864	418	-.13873				
205	-.07689						

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TABLE XI

SSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = -10 DEG, PSI = 0 DEG

RUN 7

COCKPIT

TAP NO.	CP
103	.65075
104	-.27744
105	-.30718
106	-.25491
107	.38852
108	.48945
109	-.20985
110	-.24590
111	-.31799
112	.35674
113	-.10442
114	.52549
115	.62822
116	-.18011
117	-.19003
118	-.28194
119	-.43424
120	-.26122
121	.38672
122	.44349
123	-.20535
124	-.12695
125	-.21526
126	-.25942
127	-.36215
128	-.63116
129	-.24139
130	-.17471
131	-.28915
132	-.05215
133	-.05395
134	-.12424
135	-.19543
136	-.24319
137	-.49191
138	-.60095
139	-.41532
140	-.35674
141	-.33872
142	-.03413
143	.11457
144	-.10979
145	-.05991
146	-.14677
147	-.15645
148	-.38822
203	-.20020
204	-.17177
205	-.16042

FUSELAGE

TAP NO.	CP
211	.98611
212	-.05191
213	.06292
214	-.00851
215	-.07814
216	-.14414
217	-.16675
218	-.12606
219	.11446
221	.86766
222	-.04106
223	.91739
224	-.23456
225	-.13420
226	-.19026
227	-.20201
228	-.33222
229	-.22823
230	-.10978
231	-.18031
232	-.21015
233	-.20020
234	-.18755
235	-.25174
236	-.59986
237	-.23818
238	-.44072
239	-.26440
240	.54848
241	-.20201
242	-.21286
243	-.21467
244	-.32408
404	-.38708
405	-.34185
406	-.26767
407	-.23330
408	-.19621
409	-.22787
410	-.14012
411	-.23692
412	-.25591
413	-.22425
414	-.25229
415	-.20615
416	-.18354
417	-.22516
418	-.17178

TAILCONE

TAP NO.	CP
342	-.19195
303	-.13323
304	-.15671
305	-.20550
306	-.19285
307	-.24525
308	-.21543
309	-.19104
310	-.08896
311	-.08444
312	-.14497
313	-.09799
314	-.13865
315	-.15129
316	-.13413
317	-.11877
318	-.13503
319	-.07541
320	-.18111
321	-.07089
322	-.06999
323	-.13503
324	-.09799
325	-.07270
326	-.02482
327	-.06547
329	-.05282
330	1.14779
331	-.06547
332	-.09167
333	-.06457
334	.02577
335	-.03566
336	-.01669
337	-.00314
338	-.07722
339	-.08264
340	-.01307
341	.00680

MAIN ROTOR PYLON

TAP NO.	CP
420	.81516
421	-.42055
423	-.40970
424	-.36989
425	-.11660
426	-.16093
427	-.41603
428	.01909
429	-.15098
430	-.26315
431	.36466
432	.13941
433	-.26134
434	-.42327
435	-.41603
436	-.24144
437	-.08494
438	-.19802
439	-.21340
440	-.23963
441	-.11208
442	-.11751
443	.00462
344	-.21092
345	-.20821
346	-.21543

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TABLE XI

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = -5 DEG, PSI = 0 DEG

RUN 7

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.81660	211	.99465	342	-.11437	420	.74991
104	-.18398	212	-.06821	303	-.11165	421	-.64431
105	-.21649	213	.01969	304	-.14062	423	-.48114
106	-.12167	214	-.03649	305	-.19313	424	-.41134
107	.33979	215	-.08814	306	-.19584	425	-.17474
108	.40301	216	-.12167	307	-.24020	426	-.19196
109	-.17765	217	-.11623	308	-.21847	427	-.46482
110	-.17765	218	-.08270	309	-.20399	428	-.01609
111	-.23093	219	.09308	310	-.10531	429	-.15570
112	-.25803	221	.87414	311	-.15782	430	-.21372
113	-.03588	222	-.07364	312	-.13609	431	.34017
114	.51860	223	.91763	313	-.12251	432	.12804
115	.56465	224	-.21137	314	-.13971	433	-.23457
116	-.13160	225	-.14251	315	-.14696	434	-.40590
117	-.14876	226	-.17150	316	-.13790	435	-.43944
118	-.22461	227	-.17059	317	-.12432	436	-.26085
119	-.36729	228	-.29926	318	.00875	437	-.08136
120	-.20475	229	-.18781	319	-.06095	438	-.19559
121	.31451	230	-.11804	320	-.06095	439	-.21281
122	.35605	231	-.21318	321	-.05190	440	-.25270
123	-.19301	232	-.17150	322	-.06820	441	-.12760
124	-.12167	233	-.20231	323	-.12614	442	-.11762
125	-.17765	234	-.14160	324	-.07544	443	-.00159
126	-.21107	235	-.19868	325	-.06639	344	-.21485
127	-.30498	236	-.56747	326	-.05009	345	-.19494
128	-.59848	237	-.23312	327	-.01388	346	-.18317
129	-.22371	238	-.45602	329	-.10893		
130	-.31853	239	-.30107	330	1.12950		
131	-.44315	240	.53617	331	-.06367		
132	-.05935	241	-.21046	332	-.05281		
133	-.05845	242	-.17966	333	-.04828		
134	-.08735	243	-.18328	334	.03772		
135	-.15327	244	-.30470	335	-.01660		
136	-.22190	404	-.40046	336	-.02384		
137	-.44315	405	-.33156	337	-.01116		
138	-.54881	406	-.23094	338	-.06910		
139	-.48018	407	-.21281	339	-.02384		
140	-.46121	408	-.17564	340	-.02022		
141	-.45218	409	-.18833	341	-.00211		
142	-.06387	410	-.16658				
143	.10771	411	-.21825				
144	-.02865	412	-.23910				
145	-.09006	413	-.20646				
146	-.12257	414	-.23366				
147	-.26254	415	-.18108				
148	-.35104	416	-.17202				
203	-.21952	417	-.19015				
204	-.22315	418	-.18833				
205	-.19959						

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TABLE XI

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

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TABLE XI

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 0 DEG, PSI = 0 DEG

RUN 7

COCKPIT

TAP NO.	CP
103	.90830
104	-.09990
105	-.10174
106	-.00174
107	.28356
108	.31384
109	-.12192
110	-.13843
111	-.14119
112	-.19439
113	.02027
114	.48355
115	.49640
116	-.11550
117	-.11550
118	-.16779
119	-.29439
120	-.16687
121	.23586
122	.24136
123	-.11458
124	-.10174
125	-.13935
126	-.18247
127	-.26962
128	-.49713
129	-.17238
130	-.48704
131	-.64575
132	-.05128
133	-.04853
134	-.11183
135	-.16320
136	-.20540
137	-.39714
138	-.51548
139	-.56593
140	-.56777
141	-.57052
142	-.12651
143	.11293
144	-.06229
145	-.10816
146	-.13476
147	-.25035
148	-.33017
203	-.23324
204	-.26367
205	-.25165

FUSELAGE

TAP NO.	CP
211	.98548
212	-.07216
213	-.03350
214	-.09609
215	-.10714
216	-.12831
217	-.10345
218	-.04731
219	.05721
221	.85293
222	-.09425
223	.89896
224	-.19734
225	-.15316
226	-.15776
227	-.13107
228	-.26730
229	-.18630
230	-.10253
231	-.23785
232	-.17525
233	-.21299
234	-.13199
235	-.16973
236	-.50203
237	-.20839
238	-.40353
239	-.35199
240	.47737
241	-.20839
242	-.17433
243	-.15408
244	-.24797
404	-.41613
405	-.32404
406	-.19603
407	-.18958
408	-.15459
409	-.16472
410	-.19142
411	-.23471
412	-.26418
413	-.27983
414	-.20984
415	-.17761
416	-.17209
417	-.16656
418	-.20800

TAILCONE

TAP NO.	CP
342	-.15217
303	-.08044
304	-.17332
305	-.18160
306	-.17332
307	-.20367
308	-.19815
309	-.21931
310	-.10067
311	-.06480
312	-.04089
313	-.11538
314	-.13838
315	-.13286
316	-.12550
317	-.11906
318	-.06480
319	-.01054
320	-.09055
321	-.07676
322	-.06572
323	-.09699
324	-.07860
325	-.07124
326	-.03905
327	-.02250
329	-.03170
330	1.12432
331	-.03997
332	-.06848
333	-.03078
334	.04372
335	-.01514
336	.00141
337	-.02066
338	-.04273
339	-.01054
340	.00785
341	.01061

MAIN ROTOR PYLON

TAP NO.	CP
420	.63279
421	-.92078
423	-.55334
424	-.45941
425	-.23102
426	-.21813
427	-.51466
428	-.05973
429	-.15183
430	-.20340
431	.30587
432	.13366
433	-.20708
434	-.42810
435	-.43178
436	-.26049
437	-.09657
438	-.23563
439	-.21076
440	-.24576
441	-.14446
442	-.09012
443	-.01185
344	-.16689
345	-.16964
346	-.17608

PSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 5 DEG, PSI = 0 DEG

RUN 7

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.89565	211	.97481	342	-.17658	420	.53635
104	-.00643	212	-.06226	303	-.13879	421	-1.14827
105	-.00827	213	-.06595	304	-.10744	423	-.60088
106	.05518	214	-.18774	305	-.18857	424	-.47811
107	.19127	215	-.14807	306	-.19502	425	-.26765
108	.20415	216	-.13700	307	-.23834	426	-.22519
109	-.05701	217	-.10747	308	-.19963	427	-.56119
110	-.05701	218	-.03089	309	-.23097	428	-.08857
111	-.10206	219	.10382	310	-.13879	429	-.14304
112	-.13057	221	.83918	311	-.14247	430	-.20765
113	.02300	222	-.10932	312	-.05951	431	.26904
114	.45059	223	.87885	313	-.13418	432	.11266
115	.41932	224	-.17667	314	-.16552	433	-.17442
116	-.06620	225	-.16929	315	-.16275	434	-.45781
117	-.08735	226	-.16652	316	-.15446	435	-.43565
118	-.12045	227	-.11762	317	-.13694	436	-.28150
119	-.21701	228	-.35290	318	-.07057	437	-.09873
120	-.13149	229	-.16468	319	-.09915	438	-.27873
121	.13518	230	-.09456	320	-.14432	439	-.21873
122	.12966	231	-.28370	321	-.10191	440	-.24919
123	-.06344	232	-.16560	322	-.09454	441	-.16704
124	-.07264	233	-.24310	323	-.11482	442	-.09504
125	-.12873	234	-.15268	324	-.10007	443	-.00273
126	-.18023	235	-.15637	325	-.07518	344	-.20331
127	-.24367	236	-.44240	326	-.04660	345	-.18672
128	-.45977	237	-.18774	327	-.05213	346	-.18488
129	-.13517	238	-.34736	329	-.14800		
130	-.67127	239	-.39257	330	1.11030		
131	-.84230	240	.45350	331	-.06412		
132	-.02666	241	-.21358	332	-.04476		
133	-.03862	242	-.20989	333	-.04384		
134	-.12045	243	-.15637	334	.01424		
135	-.16919	244	-.22373	335	-.01526		
136	-.23080	404	-.40519	336	-.03278		
137	-.39080	405	-.33227	337	-.07057		
138	-.49195	406	-.14027	338	-.05213		
139	-.67127	407	-.18365	339	-.01157		
140	-.66299	408	-.16427	340	-.01803		
141	-.67035	409	-.16519	341	-.00512		
142	-.17471	410	-.17442				
143	.10300	411	-.23904				
144	-.10114	412	-.26950				
145	-.14988	413	-.27688				
146	-.16275	414	-.22519				
147	-.25103	415	-.18550				
148	-.34207	416	-.17904				
203	-.23849	417	-.19104				
204	-.28370	418	-.21781				
205	-.27724						

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TABLE XI

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 10 DEG, PSI = 0 DEG

RUN 7

COCKPIT

TAP NO.	CP
103	.80024
104	.09859
105	.10218
106	.06445
107	.10847
108	.10488
109	.02492
110	.00785
111	-.05863
112	-.09906
113	.06355
114	.41483
115	.36631
116	.00067
117	-.01012
118	-.09816
119	-.19878
120	-.10535
121	.06176
122	.01953
123	-.00652
124	-.02898
125	-.10265
126	-.21046
127	-.23382
128	-.38385
129	-.13230
130	-.79711
131	-.95883
132	.01234
133	-.01281
134	-.11613
135	-.22214
136	-.23741
137	-.33623
138	-.47549
139	-.72434
140	-.71177
141	-.71716
142	-.18890
143	.15070
144	-.10085
145	-.19878
146	-.19159
147	-.25358
148	-.35780
203	-.25675
204	-.27388
205	-.30543

FUSELAGE

TAP NO.	CP
211	.97641
212	-.01517
213	-.10441
214	-.28290
215	-.17923
216	-.15309
217	-.12334
218	.01278
219	.12095
221	.83579
222	-.09179
223	.86734
224	-.15850
225	-.21168
226	-.19275
227	-.09990
228	-.44155
229	-.12334
230	-.05754
231	-.30092
232	-.13596
233	-.25856
234	-.16391
235	-.16841
236	-.38656
237	-.16210
238	-.26036
239	-.40189
240	.44727
241	-.24143
242	-.19636
243	-.15309
244	-.22160
404	-.43407
405	-.39439
406	-.11482
407	-.18606
408	-.17524
409	-.16983
410	-.17524
411	-.22935
412	-.24649
413	-.26092
414	-.24739
415	-.18606
416	-.17885
417	-.17434
418	-.21763

TAILCONE

TAP NO.	CP
342	-.19803
303	-.22775
304	-.12778
305	-.22955
306	-.25747
307	-.23045
308	-.19803
309	-.22055
310	-.11787
311	-.07464
312	-.12868
313	-.19713
314	-.17642
315	-.13589
316	-.13318
317	-.10256
318	-.02241
319	-.04402
320	-.02601
321	-.07284
322	-.11427
323	-.13318
324	-.06924
325	-.05483
326	-.01520
327	.03613
329	-.07194
330	1.11779
331	-.06474
332	-.05393
333	-.03051
334	.03974
335	.00641
336	-.02241
337	-.07284
338	-.06294
339	.01092
340	-.01520
341	.00011

MAIN ROTOR PYLON

TAP NO.	CP
420	.44884
421	-1.33231
423	-.61174
424	-.46203
425	-.26633
426	-.20771
427	-.52516
428	-.09407
429	-.10129
430	-.18877
431	.25043
432	.11425
433	-.14818
434	-.46473
435	-.45301
436	-.26001
437	-.07333
438	-.32495
439	-.19779
440	-.24649
441	-.16171
442	-.09227
443	.03489
344	-.09806
345	-.11157
346	-.15210

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TABLE XI

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 15 DEG, PSI = 0 DEG

RUN 7

COCKPIT TAP NO.	COCKPIT CP	FUSELAGE TAP NO.	FUSELAGE CP	TAILCONE TAP NO.	TAILCONE CP	MAIN ROTOR PYLON TAP NO.	MAIN ROTOR PYLON CP
103	.61990	211	.97850	342	-.13824	420	.39337
104	.23189	212	.02045	303	-.25565	421	-1.43924
105	.20865	213	-.15447	304	-.19829	423	-.59653
106	.03432	214	-.41013	305	-.24042	424	-.43678
107	.02090	215	-.25046	306	-.25924	425	-.23575
108	.03342	216	-.18497	307	-.25296	426	-.18639
109	.13534	217	-.14730	308	-.21084	427	-.49422
110	.10941	218	.00520	309	-.20367	428	-.06882
111	-.02916	219	.10657	310	-.09164	429	-.05805
112	-.11320	221	.84574	311	-.08357	430	-.18549
113	.06561	222	-.05311	312	-.09343	431	.24708
114	.37583	223	.87444	313	-.20457	432	.13580
115	.29895	224	-.08630	314	-.19292	433	-.10652
116	.08349	225	-.22175	315	-.16961	434	-.43229
117	.07186	226	-.20291	316	-.15169	435	-.40537
118	-.07118	227	-.12128	317	-.09522	436	-.26267
119	-.71154	228	-.54559	318	.15393	437	-.07780
120	-.09800	229	-.06297	319	-.02442	438	-.31742
121	-.01575	230	-.00556	320	-.10239	439	-.21690
122	-.04883	231	-.32043	321	-.14721	440	-.24203
123	.06561	232	-.08271	322	-.15886	441	-.15139
124	.05130	233	-.30518	323	-.15886	442	-.16754
125	-.08012	234	-.18049	324	-.08716	443	.04964
126	-.23389	235	-.16075	325	-.04324	344	-.07192
127	-.24104	236	-.38860	326	-.01098	345	-.08088
128	-.33134	237	-.11500	327	.09836	346	-.09343
129	-.06671	238	-.16883	329	-.25565		
130	-.88474	239	-.40295	330	1.12456		
131	-1.06981	240	.44476	331	-.09074		
132	.09332	241	-.25584	332	-.07909		
133	.06561	242	-.21188	333	-.01008		
134	-.10158	243	-.16524	334	.05266		
135	-.26161	244	-.23072	335	.04459		
136	-.27412	404	-.45294	336	.00515		
137	-.31882	405	-.30934	337	-.11942		
138	-.45740	406	-.16126	336	-.06027		
139	-.73991	407	-.23755	339	-.00650		
140	-.72829	408	-.18460	340	-.02532		
141	-.72203	409	-.18101	341	-.01725		
142	-.19992	410	-.16754				
143	.17736	411	-.25280				
144	-.13197	412	-.25280				
145	-.28128	413	-.25819				
146	-.23121	414	-.26267				
147	-.25714	415	-.23037				
148	-.37336	416	-.19986				
203	-.23431	417	-.20075				
204	-.25584	418	-.21511				
205	-.23252						

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TABLE XI

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 20 DEG, PSI = 0 DEG

RUN 7

COCKPIT

TAP NO.	CP
103	.33386
104	.34459
105	.32403
106	-.06377
107	-.07271
108	-.03339
109	.21859
110	.19089
111	-.02982
112	-.17904
113	-.00033
114	.31778
115	.24272
116	.15872
117	.14085
118	-.05394
119	-.25768
120	-.11202
121	-.07539
122	-.12811
123	.14085
124	.13817
125	-.06288
126	-.27465
127	-.31486
128	-.29789
129	-.02714
130	-.96895
131	-1.13783
132	.16498
133	.12119
134	-.08611
135	-.36401
136	-.32023
137	-.30057
138	-.44532
139	-.77058
140	-.67318
141	-.69641
142	-.21657
143	-.20876
144	-.16028
145	-.37831
146	-.29347
147	-.27733
148	-.40690
203	-.22500
204	-.12817
205	-.13265

FUSELAGE

TAP NO.	CP
211	.99346
212	.08970
213	-.19093
214	-.55763
215	-.34694
216	-.21872
217	-.18645
218	-.09500
219	.06639
221	.85807
222	-.00265
223	.86973
224	-.04837
225	-.27700
226	-.21603
227	-.14610
228	-.71185
229	-.02148
230	.03590
231	-.33080
232	-.01968
233	-.33976
234	-.18824
235	-.18017
236	-.46797
237	-.05734
238	-.09320
239	-.42135
240	.45192
241	-.30300
242	-.23666
243	-.18914
244	-.27700
404	-.37713
405	-.35112
406	-.26590
407	-.29820
408	-.21029
409	-.21388
410	-.16365
411	-.22375
412	-.26770
413	-.36278
414	-.36637
415	-.30448
416	-.22823
417	-.22375
418	-.19325

TAILCONE

TAP NO.	CP
342	-.20872
303	-.13795
304	-.10839
305	-.32248
306	-.24365
307	-.26067
308	-.23111
309	-.20245
310	.30008
311	.04837
312	-.15318
313	-.25082
314	-.24097
315	-.17289
316	-.16572
317	-.11645
318	.24903
319	.16751
320	-.06091
321	-.28038
322	-.20603
323	-.17020
324	-.12272
325	-.06002
326	-.03942
327	.15318
329	-.11377
330	1.12510
331	-.14243
332	-.14333
333	-.05016
334	.03404
335	.05464
336	.02508
337	-.17737
338	-.06718
339	-.00896
340	.00179
341	-.02687

MAIN ROTOR PYLON

TAP NO.	CP
420	.42837
421	-1.37997
423	-.56640
424	-.40584
425	-.22105
426	-.14660
427	-.43813
428	-.05332
429	-.02730
430	-.17172
431	.26063
432	.14402
433	-.15737
434	-.41211
435	-.40045
436	-.32242
437	-.06857
438	-.30986
439	-.28026
440	-.23720
441	-.14033
442	-.21029
443	.04715
344	-.03225
345	-.01613
346	-.00896

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TABLE XI

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 24 DEG, PSI = 0 DEG

RUN 7

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.05050	211	1.01298	342	-.00397	420	.54671
104	.44044	212	.14392	303	-.07873	421	-1.23009
105	.37395	213	-.22660	304	-.31202	423	-.52117
106	-.19388	214	-.69720	305	-.31202	424	-.36424
107	-.14716	215	-.41863	306	-.35075	425	-.18024
108	-.09865	216	-.26266	307	-.28950	426	-.13334
109	.29758	217	-.24914	308	-.26968	427	-.35522
110	.24368	218	-.21308	309	-.23546	428	-.03323
111	-.09865	219	-.09138	310	.25994	429	-.00437
112	-.24510	221	.87054	311	.25093	430	-.15589
113	-.04114	222	.04295	312	-.04811	431	.26982
114	.26075	223	.89308	313	-.32102	432	.16069
115	.19516	224	-.00122	314	-.30301	433	-.27224
116	.23918	225	-.32487	315	-.24626	434	-.39220
117	.19875	226	-.25816	316	-.20933	435	-.37145
118	-.09056	227	-.17432	317	-.12016	436	-.37671
119	-.32956	228	-.66745	318	.18518	437	-.06029
120	-.11392	229	.00599	319	.15815	438	-.29749
121	-.13099	230	.05828	320	-.03460	439	-.32455
122	-.17232	231	-.37355	321	-.41560	440	-.27224
123	.20953	232	.03509	322	-.26878	441	-.09907
124	.18707	233	-.[illegible]3167	323	-.20393	442	-.20279
125	-.07618	234	-.23472	324	-.21204	443	-.10358
126	-.38706	235	-.20857	325	-.05982	344	.01674
127	-.39155	236	-.52501	326	-.07603	345	-.00217
128	-.29092	237	-.02196	327	.17167	346	-.01208
129	.01097	238	-.03729	329	-.26338		
130	-1.02857	239	-.45198	330	1.12281		
131	-1.19030	240	.44954	331	-.13007		
132	.21672	241	-.34921	332	-.14268		
133	.18078	242	-.26537	333	-.06162		
134	-.09415	243	-.20497	334	-.00037		
135	-.45534	244	-.25094	335	.05728		
136	-.37717	404	-.31734	336	.04016		
137	-.29451	405	-.35251	337	-.25617		
138	-.47241	406	-.38859	338	-.10985		
139	-.77520	407	-.37506	339	-.03550		
140	-.69434	408	-.26683	340	-.02649		
141	-.61707	409	-.24248	341	-.02289		
142	-.21904	410	-.18205				
143	.24457	411	-.22805				
144	-.17502	412	-.28848				
145	-.50386	413	-.36514				
146	-.37987	414	-.45353				
147	-.29811	415	-.37686				
148	-.44726	416	-.24953				
203	-.22210	417	-.24503				
204	-.09047	418	-.22714				
205	-.05261						

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TABLE XI

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 0 DEG, PSI = -20 DEG

RUN 8

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TABLE XII

COCKPIT

TAP NO.	CP
103	.61892
104	-.26328
105	-.23974
106	.41715
107	.32305
108	.08055
109	-.26961
110	-.30219
111	-.12394
112	.19547
113	.48682
114	.52573
115	.23347
116	-.26919
117	-.30309
118	-.28909
119	.07422
120	.41443
121	.20632
122	.01993
123	-.32209
124	-.25514
125	-.29133
126	-.10765
127	.04798
128	.10046
129	-.27052
130	-.56187
131	-.71750
132	-.20718
133	-.20266
134	-.23976
135	-.07146
136	.05160
137	.02988
138	-.01988
139	-.59264
140	-.58359
141	-.62612
142	.21718
143	-.00812
144	-.17913
145	-.02893
146	.07512
147	.03169
148	-.06512
203	-.30735
204	-.28646
205	-.37725

FUSELAGE

TAP NO.	CP
211	.74762
212	-.23744
213	.14296
214	.18473
215	.12935
216	.11210
217	.08668
218	-.05586
219	.08395
221	.63958
222	-.15845
223	.65864
224	-.24831
225	.05762
226	.05581
227	.10120
228	.26008
229	-.27375
230	-.08128
231	-.11033
232	-.26921
233	-.02136
234	.07124
235	.06943
236	-.13031
237	-.33004
238	-.36908
239	-.24833
240	.58420
241	-.05132
242	.02676
243	.07750
244	-.00774
404	-.67215
405	-.61856
406	-.35879
407	-.13807
408	-.00637
409	.01271
410	-.00546
411	-.28885
412	-.36[illegible]24
413	-.51049
414	-.38967
415	-.14261
416	-.03453
417	-.03453
418	-.06995

TAILCONE

TAP NO.	CP
342	-.24907
303	-.35610
304	-.47221
305	-.41415
306	-.21460
307	-.15927
308	-.11664
309	-.15836
310	-.20190
311	-.28082
312	-.42050
313	-.34794
314	-.24272
315	-.13206
316	-.10394
317	-.12933
318	-.15655
319	-.24272
320	-.41325
321	-.30984
322	-.16380
323	-.13206
324	-.07038
325	-.11936
326	-.12389
327	-.16380
329	-.42323
330	.89384
331	-.06130
332	-.09668
333	-.13296
334	-.07310
335	-.13750
336	-.23637
337	-.13024
338	-.08307
339	-.02230
340	-.05949
341	-.06312

MAIN ROTOR PYLON

TAP NO.	CP
420	.62762
421	-.80295
423	-.82021
424	-.39875
425	-.61675
426	-.17985
427	-.13171
428	-.64763
429	.07174
430	-.05814
431	-.04633
432	-.35606
433	.07810
434	-.65217
435	-.64763
436	-.11082
437	-.47868
438	-.85835
439	-.10901
440	-.19711
441	-.52501
442	-.05178
443	-.05905
344	-.27089
345	-.27991
346	-.28535

ASRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS ALPHA = 0 DEG, PSI = -15 DEG

RUN 8

COCKPIT

TAP NO.	CP
103	.75190
104	-.18092
105	-.15316
106	.33921
107	.35443
108	.18523
109	-.19613
110	-.21851
111	-.08602
112	.10197
113	.41261
114	.57284
115	.33921
116	-.19613
117	-.20867
118	-.18987
119	.00708
120	.34726
121	.27028
122	.11630
123	-.23373
124	-.17284
125	-.20598
126	-.07080
127	-.01709
128	-.03320
129	-.25790
130	-.49872
131	-.66791
132	-.12899
133	-.11967
134	-.13347
135	-.06096
136	-.03032
137	-.07707
138	-.11109
139	-.53542
140	-.54706
141	-.59361
142	.15390
143	.07512
144	-.05111
145	-.01172
146	.02857
147	-.03320
148	-.12989
203	-.24045
204	-.27817
205	-.30242

FUSELAGE

TAP NO.	CP
211	.72248
212	-.13984
213	.15838
214	.12694
215	.04879
216	.02184
217	.05059
218	.03262
219	.13682
221	.61199
222	-.08056
223	.63894
224	-.25751
225	-.00510
226	.00747
227	.04784
228	.14041
229	-.25482
230	.00478
231	-.06888
232	-.26829
233	-.08235
234	.01106
235	.00747
236	-.15062
237	-.29075
238	-.35362
239	-.22338
240	.54283
241	-.11110
242	-.04642
243	.00208
244	-.00690
404	-.54025
405	-.55103
406	-.32187
407	-.17269
408	-.05497
409	-.04778
410	-.04329
411	-.29671
412	-.35422
413	-.39466
414	-.32007
415	-.15652
416	-.08732
417	-.07794
418	-.11428

TAILCONE

TAP NO.	CP
342	-.19989
303	-.25553
304	-.38027
305	-.32822
306	-.21963
307	-.20168
308	-.14514
309	-.19540
310	-.14245
311	-.19899
312	-.28424
313	-.27886
314	-.22771
315	-.14873
316	-.12181
317	-.12809
318	-.11732
319	-.15142
320	-.26271
321	-.20617
322	-.13976
323	-.12809
324	-.07065
325	-.09130
326	-.09040
327	-.09578
329	-.23219
330	.87974
331	-.07783
332	-.09040
333	-.07873
334	-.04463
335	-.08501
336	-.12001
337	-.09399
338	-.08322
339	-.02130
340	-.04822
341	-.03476

MAIN ROTOR PYLON

TAP NO.	CP
420	.63520
421	-.82422
423	-.68852
424	-.34164
425	-.44139
426	-.11338
427	-.19876
428	-.38927
429	.08702
430	-.06216
431	.10229
432	-.09541
433	.01153
434	-.56092
435	-.59237
436	-.16371
437	-.39824
438	-.59686
439	-.16961
440	-.21313
441	-.43510
442	-.07384
443	-.04419
344	-.26899
345	-.25642
346	-.25822

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TABLE XII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 0 DEG, PSI = -10 DEG

RUN 8

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.85321	211	.71275	342	-.22606	420	.63072
104	-.15241	212	-.07689	303	-.20060	421	-.90949
105	-.11976	213	.12681	304	-.22969	423	-.64365
106	.21030	214	.06403	305	-.26424	424	-.35874
107	.34632	215	-.02058	306	-.22878	425	-.34235
108	.24657	216	-.05152	307	-.23424	426	-.12935
109	-.16782	217	-.03423	308	-.18424	427	-.29502
110	-.18596	218	-.02331	309	-.21333	428	-.23903
111	-.11523	219	.12590	310	-.10607	429	.02813
112	.00628	221	.54902	311	-.15243	430	-.11752
113	.29917	222	-.05607	312	-.22424	431	.19106
114	.59327	223	.63268	313	-.21969	432	.09184
115	.42684	224	-.25896	314	-.21151	433	-.05835
116	-.17870	225	-.07608	315	-.17151	434	-.50711
117	-.16964	226	-.09246	316	-.13515	435	-.48435
118	-.17870	227	-.03696	317	-.13334	436	-.22948
119	-.09981	228	.03997	318	-.15515	437	-.34963
120	.20849	229	-.25532	319	-.16424	438	-.45340
121	.28284	230	-.01057	320	-.17333	439	-.19489
122	.17766	231	-.09883	321	-.15970	440	-.23949
123	-.13609	232	-.25441	322	-.12879	441	3052
124	-.14606	233	-.15342	323	-.10061	442	-.12116
125	-.16238	234	-.06789	324	-.08879	443	-.04834
126	-.13045	235	-.08154	325	-.09152	344	-.24604
127	-.11614	236	-.19345	326	-.07152	345	-.26060
128	-.22132	237	-.29263	327	-.10970	346	-.26519
129	-.23764	238	-.40727	329	-.12334		
130	-.50514	239	-.268[illegible]	330	.87841		
131	-.68015	240	.52350	331	-.07789		
132	-.09256	241	-.17253	332	-.07334		
133	-.08621	242	-.11703	333	-.05789		
134	-.10888	243	-.07972	334	.00665		
135	-.09437	244	-.06971	335	-.10697		
136	-.10254	404	-.49072	336	-.08152		
137	-.21226	405	-.44885	337	-.07516		
138	-.26848	406	-.30230	338	-.09152		
139	-.53144	407	-.20854	339	-.01880		
140	-.57406	408	-.11661	340	-.04334		
141	-.59673	409	-.11114	341	-.02607		
142	.08335	410	-.10113				
143	.11146	411	-.31140				
144	-.02727	412	-.32141				
145	-.04269	413	-.30321				
146	-.05720	414	-.24320				
147	-.14153	415	-.18397				
148	-.21498	416	-.13936				
203	-.19982	417	-.13572				
204	-.22712	418	-.15393				
205	-.27534						

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TABLE XII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 0 DEG, PSI = -5 DEG

RUN 8

COCKPIT

TAP NO.	CP
103	.89904
104	-.10942
105	-.09320
106	.12219
107	.32046
108	.29437
109	-.13466
110	-.14547
111	-.11032
112	-.08419
113	.16815
114	.54486
115	.47096
116	-.11753
117	-.12384
118	-.13285
119	-.17071
120	.02756
121	.27179
122	.21952
123	-.11393
124	-.11573
125	-.11663
126	-.12745
127	-.20495
128	-.38159
129	-.19594
130	-.48703
131	-.64925
132	-.03823
133	-.05715
134	-.09951
135	-.11934
136	-.16259
137	-.32391
138	-.40142
139	-.53840
140	-.54922
141	-.56183
142	.04288
143	.12579
144	-.02741
145	-.07157
146	-.09681
147	-.19684
148	-.26984
203	-.17812
204	-.22695
205	-.25770

FUSELAGE

TAP NO.	CP
211	.71891
212	-.04339
213	.07597
214	-.01626
215	-.07052
216	-.09584
217	-.05424
218	.00544
219	.14560
221	.60768
222	-.04791
223	.63390
224	-.21068
225	-.10307
226	-.11392
227	-.07323
228	-.10849
229	-.20616
230	-.04972
231	-.15461
232	-.20254
233	-.18807
234	-.10578
235	-.11663
236	-.29749
237	-.25227
238	-.41414
239	-.28663
240	.51454
241	-.17903
242	-.12568
243	-.10849
244	-.14105
404	-.43376
405	-.35686
406	-.24559
407	-.20578
408	-.14245
409	-.13703
410	-.13974
411	-.25283
412	-.28449
413	-.24559
414	-.24830
415	-.18588
416	-.15331
417	-.15150
418	-.18497

TAILCONE

TAP NO.	CP
342	-.17259
303	-.13555
304	-.14820
305	-.20873
306	-.20421
307	-.22499
308	-.19247
309	-.23493
310	-.09399
311	-.15337
312	-.15091
313	-.13736
314	-.18434
315	-.17078
316	-.13916
317	-.12200
318	-.07140
319	-.06598
320	-.09399
321	-.09399
322	-.09580
323	-.13284
324	-.08496
325	-.06327
326	-.03256
327	-.06147
329	-.05153
330	.87451
331	-.06960
332	-.06147
333	-.04520
334	.02707
335	-.03075
336	-.06056
337	-.03165
338	-.05785
339	-.02171
340	-.02081
341	-.00365

MAIN ROTOR PYLON

TAP NO.	CP
420	.63285
421	-.91414
423	-.57851
424	-.36862
425	-.23021
426	-.12798
427	-.40210
428	-.09903
429	-.01942
430	-.14879
431	.28093
432	.17961
433	-.14879
434	-.47899
435	-.45638
436	-.24559
437	-.29082
438	-.31887
439	-.19854
440	-.24378
441	-.19854
442	-.09541
443	-.03208
344	-.21596
345	-.20331
346	-.20873

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TABLE XII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 0 DEG, PSI = 0 DEG

RUN 8

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TABLE XII

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.90605	211	.70957	342	-.21157	420	.64189
104	-.09740	212	-.07483	303	-.12340	421	-.92403
105	-.10188	213	-.02710	304	-.15669	423	-.56003
106	-.00226	214	-.09464	305	-.18458	424	-.44200
107	.26970	215	-.11626	306	-.18818	425	-.22216
108	.31009	216	-.13787	307	-.22507	426	-.21586
109	-.12163	217	-.09644	308	-.18998	427	-.51408
110	-.13509	218	-.03701	309	-.21157	428	-.06359
111	-.14048	219	.10528	310	-.10630	429	-.14468
112	-.17997	221	.59160	311	-.06851	430	-.19784
113	.02108	222	-.10365	312	-.04871	431	.30942
114	.49049	223	.62222	313	-.11980	432	.15265
115	.48960	224	-.21802	314	-.15129	433	-.18883
116	-.11176	225	-.15678	315	-.15669	434	-.43930
117	-.11894	226	-.15048	316	-.13869	435	-.42759
118	-.14945	227	-.13067	317	-.13689	436	-.25640
119	-.29216	228	-.27566	318	-.07661	437	-.24379
120	-.15843	229	-.19100	319	-.06401	438	-.23027
121	.23380	230	-.10545	320	-.19628	439	-.21405
122	.22931	231	-.24324	321	-.09550	440	-.23748
123	-.10368	232	-.18380	322	-.07841	441	-.15729
124	-.10637	233	-.20631	323	-.10630	442	-.09512
125	-.14138	234	-.15498	324	-.08111	443	-.02124
126	-.16561	235	-.17029	325	-.07121	344	-.19808
127	-.26972	236	-.50621	326	-.04332	345	-.19268
128	-.51834	237	-.20721	327	-.03702	346	-.20347
129	-.18535	238	-.43956	329	-.10990		
130	-.49411	239	-.34951	330	.86635		
131	-.65028	240	.49073	331	-.03882		
132	-.03457	241	-.19821	332	-.05141		
133	-.04085	242	-.17569	333	-.03882		
134	-.09022	243	-.16939	334	.01877		
135	-.14048	244	-.25855	335	-.02622		
136	-.19702	404	-.39065	336	-.00912		
137	-.39628	405	-.34560	337	-.03072		
138	-.50757	406	-.20504	338	-.04692		
139	-.56412	407	-.19874	339	-.01092		
140	-.56053	408	-.16090	340	-.00823		
141	-.57758	409	-.16810	341	-.00373		
142	.00672	410	-.17892				
143	.10455	411	-.20504				
144	-.06329	412	-.26271				
145	-.10637	413	-.23568				
146	-.14048	414	-.20144				
147	-.25267	415	-.16991				
148	-.33794	416	-.17171				
203	-.23063	417	-.17711				
204	-.24954	418	-.20775				
205	-.24954						

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 0 DEG, PSI = 5 DEG

RUN 8

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.86073	211	.70438	342	-.19997	420	.62712
104	-.12660	212	-.14567	303	-.15556	421	-.91674
105	-.13112	213	-.18196	304	-.14196	423	-.59182
106	-.11484	214	-.20282	305	-.16191	424	-.57366
107	.17991	215	-.15744	306	-.17369	425	-.25509
108	.26942	216	-.15565	307	-.21629	426	-.35856
109	-.13564	217	-.15383	308	-.18728	427	-.61269
110	-.15824	218	-.17473	309	-.21629	428	-.12530
111	-.19361	219	.01581	310	-.11205	429	-.32679
112	-.27669	221	.58282	311	-.10843	430	-.33768
113	-.15644	222	-.18377	312	-.13290	431	.29675
114	.36345	223	.62274	313	-.10390	432	-.09081
115	.46833	224	-.20827	314	-.13562	433	-.27415
116	-.12298	225	-.17470	315	-.12656	434	-.46475
117	-.14559	226	-.18468	316	-.12837	435	-.50831
118	-.20164	227	-.18377	317	-.12293	436	-.31408
119	-.36529	228	-.44777	318	-.10118	437	-.25418
120	-.39423	229	-.19557	319	-.10208	438	-.23149
121	.15640	230	-.21915	320	-.17188	439	-.25327
122	.21698	231	-.39334	321	-.09393	440	-.24783
123	-.10852	232	-.20645	322	-.08033	441	-.20063
124	-.12931	233	-.23276	323	-.09211	442	-.10896
125	-.19170	234	-.17561	324	-.07398	443	-.03907
126	-.24685	235	-.22641	325	-.07217	344	-.21901
127	-.32642	236	-.68364	326	-.07127	345	-.18456
128	-.66005	237	-.23548	327	-.06220	346	-.20360
129	-.20868	238	-.50129	329	-.13834		
130	-.52804	239	-.47136	330	.86232		
131	-.68084	240	.45581	331	-.04045		
132	-.07958	241	-.22822	332	-.05042		
133	-.08772	242	-.20282	333	-.04407		
134	-.16548	243	-.22369	334	.00578		
135	-.21882	244	-.40674	335	-.04770		
136	-.26674	404	-.42391	336	-.07127		
137	-.47741	405	-.33859	337	-.06220		
138	-.63654	406	-.17703	338	-.04317		
139	-.66186	407	-.20063	339	-.02232		
140	-.61755	408	-.18611	340	-.01779		
141	-.58139	409	-.19428	341	-.01326		
142	-.04703	410	-.17068				
143	.05061	411	-.21515				
144	-.15824	412	-.27233				
145	-.16909	413	-.29048				
146	-.17723	414	-.22695				
147	-.28754	415	-.16977				
148	-.40508	416	-.16977				
203	-.31169	417	-.18974				
204	-.29536	418	-.20244				
205	-.25363						

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TABLE XII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 0 DEG, PSI = 10 DEG

RUN 8

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.79766	211	.68272	342	-.17936	420	.63572
104	-.15770	212	-.24073	303	-.13885	421	-.88849
105	-.172[illegible]6	213	-.35065	304	-.19376	423	-.58469
106	-.20618	214	-.28037	305	-.17215	424	-.73521
107	.06408	215	-.17767	306	-.19106	425	-.34133
108	.23827	216	-.15785	307	-.20906	426	-.50267
109	-.17296	217	-.17136	308	-.17395	427	-.59280
110	-.17655	218	-.29929	309	-.20546	428	-.20613
111	-.23402	219	-.05965	310	-.12086	429	-.48104
112	-.33009	221	.56289	311	-.09384	430	-.56847
113	-.31932	222	-.28668	312	-.15325	431	.27429
114	.23468	223	.58812	313	-.08664	432	-.36927
115	.42144	224	-.20199	314	-.13345	433	-.35395
116	-.16039	225	-.18488	315	-.12265	434	-.49005
117	-.18464	226	-.17947	316	-.09114	435	-.46842
118	-.27263	227	-.21731	317	-.11005	436	-.33953
119	-.39744	228	-.61101	318	-.07494	437	-.29716
120	-.60036	229	-.21010	319	-.05424	438	-.27824
121	.05241	230	-.33173	320	-.03354	439	-.23767
122	.17542	231	-.53444	321	-.07674	440	-.22596
123	-.15321	232	-.20740	322	-.08754	441	-.30437
124	-.15590	233	-.25064	323	-.09924	442	-.10968
125	-.26096	234	-.21371	324	-.05334	443	-.03307
126	-.29957	235	-.27857	325	-.07044	344	-.17765
127	-.35754	236	-.81192	326	-.09474	345	-.21536
128	-.76[illegible]16	237	-.24794	327	-.08214	346	-.20366
129	-.19810	238	-.55606	329	-.05874		
130	-.55008	239	-.58399	330	.85308		
131	-.68656	240	.42055	331	-.02183		
132	-.10562	241	-.21280	332	-.03083		
133	-.14423	242	-.24524	333	-.04794		
134	-.25826	243	-.26326	334	-.04074		
135	-.25557	244	-.52543	335	-.04074		
136	-.30046	404	-.31339	336	-.02813		
137	-.51775	405	-.35034	337	-.04344		
138	-.71888	406	-.17999	338	-.03984		
139	-.71888	407	-.17278	339	-.00113		
140	-.64885	408	-.15926	340	-.03984		
141	-.59587	409	-.20162	341	-.03083		
142	-.08317	410	-.16467				
143	-.01763	411	-.28094				
144	-.25647	412	-.25660				
145	-.21786	413	-.25480				
146	-.19631	414	-.23587				
147	-.30405	415	-.15836				
148	-.41270	416	-.16106				
203	-.38398	417	-.17728				
204	-.32902	418	-.15024				
205	-.26236						

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TABLE XII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 0 DEG, PSI = 15 DEG

RUN 8

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.69672	211	.67238	342	-.25283	420	.63070
104	-.20126	212	-.39114	303	-.20141	421	-.85872
105	-.24175	213	-.52927	304	-.18969	423	-.66001
106	-.30473	214	-.35231	305	-.16623	424	-.92827
107	-.05280	215	-.19522	306	-.16623	425	-.48930
108	.15415	216	-.18891	307	-.20863	426	-.69614
109	-.20936	217	-.19342	308	-.17074	427	-.60582
110	-.22375	218	-.47058	309	-.22126	428	-.39356
111	-.30833	219	-.18710	310	-.17074	429	-.69614
112	-.38031	221	.54508	311	-.14008	430	-.57782
113	-.51978	222	-.38211	312	-.12023	431	.18270
114	.08397	223	.57668	313	-.08596	432	-.76569
115	.34220	224	-.22953	314	-.14819	433	-.40349
116	-.21565	225	-.18891	315	-.11753	434	-.52543
117	-.24895	226	-.24578	316	-.12113	435	-.50104
118	-.34072	227	-.29724	317	-.12564	436	-.43149
119	-.44870	228	-.80372	318	-.12745	437	-.32853
120	-.82570	229	-.23134	319	-.10851	438	-.35472
121	-.07439	230	-.44982	320	-.12564	439	-.24272
122	.11366	231	-.72698	321	-.08505	440	-.24814
123	-.28764	232	-.23946	322	-.09678	441	-.36556
124	-.23095	233	-.24669	323	-.09407	442	-.14517
125	-.36682	234	-.19703	324	-.08776	443	-.05485
126	-.37581	235	-.38662	325	-.10400	344	-.26365
127	-.40101	236	-.83803	326	-.13737	345	-.23208
128	-.85989	237	-.25030	327	-.11302	346	-.23298
129	-.23995	238	-.62587	329	-.06972		
130	-.60256	239	-.70893	330	.84131		
131	-.69703	240	.38258	331	-.06070		
132	-.17067	241	-.20335	332	-.05799		
133	-.21655	242	-.24488	333	-.09498		
134	-.37761	243	-.36947	334	-.11302		
135	-.33263	244	-.63670	335	-.09227		
136	-.30113	404	-.36736	336	-.06882		
137	-.55487	405	-.41253	337	-.07423		
138	-.78701	406	-.28788	338	-.08776		
139	-.82480	407	-.17046	339	-.05980		
140	-.69793	408	-.14427	340	-.07874		
141	-.61605	409	-.21472	341	-.04537		
142	-.13737	410	-.15782				
143	-.13468	411	-.31769				
144	-.44240	412	-.27975				
145	-.30293	413	-.28607				
146	-.21745	414	-.27072				
147	-.32633	415	-.19936				
148	-.43930	416	-.15782				
203	-.52295	417	-.18311				
204	-.41190	418	-.18220				
205	-.32252						

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TABLE XII

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TABLE XII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA = 0 DEG, PSI = 20 DEG

RUN 8

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.56267	211	.64691	342	-.29035	420	.60352
104	-.25766	212	-.57604	303	-.23547	421	-.83081
105	-.32318	213	-.75885	304	-.18958	423	-.78396
106	-.37164	214	-.49769	305	-.18328	424	-1.11912
107	-.20381	215	-.23293	306	-.23187	425	-.64161
108	.05737	216	-.21672	307	-.22287	426	-.88127
109	-.28369	217	-.23293	308	-.16439	427	-.63080
110	-.32677	218	-.67600	309	-.24536	428	-.63440
111	-.38870	219	-.31848	310	-.21297	429	-.89298
112	-.42191	221	.52803	311	-.20218	430	-.73891
113	-.68398	222	-.52381	312	-.17698	431	.08006
114	-.12393	223	.53704	313	-.15989	432	-1.24165
115	.22251	224	-.23113	314	-.16979	433	-.45601
116	-.28010	225	-.20411	315	-.15539	434	-.56413
117	-.33754	226	-.22212	316	-.13200	435	-.58305
118	-.45063	227	-.48148	317	-.19138	436	-.49295
119	-.48114	228	-.88043	318	-.20937	437	-.39925
120	-1.07530	229	-.22573	319	-.14459	438	-.43439
121	-.24599	230	-.57424	320	-.13830	439	-.32537
122	.02954	231	-.88313	321	-.09601	440	-.30195
123	-.36357	232	-.24734	322	-.11580	441	-.49295
124	-.32318	233	-.25004	323	-.13650	442	-.17671
125	-.50896	234	-.20591	324	-.10411	443	-.11995
126	-.46319	235	-.62917	325	-.16979	344	-.22107
127	-.41742	236	-.73634	326	-.16619	345	-.21477
128	-.92272	237	-.25364	327	-.16439	346	-.20308
129	-.23343	238	-.64448	329	-.15719		
130	-.64898	239	-.80298	330	.83432		
131	-.68936	240	.33081	331	-.08611		
132	-.25497	241	-.19871	332	-.13740		
133	-.31779	242	-.26715	333	-.15539		
134	-.53589	243	-.64088	334	-.12840		
135	-.41024	244	-.88493	335	-.12030		
136	-.30882	404	-.25600	336	-.12750		
137	-.54217	405	-.51277	337	-.08881		
138	-.82668	406	-.31816	338	-.11940		
139	-.93708	407	-.22266	339	-.11400		
140	-.72078	408	-.13707	340	-.08881		
141	-.63641	409	-.19023	341	-.08341		
142	-.19573	410	-.03436				
143	-.26305	411	-.35510				
144	-.60500	412	-.34429				
145	-.35998	413	-.35240				
146	-.21907	414	-.33708				
147	-.32587	415	-.24609				
148	-.40306	416	-.15689				
203	-.66790	417	-.16861				
204	-.49139	418	-.28393				
205	-.37522						

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TABLE XIII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 10

ALPHA=-10 DEG, PSI=-20 DEG

COCKPIT

TAP NO.	CP
103	.40361
104	-.42075
105	-.54625
106	.15802
107	.55530
108	.25192
109	-.33768
110	-.50111
111	-.54174
112	-.04333
113	.55530
114	.68441
115	.35034
116	-.32414
117	-.42707
118	-.62210
119	-.11647
120	.53905
121	.44966
122	.23115
123	-.31962
124	-.35845
125	-.58237
126	-.42797
127	-.13182
128	.04606
129	-.31782
130	-.20044
131	-.39005
132	-.20405
133	-.28531
134	-.48666
135	-.35935
136	-.11015
137	-.01534
138	.03161
139	-.27448
140	-.35574
141	-.43339
142	.32054
143	-.04965
144	-.34039
145	-.26906
146	-.03611
147	.02800
148	.01626
203	-.05122
204	-.14997
205	-.26413

FUSELAGE

TAP NO.	CP
211	.41535
212	-.33932
213	-.00774
214	.03303
215	.04209
216	.12182
217	.15896
218	.14175
219	.16802
221	.34196
222	-.11645
223	.35646
224	-.26231
225	-.00774
226	.03847
227	.13269
228	.29667
229	-.27047
230	-.02857
231	-.17081
232	-.25869
233	-.12732
234	.04662
235	.07380
236	.01038
237	-.30489
238	-.54679
239	-.43807
240	.31207
241	-.15360
242	-.00955
243	.08558
244	.12272
404	-.62633
405	-.61001
406	-.56923
407	-.28916
408	-.03628
409	-.01090
410	.05527
411	-.41061
412	-.42692
413	-.56288
414	-.67527
415	-.29913
416	-.08159
417	-.05168
418	-.03809

TAILCONE

TAP NO.	CP
342	-.35174
303	-.40605
304	-.40243
305	-.65225
306	-.35084
307	-.20692
308	-.12545
309	-.16347
310	-.24493
311	-.31101
312	-.37799
313	-.53458
314	-.37075
315	-.15170
316	-.10644
317	-.13993
318	-.21054
319	-.27028
320	-.17071
321	-.37346
322	-.26304
323	-.14627
324	-.06390
325	-.11278
326	-.15623
327	-.24946
329	-.29743
330	.62311
331	-.10101
332	-.07838
333	-.12545
334	-.08110
335	-.16799
336	-.17976
337	-.17433
338	-.10101
339	-.02226
340	-.10101
341	-.13993

MAIN ROTOR PYLON

TAP NO.	CP
420	.78037
421	-.29822
423	-.65352
424	-.26650
425	-.50759
426	-.08159
427	.01358
428	-.56379
429	.19485
430	.08790
431	.00723
432	-.08794
433	.09152
434	-.67890
435	-.59823
436	-.10697
437	-.47406
438	-.63992
439	-.15954
440	-.18673
441	-.37164
442	-.11150
443	-.07797
344	-.25579
345	-.28023
346	-.25398

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TABLE XIII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 10

ALPHA=-10 DEG, PSI=-15 DEG

COCKPIT

TAP NO.	CP
103	.51919
104	-.35828
105	-.46188
106	.04983
107	.55703
108	.36784
109	-.26999
110	-.41233
111	-.47719
112	-.15287
113	.41739
114	.69486
115	.48856
116	-.27089
117	-.34386
118	-.54476
119	-.21954
120	.39937
121	.48315
122	.30208
123	-.27179
124	-.27630
125	-.47359
126	-.38891
127	-.22945
128	-.14837
129	-.25377
130	-.16819
131	-.36188
132	-.15017
133	-.18891
134	-.33395
135	-.30422
136	-.17269
137	-.16368
138	-.14116
139	-.27269
140	-.32765
141	-.39611
142	.23631
143	.02100
144	-.20513
145	-.23846
146	-.09432
147	-.07360
148	-.09882
203	-.05988
204	-.15208
205	-.22982

FUSELAGE

TAP NO.	CP
211	.40022
212	-.21265
213	.07661
214	.04950
215	-.01468
216	.01515
217	.05673
218	.09740
219	.19322
221	.32520
222	-.01559
223	.34689
224	-.22078
225	-.06350
226	-.02192
227	.03232
228	.23209
229	-.25152
230	.05582
231	-.13491
232	-.25604
233	-.16745
234	-.03276
235	-.01649
236	-.06530
237	-.27863
238	-.48202
239	-.35547
240	.28000
241	-.19186
242	-.08429
243	-.03186
244	.02147
404	-.58306
405	-.54146
406	-.47182
407	-.28824
408	-.10014
409	-.08567
410	-.00699
411	-.33436
412	-.43203
413	-.46640
414	-.59301
415	-.30814
416	-.14264
417	-.12184
418	-.08838

TAILCONE

TAP NO.	CP
342	-.16645
303	-.31908
304	-.34978
305	-.53402
306	-.34165
307	-.24050
308	-.17999
309	-.19806
310	-.15200
311	-.26489
312	-.21612
313	-.38591
314	-.33804
315	-.20167
316	-.14387
317	-.15832
318	-.17909
319	-.20618
320	-.18812
321	-.27392
322	-.24231
323	-.17728
324	-.09058
325	-.11136
326	-.12490
327	-.18903
329	-.19806
330	.60843
331	-.12581
332	-.10774
333	-.09962
334	-.08065
335	-.14568
336	-.12761
337	-.12761
338	-.10142
339	-.04182
340	-.09962
341	-.12400

MAIN ROTOR PYLON

TAP NO.	CP
420	.81688
421	-.34702
423	-.58306
424	-.22313
425	-.36059
426	-.01603
427	-.08295
428	-.33527
429	.15851
430	.02647
431	.16213
432	.10787
433	.01562
434	-.58125
435	-.47996
436	-.16887
437	-.41395
438	-.53151
439	-.19690
440	-.22765
441	-.33527
442	-.13631
443	-.07210
344	-.28385
345	-.26579
346	-.26037

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 10

ALPHA=-10 DEG, PSI=-10 DEG

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TABLE XIII

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.57775	211	.39985	342	-.09598	420	.80778
104	-.31146	212	-.06016	303	-.22679	421	-.39255
105	-.40082	213	.11828	304	-.17751	423	-.50379
106	-.07285	214	.03220	305	-.40776	424	-.22659
107	.53128	215	-.04671	306	-.31369	425	-.24453
108	.44281	216	-.04671	307	-.24829	426	-.02134
109	-.23728	217	-.02070	308	-.21693	427	-.18622
110	-.34452	218	.09945	309	-.20170	428	-.13688
111	-.42317	219	.20257	310	-.10494	429	.07933
112	-.22298	221	.32363	311	-.15422	430	-.04716
113	.26854	222	.06000	312	-.08703	431	.26054
114	.68410	223	.34963	313	-.25187	432	.23812
115	.56435	224	-.23322	314	-.27068	433	-.09381
116	-.21762	225	-.09334	315	-.18020	434	-.51994
117	-.27213	226	-.07720	316	-.14257	435	-.39435
118	-.40619	227	-.05478	317	-.14436	436	-.21313
119	-.30163	228	.05372	318	-.06732	437	-.32975
120	.19615	229	-.24667	319	-.13361	438	-.40332
121	.47855	230	.06179	320	-.11928	439	-.21044
122	.37310	231	-.11575	321	-.16139	440	-.23915
123	-.22834	232	-.24308	322	-.18020	441	-.24991
124	-.20600	233	-.18301	323	-.17124	442	-.14046
125	-.34542	234	-.08168	324	-.10046	443	-.06959
126	-.31324	235	-.09334	325	-.09240	344	-.25545
127	-.29358	236	-.18749	326	-.08434	345	-.26531
128	-.34184	237	-.2879[illegible]	327	-.07896	346	-.23664
129	-.25962	238	-.42870	329	-.10942		
130	-.13719	239	-.28882	330	.61715		
131	-.30786	240	.25638	331	-.10494		
132	-.09072	241	-.19915	332	-.09957		
133	-.12021	242	-.12024	333	-.07628		
134	-.24532	243	-.09692	334	.00256		
135	-.26588	244	-.06375	335	-.10763		
136	-.20600	404	-.48406	336	-.03596		
137	-.29001	405	-.44907	337	-.08971		
138	-.28107	406	-.43202	338	-.10226		
139	-.27839	407	-.28221	339	-.04671		
140	-.33469	408	-.15571	340	-.05477		
141	-.37580	409	-.14316	341	-.06015		
142	.18007	410	-.08395				
143	.08087	411	-.31271				
144	-.09161	412	-.38807				
145	-.17204	413	-.40511				
146	-.12825	414	-.48316				
147	-.18098	415	-.28669				
148	-.21583	416	-.17097				
203	-.04760	417	-.16289				
204	-.10499	418	-.14096				
205	-.16866						

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TABLE XIII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 10

ALPHA=-10 DEG, PSI=-5 DEG

COCKPIT

TAP NO.	CP
103	.63705
104	-.29510
105	-.34354
106	-.17667
107	.48094
108	.48722
109	-.22243
110	-.29330
111	-.36777
112	-.30676
113	.08889
114	.63077
115	.62628
116	-.19641
117	-.23140
118	-.33816
119	-.39827
120	-.04928
121	.44416
122	.41366
123	-.20359
124	-.15155
125	-.27356
126	-.30766
127	-.34265
128	-.53912
129	-.22332
130	-.14617
131	-.29151
132	-.06722
133	-.07440
134	-.16591
135	-.23140
136	-.23050
137	-.40006
138	-.43326
139	-.33995
140	-.34085
141	-.36238
142	.12298
143	.11580
144	-.02595
145	-.13361
146	-.13899
147	-.23230
148	-.29868
203	-.12016
204	-.16067
205	-.17237

FUSELAGE

TAP NO.	CP
211	.36774
212	-.05535
213	.11028
214	.01126
215	-.09316
216	-.12646
217	-.11206
218	.00406
219	.16340
221	.29482
222	.01667
223	.31823
224	-.25069
225	-.15257
226	-.16877
227	-.15347
228	-.13007
229	-.24529
230	-.00854
231	-.16967
232	-.26509
233	-.21198
234	-.14267
235	-.20208
236	-.42263
237	-.29120
238	-.44333
239	-.24889
240	.21561
241	-.21738
242	-.17417
243	-.16967
244	-.19218
404	-.41605
405	-.38273
406	-.36201
407	-.27916
408	-.18640
409	-.20981
410	-.13957
411	-.28276
412	-.32869
413	-.27646
414	-.37462
415	-.25754
416	-.19090
417	-.21702
418	-.16748

TAILCONE

TAP NO.	CP
342	-.13449
303	-.15338
304	-.17587
305	-.25771
306	-.26490
307	-.26580
308	-.23163
309	-.22803
310	-.02747
311	-.09312
312	-.10032
313	-.16597
314	-.22173
315	-.19925
316	-.15248
317	-.14798
318	-.14619
319	-.10841
320	-.06794
321	-.07424
322	-.13449
323	-.17766
324	-.12190
325	-.10391
326	-.07064
327	-.09492
329	-.04635
330	.59760
331	-.09942
332	-.10931
333	-.07513
334	-.00049
335	-.05175
336	.00131
337	-.03736
338	-.09852
339	-.07783
340	-.03646
341	-.03286

MAIN ROTOR PYLON

TAP NO.	CP
420	.81597
421	-.40975
423	-.44577
424	-.27195
425	-.16028
426	-.06572
427	-.32869
428	-.02069
429	-.01979
430	-.14497
431	.31974
432	.23869
433	-.18640
434	-.47819
435	-.43857
436	-.23953
437	-.28276
438	-.26655
439	-.21882
440	-.24494
441	-.18640
442	-.13686
443	-.07652
344	-.23972
345	-.23702
346	-.21094

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TABLE XIII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 10

ALPHA=-10 DEG, PSI=0 DEG

COCKPIT

TAP NO.	CP
103	.62628
104	-.27938
105	-.31335
106	-.26239
107	.39830
108	.49307
109	-.21322
110	-.24630
111	-.31693
112	-.37236
113	-.12650
114	.54134
115	.63432
116	-.19444
117	-.19266
118	-.28117
119	-.45640
120	-.27848
121	.39472
122	.44032
123	-.19534
124	-.14527
125	-.21143
126	-.27133
127	-.37772
128	-.70494
129	-.23110
130	-.16852
131	-.29189
132	-.07017
133	-.07286
134	-.12203
135	-.21680
136	-.25881
137	-.49752
138	-.59586
139	-.43405
140	-.35984
141	-.34464
142	.07824
143	.10684
144	-.03352
145	-.11041
146	-.16941
147	-.31246
148	-.39650
203	-.22881
204	-.16243
205	-.14948

FUSELAGE

TAP NO.	CP
211	.38119
212	-.06016
213	.05018
214	-.02966
215	-.10232
216	-.16960
217	-.17050
218	-.11578
219	.10759
221	.30494
222	-.05388
223	.34082
224	-.22163
225	-.14269
226	-.20369
227	-.23419
228	-.33376
229	-.23688
230	-.14718
231	-.21894
232	-.23509
233	-.21176
234	-.16871
235	-.28353
236	-.61634
237	-.24495
238	-.56700
239	-.30416
240	.22291
241	-.22791
242	-.21266
243	-.25123
244	-.32300
404	-.41602
405	-.36487
406	-.29666
407	-.25717
408	-.20512
409	-.24101
410	-.17460
411	-.25268
412	-.25537
413	-.25537
414	-.27243
415	-.22666
416	-.22307
417	-.23742
418	-.16832

TAILCONE

TAP NO.	CP
342	-.12289
303	-.17308
304	-.17487
305	-.18473
306	-.24299
307	-.26271
308	-.23313
309	-.20266
310	-.09152
311	-.08614
312	-.15605
313	-.12468
314	-.16143
315	-.18025
316	-.16860
317	-.12558
318	-.08525
319	-.05298
320	-.08256
321	-.05567
322	-.08256
323	-.15426
324	-.10407
325	-.09152
326	-.05209
327	-.04940
329	-.07270
330	.59680
331	-.08525
332	-.12558
333	-.09152
334	.03037
335	-.01713
336	-.01803
337	-.03058
338	-.09690
339	-.10317
340	-.01176
341	-.01176

MAIN ROTOR PYLON

TAP NO.	CP
420	.82369
421	-.41602
423	-.42320
424	-.38281
425	-.14499
426	-.18358
427	-.42320
428	.01207
429	-.16473
430	-.29756
431	.35760
432	.12695
433	-.28589
434	-.42679
435	-.41064
436	-.26613
437	-.21499
438	-.20601
439	-.22576
440	-.24640
441	-.13152
442	-.14229
443	-.05344
344	-.24388
345	-.22148
346	-.25643

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 10

ALPHA=-10 DEG, PSI= 5 DEG

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TABLE XIII

COCKPIT

TAP NO.	CP
103	.57251
104	-.29589
105	-.31958
106	-.38754
107	.25843
108	.45862
109	-.22649
110	-.23094
111	-.32614
112	-.46584
113	-.35017
114	.38210
115	.60632
116	-.20336
117	-.19446
118	-.27187
119	-.48630
120	-.53702
121	.28245
122	.43104
123	-.20603
124	-.15442
125	-.21670
126	-.26831
127	-.40355
128	-.86445
129	-.25229
130	-.21848
131	-.31458
132	-.08413
133	-.09748
134	-.14641
135	-.19823
136	-.29478
137	-.60820
138	-.74522
139	-.54858
140	-.40266
141	-.36262
142	.02086
143	.07425
144	-.06633
145	-.11527
146	-.17400
147	-.34038
148	-.47206
203	-.34563
204	-.23403
205	-.13850

FUSELAGE

TAP NO.	CP
211	.38198
212	-.10815
213	-.04655
214	-.09476
215	-.10547
216	-.17779
217	-.23492
218	-.29117
219	.02894
221	.30431
222	-.14475
223	.34091
224	-.21617
225	-.16529
226	-.22292
227	-.30456
228	-.55543
229	-.23224
230	-.25367
231	-.29474
232	-.22421
233	-.22292
234	-.21796
235	-.34116
236	-.83129
237	-.25596
238	-.52239
239	-.31884
240	.22217
241	-.21617
242	-.25456
243	-.32866
244	-.54114
404	-.38909
405	-.34175
406	-.23904
407	-.22743
408	-.22296
409	-.26405
410	-.08452
411	-.26851
412	-.23368
413	-.22921
414	-.23279
415	-.20599
416	-.21314
417	-.23636
418	-.16937

TAILCONE

TAP NO.	CP
342	-.09650
303	-.14110
304	-.18748
305	-.18570
306	-.19640
307	-.24457
308	-.23832
309	-.19640
310	-.02871
311	-.08223
312	-.11880
313	-.10542
314	-.13753
315	-.16964
316	-.16072
317	-.10899
318	-.06171
319	-.09650
320	-.05993
321	-.05815
322	-.07063
323	-.13664
324	-.12683
325	-.07688
326	-.06261
327	-.08758
329	-.10453
330	.58139
331	-.06528
332	-.12326
333	-.08669
334	-.01176
335	-.03317
336	-.02603
337	-.03139
338	-.08312
339	-.10096
340	-.05547
341	-.04120

MAIN ROTOR PYLON

TAP NO.	CP
420	.81759
421	-.41231
423	-.44268
424	-.53289
425	-.15955
426	-.34175
427	-.48913
428	-.03003
429	-.37033
430	-.46858
431	.35939
432	-.12918
433	-.34622
434	-.45876
435	-.40517
436	-.28995
437	-.19706
438	-.21224
439	-.21760
440	-.23457
441	-.16044
442	-.13990
443	-.04075
344	-.22940
345	-.25527
346	-.22494

TABLE XIII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 10 ALPHA=-10 DEG , PSI=10 DEG

COCKPIT

TAP NO.	CP
103	.53283
104	-.31256
105	-.30900
106	-.43612
107	.12391
108	.41282
109	-.25033
110	-.26100
111	-.31789
112	-.48946
113	-.57835
114	.22703
115	.54883
116	-.24411
117	-.20911
118	-.27522
119	-.50724
120	-.79259
121	.14169
122	.37193
123	-.24500
124	-.15964
125	-.22722
126	-.26278
127	-.40323
128	-.98727
129	-.26011
130	-.26633
131	-.31878
132	-.12055
133	-.11788
134	-.17122
135	-.20944
136	-.28589
137	-.65658
138	-.86193
139	-.68914
140	-.46190
141	-.38723
142	-.01121
143	.01102
144	-.11788
145	-.13566
146	-.16322
147	-.36501
148	-.54280
203	-.48272
204	-.28738
205	-.17143

FUSELAGE

TAP NO.	CP
211	.37623
212	-.21514
213	-.18035
214	-.12951
215	-.[illegible]40
216	-.2[illegible]33
217	-.308[illegible]
218	-.50324
219	-.10364
221	.30487
222	-.26865
223	.34144
224	-.22762
225	-.16162
226	-.24279
227	-.40691
228	-.81274
229	-.23744
230	-.40423
231	-.38015
232	-.22227
233	-.21335
234	-.21692
235	-.47915
236	-.94832
237	-.27936
238	-.62454
239	-.36944
240	.20943
241	-.21068
242	-.25260
243	-.51037
244	-.57370
404	-.22906
405	-.33614
406	-.18890
407	-.21299
408	-.19871
409	-.26940
410	-.05237
411	-.23976
412	-.23619
413	-.24601
414	-.24779
415	-.19336
416	-.18890
417	-.22102
418	-.16391

TAILCONE

TAP NO.	CP
342	-.22122
303	-.14548
304	-.14102
305	-.17399
306	-.17756
307	-.21499
308	-.23013
309	-.19360
310	-.11607
311	-.13478
312	-.08844
313	-.09824
314	-.11785
315	-.14102
316	-.14280
317	-.11161
318	-.14013
319	-.05992
320	-.03943
321	-.04923
322	-.05458
323	-.10537
324	-.08933
325	-.09201
326	-.08894
327	-.07062
329	-.05903
330	.58616
331	-.05992
332	-.09735
333	-.08666
334	-.03854
335	-.06171
336	-.05458
337	-.04656
338	-.10092
339	-.09914
340	-.12191
341	-.07686

MAIN ROTOR PYLON

TAP NO.	CP
420	.80787
421	-.39057
423	-.45839
424	-.72788
425	-.24779
426	-.53335
427	-.54763
428	-.11305
429	-.56548
430	-.61455
431	.32153
432	-.48695
433	-.39593
434	-.50836
435	-.50390
436	-.32989
437	-.27724
438	-.28795
439	-.26386
440	-.26029
441	-.27367
442	-.17730
443	-.06843
344	-.24083
345	-.23103
346	-.23281

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 10

ALPHA=-10 DEG, PSI=15 DEG

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.45932	211	.37112	342	-.23794	420	.80558
104	-.35465	212	-.33895	303	-.16812	421	-.37220
105	-.34983	213	-.34293	304	-.09472	423	-.53803
106	-.52163	214	-.18704	305	-.14664	424	-.98530
107	-.04214	215	-.15927	306	-.20392	425	-.37838
108	.32306	216	-.22108	307	-.22272	426	-.76211
109	-.30019	217	-.42087	308	-.21108	427	-.60973
110	-.28501	218	-.76043	309	-.22541	428	-.31305
111	-.34037	219	-.24438	310	-.13679	429	-.80513
112	-.51181	221	.29586	311	-.11710	430	-.79169
113	-.78057	222	-.39898	312	-.13500	431	.23999
114	.04001	223	.32095	313	-.10009	432	-.92345
115	.45967	224	-.24169	314	-.15290	433	-.44391
116	-.29751	225	-.17987	315	-.15380	434	-.55147
117	-.25554	226	-.22915	316	-.13679	435	-.53539
118	-.31001	227	-.62783	317	-.14843	436	-.45018
119	-.51627	228	-1.04175	318	-.11352	437	-.38296
120	-1.07255	229	-.25334	319	-.09024	438	-.35159
121	-.01267	230	-.53914	320	-.07503	439	-.32739
122	.31770	231	-.48090	321	-.07682	440	-.29602
123	-.32251	232	-.26051	322	-.07503	441	-.32291
124	-.23054	233	-.26946	323	-.10815	442	-.22700
125	-.27340	234	-.21481	324	-.09114	443	-.13288
126	-.28679	235	-.82225	325	-.16364	344	-.24062
127	-.40555	236	-1.01487	326	-.16364	345	-.23525
128	-1.10023	237	-.27753	327	-.15290	346	-.25853
129	-.24840	238	-.64306	329	-.09382		
130	-.34573	239	-.39669	330	.58378		
131	-.35823	240	.18118	331	-.09740		
132	-.19929	241	-.21840	332	-.09830		
133	-.18500	242	-.23811	333	-.15022		
134	-.23322	243	-.96794	334	-.15469		
135	-.27518	244	-.76849	335	-.14485		
136	-.28233	404	-.15888	336	-.09024		
137	-.68146	405	-.38386	337	-.06518		
138	-.98951	406	-.22700	338	-.13321		
139	-.83593	407	-.20190	339	-.14932		
140	-.53591	408	-.21086	340	-.16812		
141	-.41716	409	-.23327	341	-.13231		
142	-.03857	410	-.05670				
143	-.08232	411	-.37898				
144	-.21090	412	-.27092				
145	-.14839	413	-.25568				
146	-.18143	414	-.23106				
147	-.37073	415	-.19114				
148	-.59574	416	-.21176				
203	-.67771	417	-.23507				
204	-.39041	418	-.18218				
205	-.20854						

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TABLE XIII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 10 ALPHA=-10 DEG, PSI=20 DEG

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.34166	211	.36367	342	-.29716	420	.78945
104	-.41040	212	-.48715	303	-.18323	421	-.34252
105	-.37932	213	-.48893	304	-.17878	423	-.62864
106	-.57022	214	-.25908	305	-.12804	424	-1.19551
107	-.21595	215	-.15306	306	-.16186	425	-.47622
108	.22445	216	-.24839	307	-.23218	426	-.98695
109	-.35712	217	-.56555	308	-.21260	427	-.63042
110	-.32782	218	-.96290	309	-.27402	428	-.51722
111	-.35263	219	-.39004	310	-.29627	429	-.97982
112	-.52938	221	.27814	311	-.12181	430	-.92188
113	-1.00086	222	-.51833	312	-.09511	431	.17177
114	-.16445	223	.30220	313	-.13694	432	-1.29445
115	.34965	224	-.23680	314	-.15029	433	-.49850
116	-.35091	225	-.14860	315	-.16809	434	-.60190
117	-.30474	226	-.23324	316	-.12092	435	-.61972
118	-.35091	227	-1.23551	317	-.25087	436	-.54396
119	-.52583	228	-1.19631	318	-.24464	437	-.43522
120	-1.31873	229	-.23502	319	-.10846	438	-.45750
121	-.17155	230	-.60653	320	-.07819	439	-.41205
122	.19693	231	-.51566	321	-.04348	440	-.31757
123	-.39086	232	-.23235	322	-.08442	441	-.33004
124	-.28432	233	-.25284	323	-.16275	442	-.24626
125	-.34647	234	-.24571	324	-.10935	443	-.17317
126	-.31362	235	-1.14197	325	-.20637	344	-.24998
127	-.40862	236	-.93706	326	-.21171	345	-.26423
128	-1.14203	237	-.27779	327	-.20815	346	-.28114
129	-.21861	238	-.64306	329	-.06128		
130	-.42194	239	-.37846	330	.58049		
131	-.36689	240	.14183	331	-.11024		
132	-.24791	241	-.19850	332	-.11469		
133	-.26656	242	-.31877	333	-.24553		
134	-.30918	243	-.62257	334	-.16631		
135	-.24081	244	-.96735	335	-.14495		
136	-.29497	404	-.06711	336	-.15474		
137	-.68121	405	-.36481	337	-.09422		
138	-1.0505	406	-.23646	338	-.18768		
139	-.99642	407	-.19546	339	[illegible]		
140	-.59420	408	-.22041	340	-.16275		
141	-.45302	409	-.24091	341	-.14495		
142	-.12272	410	-.00650				
143	-.18842	411	-.41205				
144	-.32871	412	-.32381				
145	-.18398	413	-.29350				
146	-.20263	414	-.25874				
147	-.38820	415	-.17406				
148	-.61018	416	-.19635				
203	-.84708	417	-.23735				
204	-.48270	418	-.27122				
205	-.25640						

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TABLE XIV

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 9 ALPHA-10 DEG, PSI- -20 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.54805	211	.60265	342	-.28286	420	.42906
104	-.05844	212	-.11784	303	-.33157	421	-1.21041
105	.09993	213	.25956	304	-.34330	423	-.87890
106	.52556	214	.19997	305	-.19175	424	-.51578
107	.03335	215	.12323	306	-.10605	425	-.65940
108	-.08543	216	.04829	307	-.14574	426	-.31615
109	-.12682	217	-.05825	308	-.13041	427	-.24570
110	-.07013	218	-.14944	309	-.17461	428	-.68650
111	.20931	219	.00314	310	-.26031	429	-.09123
112	.33569	221	.51056	311	-.27294	430	-.15537
113	.32579	222	-.12506	312	-.31443	431	-.12646
114	.33929	223	.52681	313	-.16198	432	-.63863
115	.10353	224	-.24515	314	-.14935	433	.09575
116	-.14392	225	.08440	315	-.12860	434	-.65489
117	-.08993	226	.01037	316	-.15386	435	-.73167
118	.05044	227	-.00859	317	-.14665	436	-.05781
119	.21061	228	-.09798	318	-.25038	437	-.54378
120	.26550	229	-.22257	319	-.24317	438	-.71179
121	-.05394	230	-.03658	320	-.27474	439	-.08852
122	-.15472	231	-.00047	321	-.11417	440	-.18518
123	-.22401	232	-.22257	322	-.06546	441	-.44261
124	-.10433	233	.00314	323	-.13221	442	-.04878
125	.00185	234	.05100	324	-.11868	443	-.07949
126	.13503	235	-.00408	325	-.13221	344	-.23505
127	.14043	236	-.48080	326	-.12951	345	-.22152
128	.11253	237	-.27404	327	-.22422	346	-.22964
129	-.21321	238	-.19459	329	-.24678		
130	-.86628	239	-.07721	330	.77346		
131	-.99066	240	.47354	331	-.05734		
132	-.14032	241	-.02484	332	-.14935		
133	-.06204	242	-.02936	333	-.17371		
134	.01535	243	-.01311	334	-.12319		
135	.13233	244	-.14583	335	-.21611		
136	.14313	404	-.45255	336	-.24227		
137	.04594	405	-.44623	337	-.02487		
138	-.10523	406	-.12466	338	-.07448		
139	-.90698	407	-.04968	339	-.06817		
140	-.75311	408	-.01626	340	-.05103		
141	-.73961	409	-.05601	341	-.04291		
142	.27360	410	-.02800				
143	.10083	411	-.36222				
144	.06574	412	-.39835				
145	.16112	413	-.37125				
146	.14313	414	-.16982				
147	.01355	415	-.04155				
148	-.20511	416	-.02800				
203	-.50879	417	-.07497				
204	-.38870	418	-.08039				
205	-.39141						

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 3 ALPHA-10 DEG, PSI-15 DEG

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TABLE XIV

COCKPIT TAP NO.	COCKPIT CP	FUSELAGE TAP NO.	FUSELAGE CP	TAILCONE TAP NO.	TAILCONE CP	MAIN ROTOR PYLON TAP NO.	MAIN ROTOR PYLON CP
103	.64264	211	.59989	342	-.24492	420	.41015
104	.00020	212	-.04563	303	-.27481	421	-1.28421
105	.13754	213	.22092	304	-.26757	23	-.74179
106	.40139	214	.09943	305	-.16883	424	-.48601
107	.08694	215	.03052	306	-.14619	425	-.49961
108	.00562	216	-.02659	307	-.19057	426	-.25471
109	-.06757	217	-.08693	308	-.17064	427	-.32183
110	-.01516	218	-.09278	309	-.18242	428	-.44156
111	.15923	219	.09943	310	-.19601	429	-.08419
112	.18905	221	.50197	311	-.21231	430	-.17308
113	.29025	222	-.07283	312	-.21865	431	.01105
114	.40410	223	.52010	313	-.13532	432	-.33635
115	.20807	224	-.18707	314	-.16249	433	.00833
116	-.07570	225	-.00756	315	-.16068	434	-.59939
117	-.04317	226	-.07646	316	-.13894	435	-.65746
118	.04177	227	-.04654	317	-.11086	436	-.14315
119	.09959	228	.00332	318	-.21050	437	-.59304
120	.20260	229	-.20067	319	-.17608	438	-.70823
121	.02008	230	.00332	320	-.18514	439	-.15312
122	-.08925	231	.00242	321	-.06648	440	-.21027
123	-.17961	232	-.21064	322	-.07916	441	-.56311
124	-.02962	233	-.09640	323	-.14075	442	-.10686
125	.01827	234	-.04291	324	-.08640	443	-.07421
126	.36887	235	-.07011	325	-.07916	344	-.15162
127	.04086	236	-.43186	326	-.04111	345	-.20778
128	-.02600	237	-.24328	327	-.15796	346	-.20507
129	-.19768	238	-.16077	329	-.13804		
130	-.86000	239	-.08915	330	.76868		
131	-.98469	240	.44032	331	-.08188		
132	-.08654	241	-.10366	332	-.09546		
133	-.01154	242	-.08824	333	-.04927		
134	.02912	243	-.07646	334	.01142		
135	.05532	244	-.18344	335	-.15796		
136	.01827	404	-.41889	336	-.14075		
137	-.08293	405	-.45426	337	-.03658		
138	-.20857	406	-.12863	338	-.09727		
139	-.84554	407	-.10686	339	-.03387		
140	-.74705	408	-.08237	340	-.06195		
141	-.74705	409	-.11503	341	-.06285		
142	.15652	410	-.08782				
143	.15110	411	-.34451				
144	.08333	412	-.42392				
145	.07701	413	-.30913				
146	.03906	414	-.17943				
147	-.08022	415	-.10142				
148	-.27720	416	-.09054				
203	-.42732	417	-.12773				
204	-.34982	418	-.13407				
205	-.35933						

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TABLE XIV

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 9 ALPHA-10 DEG, PSI--10 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.72533	211	.59747	342	-.23161	420	.41335
104	.05069	212	.00618	303	-.19739	421	-1.33788
105	.15041	213	.15310	304	-.16137	423	-.62819
106	.29234	214	-.03167	305	-.16497	424	-.45145
107	.10998	215	-.04519	306	-.17578	425	-.36307
108	.07496	216	-.08215	307	-.22981	426	-.19089
109	-.02117	217	-.11189	308	-.20550	427	-.39644
110	.00039	218	-.04339	309	-.20280	428	-.24494
111	.10190	219	.10804	310	-.11904	429	-.06549
112	.09651	221	.50103	311	-.13345	430	-.20076
113	.23036	222	-.04790	312	-.14066	431	.15635
114	.43248	223	.51365	313	-.13345	432	-.04836
115	.30312	224	-.18310	314	-.17038	433	-.05737
116	-.04363	225	-.08846	315	-.15146	434	-.54072
117	-.01758	226	-.12722	316	-.15056	435	-.51908
118	.03273	227	-.09026	317	-.10644	436	-.19985
119	-.01668	228	-.28856	318	-.12265	437	-.47399
120	.11537	229	-.16598	319	-.10824	438	-.49383
121	.05608	230	.00979	320	-.07402	439	-.16468
122	-.02477	231	-.05150	321	-.06231	440	-.21158
123	-.06339	232	-.17409	322	-.08662	441	-.39103
124	-.01039	233	-.17228	323	-.13796	442	-.12861
125	.00937	234	-.10018	324	-.09203	443	-.05287
126	-.00411	235	-.10378	325	-.05150	344	-.16587
127	-.07687	236	-.29938	326	-.00377	345	-.15146
128	-.14963	237	-.20564	327	-.09653	346	-.17128
129	-.17928	238	-.17589	329	-.05150		
130	-.84223	239	-.16507	330	.77430		
131	-.99225	240	.43072	331	-.06591		
132	-.02027	241	-.15967	332	-.06591		
133	.00467	242	-.14795	333	-.01368		
134	.00467	243	-.10558	334	.06197		
135	-.02477	244	-.16868	335	-.08572		
136	-.07956	404	-.50014	336	-.06591		
137	-.17748	405	-.45235	337	-.02989		
138	-.30684	406	-.12230	338	-.06591		
139	-.79013	407	-.15116	339	-.00828		
140	-.71737	408	-.13132	340	-.03890		
141	-.72725	409	-.14485	341	-.04520		
142	.09112	410	-.13092				
143	.18634	411	-.33332				
144	.08752	412	-.39554				
145	.00578	413	-.24584				
146	-.04722	414	-.19174				
147	-.15053	415	-.13402				
148	-.30774	416	-.13943				
203	-.32371	417	-.16649				
204	-.31830	418	-.18182				
205	-.32732						

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TABLE XIV

PSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 9

ALPHA=10 DEG, PSI=-5 DEG

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.76494	211	.59384	342	-.14953	420	.43027
104	.09870	212	.00389	303	-.15666	421	-1.32523
105	.13695	213	.03869	304	-.16023	423	-.61446
106	.17075	214	-.14695	305	-.18609	424	-.41801
107	.12361	215	-.12107	306	-.19768	425	-.27871
108	.08269	216	-.12642	307	-.23781	426	-.16174
109	.01331	217	-.11660	308	-.20303	427	-.44480
110	.03643	218	-.06891	309	-.20660	428	-.12692
111	.03377	219	.13866	310	-.07373	429	-.03048
112	-.01783	221	.49834	311	-.07819	430	-.19389
113	.15207	222	-.05770	312	-.10138	431	.24901
114	.43316	223	.52333	313	-.12367	432	.11150
115	.33175	224	-.18801	314	-.17896	433	-.08406
116	-.00270	225	-.15141	315	-.16647	434	-.45730
117	.01153	226	-.15945	316	-.16112	435	-.47427
118	-.02672	227	-.10946	317	-.10584	436	-.22514
119	-.10144	228	-.36383	318	-.03985	437	-.30550
120	.01864	229	-.16302	319	-.06571	438	-.37962
121	.06668	230	-.00236	320	-.06660	439	-.17067
122	.01242	231	-.14784	321	-.06571	440	- 23496
123	-.01694	232	-.14784	322	-.09335	441	-.21442
124	-.00804	233	-.21210	323	-.13972	442	-.11352
125	-.02672	234	-.12999	324	-.09870	443	-.02869
126	-.09432	235	-.13892	325	-.05947	344	-.17182
127	-.15214	236	-.28886	326	-.00596	345	-.13437
128	-.26956	237	-.16748	327	-.05144	346	-.14686
129	-.16637	238	-.21300	329	-.03182		
130	-.81127	239	-.24655	330	.77072		
131	-.95982	240	.41712	331	-.06303		
132	.02932	241	-.21567	332	-.05233		
133	.02754	242	-.17462	333	-.00686		
134	-.01516	243	-.18356	334	.06092		
135	-.11634	244	-.18979	335	-.01488		
136	-.15926	404	-.45691	336	.00028		
137	-.26066	405	-.44301	337	-.03272		
138	-.38964	406	-.10727	338	-.04074		
139	-.73121	407	-.17960	339	.01187		
140	-.70453	408	-.15638	340	-.00686		
141	-.71253	409	-.15460	341	-.03539		
142	.03554	410	-.15638				
143	.17876	411	-.32068				
144	.01775	412	-.32961				
145	-.09432	413	-.20371				
146	-.12279	414	-.19299				
147	-.21263	415	-.15995				
148	-.33538	416	-.16263				
203	-.28440	417	-.16888				
204	-.29065	418	-.19924				
205	-.28797						

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TABLE XIV

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 9 ALPHA=10 DEG, PSI= 0 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.80051	211	.58948	342	-.15398	420	.41813
104	.10767	212	-.02687	303	-.19963	421	-1.34841
1C5	.10767	213	-.11376	304	-.15309	423	-.61616
106	.08089	214	-.30100	305	-.20858	424	-.48531
107	.10053	215	-.20604	306	-.20052	425	-.26841
108	.11036	216	-.16931	307	-.24617	426	-.21643
109	.02553	217	-.13079	308	-.22201	427	-.56866
110	.00321	218	-.01701	309	-.23364	428	-.09543
111	-.05304	219	.11557	310	-.07701	429	-.11336
112	-.10750	221	.49541	311	-.13877	430	-.20298
113	-.06928	222	-.09854	312	-.06537	431	.23529
114	.39963	223	.51154	313	-.14324	432	.11698
115	.36481	224	-.16662	314	-.18889	433	-.13487
116	.00053	225	-.20872	315	-.16651	434	-.44587
117	-.02179	226	-.19439	316	-.14861	435	-.42436
118	-.09857	227	-.12183	317	-.12176	436	-.24690
119	-.19589	228	-.44523	318	-.04121	437	-.26662
120	-.11018	229	-.15318	319	-.11728	438	-.32667
121	.06035	230	-.07256	320	-.11639	439	-.19492
122	.01928	231	-.30906	321	-.13250	440	-.24690
123	-.00929	232	-.15229	322	-.11907	441	-.15190
124	-.01464	233	-.25441	323	-.12534	442	-.10619
125	-.10393	234	-.16035	324	-.09938	443	-.02463
126	-.19589	235	-.16035	325	-.05732	344	-.16209
127	-.23160	236	-.37267	326	-.03226	345	-.15398
128	-.38606	237	-.18454	327	-.01525	346	-.18799
129	-.13607	238	-.29562	329	-.03584		
130	-.79855	239	-.40850	330	.76434		
131	-.96730	240	.38702	331	-.08327		
132	.02375	241	-.24635	332	-.06358		
133	.00657	242	-.20066	333	-.03226		
134	-.08250	243	-.16214	334	.05904		
135	-.20660	244	-.24008	335	.05277		
136	-.23964	404	-.42526	336	.01876		
137	-.33517	405	-.32219	337	-.06627		
138	-.48160	4	-.09812	338	-.05195		
139	-.71284	407	-.20029	339	-.00003		
140	-.69855	408	-.17878	340	-.02778		
141	-.70838	409	-.17789	341	-.00540		
142	-.05036	410	-.18954				
143	.13946	411	-.25048				
144	-.10839	412	-.28723				
145	-.20303	413	-.29530				
146	-.20482	414	-.26214				
147	-.24410	415	-.20298				
148	-.35571	416	-.17789				
203	-.26606	417	-.18506				
204	-.26696	418	-.22360				
205	-.27323						

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TABLE XIV

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 9 ALPHA = 10 DEG, PSI = 5 DEG

COCKPIT TAP NO.	COCKPIT CP	FUSELAGE TAP NO.	FUSELAGE CP	TAILCONE TAP NO.	TAILCONE CP	MAIN ROTOR PYLON TAP NO.	MAIN ROTOR PYLON CP
103	.78928	211	.58371	342	-.22728	420	.39634
104	.08169	212	-.11911	303	-.20581	421	-1.33600
105	.05224	213	-.29976	304	-.17898	423	-.63733
106	-.04769	214	-.42889	305	-.30868	424	-.59254
107	.04867	215	-.24803	306	-.16377	425	-.27725
108	.10489	216	-.16567	307	-.25322	426	-.32741
109	.00317	217	-.11463	308	-.20939	427	-.64449
110	-.04145	218	-.03405	309	-.22281	428	-.13393
111	-.14585	219	.06622	310	-.08505	429	-.21186
112	-.19492	221	.48971	311	-.06180	430	-.24052
113	-.09056	222	-.16119	312	-.30331	431	.26198
114	.34670	223	.50493	313	-.15393	432	.01297
115	.35384	224	-.10120	314	-.17450	433	-.19215
116	-.01914	225	-.24624	315	-.16377	434	-.47431
117	-.05929	226	-.19073	316	-.10652	435	-.46535
118	-.18243	227	-.12269	317	-.13694	436	-.25844
119	-.27969	228	-.41277	318	-.05553	437	-.27098
120	-.27702	229	-.11105	319	-.06090	438	-.28173
121	.00406	230	-.15492	320	-.17003	439	-.20828
122	.01477	231	-.50499	321	-.15572	440	-.23336
123	-.03966	232	-.11732	322	-.14320	441	-.20023
124	-.05483	233	-.26236	323	-.13157	442	-.09004
125	-.20928	234	-.17372	324	-.07700	443	-.02644
126	-.31985	235	-.17014	325	-.07253	344	-.10652
127	-.31538	236	-.52469	326	-.06716	345	-.10831
128	-.49563	237	-.15671	327	-.02959	346	-.08684
129	-.10748	238	-.33667	329	-.13425		
130	-.79901	239	-.59184	330	.76116		
131	-.97212	240	.35362	331	-.07700		
132	.01120	241	-.25072	332	-.07253		
133	-.04323	242	-.22117	333	-.04122		
134	-.21634	243	-.18536	334	-.00955		
135	-.31538	244	-.32772	335	-.02959		
136	-.29932	404	-.48595	336	-.06537		
137	-.39391	405	-.36324	337	-.10921		
138	-.53757	406	-.18051	338	-.07700		
139	-.72495	407	-.22619	339	-.05196		
140	-.71924	408	-.18051	340	-.03317		
141	-.72049	409	-.17334	341	-.01886		
142	-.12869	410	-.18857				
143	.07366	411	-.26023				
144	-.26909	412	-.31487				
145	-.31628	413	-.32472				
146	-.23954	414	-.33816				
147	-.27880	415	-.23246				
148	-.36000	416	-.18051				
203	-.27310	417	-.18409				
204	-.30265	418	-.20917				
205	-.32324						

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 9

ALPHA = 10 DEG, PSI = 10 DEG

COCKPIT TAP NO.	COCKPIT CP	FUSELAGE TAP NO.	FUSELAGE CP	TAILCONE TAP NO.	TAILCONE CP	MAIN ROTOR PYLON TAP NO.	MAIN ROTOR PYLON CP
103	.73170	211	.58128	342	-.20019	420	.36948
104	.06260	212	-.24246	303	-.21363	421	-1.35408
105	-.01958	213	-.53646	304	-.23422	423	-.62143
106	-.15000	214	-.56335	305	-.20736	424	-.69317
107	-.01690	215	-.30162	306	-.29064	425	-.41966
108	.05010	216	-.15999	307	-.21273	426	-.44567
109	-.01922	217	-.12773	308	-.19840	427	-.72456
110	-.09909	218	-.11607	309	-.21900	428	-.26184
111	-.26524	219	-.01389	310	-.13124	429	-.37214
112	-.28490	221	.47640	311	-.12049	430	-.43580
113	-.17591	222	-.26576	312	-.20915	431	.20358
114	.22072	223	.49075	313	-.20288	432	-.27260
115	.29576	224	-.15462	314	-.18228	433	-.21790
116	-.05442	225	-.29265	315	-.14019	434	-.50127
117	-.12142	226	-.18240	316	-.17064	435	-.53176
118	-.31348	227	-.12593	317	-.15542	436	-.27170
119	-.35368	228	-.45399	318	-.11154	437	-.38569
120	-.44659	229	-.13400	319	-.13572	438	-.29053
121	-.07318	230	-.26128	320	-.21094	439	-.21520
122	-.02315	231	-.72200	321	-.21542	440	-.23045
123	-.08837	232	-.12504	322	-.16169	441	-.36227
124	-.12231	233	-.28907	323	-.15542	442	-.10132
125	-.35011	234	-.17792	324	-.09183	443	-.05200
126	-.44123	235	-.17613	325	-.11781	344	-.13930
127	-.36976	236	-.59472	326	-.11064	345	-.13303
128	-.59398	237	-.16731	327	-.09631	346	-.11960
129	-.14643	238	-.41635	329	-.25124		
130	-.80[illegible]	239	-.76950	330	.75534		
131	-.99687	240	.33120	331	-.09004		
132	-.03745	241	-.25232	332	-.10437		
133	-.10266	242	-.21019	333	-.08109		
134	-.36797	243	-.20123	334	-.04706		
135	-.43497	244	-.43696	335	-.09631		
136	-.35636	404	-.45374	336	-.17960		
137	-.43497	405	-.45553	337	-.15631		
138	-.60113	406	-.36137	338	-.14288		
139	-.73691	407	-.23045	339	-.05691		
140	-.73602	408	-.17575	340	-.04795		
141	-.73066	409	-.17575	341	-.03542		
142	-.15983	410	-.20893				
143	-.02494	411	-.30398				
144	-.44748	412	-.35510				
145	-.43944	413	-.35958				
146	-.29472	414	-.38469				
147	-.28668	415	-.31654				
148	-.35100	416	-.18830				
203	-.31237	417	-.19458				
204	-.33657	418	-.21520				
205	-.31237						

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TABLE XIV

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TABLE XIV

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 9

ALPHA=10 DEG, PSI= 5 DEG

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.64181	211	.57124	342	-.26117	420	.41142
104	-.00053	212	-.39241	303	-.28700	421	-1.25188
105	-.12225	213	-.74721	304	-.29235	423	-.74085
106	-.24841	214	-.64915	305	-.32619	424	-.79882
107	-.09293	215	-.37547	306	-.27186	425	-.49113
108	-.00053	216	-.15974	307	-.26919	426	-.53751
109	-.06983	217	-.13211	308	-.17656	427	-.70785
110	-.16845	218	-.21680	309	-.22733	428	-.41443
111	-.39234	219	-.09824	310	-.18903	429	-.52680
112	-.37012	221	.47318	311	-.23891	430	-.58121
113	-.28572	222	-.35943	312	-.30749	431	.11890
114	.11141	223	.47496	313	-.19081	432	-.65880
115	.21980	224	-.16331	314	-.23891	433	-.27976
116	-.10182	225	-.34962	315	-.20595	434	-.54643
117	-.21287	226	-.16688	316	-.15697	435	-.50986
118	-.45186	227	-.14013	317	-.17389	436	-.28779
119	-.42610	228	-.52791	318	-.16677	437	-.41800
120	-.63133	229	-.14905	319	-.20863	438	-.35914
121	-.15690	230	-.37280	320	-.33332	439	-.18344
122	-.06450	231	-.92371	321	-.20239	440	-.23249
123	-.18888	232	-.13033	322	-.21130	441	-.41176
124	-.19244	233	-.33803	323	-.20685	442	-.11209
125	-.52294	234	-.17133	324	-.14094	443	-.06572
126	-.55492	235	-.20164	325	-.12312	344	-.16231
127	-.43765	236	-.61973	326	-.12758	345	-.16320
128	-.64998	237	-.17847	327	-.14450	346	-.18547
129	-.15868	238	-.50295	329	-.29591		
130	-.80990	239	-.97898	330	.73635		
131	-.96982	240	.29757	331	-.11689		
132	-.09293	241	-.24354	332	-.09462		
133	-.18711	242	-.20967	333	-.12669		
134	-.52560	243	-.20521	334	-.11422		
135	-.54781	244	-.48849	335	-.14717		
136	-.39589	404	-.43851	336	-.22466		
137	-.45275	405	-.53572	337	-.17567		
138	-.63133	406	-.38143	338	-.15430		
139	-.78147	407	-.20217	339	-.07147		
140	-.76459	408	-.16650	340	-.06167		
141	-.74416	409	-.18166	341	-.04030		
142	-.20399	410	-.23339				
143	-.13735	411	-.33684				
144	-.63221	412	-.38500				
145	-.53893	413	-.37162				
146	-.32659	414	-.36181				
147	-.29727	415	-.34308				
148	-.33281	416	-.19058				
203	-.37191	417	-.19197				
204	-.39419	418	-.19504				
205	-.35765						

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

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TABLE XIV

RUN 9

ALPHA=0 DEG, PSI=20 DEG

COCKPIT

TAP NO.	CP
103	.48922
104	-.05611
105	-.26229
106	-.34351
107	-.21141
108	-.11234
109	-.15518
110	-.28460
111	-.55325
112	-.43455
113	-.42294
114	-.06325
115	.11258
116	-.17660
117	-.32119
118	-.65679
119	-.55414
120	-.85850
121	-.29799
122	-.14804
123	-.29447
124	-.32921
125	-.72194
126	-.71123
127	-.51755
128	-.70677
129	-.15965
130	-.85136
131	-.98345
132	-.19713
133	-.33190
134	-.76657
135	-.69249
136	-.44615
137	-.47292
138	-.68356
139	-.87813
140	-.80316
141	-.76567
142	-.28192
143	-.29799
144	-.89686
145	-.66660
146	-.41223
147	-.32119
148	-.30691
203	-.47594
204	-.44549
205	-.39086

FUSELAGE

TAP NO.	CP
211	.57185
212	-.58699
213	-1.01148
214	-.76341
215	-.50818
216	-.14011
217	-.14817
218	-.35325
219	-.21444
221	.46618
222	-.50281
223	.46439
224	-.18041
225	-.37027
226	-.18130
227	-.22698
228	-.53146
229	-.16518
230	-.53505
231	-1.20492
232	-.18310
233	-.29146
234	-.18041
235	-.27802
236	-.66490
237	-.19832
238	-.60311
239	-1.19059
240	.26289
241	-.21175
242	-.24758
243	-.30937
244	-.80908
404	-.29023
405	-.65937
406	-.43986
407	-.34758
408	-.20422
409	-.18003
410	-.22035
411	-.43000
412	-.46584
413	-.42015
414	-.42552
415	-.39596
416	-.22662
417	-.18003
418	-.22393

TAILCONE

TAP NO.	CP
342	-.36013
303	-.37624
304	-.31540
305	-.32166
306	-.28408
307	-.28855
308	-.23219
309	-.25366
310	-.25545
311	-.29661
312	-.37713
313	-.30466
314	-.27961
315	-.24024
316	-.16597
317	-.20982
318	-.25276
319	-.32166
320	-.44335
321	-.27334
322	-.25545
323	-.27066
324	-.17761
325	-.17224
326	-.15792
327	-.22324
329	-.35119
330	.73146
331	-.19908
332	-.23040
333	-.21966
334	-.14003
335	-.21429
336	-.28050
337	-.18297
338	-.21608
339	-.11855
340	-.07471
341	-.06308

MAIN ROTOR PYLON

TAP NO.	CP
420	.37546
421	-1.20680
423	-.86275
424	-.98460
425	-.70148
426	-.74628
427	-.64593
428	-.69879
429	-.79735
430	-.77137
431	.00185
432	-1.18082
433	-.35295
434	-.58590
435	-.57067
436	-.40581
437	-.49362
438	-.44434
439	-.24992
440	-.25171
441	-.49183
442	-.08864
443	-.09561
344	-.16329
345	-.16329
346	-.19192

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TABLE XV

RCEA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA=-20 DEG , PSI=0 DEG

RUN 95

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	-.08359	211	.70954	342	-.58087	420	.86729
104	-.37508	212	.42347	303	-.63214	421	-.05419
105	-.49910	213	.75187	304	-.59369	423	-.14660
106	-.72922	214	.02965	305	.79691	424	.01511
107	.49790	215	-.14609	306	-.44374	425	.11650
108	.71291	216	-.21023	307	-.51807	426	.07158
109	-.23061	217	-.16534	308	.00613	427	-.01441
110	-.28815	218	.09123	309	-.13870	428	.17297
111	-.61032	219	.34394	310	-.40913	429	.03308
112	-.65635	221	.76342	311	-.44502	430	.04335
113	-.29198	222	-.13327	312	-.45143	431	.39115
114	.57611	223	-.44499	313	-.48347	432	.34751
115	.76533	224	-.23846	314	-.48859	433	-.21975
116	-.13984	225	-.36674	315	-.35146	434	-.34167
117	-.19482	226	-.30003	316	-.15152	435	-.32371
118	-.44668	227	-.04988	317	-.13998	436	-.24799
119	-.65379	228	-.00499	318	-.40913	437	-.45205
120	-.33289	229	.01426	319	-.32582	438	-.17868
121	.56333	230	-.26026	320	-.47193	439	-.17997
122	.67967	231	-.31927	321	-.36555	440	-.20435
123	-.13856	232	-.45653	322	-.38222	441	-.16970
124	-.10276	233	-.36032	323	-.35146	442	-.13248
125	-.30093	234	-.51298	324	-.22970	443	-.13248
126	-.45691	235	-.08067	325	-.13101	344	-.09769
127	-.50549	236	.09251	326	-.08615	345	-.09000
128	-.76246	237	-.49117	327	-.35658	346	-.03489
129	-.51444	238	-.48604	329	-.32070		
130	.26416	239	-.37572	330	.75718		
131	.21302	240	.32598	331	-.27456		
132	.00591	241	-.69642	332	-.16690		
133	-.03501	242	-.38983	333	-.12076		
134	-.16030	243	-.45397	334	-.00413		
135	-.34312	244	.02965	335	-.12332		
136	-.35718	404	-.46360	336	-.25021		
137	-.52850	405	-.44691	337	-.18484		
138	-.53361	406	-.44049	338	-.22073		
139	-.10149	407	-.31601	339	-.17074		
140	.06216	408	-.54830	340	-.09000		
141	.09029	409	-.48156	341	-.05539		
142	.51474	410	-.22617				
143	.13759	411	-.44435				
144	-.07720	412	-.47258				
145	-.20377	413	-.47515				
146	-.24212	414	-.45333				
147	-.24596	415	.91991				
148	-.30732	416	.25382				
203	.03473	417	.14736				
204	.14767	418	-.24542				
205	.20283						

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TABLE XV

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA=-15 DEG, PSI=0 DEG

RUN 95

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.31790	211	.74282	342	-.60106	420	.83253
104	-.30965	212	.46453	303	-.53443	421	-.34271
105	-.41956	213	.78770	304	-.54212	423	-.27856
106	-.47836	214	.00029	305	.81603	424	-.09252
107	.46616	215	-.12667	306	-.42168	425	.02167
108	.61826	216	-.16899	307	-.42808	426	-.01169
109	-.20740	217	-.09204	308	-.09111	427	-.15411
110	-.24191	218	.09391	309	-.17311	428	.10250
111	-.44896	219	.28499	310	-.33071	429	-.02837
112	-.48475	221	.80181	311	-.39093	430	-.05403
113	-.19078	222	-.06255	312	-.35761	431	.36808
114	.56330	223	-.43060	313	-.46652	432	.32061
115	.71412	224	-.24081	314	-.42040	433	-.27471
116	-.15249	225	-.33955	315	-.24614	434	-.40429
117	-.18567	226	-.34083	316	-.17567	435	-.39403
118	-.33909	227	-.03562	317	-.15774	436	-.29267
119	-.52309	228	-.04844	318	-.41655	437	-.36761
120	-.24446	229	-.10102	319	-.26280	438	-.21441
121	.40939	230	-.10077	320	-.58056	439	-.20158
122	.57352	231	-.24209	321	-.36915	440	-.19901
123	-.14605	232	-.41906	322	-.33840	441	-.15795
124	-.11537	233	-.31903	323	-.26280	442	-.14384
125	-.23935	234	-.62207	324	-.12058	443	-.14128
126	-.34288	235	-.11384	325	-.13339	344	-.10136
127	-.40550	236	-.04716	326	-.07702	345	-.08214
128	-.67646	237	-.40406	327	-.33711	346	-.02833
129	-.37739	238	-.38315	329	-.30893		
130	.11213	239	-.31775	330	.78400		
131	.02905	240	.38502	331	-.19361		
132	-.02207	241	-.39364	332	-.18336		
133	-.02974	242	-.53705	333	-.13595		
134	-.12049	243	-.30983	334	-.01679		
135	-.25597	244	-.11128	335	-.13980		
136	-.27386	404	-.40686	336	-.10520		
137	-.44896	405	-.39761	337	-.10648		
138	-.49497	406	-.35682	338	-.17695		
139	-.18056	407	-.59803	339	-.12955		
140	-.05530	408	-.52875	340	-.03986		
141	-.06297	409	-.32788	341	-.04242		
142	.49556	410	-.29652				
143	.13897	411	-.42611				
144	-.01568	412	-.41584				
145	-.13071	413	-.37094				
146	-.16522	414	-.39505				
147	-.20484	415	.93132				
148	-.24830	416	-.09380				
203	-.02484	417	-.13101				
204	.05584	418	-.24777				
205	.09263						

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA=-10 DEG, PSI=0 DEG

RUN 95

COCKPIT TAP NO.	COCKPIT CP	FUSELAGE TAP NO.	FUSELAGE CP	TAILCONE TAP NO.	TAILCONE CP	MAIN ROTOR PYLON TAP NO.	MAIN ROTOR PYLON CP
103	.60542	211	.79756	342	-.40808	420	.76059
104	-.27290	212	.55212	303	-.40553	421	-.62112
105	-.31980	213	.85605	304	-.39791	423	-.39465
106	-.26910	214	.01037	305	.83581	424	-.18727
107	.40897	215	-.07865	306	-.40172	425	-.06894
108	.52810	216	-.10408	307	-.38139	426	-.08167
109	-.20066	217	-.03414	308	-.12093	427	-.26615
110	-.22601	218	.09812	309	-.18573	428	.03666
111	-.33881	219	.24818	310	-.30516	429	-.08167
112	-.33754	221	.83698	311	-.33819	430	-.12747
113	-.10434	222	-.08882	312	-.30008	431	.32038
114	.54458	223	-.36987	313	-.36361	432	.30002
115	.64724	224	-.23889	314	-.37504	433	-.31958
116	-.17531	225	-.36733	315	-.12855	434	-.42646
117	-.16644	226	-.36860	316	-.14380	435	-.42773
118	-.26657	227	-.07865	317	-.13872	436	-.31068
119	-.42245	228	-.10408	318	-.16286	437	-.36666
120	-.20827	229	-.17461	319	-.23528	438	-.19872
121	.42544	230	-.17276	320	-.20733	439	-.22671
122	.49515	231	-.21091	321	-.14507	440	-.22671
123	-.17531	232	-.38640	322	-.21876	441	-.13129
124	-.11194	233	-.30120	323	-.14888	442	-.12874
125	-.20066	234	-1.00445	324	-.12728	443	-.12620
126	-.26530	235	-.34062	325	-.08408	344	-.07519
127	-.33247	236	-.10663	326	-.04215	345	-.06121
128	-.58342	237	-.38513	327	-.12093	346	.00613
129	-.36289	238	-.48432	329	-.17683		
130	-.04604	239	-.29230	330	.82310		
131	-.17278	240	.43512	331	-.05105		
132	-.03843	241	-.18420	332	-.08408		
133	-.05237	242	-.66491	333	-.06121		
134	-.10687	243	-.38386	334	.00232		
135	-.17151	244	-.20201	335	-.02055		
136	-.21587	404	-.37938	336	-.03072		
137	-.39204	405	-.38329	337	-.01674		
138	-.43133	406	-.36920	338	-.07519		
139	-.26403	407	-.03841	339	-.05994		
140	-.20193	408	-.15037	340	-.02691		
141	-.19686	409	-.39338	341	-.00276		
142	.44826	410	-.35521				
143	.10986	411	-.38702				
144	-.00294	412	-.37429				
145	-.10814	413	-.36920				
146	-.12208	414	-.37811				
147	-.17658	415	.96161				
148	-.21207	416	-.13892				
203	-.03541	417	-.04604				
204	-.01125	418	-.28523				
205	-.01252						

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA=-5 DEG , PSI=0 DEG

RUN 35

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.77376	211	.80928	342	-.34769	420	.66987
104	-.20824	212	.59133	303	-.32321	421	-.95975
105	-.22109	213	.89311	304	-.40439	423	-.52493
106	-.13497	214	-.00580	305	.83002	424	-.26171
107	.35474	215	-.05223	306	-.31805	425	-.14688
108	.42929	216	-.06512	307	-.37862	426	-.13784
109	-.18510	217	.01484	308	-.04875	427	-.38300
110	-.18896	218	.09867	309	-.13122	428	-.03204
111	-.23009	219	.20958	310	-.19307	429	-.12752
112	-.24551	221	.83895	311	-.26760	430	-.19720
113	-.03214	222	-.12961	312	-.33609	431	.29182
114	.51670	223	-.32822	313	-.19693	432	.28150
115	.58225	224	-.24697	314	-.32965	433	-.33139
116	-.14654	225	-.32822	315	-.07968	434	-.41525
117	-.16068	226	-.23149	316	-.04360	435	-.48235
118	-.21209	227	.06771	317	-.06808	436	-.28107
119	-.32520	228	-.13477	318	-.16987	437	-.32493
120	-.16068	229	-.13348	319	-.23172	438	-.21268
121	.35474	230	-.10409	320	-.14153	439	-.18300
122	.37788	231	-.25084	321	-.13380	440	-.17010
123	-.15168	232	-.32048	322	-.14410	441	-.10817
124	-.11826	233	-.29082	323	-.05777	442	-.06172
125	-.17010	234	-.82346	324	-.03716	443	-.07720
126	-.20181	235	-.20312	325	-.06293	344	-.06808
127	-.26608	236	-.21215	326	-.02169	345	-.02814
128	-.51800	237	-.31403	327	-.08612	346	.00537
129	-.31106	238	-.57199	329	-.09385		
130	-.23394	239	-.33209	330	.82100		
131	-.35991	240	.46236	331	-.01525		
132	-.05914	241	-.22505	332	-.02298		
133	-.05785	242	-.68804	333	-.01912		
134	-.09898	243	-.32951	334	.04660		
135	-.14654	244	-.31274	335	.00537		
136	-.17867	404	-.34042	336	-.02685		
137	-.33677	405	-.37653	337	-.02685		
138	-.41389	406	-.30042	338	-.04875		
139	-.36376	407	-.02430	339	.00021		
140	-.33091	408	-.11333	340	-.00752		
141	-.34320	409	-.33655	341	.01052		
142	.38302	410	-.37913				
143	.10025	411	-.35203				
144	-.03086	412	-.32364				
145	-.37842	413	-.37268				
146	-.09770	414	-.34300				
147	-.14140	415	.97050				
148	-.17867	416	-.12236				
203	-.07802	417	-.02559				
204	-.07286	418	-.25655				
205	-.08189						

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TABLE XV

RUN 95

NERA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA=0 DEG , PSI=0 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.89646	211	.81491	342	-.27424	420	.55638
104	-.10385	212	.62243	303	-.28457	421	-1.31237
105	-.10257	213	.90145	304	-.49364	423	-.65585
106	.00300	214	-.01053	305	.83051	424	-.36895
107	.29138	215	-.00924	306	-.30651	425	-.23584
108	.32743	216	.01014	307	-.28586	426	-.23196
109	-.11930	217	.04760	308	-.08323	427	-.53825
110	-.12188	218	.10444	309	-.17099	428	-.09109
111	-.13346	219	.18840	310	-.12453	429	-.17639
112	-.13990	221	.83945	311	-.19810	430	-.30304
113	.04429	222	-.11904	312	-.16196	431	.27077
114	.48578	223	-.29471	313	.27682	432	.26430
115	.52054	224	-.20042	314	-.29489	433	-.38575
116	-.10385	225	-.24434	315	-.07678	434	-.42840
117	-.10772	226	-.07641	316	-.06516	435	-.44520
118	-.13218	227	.14578	317	-.09614	436	-.31984
119	-.19783	228	-.21979	318	-.13744	437	-.28882
120	-.10128	229	-.11258	319	-.13615	438	-.22679
121	.25562	230	-.15133	320	-.18519	439	-.19707
122	.26306	231	-.23529	321	-.01670	440	-.18802
123	-.08969	232	-.30376	322	-.11808	441	-.10272
124	-.08583	233	-.23013	323	-.04839	442	-.07429
125	-.10900	234	-.52336	324	-.03806	443	-.08051
126	-.16050	235	-.07382	325	-.04839	344	-.06258
127	-.18882	236	-.34380	326	-.05226	345	-.02774
128	-.42442	237	-.29084	327	-.04064	346	-.00580
129	-.31370	238	-.42002	329	-.10646		
130	-.41927	239	-.30763	330	.82535		
131	-.57762	240	.48292	331	-.00838		
132	-.03820	241	-.22496	332	-.02645		
133	-.04206	242	-.55253	333	-.01741		
134	-.08454	243	-.29988	334	.03938		
135	-.10385	244	-.45102	335	.00840		
136	-.15535	404	-.20270	336	.04454		
137	-.28280	405	-.30950	337	-.03806		
138	-.37678	406	-.29624	338	-.01999		
139	-.47076	407	-.16903	339	.00711		
140	-.45789	408	-.24787	340	.00453		
141	-.46304	409	-.28495	341	.01744		
142	.33000	410	-.42581				
143	.11629	411	-.27848				
144	-.02275	412	-.27590				
145	-.03305	413	-.27719				
146	-.05107	414	-.28882				
147	-.10257	415	.97768				
148	-.15406	416	-.21645				
203	-.12549	417	-.17245				
204	-.16683	418	-.29624				
205	-.15779						

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TABLE XV

PSEA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALPHA=5 DEG , PSI=0 DEG

RUN 95

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.88162	211	.81992	342	-.22934	420	.41812
104	.01735	212	.64334	303	-.17706	421	-1.70048
105	.01474	213	.91933	304	-.33127	423	-.77662
106	.07340	214	-.04989	305	.84748	424	-.45339
107	.19463	215	-.01065	306	-.17445	425	-.33039
108	.21940	216	.00504	307	-.26201	426	-.29113
109	-.04783	217	.00504	308	-.07383	427	-.67585
110	-.04783	218	.06390	309	-.18098	428	-.17990
111	-.05826	219	.14107	310	-.12610	429	-.23094
112	-.08042	221	.82384	311	-.17053	430	-.40890
113	.07731	222	-.10352	312	-.20059	431	.21137
114	.44101	223	-.22647	313	-.16792	432	.22184
115	.42406	224	-.14930	314	-.20973	433	-.44816
116	-.03740	225	-.18200	315	-.15616	434	-.43377
117	-.04262	226	.05736	316	-.09474	435	-.45994
118	-.07521	227	.12799	317	-.09996	436	-.34871
119	-.15342	228	-.41874	318	-.03985	437	-.21523
120	-.09737	229	-.04597	319	-.08297	438	-.27674
121	.15161	230	-.02128	320	-.06860	439	-.21523
122	.13467	231	-.21731	321	-.10519	440	-.21261
123	-.33480	232	-.27301	322	-.05814	441	-.15635
124	-.02958	233	-.17284	323	-.06991	442	-.09092
125	-.07390	234	-.23824	324	-.04377	443	-.10793
126	-.11823	235	-.09829	325	-.05292	344	-.07644
127	-.15603	236	-.56001	326	-.03985	345	-.04246
128	-.34635	237	-.23693	327	-.03985	346	-.01894
129	-.19123	238	-.30757	329	-.00326		
130	-.59794	239	-.28010	330	.84748		
131	-.77523	240	.49815	331	-.05030		
132	.00822	241	-.23563	332	-.05422		
133	.00431	242	-.56655	333	-.02547		
134	-.04262	243	-.22385	334	.03987		
135	-.09346	244	-.65418	335	-.00064		
136	-.13517	404	-.20869	336	-.01286		
137	-.24207	405	-.23486	337	-.02025		
138	-.34375	406	-.22047	338	-.01371		
139	-.57448	407	-.40236	339	-.02547		
140	-.57574	408	-.40367	340	-.01763		
141	-.59664	409	-.22439	341	.02418		
142	.25720	410	-.50050				
143	.14119	411	-.20738				
144	-.00090	412	-.20439				
145	-.05174	413	-.22570				
146	-.03480	414	-.21785				
147	-.08564	415	.93390				
148	-.18340	416	-.31599				
203	-.16107	417	-.26888				
204	-.21339	418	-.32254				
205	-.22385						

HSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 95

ALPHA=10 DEG, PSI=0 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.76702	211	.85279	342	-.16451	420	.30015
104	.11870	212	.68787	303	-.22859	421	-2.03463
105	.13566	213	.95880	304	-.29266	423	-.89277
106	.06783	214	-.09614	305	.86726	424	-.53398
107	.10044	215	-.01630	306	-.09782	425	-.41220
108	.10696	216	-.02153	307	-.13182	426	-.36244
109	.04304	217	-.06734	308	-.16059	427	-.81552
110	.04304	218	.00988	309	-.18936	428	-.24066
111	-.01957	219	.12637	310	-.14228	429	-.30482
112	-.07827	221	.84362	311	-.13574	430	-.53791
113	.07565	222	-.03724	312	-.21943	431	.16396
114	.41090	223	-.12232	313	-.14359	432	.17837
115	.33655	224	-.09614	314	-.12789	433	-.53791
116	.03652	225	-.09614	315	-.12659	434	-.47636
117	.02478	226	.12375	316	-.14620	435	-.50124
118	-.04565	227	.01380	317	-.10697	436	-.37946
119	-.14871	228	-.92203	318	-.10697	437	-.14114
120	-.07436	229	.01904	319	-.04682	438	-.38208
121	.04957	230	-.01630	320	.05257	439	-.23542
122	.01435	231	-.10300	321	-.03113	440	-.24197
123	.02609	232	-.14849	322	-.03113	441	-.13197
124	.03130	233	-.11185	323	-.07689	442	-.10186
125	-.03131	234	.02207	324	-.06774	443	-.12805
126	-.13306	235	-.23750	325	-.04813	344	-.07166
127	-.15915	236	-.81863	326	-.05205	345	-.05466
128	-.29481	237	-.12886	327	.04995	346	-.02851
129	-.12001	238	-.10561	329	-.03766		
130	-.77876	239	-.25582	330	.87641		
131	-.97052	240	.53081	331	-.03766		
132	.06913	241	-.22703	332	-.08997		
133	.04957	242	-.46393	333	-.05728		
134	-.04957	243	-.13802	334	.00418		
135	-.13958	244	-.88800	335	-.01282		
136	-.14871	404	-.13197	336	-.02720		
137	-.23481	405	-.16864	337	-.04028		
138	-.38482	406	-.10352	338	-.04682		
139	-.68876	407	-.60504	339	-.03636		
140	-.68876	408	-.57981	340	-.03374		
141	-.69136	409	-.13459	341	.00811		
142	.21914	410	-.58374				
143	.17871	411	-.13721				
144	-.00653	412	-.14114				
145	-.09132	413	-.14114				
146	-.06392	414	-.13721				
147	-.10697	415	1.02428				
148	-.25046	416	-.45803				
203	-.22703	417	-.39256				
204	-.26498	418	-.36244				
205	-.24804						

OSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS ALPHA = 15 DEG , PSI = 0 DEG

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TABLE XV

RUN 95

COCKPIT TAP NO.	COCKPIT CP	FUSELAGE TAP NO.	FUSELAGE CP	TAILCONE TAP NO.	TAILCONE CP	MAIN ROTOR PYLON TAP NO.	MAIN ROTOR PYLON CP
103	.55352	211	.89563	342	-.13736	420	.24730
104	.25522	212	.74385	303	-.15572	421	-2.28490
105	.23298	213	1.00116	304	-.10195	423	-.96758
106	.02233	214	-.19741	305	.90274	424	-.62084
107	-.00907	215	-.06876	306	-.00489	425	-.48557
108	.00140	216	-.13571	307	-.08490	426	-.41858
109	.14270	217	-.23154	308	-.24229	427	-.91636
110	.13092	218	-.10683	309	-.18982	428	-.28987
111	-.00515	219	.04152	310	-.07440	429	-.32271
112	-.10589	221	.88826	311	-.04948	430	-.61428
113	.06927	222	.02445	312	-.05473	431	.15799
114	.34549	223	-.05826	313	-.05079	432	.17769
115	.27092	224	-.07795	314	-.03899	433	-.57094
116	.12177	225	-.08320	315	-.12031	434	-.48294
117	.09821	226	.12028	316	-.18327	435	-.52103
118	-.02870	227	-.22892	317	-.13343	436	-.40414
119	-.19747	228	-1.39729	318	-.02325	437	-.06266
120	-.29804	229	.07959	319	-.00358	438	-.40939
121	-.05486	230	.05596	320	-.01800	439	-.24128
122	-.08626	231	-.18074	321	.00036	440	-.23602
123	.09298	232	-.06088	322	.00298	441	-.14409
124	.09298	233	-.06745	323	-.09014	442	-.12045
125	-.04832	234	.20167	324	-.13080	443	-.14540
126	-.19617	235	[illegible]	325	-.07834	344	-.11506
127	-.20140	236	[illegible]	326	-.04555	345	-.05473
128	-.27990	237	[illegible]	327	.03184	346	-.04161
129	-.07580	238	-.05826	329	-.00620		
130	-.95501	239	-.22892	330	.90274		
131	-1.14865	240	.59157	331	-.03899		
132	.14139	241	-.23811	332	-.11769		
133	.10214	242	-.34707	333	-.07965		
134	-.03393	243	-.06351	334	.02397		
135	-.20402	244	-1.15705	335	.02921		
136	-.20140	404	-.05215	336	-.05473		
137	-.23934	405	-.10337	337	-.02456		
138	-.40812	406	-.16642	338	-.04161		
139	-.70801	407	-.96232	339	-.04817		
140	-.76922	408	-.73248	340	-.03506		
141	-.76792	409	-.06003	341	-.02850		
142	.15971	410	-.67923				
143	.20681	411	-.05084				
1 4	-.23916	412	-.05084				
[illegible]	-.17916	413	-.05478				
146	-.12421	414	-.05609				
147	-.15953	415	1.10100				
148	-.35971	416	-.58538				
203	-.28405	417	-.44617				
204	-.26568	418	-.38050				
205	-.25911						

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TABLE XV

SPA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 95 ALPHA=20 DEG, PSI=0 DEG

COCKPIT TAP NO.	COCKPIT CP	FUSELAGE TAP NO.	FUSELAGE CP	TAILCONE TAP NO.	TAILCONE CP	MAIN ROTOR PYLON TAP NO.	MAIN ROTOR PYLON CP
103	.23089	211	.91611	342	-.02372	420	.18837
104	.35502	212	.81541	303	-.01975	421	-2.50116
105	.32069	213	1.06052	304	-.04623	423	-1.04836
106	-.12960	214	-.32403	305	.90819	424	-.68517
107	-.13092	215	-.16504	306	-.00916	425	-.53538
108	-.10319	216	-.22864	307	.02658	426	-.47573
109	.24278	217	-.42870	308	-.27391	427	-1.03246
110	.21637	218	-.33993	309	-.22626	428	-.33787
111	-.05961	219	-.08952	310	.05173	429	-.36704
112	-.19958	221	.92406	311	.02923	430	-.70372
113	-.02396	222	.00597	312	.02923	431	.11149
114	.27579	223	.00323	313	-.01711	432	.13269
115	.19260	224	-.08422	314	.02525	433	-.62552
116	.20446	225	-.12662	315	-.21037	434	-.53803
117	.17411	226	.02972	316	-.21832	435	-.54068
118	-.05433	227	-.57445	317	-.16272	436	-.44259
119	-.27221	228	-1.69269	318	.05835	437	-.02637
120	-.13488	229	.14234	319	.04908	438	-.40813
121	-.15733	230	.12909	320	.00143	439	-.29280
122	-.20090	231	-.19757	321	-.00387	440	-.27027
123	.17939	232	-.00340	322	.00275	441	-.19471
124	.17147	233	-.03785	323	-.08065	442	-.16820
125	-.06753	234	.34506	324	-.14286	443	-.17351
126	-.30522	235	-.67653	325	-.12036	344	-.15345
127	-.30126	236	-1.60127	326	-.06476	345	-.10050
128	-.29994	237	.01515	327	.07820	346	-.06873
129	-.01603	238	.02707	329	-.05682		
130	-1.12655	239	-.24056	330	.91614		
131	-1.31538	240	.63124	331	-.05020		
132	.20052	241	-.26044	332	-.12433		
133	.17543	242	-.24984	333	-.13095		
134	-.05301	243	.00588	334	.00010		
135	-.35143	244	-1.37206	335	.07026		
136	-.29465	404	.00147	336	.03717		
137	-.28013	405	-.04625	337	-.03299		
138	-.47820	406	-.08204	338	-.02770		
139	-.90207	407	-1.22996	339	-.03564		
140	-.82812	408	-.89267	340	-.06608		
141	-.83737	409	.01340	341	-.07403		
142	.10677	410	-.62949				
143	.24410	411	.01074				
144	-.11507	412	.01207				
145	-.34483	413	.01207				
146	-.22863	414	.01207				
147	-.24976	415	1.12553				
148	-.50197	416	-.70240				
203	-.37306	417	-.49694				
204	-.29220	418	-.42271				
205	-.26706						

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TABLE XV

USRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 95 — ALPHA=24 DEG , PSI=0 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	-.02298	211	.92349	342	.03769	420	.17859
104	.48045	212	.84851	303	.04426	421	-2.58908
105	.40704	213	1.08134	304	-.03985	423	-1.05324
106	-.25372	214	-.40775	305	.92483	424	-.69922
107	-.20652	215	-.21832	306	.17175	425	-.54261
108	-.14753	216	-.30383	307	.00746	426	-.49786
109	.32444	217	-.56692	308	-.31453	427	-1.07167
110	.29822	218	-.58270	309	-.29482	428	-.33467
111	-.09902	219	-.10125	310	.11786	429	-.35968
112	-.28780	221	.93401	311	.10078	430	-.76239
113	-.07673	222	.14474	312	.00615	431	.11147
114	.22480	223	.05924	313	.00089	432	.12990
115	.15139	224	-.06705	314	.06792	433	-.63473
116	.29036	225	-.12230	315	-.22253	434	-.52945
117	.24840	226	-.03548	316	-.25670	435	-.55840
118	-.05707	227	-.74714	317	-.22648	436	-.46496
119	-.33369	228	-1.95209	318	.16781	437	.01408
120	-.14621	229	.20920	319	.11261	438	-.42811
121	-.20521	230	.19684	320	-.00699	439	-.32283
122	-.24323	231	-.16965	321	-.01619	440	-.33072
123	.25758	232	.05792	322	-.01488	441	-.16753
124	.23923	233	-.02101	323	-.11345	442	-.22544
125	-.05707	234	.38284	324	-.16076	443	-.20707
126	-.39400	235	-1.11152	325	-.17128	344	-.14631
127	-.37564	236	-1.80739	326	-.13579	345	-.12002
128	-.28780	237	.05792	327	.11786	346	-.09111
129	.02815	238	.09344	329	-.00962		
130	-1.18061	239	-.20780	330	.93008		
131	-1.36022	240	.64461	331	-.06088		
132	.27856	241	-.21306	332	-.09505		
133	.23005	242	-.12887	333	-.16996		
134	-.05051	243	.05397	334	.00089		
135	-.43071	244	-1.54430	335	.07055		
136	-.34418	404	.06409	336	.04164		
137	-.29960	405	.01540	337	-.04642		
138	-.51723	406	-.03988	338	-.03722		
139	-.95905	407	-1.27829	339	-.05956		
140	-.82008	408	-.89268	340	-.04905		
141	-.83057	409	.05620	341	-.05956		
142	.06224	410	-.57866				
143	.29036	411	.06014				
144	-.04329	412	.06409				
145	-.42809	413	.06804				
146	-.29436	414	.05356				
147	-.29698	415	1.13660				
148	-.58147	416	-.71238				
203	-.39986	417	-.50313				
204	-.29594	418	-.43206				
205	-.23148						

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 96

ALPHA=0 DEG , PSI=-20 DEG

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TABLE XVI

COCKPIT TAP NO.	COCKPIT CP	FUSELAGE TAP NO.	FUSELAGE CP	TAILCONE TAP NO.	TAILCONE CP	MAIN ROTOR PYLON TAP NO.	MAIN ROTOR PYLON CP
103	.62389	211	.65684	342	-.40652	420	.53880
104	-.25700	212	.66470	303	-.46408	421	-1.21272
105	-.22438	213	.83231	304	-.49025	423	-.92452
106	.45424	214	.13044	305	.69112	424	-.41098
107	.32896	215	.17366	306	-.41960	425	-.58259
108	.11624	216	.14485	307	-.39998	426	-.23412
109	-.25700	217	.12783	308	.01736	427	-.28259
110	-.30007	218	-.04109	309	-.04282	428	-.60224
111	-.11345	219	.11604	310	-.35942	429	-.02059
112	.21672	221	.62018	311	-.38689	430	-.23019
113	.50905	222	-.17727	312	-.47978	431	.07505
114	.51297	223	-.32000	313	-.06506	432	-.43587
115	.23891	224	.00212	314	-.35550	433	-.05203
116	-.23743	225	.01783	315	-.06244	434	-.64286
117	-.28310	226	.20377	316	-.06506	435	-.75028
118	-.29354	227	.25615	317	-.06375	436	-.13063
119	.12407	228	.21818	318	-.25607	437	-.32845
120	.45163	229	-.29643	319	-.19981	438	-.76338
121	.21411	230	-.09478	320	-.19720	439	-.08347
122	.05229	231	-.17466	321	-.01273	440	-.10574
123	-.28180	232	-.34357	322	-.03497	441	-.42277
124	-.27005	233	.03093	323	-.09253	442	-.04024
125	-.28310	234	-.03062	324	-.07945	443	-.10574
126	-.10040	235	-.03324	325	-.09384	344	-.47586
127	.09014	236	-.27679	326	-.13178	345	-.12001
128	.16191	237	-.32262	327	-.17626	346	-.22729
129	-.34705	238	-.25060	329	-.16841		
130	-.50365	239	-.24275	330	.72382		
131	-.66026	240	.43031	331	-.09384		
132	-.18522	241	.06497	332	-.10562		
133	-.19697	242	-.13275	333	-.13440		
134	-.24917	243	-.32262	334	-.11608		
135	-.05211	244	-.51118	335	-.08338		
136	.07839	404	-.33369	336	-.06768		
137	.12146	405	-.44897	337	-.07684		
138	.07448	406	-.45421	338	-.11870		
139	-.53236	407	.20343	339	-.08992		
140	-.51148	408	.08684	340	-.09777		
141	-.55324	409	-.34941	341	-.08992		
142	.35375	410	-.22102				
143	-.01296	411	-.34417				
144	-.17609	412	-.33369				
145	-.00774	413	-.33238				
146	.12146	414	-.33893				
147	.14886	415	.89989				
148	.04838	416	-.00356				
203	-.22703	417	.07112				
204	-.22965	418	-.09133				
205	-.28727						

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 96 ALPHA-0 DEG, PSI=-15 DEG

COCKPIT TAP NO.	COCKPIT CP	FUSELAGE TAP NO.	FUSELAGE CP	TAILCONE TAP NO.	TAILCONE CP	MAIN ROTOR PYLON TAP NO.	MAIN ROTOR PYLON CP
103	.74772	211	.63564	342	-.31914	420	.55256
104	-.18691	212	.65766	303	-.33985	421	-1.23317
105	-.16626	213	.82994	304	-.28550	423	-.77572
106	.34366	214	.11494	305	.68251	424	-.35067
107	.36689	215	.12789	306	-.34891	425	-.43360
108	.20424	216	.08774	307	-.37608	426	-.16665
109	-.20628	217	.10198	308	.00309	427	-.32864
110	-.22435	218	.06960	309	-.07844	428	-.37788
111	-.11204	219	.19229	310	-.27644	429	-.01633
112	.12420	221	.57995	311	-.24150	430	-.24570
113	.42886	222	-.11822	312	-.25055	431	.16380
114	.58119	223	-.31899	313	-.13279	432	-.11352
115	.36947	224	-.05086	314	-.34114	433	-.12259
116	-.16884	225	-.07677	315	-.05385	434	-.56060
117	-.19853	226	.12012	316	-.03961	435	-.64224
118	-.20370	227	.23281	317	-.06291	436	-.17572
119	.04029	228	.11882	318	-.13667	437	-.30402
120	.36560	229	-.21795	319	-.22338	438	-.56190
121	.28944	230	-.07402	320	-.14444	439	-.07983
122	.14485	231	-.10915	321	-.01373	440	-.11352
123	-.18046	232	-.34360	322	-.01502	441	-.38954
124	-.18175	233	-.05086	323	-.07585	442	-.03966
125	-.21015	234	-.16096	324	-.04479	443	-.08372
126	-.07977	235	-.02884	325	-.07585	344	-.31526
127	.01576	236	-.38634	326	-.09267	345	-.07326
128	.02996	237	-.32417	327	-.09008	346	-.16902
129	-.29148	238	-.25552	329	-.07973		
130	-.44252	239	-.22443	330	.72392		
131	-.60130	240	.41156	331	-.03832		
132	-.12108	241	-.02236	332	-.07326		
133	-.11333	242	-.28013	333	-.07844		
134	-.15077	243	-.31121	334	-.04608		
135	-.05266	244	-.48219	335	-.04867		
136	.02738	404	-.33123	336	-.01502		
137	.01963	405	-.45304	337	-.04091		
138	-.02039	406	-.46082	338	-.07844		
139	-.44123	407	.12103	339	-.03185		
140	-.45026	408	.00700	340	-.05385		
141	-.49028	409	-.32993	341	-.02926		
142	.28815	410	-.20494				
143	.06740	411	-.32864				
144	-.07202	412	-.32605				
145	.00801	413	-.32345				
146	.08031	414	-.31568				
147	.09451	415	.87006				
148	.01189	416	-.05909				
203	-.17132	417	.00829				
204	-.19982	418	-.13814				
205	-.24256						

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TABLE XVI

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 96 — ALPHA = 0 DEG, PSI = -10 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.83310	211	.63238	342	-.33171	420	.54113
104	-.13667	212	.66750	303	-.35900	421	-1.30043
105	-.10944	213	.82881	304	-.39410	423	-.73299
106	.21986	214	.08342	305	.66775	424	-.30351
107	.38452	215	.06000	306	-.38370	425	-.33995
108	.27950	216	.06000	307	-.34341	426	-.15515
109	-.14963	217	.07171	308	-.03018	427	-.38941
110	-.15741	218	.10683	309	-.11076	428	-.22543
111	-.10426	219	.19919	310	-.29662	429	-.03932
112	.01632	221	.56473	311	-.20304	430	-.28269
113	.33395	222	-.09440	312	-.20954	431	.21577
114	.59325	223	-.31595	313	-.19394	432	.11295
115	.43248	224	-.10391	314	-.33561	433	-.23193
116	-.13018	225	-.16895	315	-.06008	434	-.52606
117	-.14963	226	.04959	316	-.07437	435	-.51565
118	-.15482	227	.20570	317	-.06657	436	-.25536
119	-.04851	228	-.02065	318	-.13806	437	-.29961
120	.23542	229	-.14684	319	-.21214	438	-.42064
121	.32358	230	-.03366	320	-.25633	439	-.13823
122	.19393	231	-.11562	321	-.08607	440	-.16165
123	-.12370	232	-.31465	322	-.05358	441	-.30481
124	-.11203	233	-.13383	323	-.08607	442	-.05624
125	-.14704	234	-.30684	324	-.04058	443	-.09268
126	-.09518	235	-.03366	325	-.05618	344	-.24853
127	-.05369	236	-.37058	326	-.03798	345	-.04578
128	-.14834	237	-.32635	327	-.07437	346	-.06137
129	-.30910	238	-.28993	329	-.21344		
130	-.42060	239	-.27139	330	.72494		
131	-.59692	240	.41774	331	-.03538		
132	-.05758	241	-.11301	332	-.03668		
133	-.06666	242	-.43693	333	-.04578		
134	-.09129	243	-.31465	334	.00751		
135	-.05629	244	-.46425	335	.01921		
136	-.06406	404	-.30221	336	-.04318		
137	-.09518	405	-.39331	337	-.03538		
138	-.14574	406	-.39461	338	-.05358		
139	-.43356	407	.01274	339	-.02108		
140	-.45171	408	-.08357	340	-.02758		
141	-.48801	409	-.32564	341	-.02758		
142	.23153	410	-.33084				
143	.10837	411	-.31653				
144	-.00572	412	-.32043				
145	-.00961	413	-.31653				
146	.02928	414	-.31783				
147	.00465	415	.85999				
148	-.07833	416	-.14604				
203	-.11692	417	-.05014				
204	-.16895	418	-.19289				
205	-.18196						

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TABLE XVI

NSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 96 — ALPHA=0 DEG, PSI=-5 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.87646	211	.62906	302	-.29250	420	.56030
104	-.11275	212	.68859	303	-.28733	421	-1.29237
105	-.08695	213	.84646	304	-.39464	423	-.66575
106	.14133	214	.05449	305	.65908	424	-.30324
107	.35026	215	.01826	306	-.27181	425	-.23333
108	.30254	216	.01179	307	-.32741	426	-.16083
109	-.12177	217	.05837	308	-.04555	427	-.46637
110	-.12951	218	.12178	309	-.13477	428	-.13882
111	-.10372	219	.21237	310	-.17485	429	-.07279
112	-.05729	221	.56436	311	-.25501	430	-.29030
113	.19679	222	-.08915	312	-.16450	431	.25087
114	.56048	223	-.30526	313	-.25501	432	.23275
115	.49858	224	-.15644	314	-.32094	433	-.30972
116	-.10501	225	-.19268	315	-.07917	434	-.47414
117	-.10630	226	.00014	316	-.05848	435	-.48450
118	-.12693	227	.19296	317	-.07917	436	-.26440
119	-.12435	228	-.05809	318	-.15287	437	-.27994
120	.08974	229	-.10338	319	-.20975	438	-.28000
121	.30254	230	-.06715	320	-.08434	439	-.15177
122	.24450	231	-.16550	321	-.07141	440	-.17248
123	-.07921	232	-.31173	322	-.08951	441	-.18802
124	-.08824	233	-.19268	323	-.08305	442	-.04431
125	-.09469	234	-.41137	324	-.02487	443	-.08704
126	-.11146	235	-.05550	325	-.03650	344	-.10891
127	-.12306	236	-.35702	326	-.02228	345	-.03909
128	-.27396	237	-.31044	327	-.10503	346	-.00160
129	-.29201	238	-.35961	329	-.09210		
130	-.40035	239	-.24961	330	.72502		
131	-.57794	240	.44530	331	-.04555		
132	-.04439	241	-.18491	332	-.03909		
133	-.04181	242	-.54078	333	-.03004		
134	-.06245	243	-.20232	334	.03590		
135	-.08050	244	-.47608	335	-.04685		
136	-.08695	404	-.29159	336	-.23044		
137	-.19142	405	-.34338	337	-.04426		
138	-.26880	406	-.32655	338	-.06753		
139	-.42743	407	-.05855	339	-.00935		
140	-.43904	408	-.15954	340	-.01840		
141	-.46871	409	-.30713	341	.00228		
142	.16841	410	-.38222				
143	.12972	411	-.31360				
144	.01365	412	-.30324				
145	-.01473	413	-.31490				
146	-.01215	414	-.30972				
147	-.04955	415	.87231				
148	-.10759	416	-.17507				
203	-.08786	417	-.09739				
204	-.15515	418	-.24887				
205	-.16032						

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TABLE XVI

NSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 96

ALPHA= 0 DEG , PSI= 0 DEG

COCKPIT

TAP NO.	CP
103	.88773
104	-.10032
105	-.10418
106	.00145
107	.28485
108	.33123
109	-.12608
110	-.12350
111	-.14283
112	-.14283
113	.04139
114	.47160
115	.50256
116	-.10547
117	-.10676
118	-.11835
119	-.20208
120	-.10904
121	.25780
122	.26939
123	-.08486
124	-.08743
125	-.11449
126	-.14025
127	-.18147
128	-.41463
129	[illegible]
130	[illegible]
131	-.58[illegible]81
132	-.03075
133	-.[illegible]364
134	[illegible]
135	-.105[illegible]
136	-.1[illegible]31
137	[illegible]
138	[illegible]
139	[illegible]
140	[illegible]
141	[illegible]
142	[illegible]
143	[illegible]
144	[illegible]
145	[illegible]
146	[illegible]
147	-.1[illegible]
148	-.15[illegible]
203	-.1167
204	-.14134
205	-.14134

FUSELAGE

TAP NO.	CP
211	.62514
212	.70270
213	.86426
214	-.02630
215	-.00950
216	.00860
217	.05255
218	.10425
219	.19085
221	.56698
222	-.19453
223	-.30161
224	-.19304
225	-.24215
226	-.06120
227	.15595
228	-.27188
229	-.09868
230	-.17617
231	-.29923
232	-.29515
233	-.29923
234	-.51876
235	-.04698
236	-.37141
237	-.29481
238	-.43733
239	-.39420
240	.44289
241	-.27957
242	-.66482
243	-.27835
244	-.47481
404	-.28925
405	-.35262
406	-.34615
407	-.14571
408	-.23753
409	-.30218
410	-.42115
411	-.29572
412	-.30089
413	-.29279
414	-.20572
415	.87328
416	-.22072
417	-.14830
418	-.29408

TAILCONE

TAP NO.	CP
342	-.26175
303	-.29016
304	-.31212
305	.66159
306	-.34957
307	-.29920
308	-.04996
309	-.17006
310	-.12228
311	-.2[illegible]343
312	-.[illegible]56
313	-.20235
314	-.31082
315	-.08354
316	-.06546
317	-.08225
318	-.11712
319	-.13261
320	-.14811
321	-.09387
322	-.09904
323	-.06675
324	-.02026
325	-.05384
326	-.03059
327	-.05900
329	-.12357
330	.72228
331	-.02930
332	-.03188
333	-.00347
334	.02364
335	-.01897
336	-.02414
337	-.01251
338	-.03447
339	.01331
340	-.00735
341	.01073

MAIN ROTOR PYLON

TAP NO.	CP
420	.55517
421	-1.30178
423	-.64757
424	-.36038
425	-.23365
426	-.21425
427	-.52978
428	-.09528
429	-.17016
430	-.30994
431	.25516
432	.26033
433	-.39141
434	-.41469
435	-.44184
436	-.32287
437	-.28796
438	-.24529
439	-.18451
440	-.19097
441	-.10563
442	-.06037
443	-.07976
344	-.07063
345	-.03576
346	-.02285

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TABLE XVI

NSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 96 ALFHA=0 DEG, PSI=5 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.84075	211	.61594	342	-.28339	420	.54569
104	-.12130	212	.71844	303	-.29895	421	-1.28456
105	-.13165	213	.86245	304	-.36895	423	-.69005
106	-.11742	214	-.09209	305	.66031	424	-.47068
107	.19680	215	-.04317	306	-.31969	425	-.24612
108	.29249	216	-.00035	307	-.28080	426	-.31751
109	-.14716	217	.02689	308	-.10061	427	-.62774
110	-.14199	218	.02689	309	-.17580	428	-.13838
111	-.17561	219	.13458	310	-.16284	429	-.29804
112	-.22733	221	.55106	311	-.20302	430	-.34096
113	-.11742	222	-.20146	312	-.26265	431	.22248
114	.36102	223	-.20709	313	-.20821	432	.12123
115	.47869	224	-.22611	314	-.30154	433	-.44091
116	-.12389	225	-.26244	315	-.11358	434	-.46030
117	-.13294	226	-.08858	316	-.07080	435	-.44342
118	-.17302	227	.12680	317	-.09413	436	-.35905
119	-.26225	228	-.35715	318	-.14080	437	-.28376
120	-.31914	229	-.12361	319	-.11228	438	-.23573
121	.18775	230	-.24427	320	-.15247	439	-.20977
122	.23430	231	-.30158	321	-.09673	440	-.20458
123	-.04673	232	-.30136	322	-.10321	441	-.19030
124	-.11096	233	-.26503	323	-.05524	442	-.11112
125	-.15621	234	-.61664	324	-.07210	443	-.10463
126	-.17820	235	-.07171	325	-.06432	344	-.13173
127	-.26483	236	-.40256	326	-.03580	345	-.05913
128	-.55578	237	-.27412	327	-.02673	346	-.02413
129	-.32432	238	-.51155	329	-.09284		
130	-.44586	239	-.38699	330	.72901		
131	-.58422	240	.44078	331	-.03450		
132	-.05665	241	-.29579	332	-.04228		
133	-.09415	242	-.75158	333	-.04876		
134	-.13811	243	-.30136	334	.00179		
135	-.14587	244	-.49728	335	-.02413		
136	-.18465	404	-.28636	336	.02513		
137	-.55923	405	-.35386	337	-.03969		
138	-.49371	406	-.32400	338	-.04099		
139	-.53259	407	-.24612	339	-.00469		
140	-.50147	408	-.32011	340	-.02154		
141	-.48207	409	-.30323	341	.00309		
142	.08559	410	-.47587				
143	.05326	411	-.29636				
144	-.10708	412	-.28117				
145	-.08639	413	-.27987				
146	-.08519	414	-.28117				
147	-.13811	415	.87669				
148	-.20664	416	-.22795				
203	-.19497	417	-.19160				
204	-.17551	418	-.32140				
205	-.17551						

HSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 96

ALPHA=0 DEG , PSI=10 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.80226	211	.60657	342	-.27917	420	.53399
104	-.14858	212	.72292	303	-.27271	421	-1.23403
105	-.16920	213	.87288	304	-.34504	423	-.69211
106	-.21300	214	-.14323	305	.66629	424	-.60029
107	.09235	215	-.04240	306	-.30241	425	-.35196
108	.24696	216	.00543	307	-.30758	426	-.45414
109	-.17177	217	.03129	308	-.13451	427	-.69211
110	-.18079	218	-.10057	309	-.17584	428	-.24332
111	-.22718	219	.04034	310	-.18359	429	-.45414
112	-.27871	221	.52254	311	-.20554	430	-.41922
113	-.31221	222	-.20449	312	-.17325	431	.16797
114	.24696	223	-.20061	313	-.17196	432	-.06484
115	.44795	224	-.26087	314	-.29467	433	-.48130
116	-.15503	225	-.28156	315	-.09963	434	-.50846
117	-.16276	226	-.10962	316	-.08930	435	-.45672
118	-.21945	227	.10110	317	-.08155	436	-.37654
119	-.32252	228	-.40696	318	-.14096	437	-.27953
120	-.54028	229	-.16521	319	-.13709	438	-.27307
121	.07173	230	-.35266	320	-.11642	439	-.24203
122	.20444	231	-.46642	321	-.15776	440	-.22133
123	-.13055	232	-.29156	322	-.10480	441	-.28083
124	-.15760	233	-.27380	323	-.09705	442	-.13339
125	-.22073	234	-.64612	324	-.04797	443	-.12304
126	-.23104	235	-.16392	325	-.05443	344	-.19779
127	-.29546	236	-.40849	326	-.09318	345	-.10480
128	-.66523	237	-.29673	327	-.10867	346	-.07251
129	-.32896	238	-.57631	329	-.13063		
130	-.48099	239	-.46642	330	.73991		
131	-.58664	240	.42946	331	-.05314		
132	-.09962	241	-.31646	332	-.04926		
133	-.13055	242	-.79608	333	-.03764		
134	-.21172	243	-.20802	334	-.01955		
135	-.20656	244	-.55433	335	-.01051		
136	-.20527	404	-.27695	336	-.06218		
137	-.40884	405	-.32999	337	-.05443		
138	-.57633	406	-.30790	338	-.04668		
139	-.61241	407	-.30928	339	.00369		
140	-.53382	408	-.37136	340	-.03505		
141	-.49130	409	-.29117	341	-.01439		
142	.05498	410	-.47224				
143	-.01717	411	-.28988				
144	-.20141	412	-.27565				
145	-.13695	413	-.20505				
146	-.08932	414	-.29859				
147	-.15116	415	.87931				
148	-.21945	416	-.26143				
203	-.24795	417	-.10159				
204	-.23890	418	-.34032				
205	-.20390						

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TABLE XVI

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 96 ALPHA=0 DEG , PSI=15 DEG

COCKPIT TAP NO.	COCKPIT CP	FUSELAGE TAP NO.	FUSELAGE CP	TAILCONE TAP NO.	TAILCONE CP	MAIN ROTOR PYLON TAP NO.	MAIN ROTOR PYLON CP
103	.66695	211	.57259	342	-.28780	420	.55823
104	-.20120	212	.79414	303	-.31486	421	-1.16555
105	-.24233	213	.85116	304	-.39990	423	-.74622
106	-.29631	214	-.25150	305	.62447	424	-.75396
107	-.04182	215	-.06837	306	-.31743	425	-.46624
108	.17797	216	.00385	307	-.30455	426	-.50042
109	-.21919	217	-.00002	308	-.14091	427	-.59013
110	-.23719	213	-.27214	309	-.23883	428	-.39527
111	-.28860	219	-.08385	310	-.20662	429	-.59784
112	-.33487	221	.48231	311	-.18858	430	-.41850
113	-.47112	222	-.30466	312	-.22208	431	.07567
114	.07771	223	-.30438	313	-.23883	432	-.33076
115	.35406	224	-.32244	314	-.32001	433	-.51656
116	-.20248	225	-.20793	315	-.13962	434	-.53075
117	-.23076	226	-.12770	316	-.09710	435	-.46494
118	-.30917	227	.06704	317	-.14735	436	-.40430
119	-.38599	228	-.51460	318	-.17956	437	-.30108
120	-.77445	229	-.25021	319	-.18729	438	-.37721
121	-.05210	230	-.47204	320	-.14220	439	-.28918
122	.14455	231	-.61648	321	-.15766	440	-.26237
123	-.19991	232	-.39567	322	-.16410	441	-.36301
124	-.21791	233	-.29148	323	-.10741	442	-.17593
125	-.31559	234	-.69225	324	-.08035	443	-.14109
126	-.29117	235	-.23087	325	-.08550	344	-.32516
127	-.32716	236	-.37273	326	-.11514	345	-.14348
128	-.76802	237	-.31470	327	-.08421	346	-.12158
129	-.29246	238	-.67195	329	-.08421		
130	-.52253	239	-.55844	330	.71209		
131	-.62278	240	.40880	331	-.06875		
132	-.15621	241	-.33404	332	-.05715		
133	-.20891	242	-.83056	333	-.06489		
134	-.32845	243	-.31586	334	-.08164		
135	-.25004	244	-.53652	335	-.01850		
136	-.21691	404	-.30495	336	-.07262		
137	-.42871	405	-.32044	337	-.06875		
138	-.64206	406	-.29463	338	-.06102		
139	-.70761	407	-.39011	339	-.05458		
140	-.58422	408	-.42366	340	-.06489		
141	-.52767	409	-.32173	341	-.05844		
142	.00445	410	-.46624				
143	-.10223	411	-.31399				
144	-.34644	412	-.32819				
145	-.10092	413	-.31528				
146	-.03938	414	-.20859				
147	.14979	415	.86660				
148	-.23719	416	-.28689				
203	-.38692	417	-.10786				
204	-.30438	418	-.30882				
205	-.25159						

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TABLE XVI

PSPA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENT

RUN 90 ALPHA=0 DEG, PSI=20 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAIL CONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.54743	211	.55092	342	-.34466	420	.54468
104	-.25657	212	.72170	303	-.29437	421	-1.08899
105	-.30159	213	.85079	304	-.33177	423	-.88752
106	-.36592	214	-.40262	305	.61873	424	-.95339
107	-.18195	215	-.07474	306	-.30984	425	-.57112
108	.07792	216	-.05538	307	-.31113	426	-.81649
109	-.28487	217	-.03344	308	-.15095	427	-.61303
110	-.30803	218	-.41294	309	-.28921	428	-.58791
	-.36206	219	-.10963	310	-.36014	429	.75709
112	-.36592	221	.44417	311	-.24407	430	.45231
113	-.66181	222	-.51105	312	-.24149	431	-.05455
114	-.13435	223	-.30968	313	-.28534	432	-.70543
115	.22072	224	-.44392	314	-.31113	433	-.55562
116	-.27072	225	-.28515	315	-.15379	434	-.62794
117	-.30288	226	-.10185	316	-.14347	435	-.57112
118	-.40134	227	.02336	317	-.16798	436	-.52463
119	-.38393	228	-.61173	318	-.27889	437	-.32962
120	-1.02460	229	-.33291	319	-.23246	438	-.44198
121	-.22193	230	-.55881	320	-.19764	439	-.34254
122	.03547	231	-.70080	321	-.22601	440	-.32704
123	-.30159	232	-.31355	322	-.18861	441	-.43036
124	-.30159	233	-.24384	323	-.11897	442	-.22631
125	-.42510	234	-.60515	324	-.08544	443	-.18111
126	-.40966	235	-.23907	325	-.14863	344	-.52787
127	-.33633	236	-.41294	326	-.12026	345	-.19119
128	-.81619	237	-.29677	327	-.15766	346	-.24020
129	-.33247	238	-.64917	329	-.08544		
130	-.58334	239	-.60786	330	.71030		
131	-.62965	240	.30641	331	-.08157		
132	-.24370	241	-.34195	332	-.09189		
133	-.29259	242	-.80730	333	-.10865		
134	-.44954	243	-.33291	334	-.09189		
135	-.36077	244	-.56010	335	-.05964		
136	-.22955	404	-.31671	336	-.01322		
137	-.41352	405	-.31800	337	-.05964		
138	-.68625	406	-.26118	338	-.08157		
139	-.51847	407	-.44198	339	-.07899		
140	-.51164	408	-.40234	340	-.08544		
141	-.55632	409	-.31800	341	-.08802		
142	-.10991	410	-.51688				
143	-.23470	411	-.30250				
144	-.52544	412	-.30250				
145	-.25657	413	-.29902				
146	-.11763	414	-.30896				
147	-.16780	415	.85849				
148	-.21797	416	-.30509				
203	-.49556	417	-.21210				
204	-.38455	418	-.40582				
205	-.29419						

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ORIGINAL PAGE IS POOR

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TABLE XVII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 38 ALPHA=-8DEG, PSI=0 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.81065	211	.03644	342	-.05578	420	.79849
104	-.16449	212	.04038	303	.79084	421	-.00493
105	-.18663	213	-.03571	304	-.29169	423	-.52960
106	-.10959	214	-.09422	305	-.22354	424	-.28288
107	.42258	215	-.11047	306	-.42143	425	-.16746
108	.52079	216	-.23509	307	-.61278	426	-.17396
109	-.13941	217	-.19967	308	-.57739	427	-.47842
110	-.13303	218	-.19262	309	-.28120	428	.00452
111	-.20754	219	.87333	310	-.14621	429	-.15290
112	-.22062	221	-.19705	311	.78953	430	-.26451
113	-.02844	222	-.21541	312	-.35721	431	.80899
114	.58077	223	-.19705	313	-.09248	432	.31686
115	.65921	224	-.19574	314	-.12262	433	-.34456
116	-.10296	225	-.40628	315	-.31528	434	-.47711
117	-.10427	226	-.20754	316	-.39129	435	-.46661
118	-.16702	227	-.19967	317	-.17898	436	-.37081
119	-.32259	228	-.20492	318	-.10690	437	-.25138
120	-.17355	229	-.17737	319	.81574	438	-.22514
121	.41082	230	-.20886	320	-.05972	439	-.27763
122	.45659	231	-.20230	321	.00450	440	-.30125
123	-.11211	232	-.20591	322	-.02826	441	-.13721
124	-.04674	233	-.18918	323	-.21829	442	-.17002
125	-.12388	234	-.17344	324	-.31266	443	-.13065
126	-.16833	235	-.19443	325	-.11738	344	-.09641
127	-.27683	236	-.19967	326	.85375	345	-.05185
128	-.56183	237	-.18524	327	-.09248	346	.01499
129	-.19579	238	-.21673	329	-.09510		
130	-.16440	239	-.20492	330	.79084		
131	-.30821	240	.92711	331	-.15670		
132	-.00369	241	-.46980	332	-.24713		
133	-.00239	242	-.17737	333	-.09641		
134	-.05982	243	-.18656	334	.04644		
135	-.11472	244	-.21410	335	-.00074		
136	-.17486	404	-.21505	336	.01630		
137	-.39188	405	-.10405	337	.00450		
138	-.47032	406	-.20152	338	-.06365		
139	-.36442	407	.22973	339	-.05972		
140	-.32390	408	-.50204	340	.02154		
141	-.30821	409	-.23301	341	.03202		
142	.18465	410	.37261				
143	.18727	411	-.18970				
144	.02385	412	-.20283				
145	-.04936	413	-.20020				
146	-.08596	414	-.17780				
147	-.13826	415	-.30787				
148	-.20885	416	-.26188				
203	-.08030	417	-.75270				
204	-.05276	419	1.00815				
205	-.04982						

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TABLE XVII

PDCA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

ALFA = 4 DEG. [illegible]

RUN 129

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.93546	211	.07937	302	-.05632	420	.66039
104	-.07197	212	.05855	303	.90673	421	-1.22008
105	-.07975	213	-.02601	304	-.38127	423	-.69545
106	.02138	214	.02473	305	-.18370	424	-.40781
107	.39479	215	-.07902	306	-.47875	425	-.24772
108	.44795	216	-.10383	307	-.64382	426	-.24772
109	-.04215	217	-.18212	308	-.64252	427	-.63818
110	-.05901	218	-.18082	309	-.29808	428	-.09153
111	-.09401	219	.89636	310	-.05762	429	-.23861
112	-.11476	221	-.17692	311	.79633	430	-.37137
113	.05639	222	-.17301	312	-.26169	431	.76768
114	.56723	223	-.16391	313	-.10961	432	.25858
115	.61261	224	-.19602	314	-.10961	433	-.42213
116	-.03307	225	-.32002	315	-.34097	434	-.54057
117	-.03178	226	-.14830	316	-.44236	435	-.50803
118	-.07586	227	-.17171	317	-.17200	436	-.39479
119	-.17310	228	-.17041	318	-.06282	437	-.18134
120	-.09272	229	-.16000	319	.83013	438	-.26334
121	.36497	230	-.15870	320	-.00272	439	-.30629
122	.36442	231	-.17041	321	-.02123	440	-.33883
123	-.04608	232	-.17041	322	-.01473	441	-.16572
124	-.00714	233	-.17692	323	-.27059	442	-.18134
125	-.04215	234	-.19602	324	-.28119	443	-.17874
126	-.08753	235	-.19602	325	-.09142	344	-.10181
127	-.19514	236	-.17171	326	.88472	345	-.07192
128	-.45186	237	-.17529	327	-.06542	346	-.01343
129	-.17579	238	-.19342	329	.00217		
130	-.50146	239	-.15480	330	.81323		
131	-.47702	240	.09400	331	-.14991		
132	.06158	241	-.42540	332	-.18370		
133	.05380	242	-.17822	333	-.06412		
134	.00453	243	-.19342	334	.02686		
135	-.03695	244	-.14179	335	.04246		
136	-.09531	404	-.19566	336	.05026		
137	-.29239	405	-.19525	337	.04246		
138	-.39352	406	-.10436	338	-.04462		
139	-.41157	407	.40804	339	-.00173		
140	-.41045	408	-.65250	340	.03596		
141	-.40778	409	-.26204	341	.04766		
142	.20031	410	.75968				
143	.20938	411	-.10045				
144	.06287	412	-.19785				
145	.00842	413	-.17493				
146	-.13696	414	-.17093				
147	-.09661	415	-.27884				
148	-.17051	416	-.29937				
203	-.10406	417	-.47116				
204	-.14790	418	1.03430				
205	-.13659						

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TABLE XVII

PSPA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 138

ALPHA=0 LEG. PSI=0 LEG

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.95925	211	.06564	302	-.19051	420	.56293
104	.03498	212	.07084	303	.81651	421	-1.55910
105	.02592	213	-.03048	304	-.45524	423	-.76123
106	.12430	214	.03577	305	-.25929	424	-.44676
107	.31979	215	.03317	306	-.44226	425	-.31421
108	.36637	216	-.27830	307	-.48630	426	-.28562
109	.00003	217	-.10154	308	-.50326	427	-.71835
110	-.01292	218	-.20582	309	-.28135	428	-.16217
111	-.01939	219	.89042	310	-.11524	429	-.24794
112	-.05564	221	-.17855	311	.78926	430	-.39088
113	.13336	222	-.18764	312	-.32158	431	.73706
114	.57608	223	-.10024	313	-.27226	432	.24976
115	.55795	224	-.20193	314	-.24631	433	-.37019
116	.00132	225	-.20972	315	-.32417	434	-.53252
117	-.01939	226	-.27960	316	-.33455	435	-.55461
118	-.03751	227	-.21362	317	-.17753	436	-.35450
119	-.10353	228	-.21751	318	-.12562	437	-.22065
120	-.06470	229	-.19803	319	.84247	438	-.34280
121	.26419	230	-.17335	320	-.27875	439	-.30512
122	.28740	231	-.10543	321	-.16845	440	-.32851
123	.01427	232	-.16686	322	-.09319	441	-.18037
124	.01685	233	-.10156	323	-.22555	442	-.15048
125	-.01421	234	-.16426	324	-.30211	443	-.17387
126	-.05305	235	-.10154	325	-.09707	344	-.11784
127	-.11777	236	-.10673	326	.87880	345	-.06852
128	-.35726	237	-.15257	327	-.12692	346	-.03749
129	-.19027	238	-.10413	328	-.16326		
130	-.44787	239	-.10154	330	.92680		
131	-.66276	240	.94757	331	-.10616		
132	.08935	241	-.37441	332	-.21387		
133	.07779	242	-.23960	333	-.05165		
134	.01038	243	-.20323	334	.04309		
135	-.01292	244	-.21102	335	-.05425		
136	-.08671	404	-.20246	336	.05606		
137	-.22651	405	-.10466	337	.05995		
138	-.37538	406	-.10376	338	-.07112		
139	-.49314	407	.60621	339	.01842		
140	-.53972	408	-.40727	340	.05735		
141	-.50353	409	-.21805	341	.03010		
142	.20844	410	.72536				
143	.23692	411	-.10557				
144	.05957	412	-.10167				
145	.02592	413	-.23405				
146	.00003	414	-.20376				
147	-.06470	415	-.50783				
148	-.15531	416	-.20975				
203	-.17205	417	-.61690				
204	-.19674	418	1.07362				
205	-.23050						

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TABLE XVII

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 138 ALPHA=5 DEG , PSI=0 DEG

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.89472	211	.15513	302	-.16783	420	.49718
104	.11095	212	.17684	303	.81757	421	-1.78473
105	.11905	213	-.01002	304	-.51762	423	-.84635
106	.14350	214	.03756	305	-.30488	424	-.48433
107	.23984	215	.07936	306	-.44322	425	-.35886
108	.24635	216	-.19582	307	-.42365	426	-.30266
109	.05637	217	-.21719	308	-.50457	427	-.75748
110	.04195	218	-.17929	309	-.31923	428	-.13629
111	.02372	219	.97160	310	-.16914	429	-.22686
112	-.03226	221	-.16753	311	.79408	430	-.37585
113	.10835	222	-.17668	312	-.42626	431	.78094
114	.50414	223	-.10880	313	-.31140	432	.25409
115	.45987	224	-.14271	314	-.36491	433	-.33664
116	.07320	225	-.04347	315	-.43017	434	-.49870
117	.05757	226	-.20411	316	-.44714	435	-.46864
118	-.00232	227	-.19321	317	-.22396	436	-.31965
119	-.10257	228	-.19452	318	-.16392	437	-.15890
120	-.04137	229	-.20019	319	.83323	438	-.31312
121	.17735	230	-.19497	320	-.28791	439	-.27260
122	.16304	231	-.20155	321	-.25659	440	-.31312
123	.03023	232	-.17929	322	-.20829	441	-.21370
124	.06538	233	-.15979	323	-.33489	442	-.14191
125	.01591	234	-.17537	324	-.34534	443	-.18242
126	-.06972	235	-.20411	325	-.14304	344	-.16522
127	-.11559	236	-.22501	326	.87500	345	-.08691
128	-.31739	237	-.14402	327	-.11954	346	-.03471
129	-.22104	238	-.22109	329	-.16131		
130	-.66631	239	-.16627	330	.83454		
131	-.82775	240	1.05651	331	-.20569		
132	.07971	241	-.27808	332	-.30618		
133	.09403	242	-.19713	333	-.10127		
134	.02893	243	-.17798	334	.02011		
135	-.07132	244	-.19452	335	-.05950		
136	-.10777	404	-.16805	336	.02664		
137	-.23146	405	-.17537	337	.03316		
138	-.37727	406	-.10540	338	-.14173		
139	-.63245	407	.20756	339	-.00991		
140	-.60902	408	-.36017	340	.04099		
141	-.62074	409	-.11410	341	.01359		
142	.23335	410	.54815				
143	.25156	411	-.16543				
144	.05627	412	-.15759				
145	-.01564	413	-.14975				
146	.00812	414	-.15890				
147	-.06741	415	-.37977				
148	-.21714	416	-.20726				
203	-.22763	417	-.52484				
204	-.23416	418	1.17497				
205	-.24461						

PSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 135 ALPHA=10 DEG , PSI=0 DEG

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TABLE XVII

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAIL CONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.81455	211	.20971	342	-.13018	420	.39299
104	.23835	212	.19660	303	.86922	421	-2.13580
105	.22267	213	-.01710	304	-.55719	423	-.92124
106	.12729	214	-.02758	305	-.32142	424	-.55137
107	.11945	215	.00303	306	-.60958	425	-.40578
108	.12467	216	-.14557	307	-.57421	426	-.34413
109	.15342	217	-.13378	308	-.60041	427	-.88189
110	.13251	218	-.15344	309	-.35809	428	-.18412
111	.03321	219	.99894	310	-.11708	429	-.25232
112	-.03996	221	-.19853	311	.83517	430	-.42808
113	.11553	222	-.13115	312	-.35809	431	.80091
114	.45916	223	-.14951	313	-.41703	432	.23954
115	.38468	224	-.00051	314	-.44585	433	-.35331
116	.13513	225	.06550	315	-.50479	434	-.54350
117	.14166	226	-.13376	316	-.51265	435	-.53432
118	.02929	227	-.14557	317	-.23104	436	-.37036
119	-.10137	228	-.15213	318	-.09482	437	-.11067
120	-.02297	229	-.11935	319	.37970	438	-.34938
121	.08025	230	-.13246	320	-.28998	439	-.32577
122	.03452	231	-.15606	321	-.16948	440	-.35987
123	.13905	232	-.13115	322	-.22842	441	-.23265
124	.13382	233	-.15869	323	-.43275	442	-.19330
125	.02014	234	-.15344	324	-.45371	443	-.23002
126	-.09876	235	-.15344	325	-.17079	344	-.15376
127	-.13273	236	-.17180	326	.95436	345	-.12494
128	-.28037	237	-.11018	327	-.10267	346	-.09220
129	-.15102	238	-.12329	329	-.23235		
130	-.82391	239	-.14295	330	.87184		
131	-1.03959	240	1.09678	331	-.25723		
132	.18216	241	-.09707	332	-.35023		
133	.17694	242	-.10887	333	-.11053		
134	.03074	243	-.14557	334	-.02539		
135	-.08046	244	-.14689	335	-.02670		
136	-.12489	404	-.11722	336	.05320		
137	-.19152	405	-.11460	337	.06236		
138	-.37706	406	-.11591	338	-.13935		
139	-.74944	407	.02026	339	-.08172		
140	-.72853	408	-.37168	340	-.03194		
141	-.72331	409	-.16444	341	.00866		
142	.29584	410	.17658				
143	.26709	411	-.11985				
144	.04889	412	-.11329				
145	-.05041	413	-.12509				
146	-.03212	414	-.12378				
147	-.09353	415	-.43595				
148	-.28821	416	-.15657				
203	-.24521	417	-.62219				
204	-.28192	418	1.12750				
205	-.30945						

RSRA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 138 ALPHA=15 DEG, PSI=0 DEG

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TABLE XVII

COCKPIT TAP NO.	CP	FUSELAGE TAP NO.	CP	TAILCONE TAP NO.	CP	MAIN ROTOR PYLON TAP NO.	CP
103	.58679	211	.31248	342	-.08770	420	.26905
104	.37974	212	.27589	303	.87829	421	-2.38712
105	.34589	213	-.02070	304	-.55504	423	-1.00414
106	.08415	214	-.09900	305	-.36576	424	-.60806
107	.04378	215	.09689	306	-.76390	425	-.46558
108	.05290	216	-.09080	307	-.71169	426	-.41983
109	.25474	217	-.09080	308	-.76782	427	-1.02767
110	.24562	218	-.06512	309	-.42450	428	-.27866
111	.04769	219	.97622	310	-.07465	429	-.28650
112	-.04867	221	-.05336	311	.87699	430	-.47081
113	.11020	222	-.09995	312	-.41536	431	.76577
114	.42402	223	-.09125	313	-.38273	432	.21023
115	.32375	224	-.05206	314	-.50543	433	-.37539
116	.23260	225	.16876	315	-.56809	434	-.62506
117	.20135	226	-.07949	316	-.69863	435	-.61068
118	.04378	227	.08995	317	-.30832	436	-.40153
119	-.12289	228	-.09125	318	-.07204	437	-.05513
120	-.02783	229	-.09779	319	.88482	438	-.43029
121	-.00179	230	-.17045	320	-.34356	439	-.39107
122	-.04476	231	-.10352	321	-.25610	440	-.46428
123	.22609	232	-.11085	322	-.25741	441	-.30611
124	.21697	233	-.10693	323	-.48585	442	-.28258
125	.05420	234	-.07035	324	-.59812	443	-.31656
126	-.10727	235	-.09256	325	-.22999	344	-.20389
127	-.12550	236	-.06120	326	.95531	345	-.18039
128	-.22707	237	-.05728	327	-.08379	346	-.12295
129	-.09425	238	-.09517	329	-.24957		
130	-.99274	239	-.09648	330	.89004		
131	-1.18156	240	1.09381	331	-.39939		
132	.27297	241	-.04944	332	-.39578		
133	.24692	242	-.08733	333	-.21312		
134	.07764	243	-.08864	334	-.07415		
135	-.13852	244	-.09517	335	.01803		
136	-.13852	404	-.09127	336	.08069		
137	-.20753	405	-.07997	337	.07547		
138	-.40156	406	-.09127	338	-.11251		
139	-.80914	407	.85074	339	-.13470		
140	-.76096	408	-.44336	340	-.05638		
141	-.76356	409	-.15578	341	-.03288		
142	.35891	410	-.14533				
143	.32896	411	-.05644				
144	.05290	412	-.05513				
145	-.14763	413	-.06036				
146	-.07992	414	-.08650				
147	-.10596	415	-.69826				
148	-.36119	416	-.15578				
203	-.30292	417	-.77146				
204	-.31468	418	1.06904				
205	-.32513						

RERA STATIC PRESSURE DISTRIBUTION - PRESSURE COEFFICIENTS

RUN 138

ALPHA =20 DEG , PSI=0 DEG

COCKPIT		FUSELAGE		TAILCONE		MAIN ROTOR PYLON	
TAP NO.	CP	TAP NO.	CP	TAP NO.	CP	TAP NO.	CP
103	.24612	211	.40714	342	-.05603	420	.19763
104	.49236	212	.37446	303	.88696	421	-2.62735
105	.42461	213	.02150	304	-.56671	423	-1.04353
106	-.07829	214	-.17721	305	-.31725	424	-.67864
107	-.07438	215	.07902	306	-.86189	425	-.51123
108	-.04572	216	-.05171	307	-.75740	426	-.43276
109	.36077	217	-.02295	308	-.83969	427	-1.06053
110	.31517	218	-.03341	309	-.45308	428	-.27843
111	.00770	219	.95488	310	-.02861	429	-.29543
112	-.14604	221	-.05955	311	.88043	430	-.54131
113	.02463	222	-.06348	312	-.50925	431	.69723
114	.33080	223	-.05040	313	-.53929	432	.17147
115	.22788	224	.05549	314	-.55627	433	-.35952
116	.33211	225	.31955	315	-.64377	434	-.68256
117	.29563	226	-.05694	316	-.70516	435	-.61847
118	.04808	227	-.03864	317	-.42958	436	-.45630
119	-.21509	228	-.05825	318	-.04689	437	-.02601
120	-.08741	229	-.05694	319	.91439	438	-.46938
121	-.12259	230	-.07393	320	-.48182	439	-.43799
122	-.16428	231	-.05171	321	-.40215	440	-.50731
123	.30996	232	-.05171	322	-.32901	441	-.27712
124	.29693	233	-.05955	323	-.51970	442	-.34644
125	.02984	234	-.04517	324	-.56280	443	-.36606
126	-.24245	235	-.04648	325	-.33945	344	-.26631
127	-.24897	236	-.05694	326	.96272	345	-.24019
128	-.22421	237	.00189	327	-.03514	346	-.13701
129	-.06657	238	-.05694	329	-.31856		
130	-1.09191	239	-.07655	330	.90133		
131	-1.28095	240	1.10129	331	-.32639		
132	.34253	241	.00450	332	-.55627		
133	.30866	242	-.05302	333	-.33162		
134	.05720	243	-.04387	334	-.10828		
135	-.28024	244	-.05825	335	.04062		
136	-.23724	404	-.03909	336	.07066		
137	-.23203	405	-.02994	337	.09286		
138	-.43788	406	-.01293	338	-.03905		
139	-.91733	407	.85041	339	-.17489		
140	-.81050	408	-.41706	340	-.04297		
141	-.82092	409	-.13587	341	-.00901		
142	.42461	410	-.24704				
143	.39204	411	-.03255				
144	.01421	412	-.04432				
145	-.25939	413	-.02471				
146	-.1708[illegible]	414	-.01424				
147	-.18122	415	-.64856				
148	-.48609	416	-.10187				
203	-.36284	417	-.74665				
204	-.30140	418	.94050				
205	-.33408						

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TABLE XVII

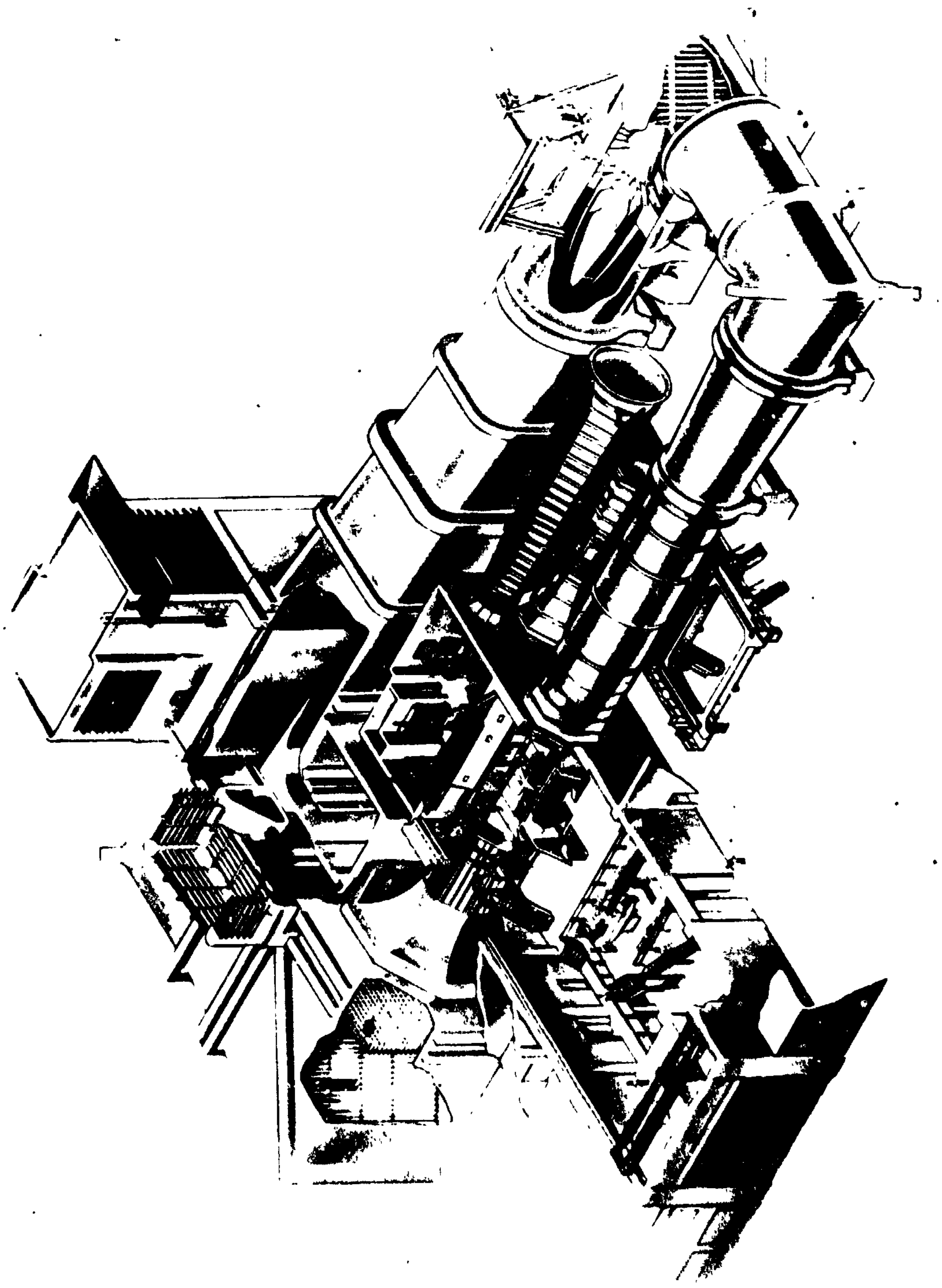


Figure 4 UARL Large Subsonic Wind Tunnel

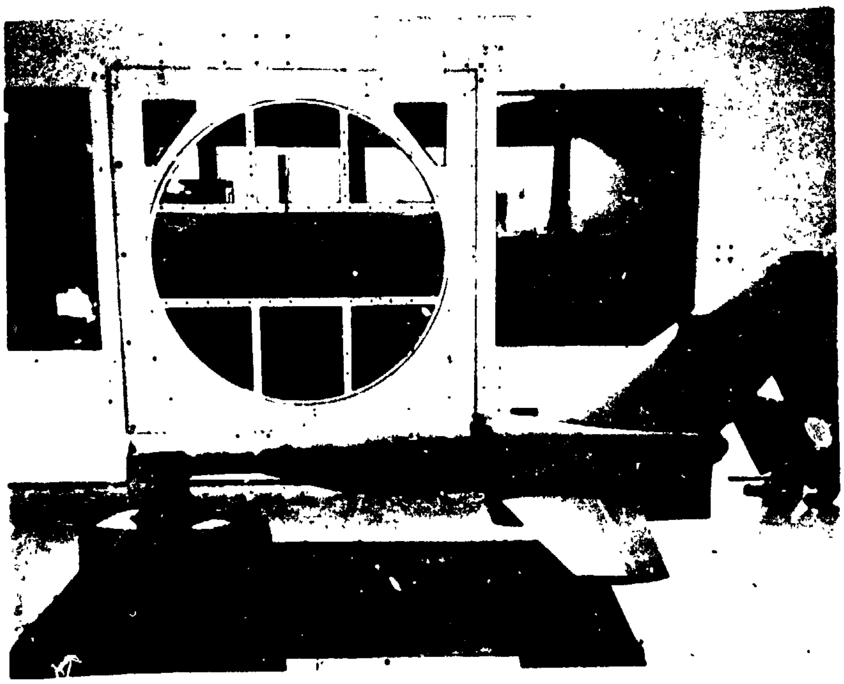
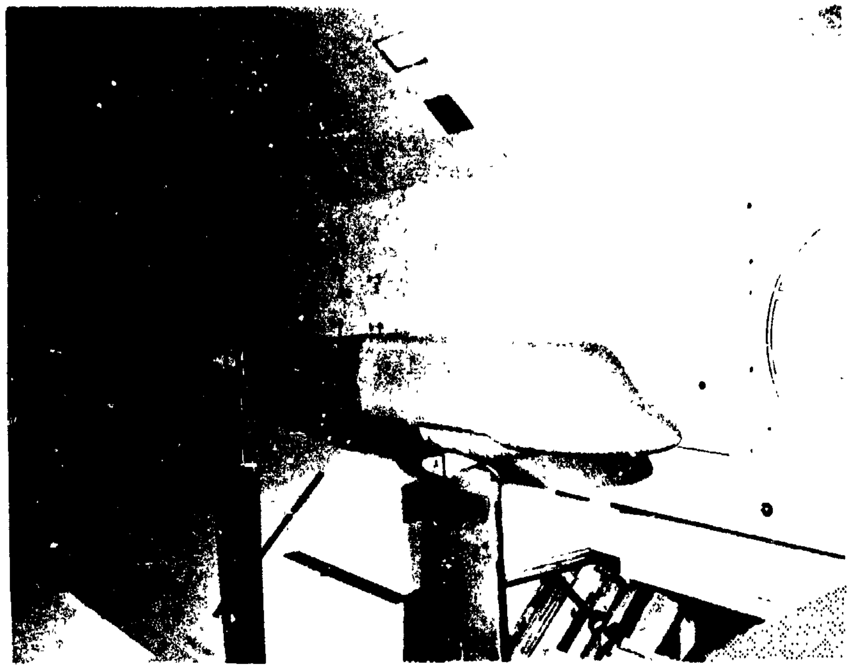


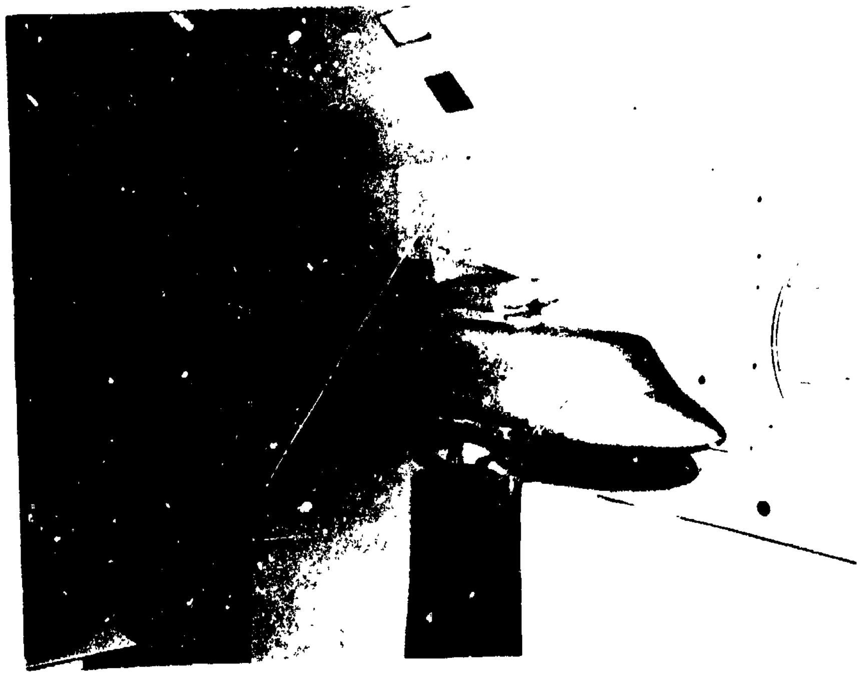
Figure 5 Model Installation - Tail Alone



a Fuselage FT_2

b [illegible]

Figure 6 [illegible]

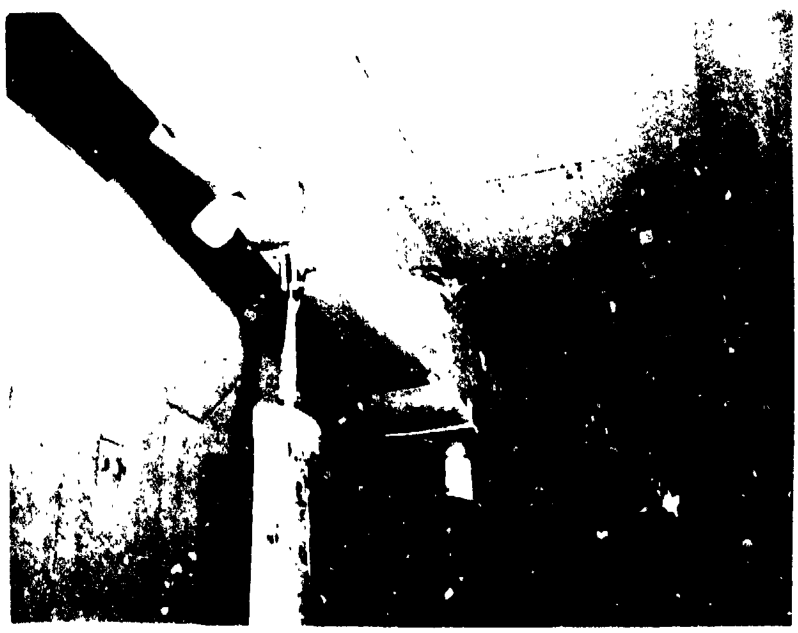


c FPBT$_2$-Phase I

d FP[illegible]

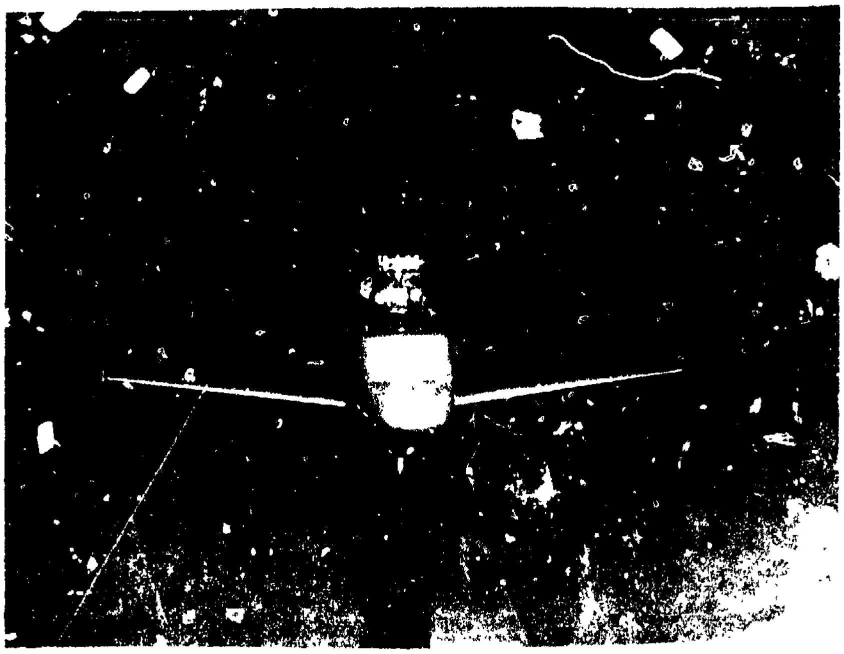
Figure 6 [illegible] Configurations (Continued)

e FTBT$_2$-Phase II-Front View



f FTBT$_2$-Phase II-Aft View

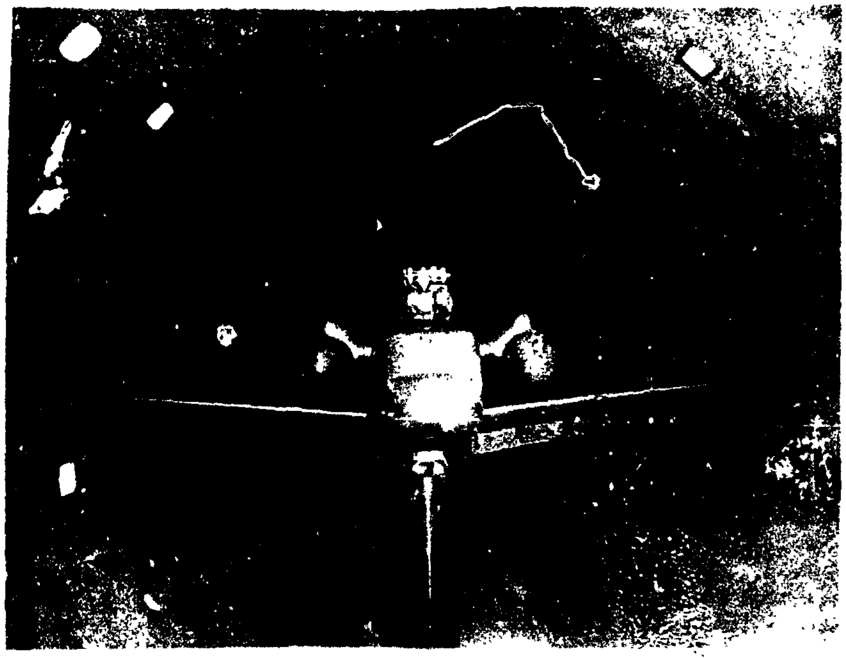
Figure 6 Basic Configurations (Continued)



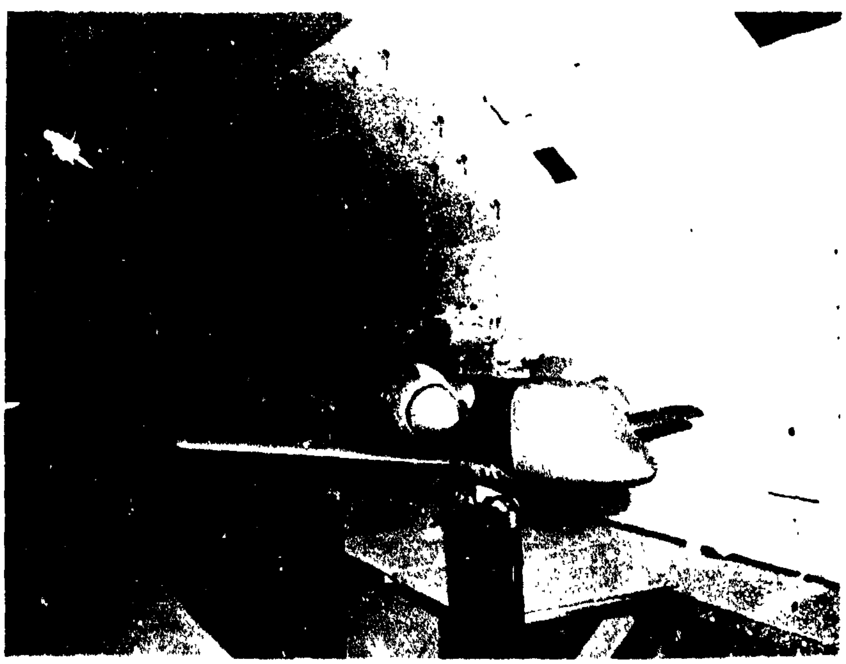
g FPBW1g-[illegible] View

h FPBW1g-Quarter View

Figure 6 [illegible] Configurations (Continued)



i FPBWNT$_2$-Front View



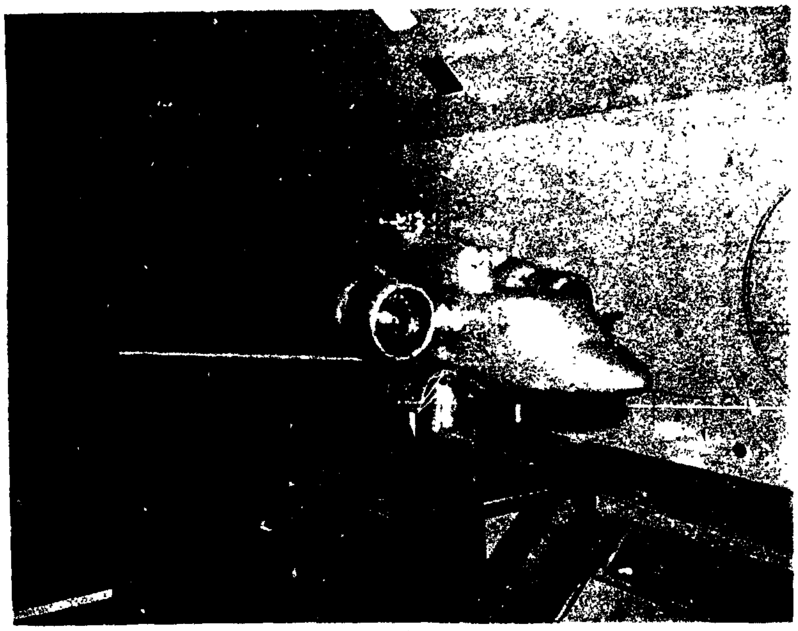
j FPBWNT$_2$-Quarter View

Figure 6 Basic Configurations (Continued)

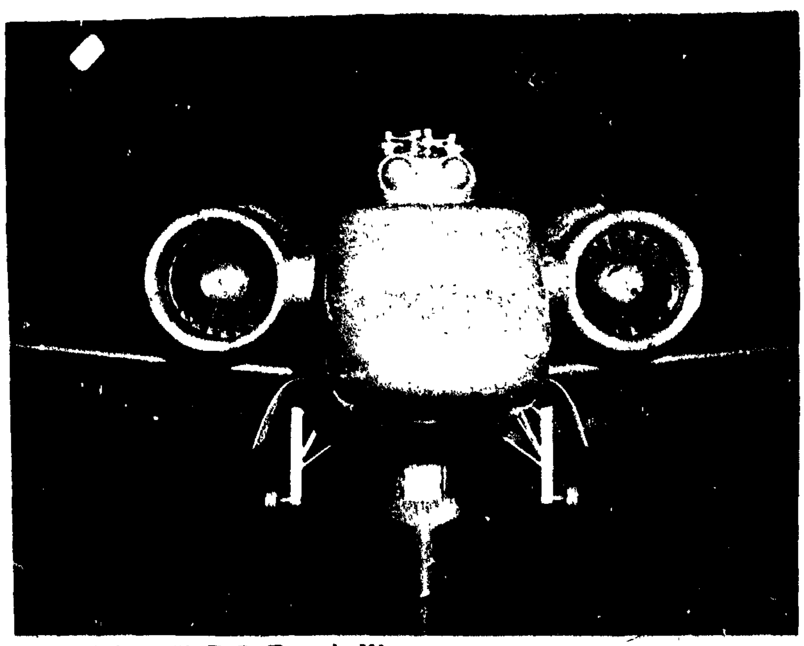
k FPBWNT$_2$L-Front View

l FPBWNT$_2$I-Quarter View

Figure 6 Basic Configurations (Continued)

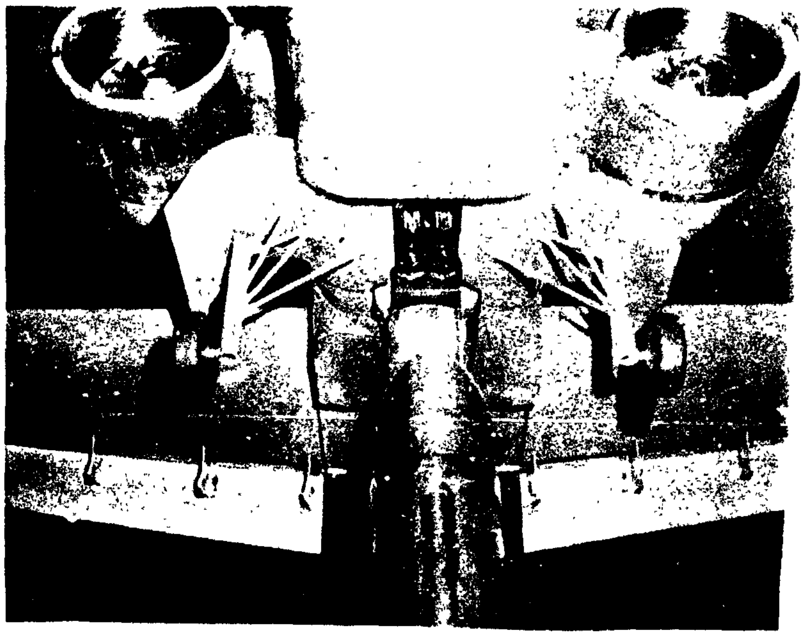


m $FPBN_{P5}W_7T_2L$-Quarter View

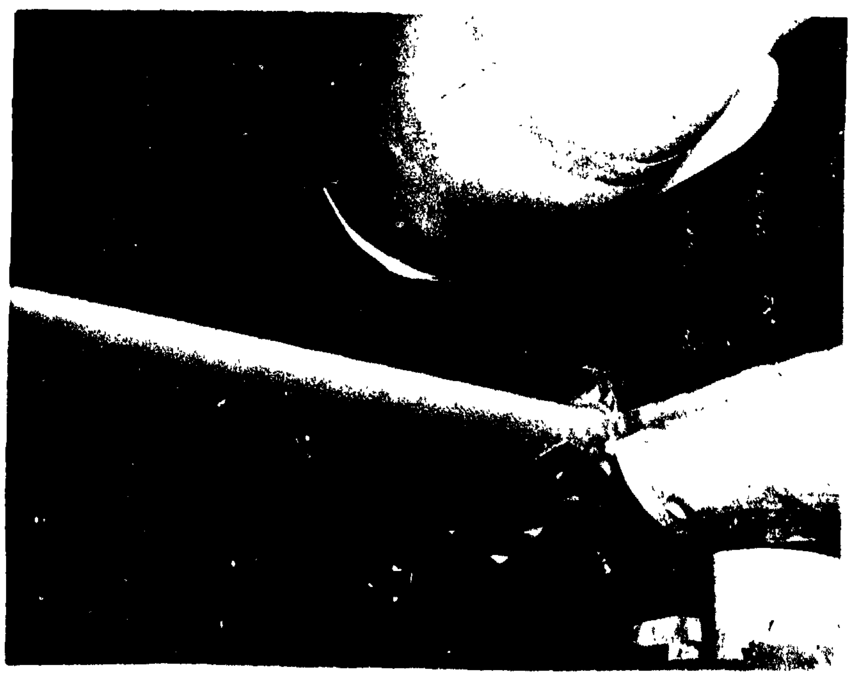


n $FPBN_{P5}W_7T_2L$-Front View

Figure 6 Basic Configurations (Continued)

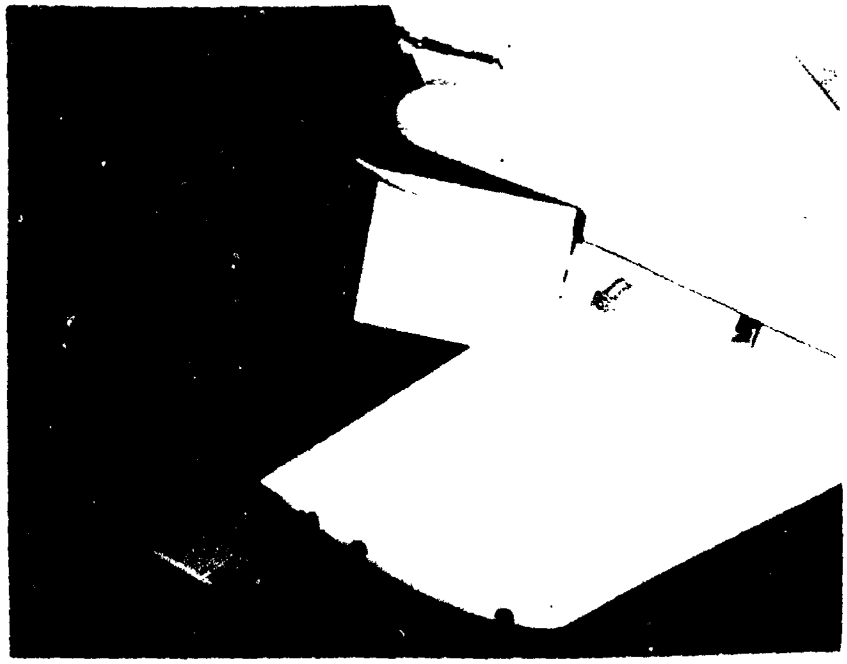


o FPBN$_{P5}$W$_7$T$_2$L-Bottom View

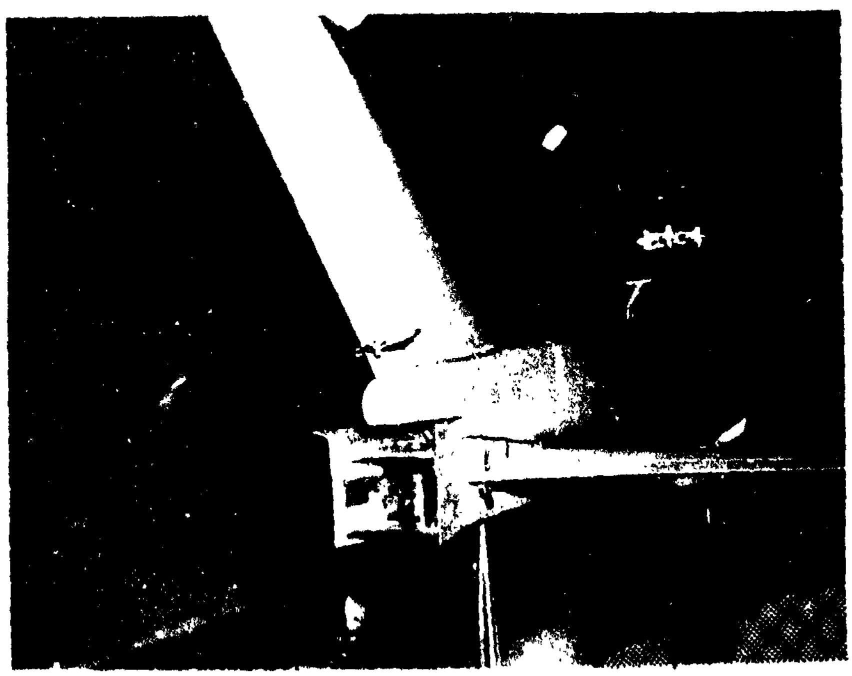


p Nacelle & Spoiler

Figure 6 Basic Configurations (Continued)

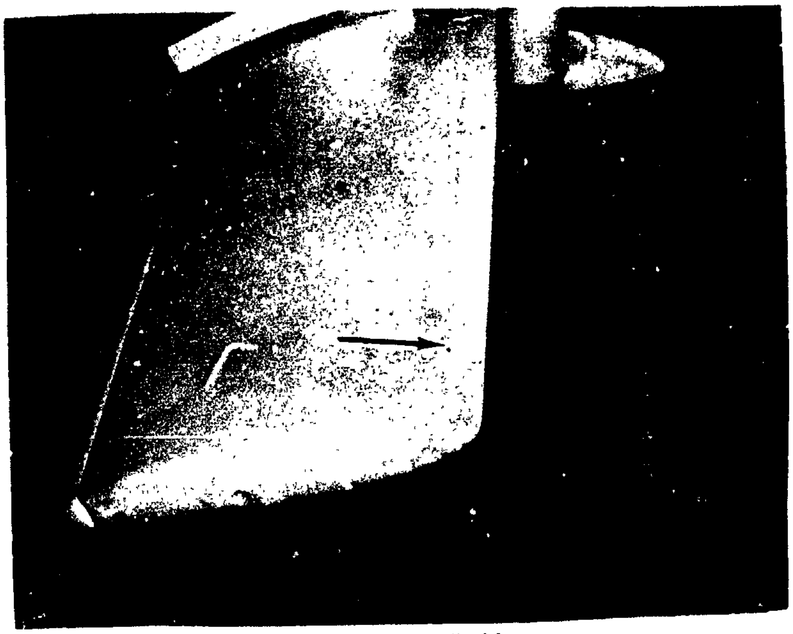


q Speed Brakes-Side View

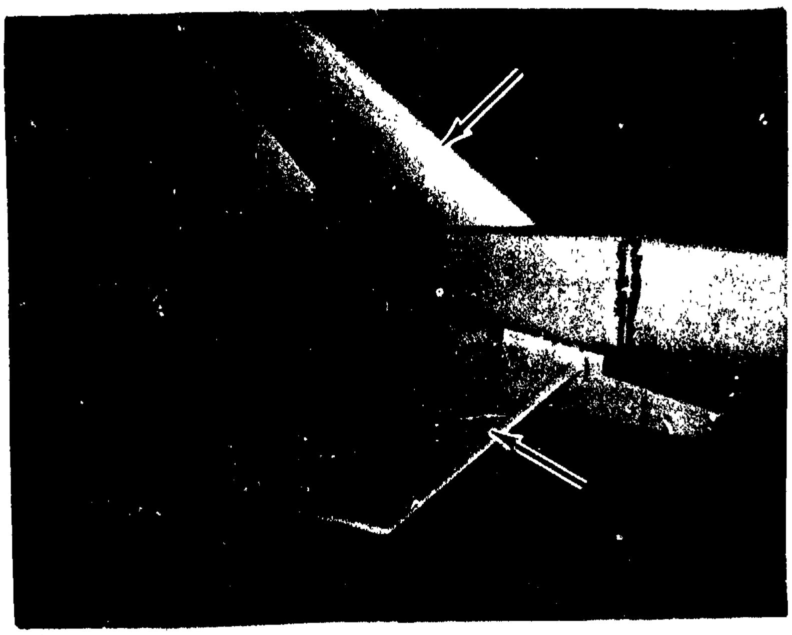


r Speed Brakes-Aft View

Figure 6 Basic Configurations (Continued)

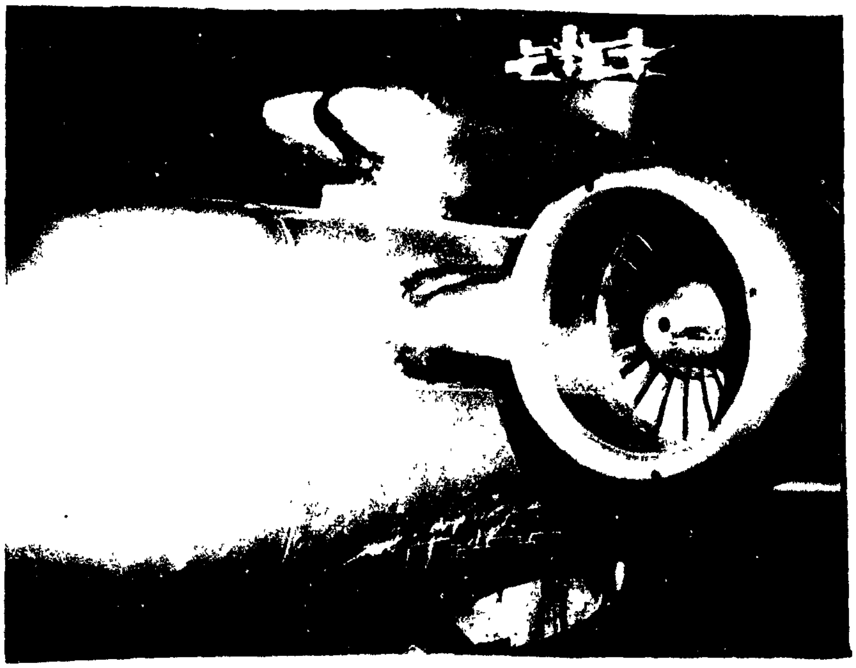


s Leading Edge Roughness Grit
Location-Wing

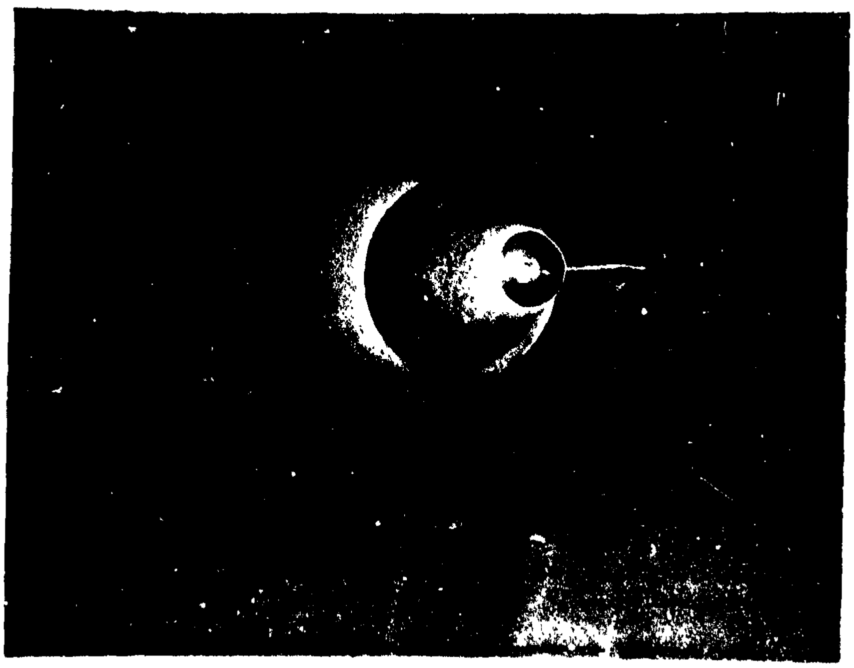


t Leading Edge Roughness Grit
Location-Empennage

Figure 6 Basic Configurations (Concluded)

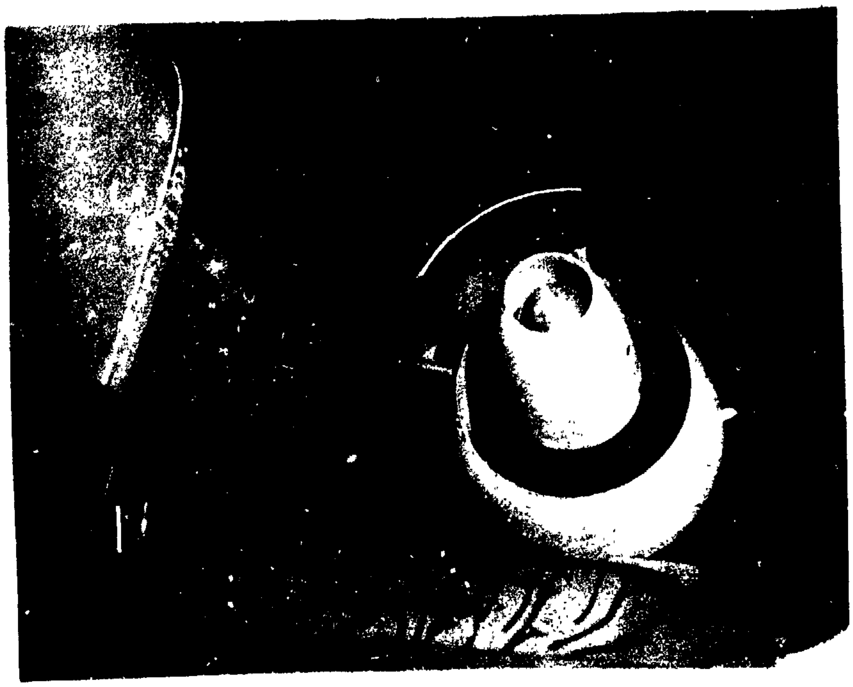


a N_p-Front View



b N_p-Aft View

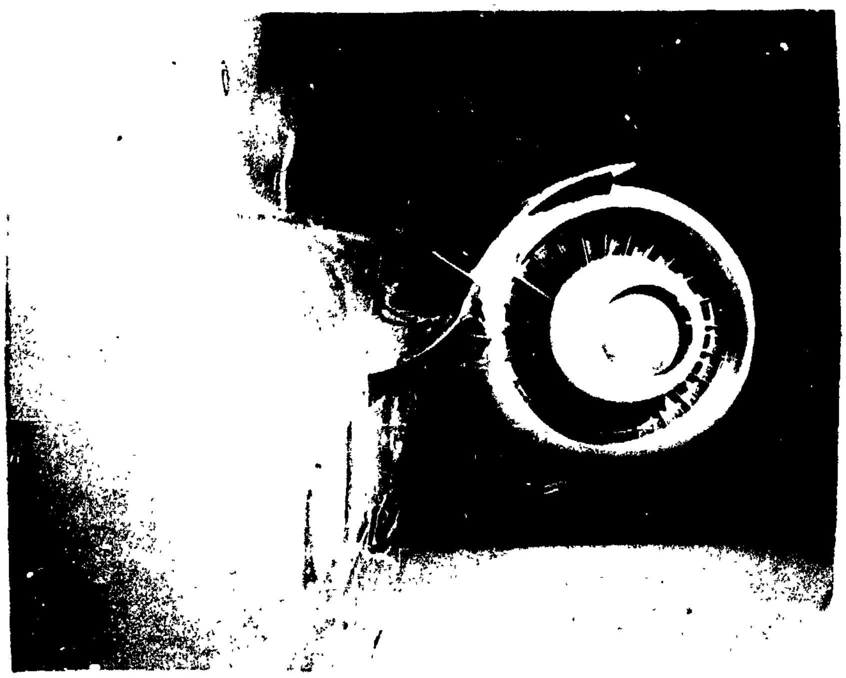
Figure 7 Powered Nacelle Configurations



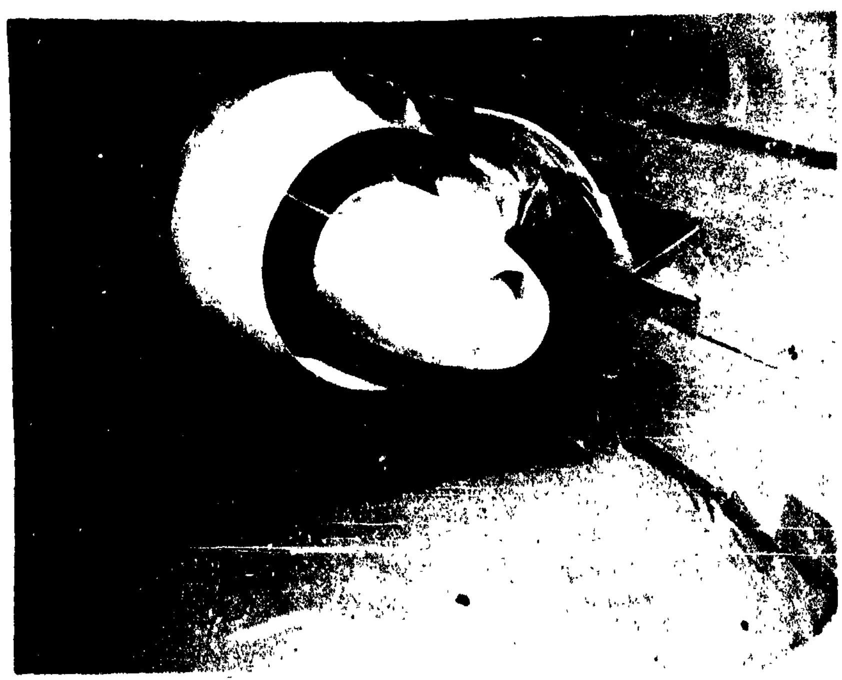
c N_{P1}-Aft View

d N_{P1}-Top View

Figure 7 Powered Nacelle Configurations (Continued)

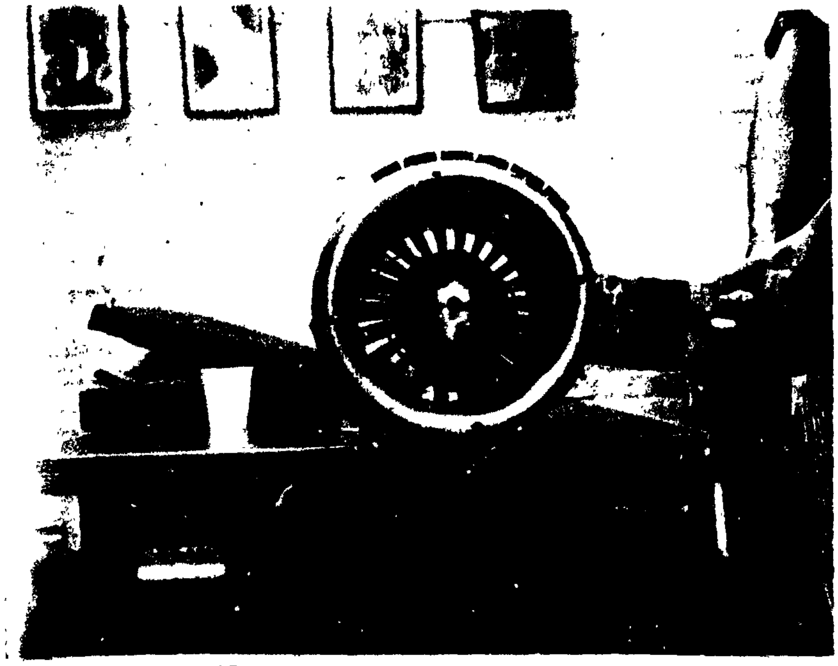


e N_{P1} & Splitter-Aft View

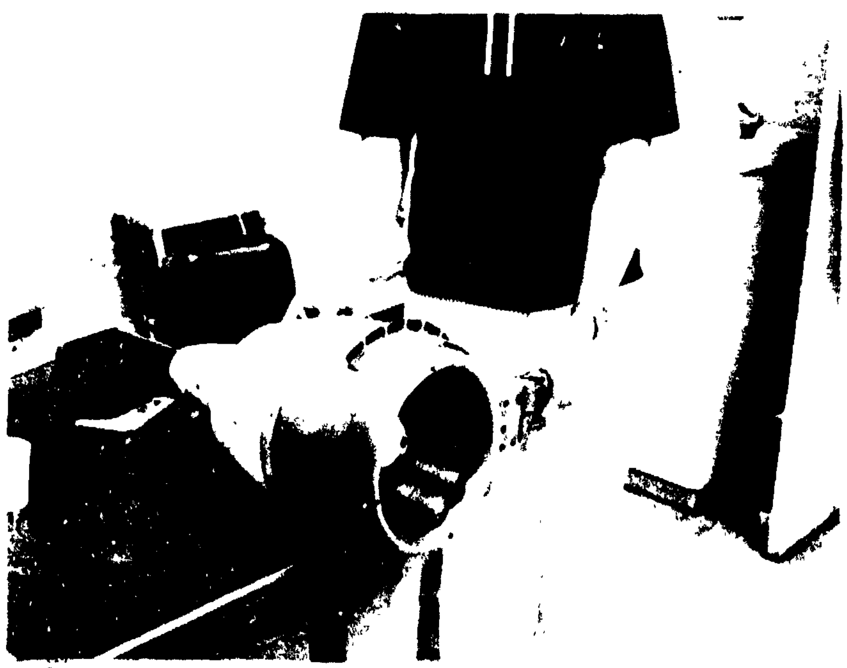


f N_{P1} & Splitter-Quarter View

Figure 7 Powered Nacelle Configurations (Continued)

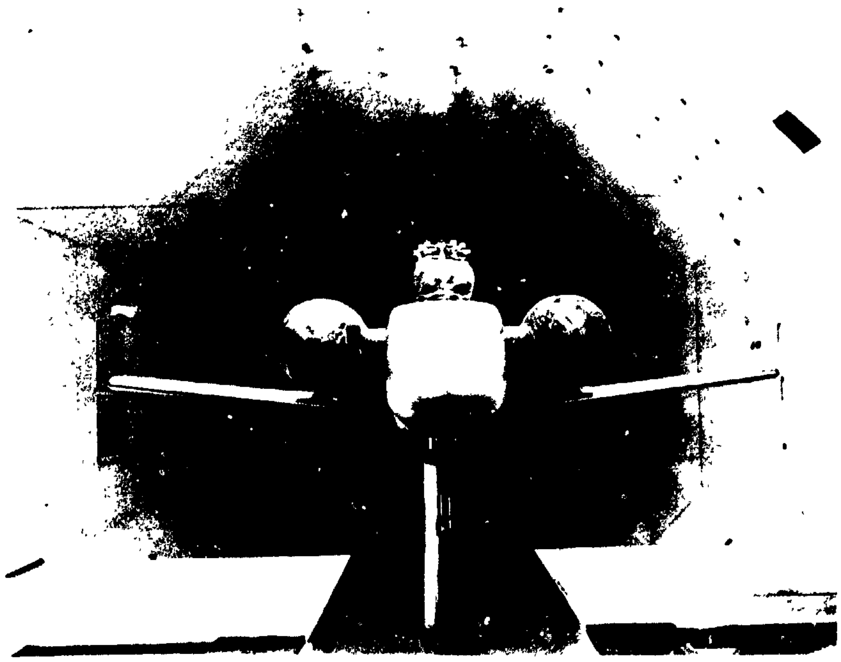


g N_{P1} & Spoiler

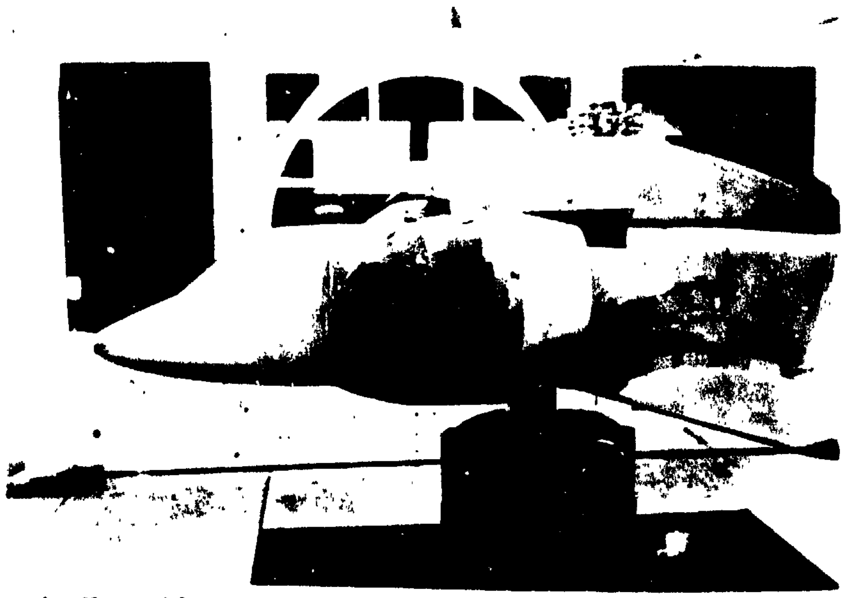


h N_{P1} & Spoiler

Figure 7 **Powered Nacelle Configurations** (Continued)



i N_{P3}-Front View



j N_{P3}-Side View

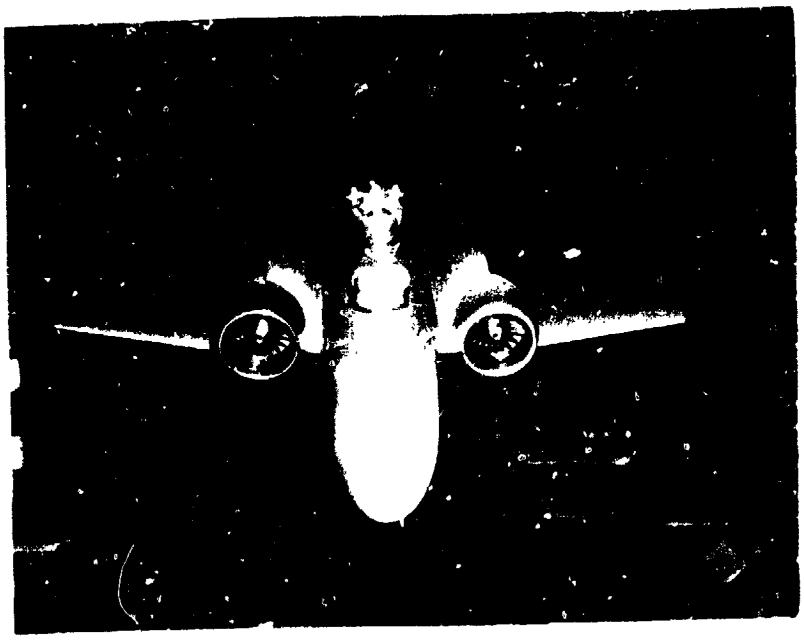
Figure 7 Powered Nacelle Configurations (Continued)

k N_{P4}-Side View

l N_{P5}-Front View

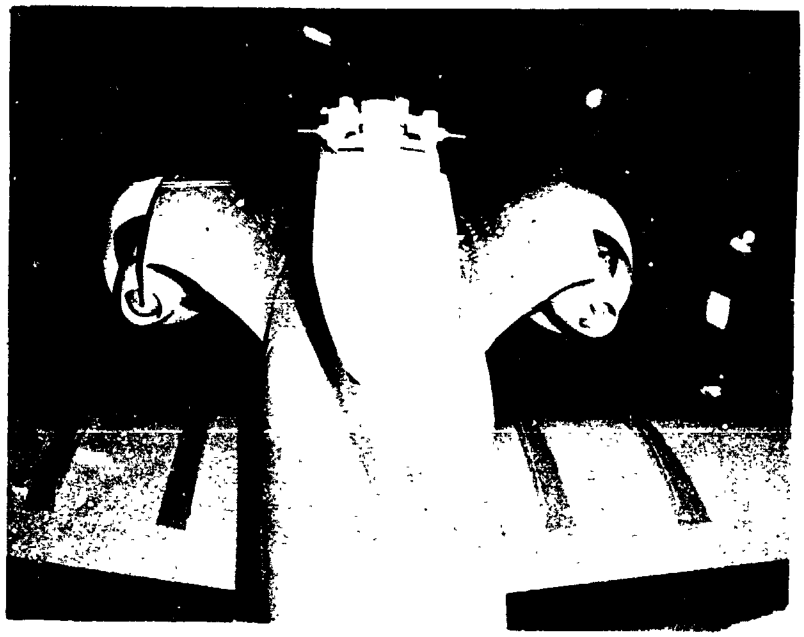
Figure 7 Powered Nacelle Configurations (Continued)

m N_{P5}-Aft View



n N_{P6}-Front View

Figure 7 Powered Nacelle Configurations (Continued)

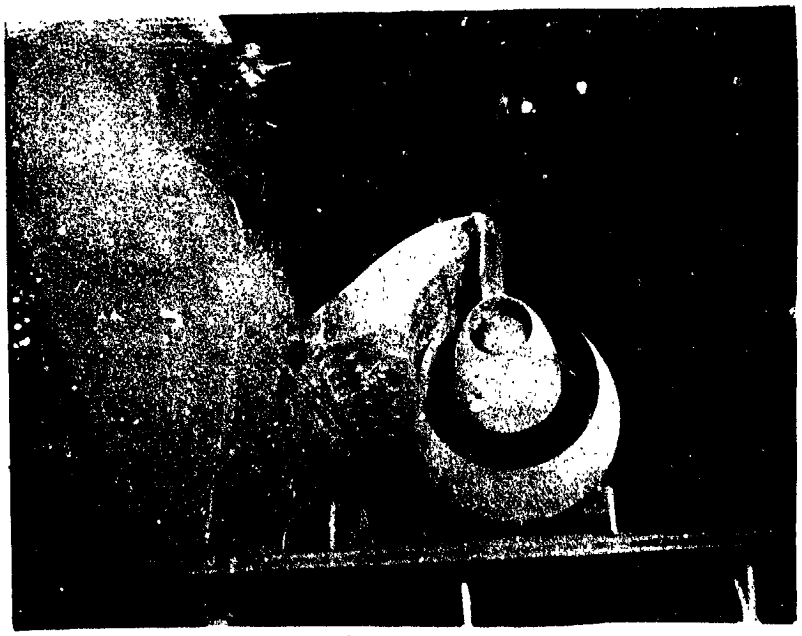


o N_{P6}-Aft View

p N_{P6}-Aft Quarter View

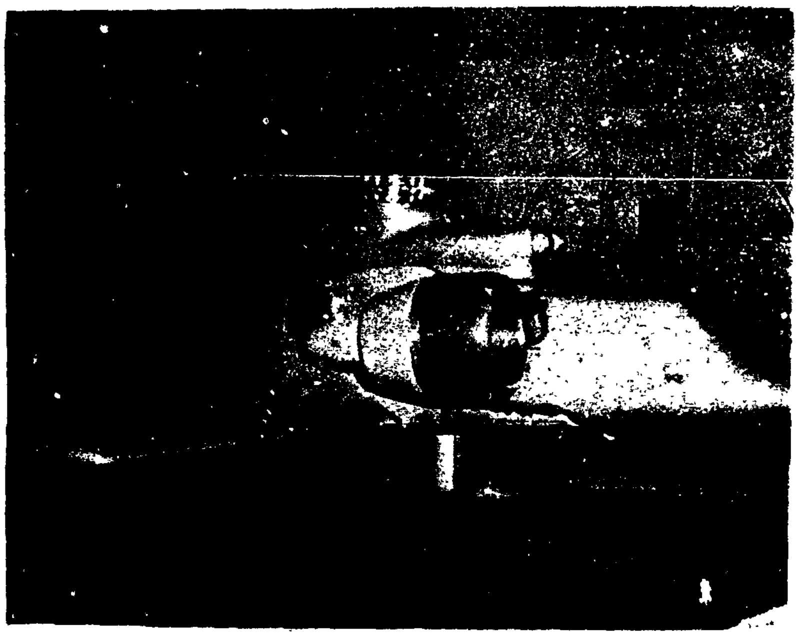
Figure 7 Powered Nacelle Configurations (Continued)

q N_{P7}-Aft Top View

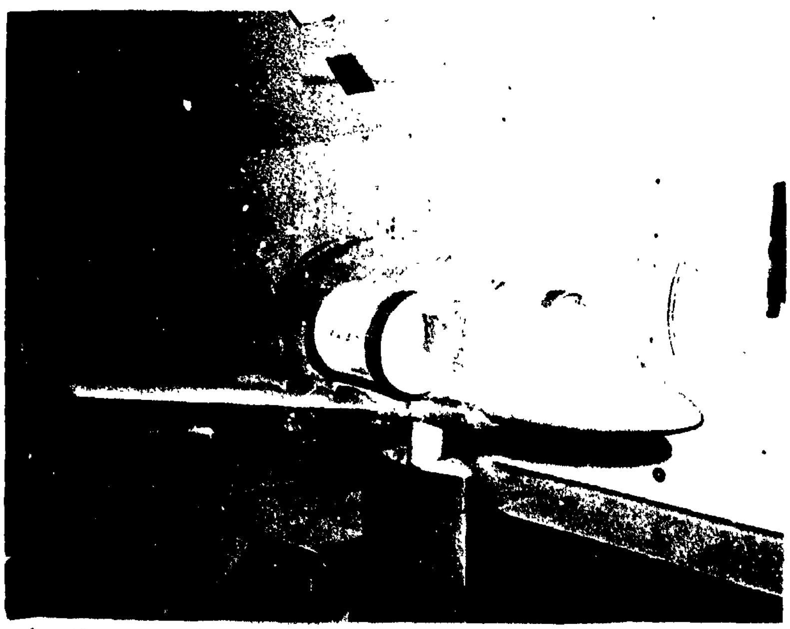


r N_{P7}-Aft Bottom View

Figure 7 Powered Nacelle Configurations (Continued)

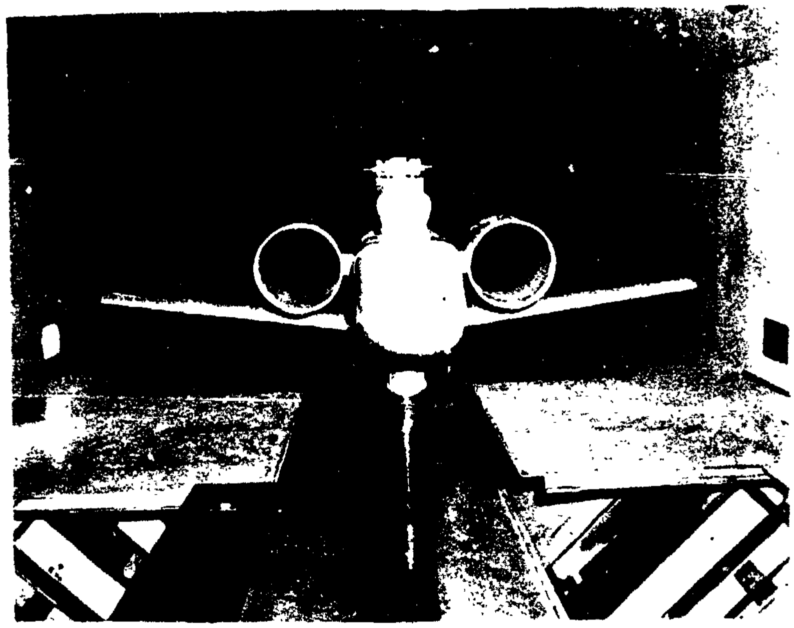


s N_{P5}-i_N = +5 Deg

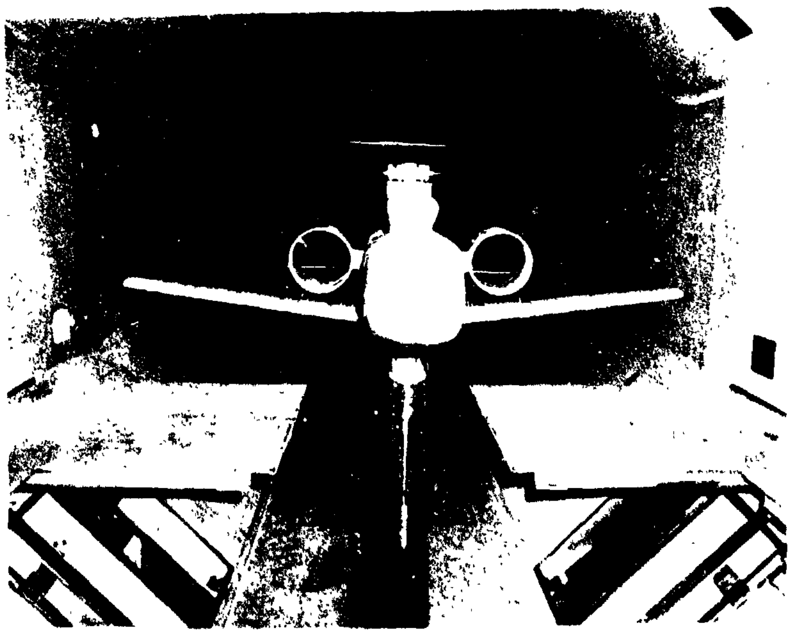


t N_{R1}-Quarter View

Figure 7 Powered Nacelle Configurations (Continued)

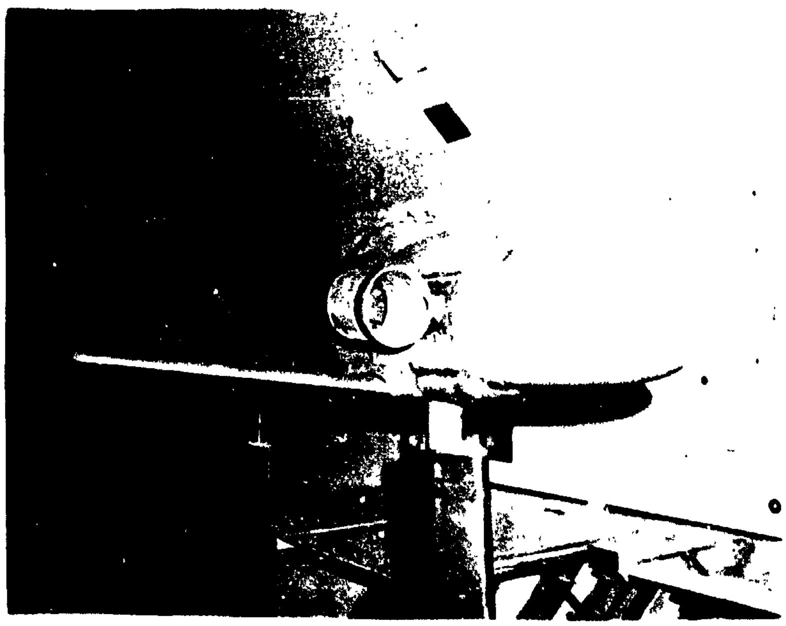


u N_{R1}-Front View



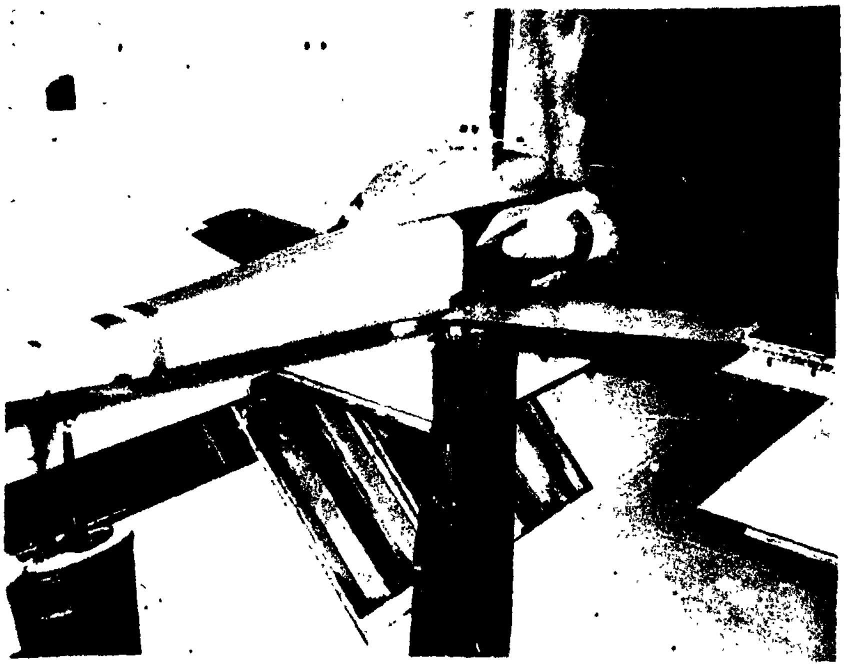
v N_{R2}-Front View

Figure 7 Powered Nacelle Configurations (Continued)

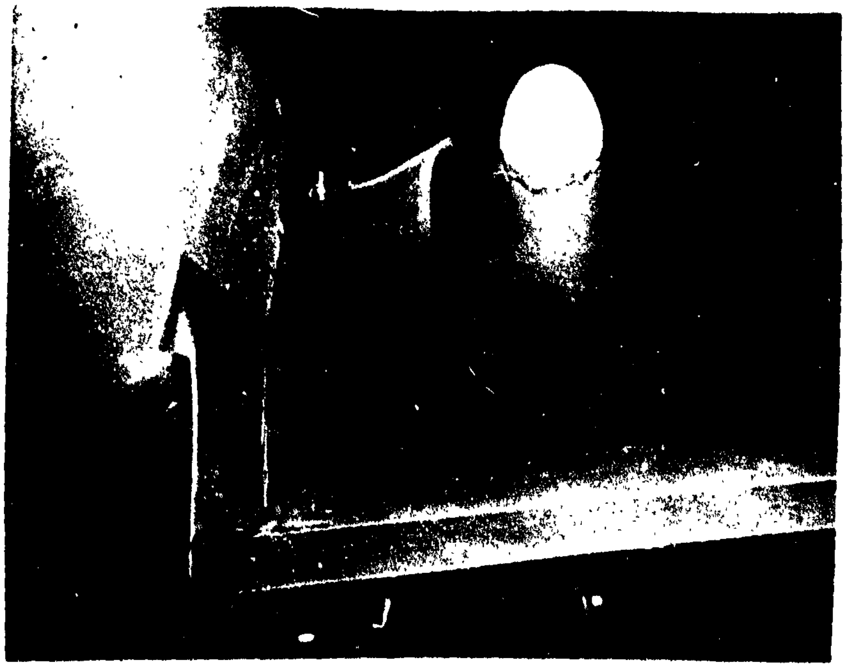


w N_{R2}-Quarter View

Figure 7 Powered Nacelle Configurations (Concluded)



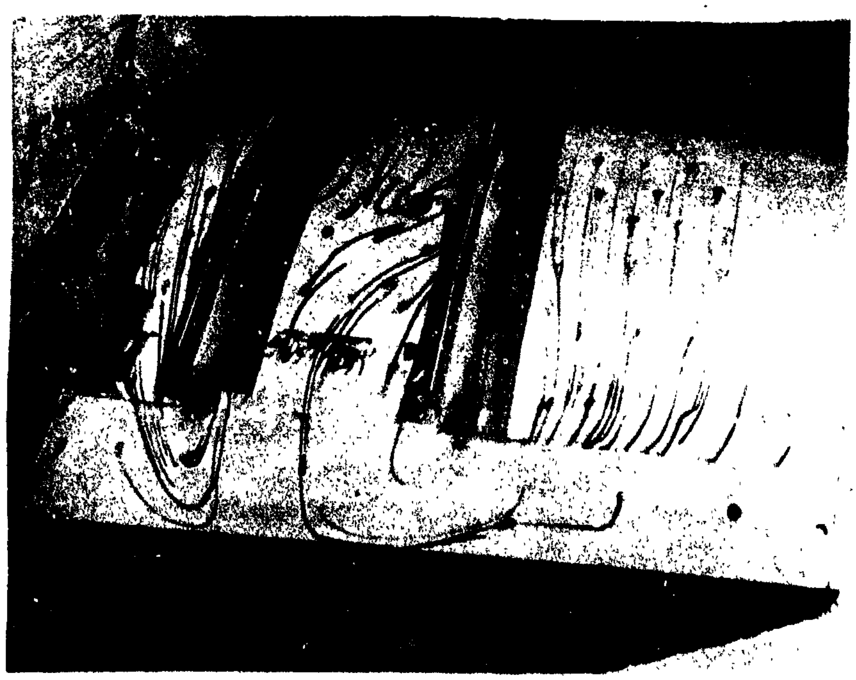
a W



b W_1

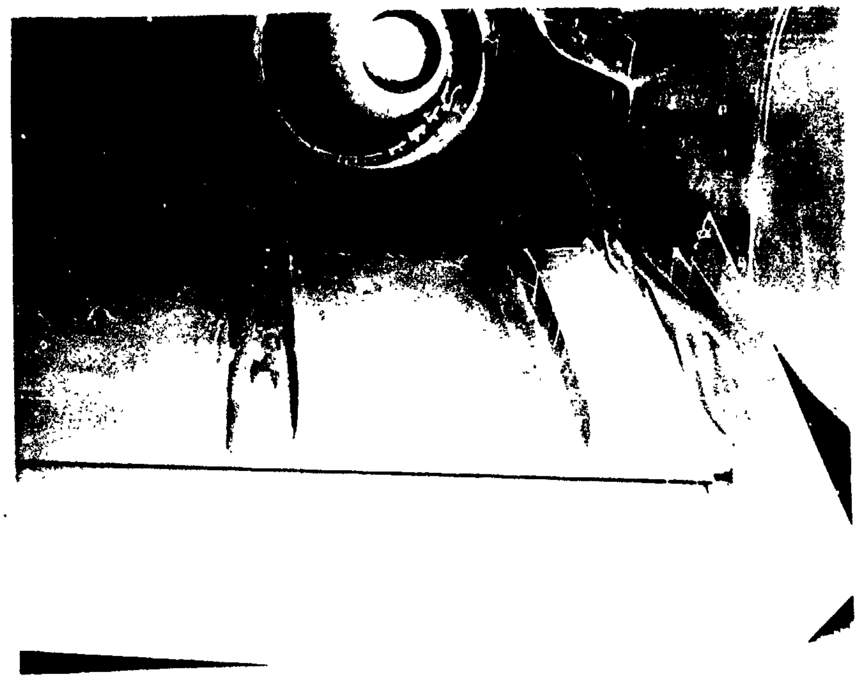
Figure 8 Wing Configurations

c W_2

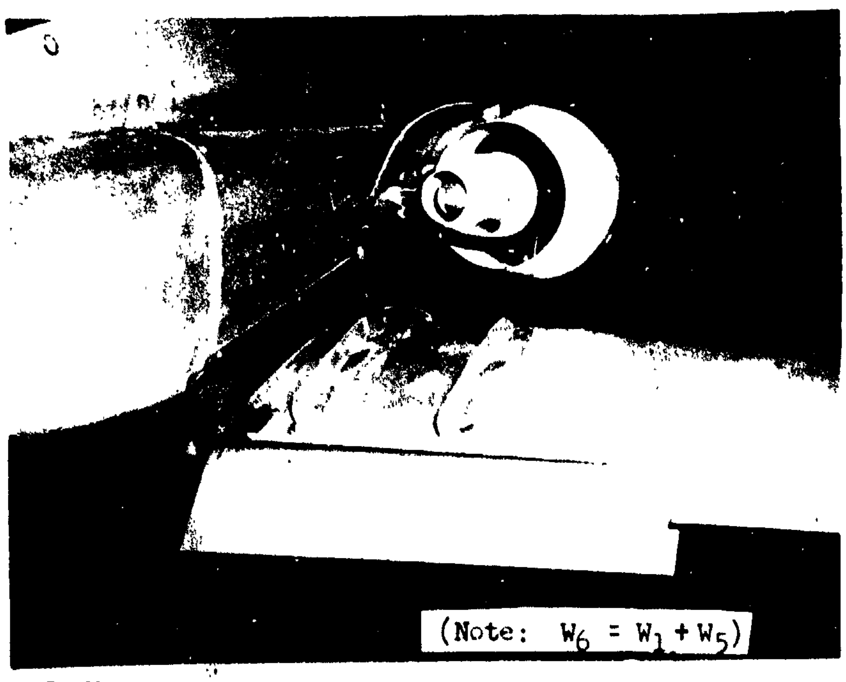


d W_3

Figure 8 Wing Configurations (Continued)

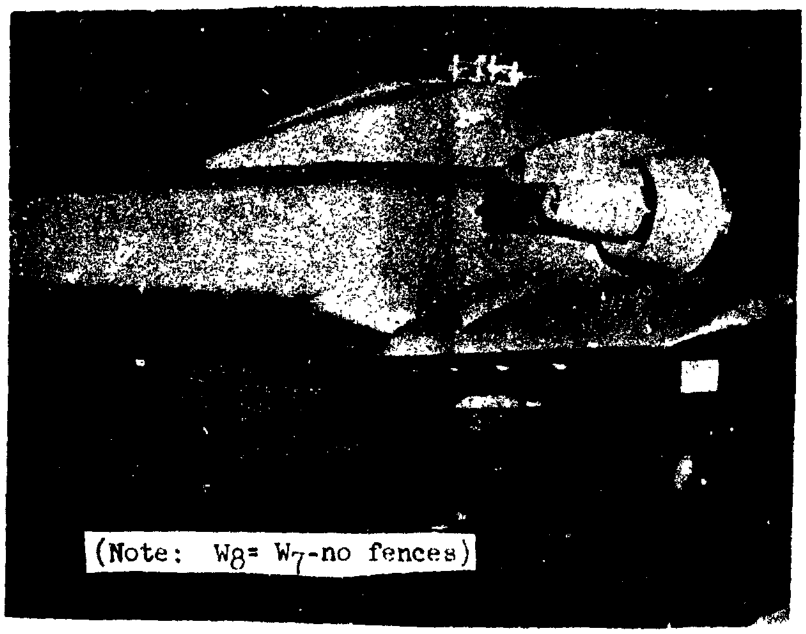


e W_4

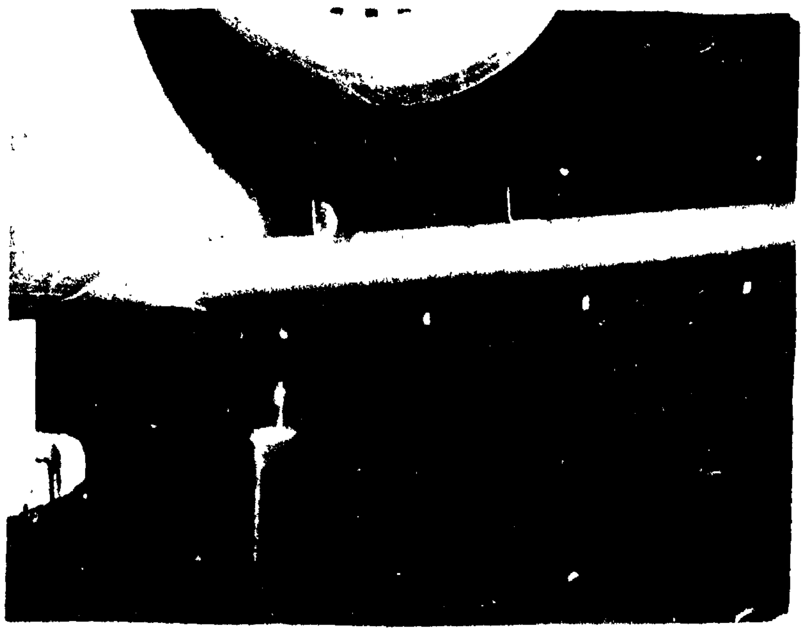


f W_5

Figure 8 Wing Configurations (Continued)

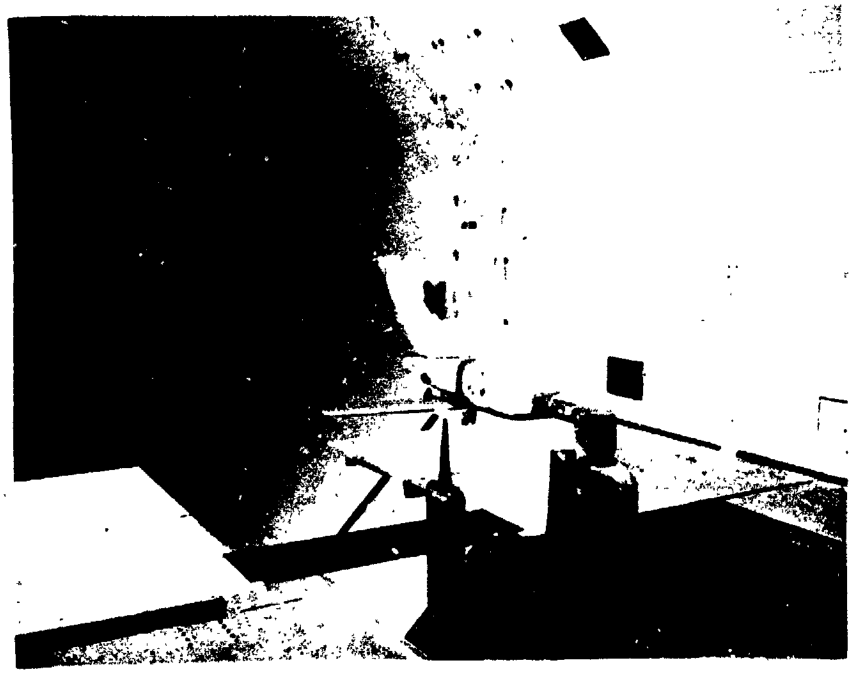


g W_7-Quarter View

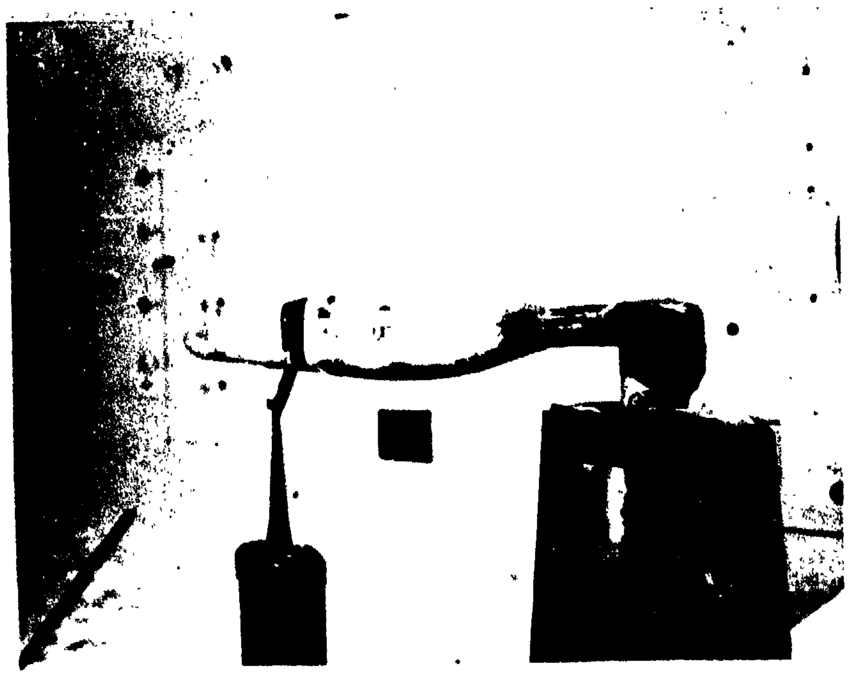


h W_7-Front View

Figure 8 Wing Configurations (Concluded)

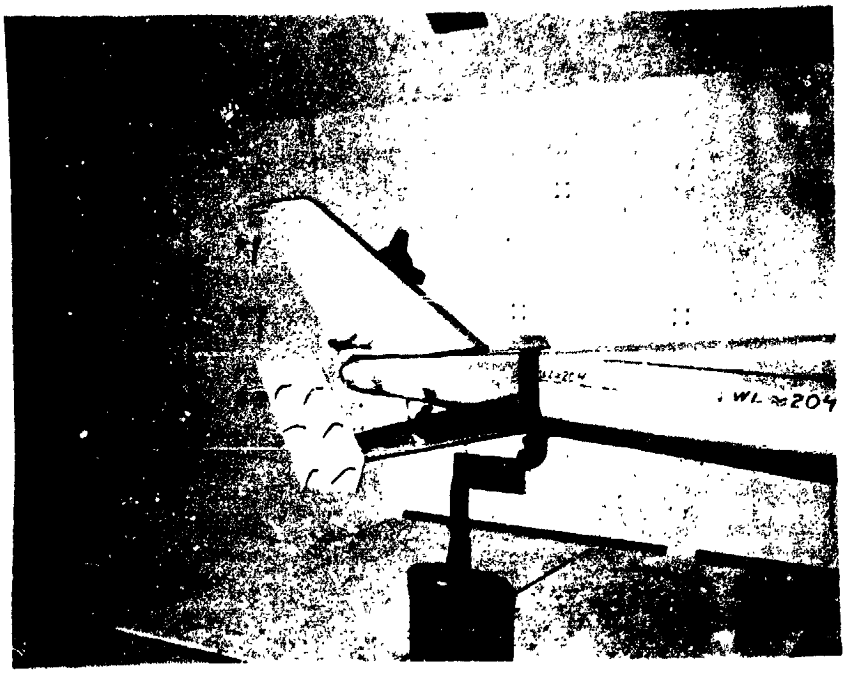


a T_3

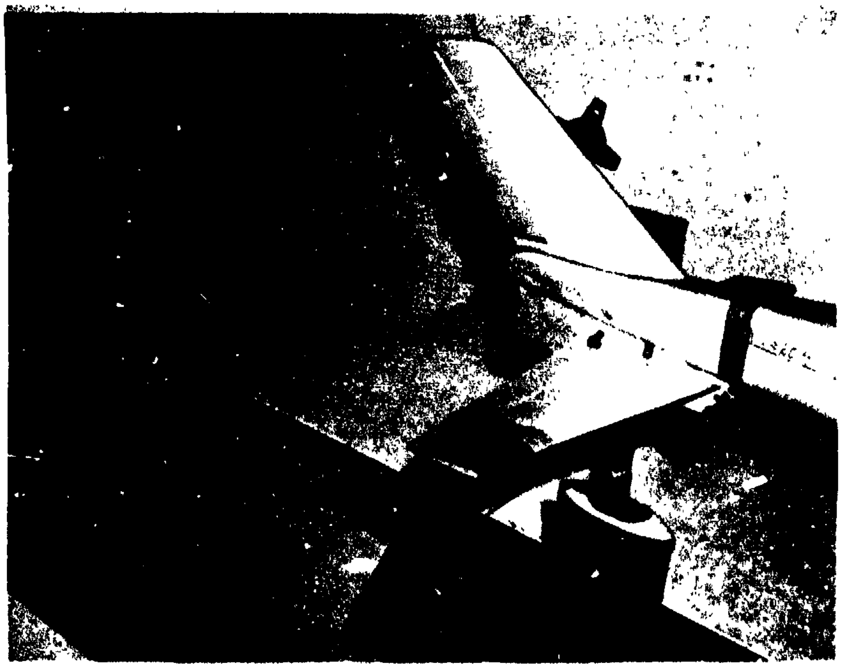


b T_4

Figure 9 Empennage Configurations

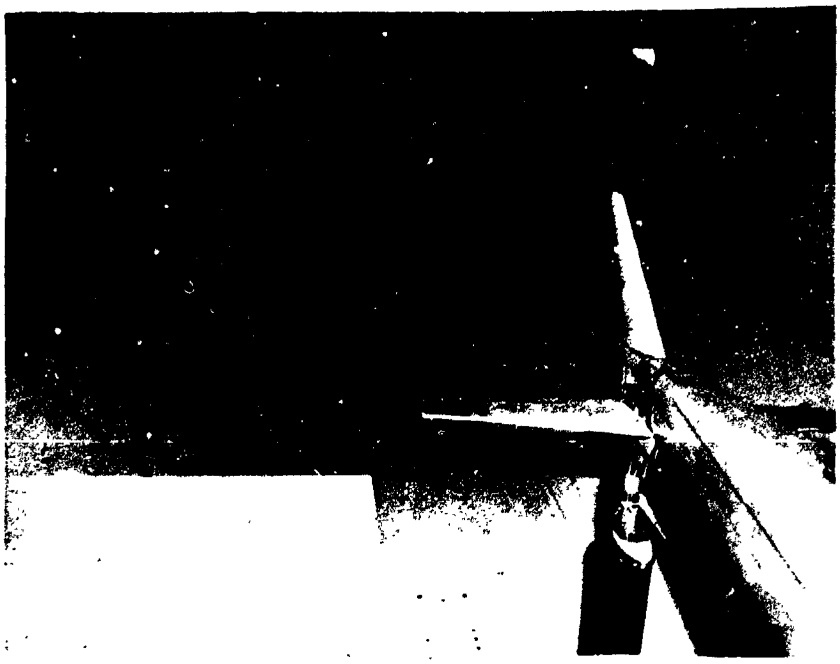


c T_5

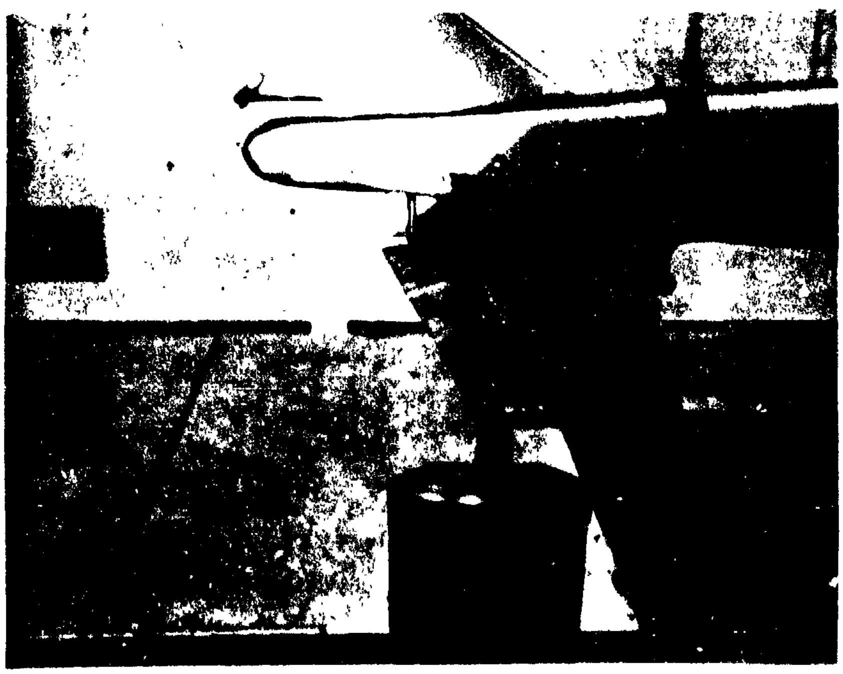


d T_6

Figure 9 ...nage Configurations (Continued)

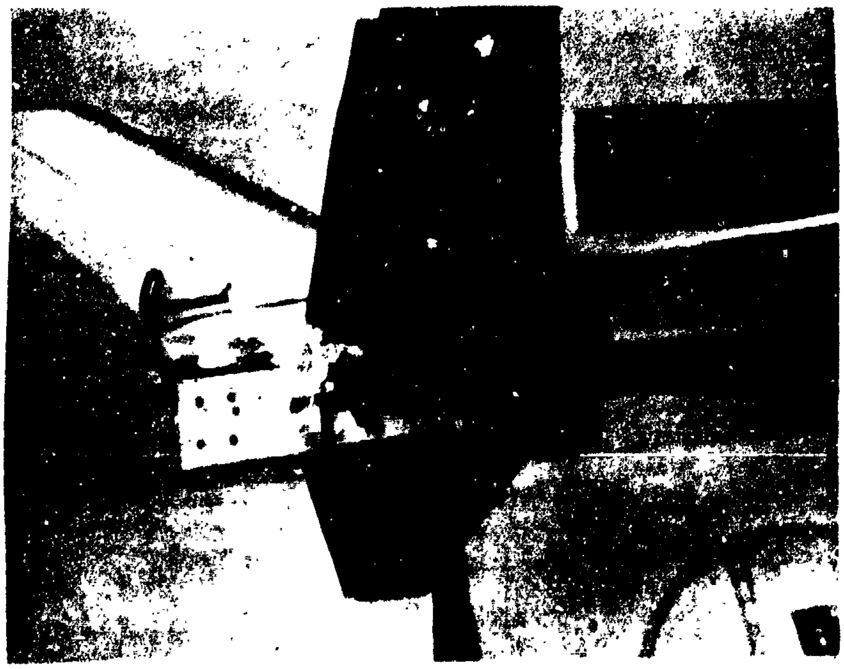


e T_6



f T_7

Figure 9 Empennage Configurations (Continued)

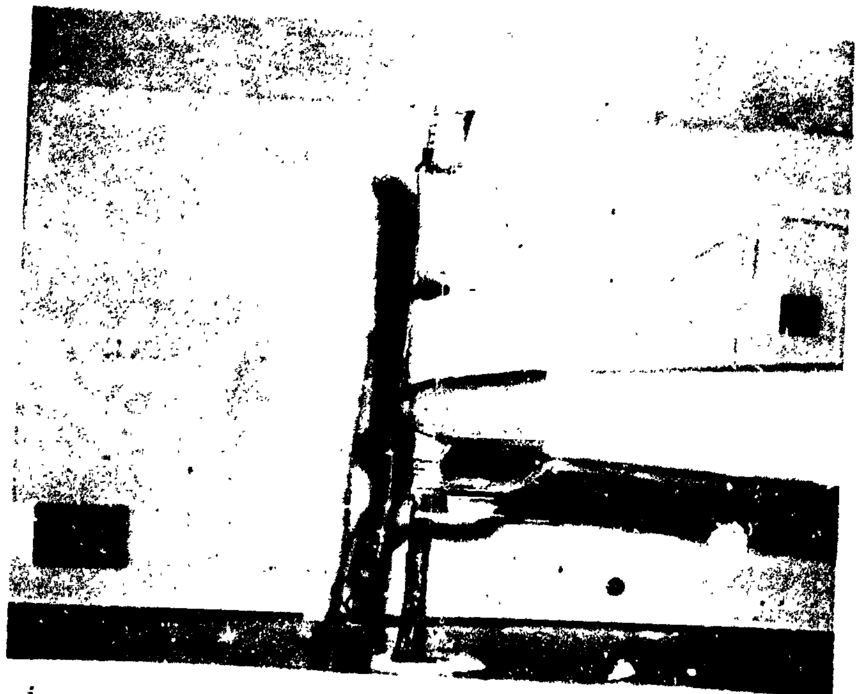


g T7

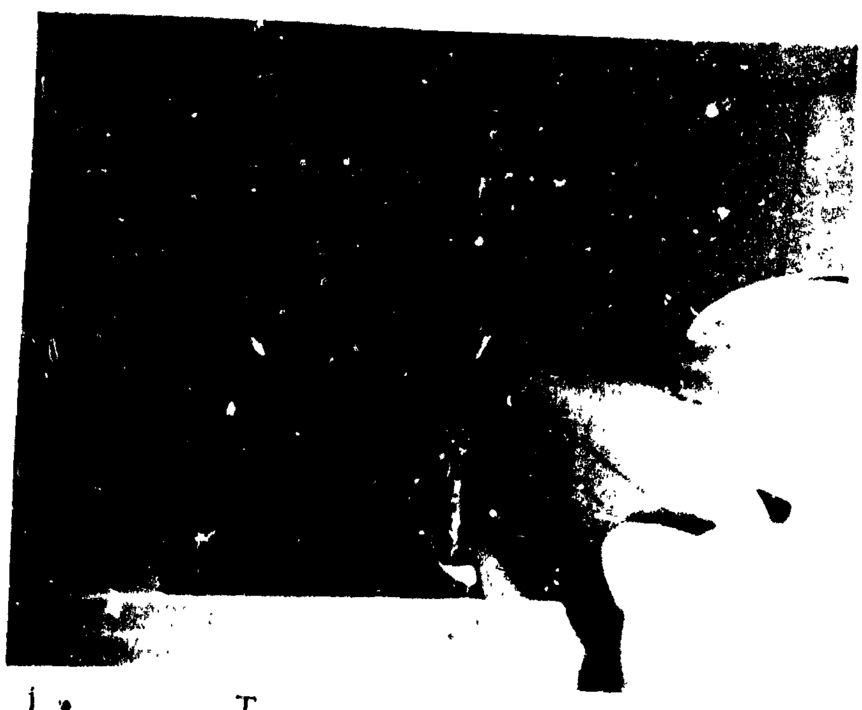
T_8

h

Figure 9 Empennage Configurations (Continued)

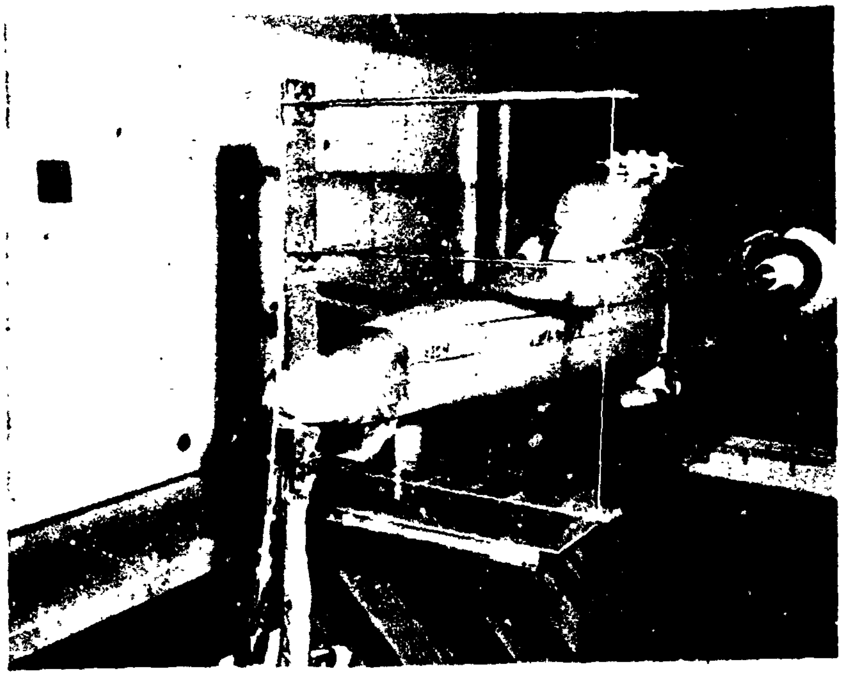


i T_9

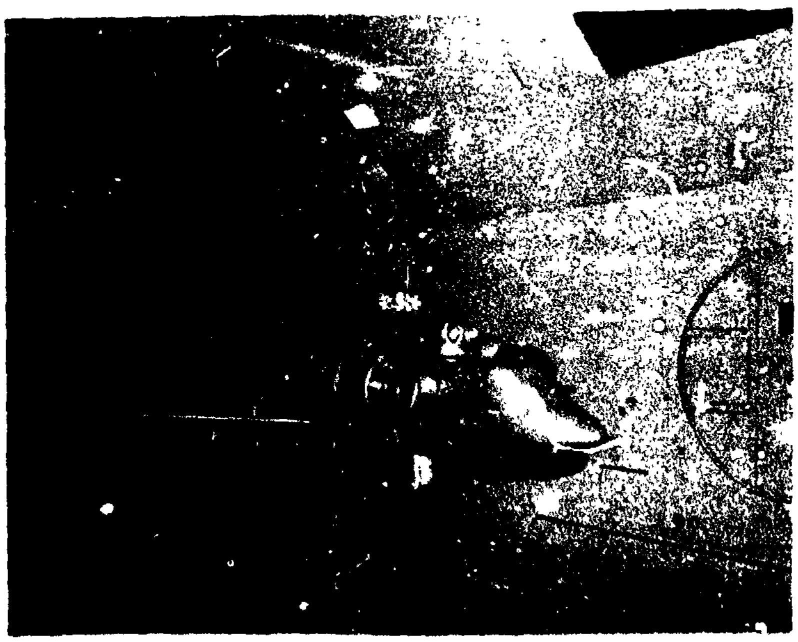


j T_9

Figure 9 Empennage Configurations (Continued)



k T_9 (Total Pressure Rake)



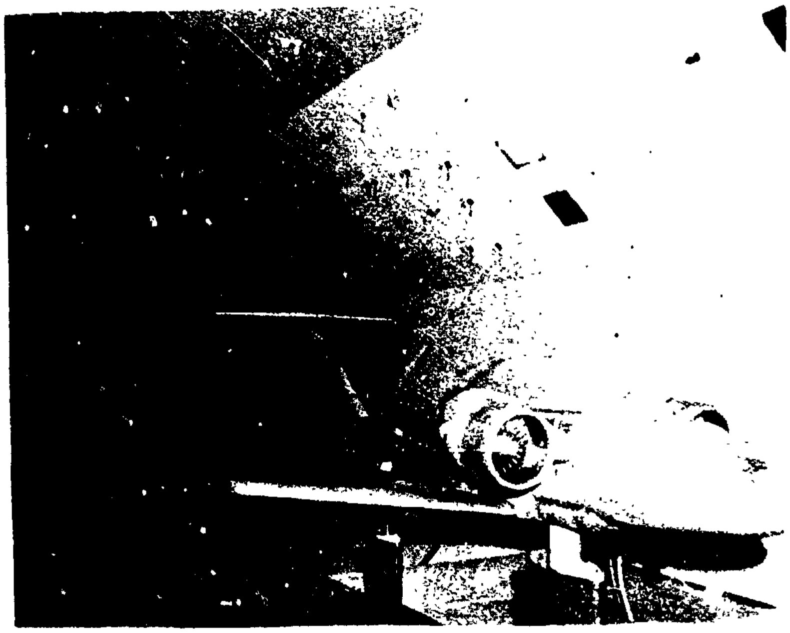
l T_{10}

Figure 9 Empennage Configurations (Continued)

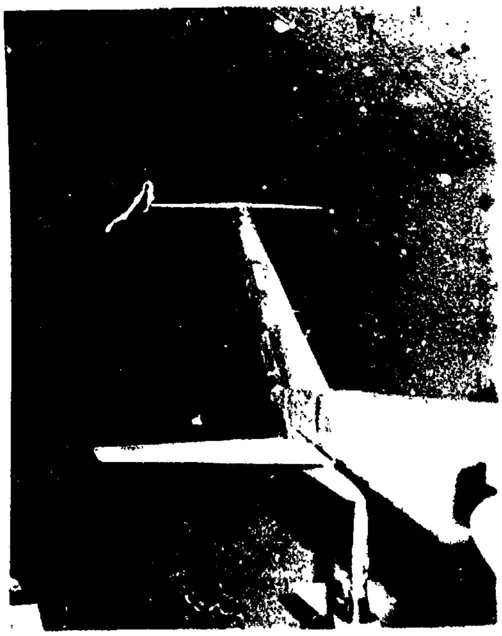
m T11 & Hot Wire Probe, Traverse, and Support Structure

n T_{13}

Figure 9 Empennage Configurations (Continued)

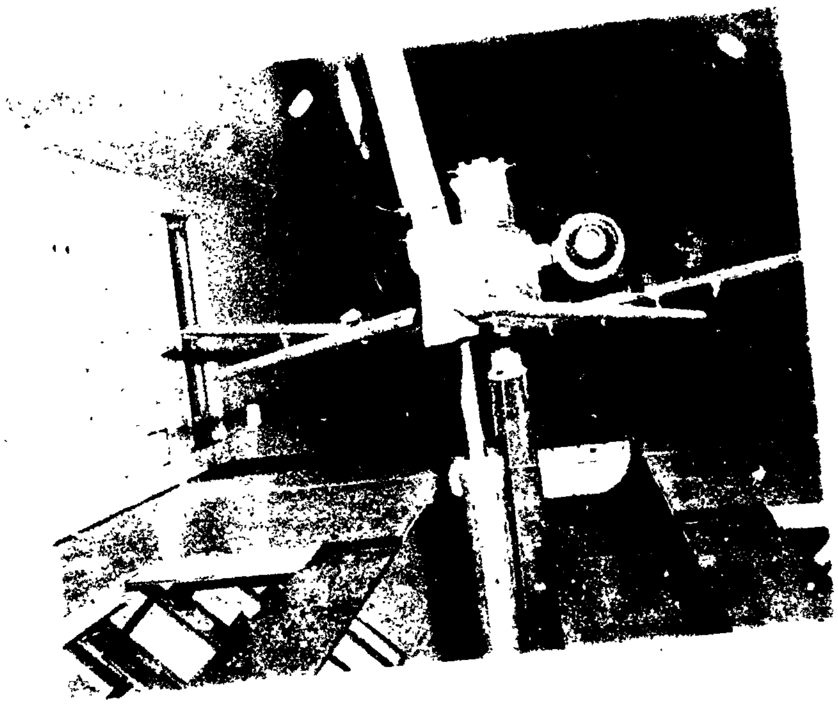


o T_{15}

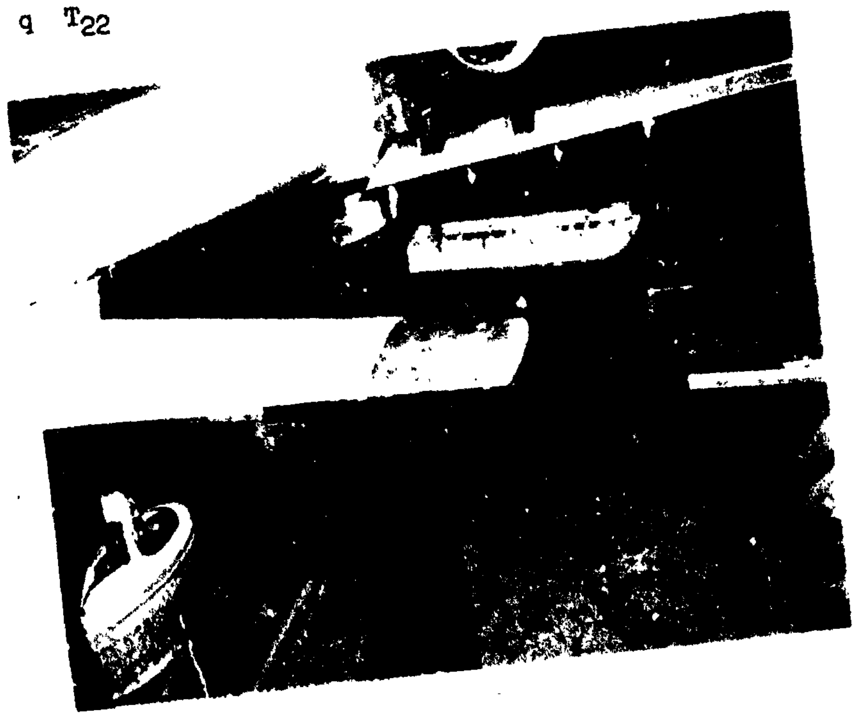


p T_{18}

Figure 9 Empennage Configurations (Continued)

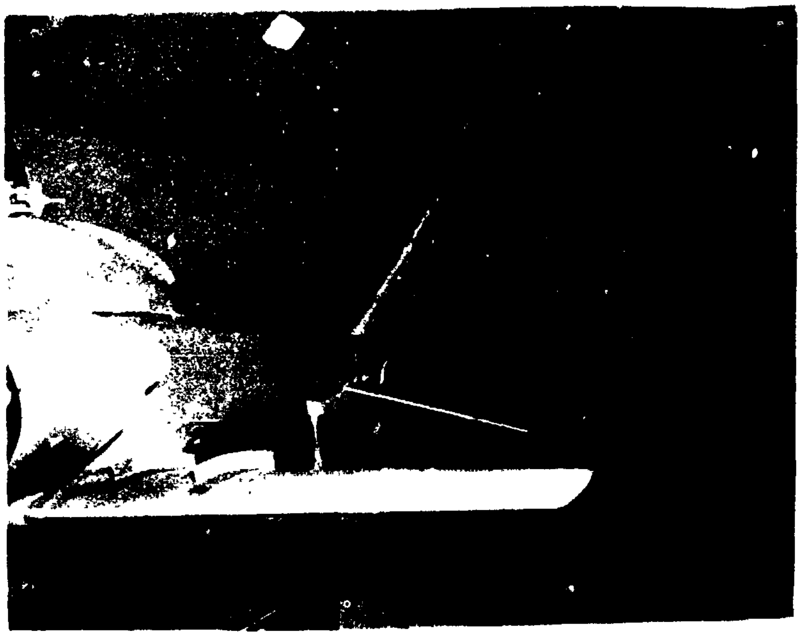


q T_{22}

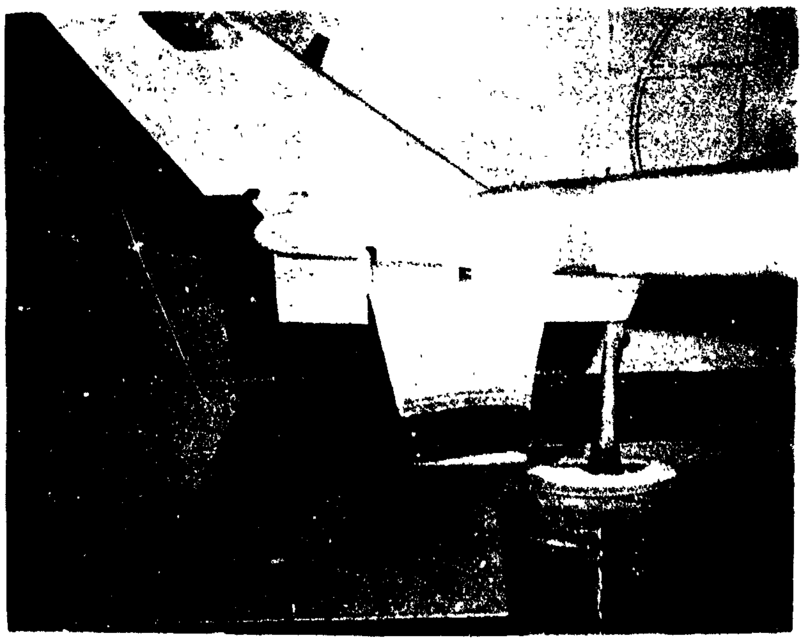


r T_{23}

Figure 9 Empennage Configurations (Continued)

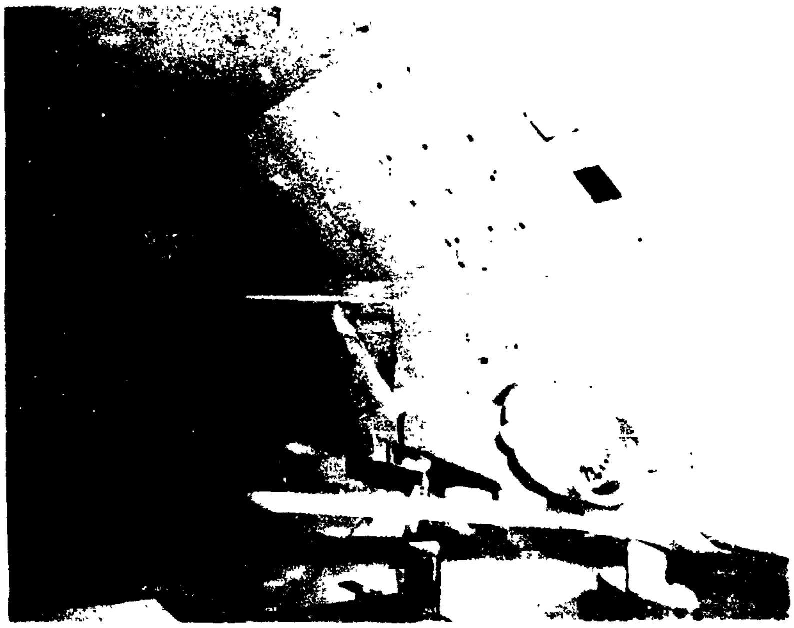


s T_{24}

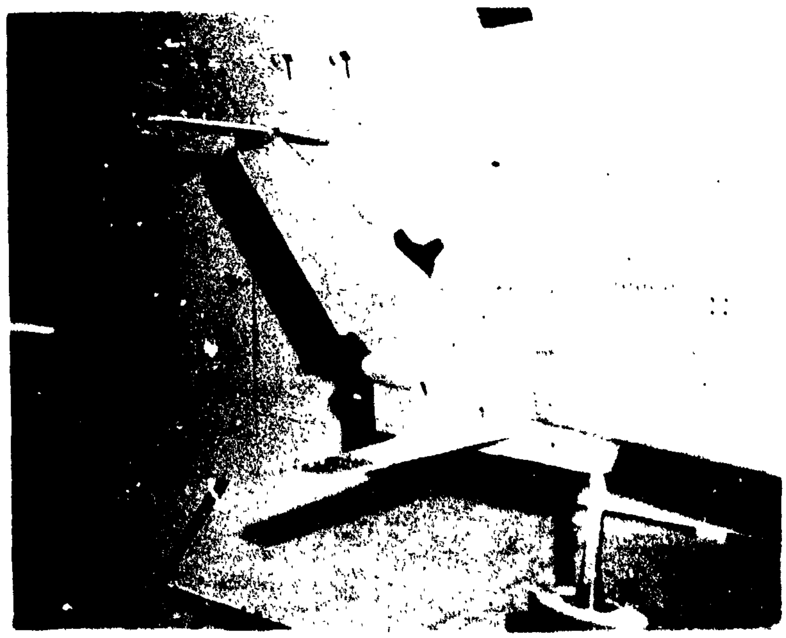


t T_{24}

Figure 9 Empennage Configurations (Continued)

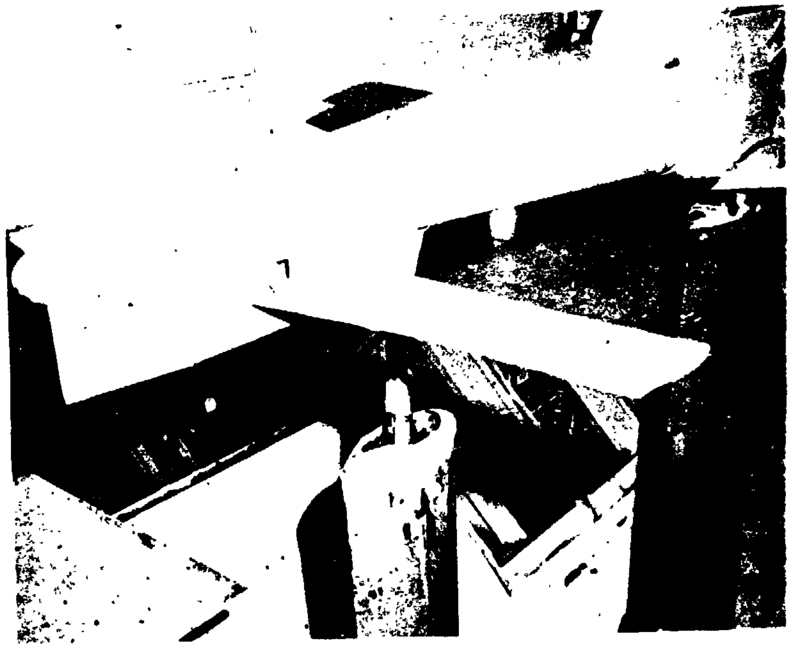


u T_{25}

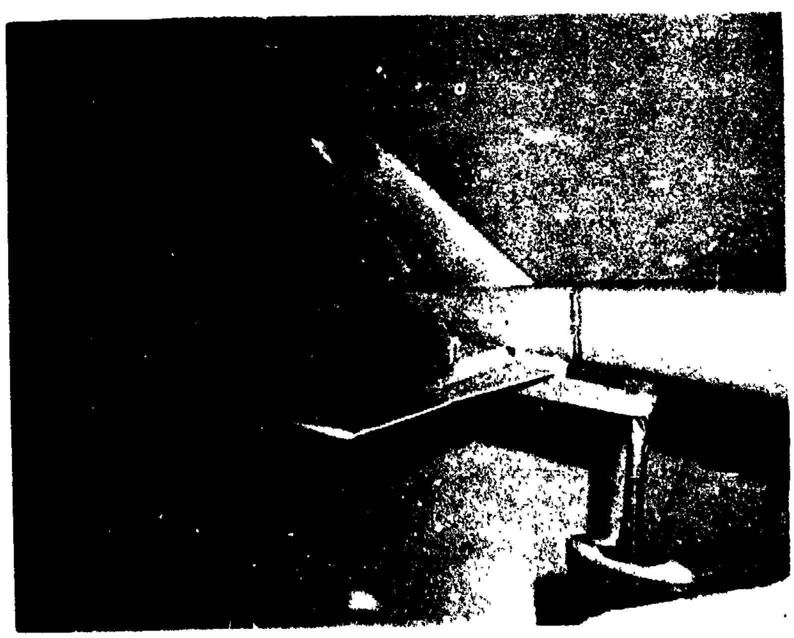


v T_{27}

Figure 9 Empennage Configurations (Continued)

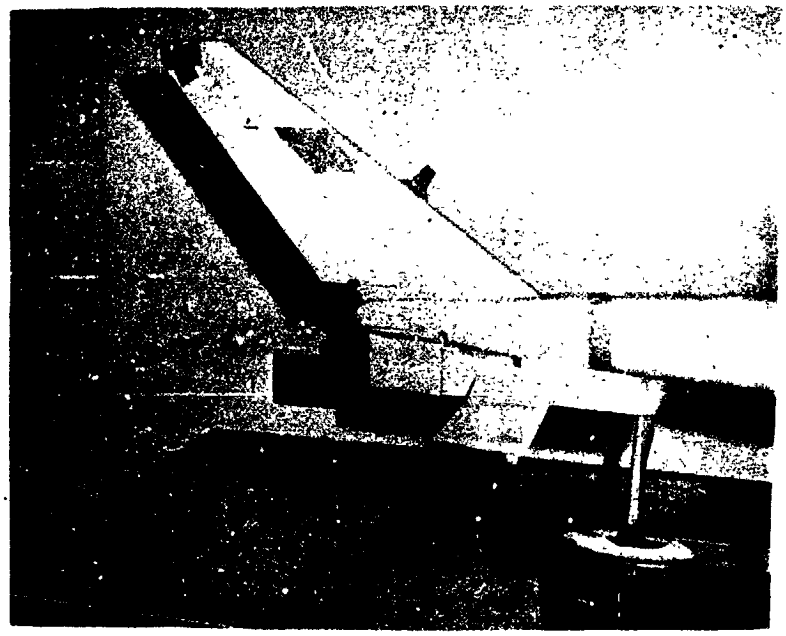


w T_{28}

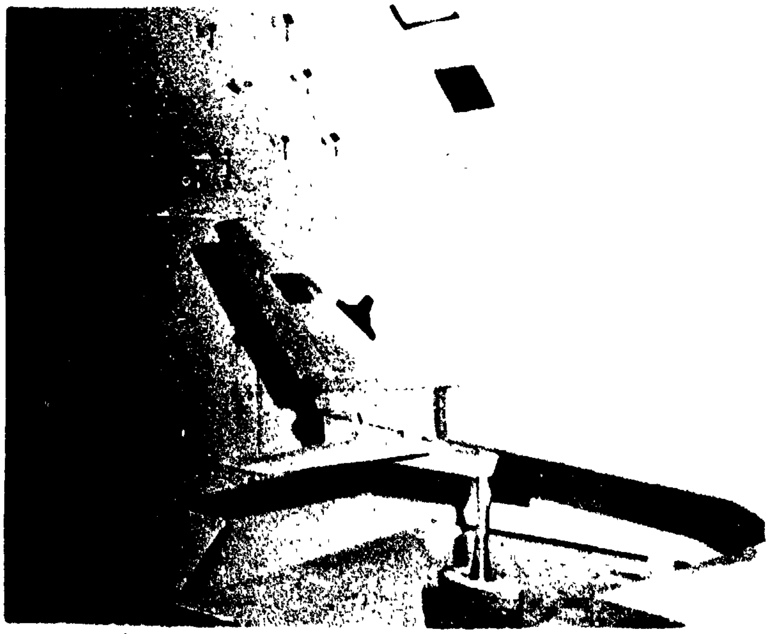


x T_{28} with inboard spoiler

Figure 9 Empennage Configurations (Continued)

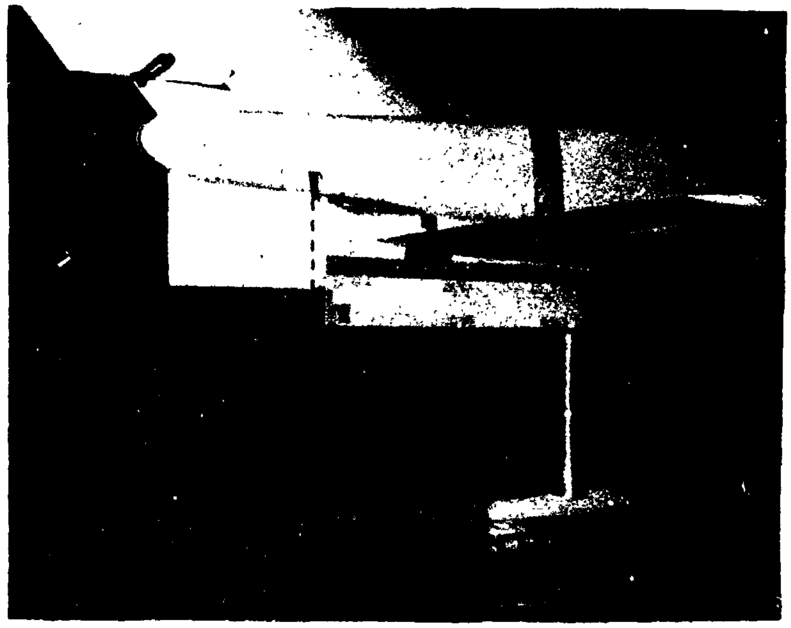


y T_{32}

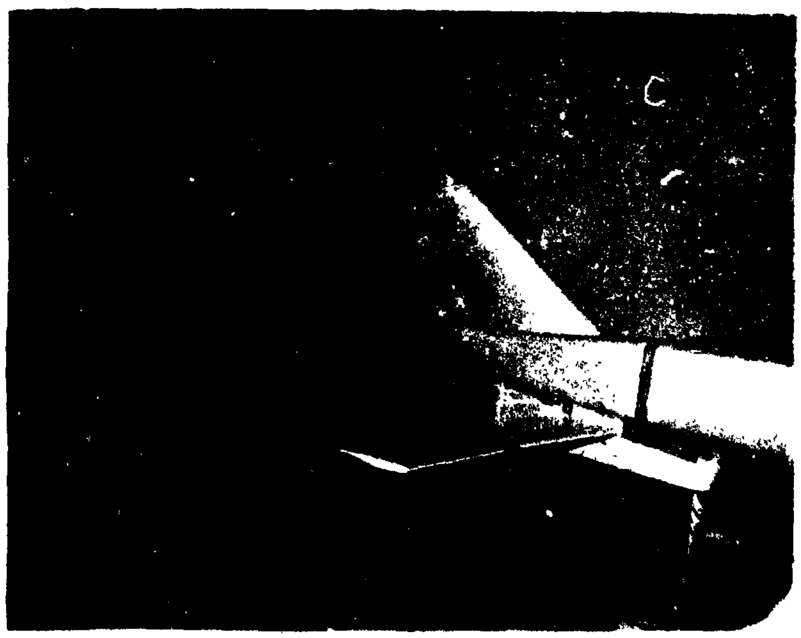


z T_{34}

Figure 9 Empennage Configurations (Continued)

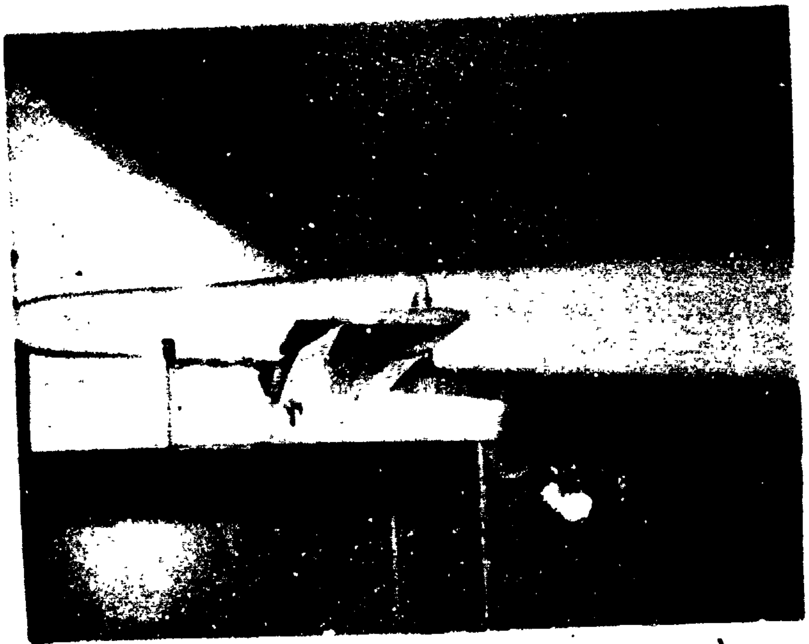


A T_{35}

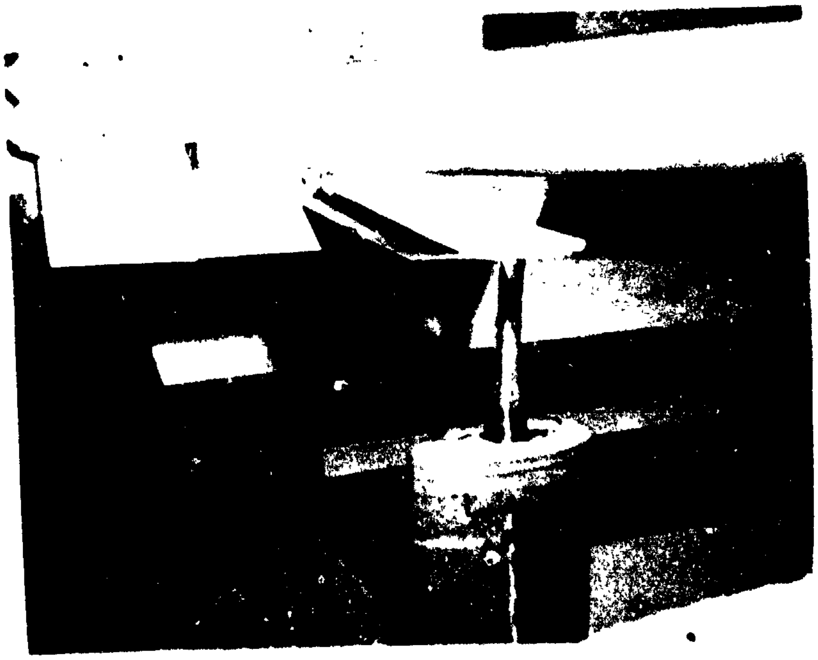


B T_{38}

Figure 9 Empennage Configurations (Continued)

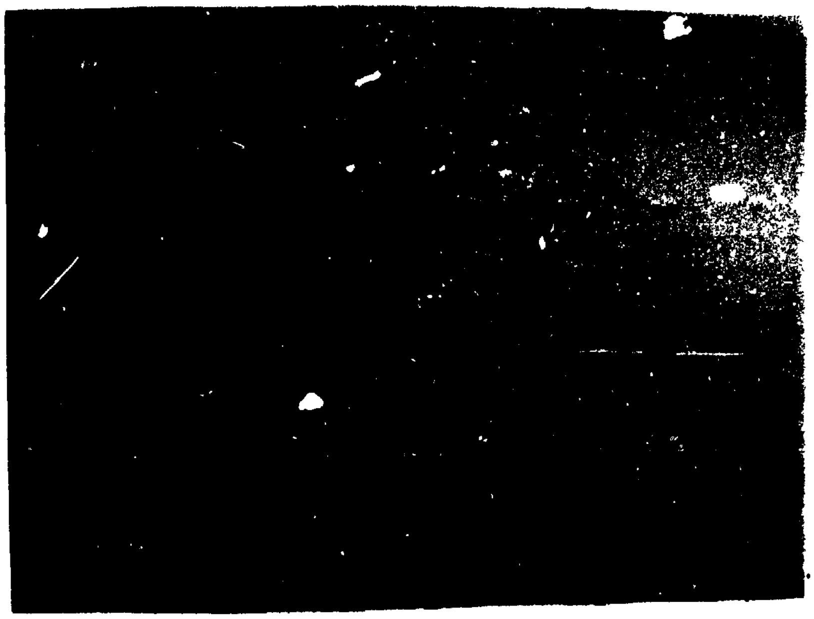


C T_{40} with split flap elevator (δ_E = 25 Deg)



D T_{40} with split flap elevator (δ_E =-21 Deg)

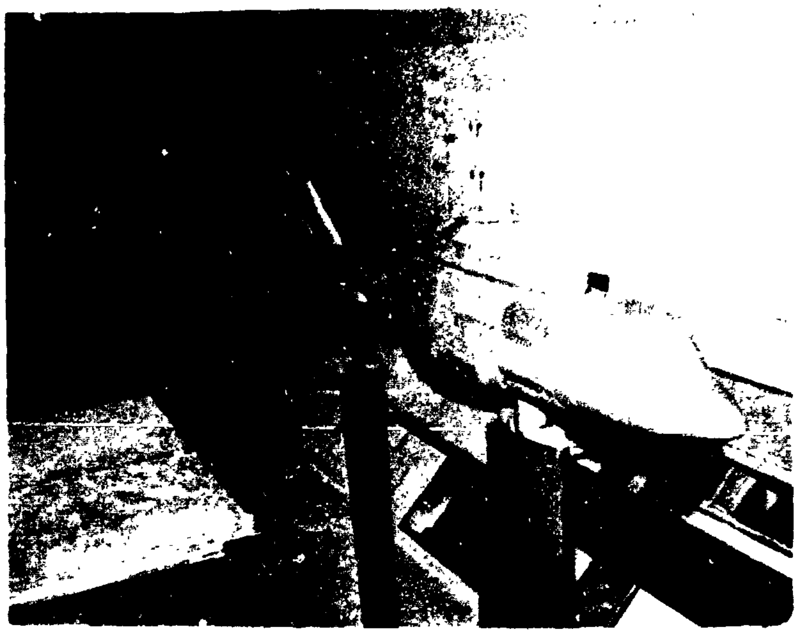
Figure 9 Empennage Configurations (Continued)



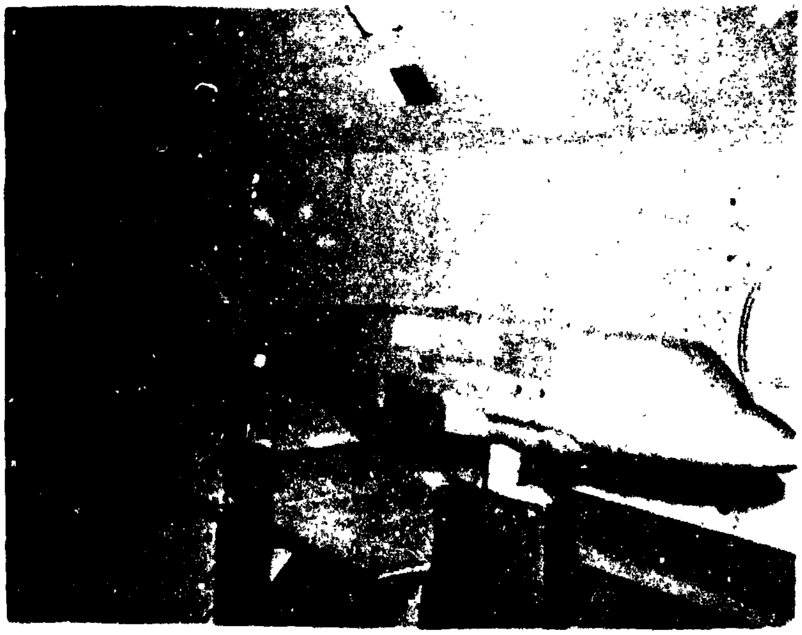
E T_{41} (compound T-Tail)

F T_{44}

Figure 9 Empennage Configurations (Continued)

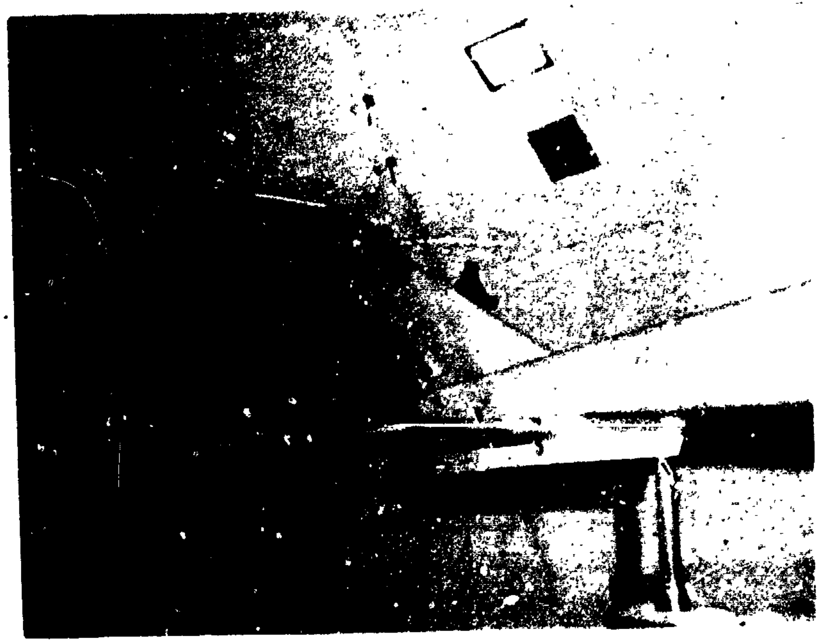


G T_{45}



H T_{47}

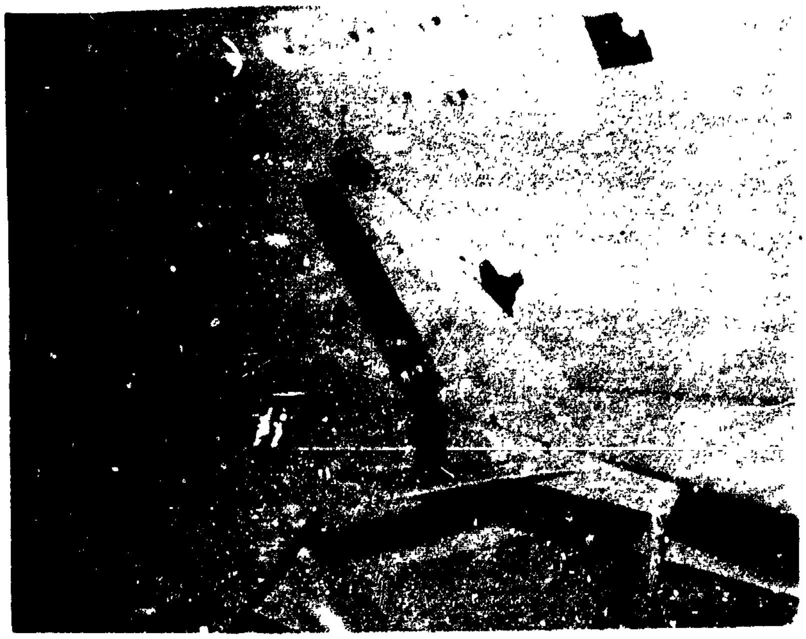
Figure 9 Empennage Configurations (Continued)



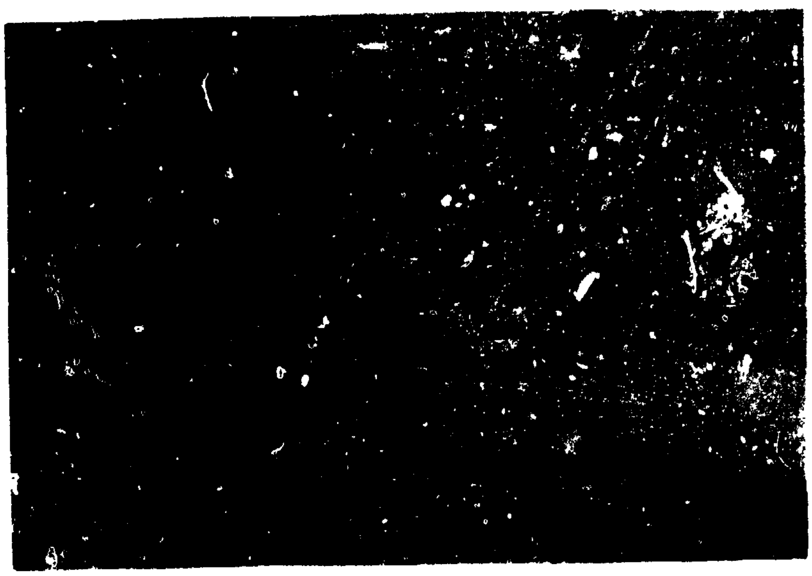
I T_{49}

J T_{50} (helicopter T-Tail)

Figure 9 Empennage Configurations (Continued)

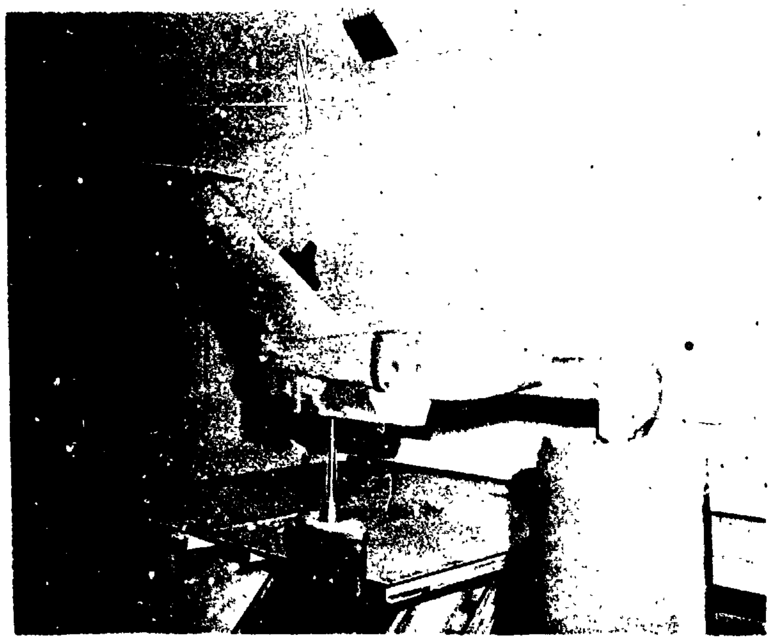


K T_{55}



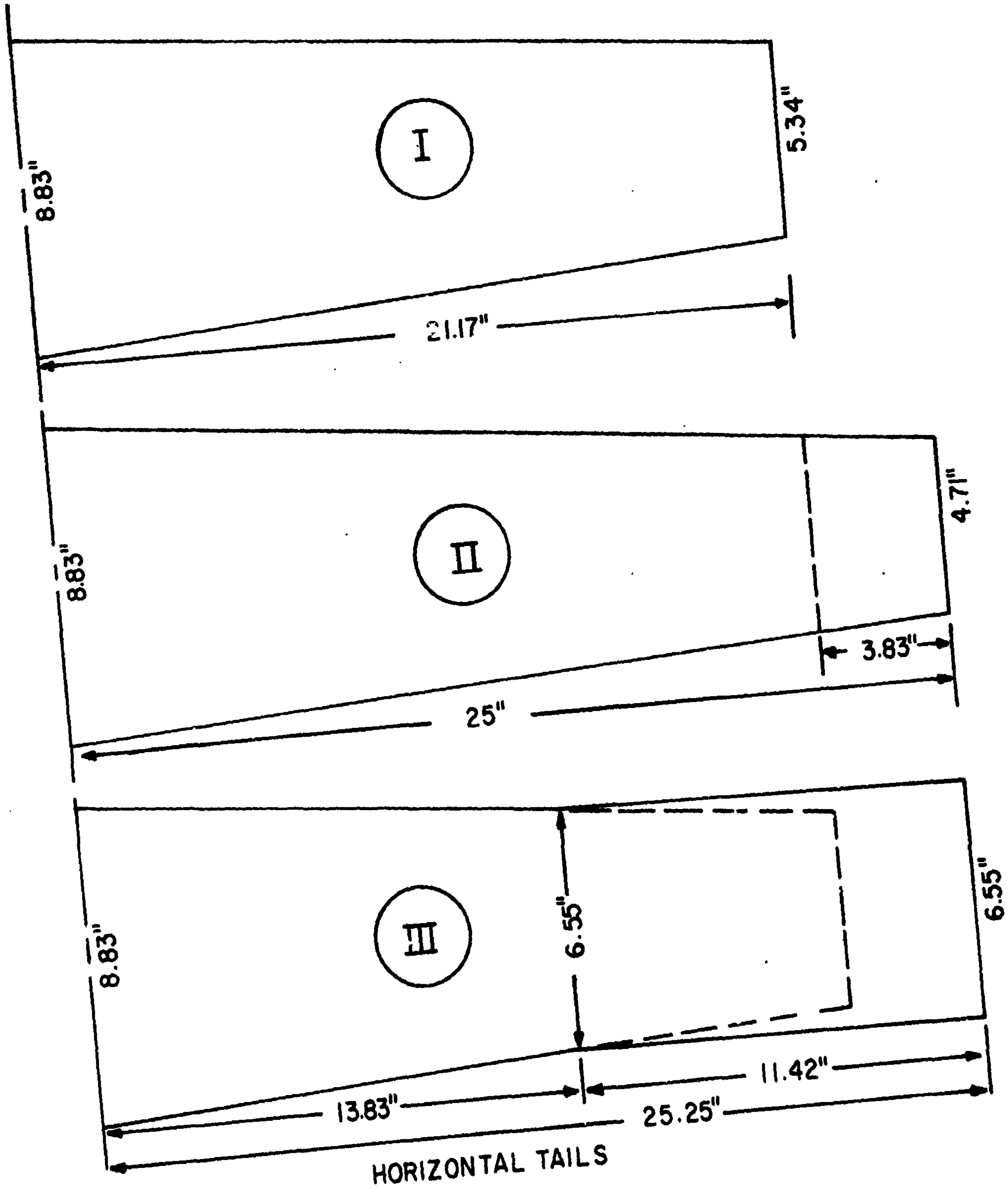
L T_{60} (compound Tail)

Figure 9 Empennage Configurations (Continued)



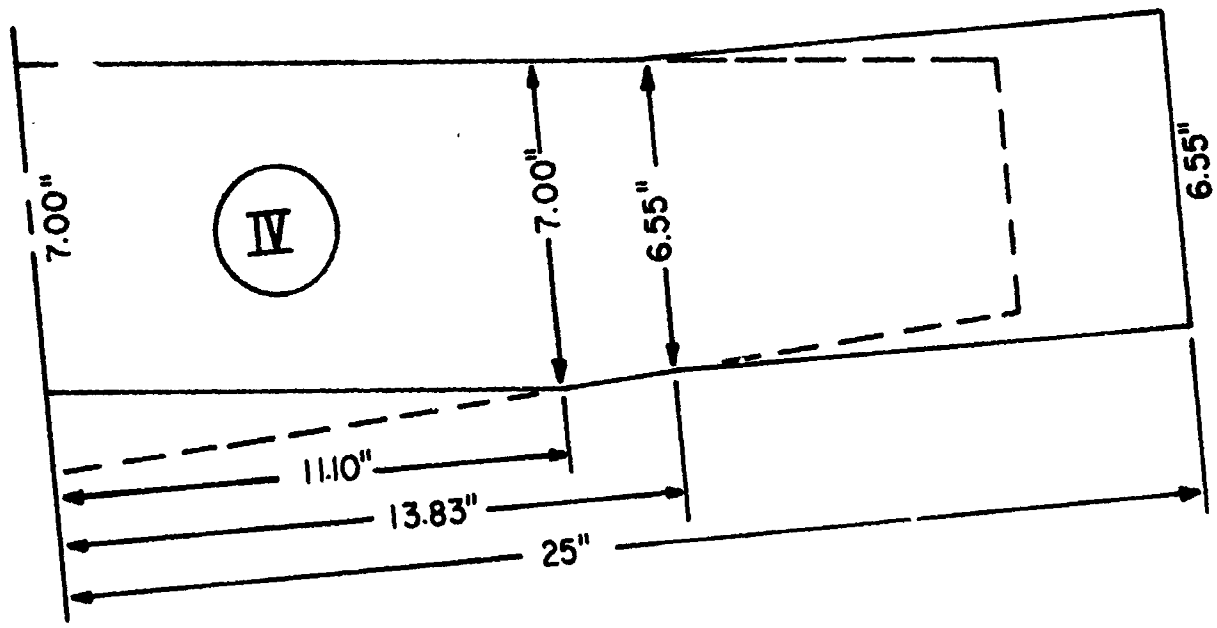
M T_{65} (compound T-Tail alone)

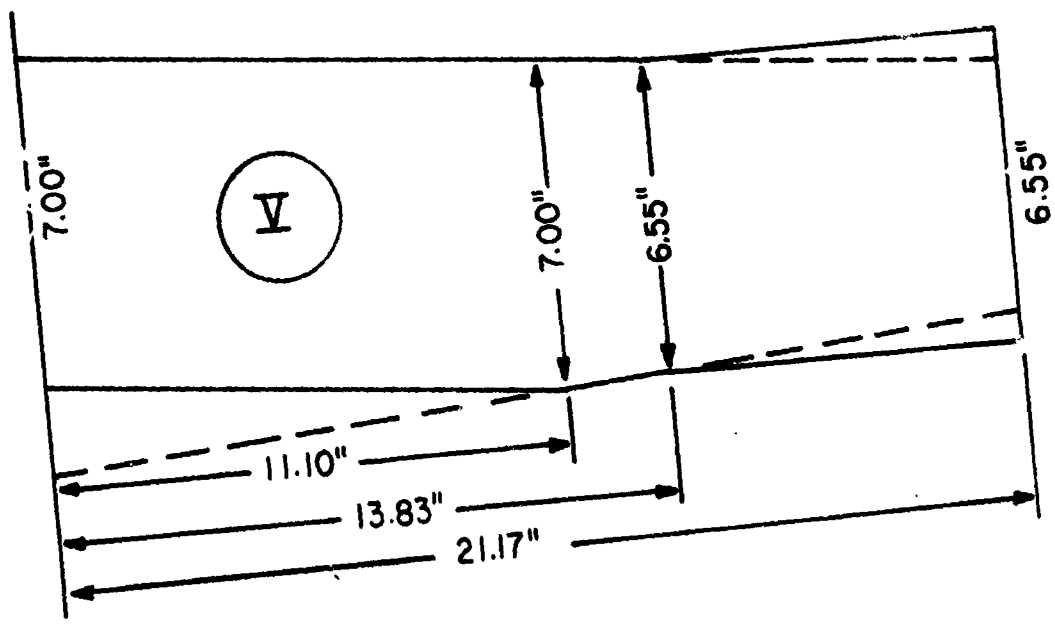
Figure 9 Empennage Configurations (Concluded)



HORIZONTAL TAILS

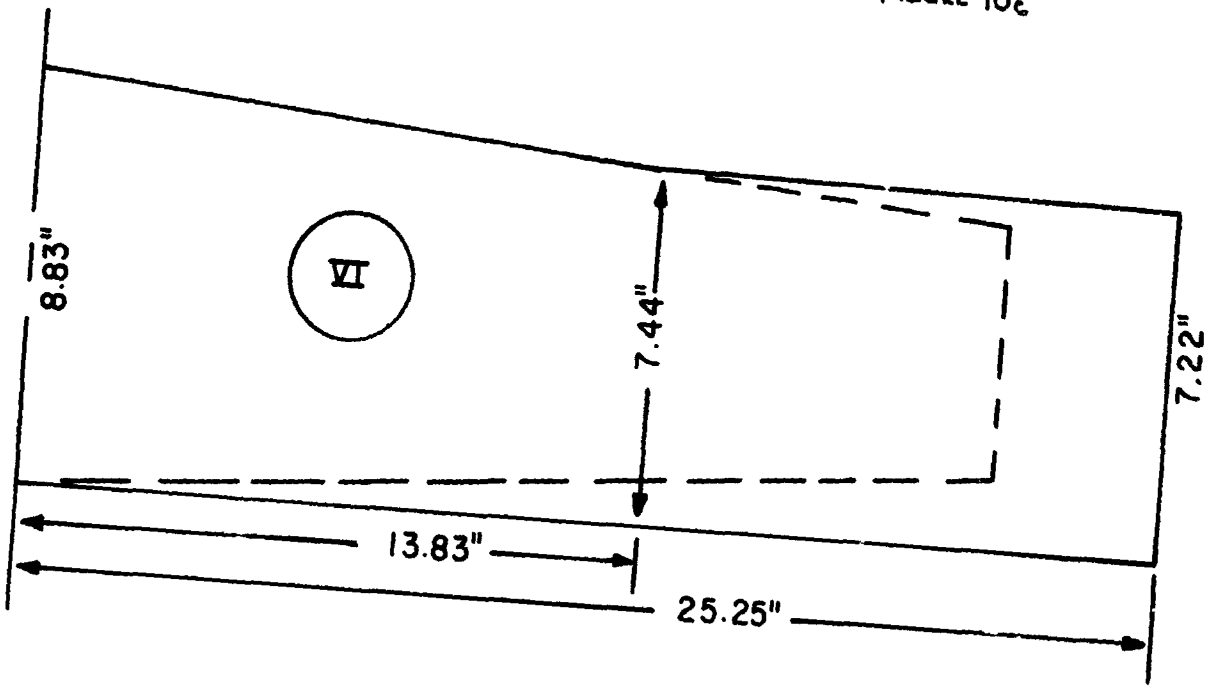
FIGURE 10b

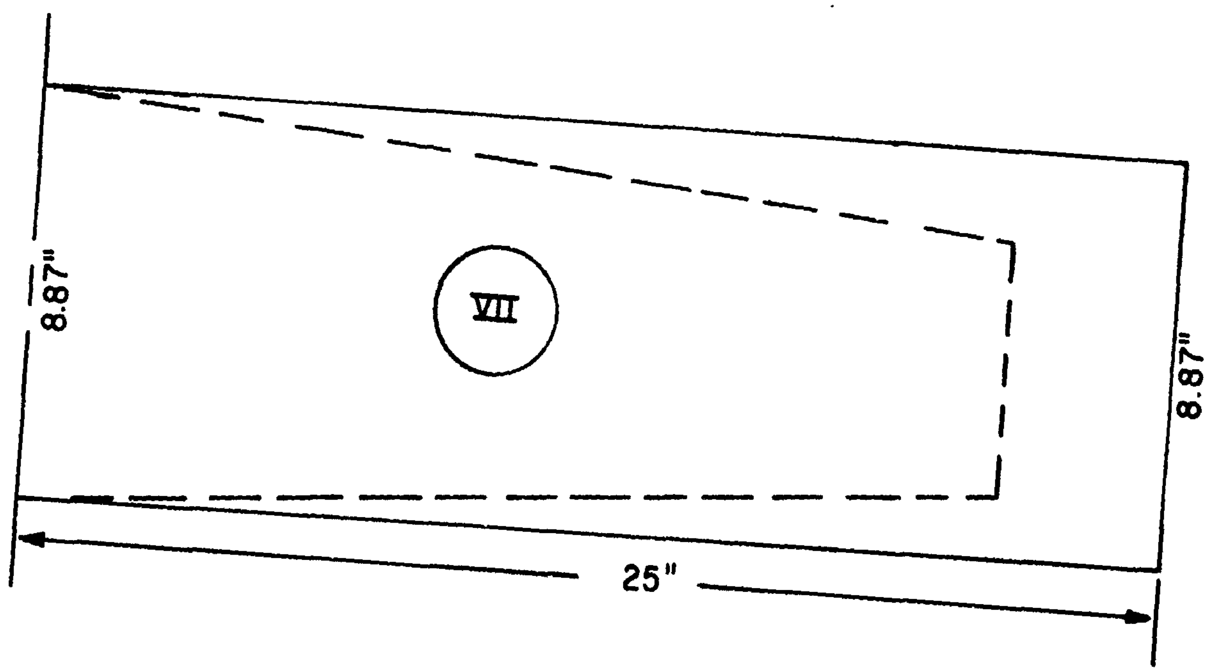




HORIZONTAL TAILS (CONTINUED)

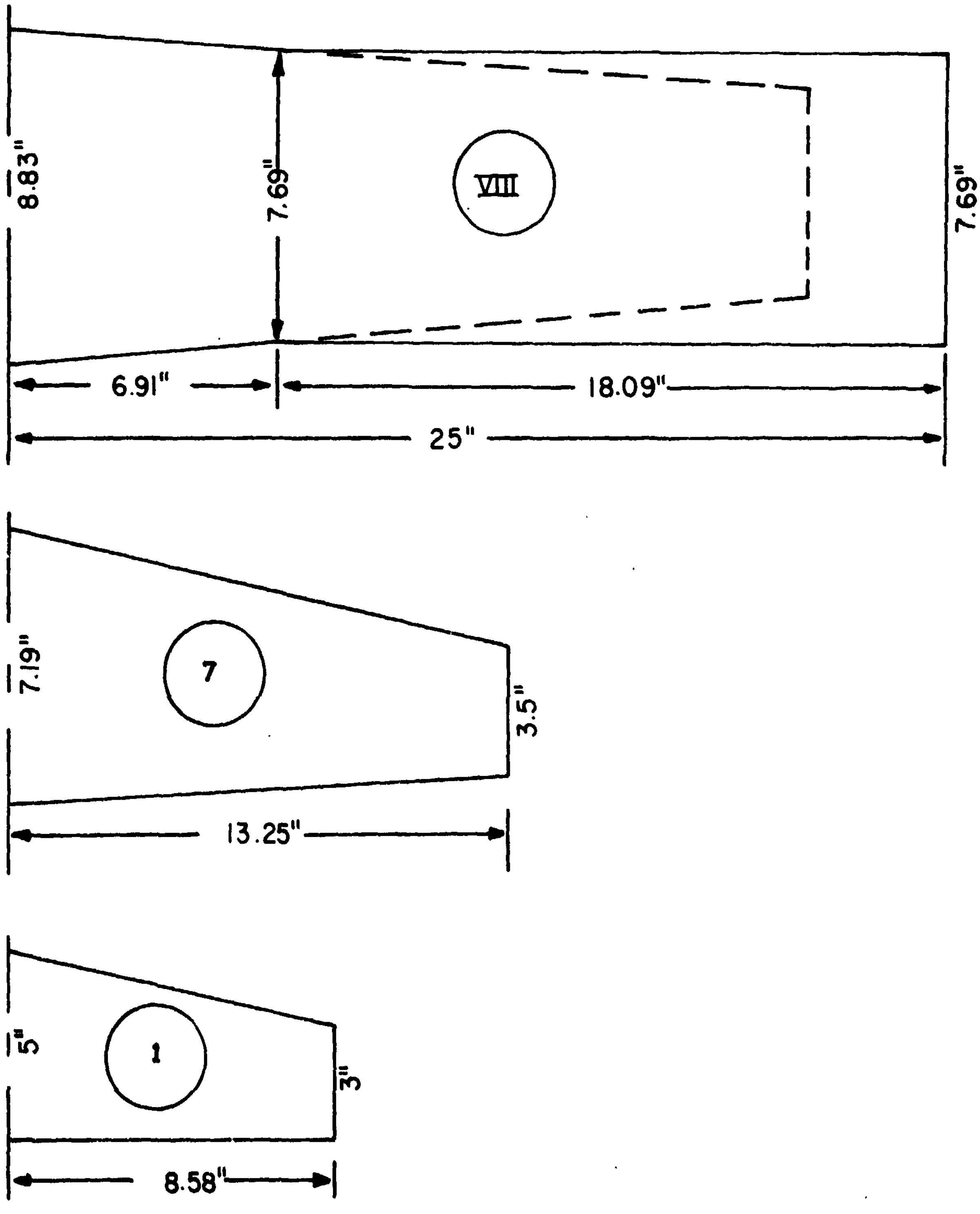
FIGURE 10c





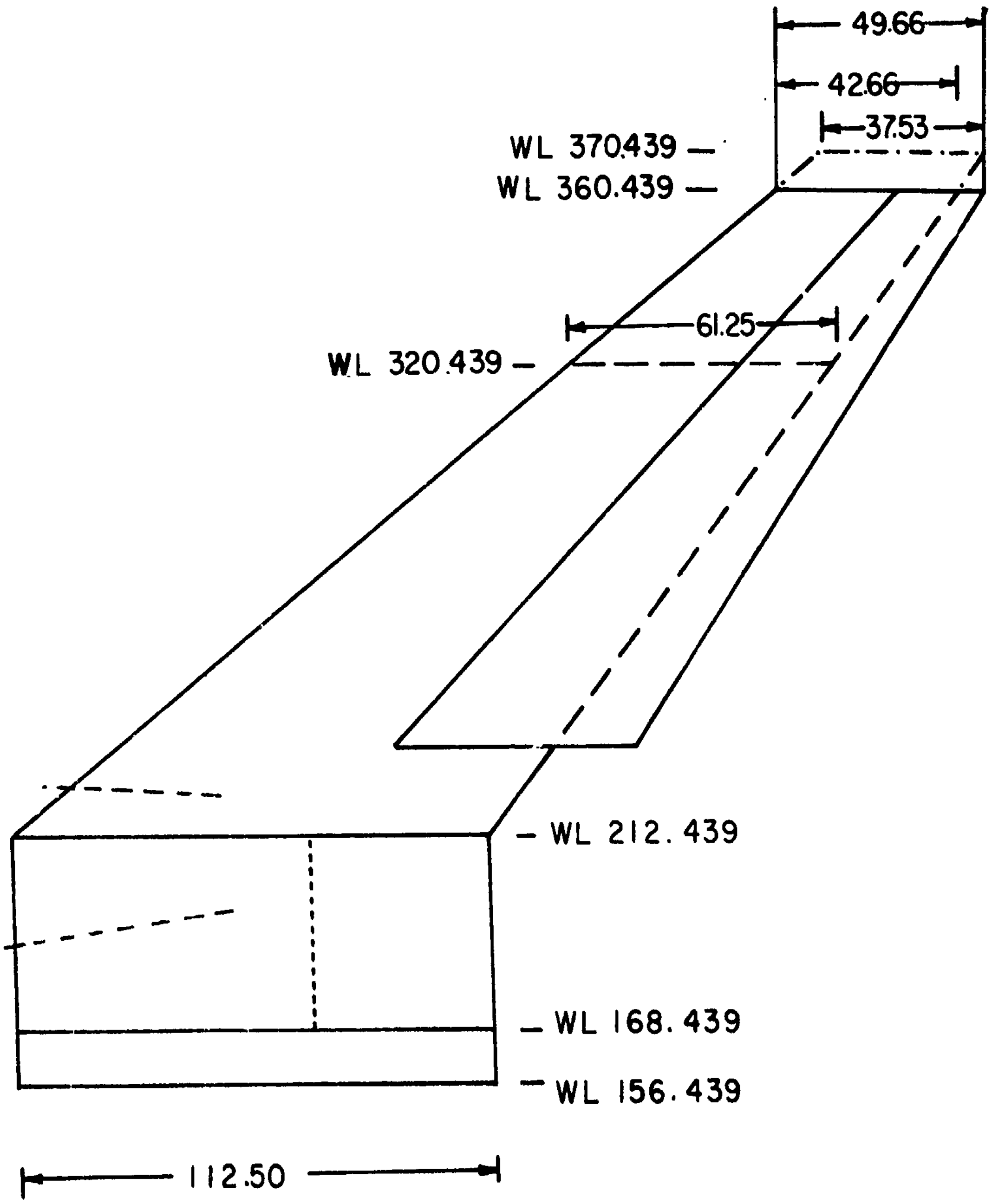
HORIZONTAL TAILS (CONTINUED)

FIGURE 10d

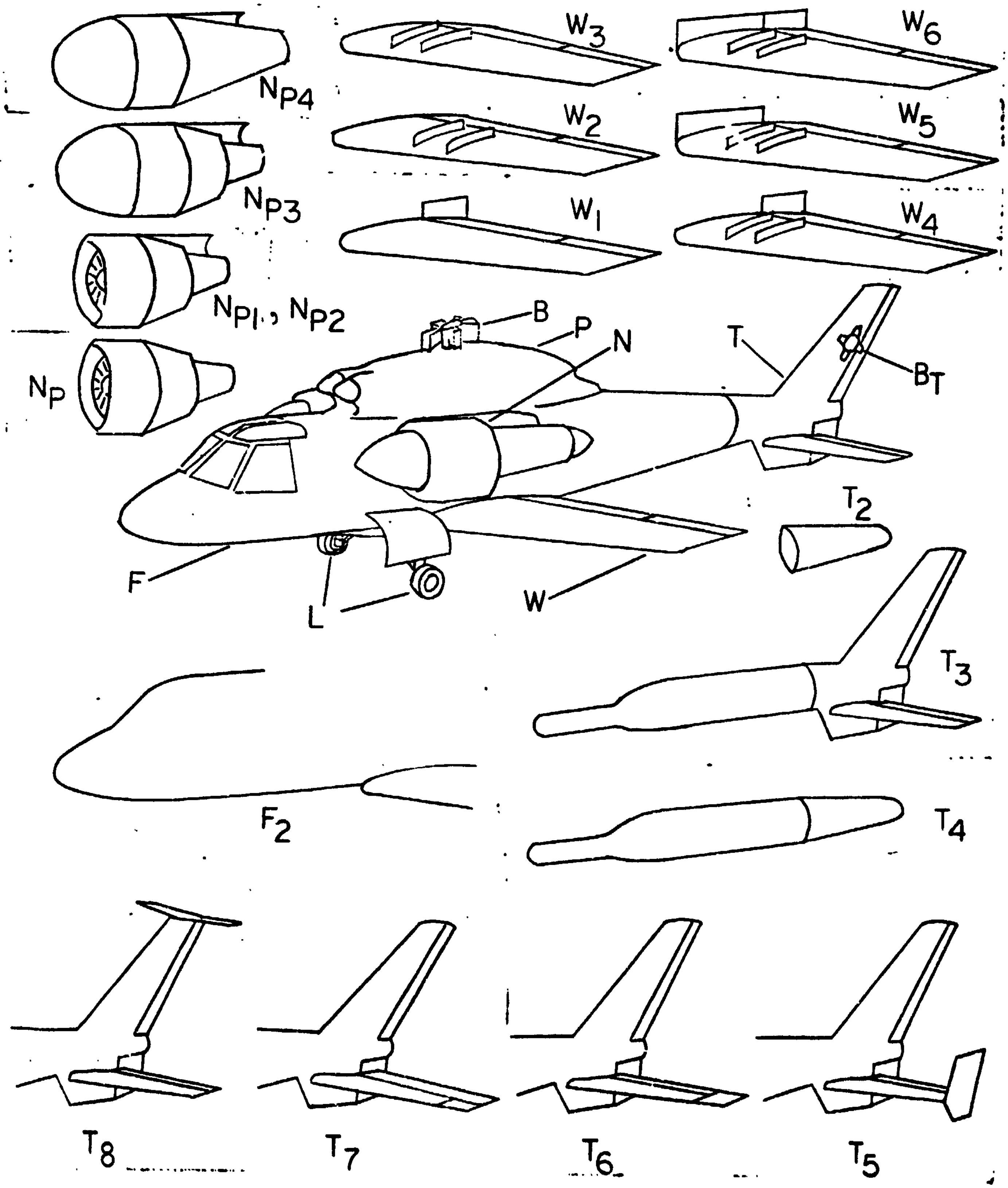


HORIZONTAL TAILS (CONCLUDED)

FIGURE 10e

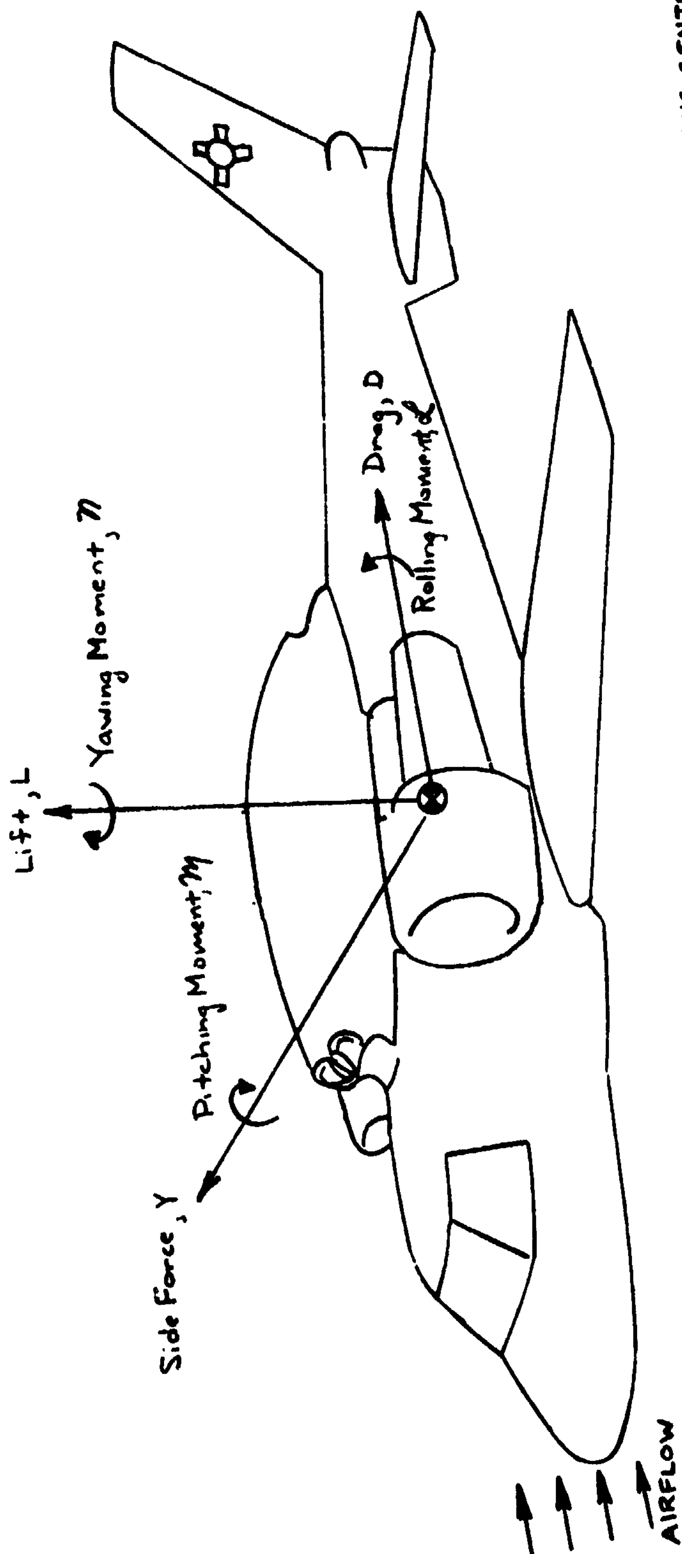

49.66
42.66
37.53
WL 370.439
WL 360.439
61.25
WL 320.439
WL 212.439
WL 168.439
WL 156.439
112.50

COMPONENT CONFIGURATIONS



WIND AXIS COORDINATE SYSTEM

FORWARD FLIGHT



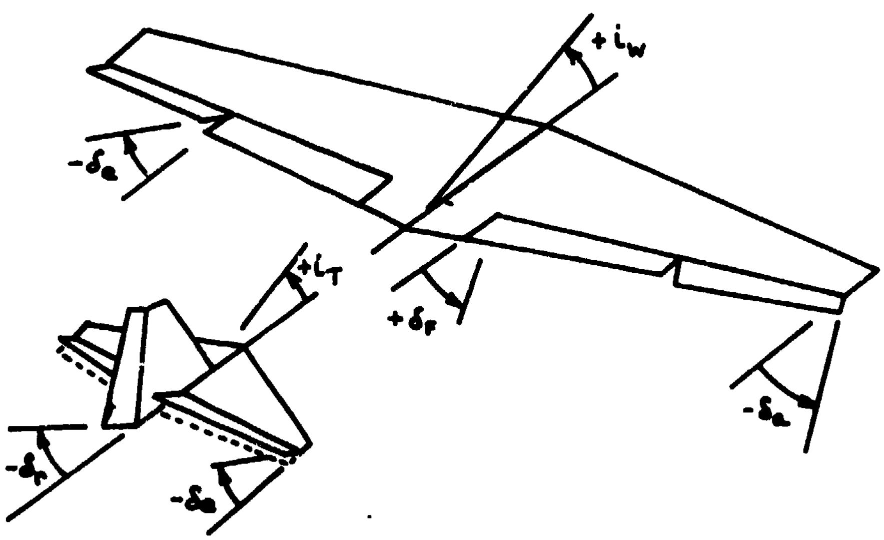
MODEL RESOLVING CENTER

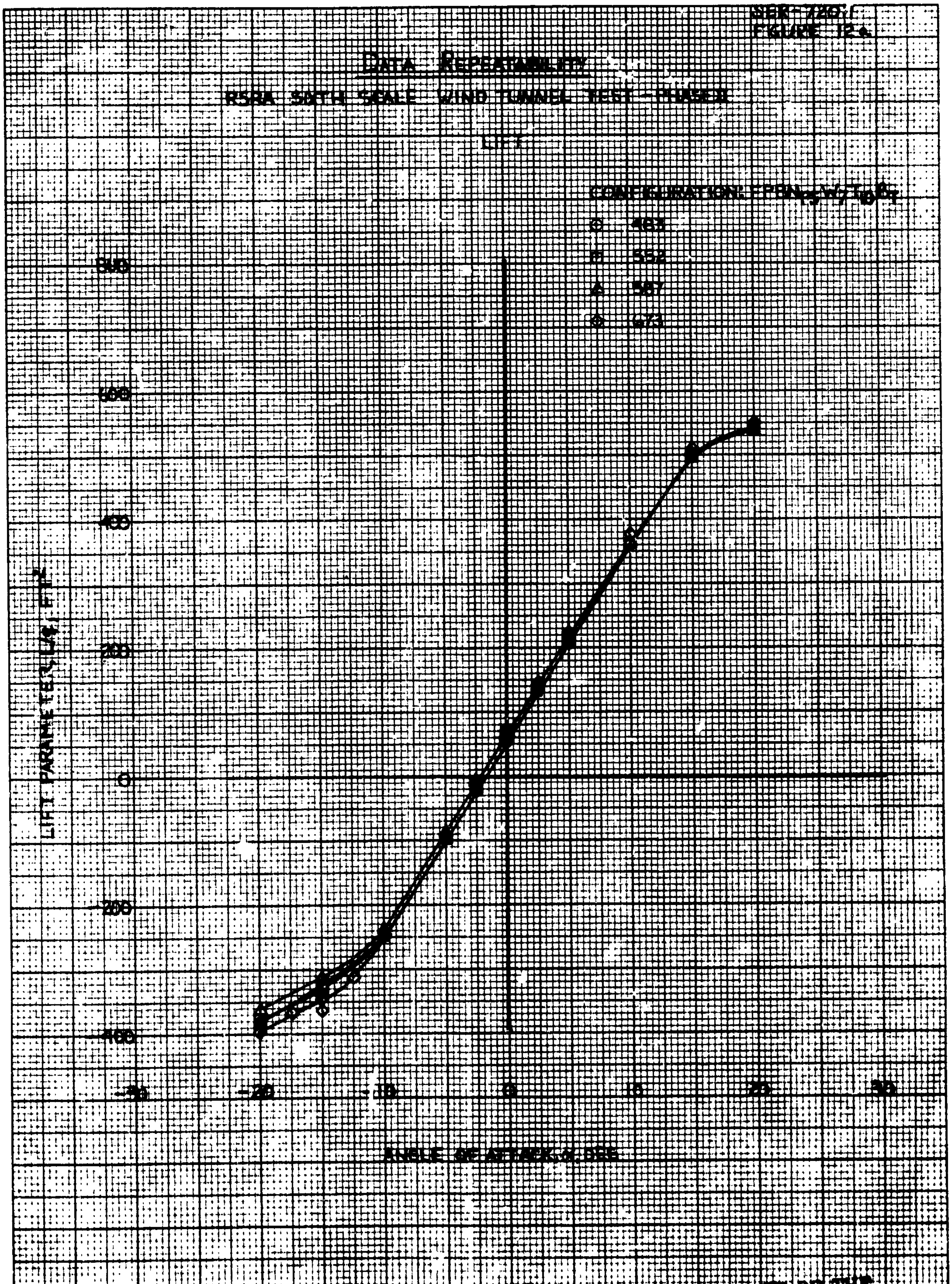
F.S. 309

W.L. 223

B.L. 0

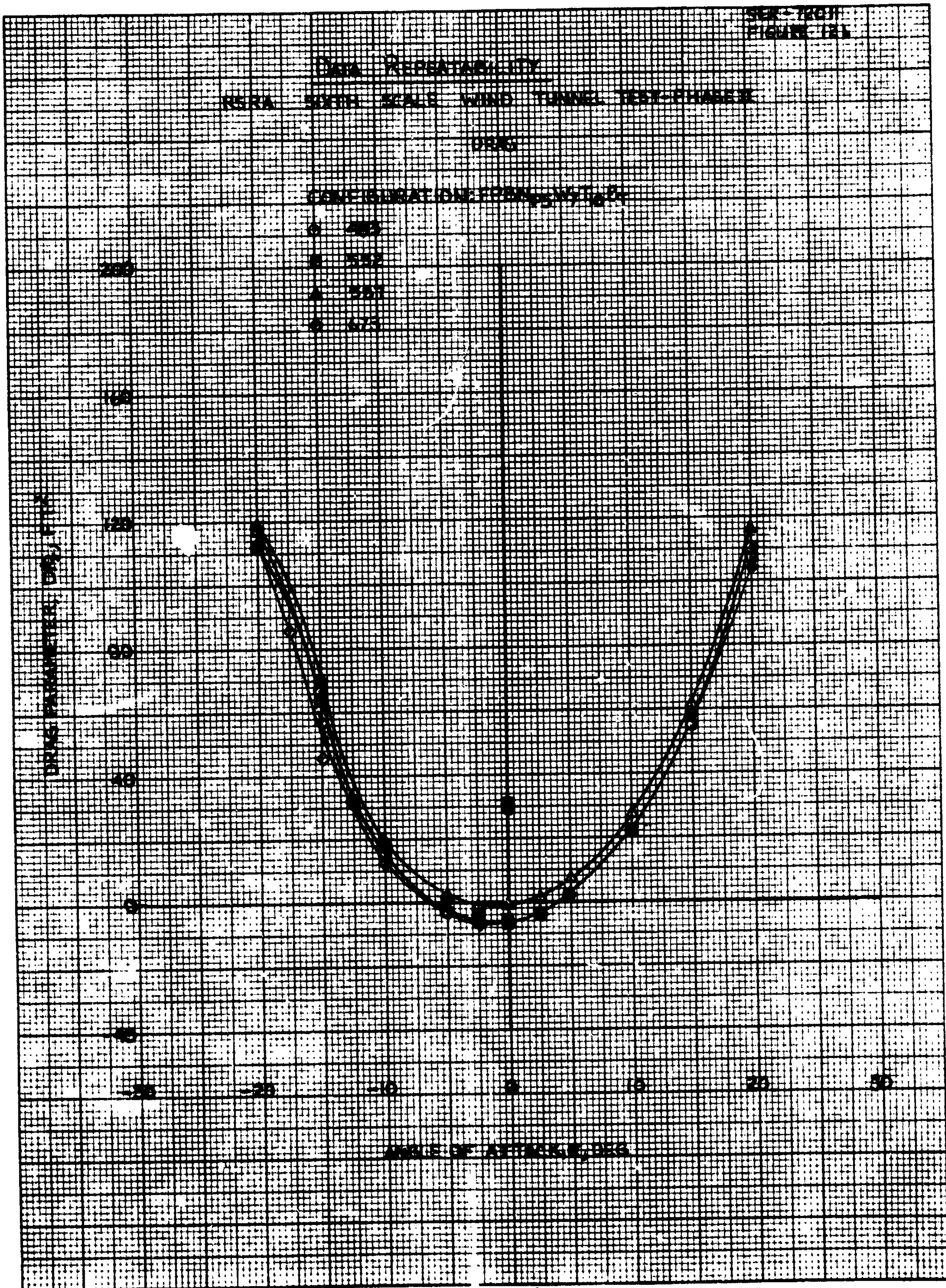
CONTROL SYSTEM SIGN CONVENTION





46 1473

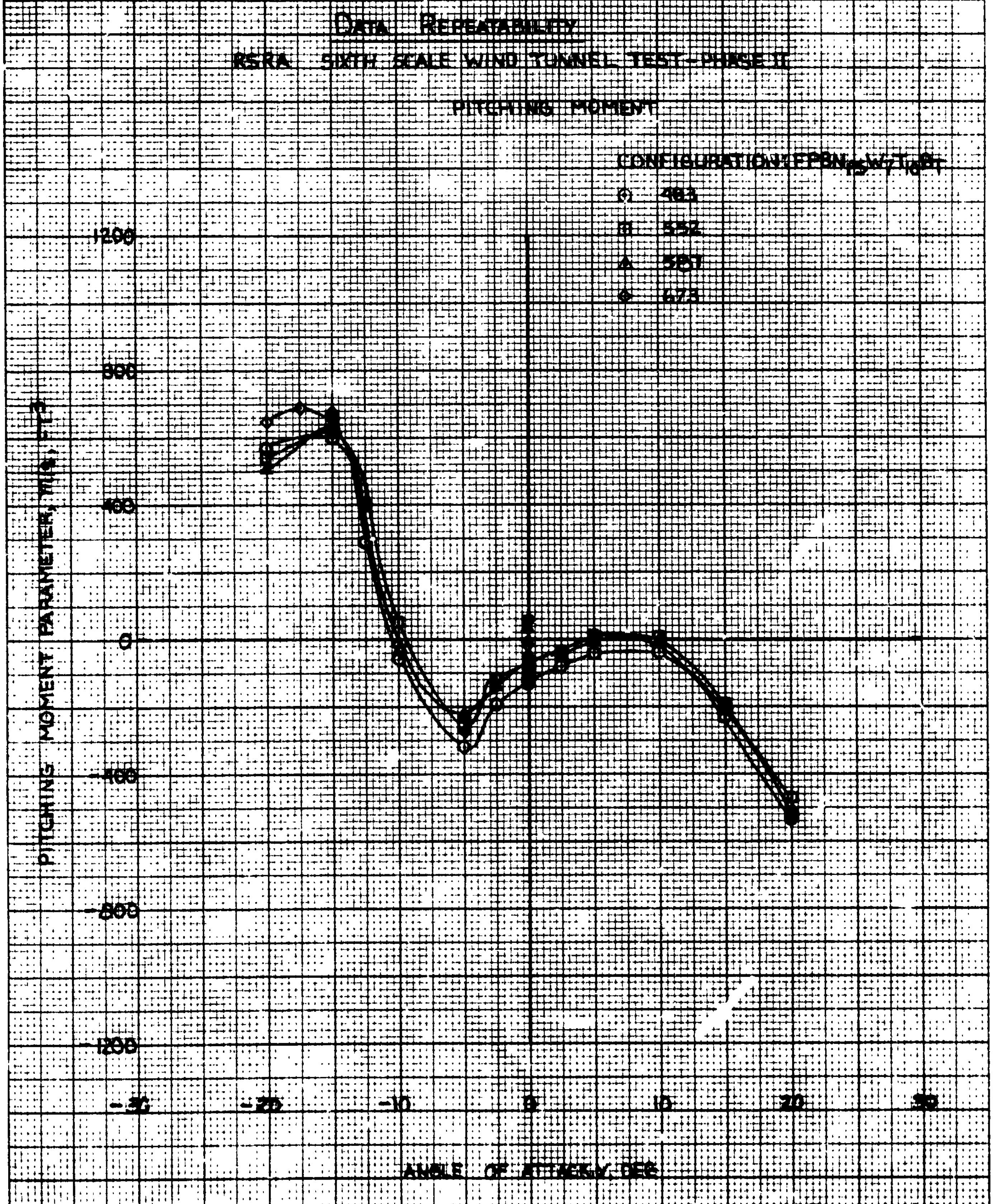
K·E 10 X 10 TO ½ INCH • 7½ X 10 INCHES KEUFFEL & ESSER CO. MADE IN U.S.A.



DATA REPEATABILITY
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
200
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

.216

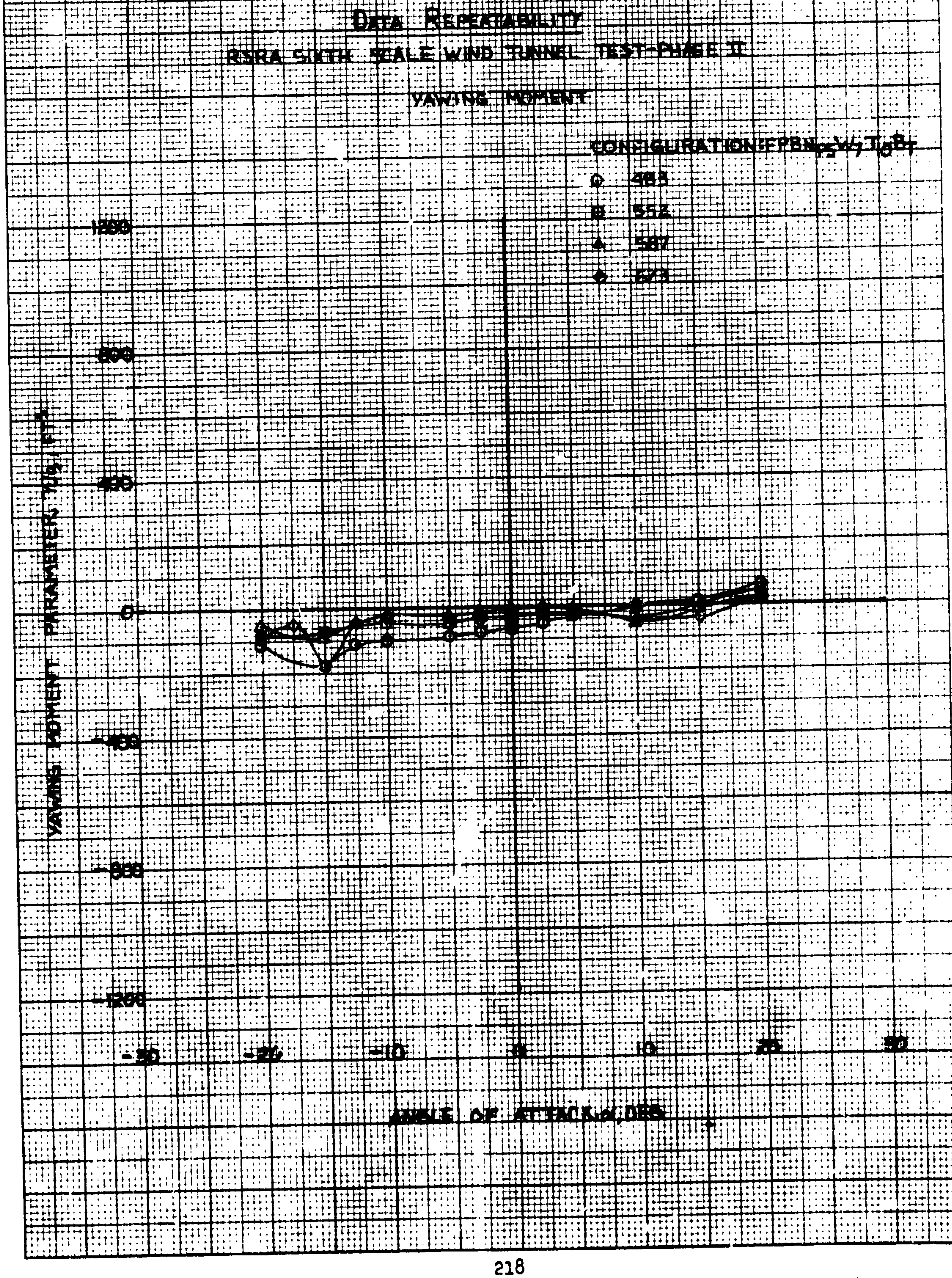
SER-72011
FIGURE 12c



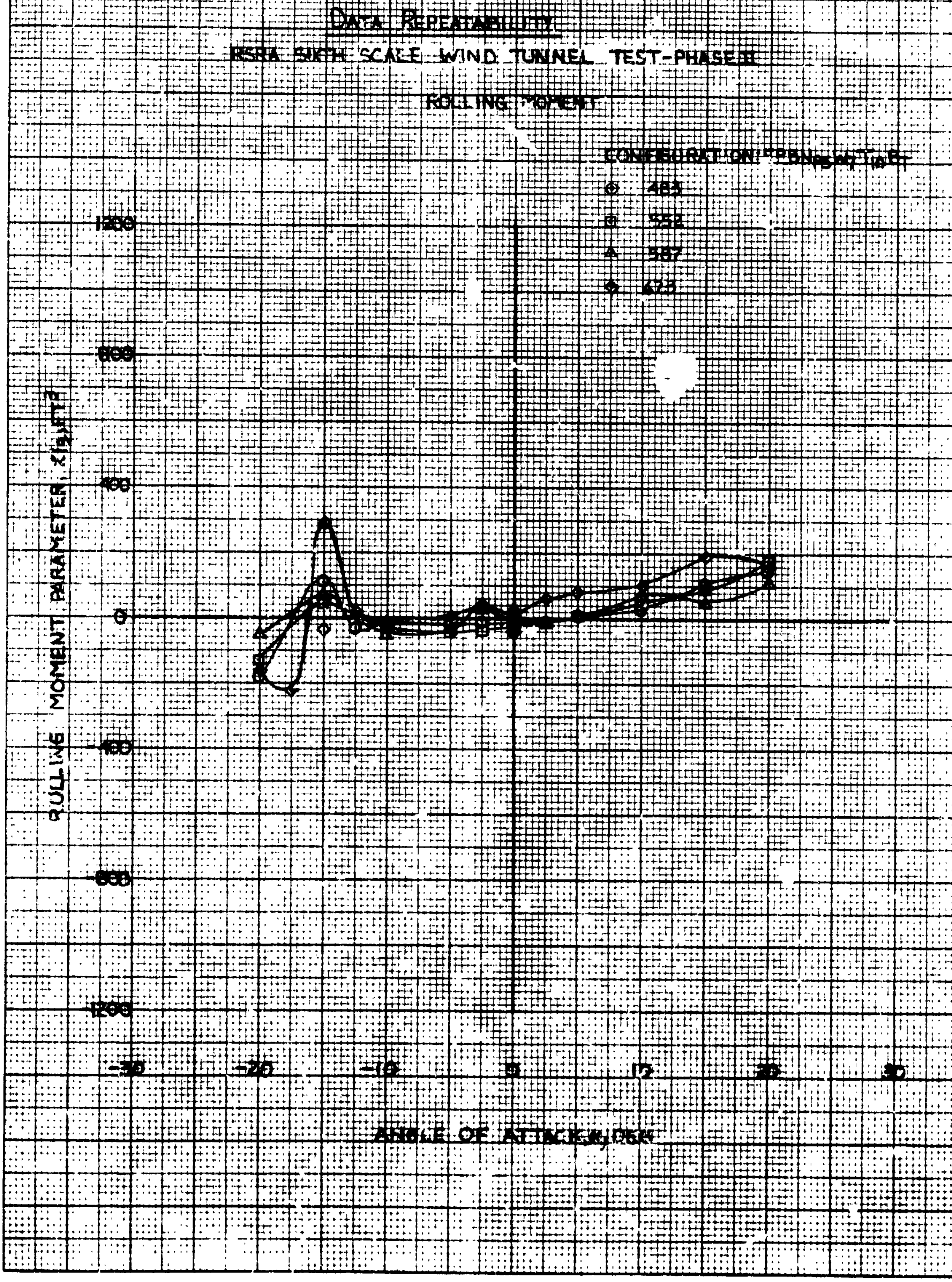
K•E 10 X 10 TO 1 INCH • 7 1/2 X 10 INCHES KEUFFEL & ESSER CO.

46 1473

SER-72011
FIGURE 12d



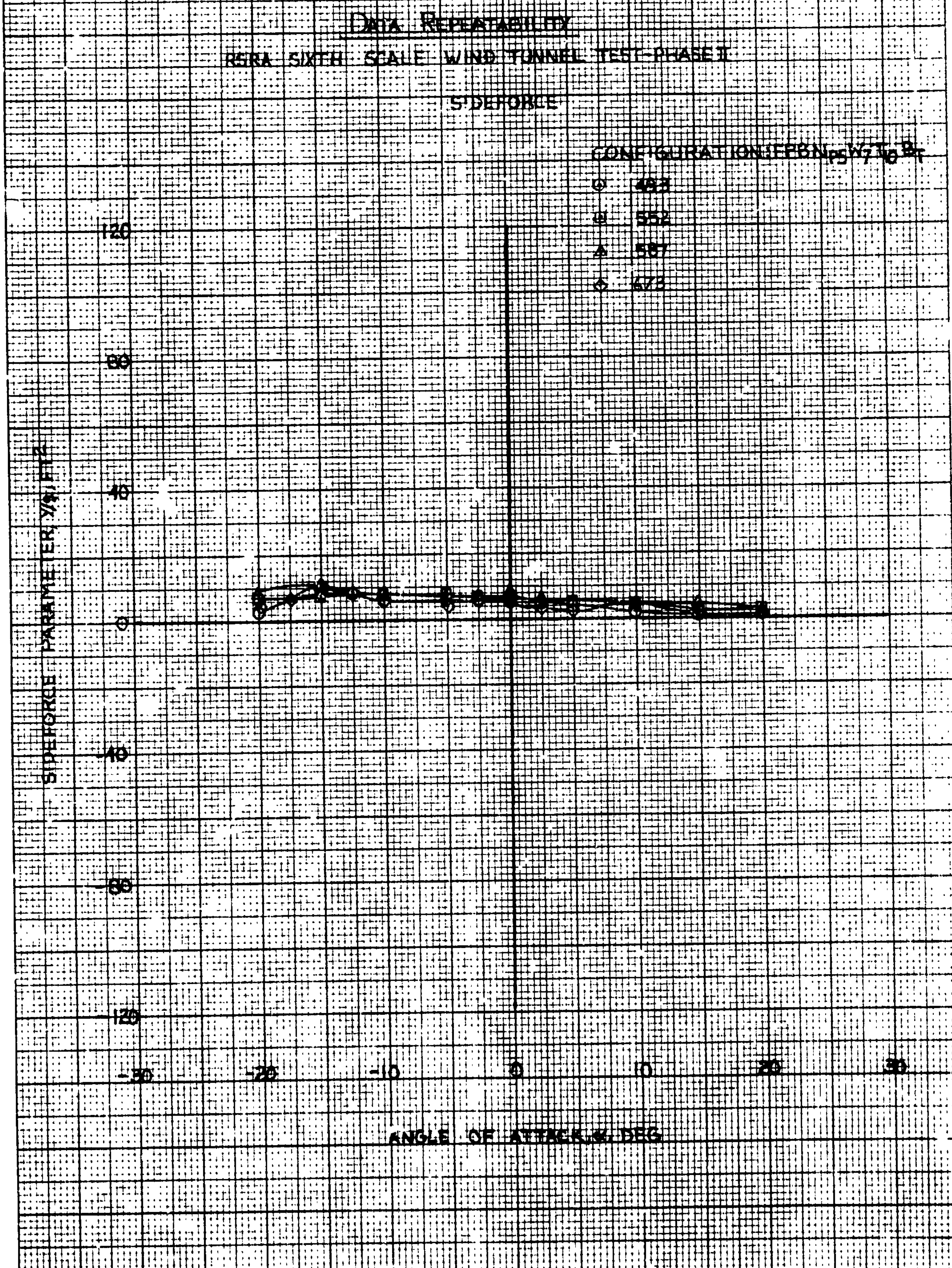
SER-72011
FIGURE 24

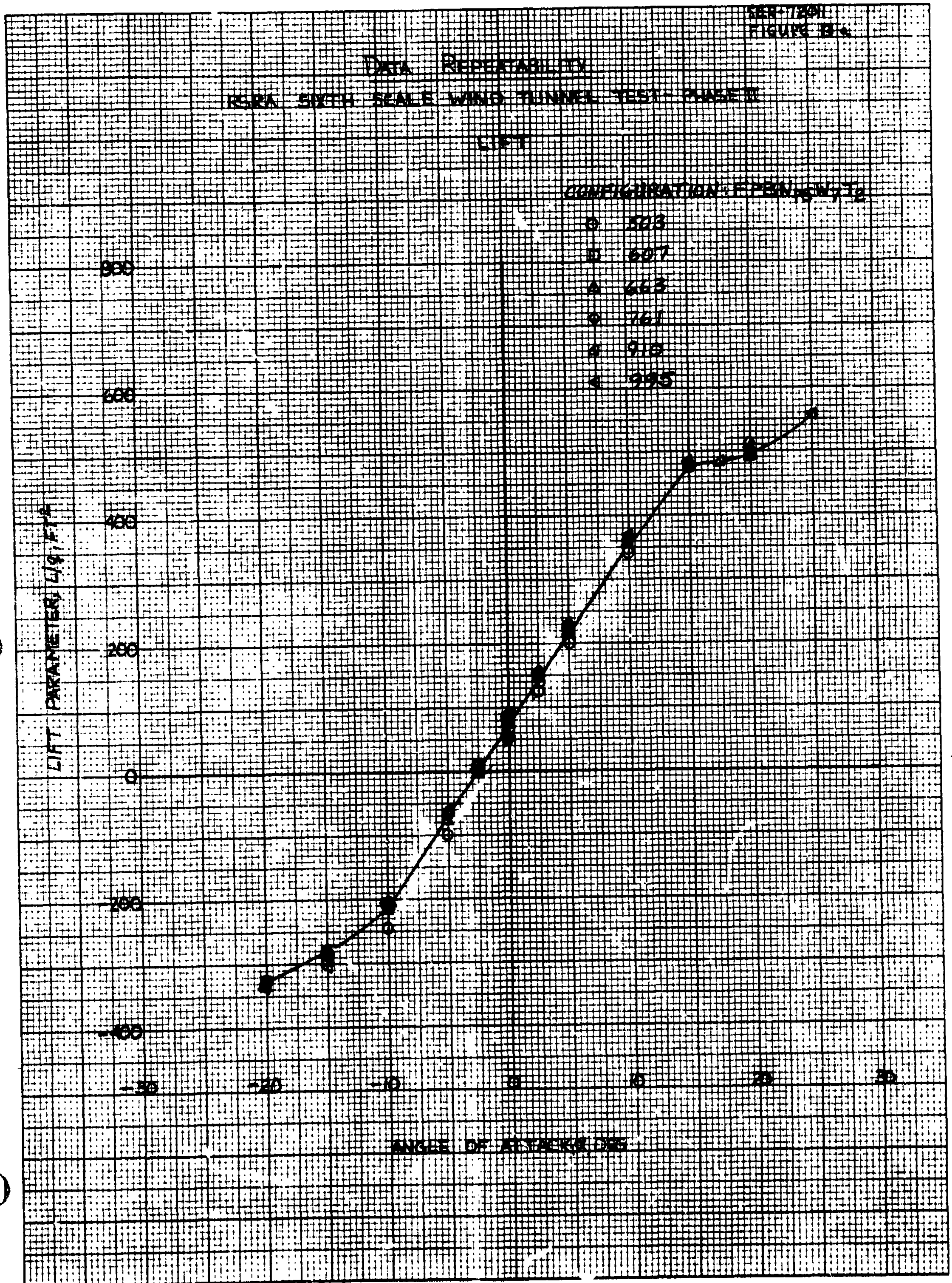


46 1473

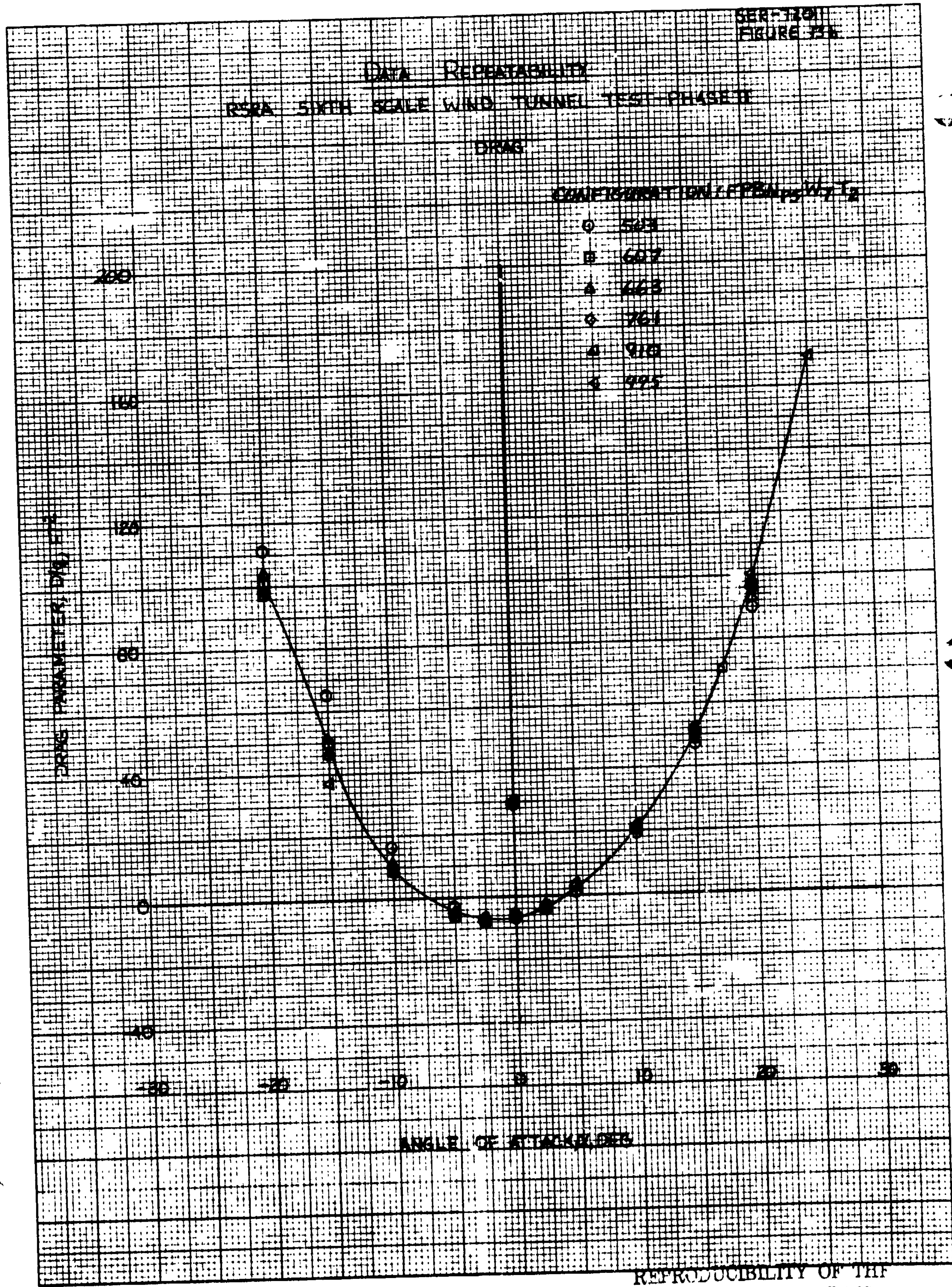
K·E 10 X 10 TO 1 INCH KEUFFEL & ESSER CO.

SEE-3201
FIGURE 12 f

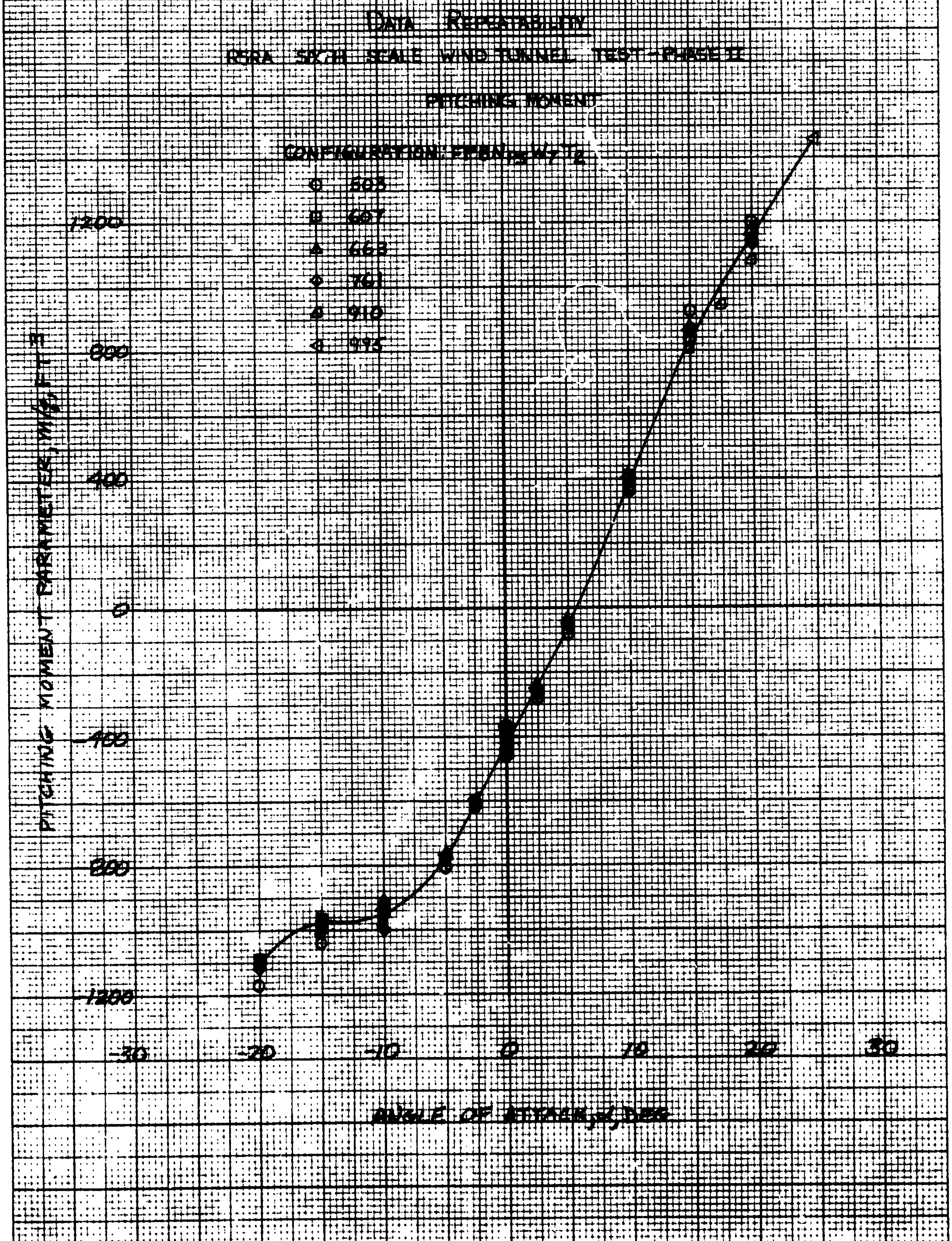


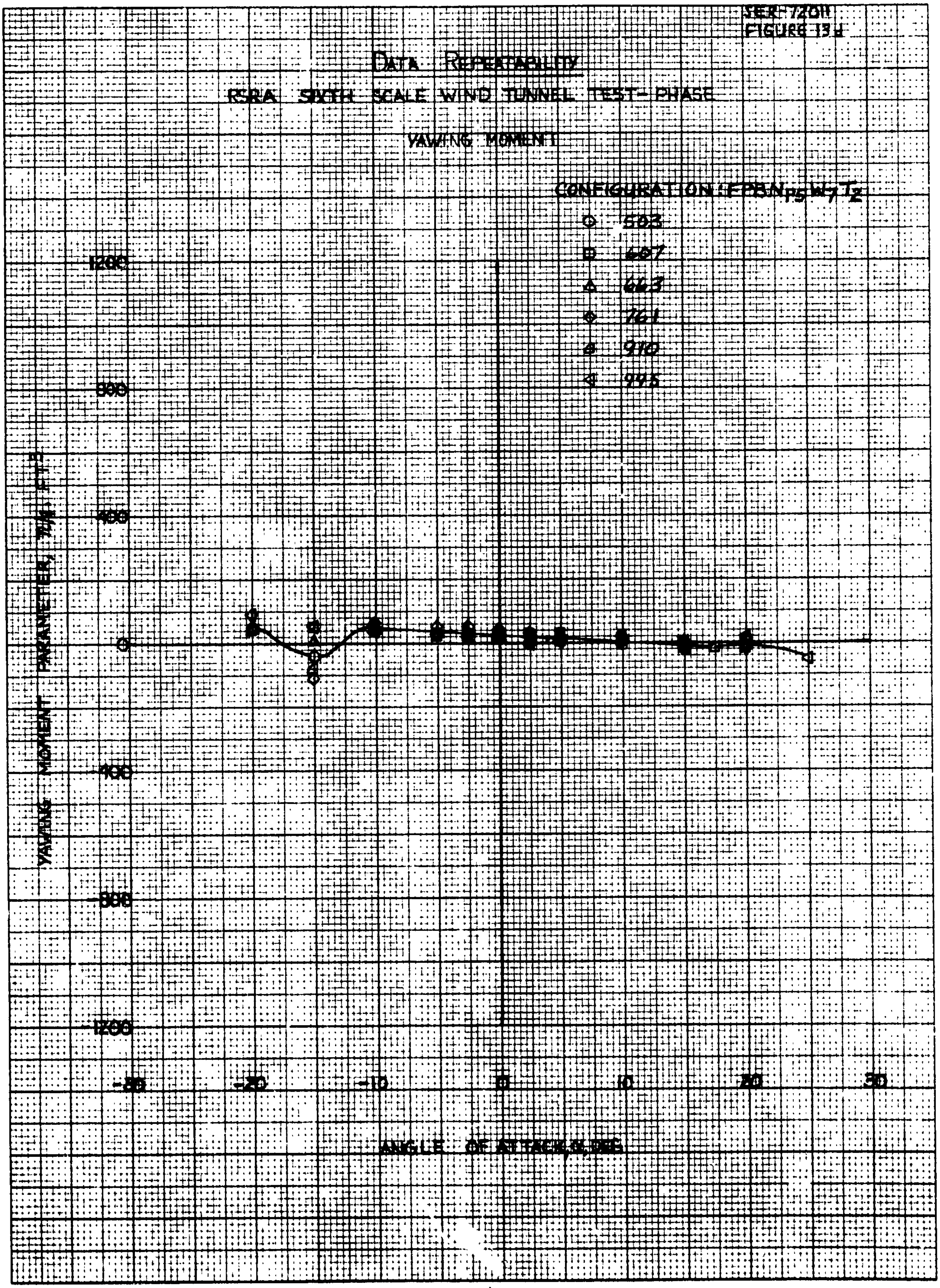


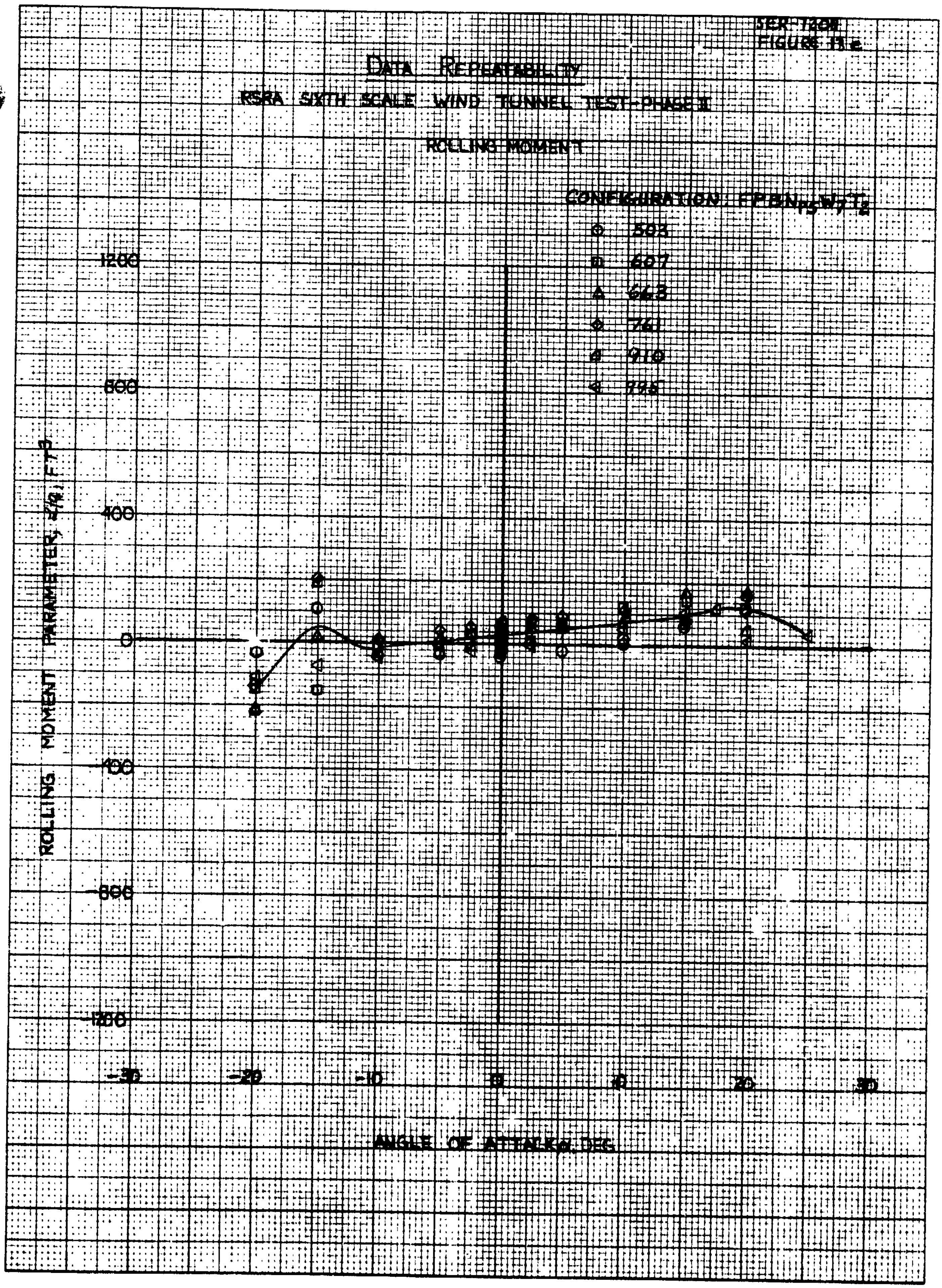
K•E 10 X 10 TO ½ INCH • 7½ X 10 INCHES KEUFFEL & ESSER CO. MADE IN U.S.A.
46 1473


DATA REPEATABILITY
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
DRAG PARAMETER, D/q, FT²
ANGLE OF ATTACK, α, DEG
200
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30

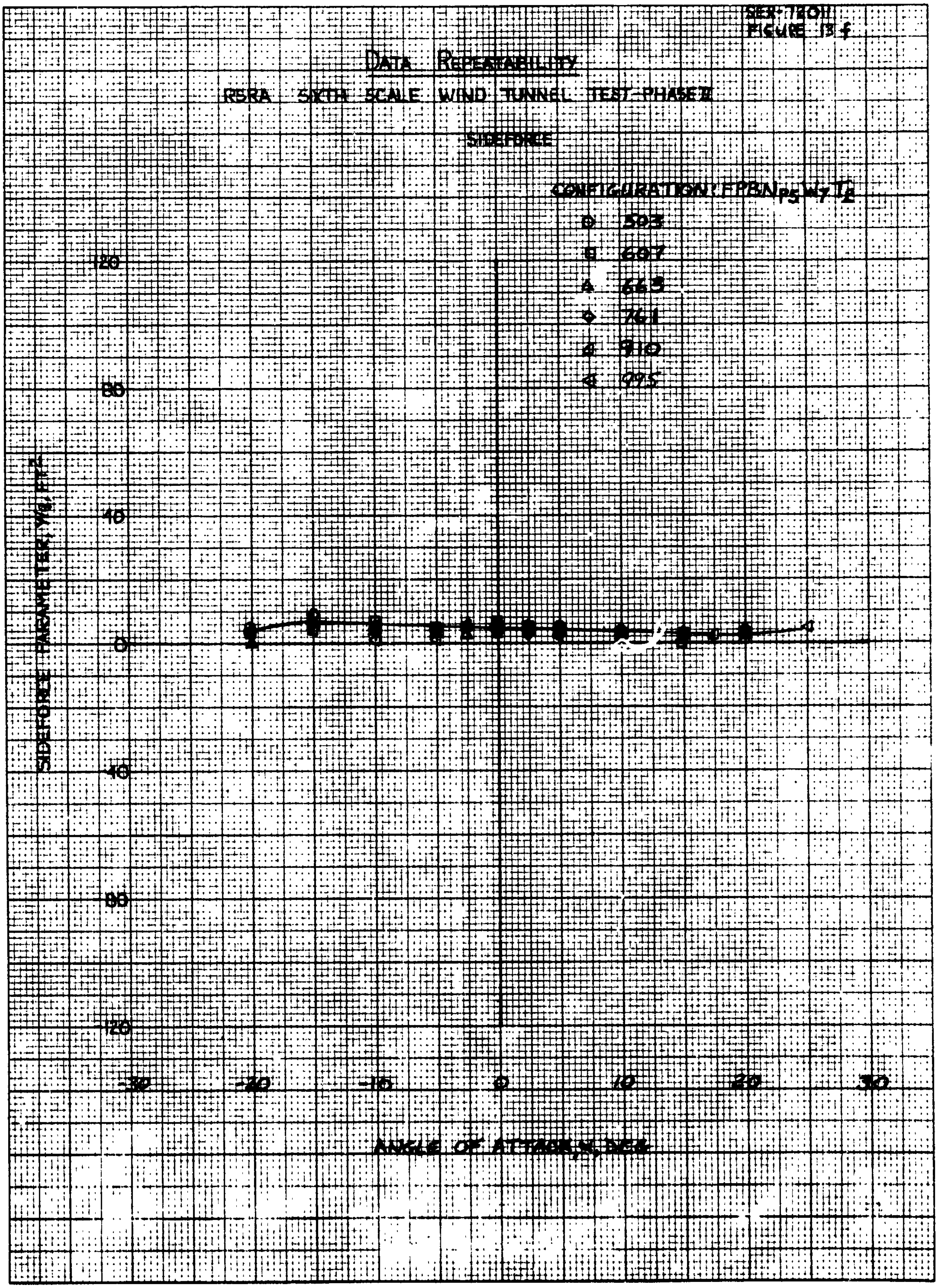
SER-72011
FIGURE 13c

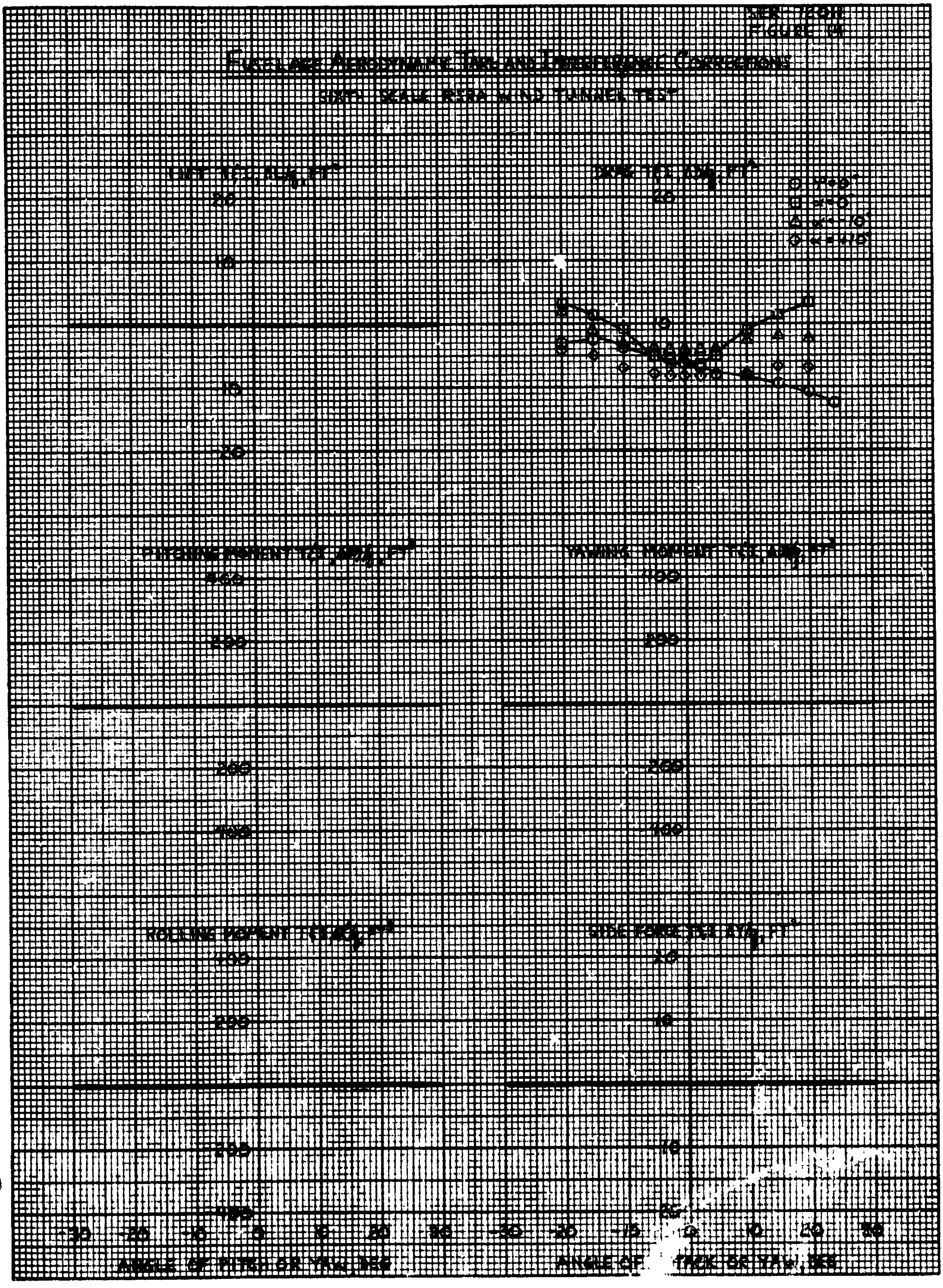



SER-72011
FIGURE 13d
DATA REPEATABILITY
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE
YAWING MOMENT
CONFIGURATION: FPBN$_{P5}$W$_7$T$_2$
503
607
663
761
910
995
1200
800
400
0
-400
-800
-1200
YAWING MOMENT PARAMETER, N/q, FT^3
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG


SER-7209
FIGURE 11e
DATA REPEATABILITY
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
ROLLING MOMENT
CONFIGURATION: FPBN
503
607
643
761
910
795
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ROLLING MOMENT PARAMETER
ANGLE OF ATTACK, DEG

SER-72011
FIGURE 13 f




ANGLE OF PITCH OR YAW, DEG
-30 -20 -10 0 10 20 30

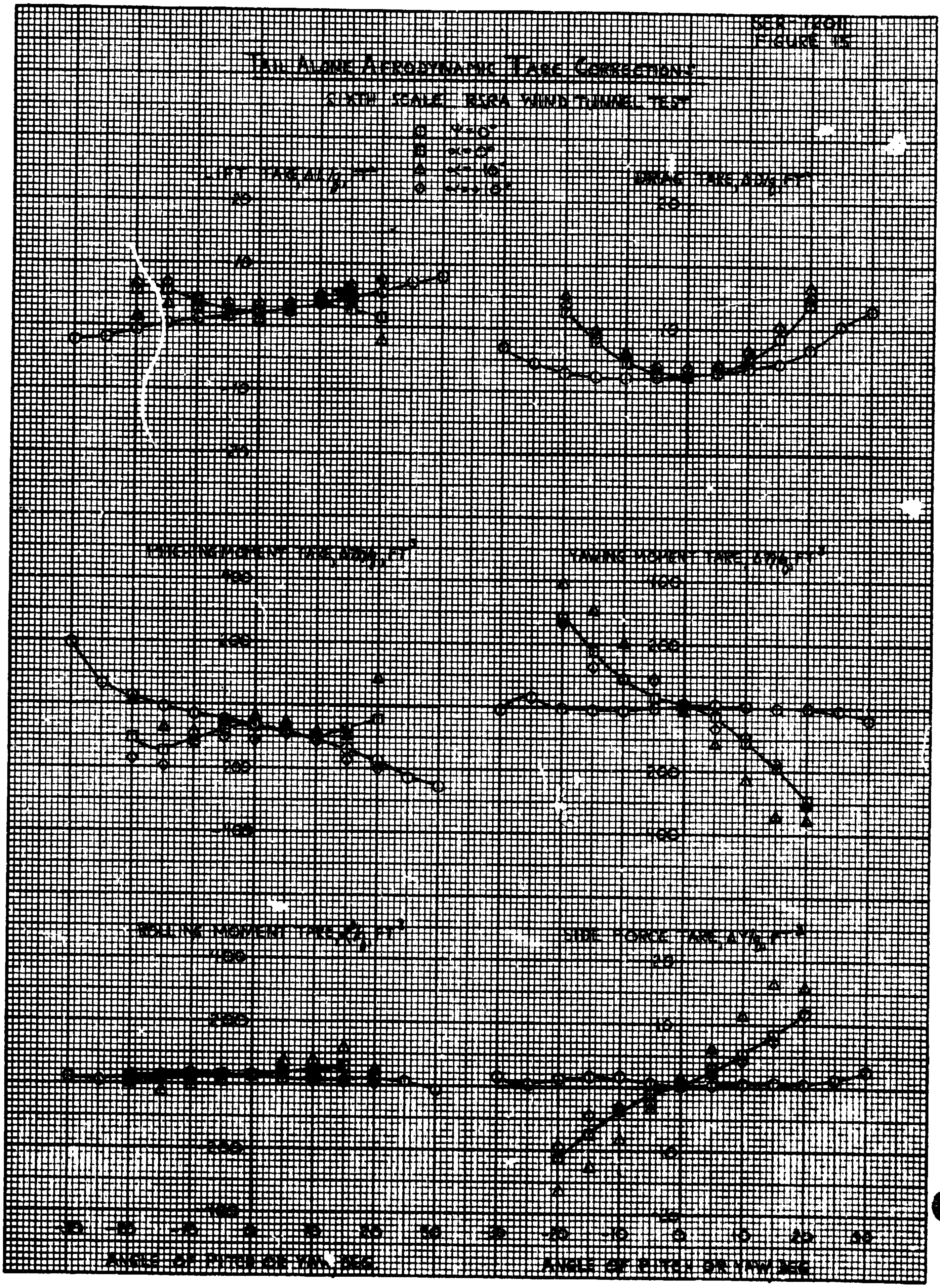
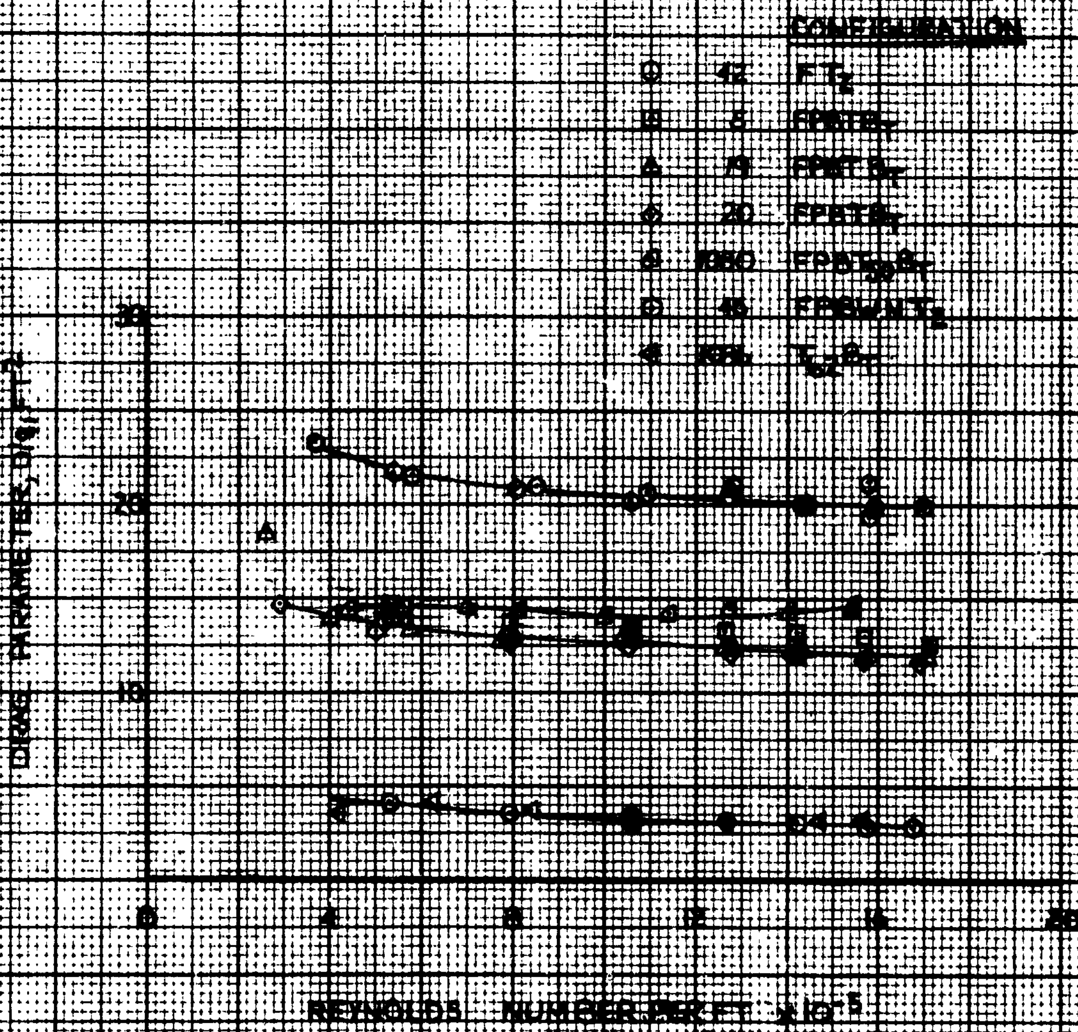


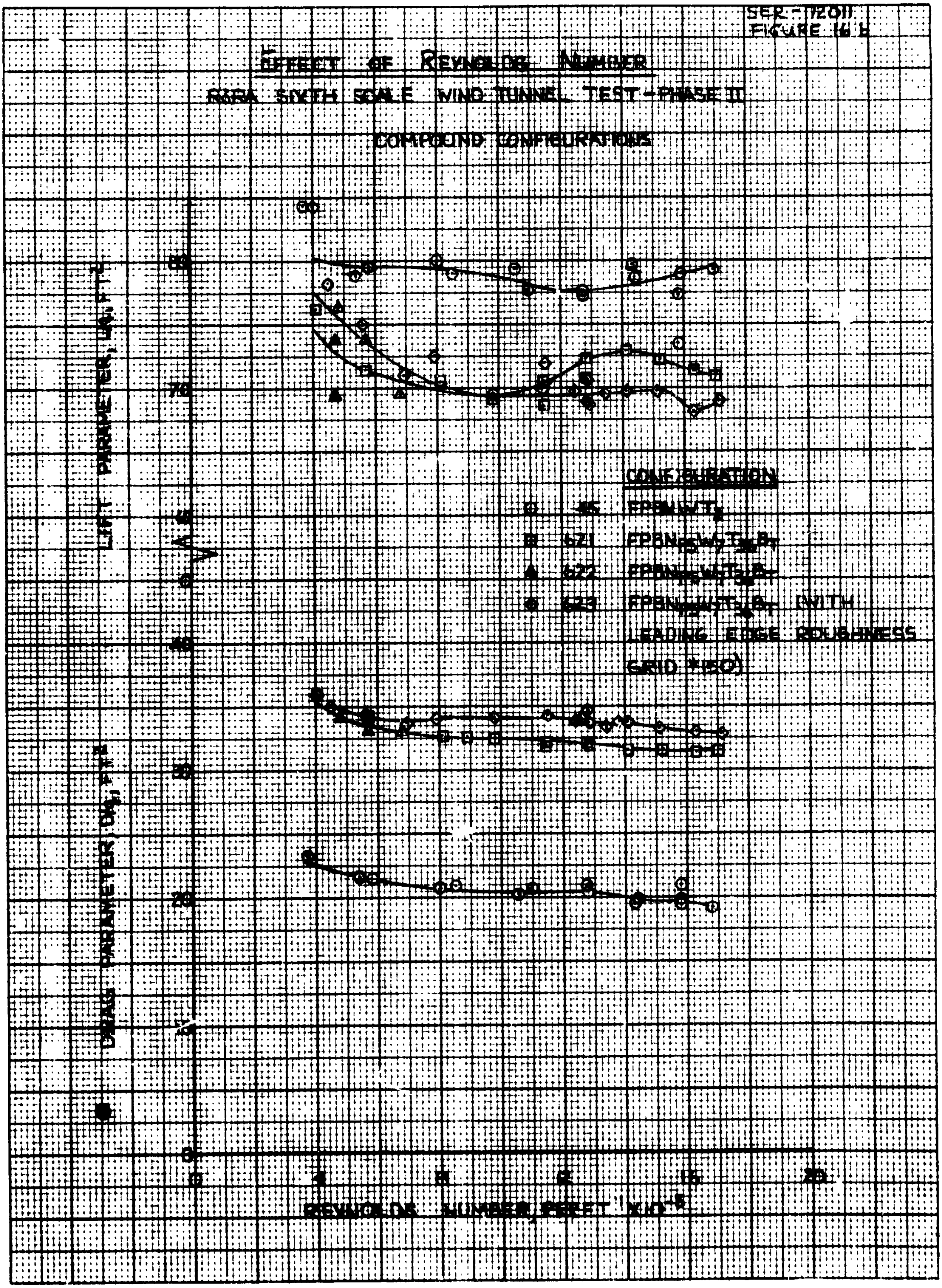
FIGURE 15
TAIL ALONE AERODYNAMIC TARE CORRECTIONS
WIND TUNNEL TEST
LIFT TARE
DRAG TARE
PITCHING MOMENT TARE
YAWING MOMENT TARE
ROLLING MOMENT TARE
SIDE FORCE TARE
ANGLE OF PITCH OR YAW, DEG.
ANGLE OF PITCH OR YAW, DEG.

EFFECT OF REYNOLDS NUMBER

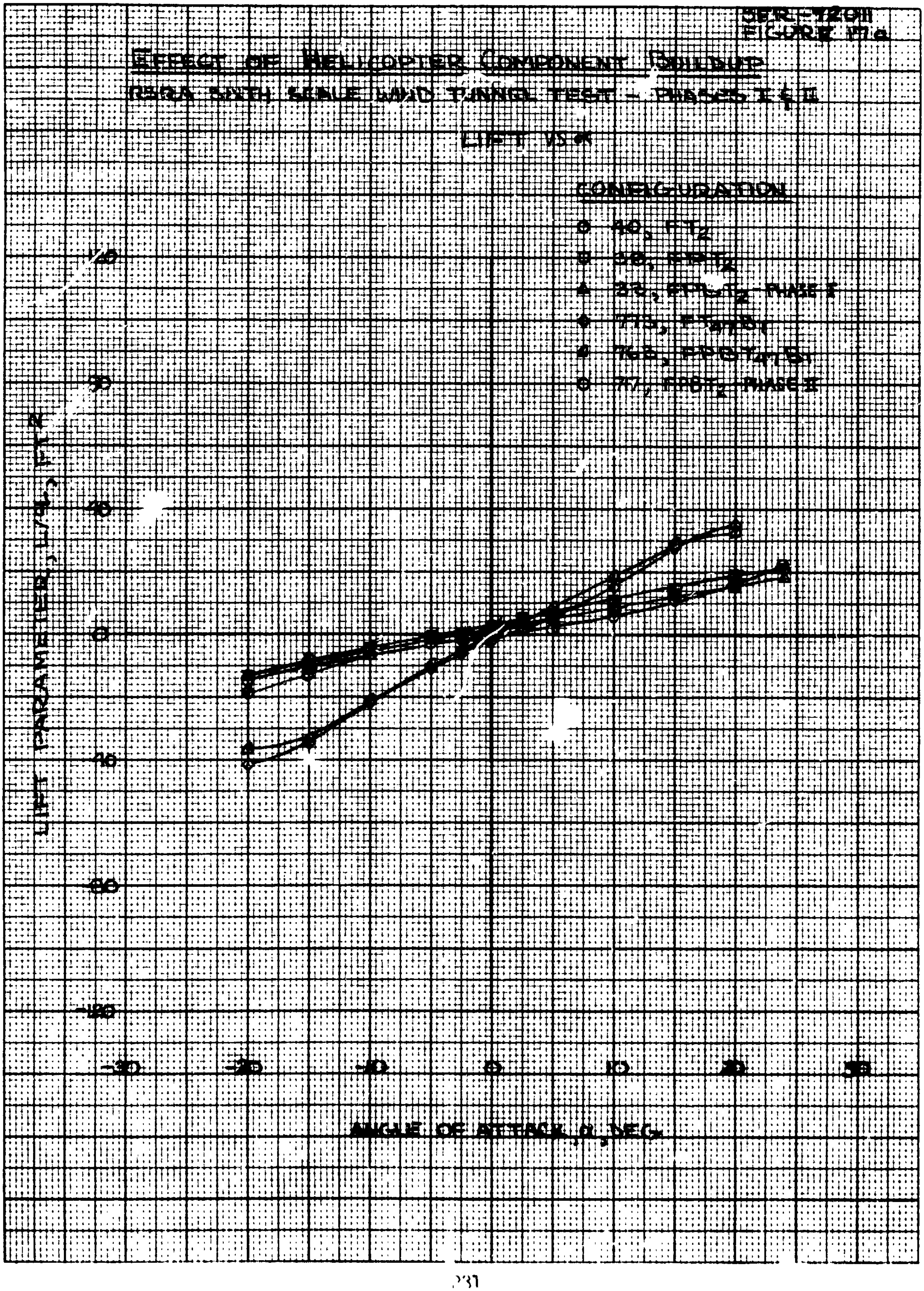
RSRA SIXTH SCALE WIND TUNNEL TEST–PHASE I

HELICOPTER CONFIGURATIONS

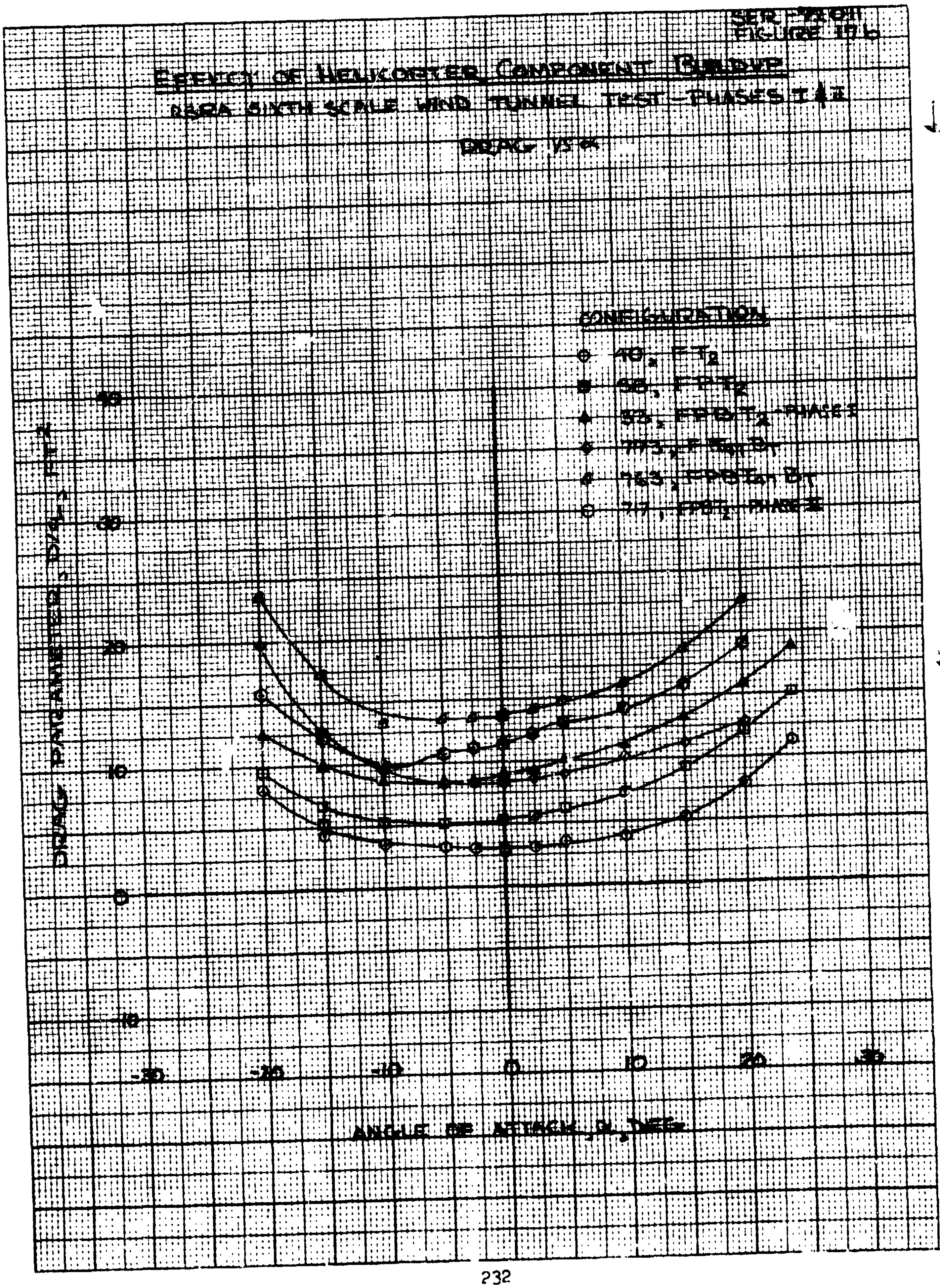


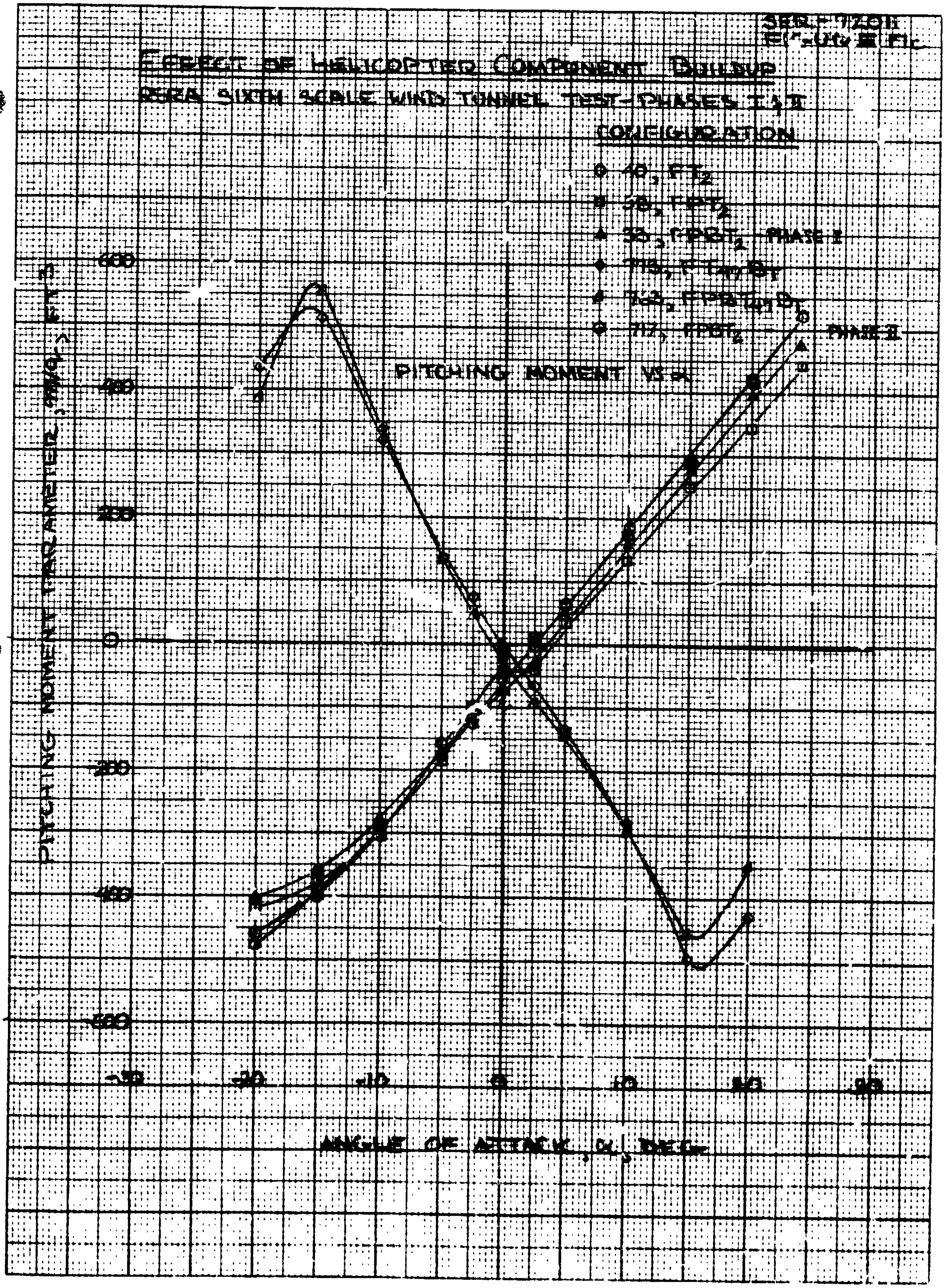


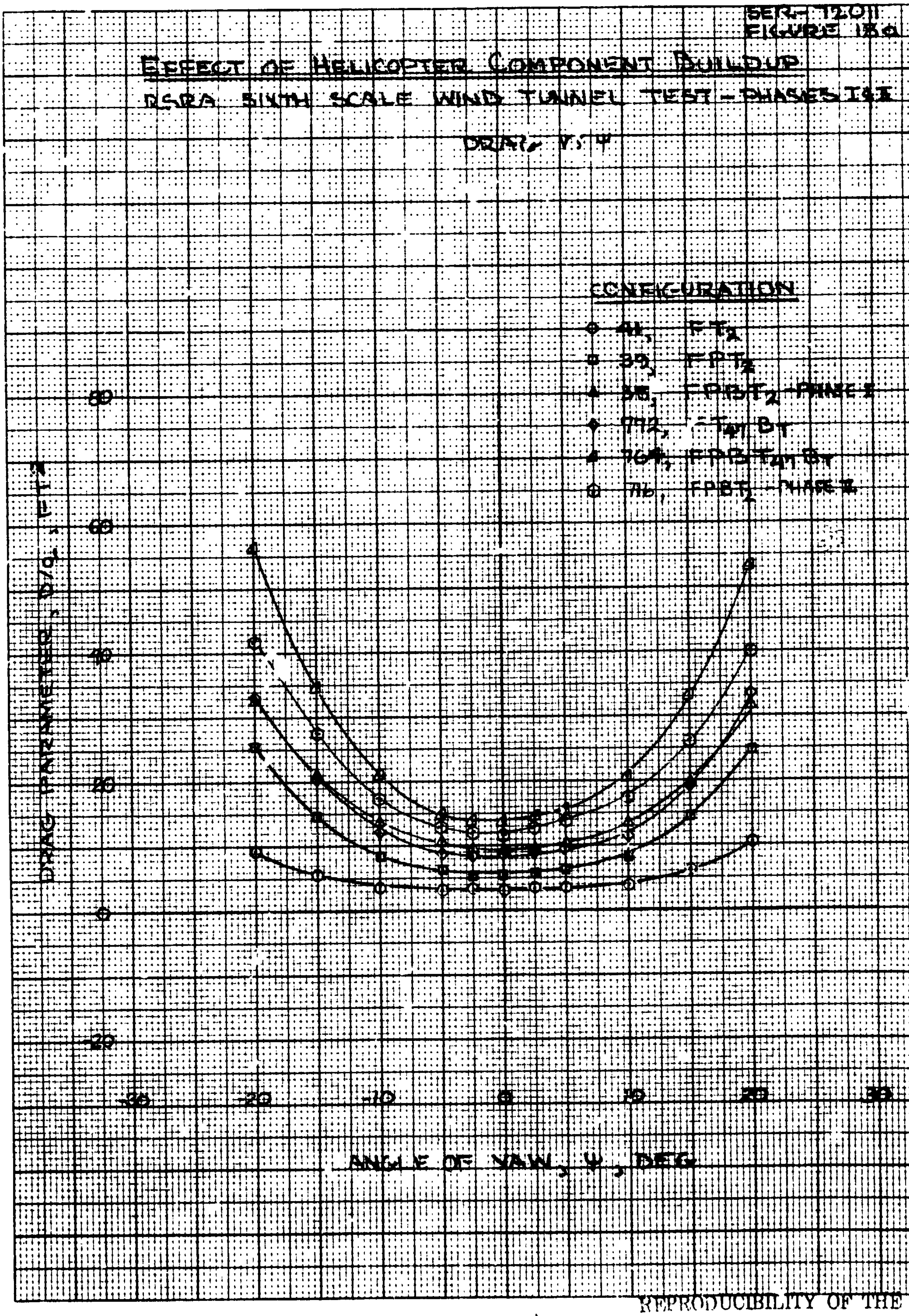
SER-11201
FIGURE 16 B
EFFECT OF REYNOLDS NUMBER
SIXTH SCALE WIND TUNNEL TEST - PHASE II
COMPOUND CONFIGURATIONS
CONFIGURATION
621
622
623
(WITH
LEADING EDGE ROUGHNESS
GRID
LIFT PARAMETER
DRAG PARAMETER
80
70
40
30
20
0
4
8
12
16
20
REYNOLDS NUMBER



SER-72011
FIGURE 17a
EFFECT OF HELICOPTER COMPONENT BUILDUP
SIXTH SCALE WIND TUNNEL TEST - PHASES I & II
LIFT VS α
CONFIGURATION
120
80
40
0
-40
-80
-120
LIFT PARAMETER, L/q, FT²
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG.


EFFECT OF HELICOPTER COMPONENT BUILDUP
SIXTH SCALE WIND TUNNEL TEST - PHASES I & II
DRAG VS α
CONFIGURATION
40, F T2
96, F P T2
53, F P B T2 - PHASE I
717, FPBT2 PHASE II
40
30
20
10
0
-10
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG


EFFECT OF HELICOPTER COMPONENT BUILDUP
SIXTH SCALE WIND TUNNEL TEST-PHASES I & II
CONFIGURATION
PHASE II
PITCHING MOMENT VS α
600
400
200
0
-200
-400
-600
-20
-10
0
10
30
ANGLE OF ATTACK, α, DEG


EFFECT OF HELICOPTER COMPONENT BUILDUP
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASES I & II
DRAG VS Ψ
CONFIGURATION
ANGLE OF YAW, Ψ, DEG
DRAG PARAMETER

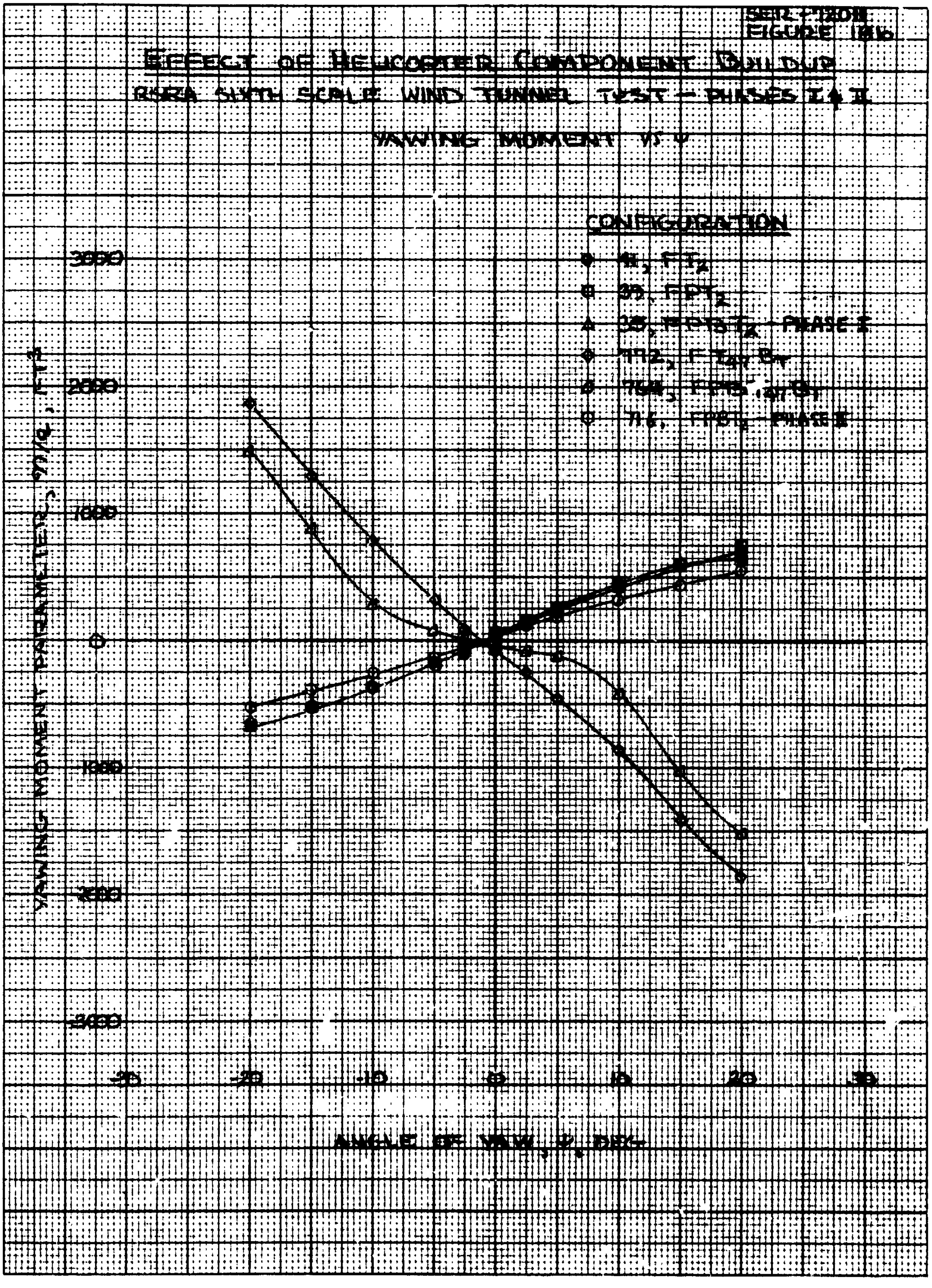
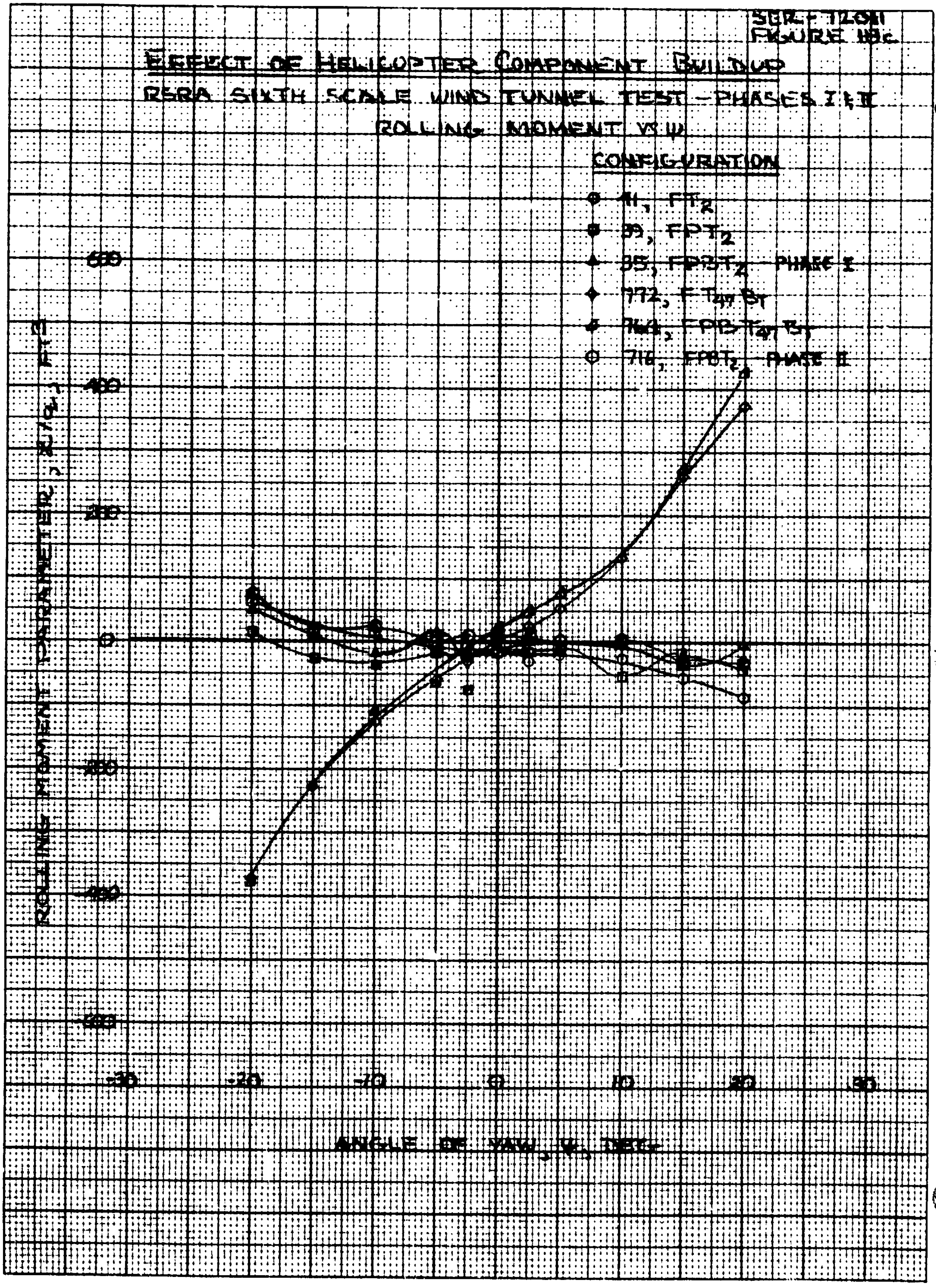


FIGURE 18b
EFFECT OF HELICOPTER COMPONENT BUILDUP
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASES I & II
YAWING MOMENT VS ψ
CONFIGURATION
3000
2000
1000
0
-1000
-2000
-3000
YAWING MOMENT PARAMETER, N/q, FT³
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG


SER-72011
FIGURE 18c
EFFECT OF HELICOPTER COMPONENT BUILDUP
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASES I & II
ROLLING MOMENT VS ψ
CONFIGURATION
41, FT2
39, FPT2
35, FPBT2 PHASE I
772, F T4T BT
764, FPB T4T BT
716, FPBT2 PHASE II
ROLLING MOMENT PARAMETER, RL/q, FT³
600
400
200
-200
-400
-600
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG

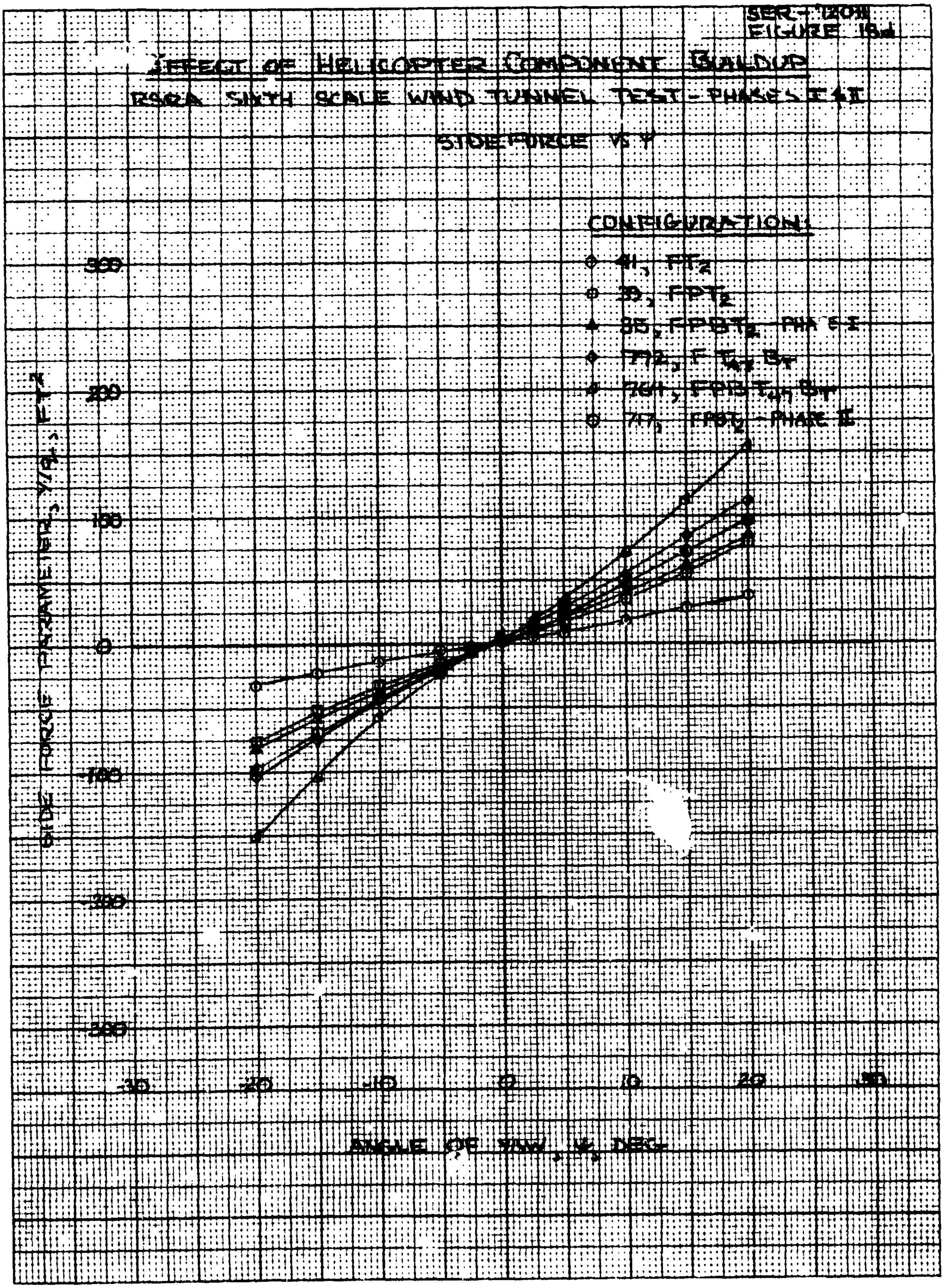
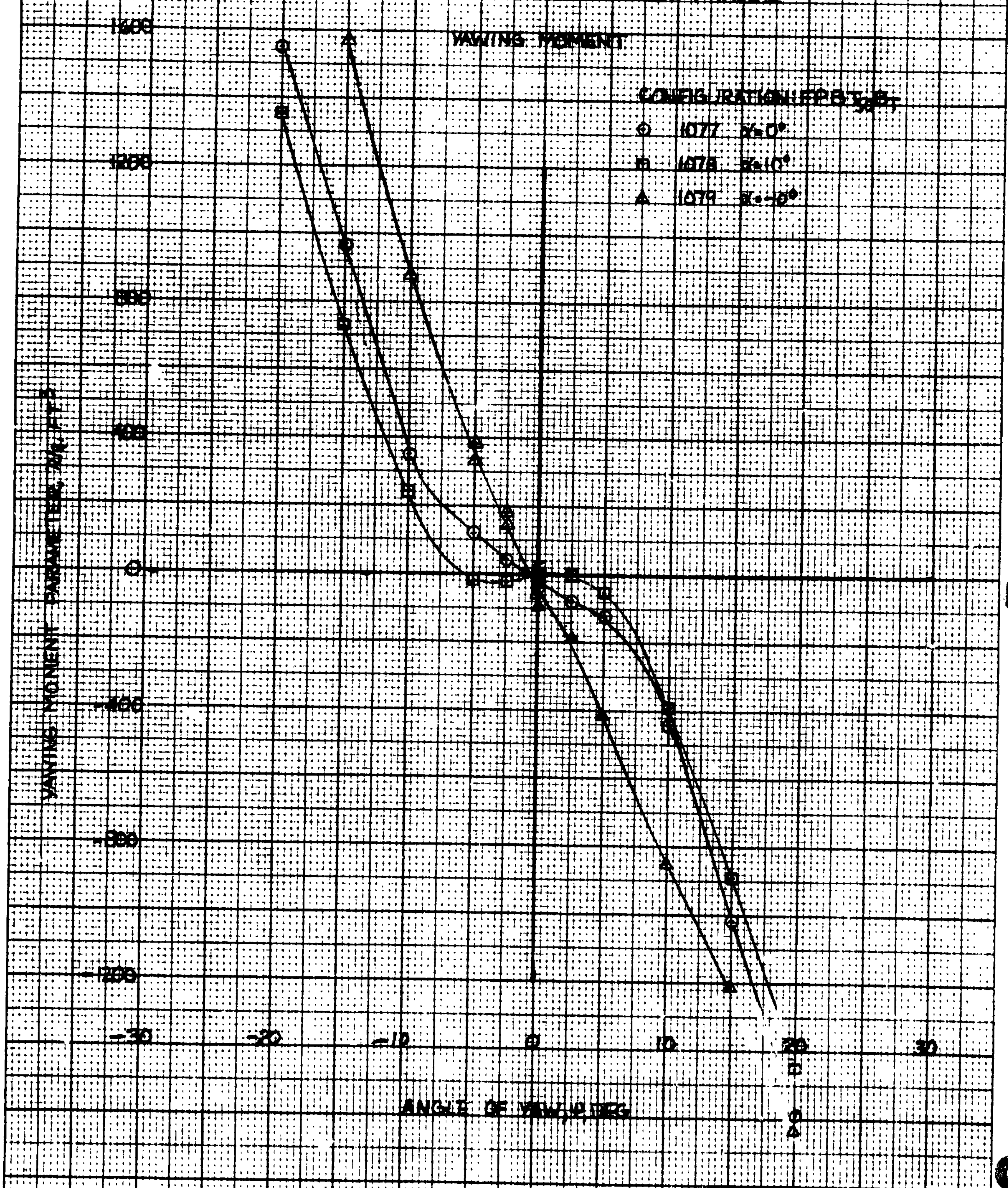
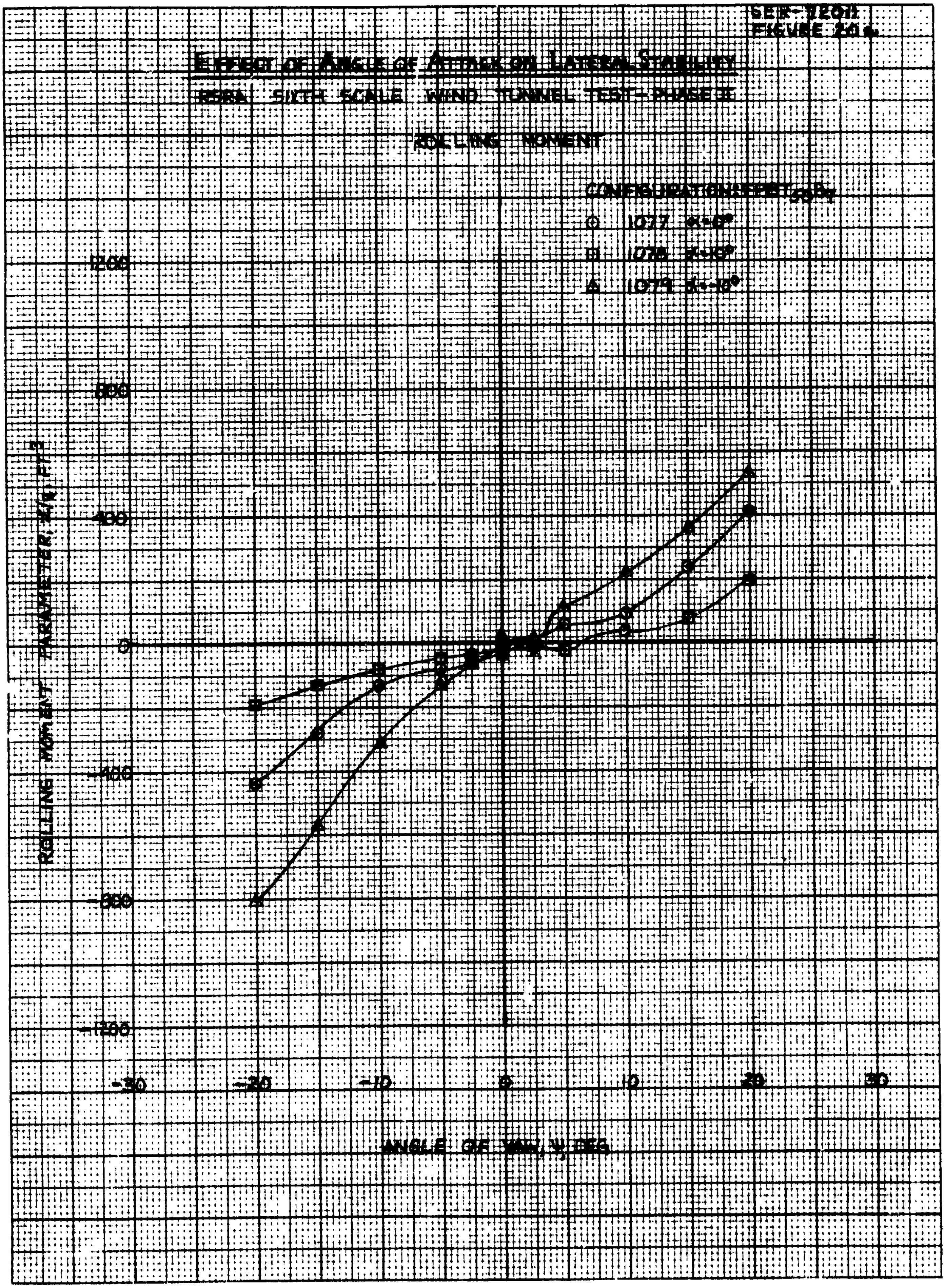


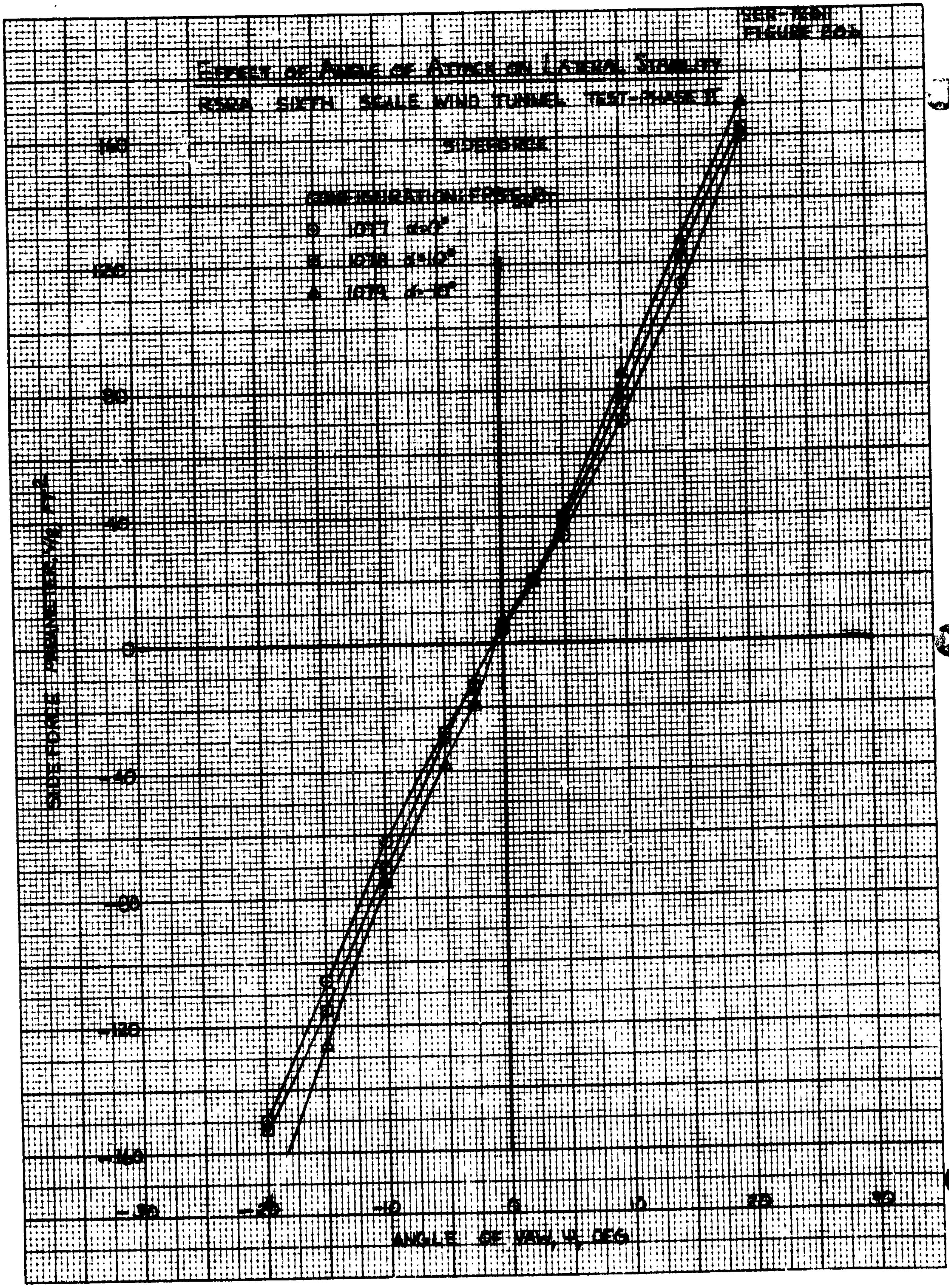
FIGURE 13d
EFFECT OF HELICOPTER COMPONENT BUILDUP
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASES I & II
SIDE FORCE VS ψ
CONFIGURATION:
41, FT2
39, FPT2
85, FPBT2 - PHASE I
772, F T4T BT
764, FPB T4T BT
717, FPBT2 - PHASE II
SIDE FORCE PARAMETER, Y/q, FT²
300
200
100
0
-100
-200
-300
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG

EFFECT OF ANGLE OF ATTACK ON DIRECTIONAL STABILITY

RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II




SER-?2611
FIGURE 20a
EFFECT OF ANGLE OF ATTACK ON LATERAL STABILITY
SIXTH SCALE WIND TUNNEL TEST-PHASE II
ROLLING MOMENT
CONFIGURATION
1077
1078
1079
1200
800
400
0
-400
-800
-1200
ROLLING MOMENT PARAMETER
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG



EFFECT OF ANGLE OF ATTACK ON LATERAL STABILITY
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
SIDEFORCE
SIDE FORCE PARAMETER
ANGLE OF YAW, ψ, DEG
160
120
80
40
0
-40
-80
-120
-160
-30
-20
-10
0
10
20
30

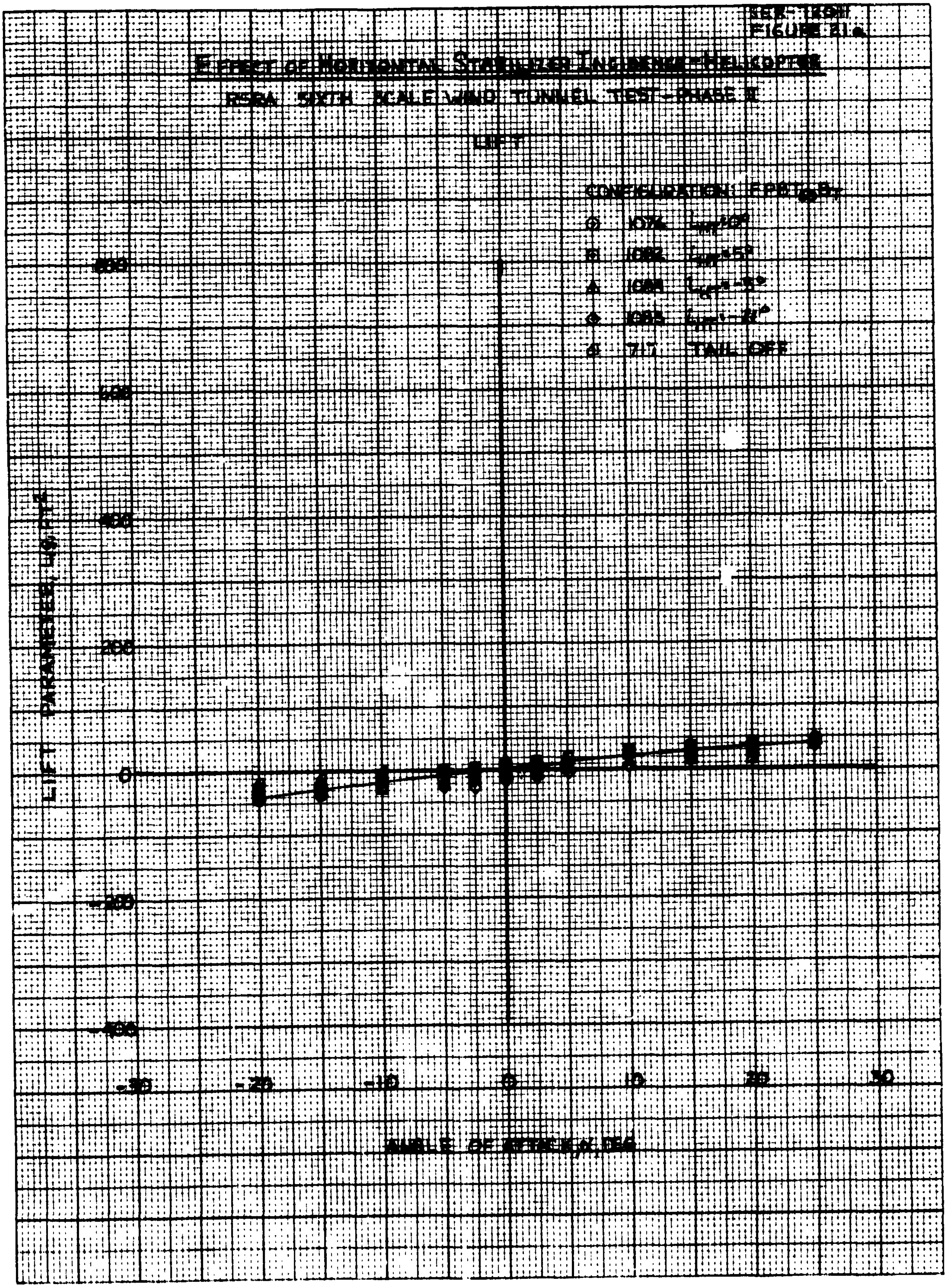


FIGURE 21a
EFFECT OF HORIZONTAL STABILIZER INCIDENCE - HELICOPTER
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT
CONFIGURATION:
TAIL OFF
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

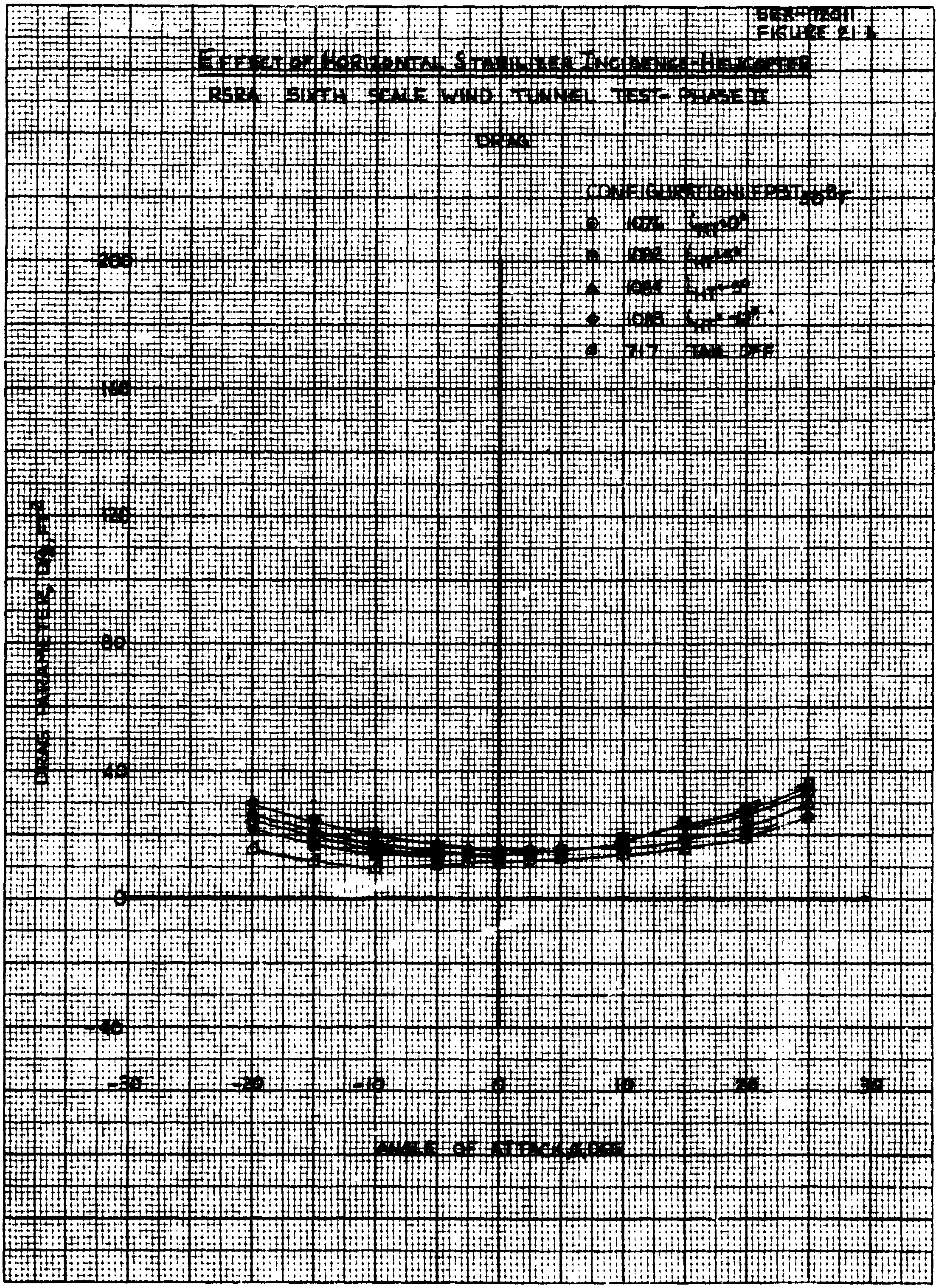
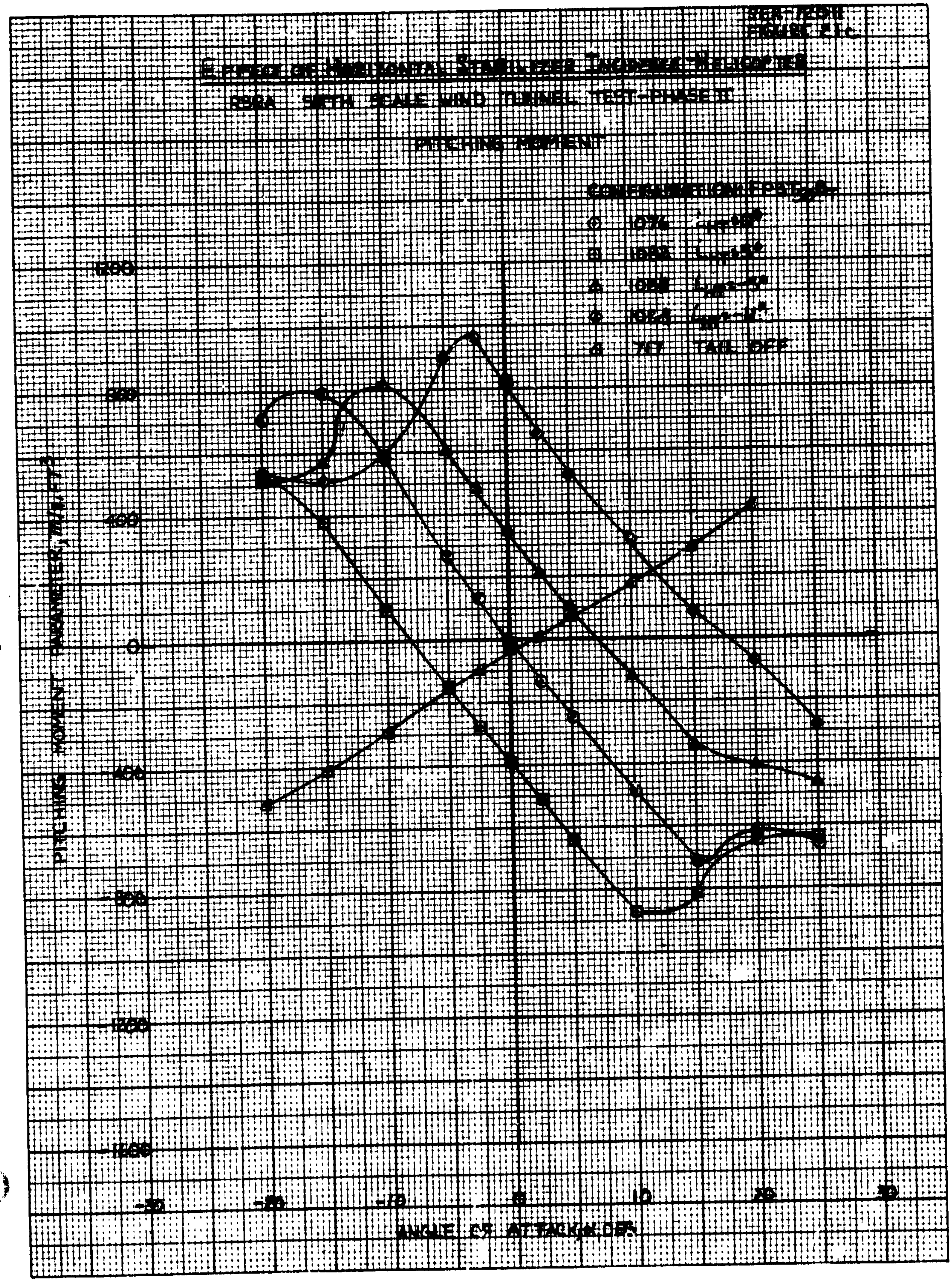
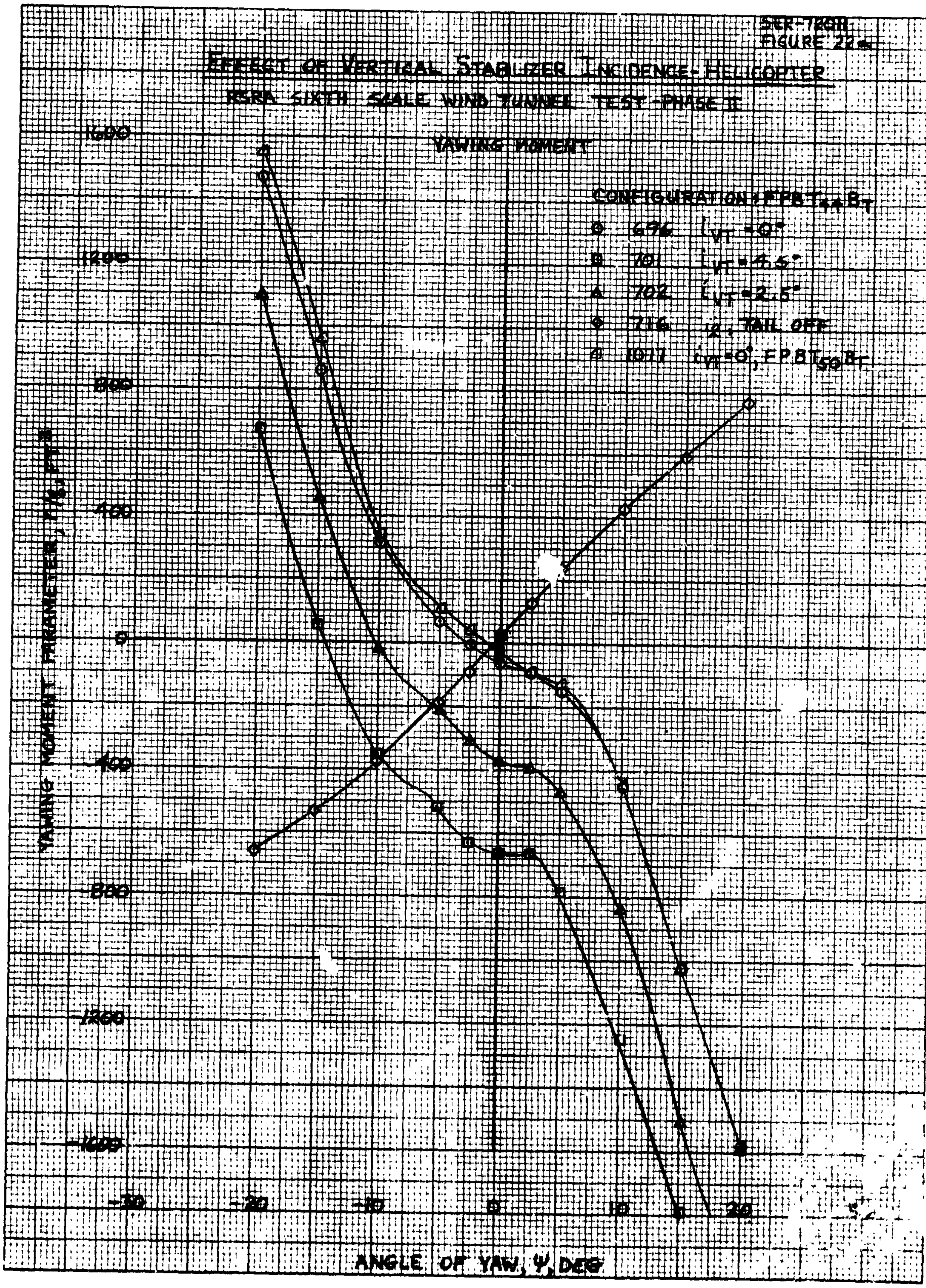


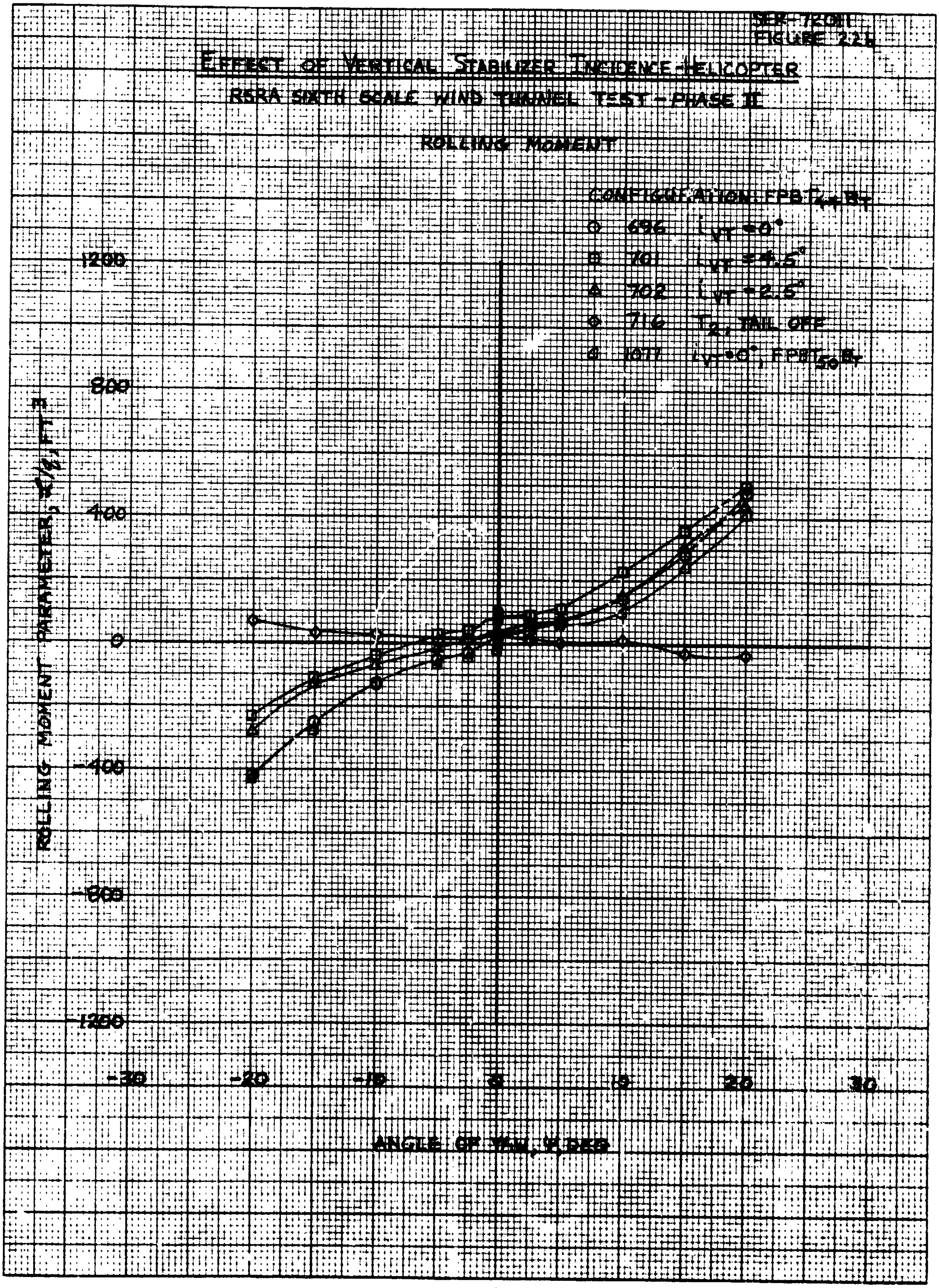
FIGURE 21
EFFECT OF HORIZONTAL STABILIZER INCIDENCE-HELICOPTER
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
CONFIGURATION
1076
1082
1084
1086
717 TAIL OFF
200
0
-40
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK

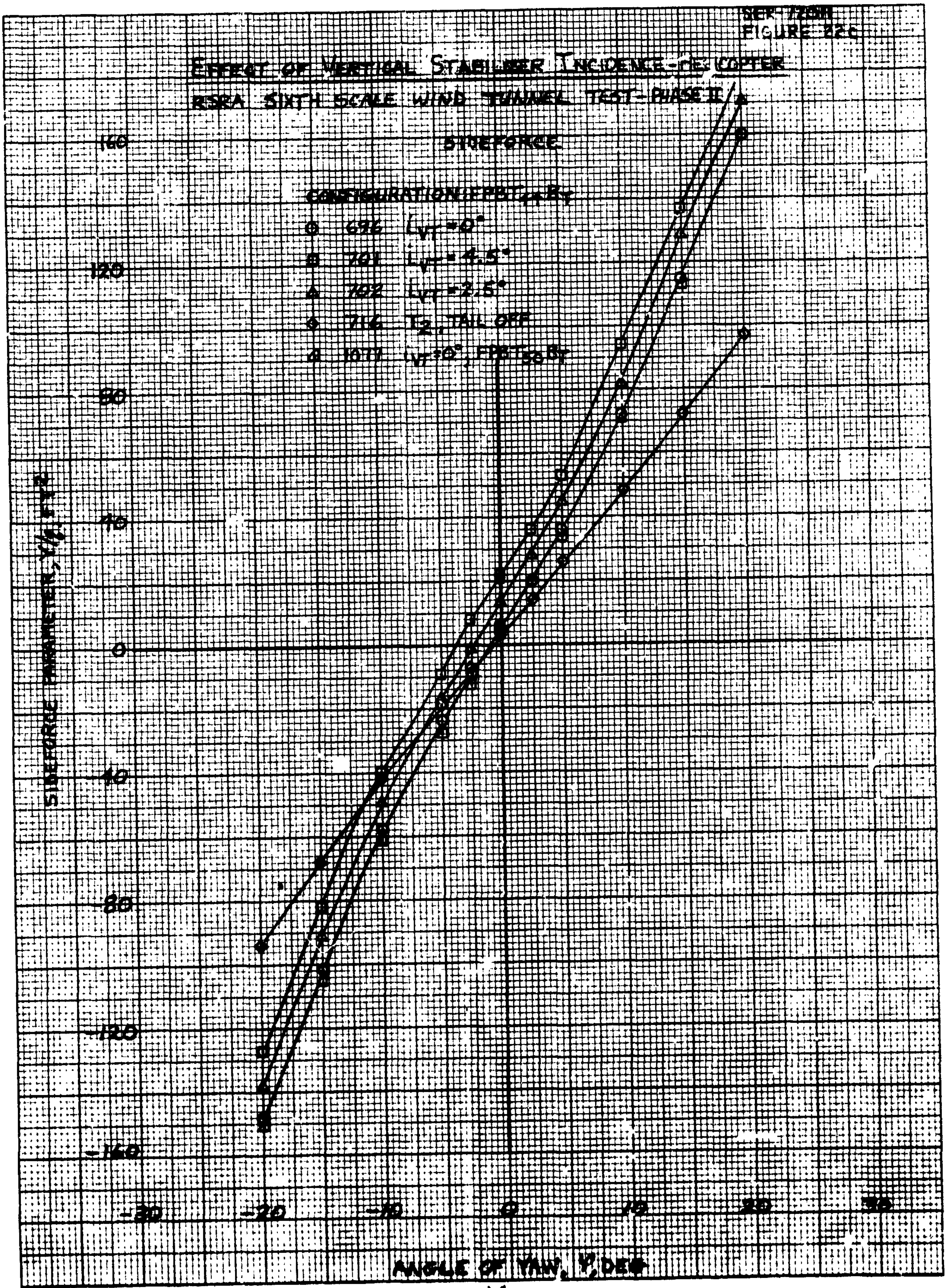

PITCHING MOMENT
1076
717 TAIL OFF
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, DEG.
PITCHING MOMENT PARAMETER

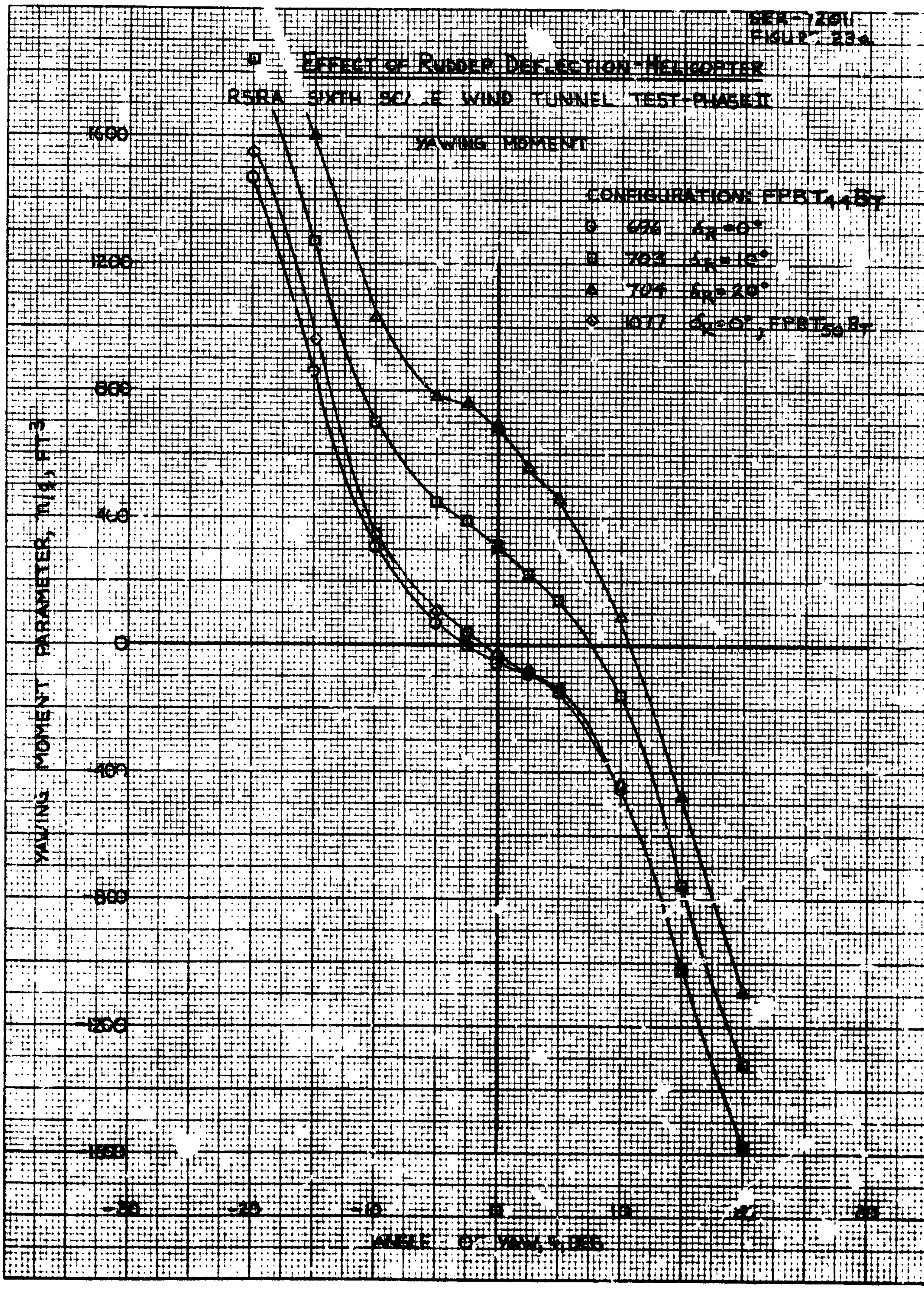
SER-72011
FIGURE 22a

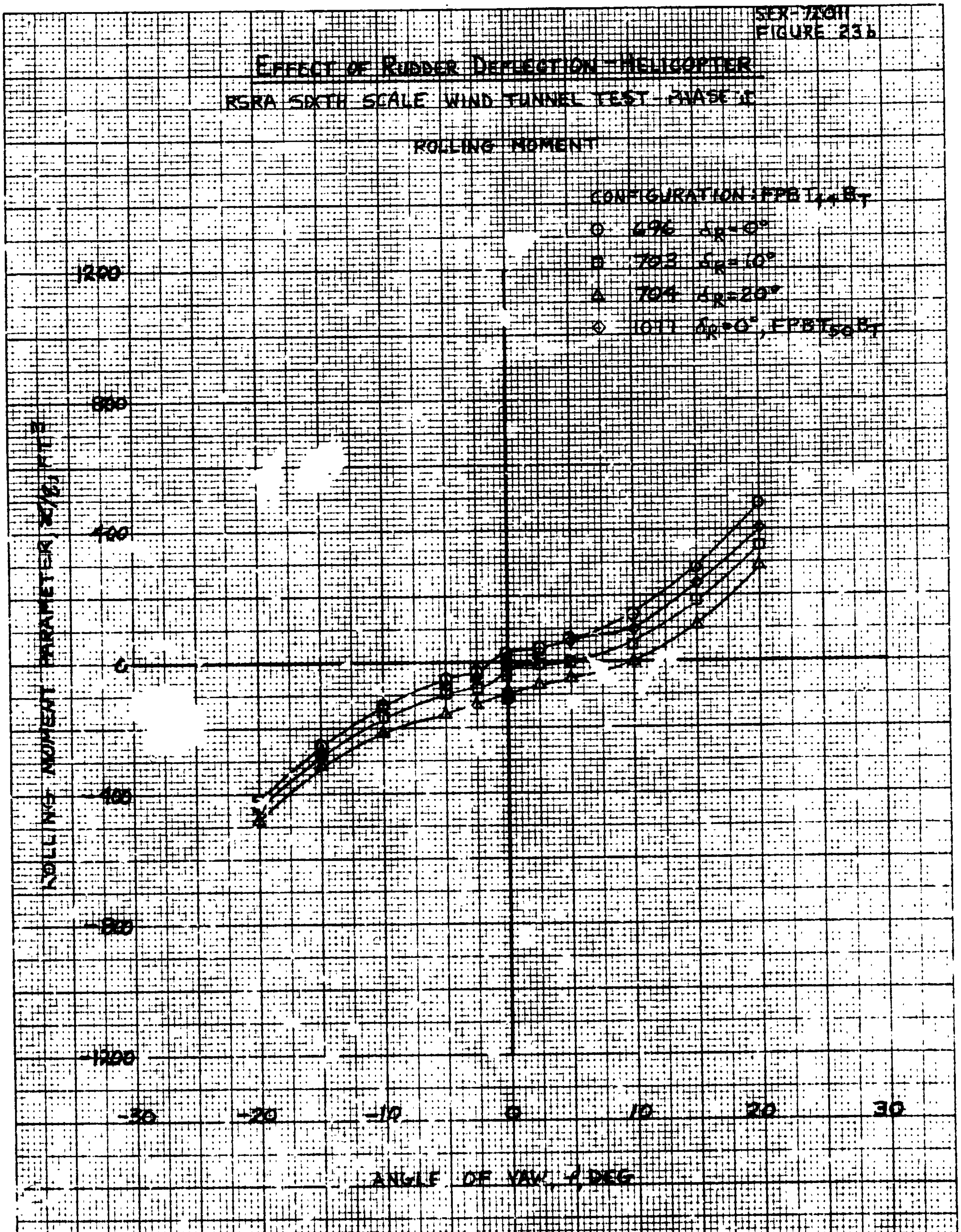


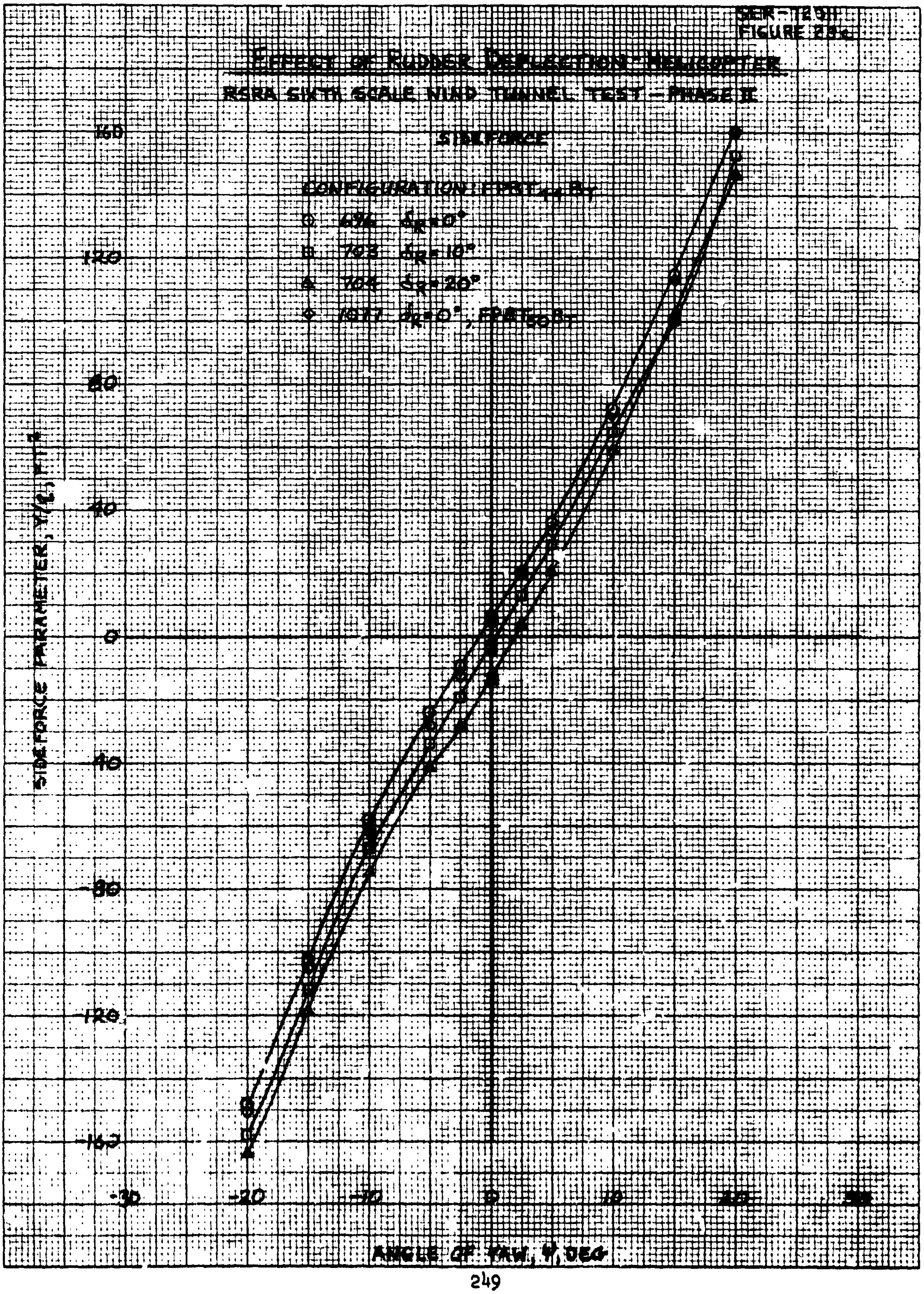
K•E 10 X 10 TO ½ INCH 46 1473
KEUFFEL & ESSER CO. MADE IN U.S.A.


SER-72011
FIGURE 22b
EFFECT OF VERTICAL STABILIZER INCIDENCE-HELICOPTER
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT
CONFIGURATION: FPBT$_{4}$B$_{T}$
696 i_{VT} = 0°
701 i_{VT} = 4.5°
702 i_{VT} = 2.5°
716 T$_2$, TAIL OFF
1077 i_{VT} = 0°, FPBT$_{50}$B$_{T}$
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ROLLING MOMENT PARAMETER, L/q, FT^3
ANGLE OF YAW, Ψ, DEG


EFFECT OF VERTICAL STABILIZER INCIDENCE-HELICOPTER
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
SIDEFORCE
CONFIGURATION: FPBT4BT
696 i_{VT}=0°
701 i_{VT}=4.5°
702 i_{VT}=2.5°
716 T_2, TAIL OFF
1071 i_{VT}=0°, FPBT50BT
160
120
80
40
0
-40
-80
-120
-160
SIDEFORCE PARAMETER, Y/q, FT²
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG


SER-72011
FIGURE 23a
EFFECT OF RUDDER DEFLECTION-HELICOPTER
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
YAWING MOMENT
CONFIGURATION: FPBT4 BT
696 δR=0°
703 δR=10°
704 δR=20°
1077 δR=0°, FPBT58 BT
1600
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG
YAWING MOMENT PARAMETER, N/q, FT3


SER-72011
FIGURE 23b
EFFECT OF RUDDER DEFLECTION - HELICOPTER
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT
CONFIGURATION: FPBT44BT
696 δR=0°
702 δR=10°
704 δR=20°
1011 δR=0°, FPBT50BT
ROLLING MOMENT PARAMETER L/q, FT³
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ DEG



K•E 10 X 10 TO 1/2 INCH • 7 1/2 X 10 INCHES KEUFFEL & ESSER CO. MADE IN U.S.A.

46 1473

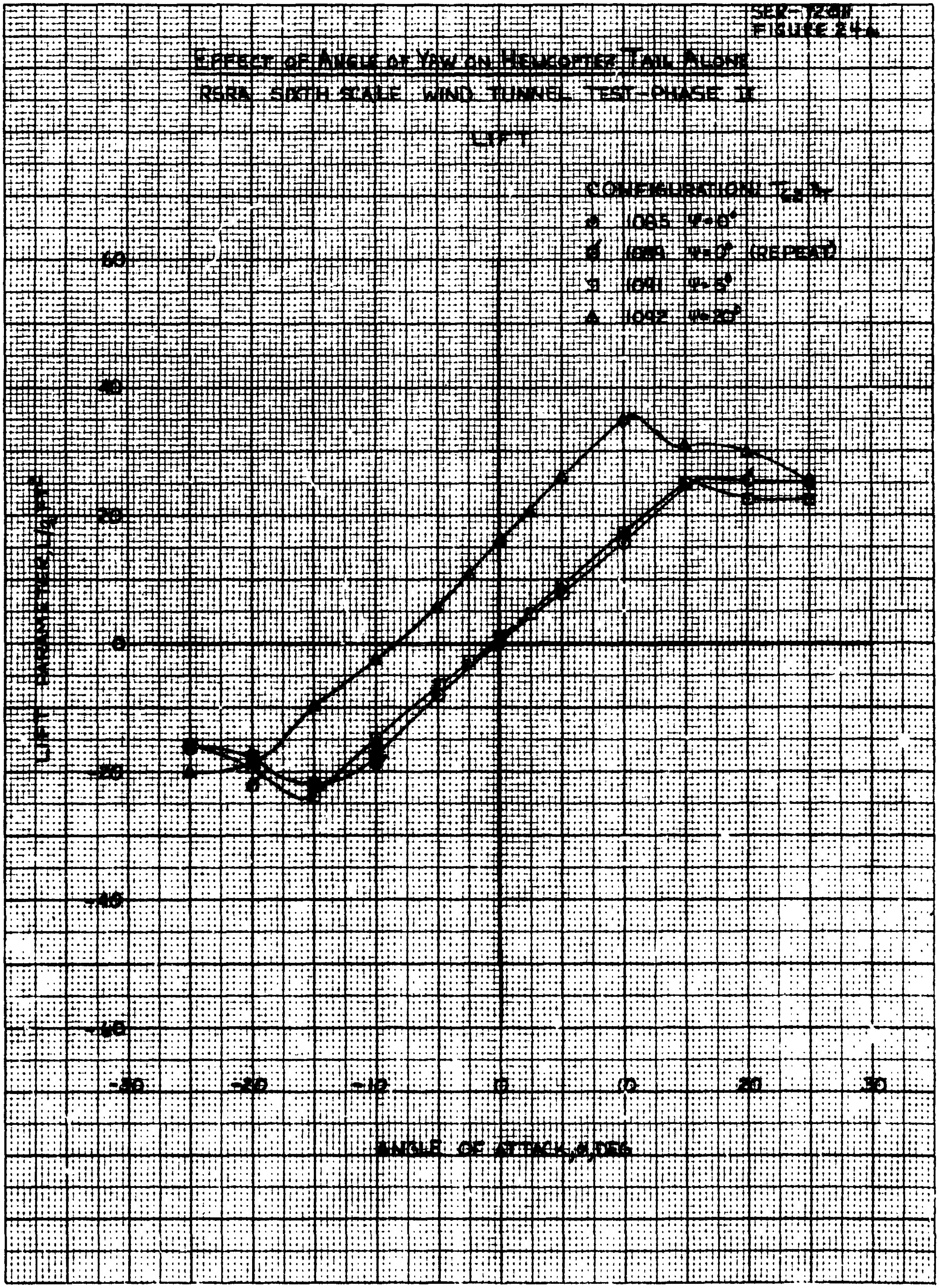
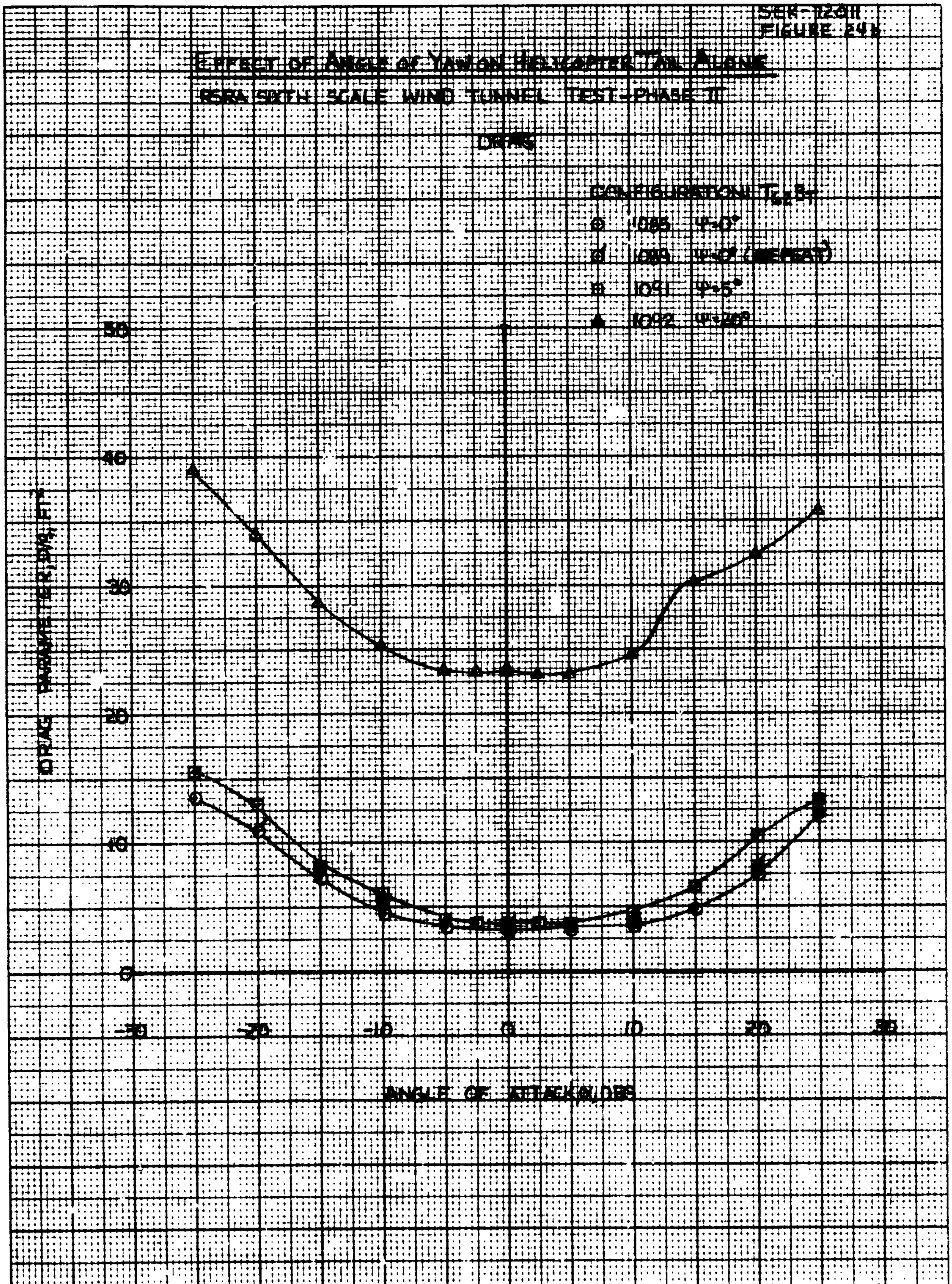
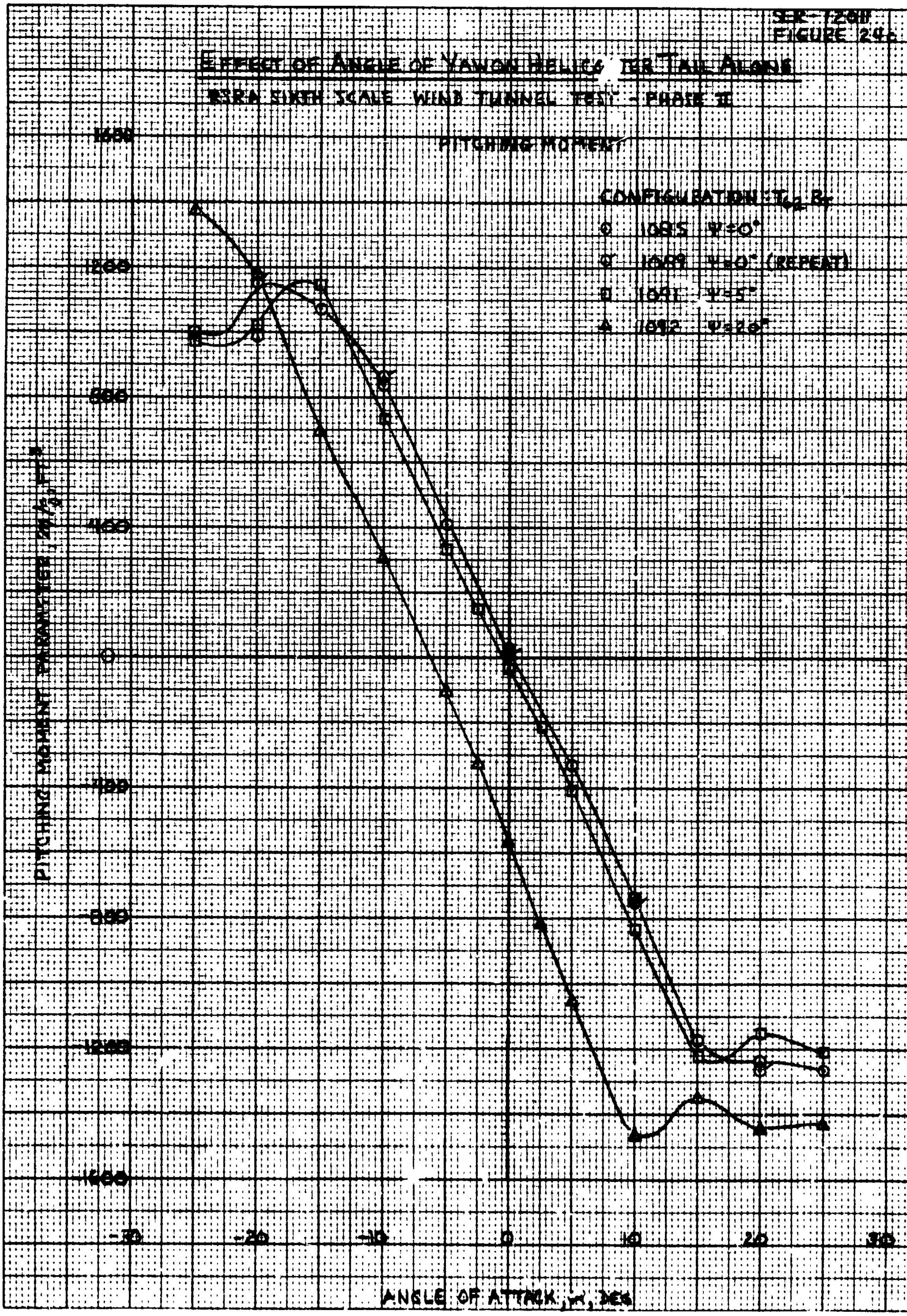
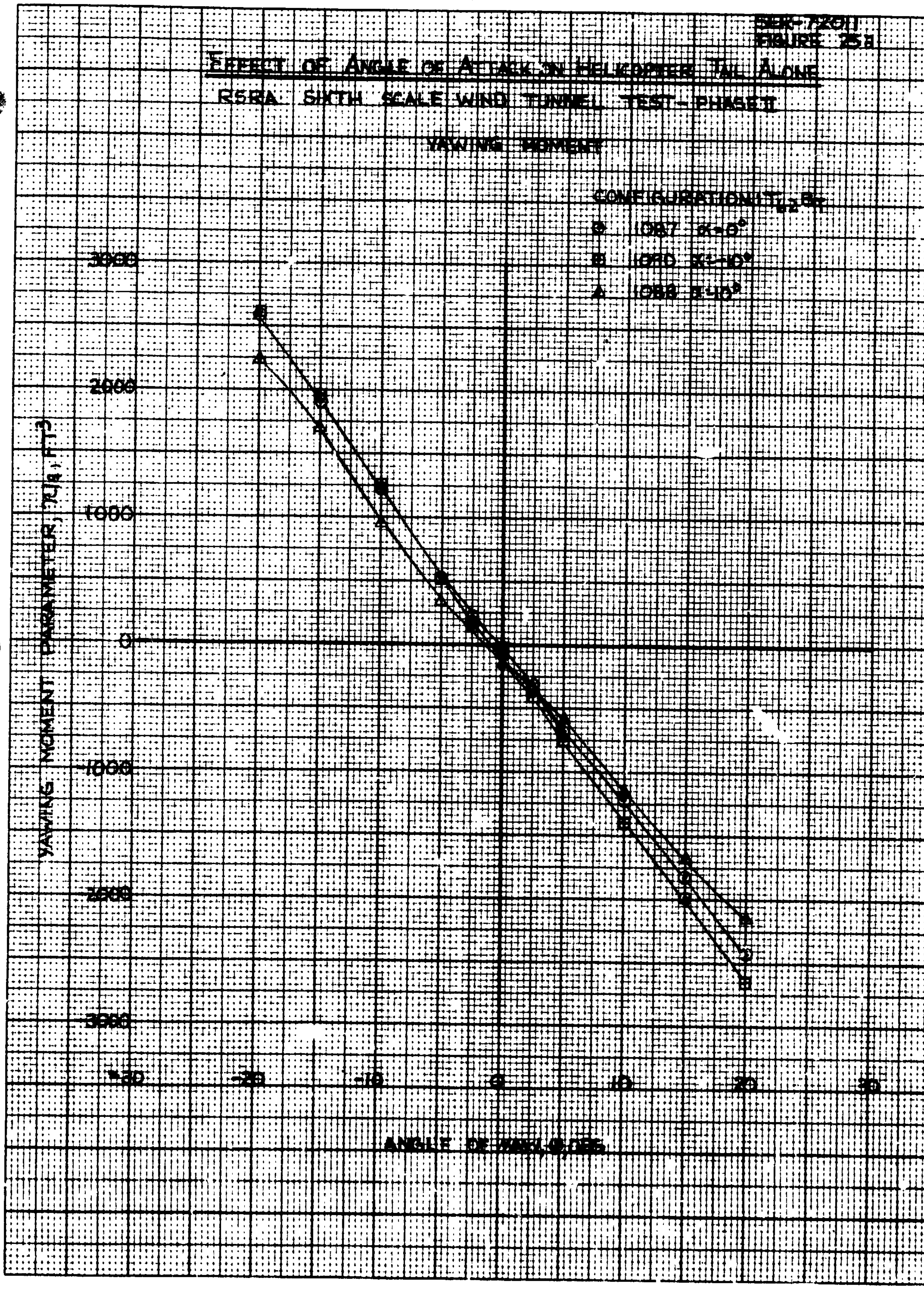


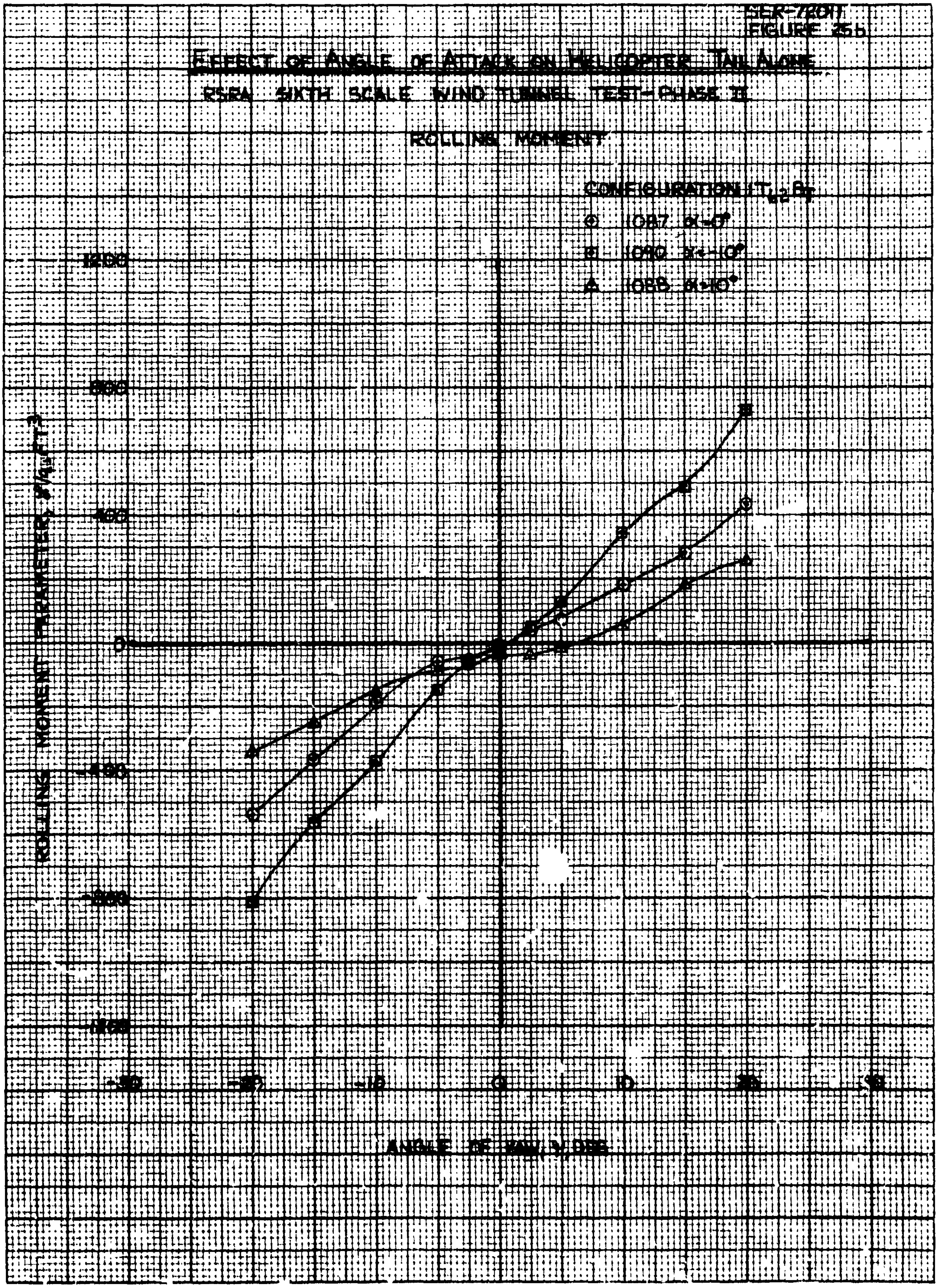
FIGURE 24
EFFECT OF ANGLE OF YAW ON HELICOPTER TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
LIFT
CONFIGURATION:
1085 Ψ=0°
Ψ=0° (REPEAT)
1092 Ψ=20°
60
40
20
0
-20
-40
-60
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG


SER-72611
FIGURE 24b
EFFECT OF ANGLE OF YAW ON HELICOPTER TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
CONFIGURATION: $T_{6}B_{7}$
1085 Ψ=0°
1089 Ψ=0° (REPEAT)
1091 Ψ=5°
1092 Ψ=20°
50
40
30
20
10
0
DRAG PARAMETER, D/q, FT²
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, DEG



SER-72011
FIGURE 24c
EFFECT OF ANGLE OF YAW ON HELICOPTER TAIL ALONE
S-61A SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT
CONFIGURATION: T₆₂ R₇
1085 Ψ=0°
1089 Ψ=0° (REPEAT)
1091 Ψ=5°
1092 Ψ=20°
1600
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
PITCHING MOMENT PARAMETER, M/q, FT³
ANGLE OF ATTACK, α, DEG


SER-72011
FIGURE 25
EFFECT OF ANGLE OF ATTACK ON HELICOPTER TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT
CONFIGURATION: $T_{L2}B_T$
1087 $\alpha = 0°$
1090 $\alpha = -10°$
1088 $\alpha = 10°$
3000
2000
1000
0
-1000
-2000
-3000
-30
-20
-10
0
10
20
30
YAWING MOMENT PARAMETER, N/q, FT^3
ANGLE OF YAW, DEG


SER-72011
FIGURE 25b
EFFECT OF ANGLE OF ATTACK ON HELICOPTER TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
ROLLING MOMENT
CONFIGURATION: $T_{L2}B_T$
1087 α=0°
1090 α=-10°
1088 α=+10°
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ROLLING MOMENT PARAMETER, #/q, FT³
ANGLE OF YAW, ψ, DEG

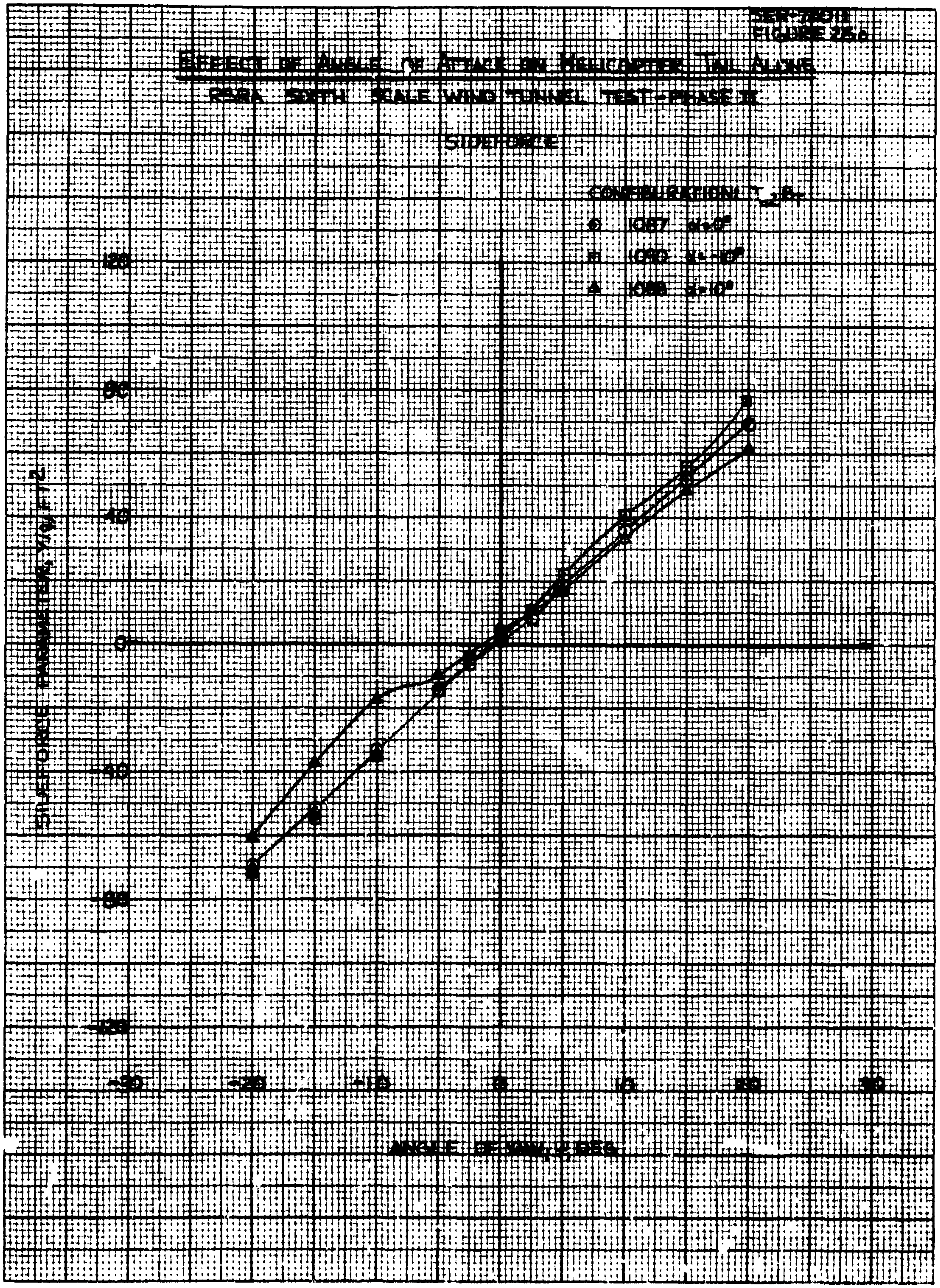
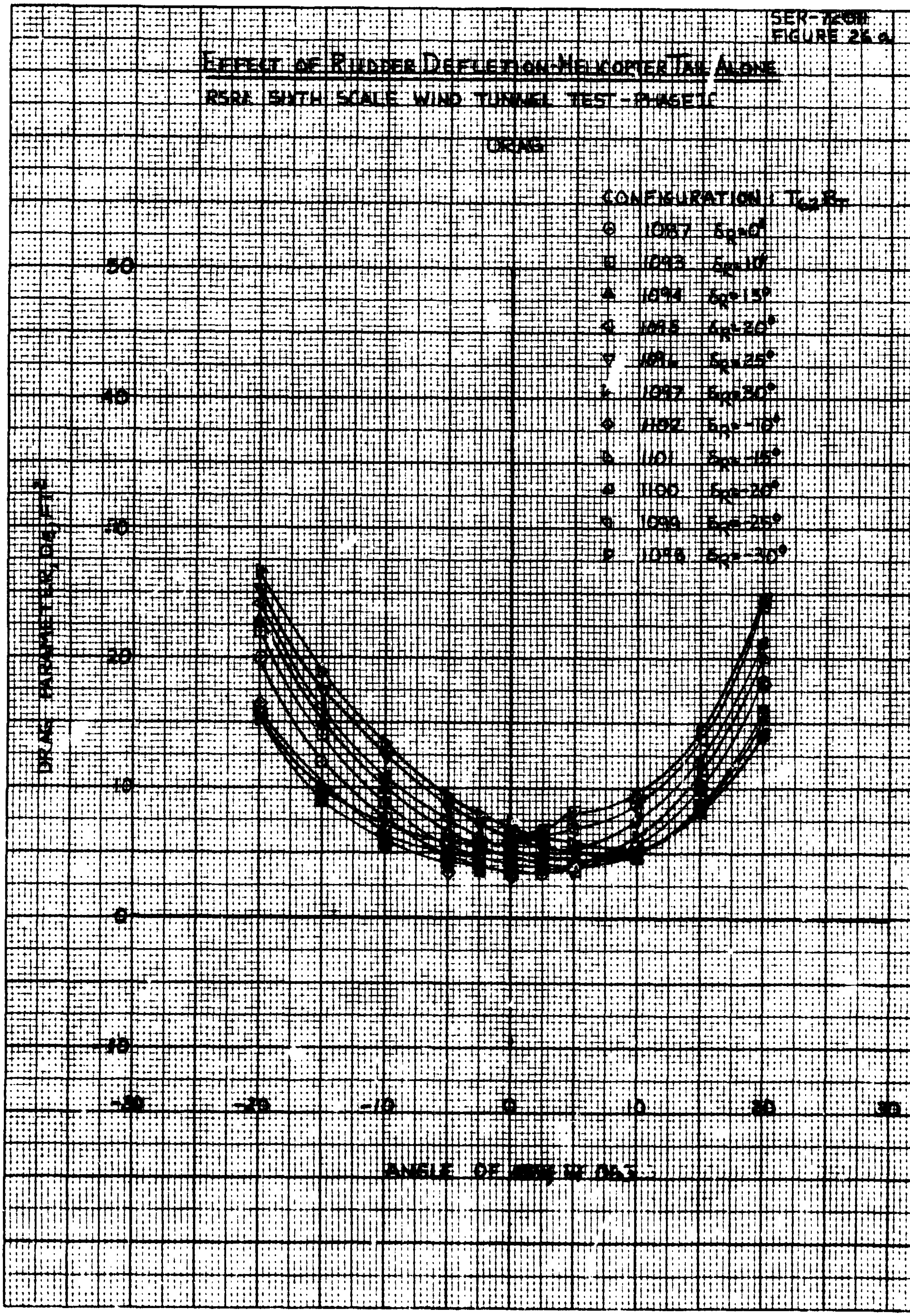


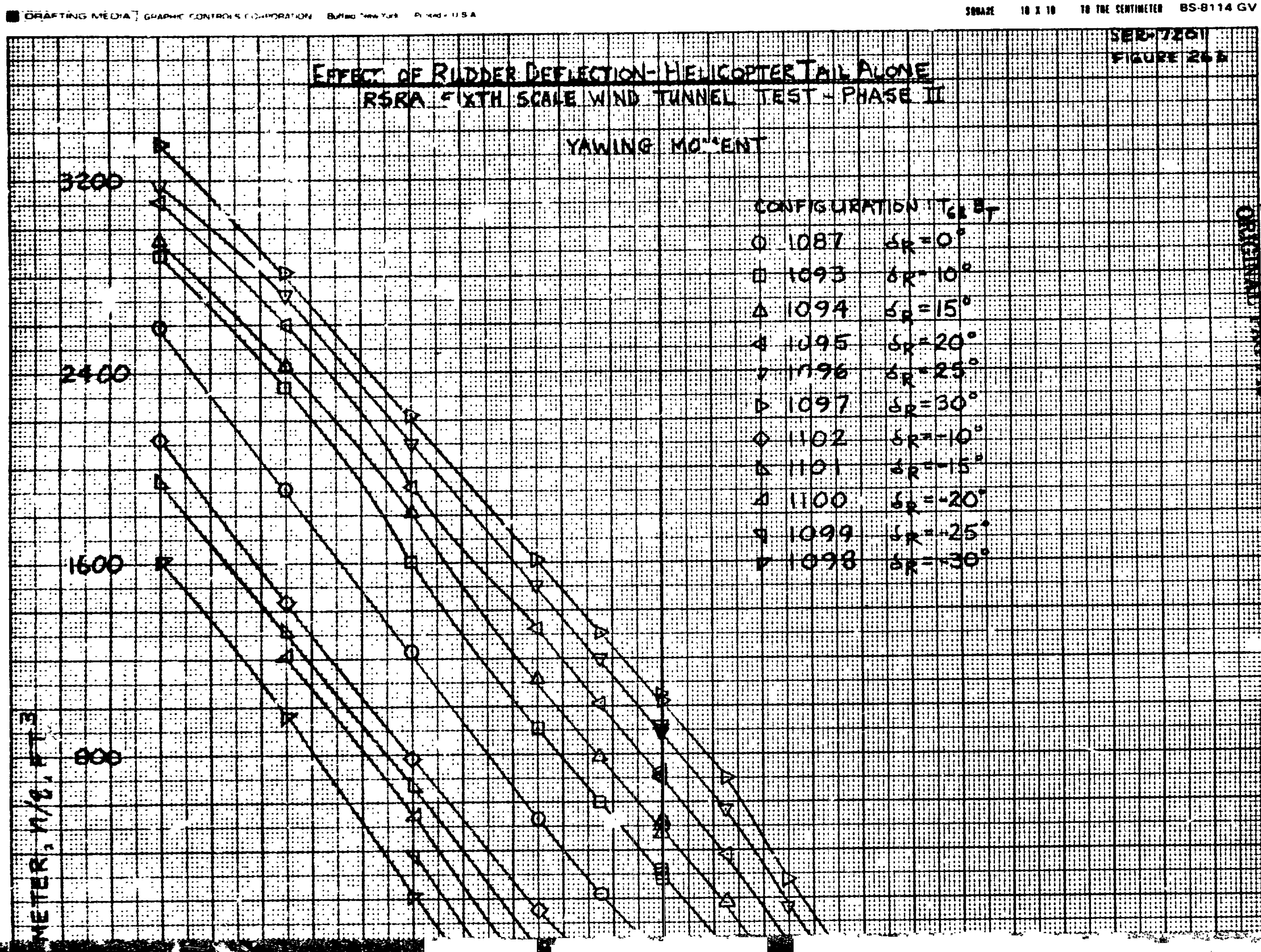
FIGURE 25a
EFFECT OF ANGLE OF ATTACK ON HELICOPTER TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
SIDEFORCE
CONFIGURATION:
1087 α=0°
1090 α=-10°
1088 α=10°
120
80
40
0
-40
-80
-120
-30
-20
-10
0
10
20
30
SIDEFORCE PARAMETER, Y/q, FT^2
ANGLE OF YAW, ψ, DEG.



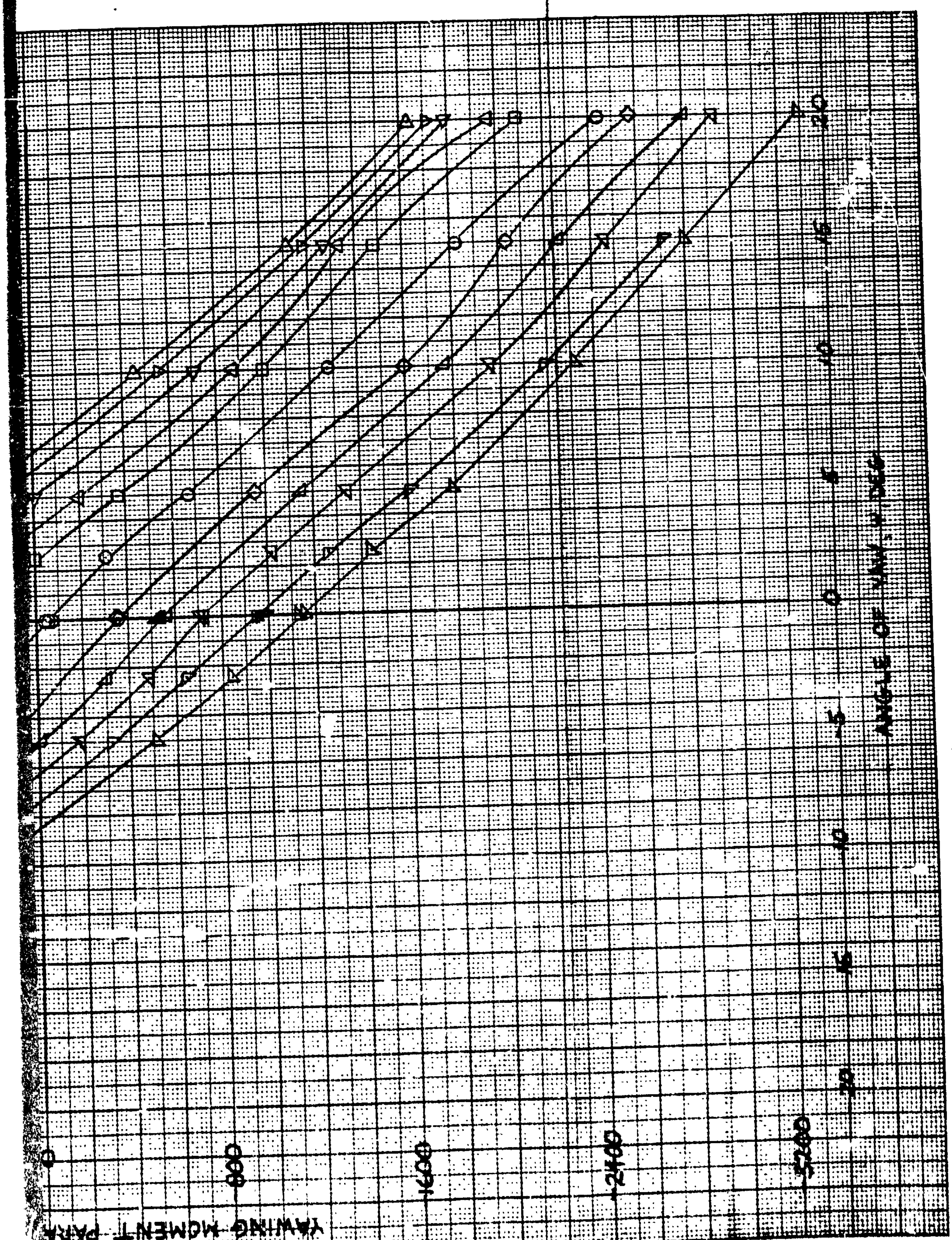
SER-72011
FIGURE 26 a
EFFECT OF RUDDER DEFLECTION-HELICOPTER TAIL ALONE
R5RI SIXTH SCALE WIND TUNNEL TEST - PHASE IC
DRAG
CONFIGURATION: T
1087 δR=0°
1093 δR=10°
1094 δR=15°
1095 δR=20°
1096 δR=25°
1097 δR=30°
1102 δR=-10°
1101 δR=-15°
1100 δR=-20°
1099 δR=-25°
1098 δR=-30°
DRAG PARAMETER, D/q, FT²
50
40
30
20
10
0
-10
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ DEG.

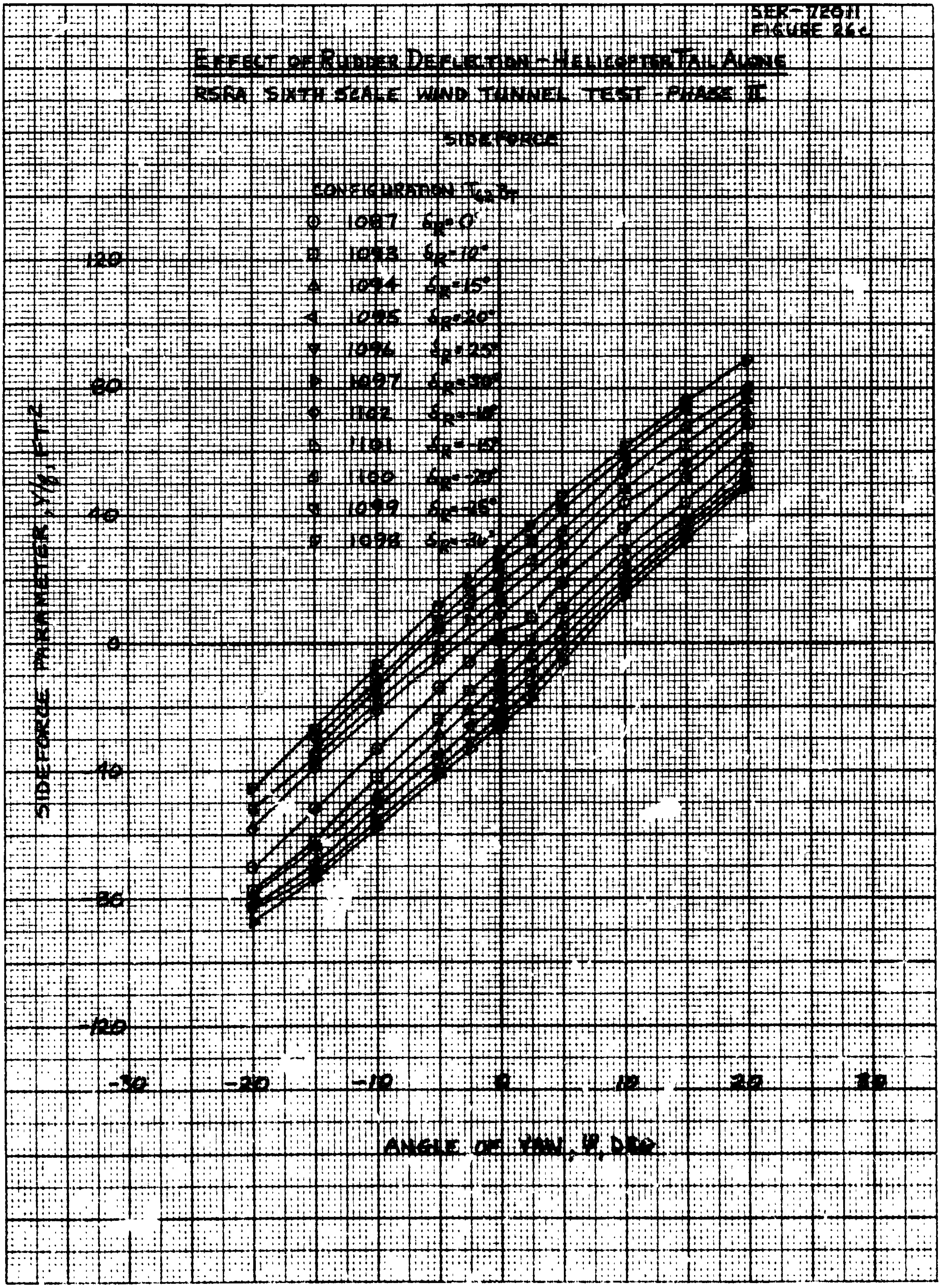
FOLDOUT FRAME

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR



FOLDOUT FRAME 2





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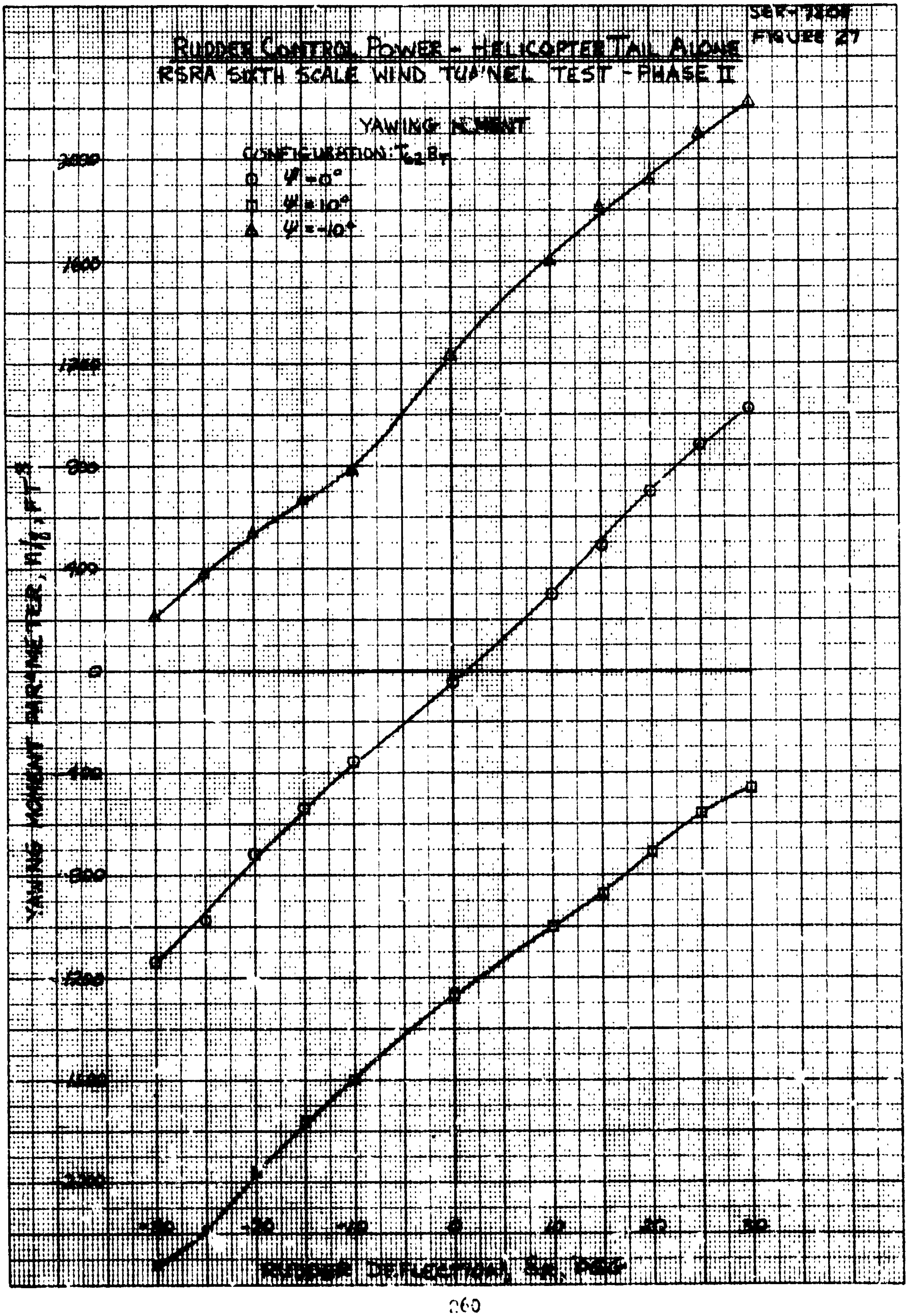

SER-72
FIGURE 27
RUDDER CONTROL POWER - HELICOPTER TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT
CONFIGURATION: T62BT
ψ = 0°
ψ = 10°
ψ = -10°
2000
1600
1200
800
400
0
-400
-800
-1200
-1600
-2000
-30
-20
-10
0
10
20
30
YAWING MOMENT PARAMETER
RUDDER DEFLECTION

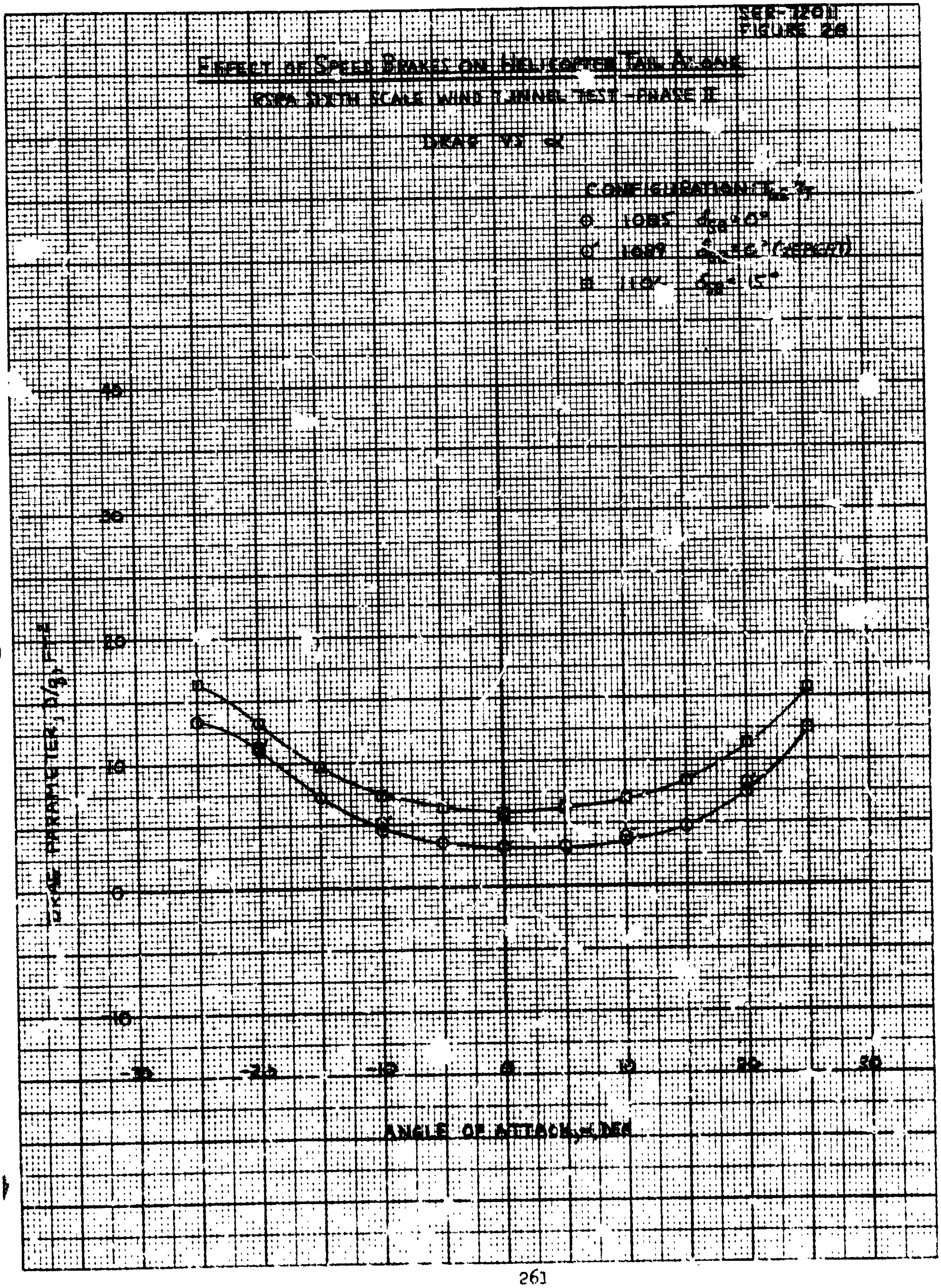


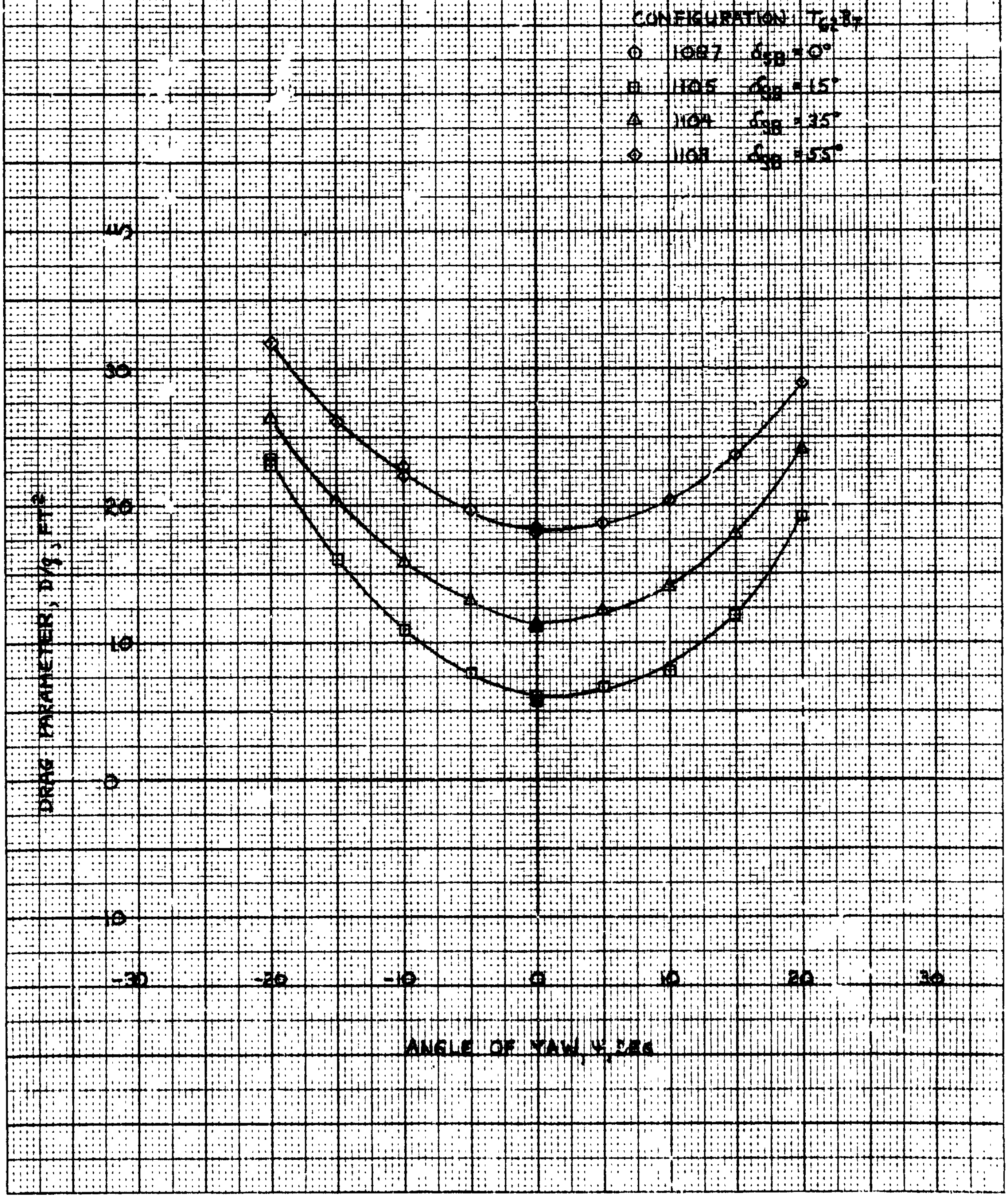
FIGURE 26
EFFECT OF SPEED BRAKES ON HELICOPTER TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
DRAG VS α
CONFIGURATION
1085
1089
1101
40
30
20
10
0
-10
-30
-20
-10
0
10
20
30
DRAG PARAMETER, D/q, FT²
ANGLE OF ATTACK, α, DEG

C-4

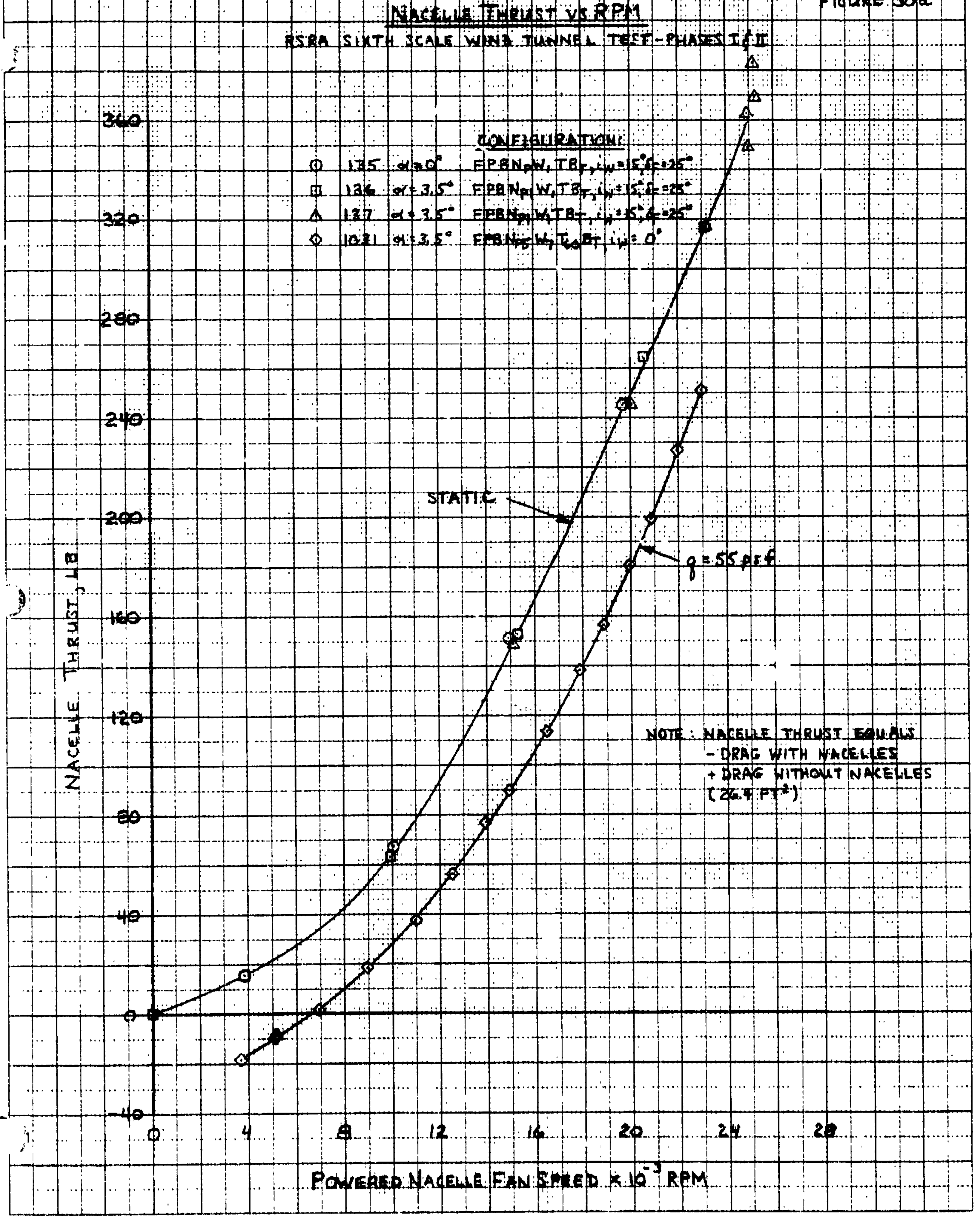
EFFECT OF SPEED BRAKES ON HELICOPTER TAIL ALONE

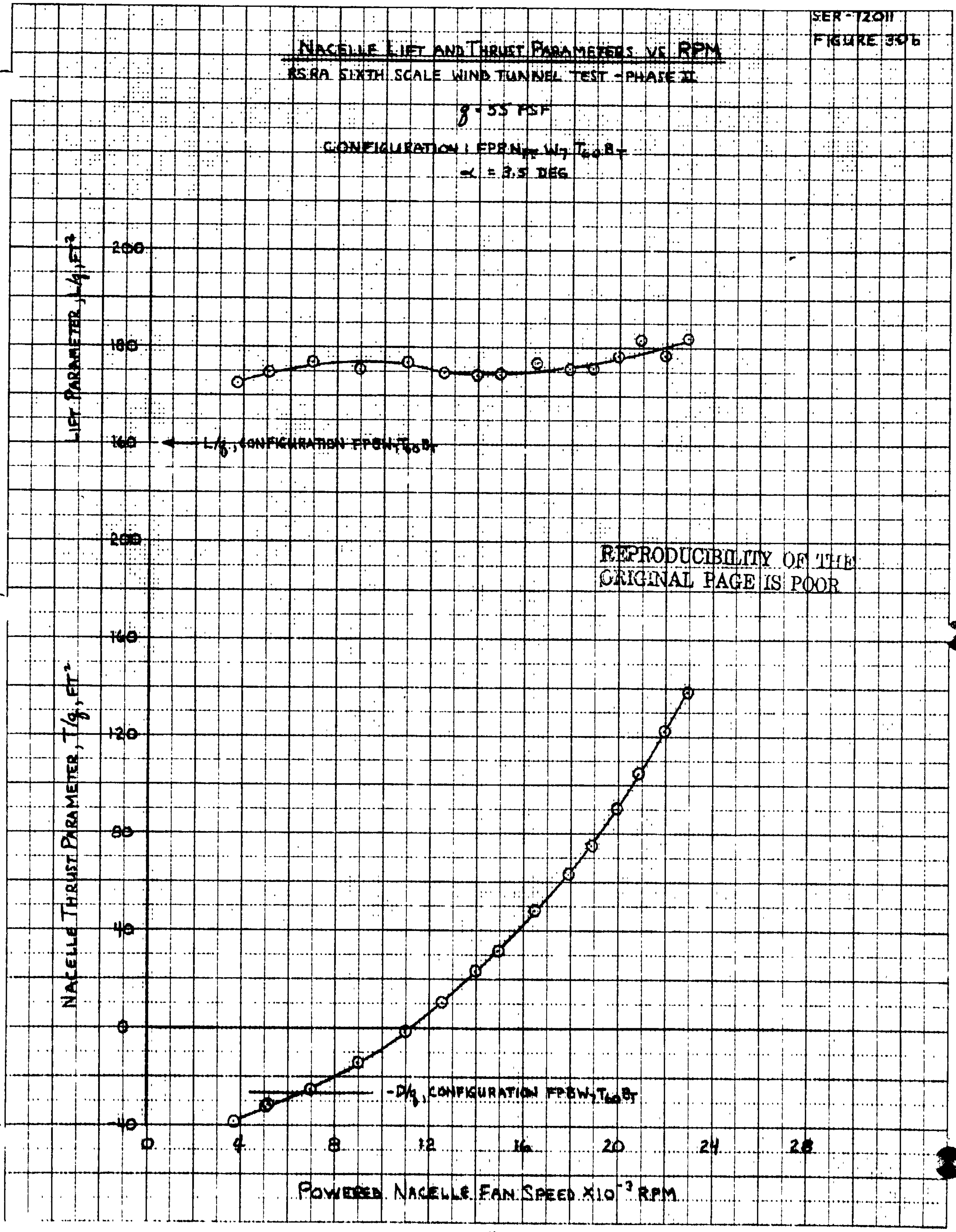
RSRA SIX-1 SCALE WIND TUNNEL TEST-PHASE II

DRAG VS Ψ

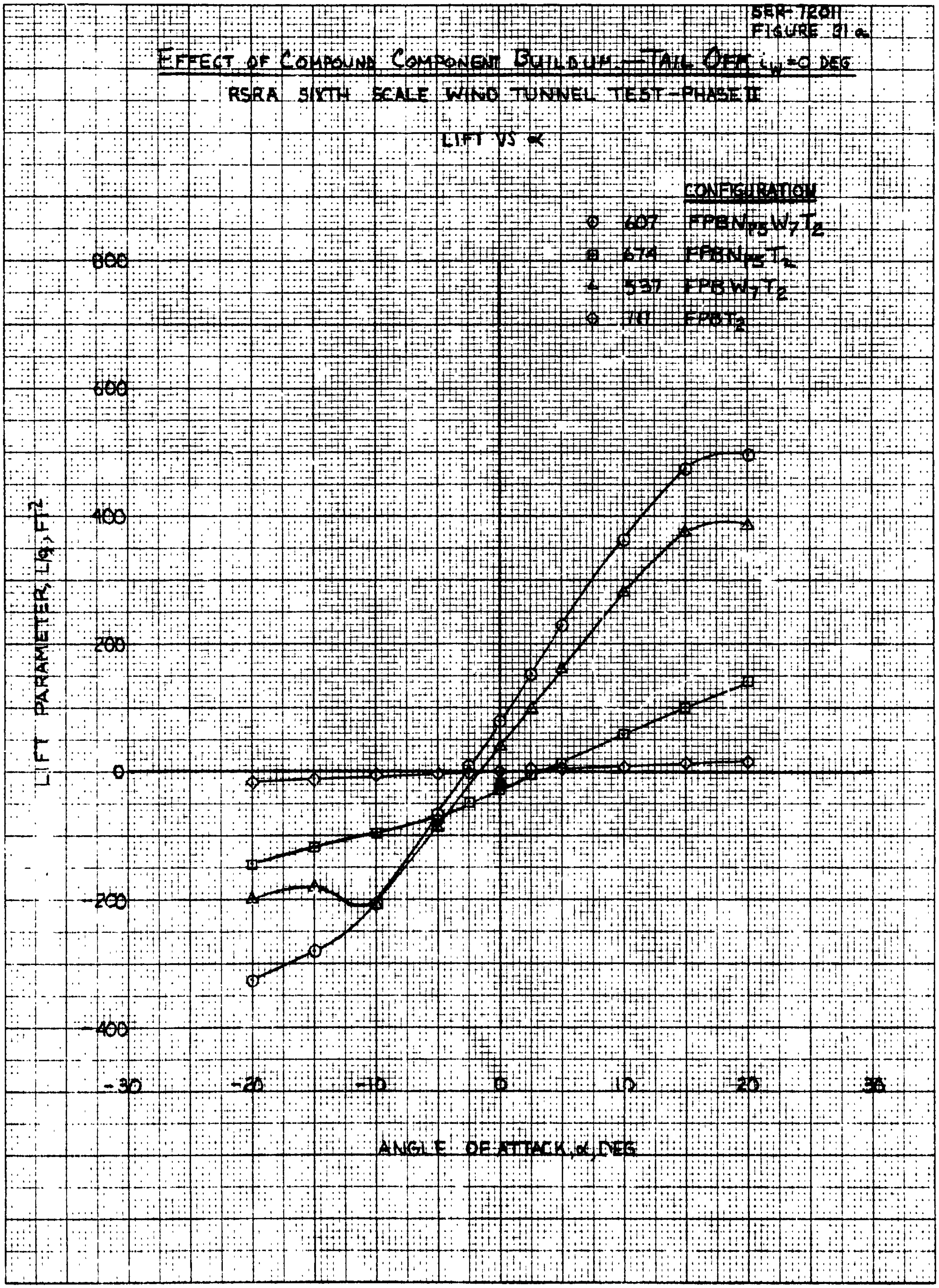


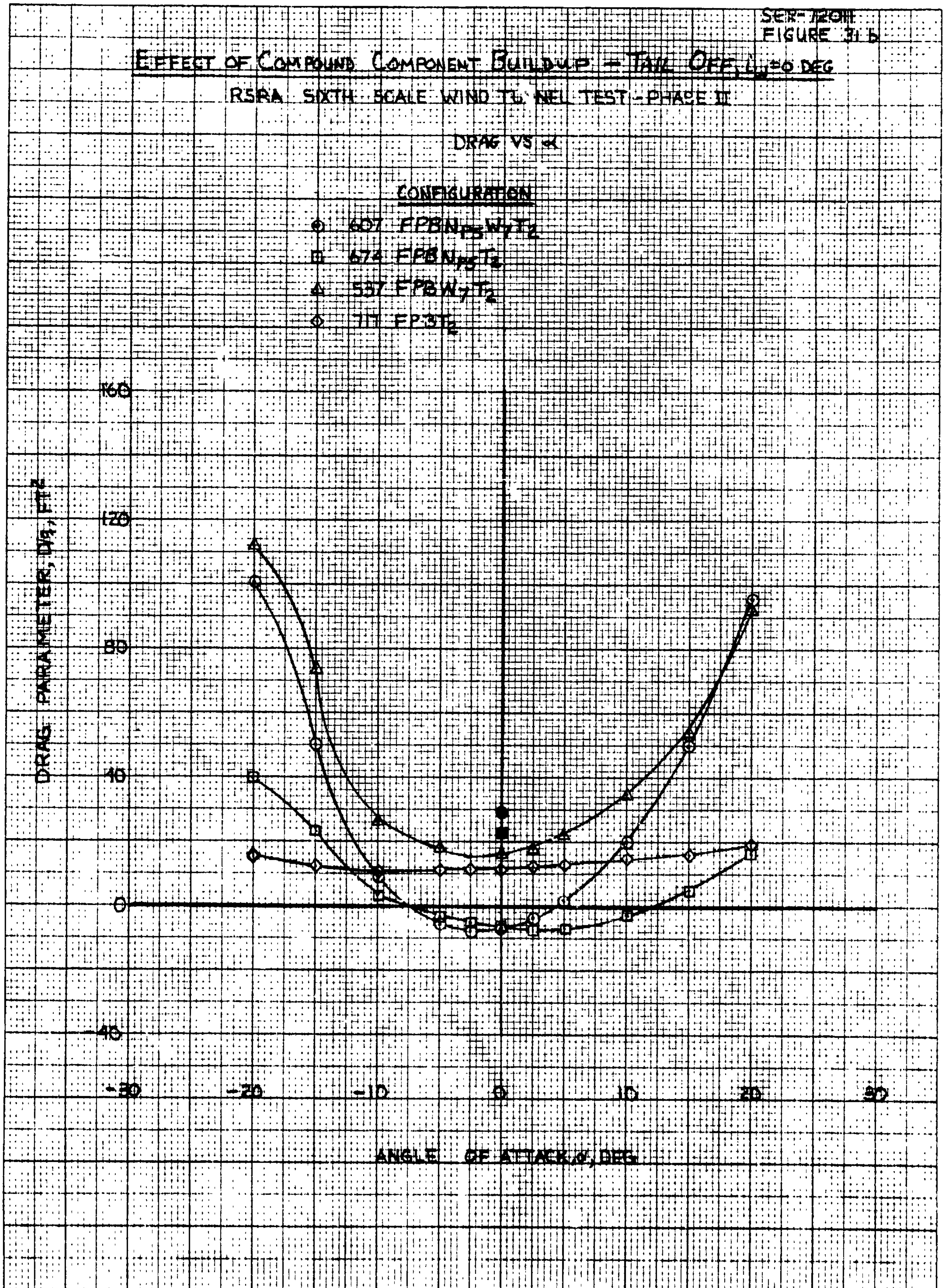
SER-72011
FIGURE 30a

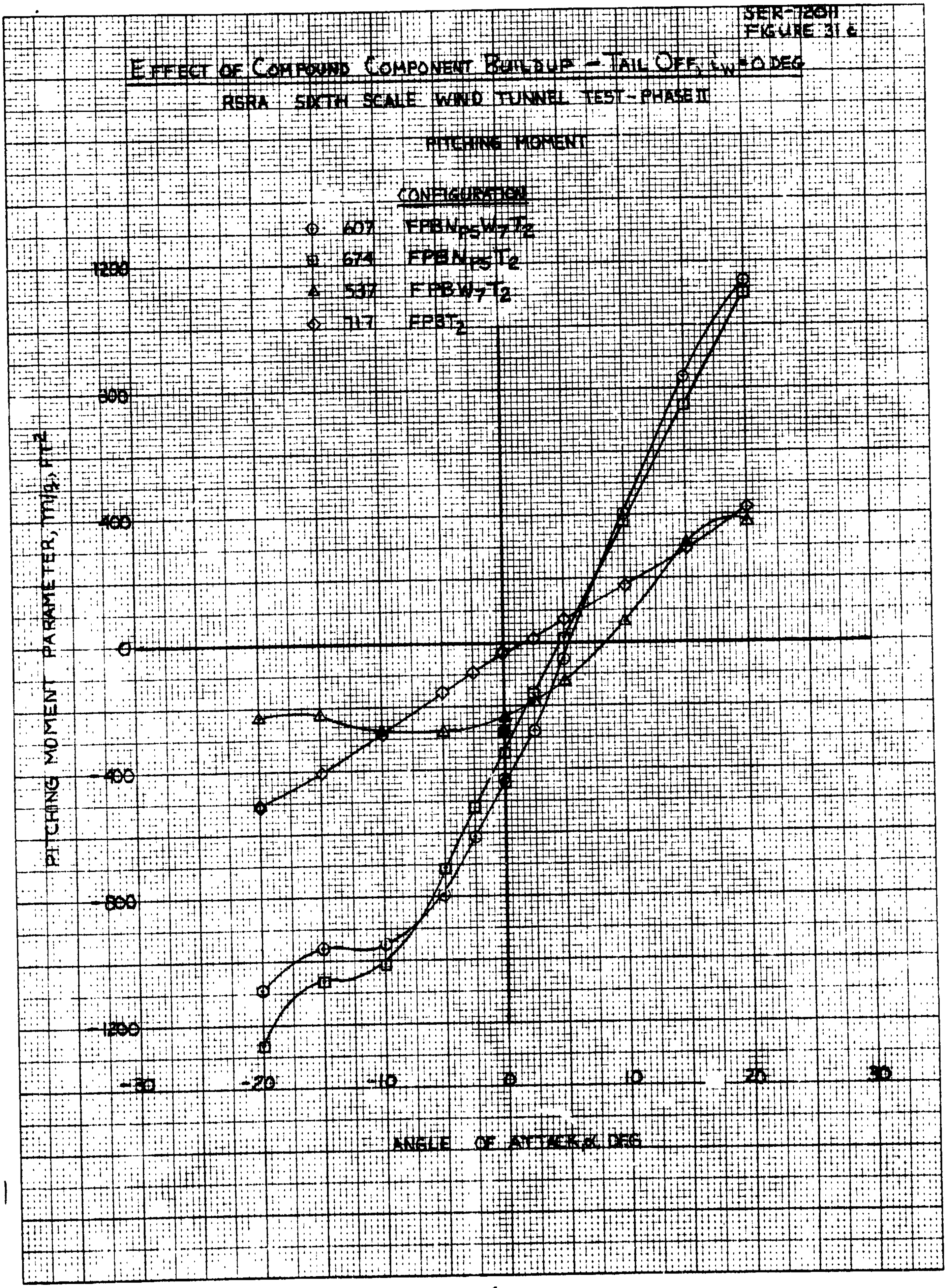


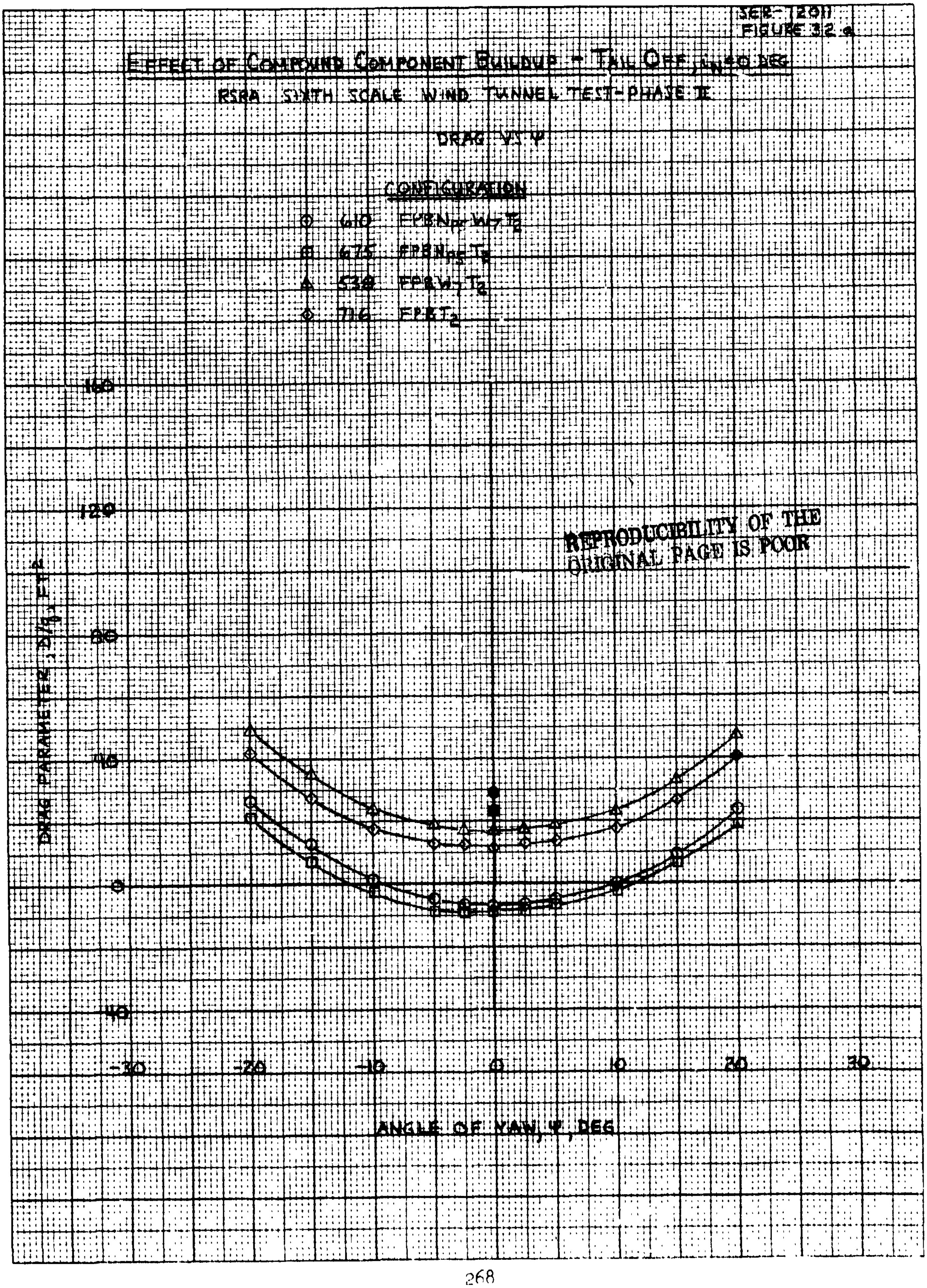


SER-72011
FIGURE 306
NACELLE LIFT AND THRUST PARAMETERS VS RPM
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
q = 55 PSF
CONFIGURATION: FPBNPF W7 T60 BT
α = 3.5 DEG
LIFT PARAMETER, L/q, FT²
200
180
160
L/q, CONFIGURATION FPBW7T60BT
NACELLE THRUST PARAMETER, T/q, FT²
200
160
120
80
40
0
-40
-D/q, CONFIGURATION FPBW7T60BT
0
4
8
12
16
20
24
28
POWERED NACELLE FAN SPEED X10⁻³ RPM


SER-72011
FIGURE 31a
EFFECT OF COMPOUND COMPONENT BUILDUP—TAIL OFF $i_W = 0$ DEG
RSRA SIXTH SCALE WIND TUNNEL TEST—PHASE II
LIFT VS α
CONFIGURATION
607 $FPBN_{F5}W_7T_2$
674 $FPBN_{F5}T_2$
537 $FPBW_7T_2$
$FPBT_2$
LIFT PARAMETER, L/q, FT^2
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

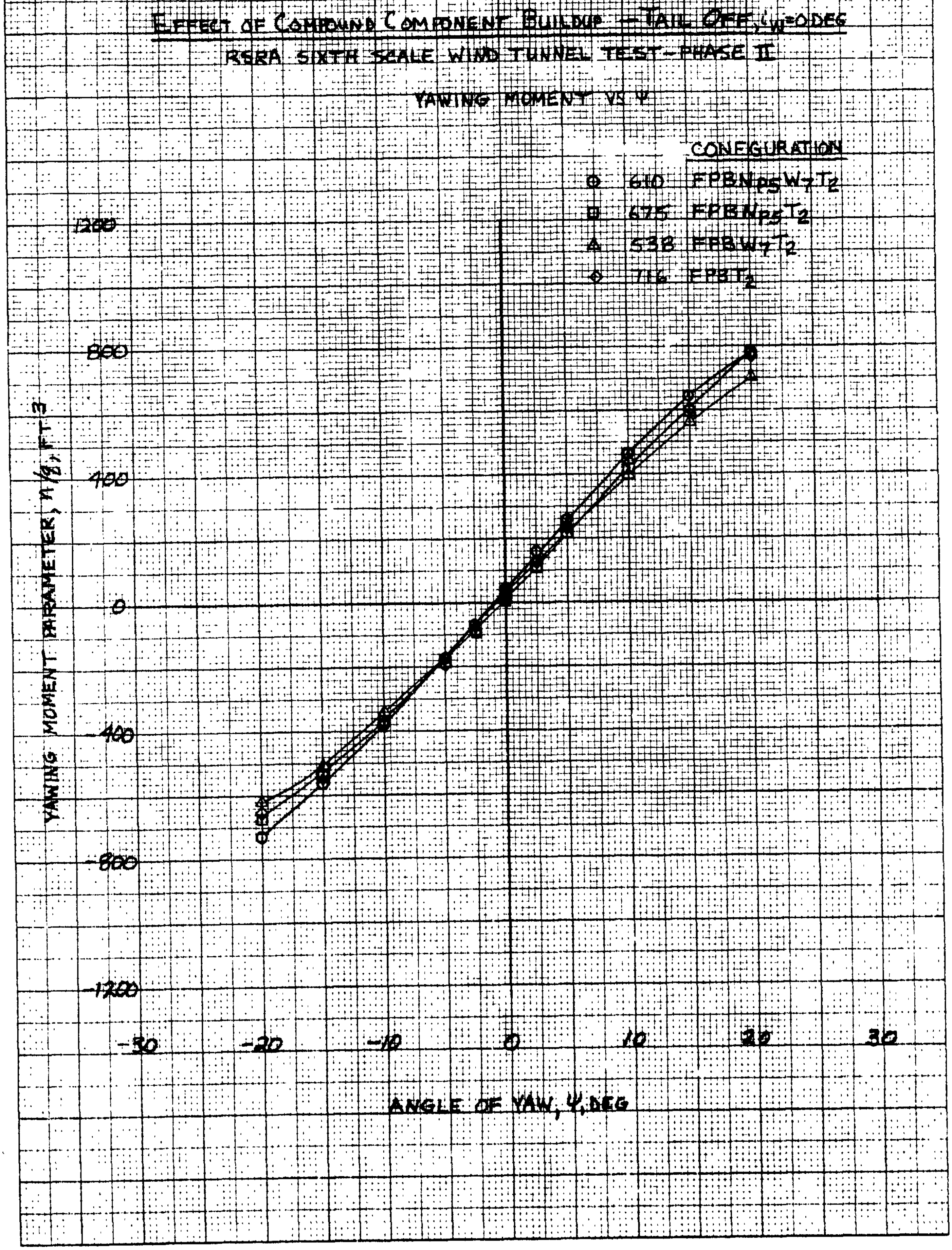

SER-72011
FIGURE 31 b
EFFECT OF COMPOUND COMPONENT BUILDUP - TAIL OFF, i_w=0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
DRAG VS α
CONFIGURATION
607 $FPBN_{PS}W_7T_2$
674 $FPBN_{PS}T_2$
537 $FPBW_7T_2$
717 $FPBT_2$
DRAG PARAMETER, D/q, FT²
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG


SER-72011
FIGURE 31 6
EFFECT OF COMPOUND COMPONENT BUILDUP - TAIL OFF, i_W = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT
CONFIGURATION
607 $FPBN_{P5}W_7T_2$
674 $FPBN_{P5}T_2$
537 $FPBW_7T_2$
717 $FPBT_2$
PITCHING MOMENT PARAMETER, M/q, FT³
ANGLE OF ATTACK, α, DEG
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30

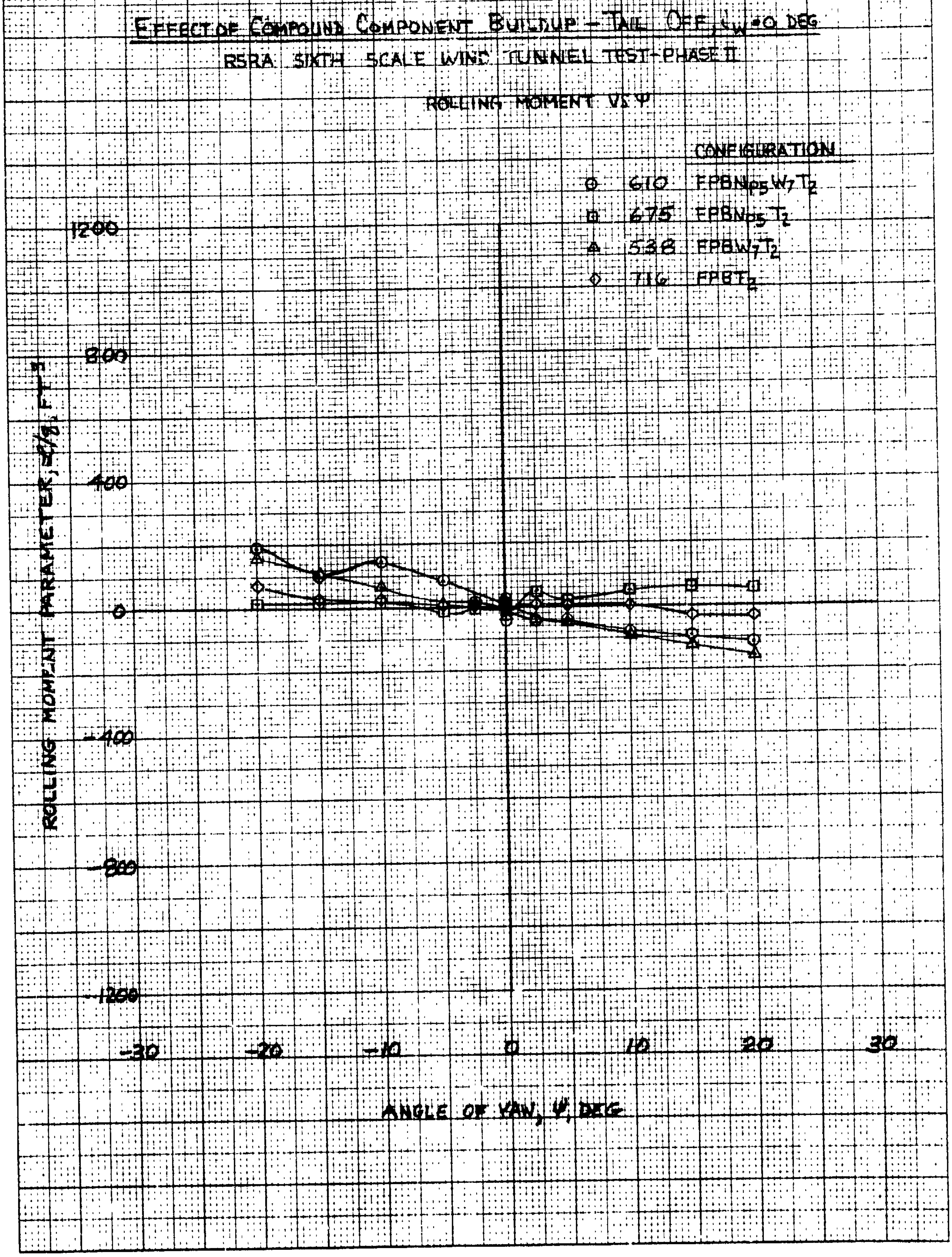


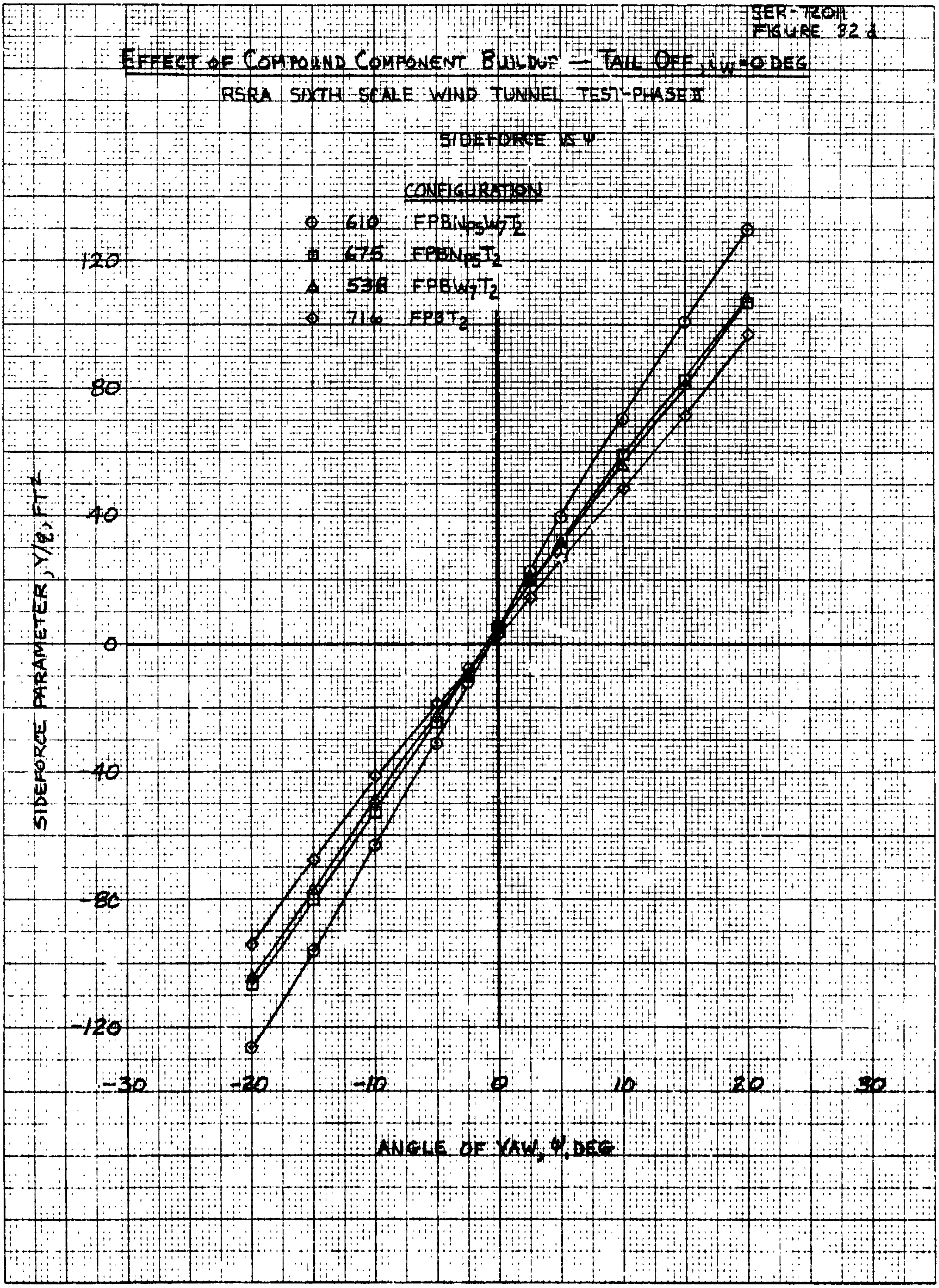
SER-72011
FIGURE 32 a
EFFECT OF COMPOUND COMPONENT BUILDUP - TAIL OFF, iw=0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG VS Ψ
CONFIGURATION
610 FPBNps W7 T2
675 FPBNps T2
538 FPBW7 T2
716 FPBT2
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30
DRAG PARAMETER, D/q, FT²
ANGLE OF YAW, Ψ, DEG

SER-72011
FIGURE 32 b

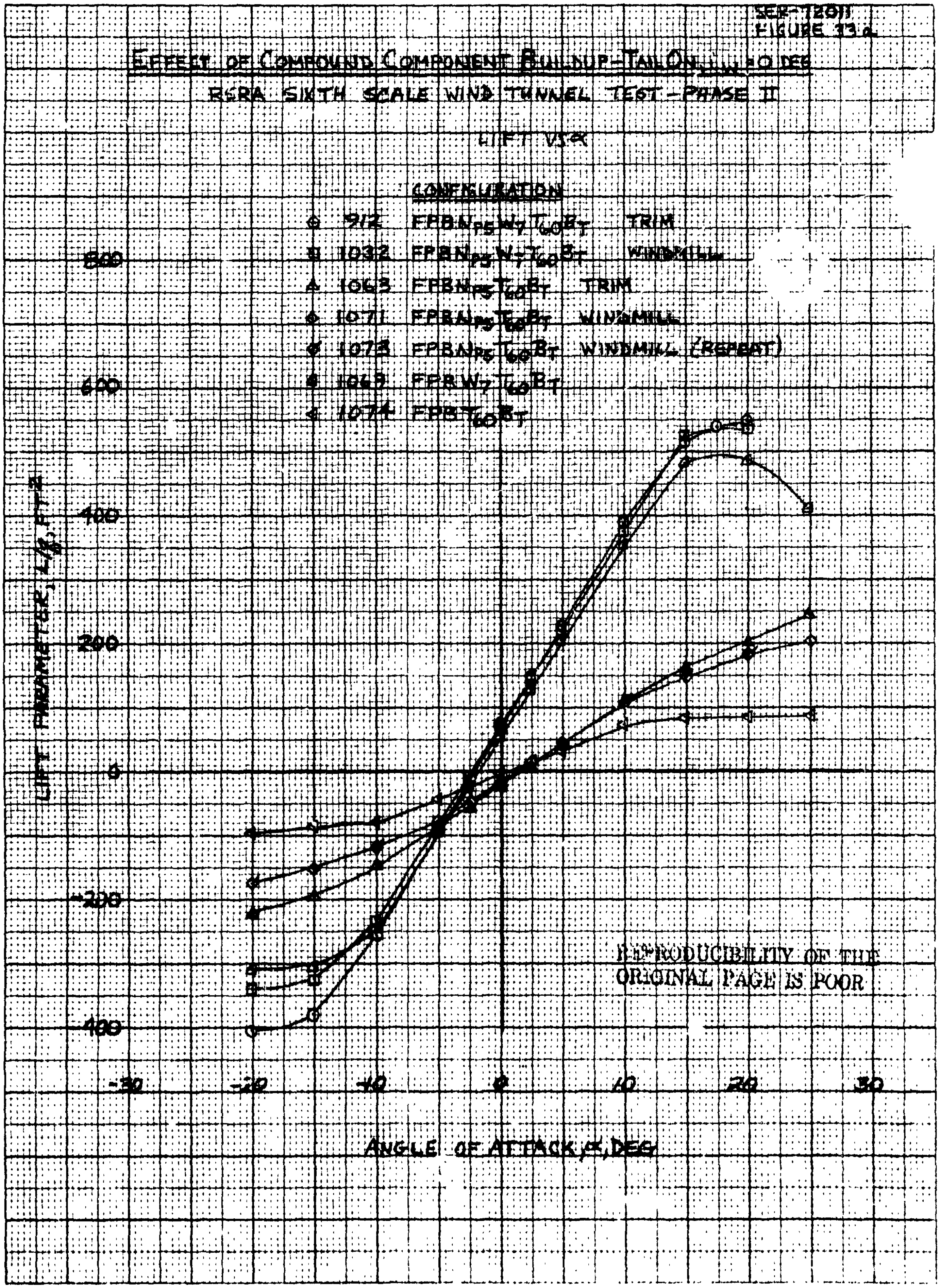


SER-72011
FIGURE 32c

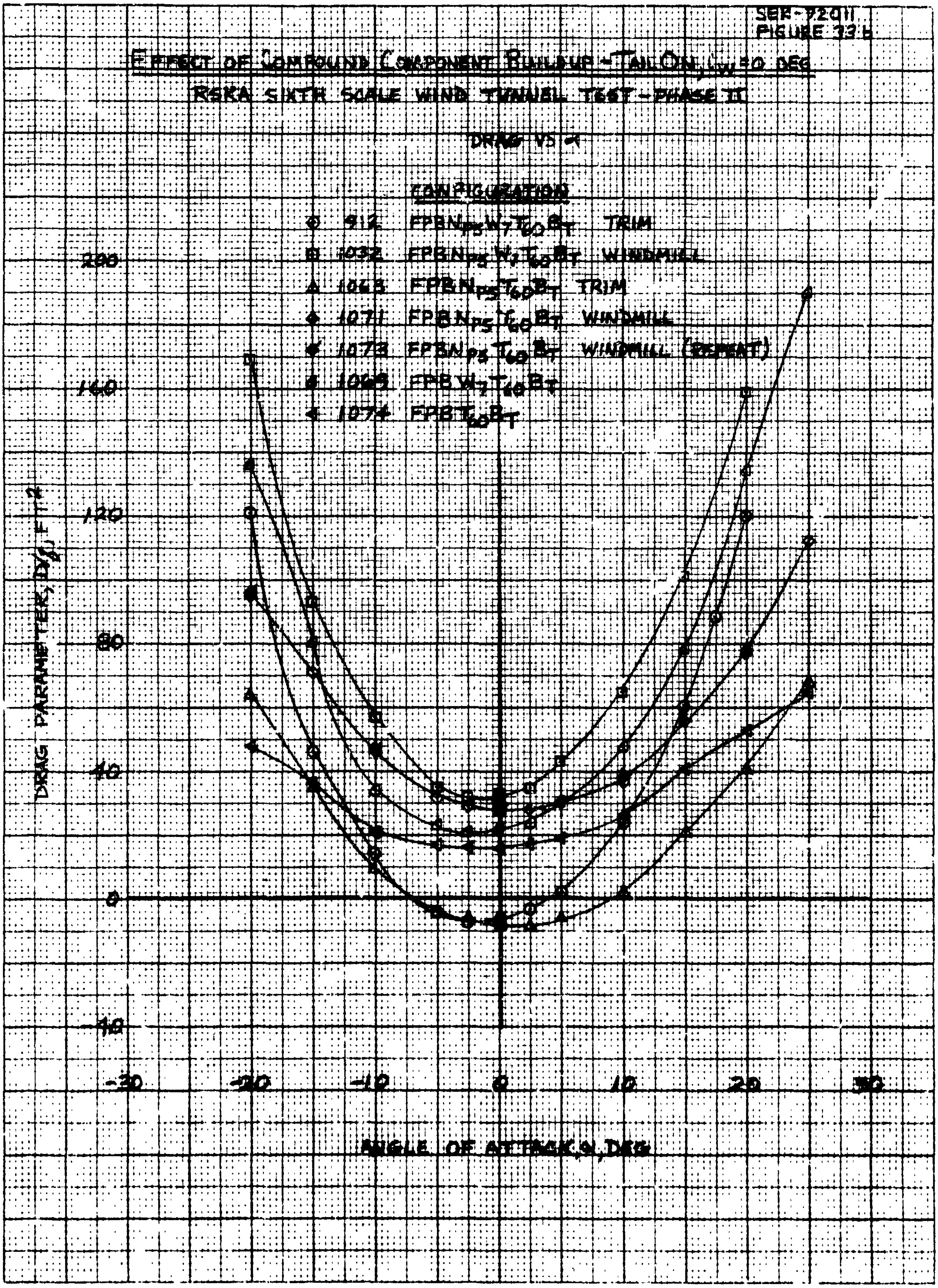




SER-72011
FIGURE 32 a
EFFECT OF COMPOUND COMPONENT BUILDUP — TAIL OFF, iW = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
SIDEFORCE VS Ψ
CONFIGURATION
610 FPBN$_{P5}$W$_7$T$_2$
675 FPBN$_{P5}$T$_2$
538 FPBW$_7$T$_2$
716 FPBT$_2$
SIDEFORCE PARAMETER, Y/q, FT^2
ANGLE OF YAW, Ψ, DEG
120
80
40
0
-40
-80
-120
-30
-20
-10
0
10
20
30



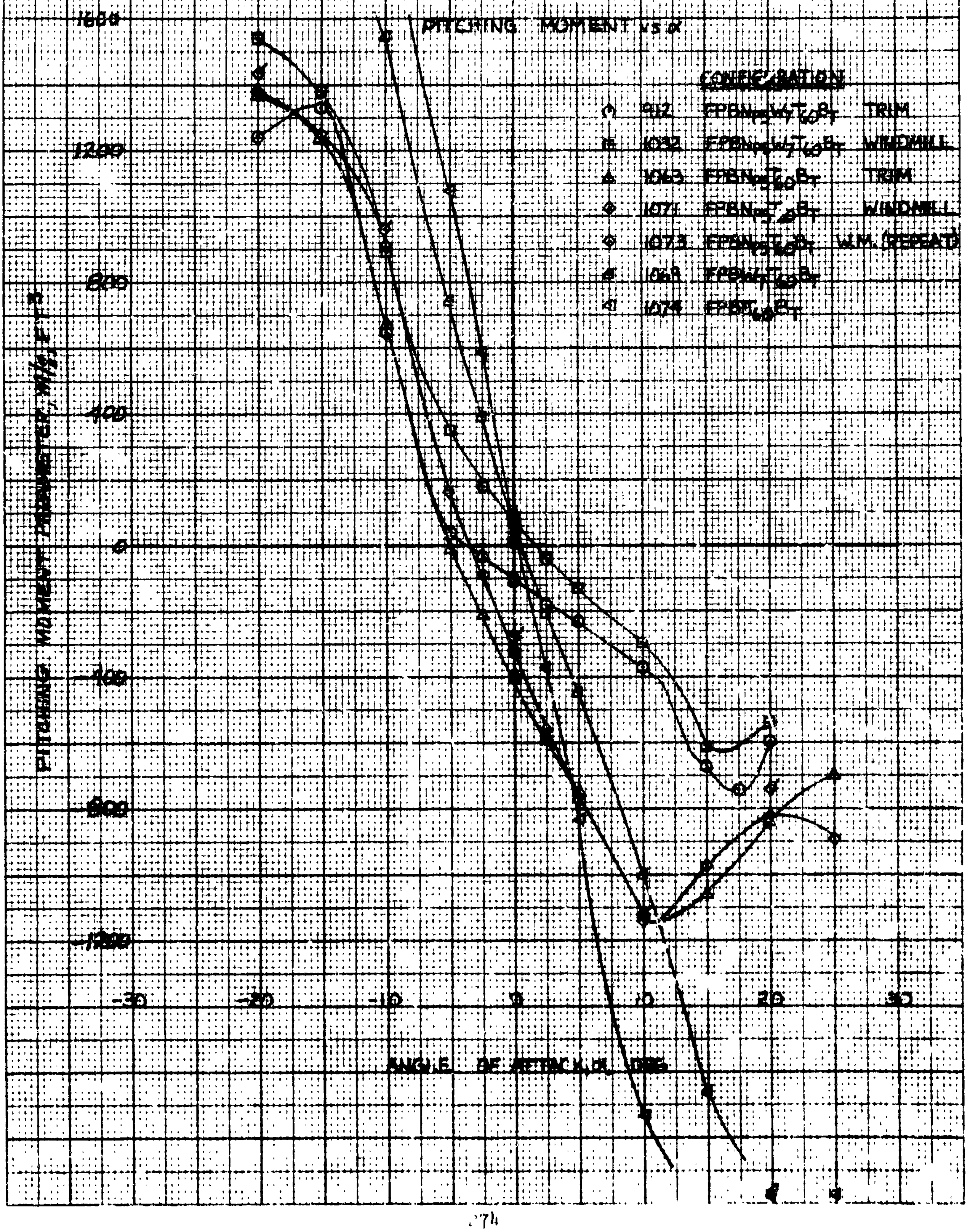
SER-72011
FIGURE 33a
EFFECT OF COMPOUND COMPONENT BUILDUP-TAIL ON, i_w = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT VS α
CONFIGURATION
912 $FPBN_{P5}W_7T_{60}B_T$ TRIM
1032 $FPBN_{P5}W_7T_{60}B_T$ WINDMILL
1063 $FPBN_{P5}T_{60}B_T$ TRIM
1071 $FPBN_{P5}T_{60}B_T$ WINDMILL
1073 $FPBN_{P5}T_{60}B_T$ WINDMILL (REPEAT)
1069 $FPBW_7T_{60}B_T$
1074 $FPBT_{60}B_T$
800
600
400
200
0
-200
-400
LIFT PARAMETER, L/q, FT^2
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

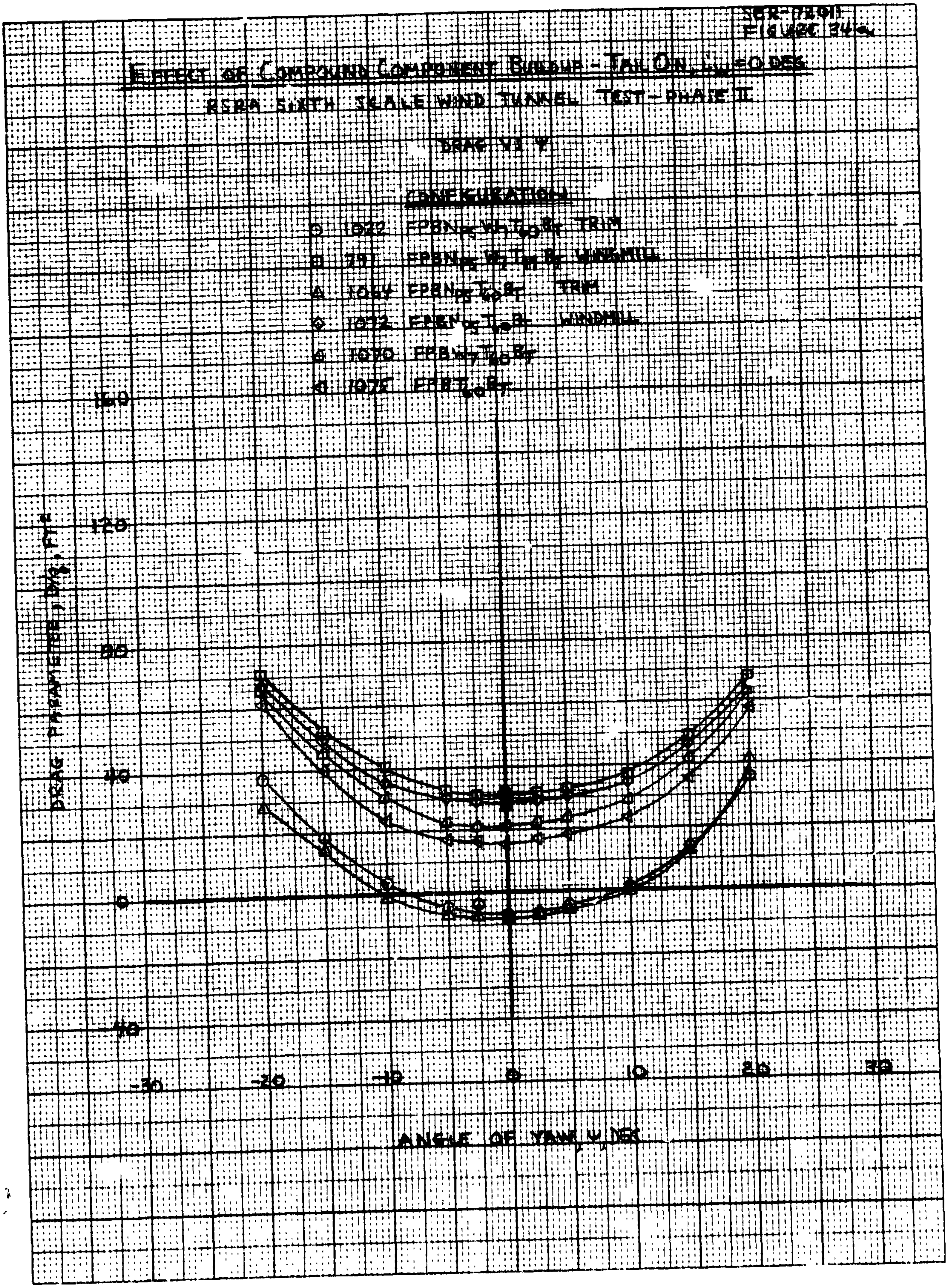

SER-72011
FIGURE 33b
EFFECT OF COMPOUND COMPONENT BUILDUP - TAIL ON, i_w=0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
DRAG VS α
CONFIGURATION
912 FPBN$_{PS}$W$_7$T$_{60}$B$_T$ TRIM
1032 FPBN$_{PS}$W$_7$T$_{60}$B$_T$ WINDMILL
1063 FPBN$_{PS}$T$_{60}$B$_T$ TRIM
1071 FPBN$_{PS}$T$_{60}$B$_T$ WINDMILL
1073 FPBN$_{PS}$T$_{60}$B$_T$ WINDMILL (REPEAT)
1069 FPBW$_7$T$_{60}$B$_T$
1074 FPBT$_{60}$B$_T$
200
160
120
80
40
0
-40
DRAG PARAMETER, D/q, FT^2
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

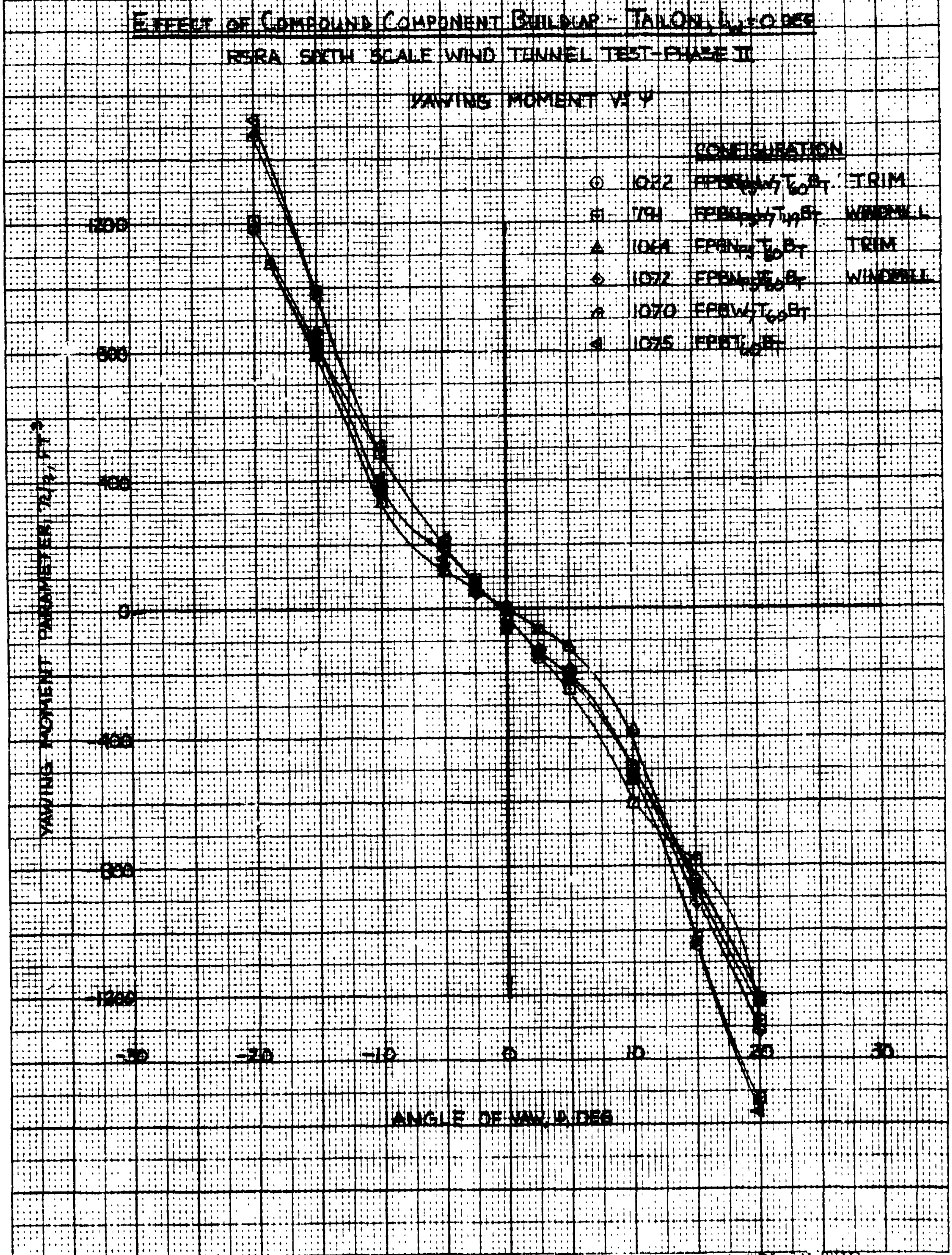
SER-71011
FIGURE 33.e

EFFECT OF COMPOUND COMPONENT BUILDUP-TAIL ON, i_w=0 DEG

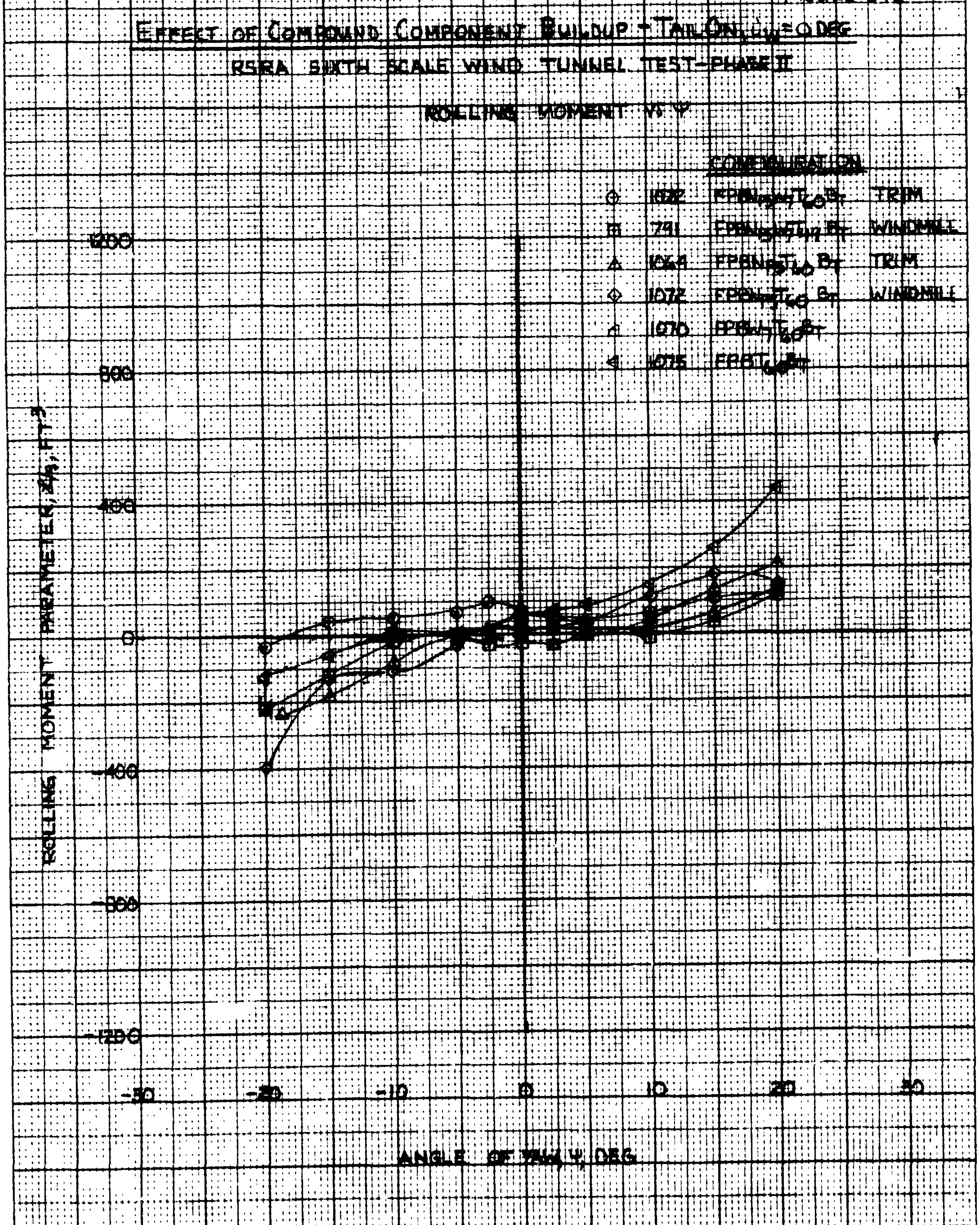
R5RA SIXTH SCALE WIND TUNNEL TEST-PHASE II



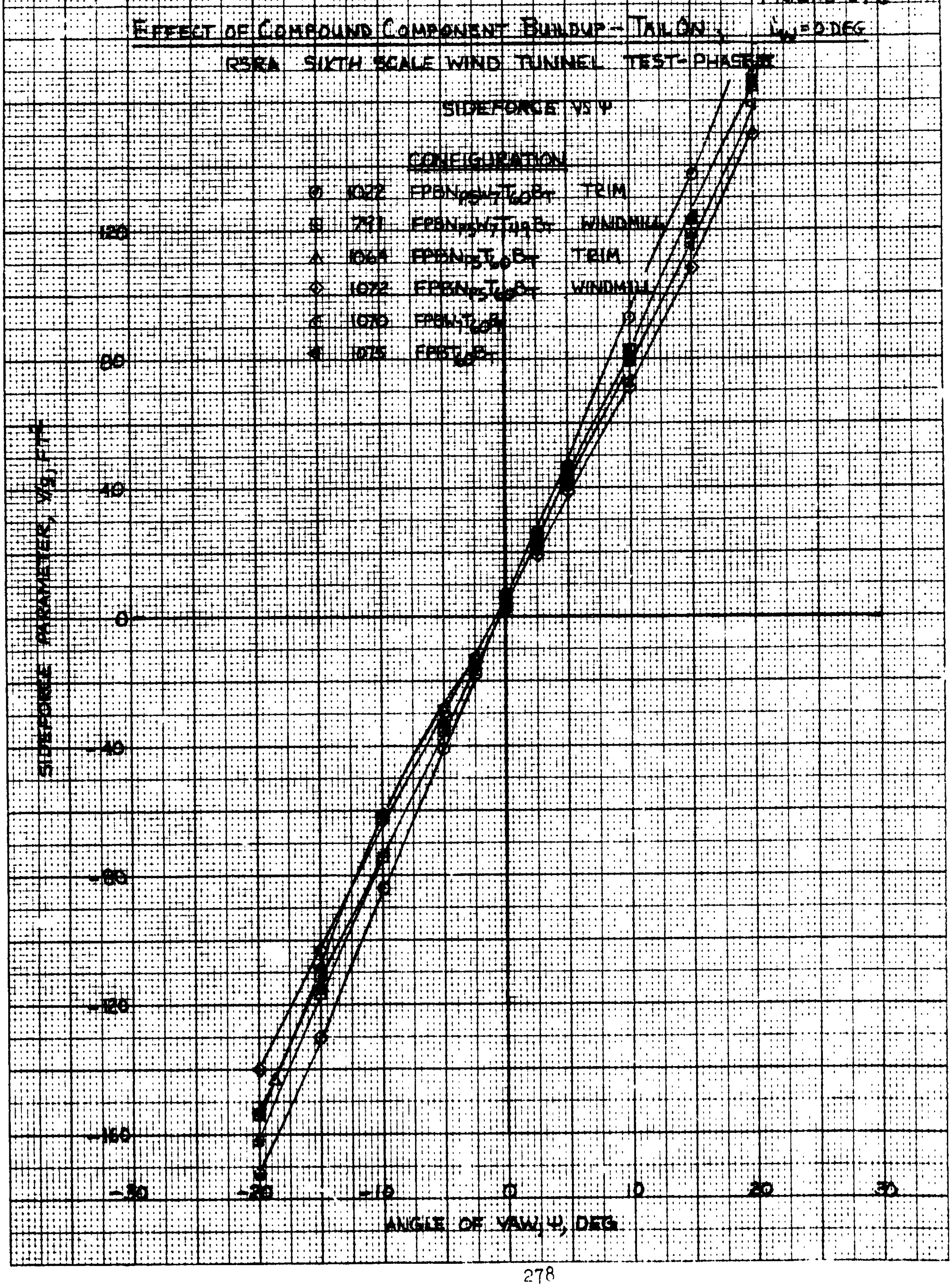

SER-72011
FIGURE 34
EFFECT OF COMPOUND COMPONENT BUILDUP - TAIL ON, iw = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
DRAG VS Ψ
CONFIGURATION
○ 1022 FPBN WT B TRIM
□ 791 FPBN W T B WINDMILL
△ 1064 FPBN T B TRIM
◇ 1072 FPBN T B WINDMILL
1070 FPBW T B
1075 FPBT B
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30
DRAG PARAMETER, D/q, FT²
ANGLE OF YAW, Ψ, DEG

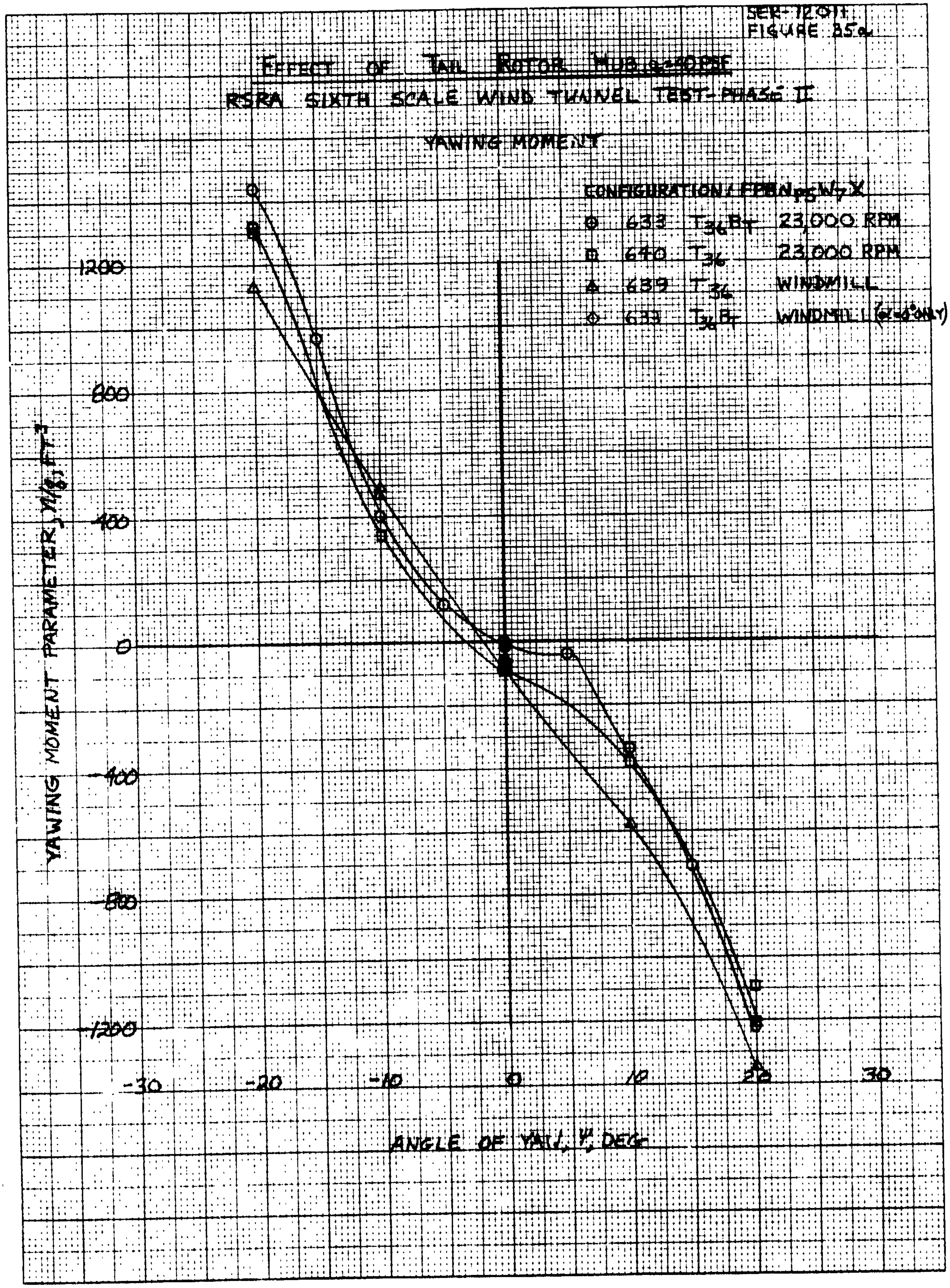

EFFECT OF COMPOUND COMPONENT BUILDUP - TAIL ON, i_w = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
YAWING MOMENT VS Ψ
CONFIGURATION
1022 FPBW$_7$T$_{60}$B$_T$ TRIM
791 FPBW$_7$T$_{60}$B$_T$ WINDMILL
1064 FPBN$_{25}$T$_{60}$B$_T$ TRIM
1072 FPBW$_7$T$_{60}$B$_T$ WINDMILL
1070 FPBW$_7$T$_{60}$B$_T$
1075 FPBT$_{60}$B$_T$
YAWING MOMENT PARAMETER, N/q, FT^3
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF YAW, Ψ, DEG

SER-72011
FIGURE 34c

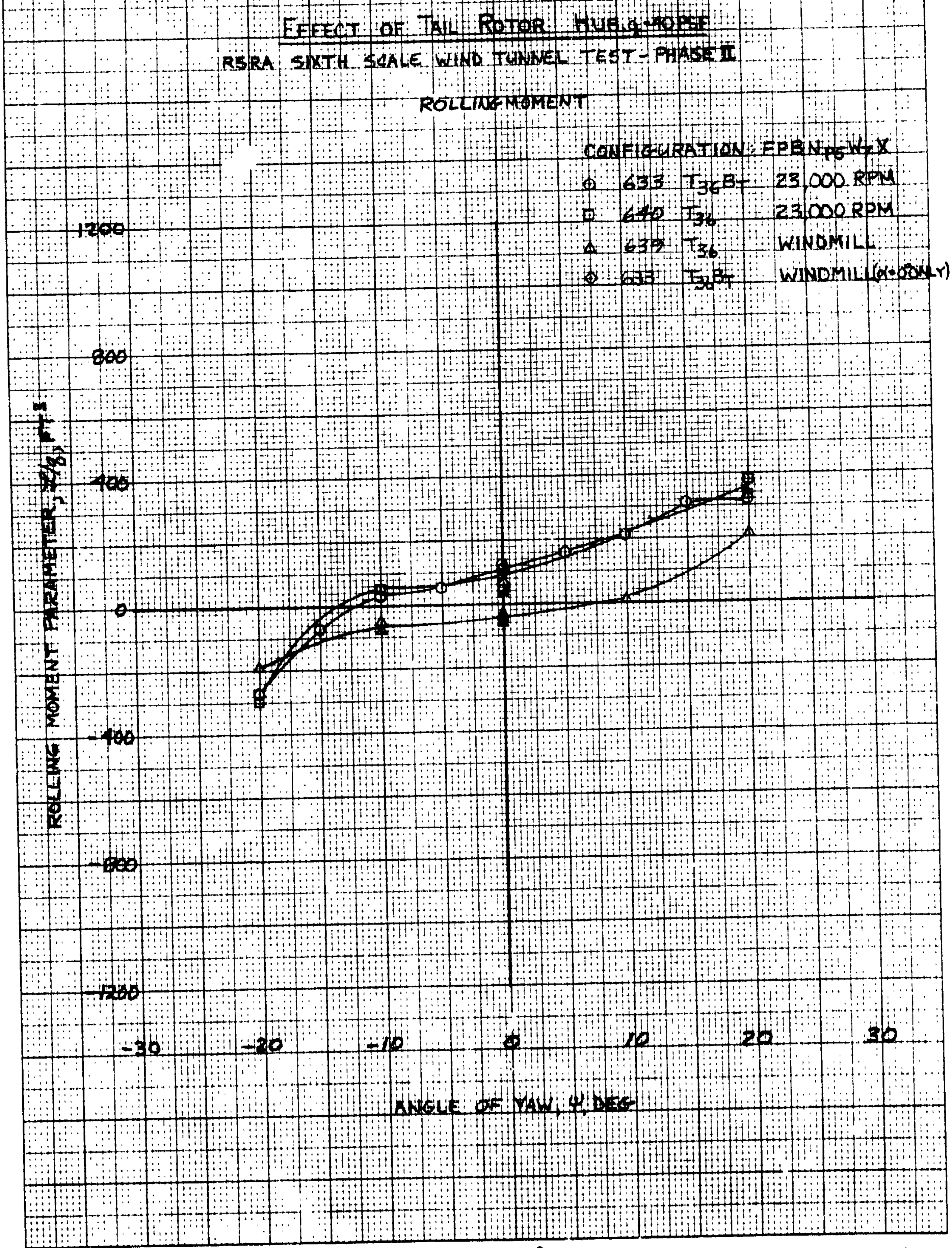


SER-72011
FIGURE 34d

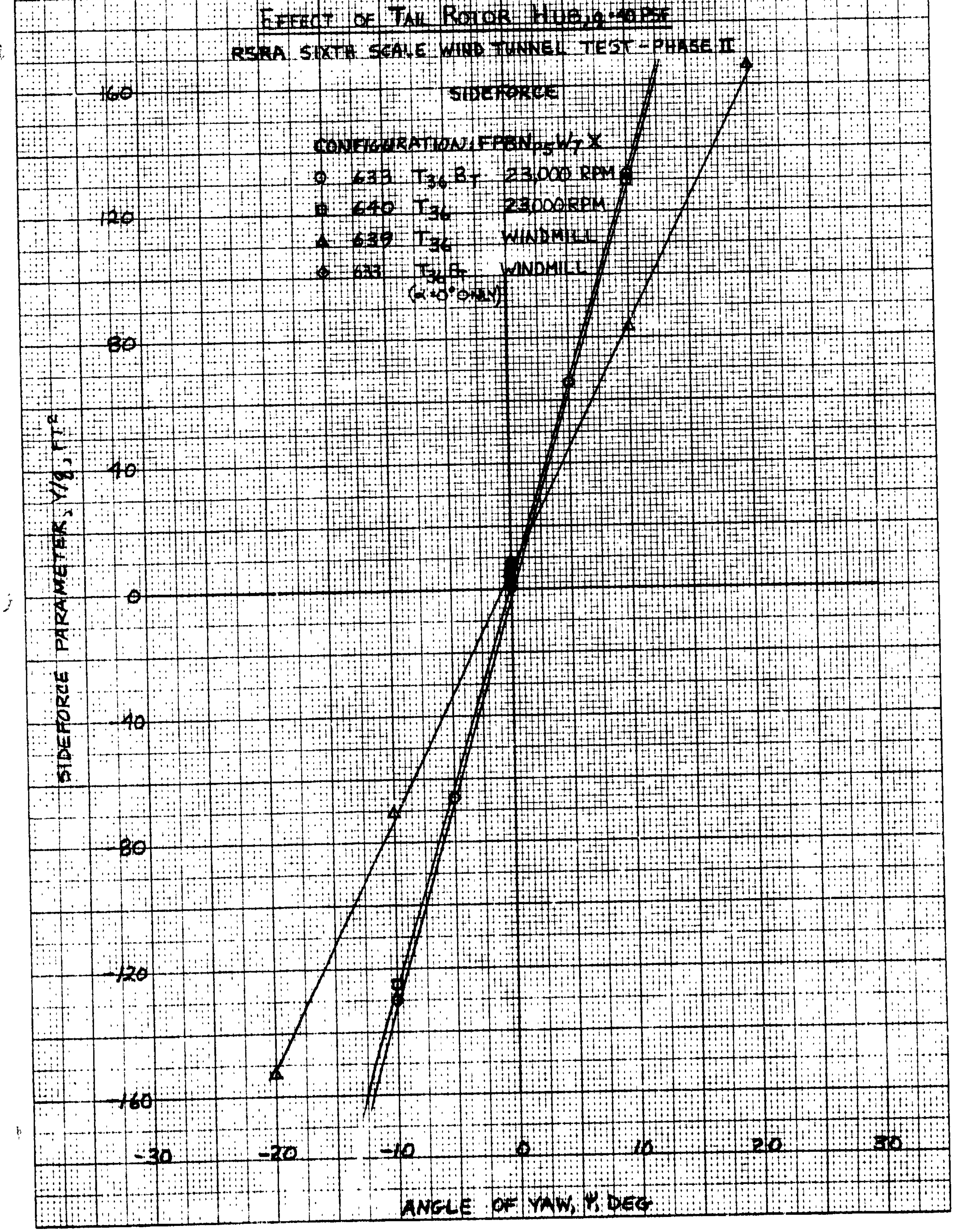



SER-12011
FIGURE 35a
EFFECT OF TAIL ROTOR HUB/HORSE
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
YAWING MOMENT
CONFIGURATION: FPBN$_{P5}$W$_7$X
633 T$_{36}$B$_T$ 23,000 RPM
640 T$_{36}$ 23,000 RPM
639 T$_{36}$ WINDMILL
633 T$_{36}$B$_T$ WINDMILL (ψ=0° ONLY)
YAWING MOMENT PARAMETER, N/q, FT^3
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG

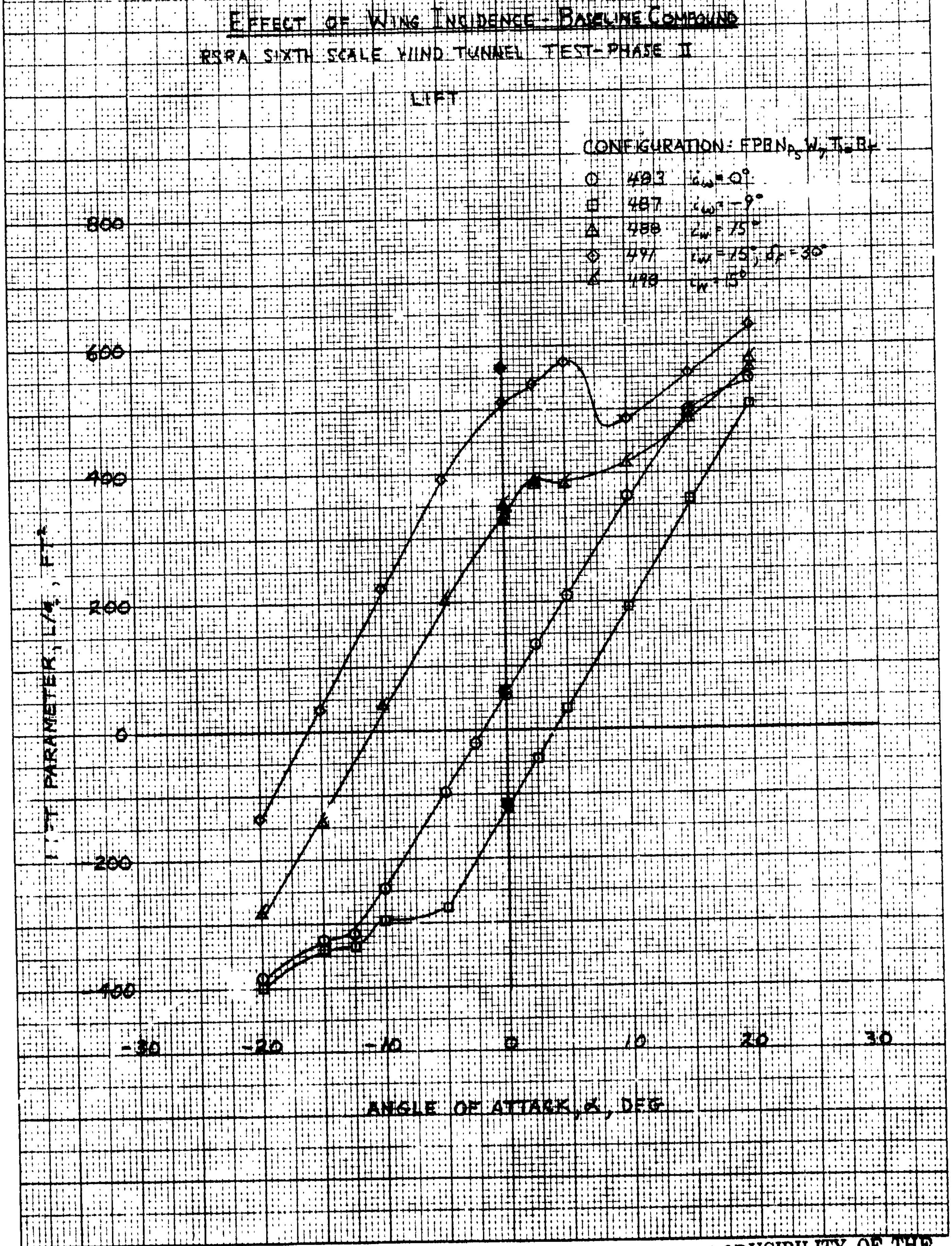
SER-72011
FIGURE 35b

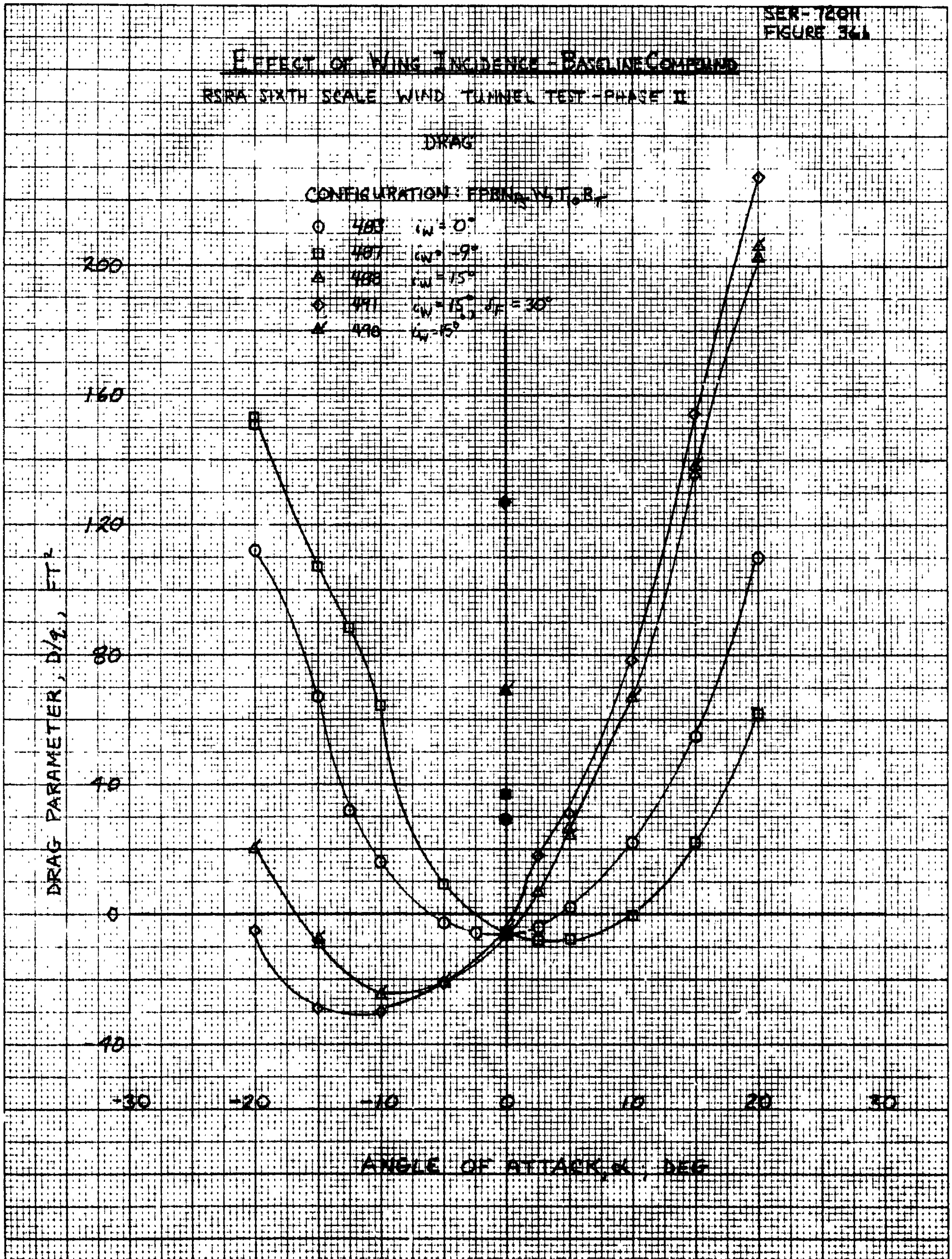


SER-72011
FIGURE 75c

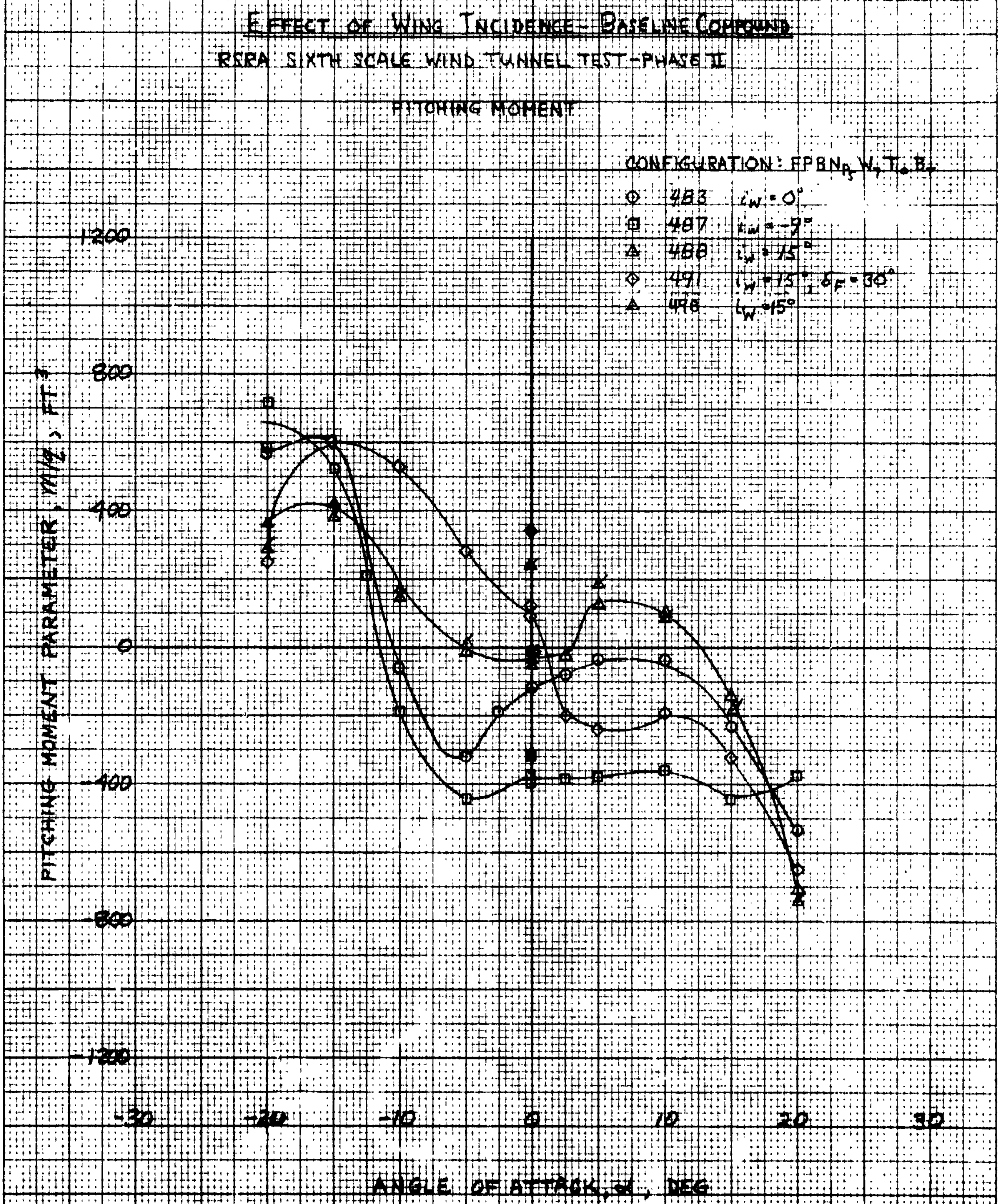


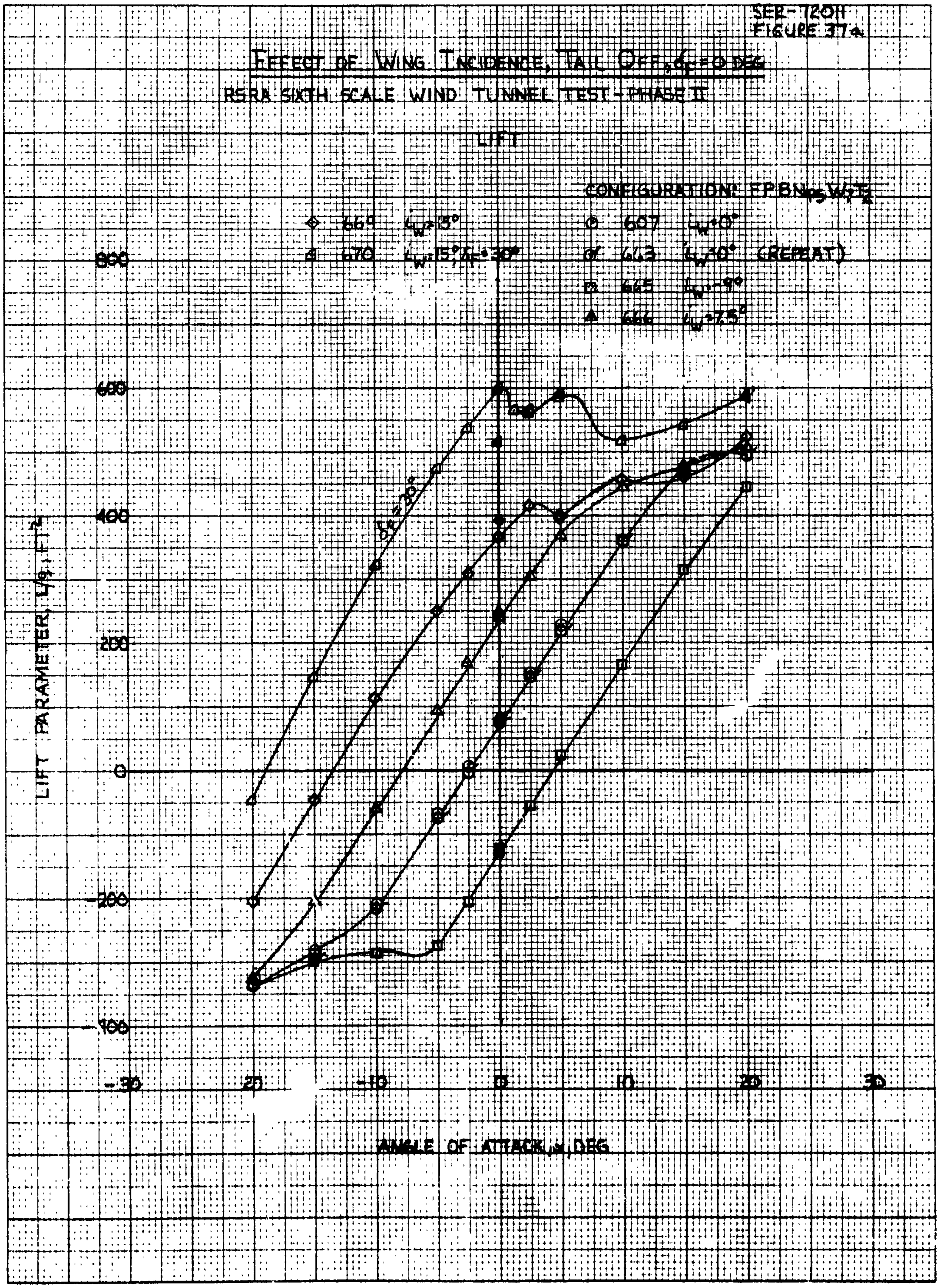
SER-72011
FIGURE 36a



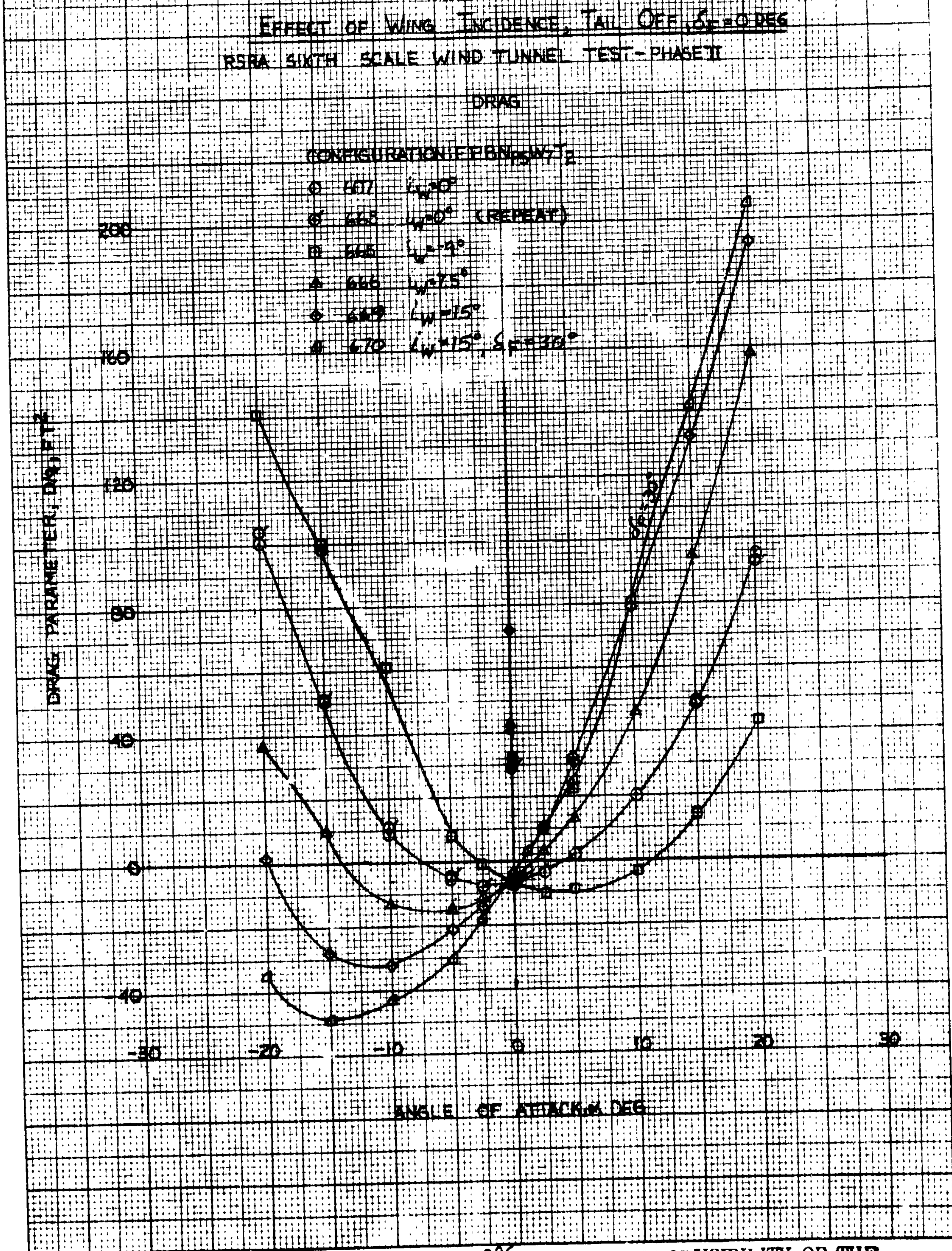

EFFECT OF WING INCIDENCE - BASELINE COMPOUND
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
DRAG
CONFIGURATION: FPRN W T B
483 $i_W = 0°$
487 $i_W = -9°$
488 $i_W = 15°$
491 $i_W = 15°, \delta_F = 30°$
490 $i_W = 15°$
DRAG PARAMETER, D/q, FT²
200
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

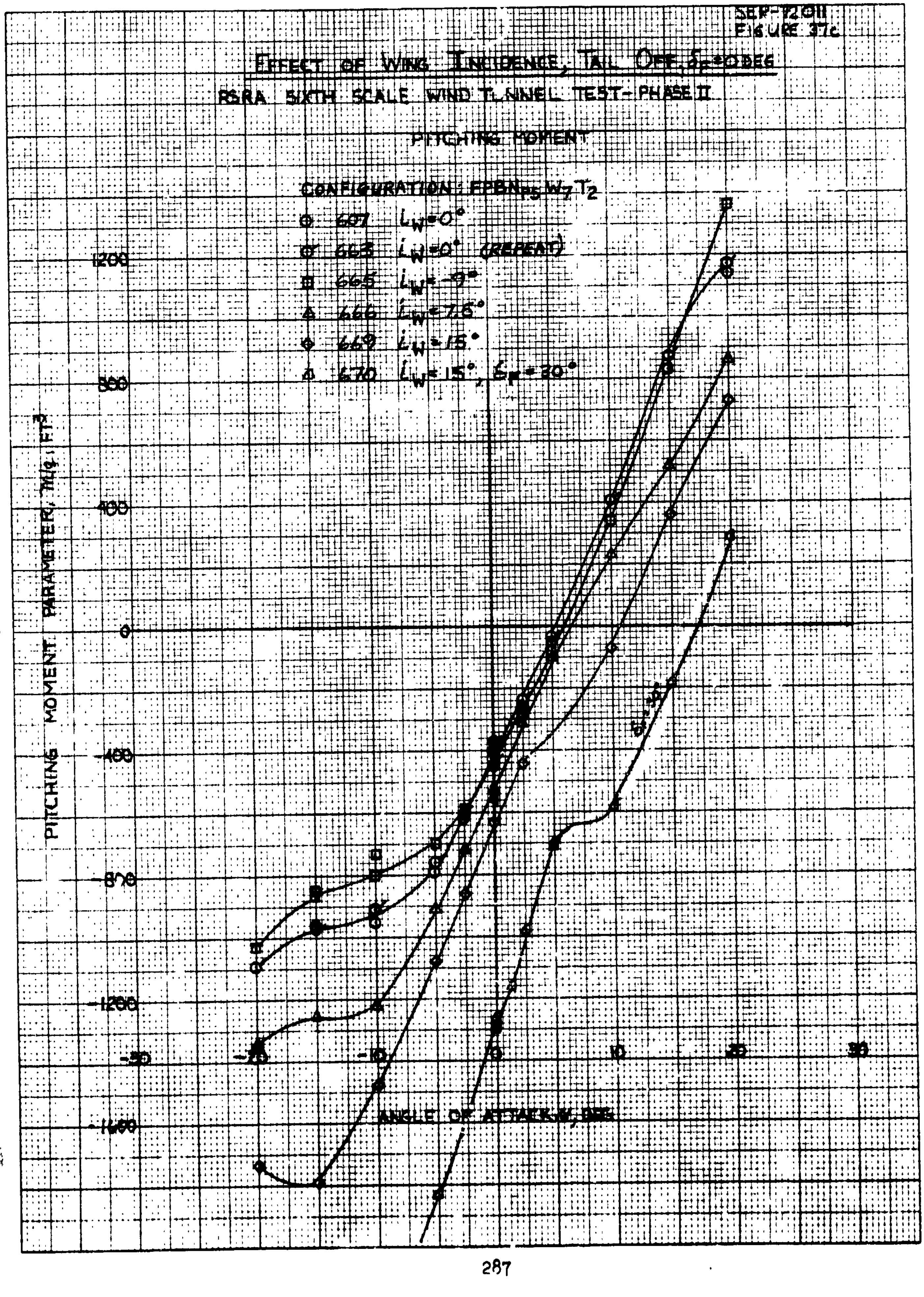
SER-72011
FIGURE 36c

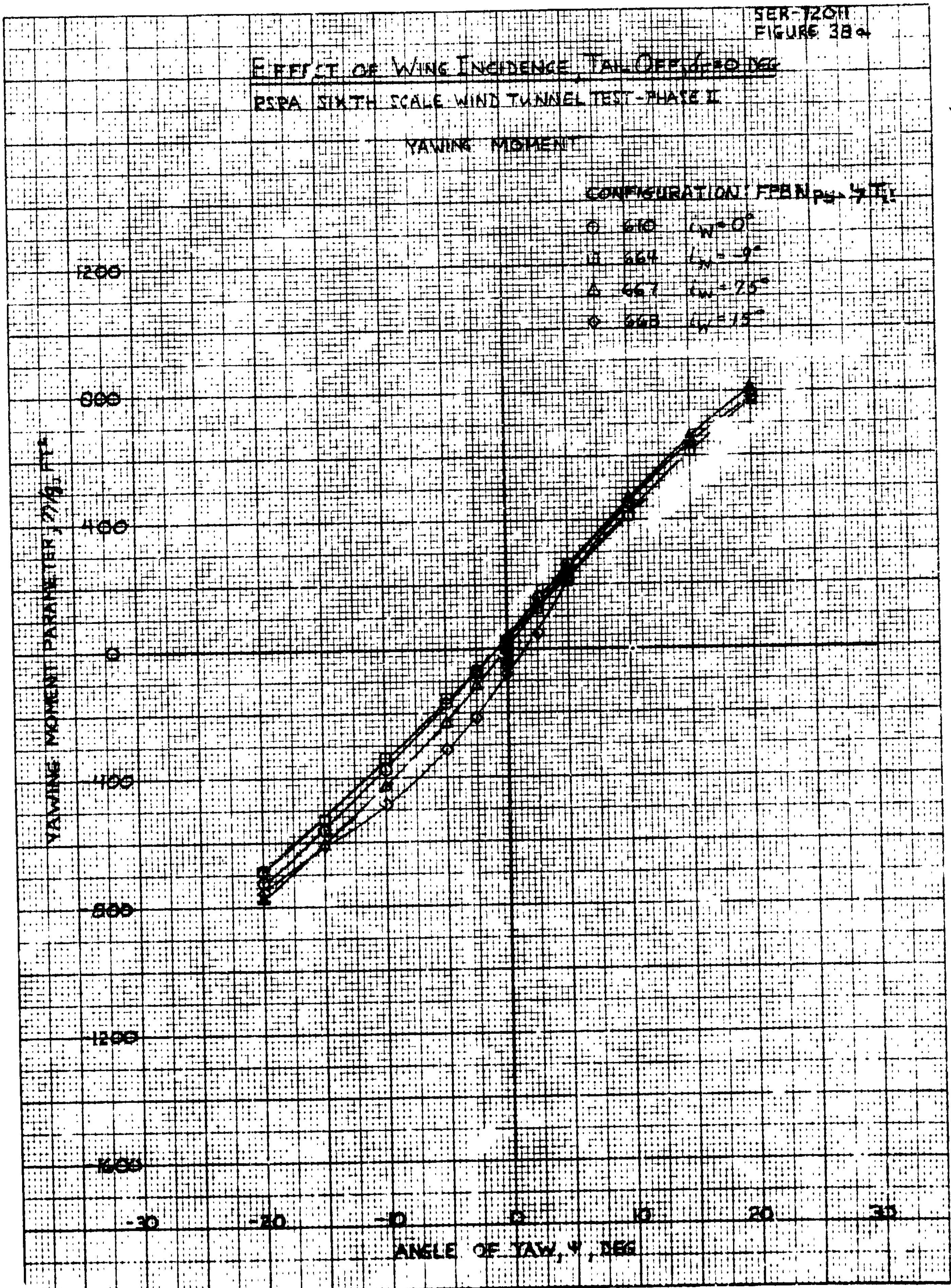


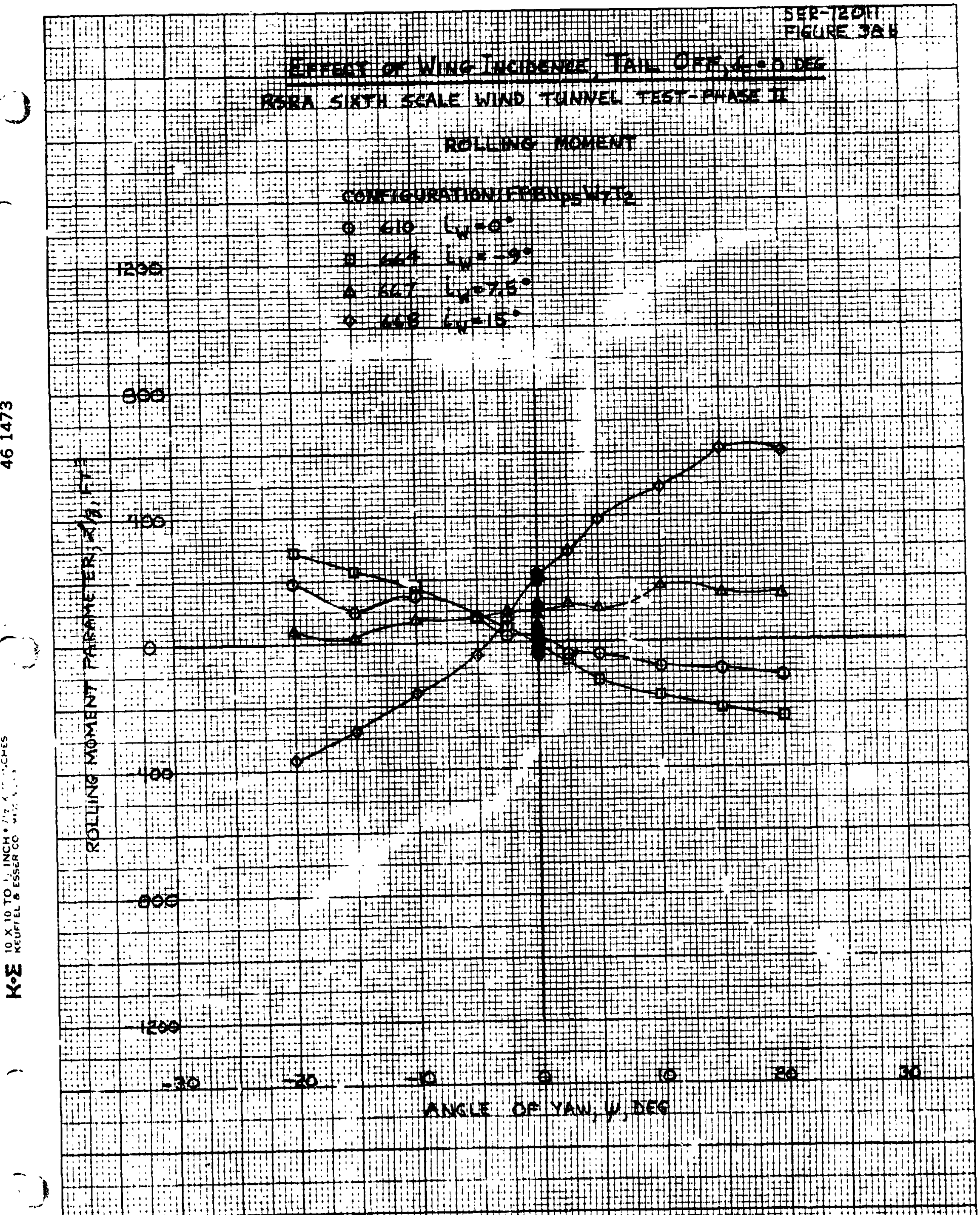

SER-72011
FIGURE 37a
EFFECT OF WING INCIDENCE, TAIL OFF, δF = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT
CONFIGURATION: FPBN95W7T2
669 iW=15°
670 iW=15°, δF=30°
607 iW=0°
663 iW=0° (REPEAT)
665 iW=-9°
666 iW=7.5°
δF=30°
LIFT PARAMETER, L/q, FT²
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG
46 1473
K•E 10 X 10 TO 1/2 INCH KEUFFEL & ESSER CO

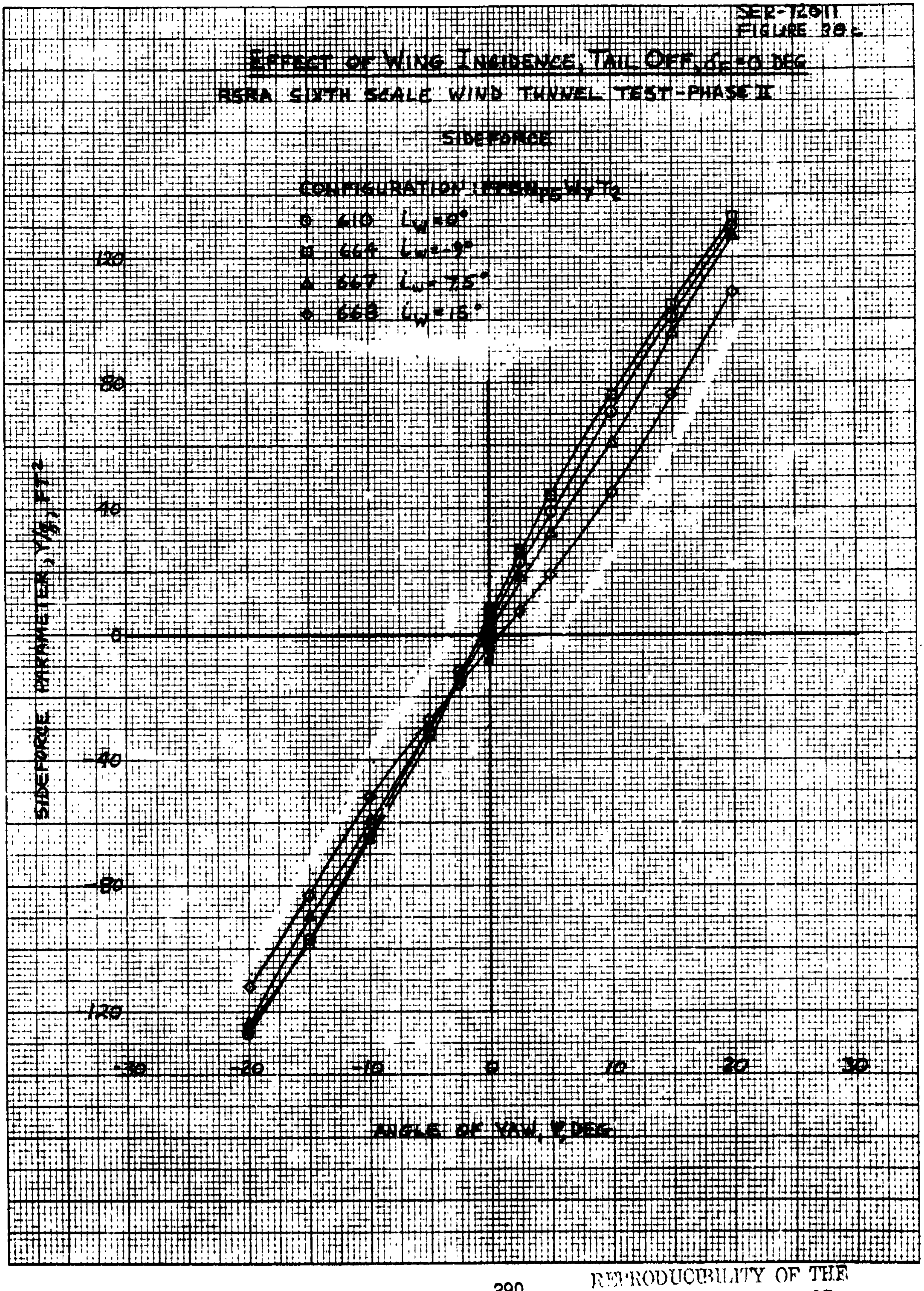
SER-72011
FIGURE 37b

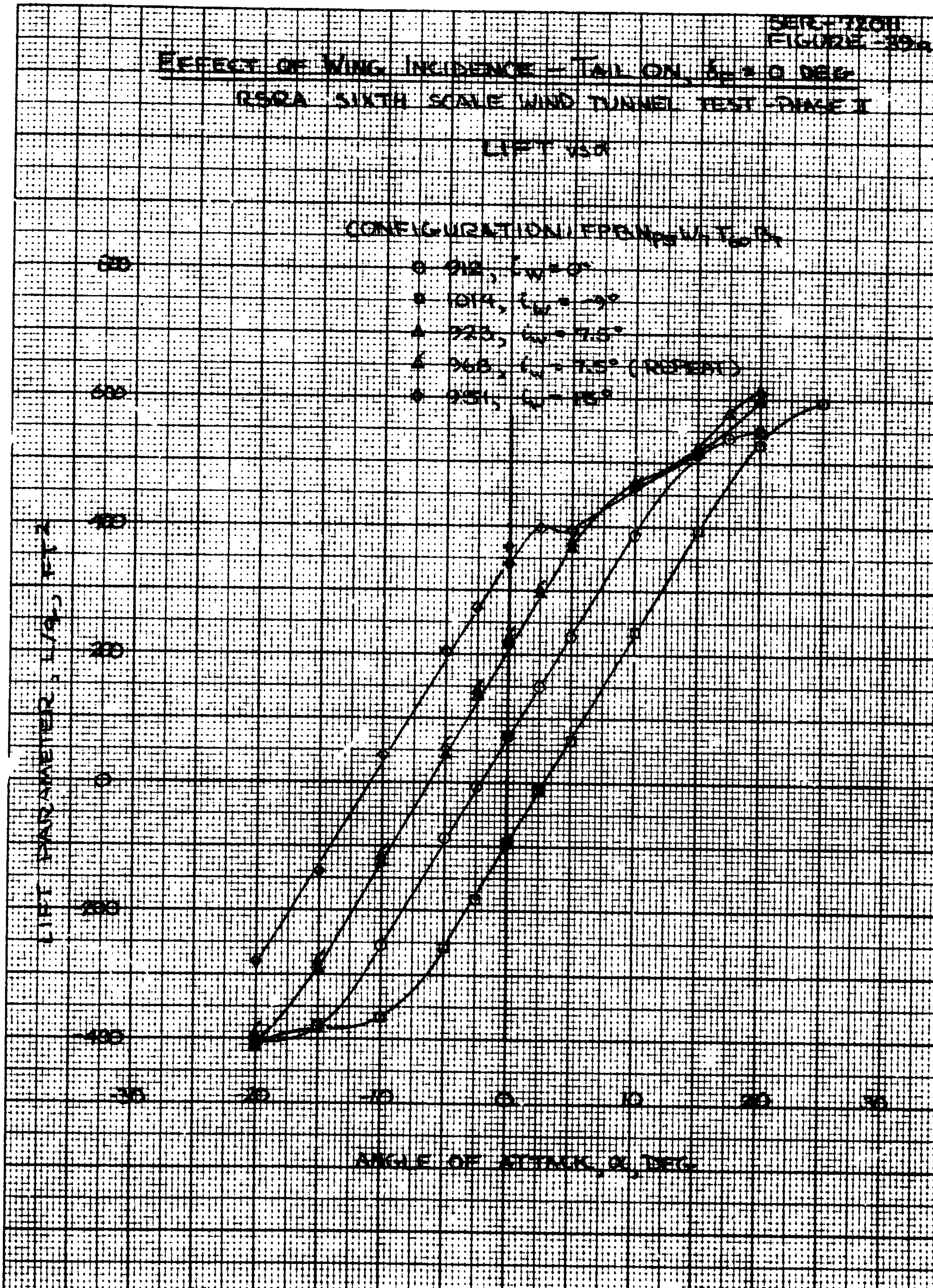



SEF-72011
FIGURE 37c
EFFECT OF WING INCIDENCE, TAIL OFF, δ_F=0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
PITCHING MOMENT
CONFIGURATION: $FPBN_{P5}W_7T_2$
607 i_W=0°
663 i_W=0° (REPEAT)
665 i_W=-9°
666 i_W=7.5°
669 i_W=15°
670 i_W=15°, δ_F=30°
PITCHING MOMENT PARAMETER, M/q, FT^3
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG


SER-72011
FIGURE 38a
EFFECT OF WING INCIDENCE, TAIL OFF, ψ=0 DEG
PSPA SIXTH SCALE WIND TUNNEL TEST-PHASE II
YAWING MOMENT
CONFIGURATION: FPBN
○ 610 iw=0°
□ 664 iw=-9°
△ 667 iw=7.5°
◇ 668 iw=15°
YAWING MOMENT PARAMETER, $\mathcal{N}/q_t$, FT³
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG


SER-72011
FIGURE 386
EFFECT OF WING INCIDENCE, TAIL OFF, i_t = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
ROLLING MOMENT
CONFIGURATION: FPBN$_{PS}$W$_7$T$_2$
610 i_W=0°
664 i_W=-9°
667 i_W=7.5°
668 i_W=15°
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ROLLING MOMENT PARAMETER, L/q, FT³
ANGLE OF YAW, ψ, DEG
46 1473
K•E 10 X 10 TO 1/2 INCH KEUFFEL & ESSER CO.


SER-72611
FIGURE 38c
EFFECT OF WING INCIDENCE, TAIL OFF, δ_F=0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
SIDEFORCE
CONFIGURATION: FPBN$_{PC}$W$_Y$T$_2$
610 i_W=0°
664 i_W=-9°
667 i_W=7.5°
668 i_W=15°
SIDEFORCE PARAMETER, Y/q, FT²
ANGLE OF YAW, Ψ, DEG
120
80
40
0
-40
-80
-120
-30
-20
-10
0
10
20
30


SER-72011
FIGURE-39a
EFFECT OF WING INCIDENCE - TAIL ON, δF = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT vs α
CONFIGURATION: FPBNpcWiTcDe
912, iw = 0°
1014, iw = -9°
923, iw = 7.5°
968, iw = 7.5° (REPEAT)
951, iw = 15°
LIFT PARAMETER, L/q, FT²
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

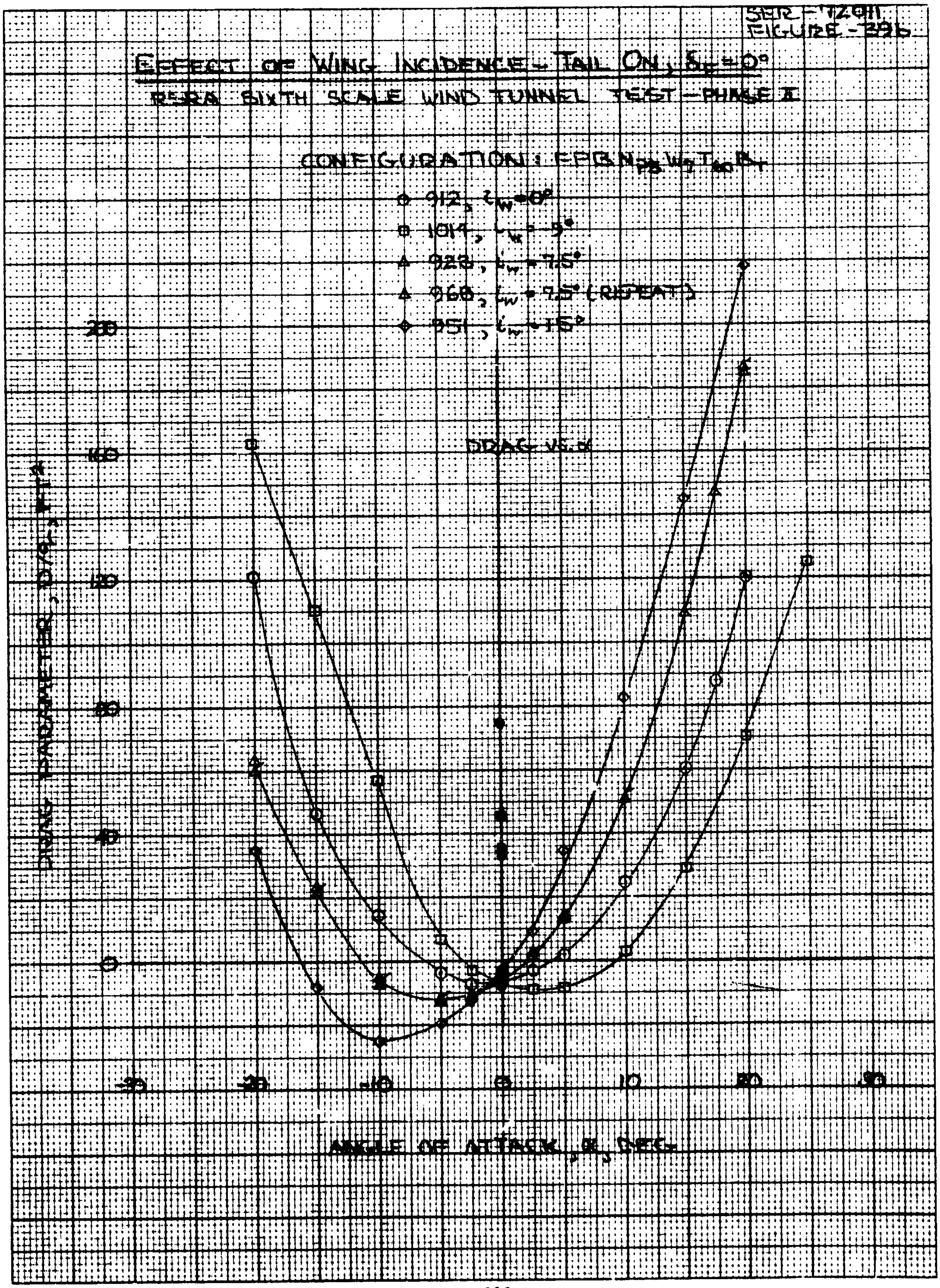
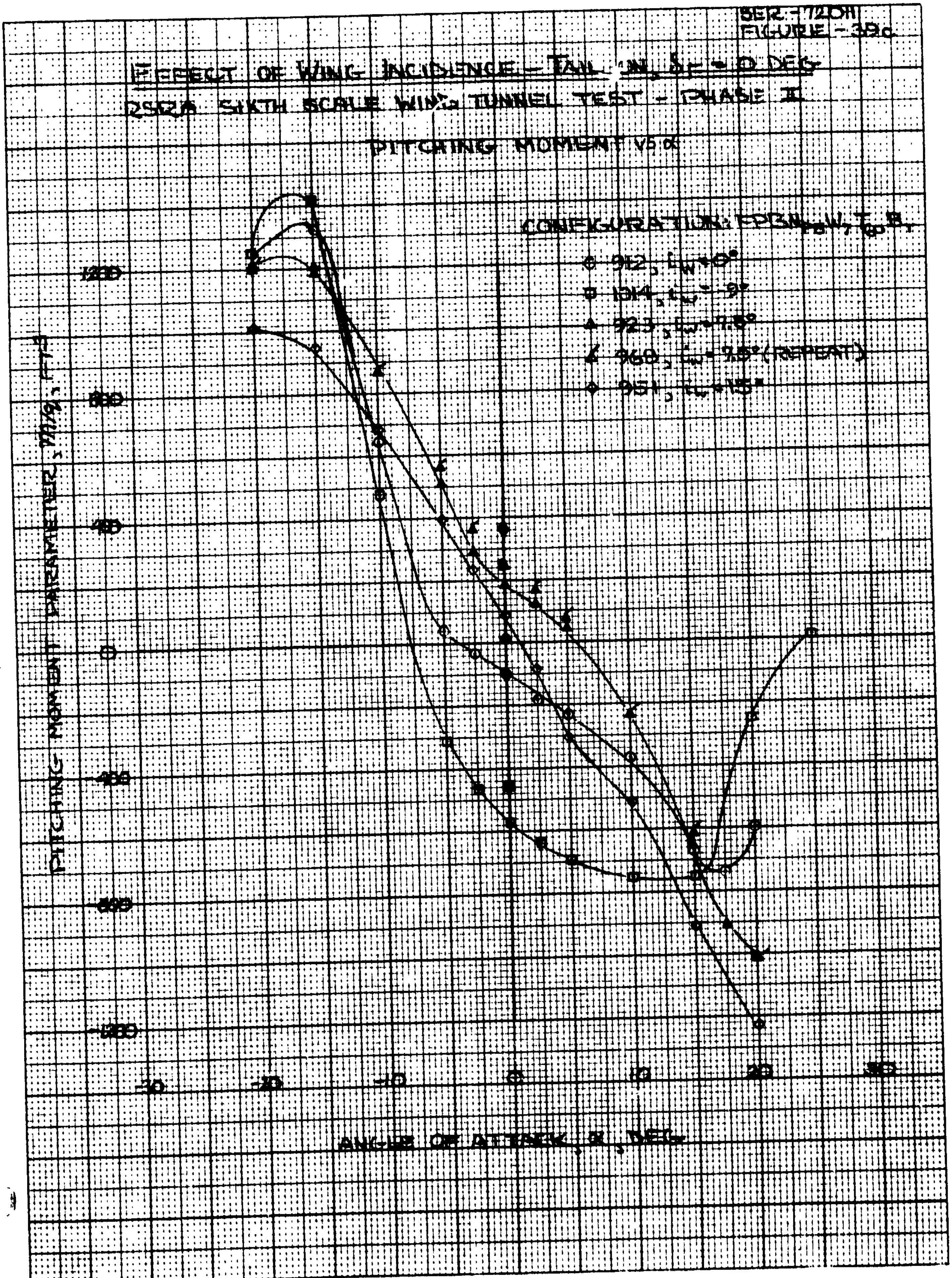
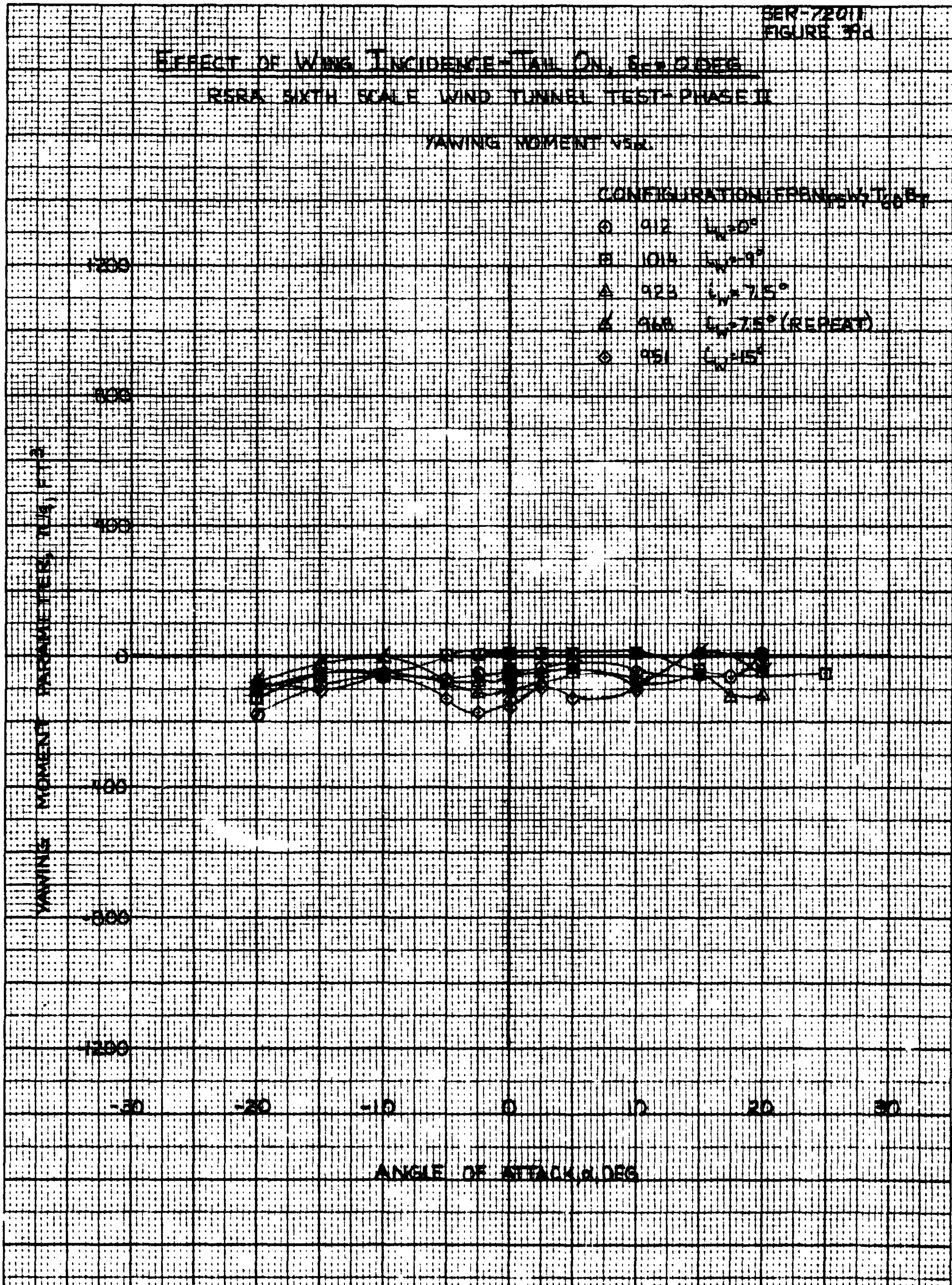
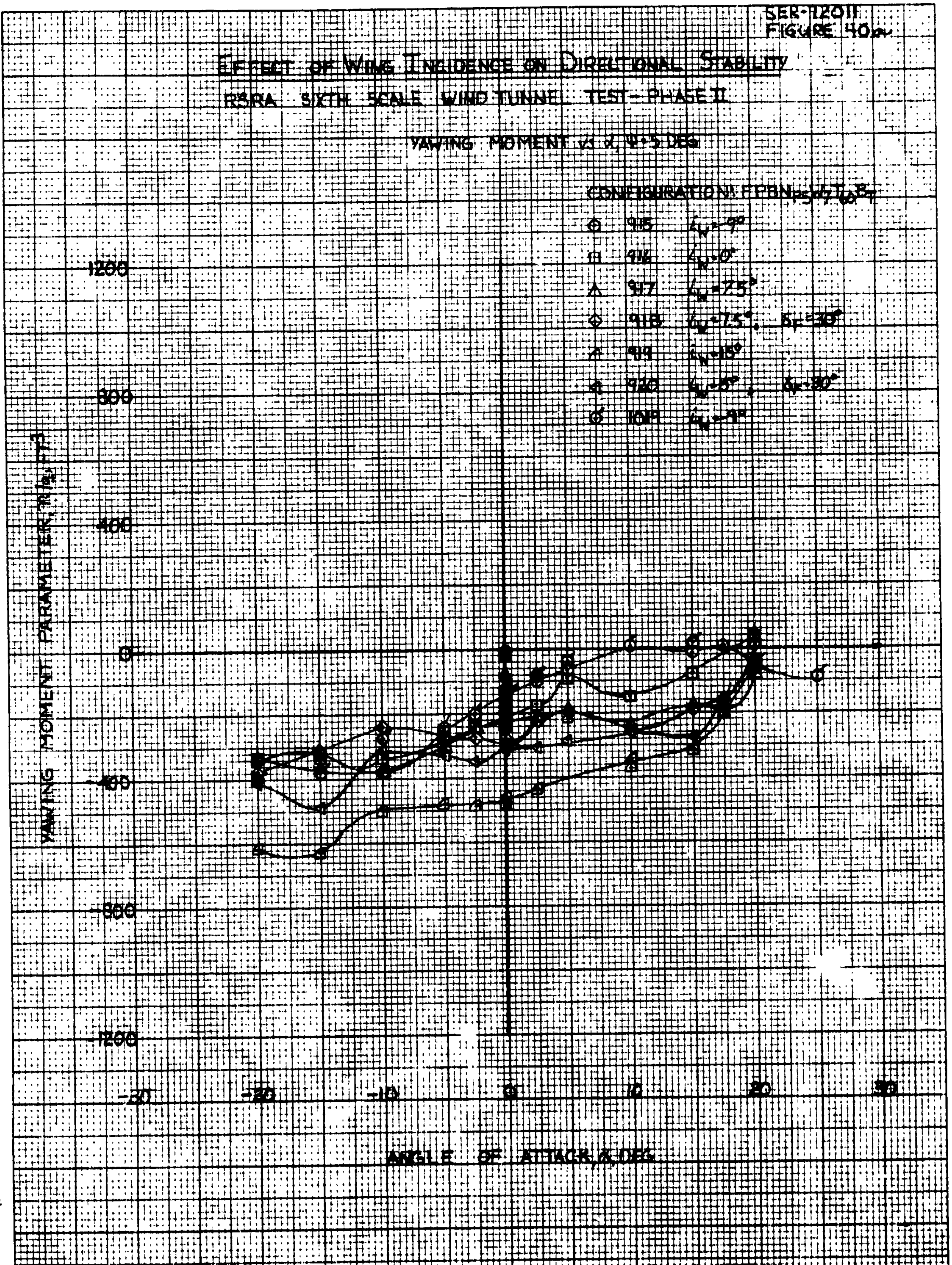


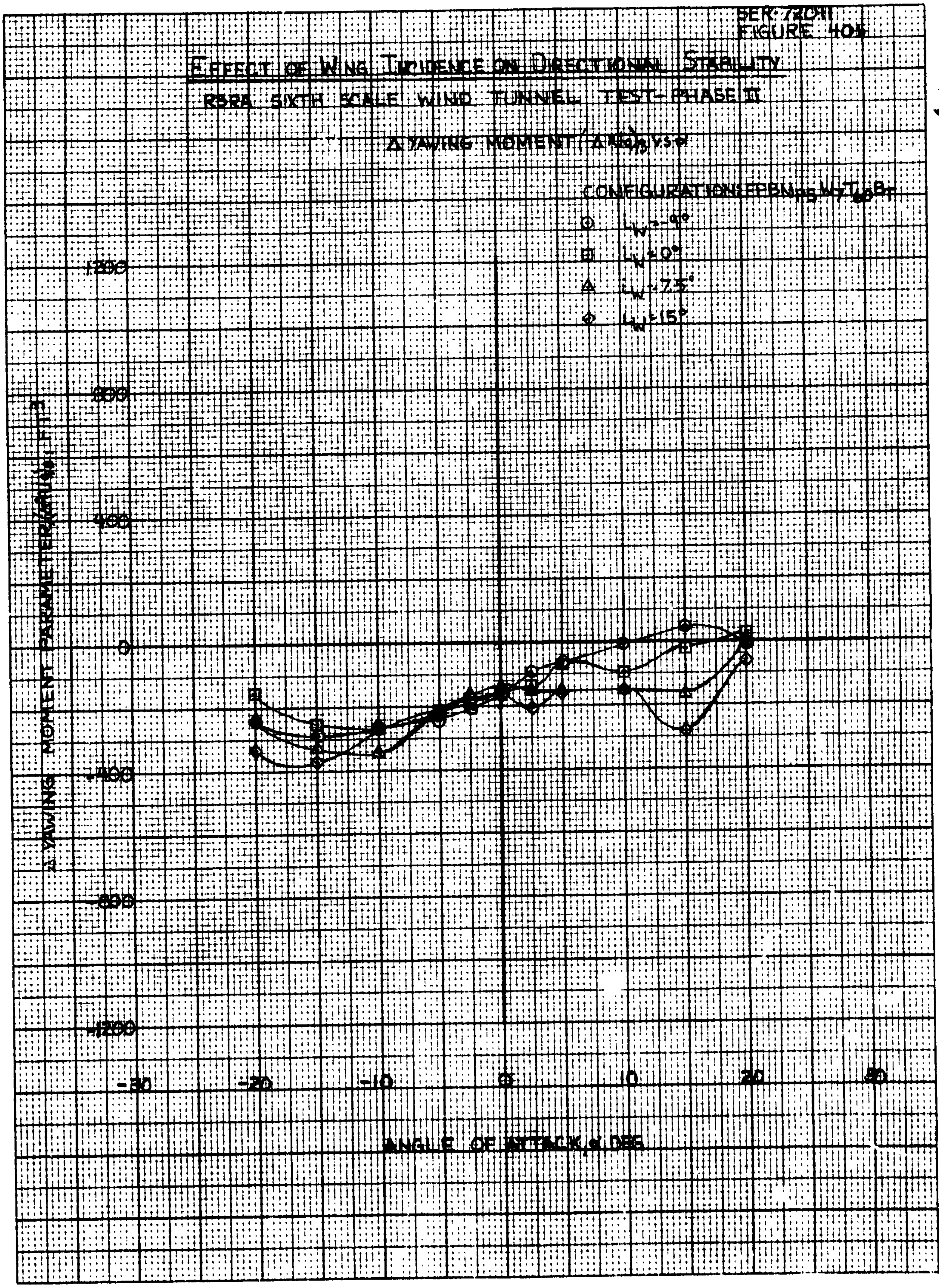
FIGURE - 39b
EFFECT OF WING INCIDENCE - TAIL ON
SIXTH SCALE WIND TUNNEL TEST - PHASE II
912, i_W = 0°
1014, i_W = -5°
923, i_W = 7.5°
968, i_W = 7.5° (REPEAT)
951, i_W = 15°
DRAG VS. α
200
160
120
80
40
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG.

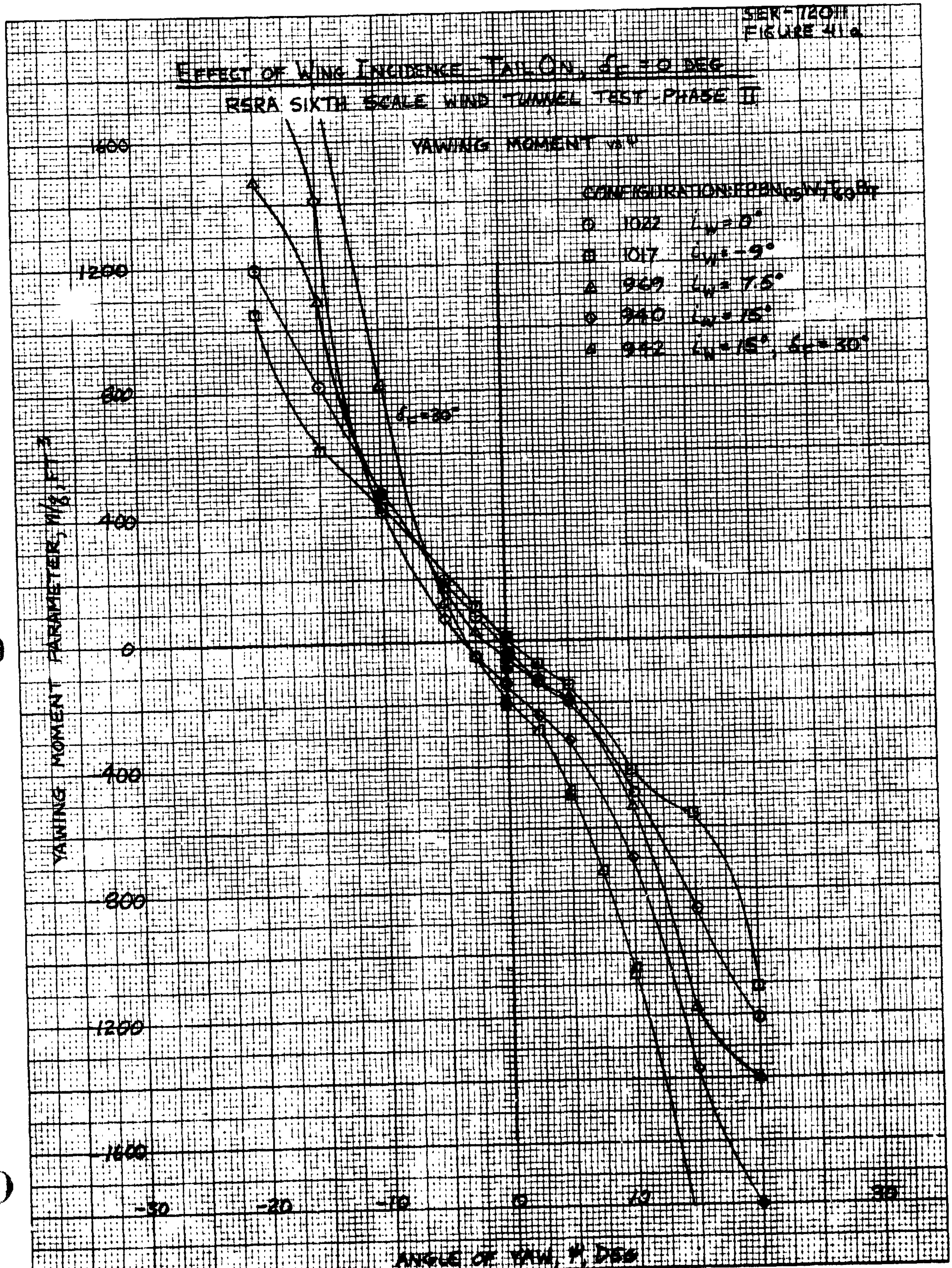


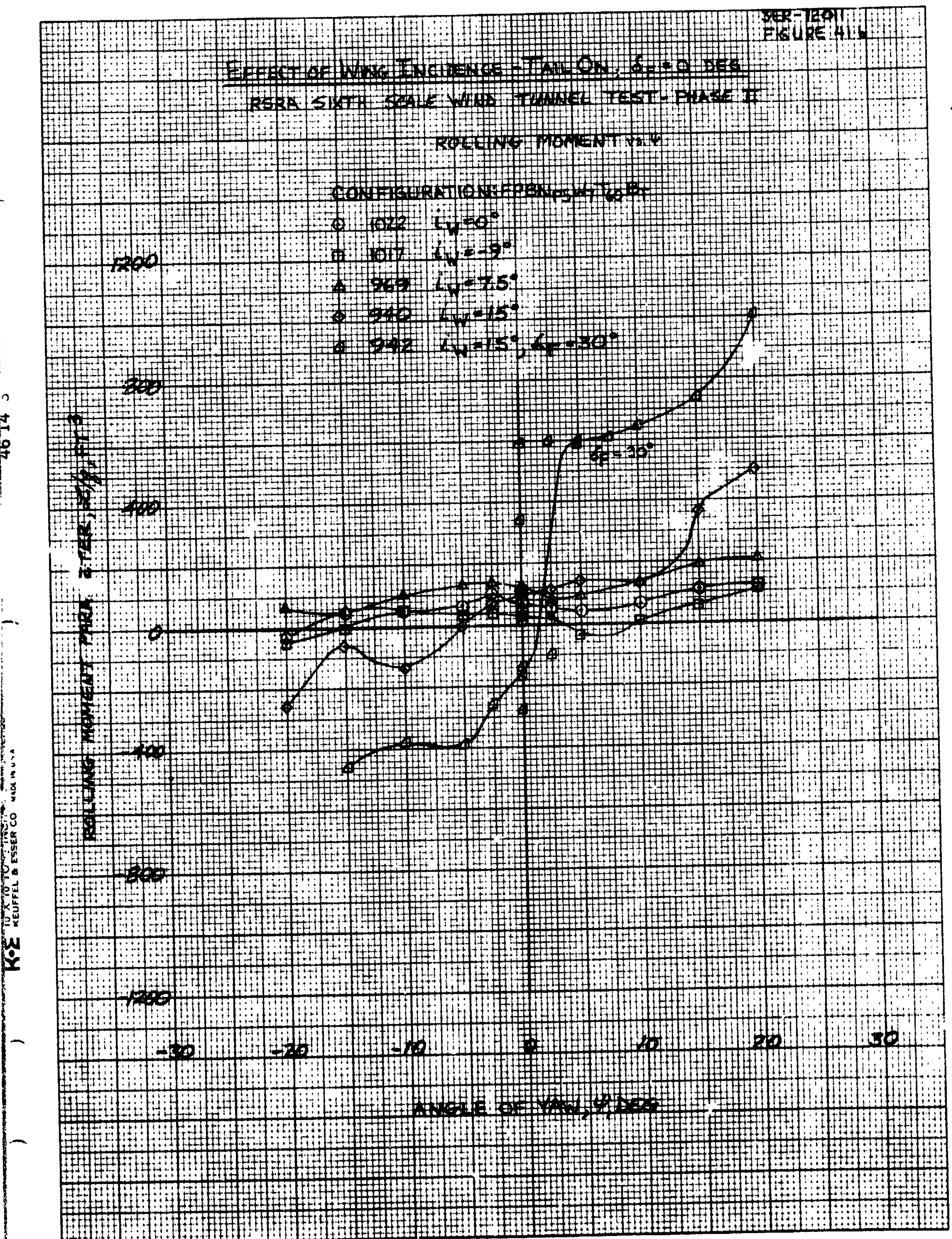
SER-72011
FIGURE-39c
EFFECT OF WING INCIDENCE - TAIL ON, δ_F = 0 DEG
2592A SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT VS α
CONFIGURATION:
912, i_W = 0°
1314, i_W = 9°
923, i_W = 7.5°
960, i_W = 7.5° (REPEAT)
951, i_W = 15°
PITCHING MOMENT PARAMETER, M/q, FT³
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG


SER-72011
FIGURE 39d
EFFECT OF WING INCIDENCE - TAIL ON, δ = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT VS α
CONFIGURATION: FPBN
912 i_W = 0°
1014 i_W = -9°
923 i_W = 7.5°
968 i_W = 7.5° (REPEAT)
951 i_W = 15°
1200
800
400
0
-400
-800
-1200
YAWING MOMENT PARAMETER, (LB, FT)
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

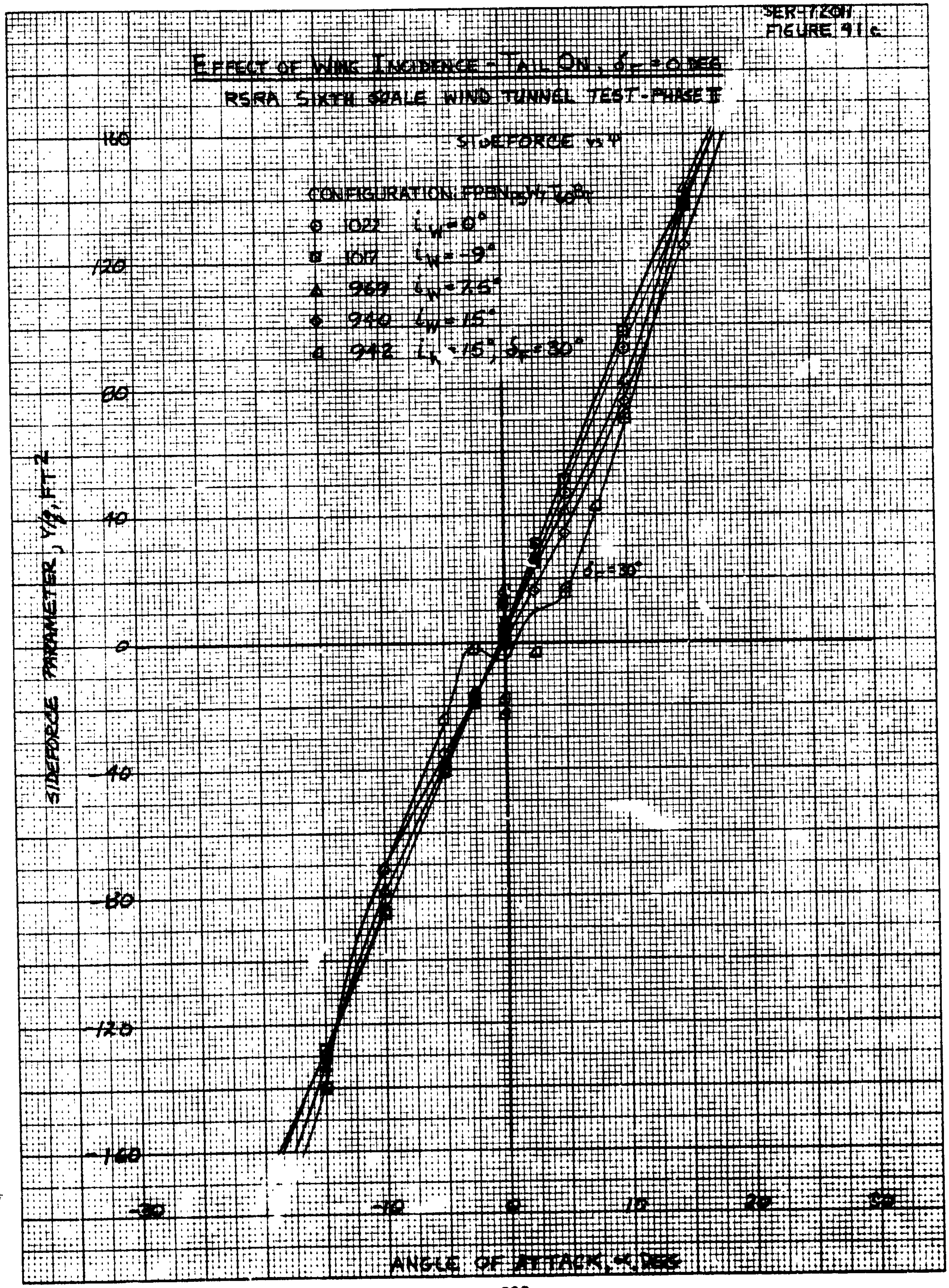

SER-72011
FIGURE 40
EFFECT OF WING INCIDENCE ON DIRECTIONAL STABILITY
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT vs α, ψ=5 DEG
CONFIGURATION: FPBN$_{P5}$W$_7$T$_{60}$B$_7$
915 i_W=-9°
916 i_W=0°
917 i_W=7.5°
918 i_W=7.5°, δ_F=30°
919 i_W=15°
920 i_W=-5°, δ_F=30°
1019 i_W=-9°
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
YAWING MOMENT PARAMETER, N/q, FT³
ANGLE OF ATTACK, α, DEG


SER 72011
FIGURE 405
EFFECT OF WING INCIDENCE ON DIRECTIONAL STABILITY
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
Δ YAWING MOMENT (ΔN/q)β VS α
CONFIGURATION: FPBN W T B
i_W = -9°
i_W = 0°
i_W = 7.5°
i_W = 15°
1200
800
400
0
-400
-800
-1200
Δ YAWING MOMENT PARAMETER, FT³
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α DEG


EFFECT OF WING INCIDENCE - TAIL ON, δ_E = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT vs ψ
CONFIGURATION: F7BN05W1T60R
1022 i_W = 0°
1017 i_W = -9°
969 i_W = 7.5°
940 i_W = 15°
942 i_W = 15°, δ_F = 30°
δ_F = 30°
1600
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
30
YAWING MOMENT PARAMETER, N/q, FT^3
ANGLE OF YAW, ψ, DEG


SER-72601
FIGURE 41.b
EFFECT OF WING INCIDENCE - TAIL ON, δF = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT vs. Ψ
CONFIGURATION: FPBN
1022 iW = 0°
1017 iW = -9°
969 iW = 7.5°
940 iW = 15°
942 iW = 15°, δF = 30°
δF = 30°
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ROLLING MOMENT PARA.
ANGLE OF YAW, Ψ, DEG
K+E 10 X 10 TO 1/2 INCH 46 1470
KEUFFEL & ESSER CO. MADE IN U.S.A.

SER-72011
FIGURE 91c



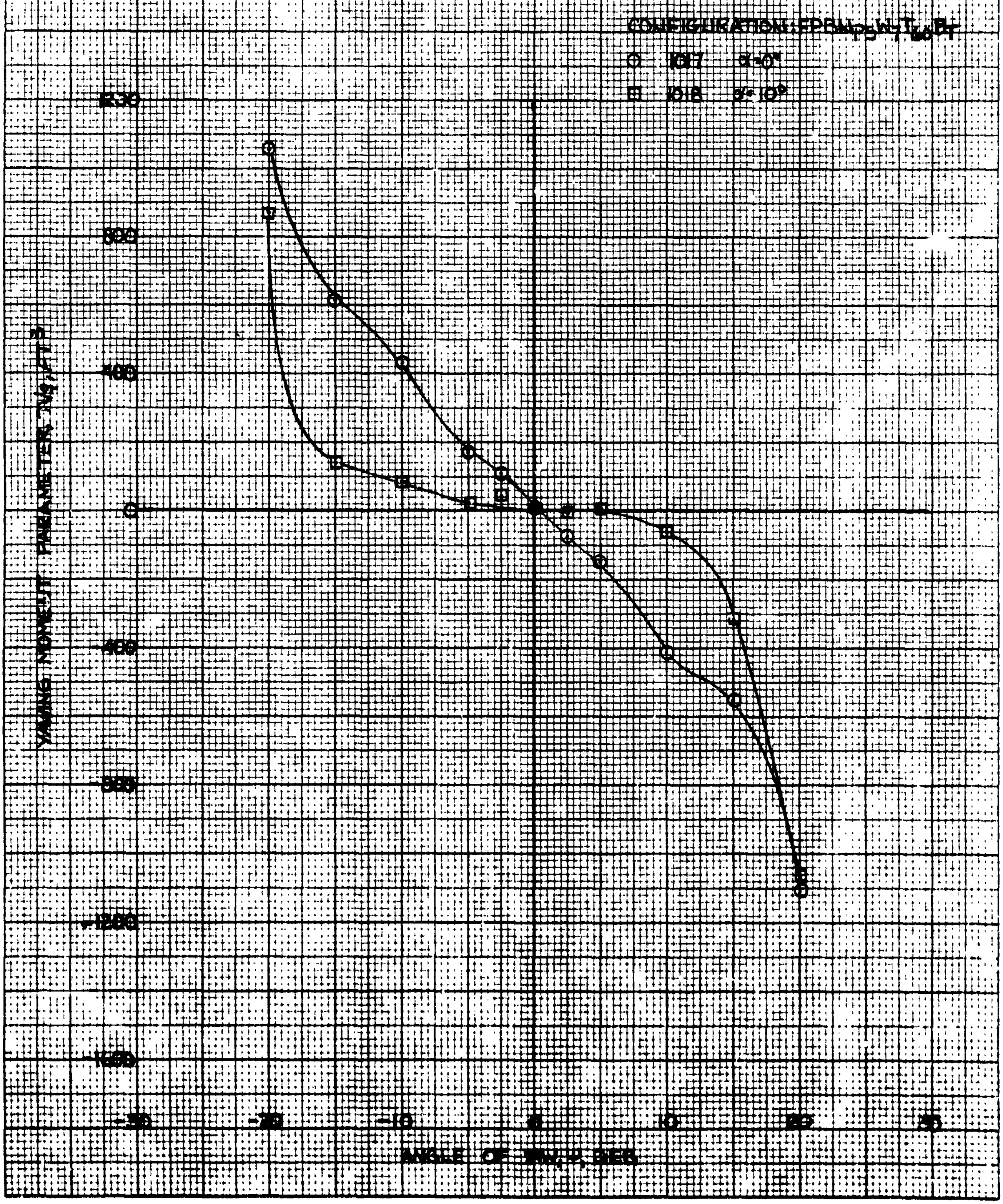
K•E 10 X 10 TO ½ INCH 7 X 10 INCHES KEUFFEL & ESSER CO. MADE IN U.S.A. 46 1473

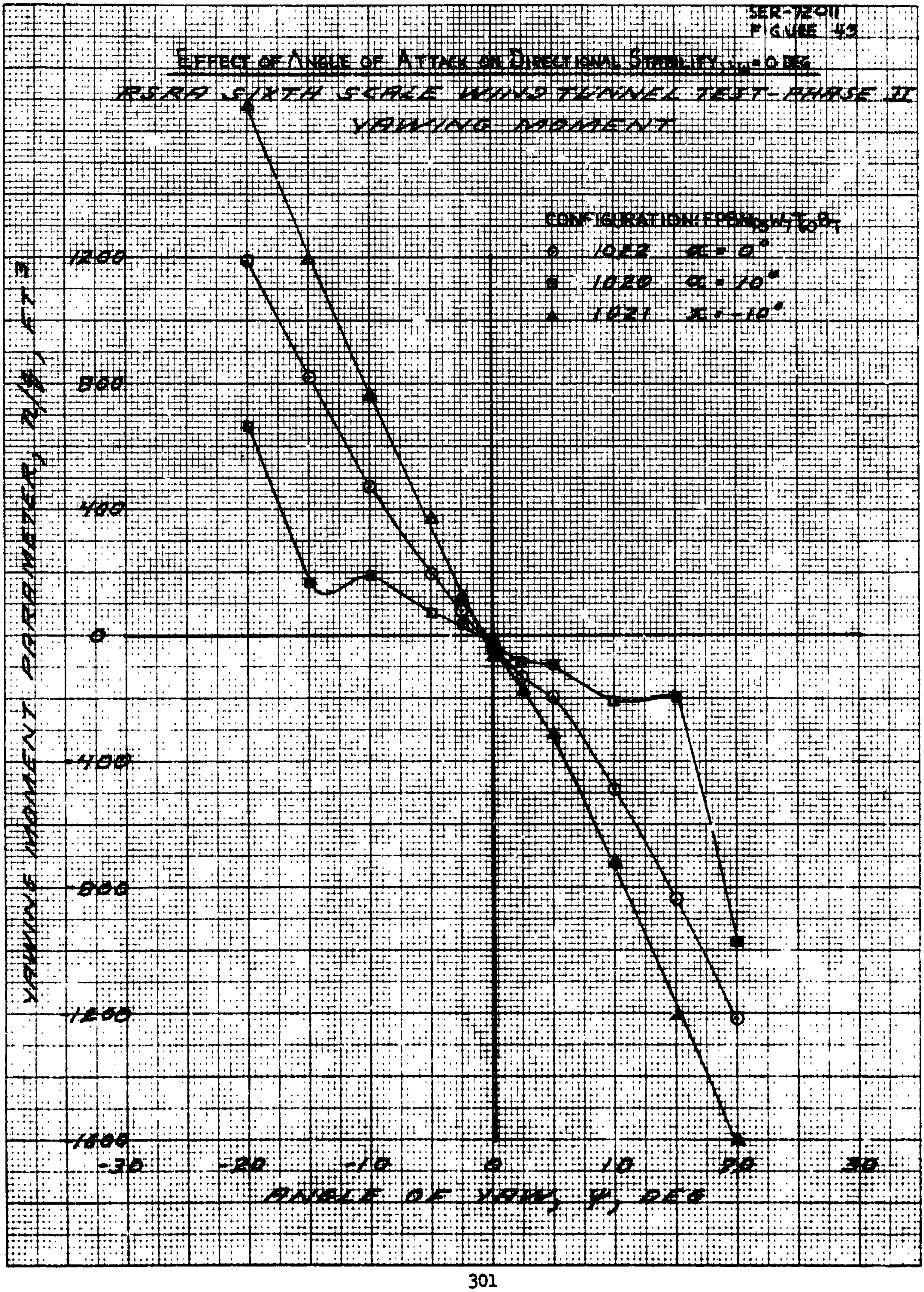
SER-12011
FIGURE 42

EFFECT OF ANGLE OF ATTACK ON DIRECTIONAL STABILITY

R52A SIXTH SCALE WIND TUNNEL TEST-PHASE II

YAWING MOMENT



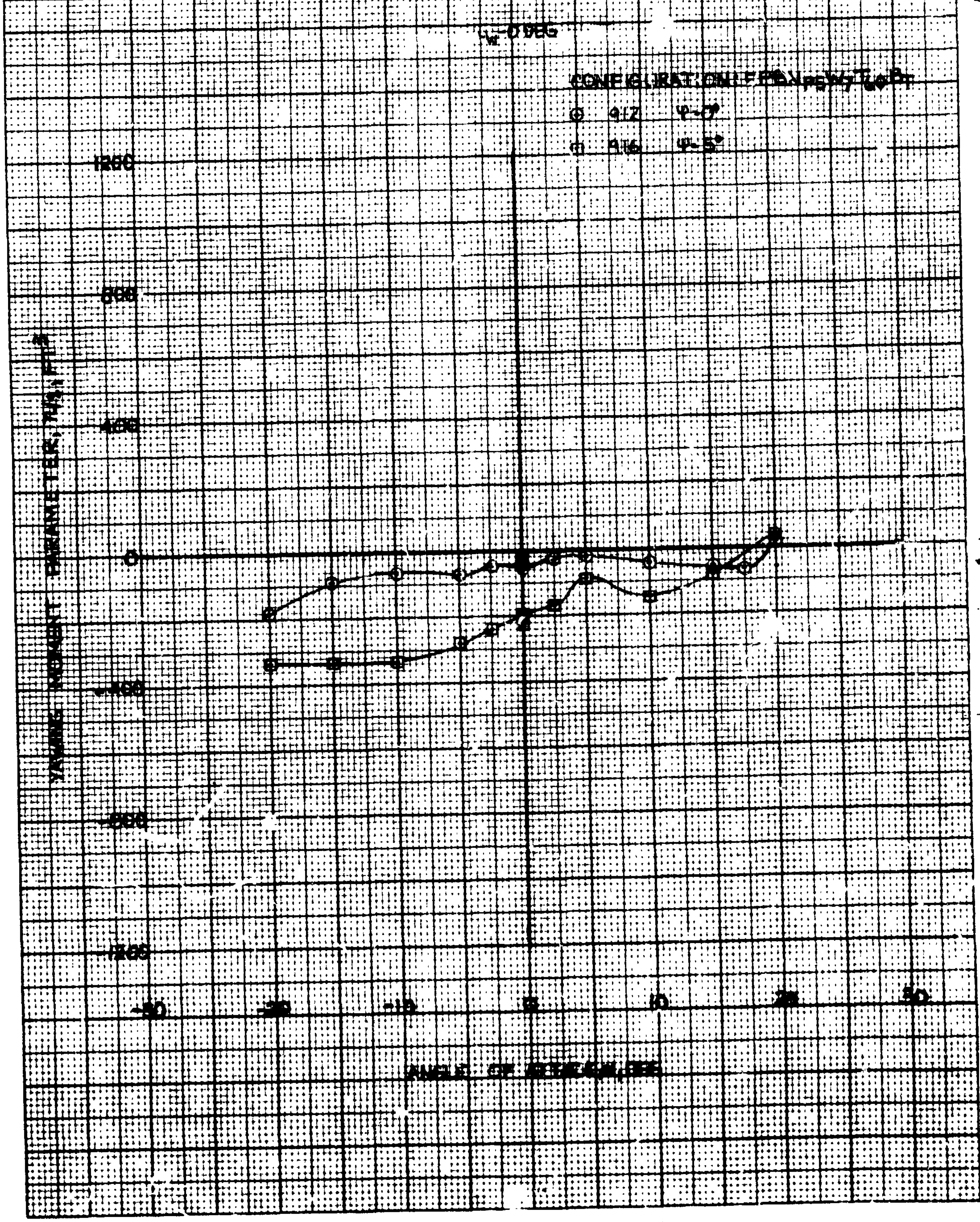


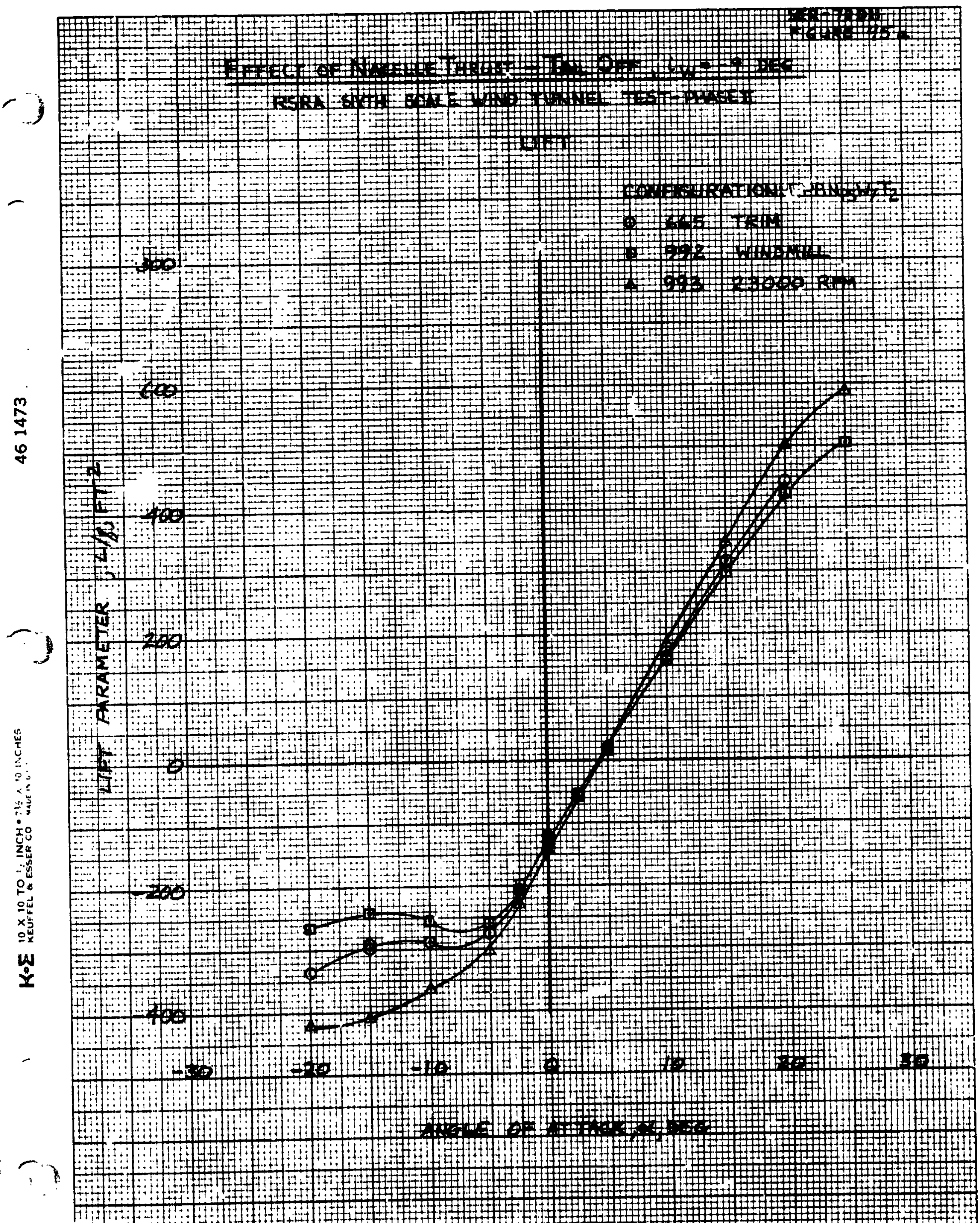
46 1473

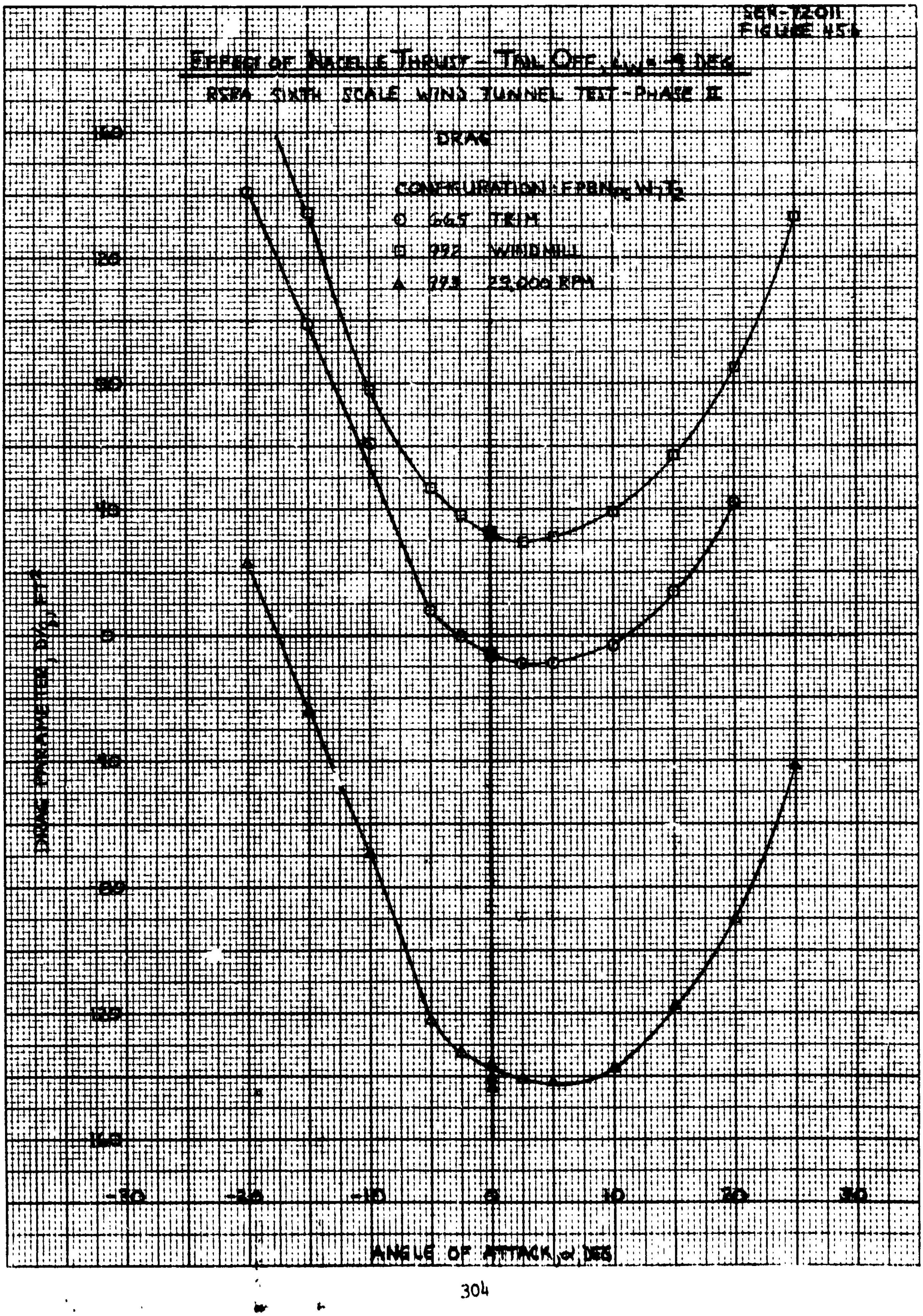
K•E 10 X 10 TO ½ INCH KEUFFEL & ESSER CO.

SER-72011
FIGURE 44

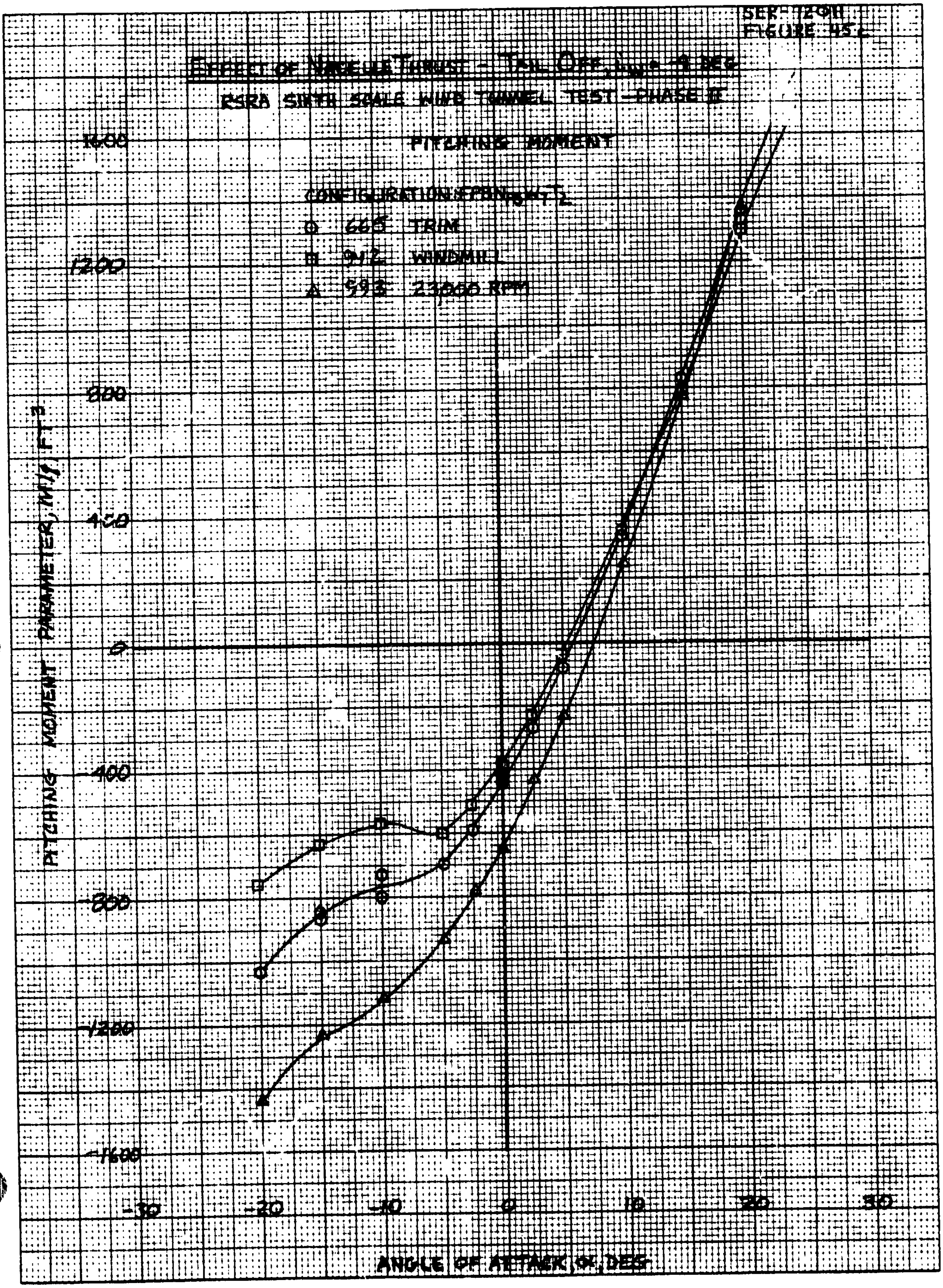
EFFECT OF ANGLE OF YAW ON DIRECTIONAL STABILITY-TAIL ON
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II

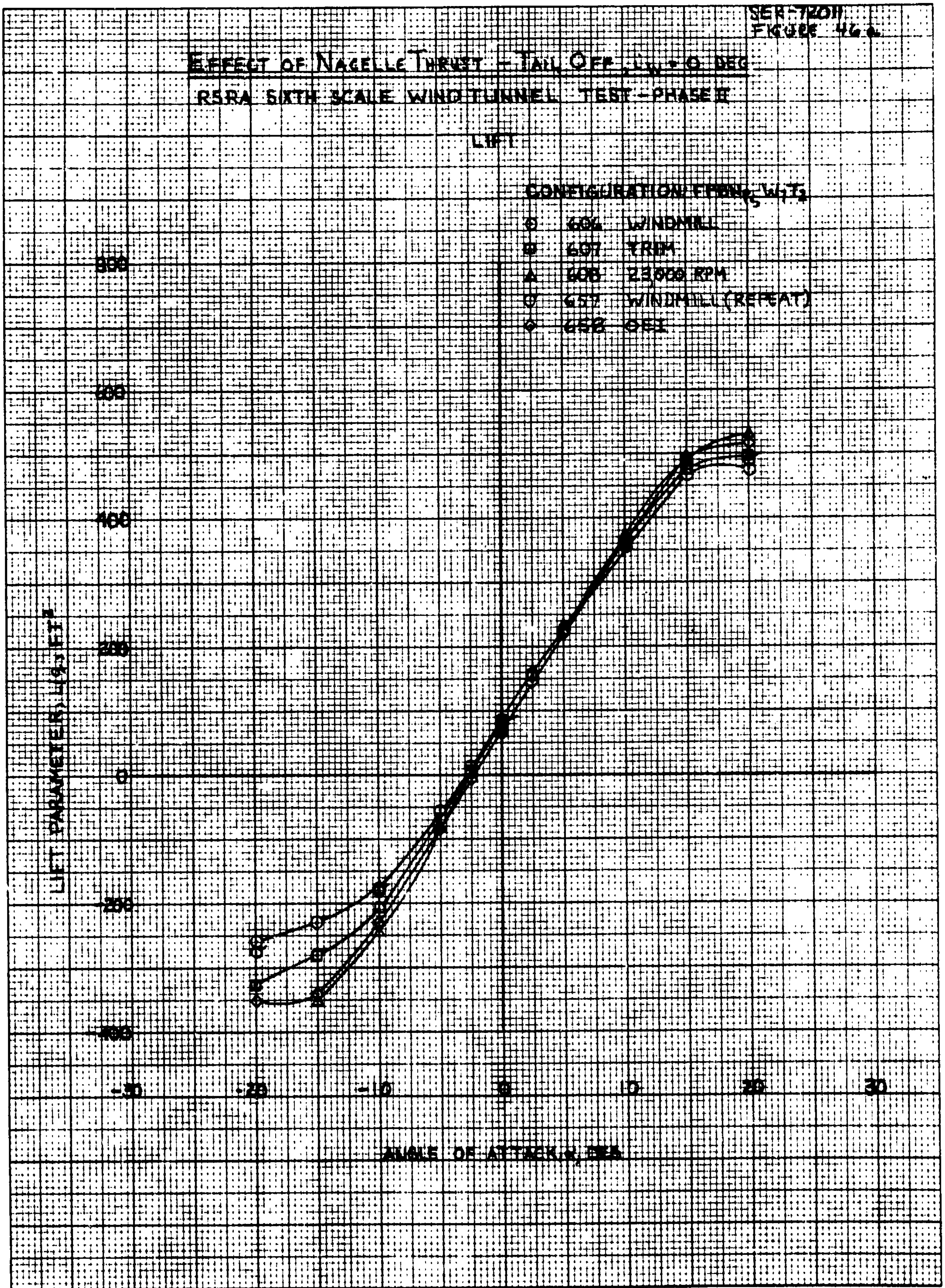



RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
LIFT
TRIM
992 WINDMILL
993 23000 RPM
LIFT PARAMETER
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK

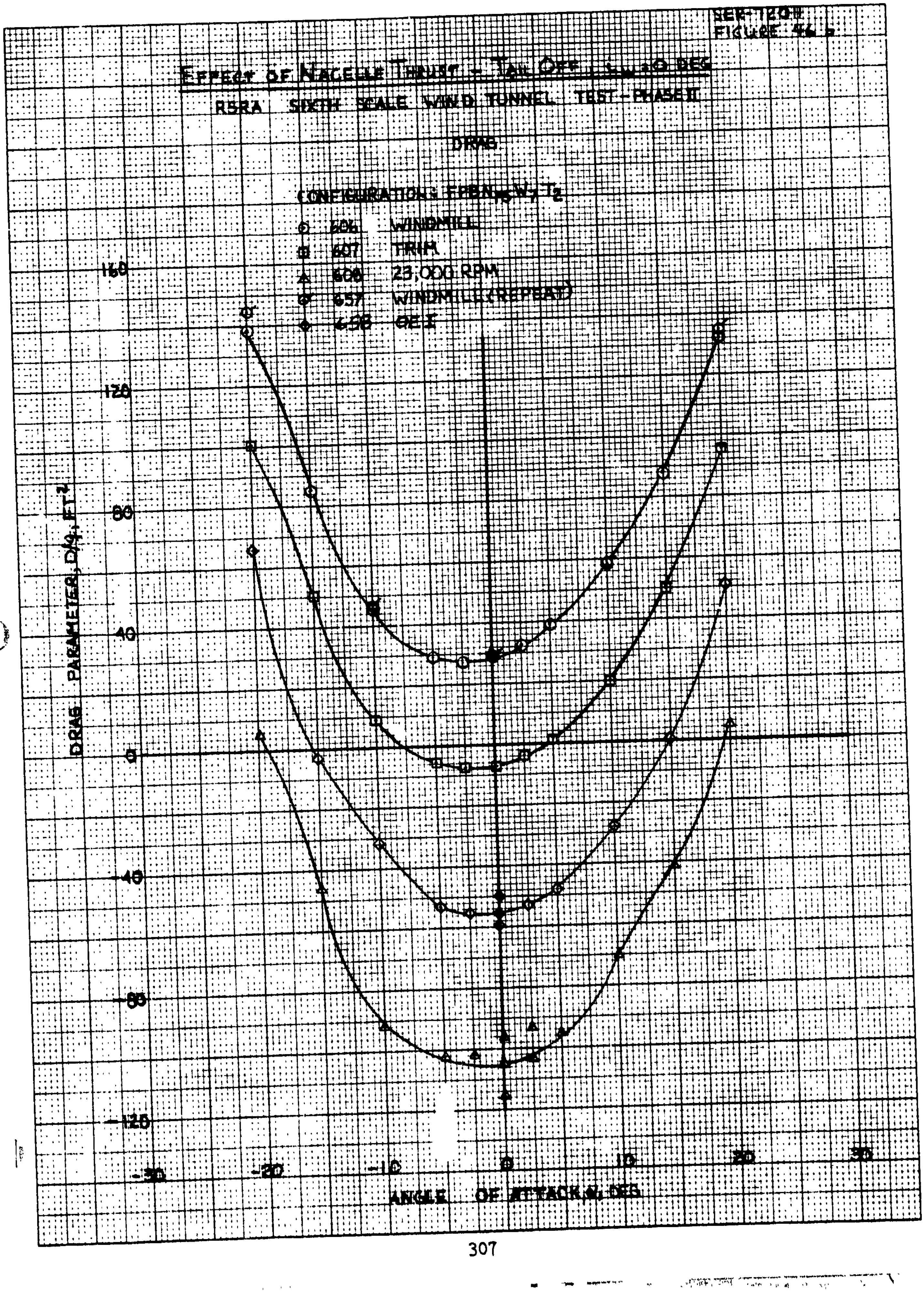


SER-72011
EFFECT OF NACELLE THRUST – TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
DRAG
CONFIGURATION
TRIM
WINDMILL
RPM
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG


SER-1201
FIGURE 45c
EFFECT OF NACELLE THRUST - TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT
CONFIGURATION:
665 TRIM
912 WINDMILL
593 23000 RPM
1600
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
PITCHING MOMENT PARAMETER
ANGLE OF ATTACK, DEG

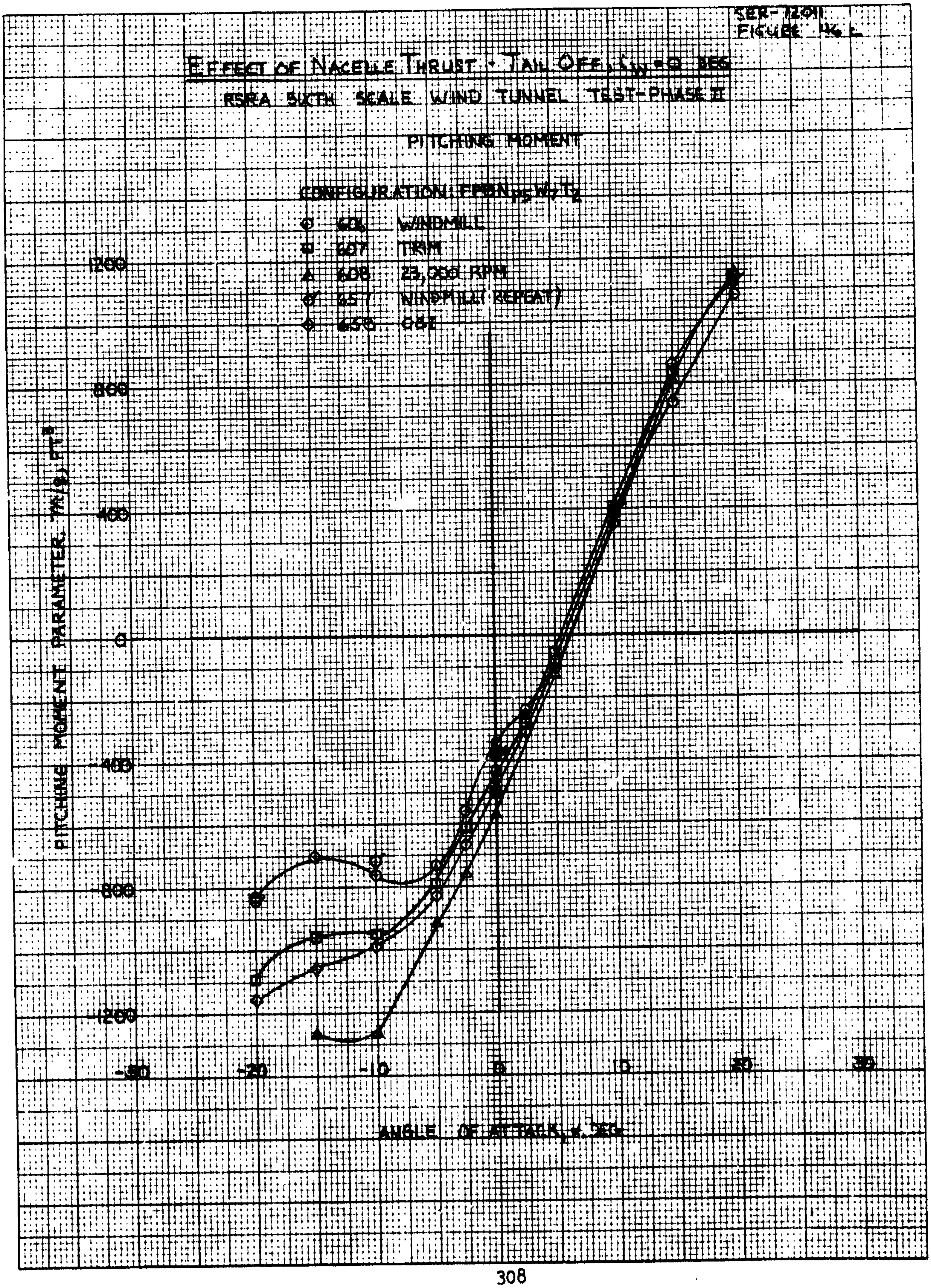


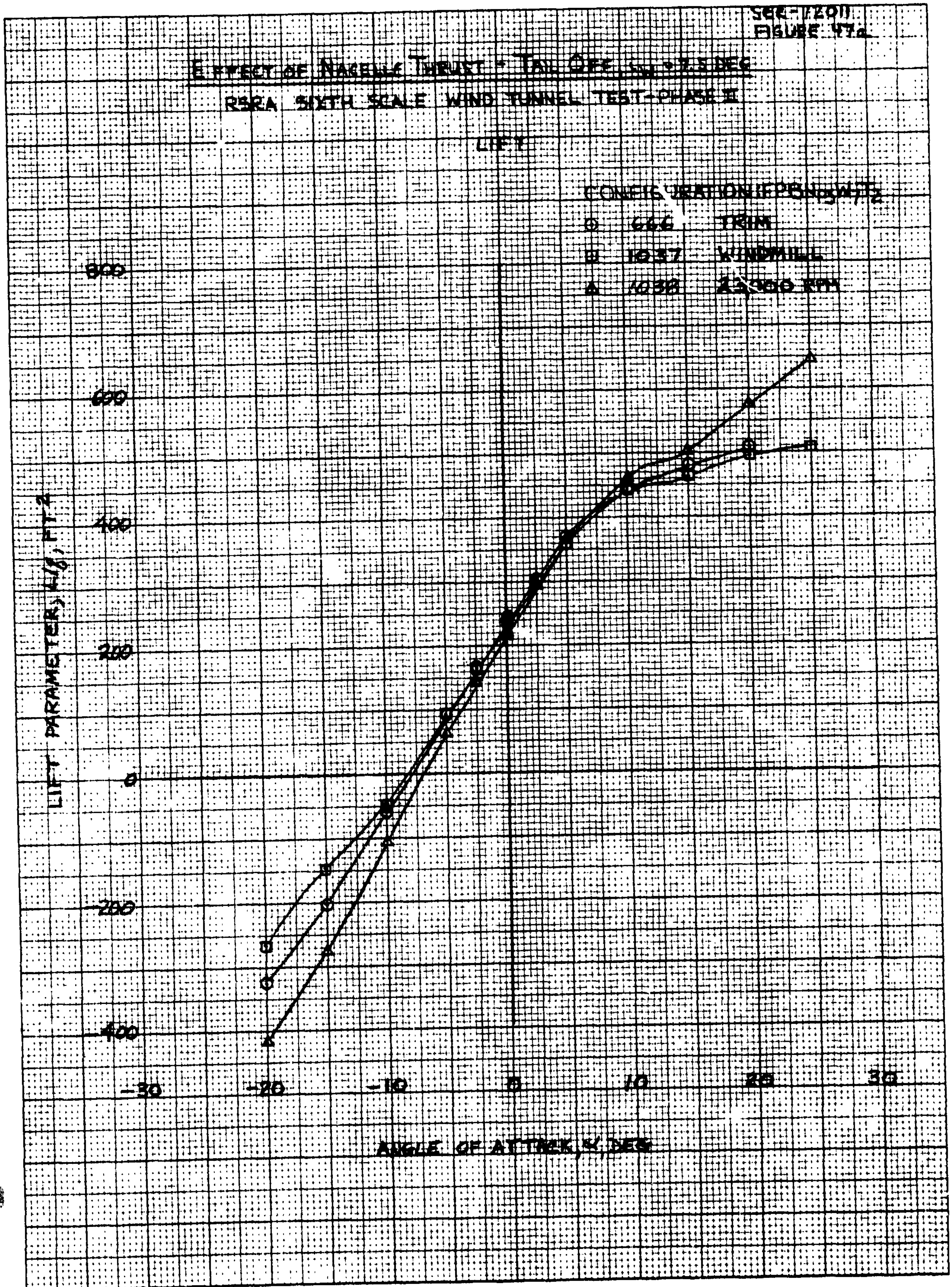
K-E 10 X 10 TO 1/2 INCH • 7 1/2 X 10 INCHES KEUFFEL & ESSER CO. MADE IN U.S.A. 46 1473

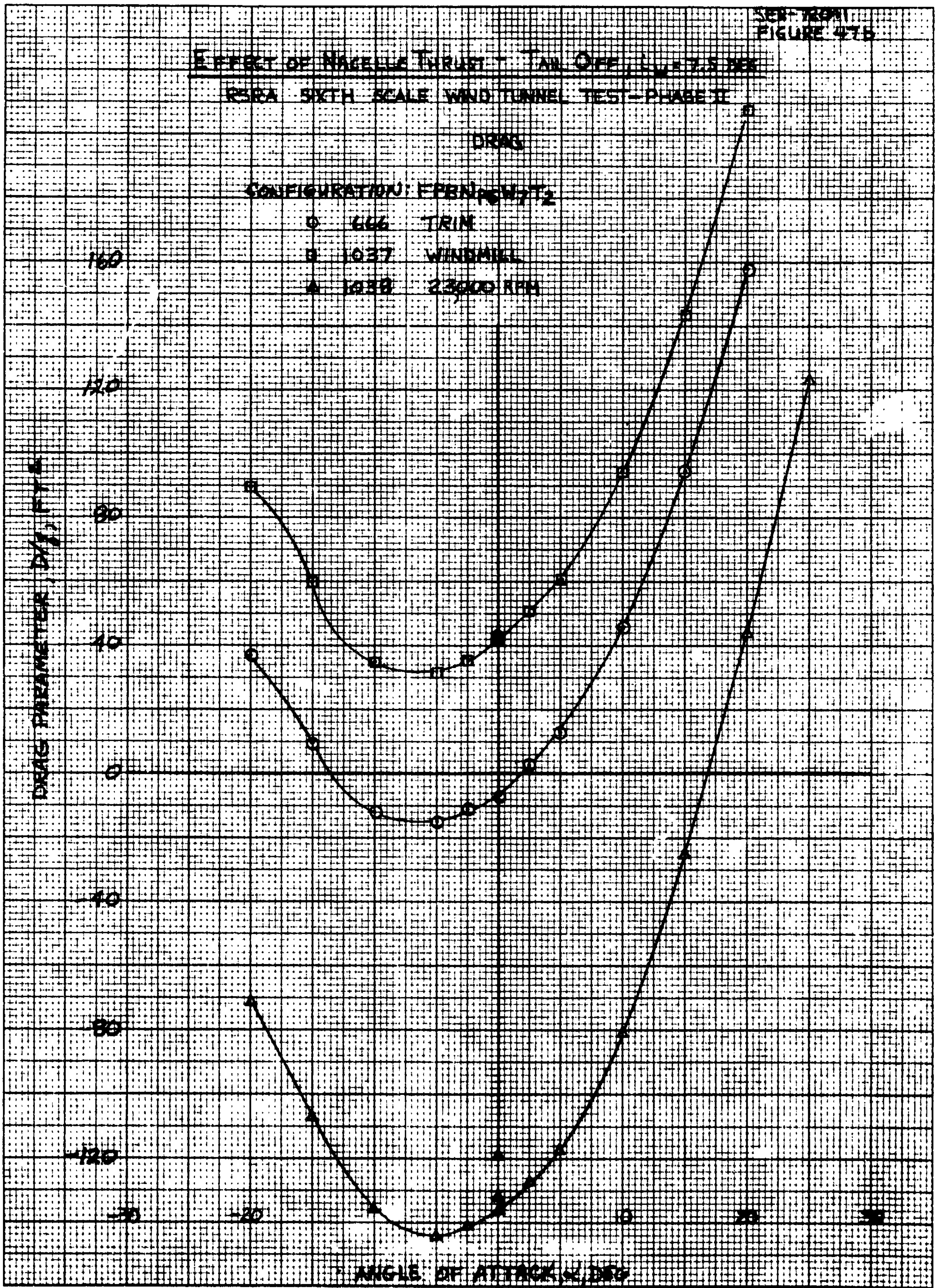


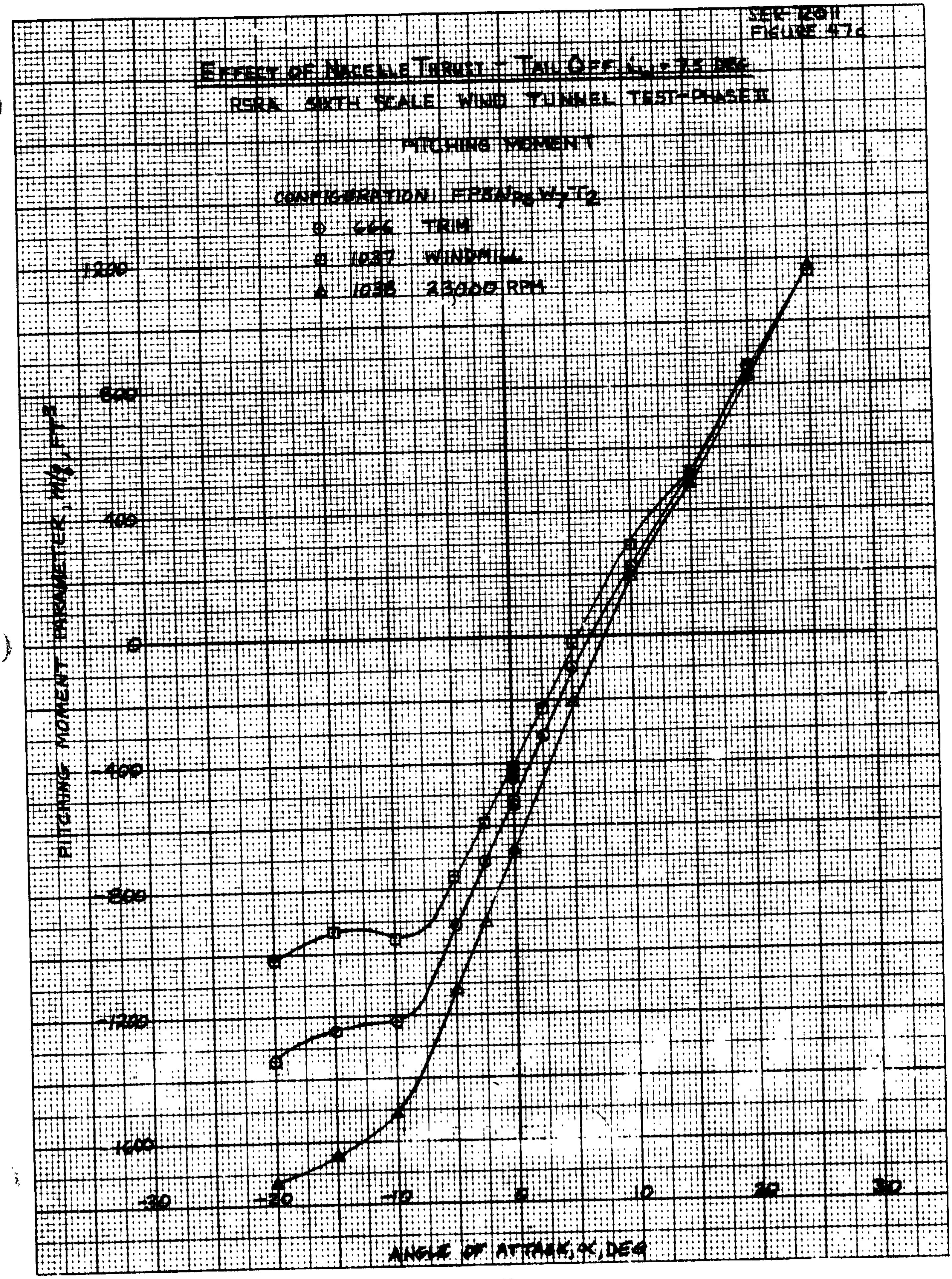
46 1473

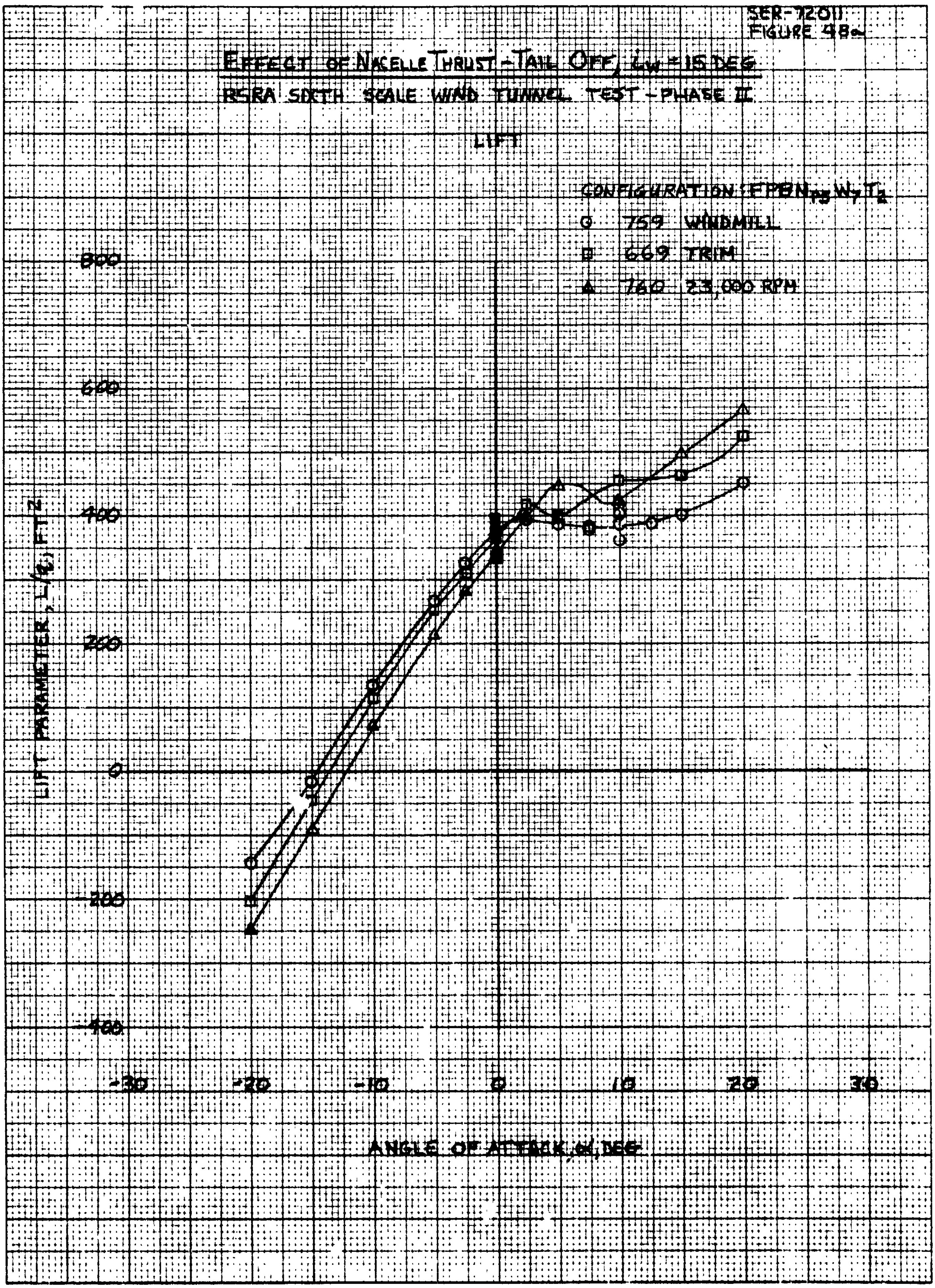
K•E 10 X 10 TO 1/2 INCH KEUFFEL & ESSER CO.


SER-72011
FIGURE 46 L
EFFECT OF NACELLE THRUST - TAIL OFF, i_W = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
PITCHING MOMENT
CONFIGURATION: FPBN$_{15}$W$_7$T$_2$
606 WINDMILL
607 TRIM
608 23,000 RPM
657 WINDMILL (REPEAT)
656 OBI
PITCHING MOMENT PARAMETER, M/q, FT^3
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

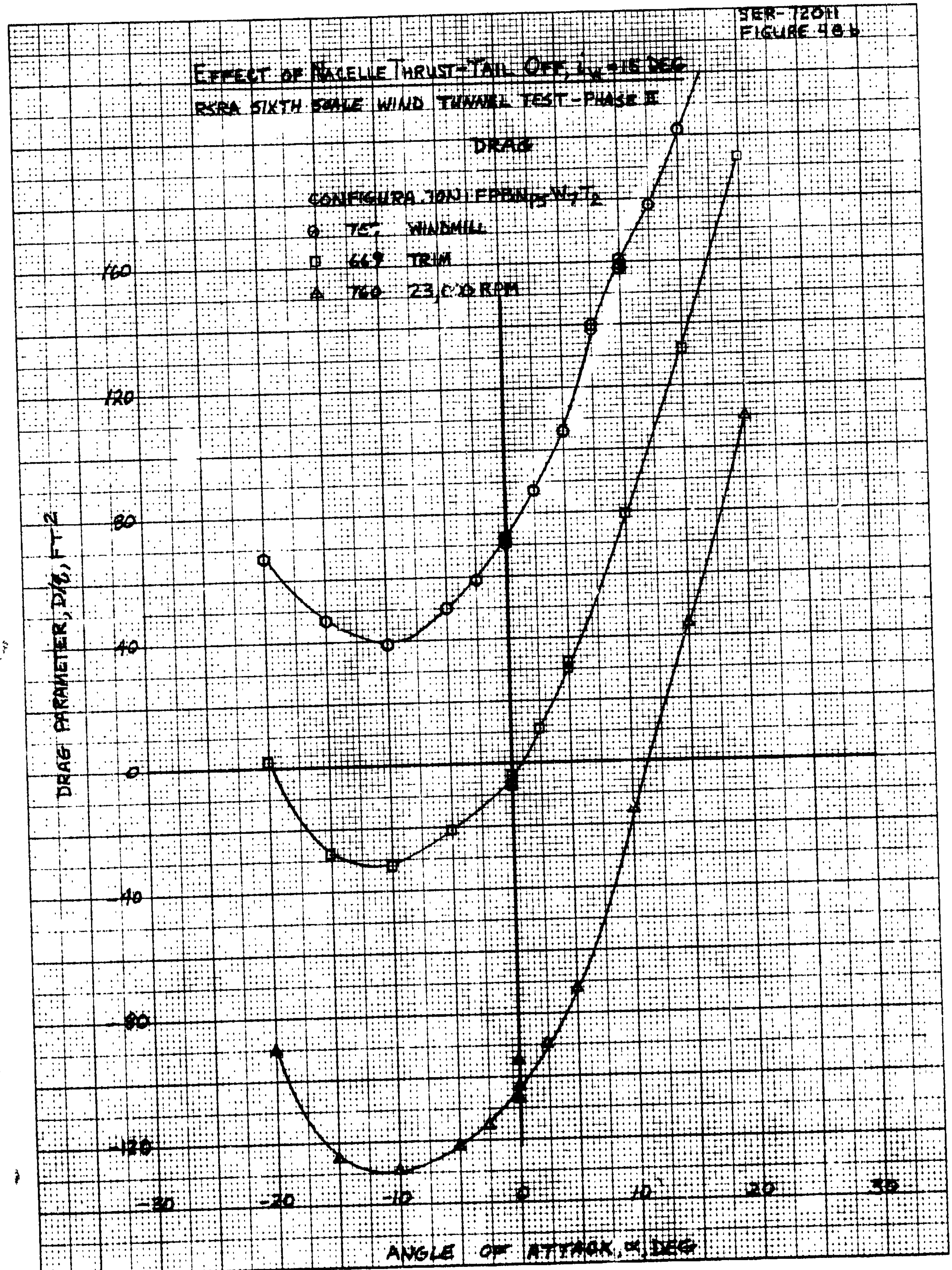

SER-72011
FIGURE 47a
EFFECT OF NACELLE THRUST - TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
LIFT
CONFIGURATION
666 TRIM
1037 WINDMILL
1038
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
LIFT PARAMETER
ANGLE OF ATTACK, α, DEG


SEE FROM
FIGURE 47B
EFFECT OF NACELLE THRUST - TAIL OFF, i_W = 7.5 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
DRAG
CONFIGURATION: FPBN$_{R6}$W$_7$T$_2$
666 TRIM
1037 WINDMILL
1038 23,000 RPM
DRAG PARAMETER, D/q, FT²
160
120
80
40
0
-40
-80
-120
-30
-20
10
20
30
ANGLE OF ATTACK, α, DEG


SER 12011
FIGURE 47c
EFFECT OF NACELLE THRUST - TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT
CONFIGURATION: FP8N7R8W7T2
666 TRIM
1037 WINDMILL
1038 23,000 RPM
PITCHING MOMENT PARAMETER, M/q, FT³
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

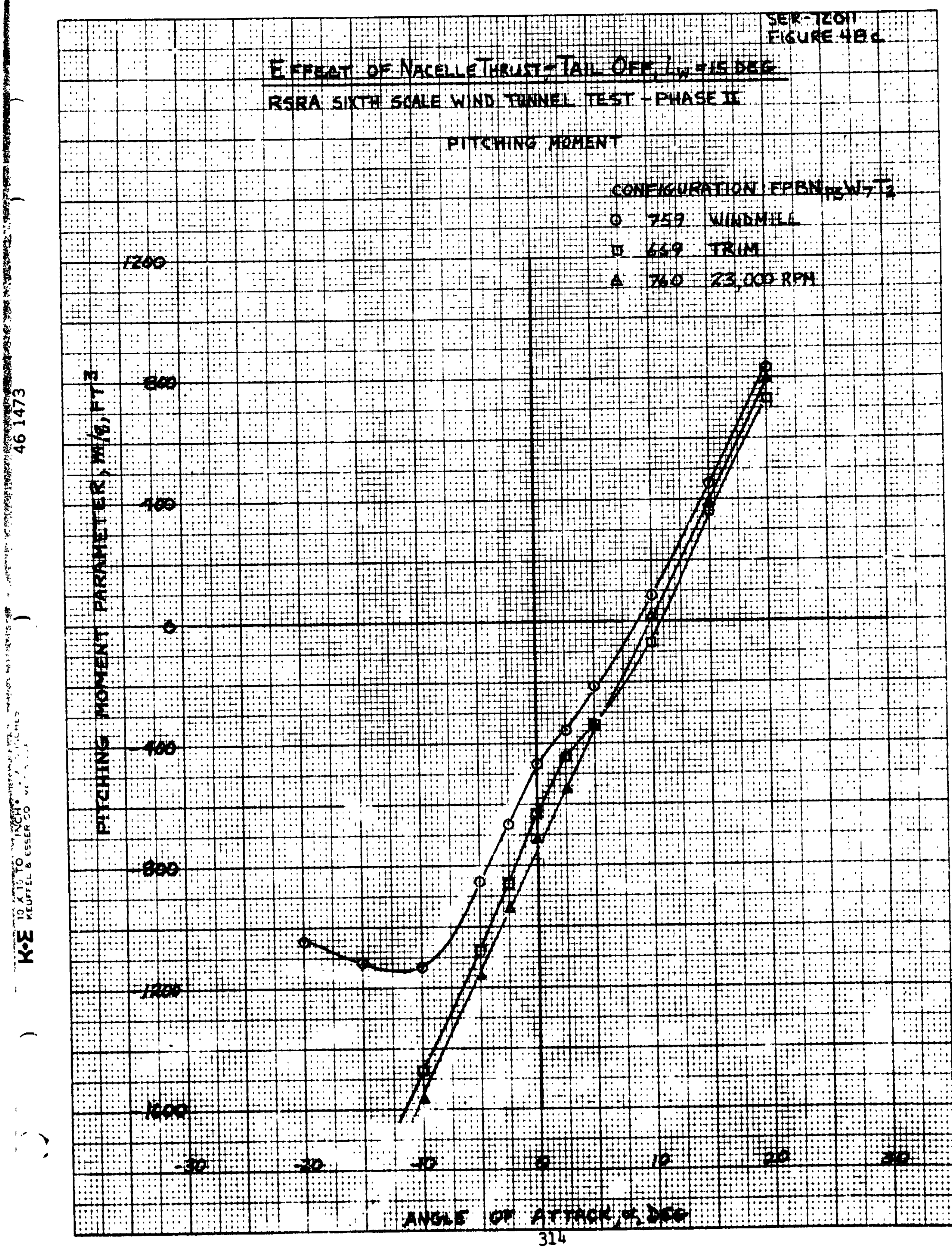

SER-72011
FIGURE 48a
EFFECT OF NACELLE THRUST - TAIL OFF, i_w = 15 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT
CONFIGURATION: $FPBN_{P3}W_7T_2$
759 WINDMILL
669 TRIM
760 23,000 RPM
800
600
400
200
0
-200
-400
LIFT PARAMETER, L/q, FT^2
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

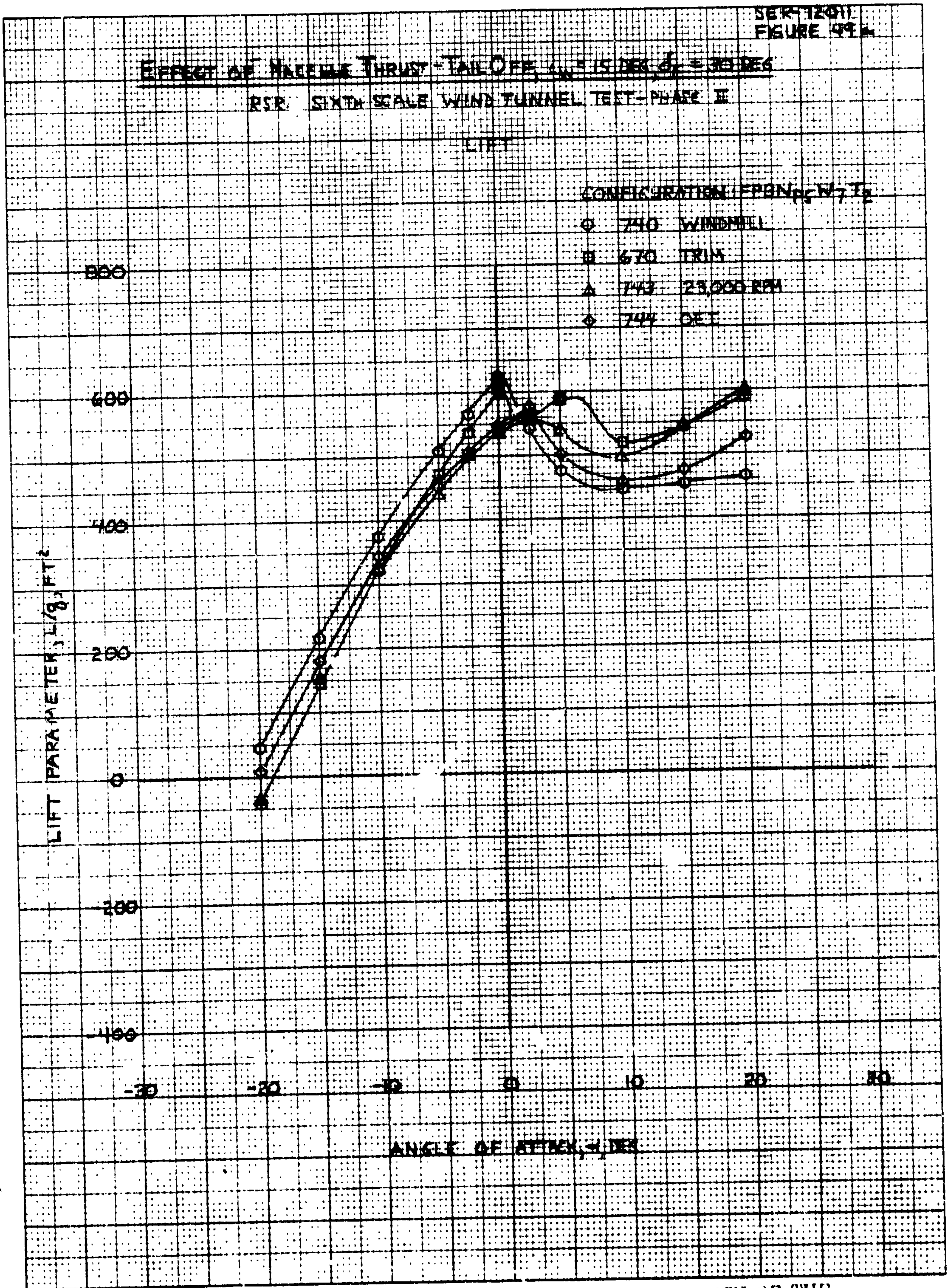
SER-72011
FIGURE 48b



46 1473

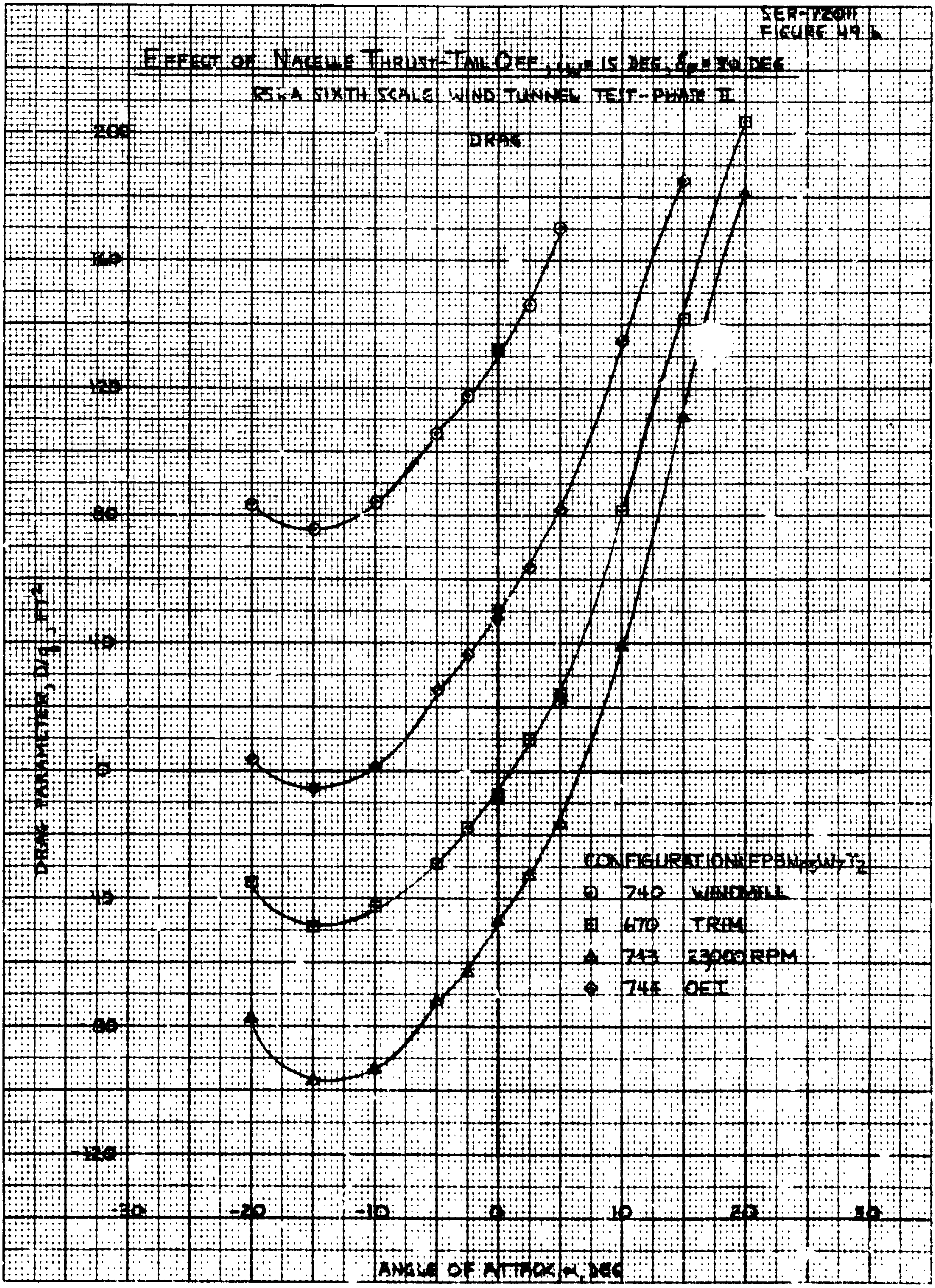
K·E 10 X 10 TO INCH KEUFFEL & ESSER CO.


SER-72011
FIGURE 48c
EFFECT OF NACELLE THRUST - TAIL OFF, i_w = 15 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT
CONFIGURATION FPBN$_{15}$W$_7$T$_2$
759 WINDMILL
669 TRIM
760 23,000 RPM
PITCHING MOMENT PARAMETER, M/q, FT^3
ANGLE OF ATTACK, α, DEG
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30



SER-12011
FIGURE 99
EFFECT OF NACELLE THRUST - TAIL OFF, iw = 15 DEG, δf = 30 DEG
RSR SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT
CONFIGURATION: FPBNpS W7 T2
740 WINDMILL
670 TRIM
743 23,000 RPM
744 OET
800
600
400
200
0
-200
-400
LIFT PARAMETER, L/q, FT²
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

46 1473

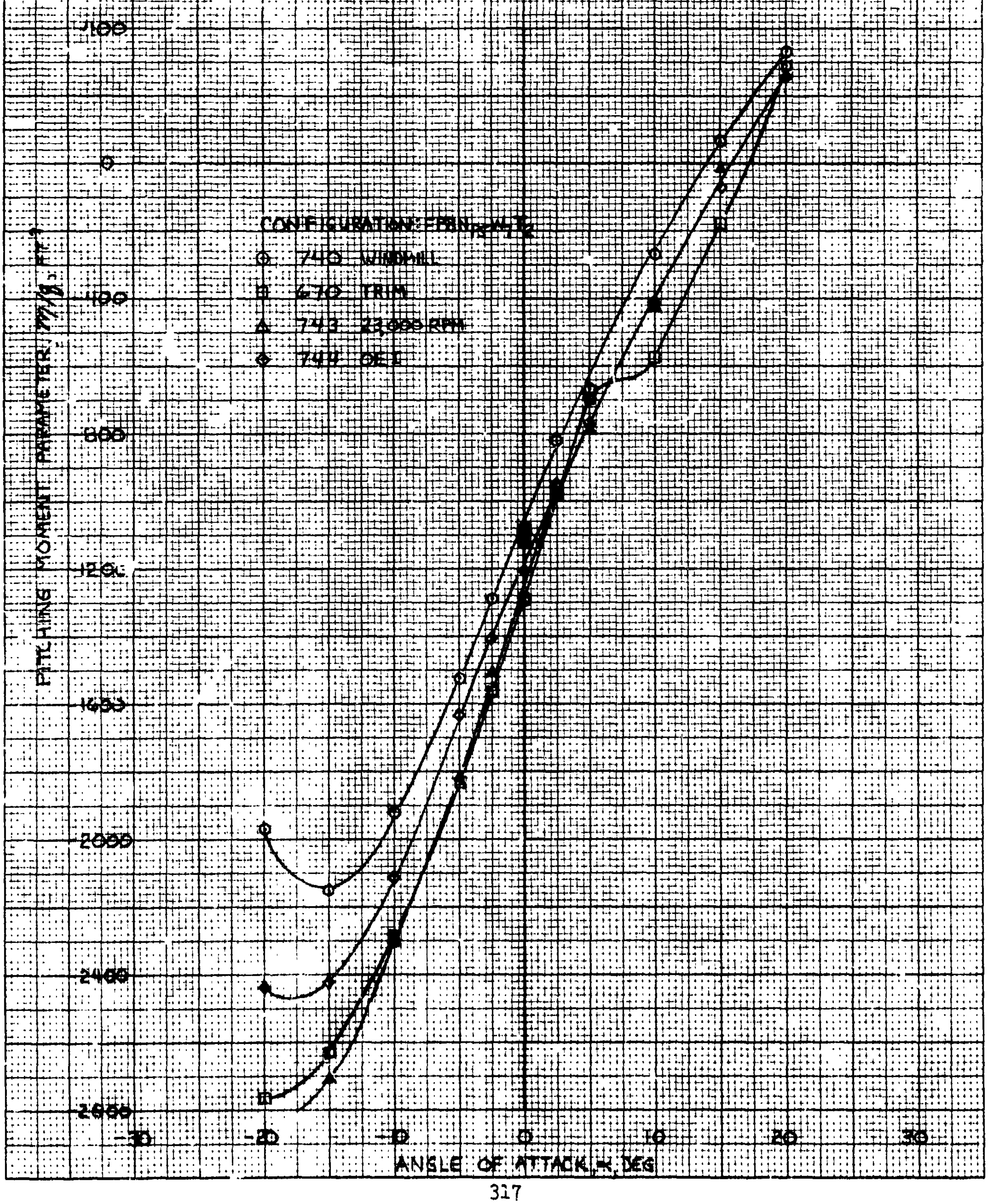


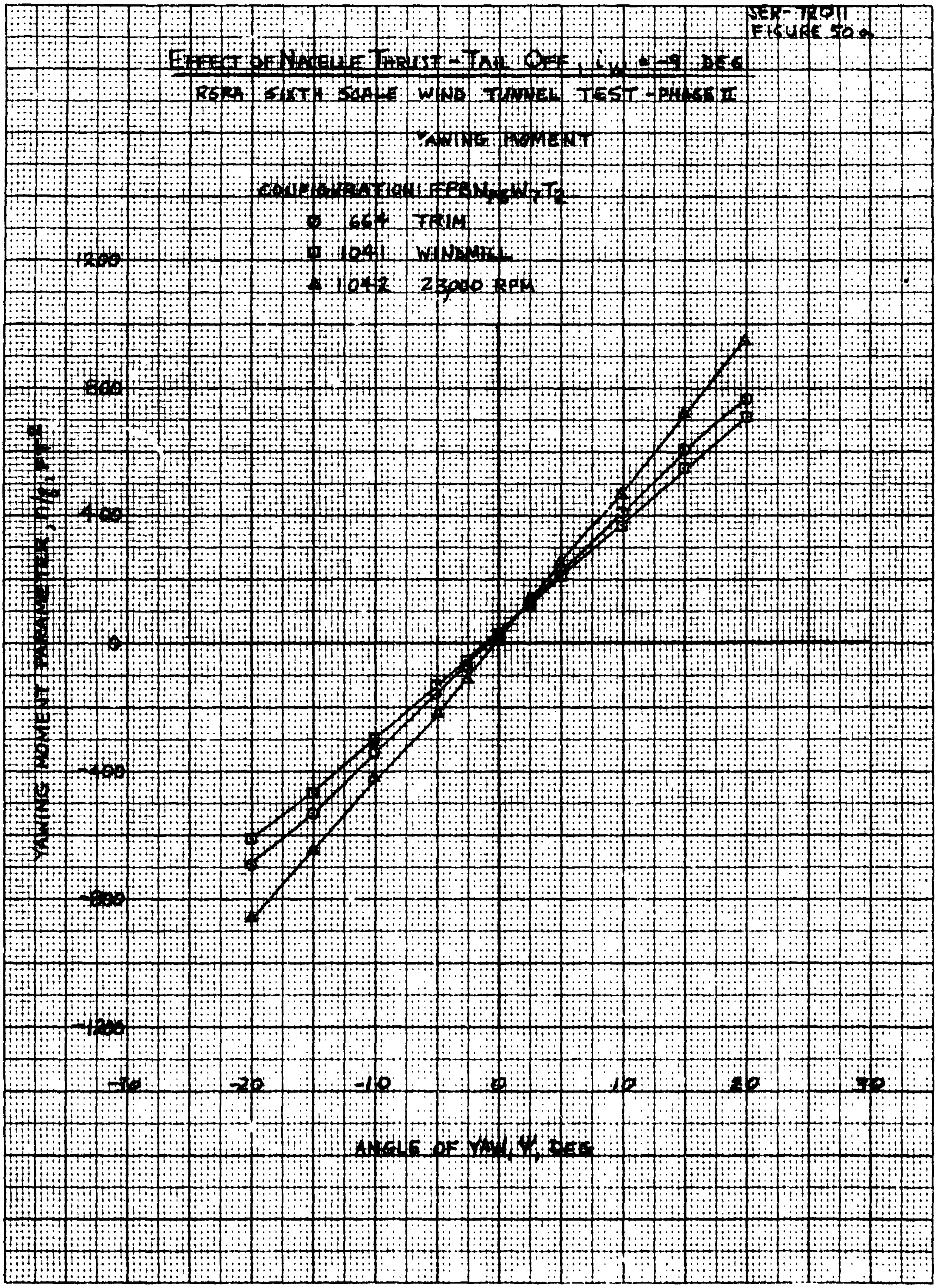
SER-72011
FIGURE 49 b
EFFECT OF NACELLE THRUST-TAIL OFF, i_W = 15 DEG, δ_F = 30 DEG
R5-A SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
200
160
120
80
40
0
-40
-80
-120
-30
-20
-10
0
10
20
30
DRAG PARAMETER, D/q, FT²
ANGLE OF ATTACK α, DEG
CONFIGURATION: FPBN₁₅W₇T₂
740 WINDMILL
670 TRIM
743 23000 RPM
744 OEI

EFFECT OF NACELLE THRUST - TAIL OFF, i_w = 15 DEG, δ_F = 30 DEG

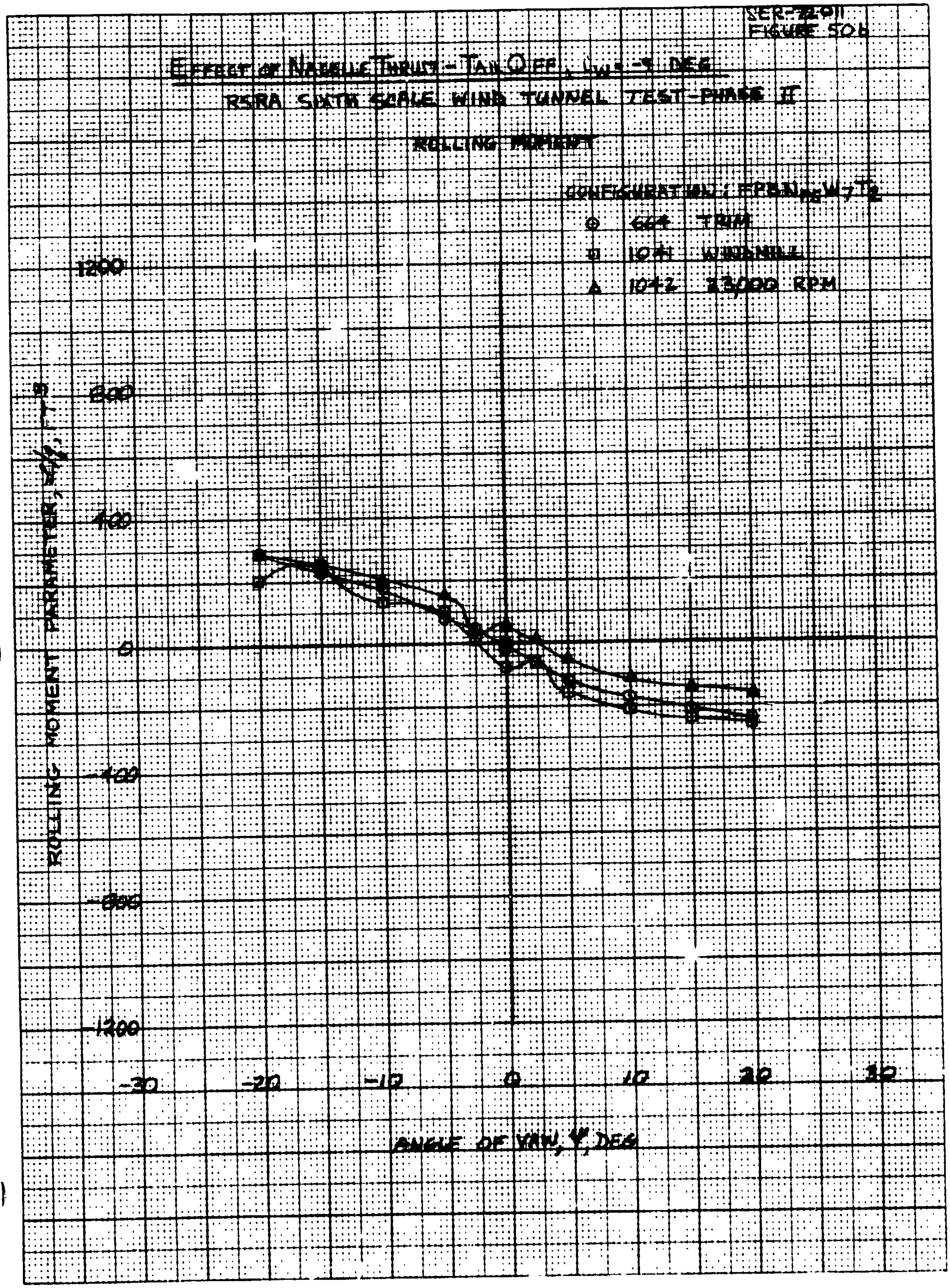
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II

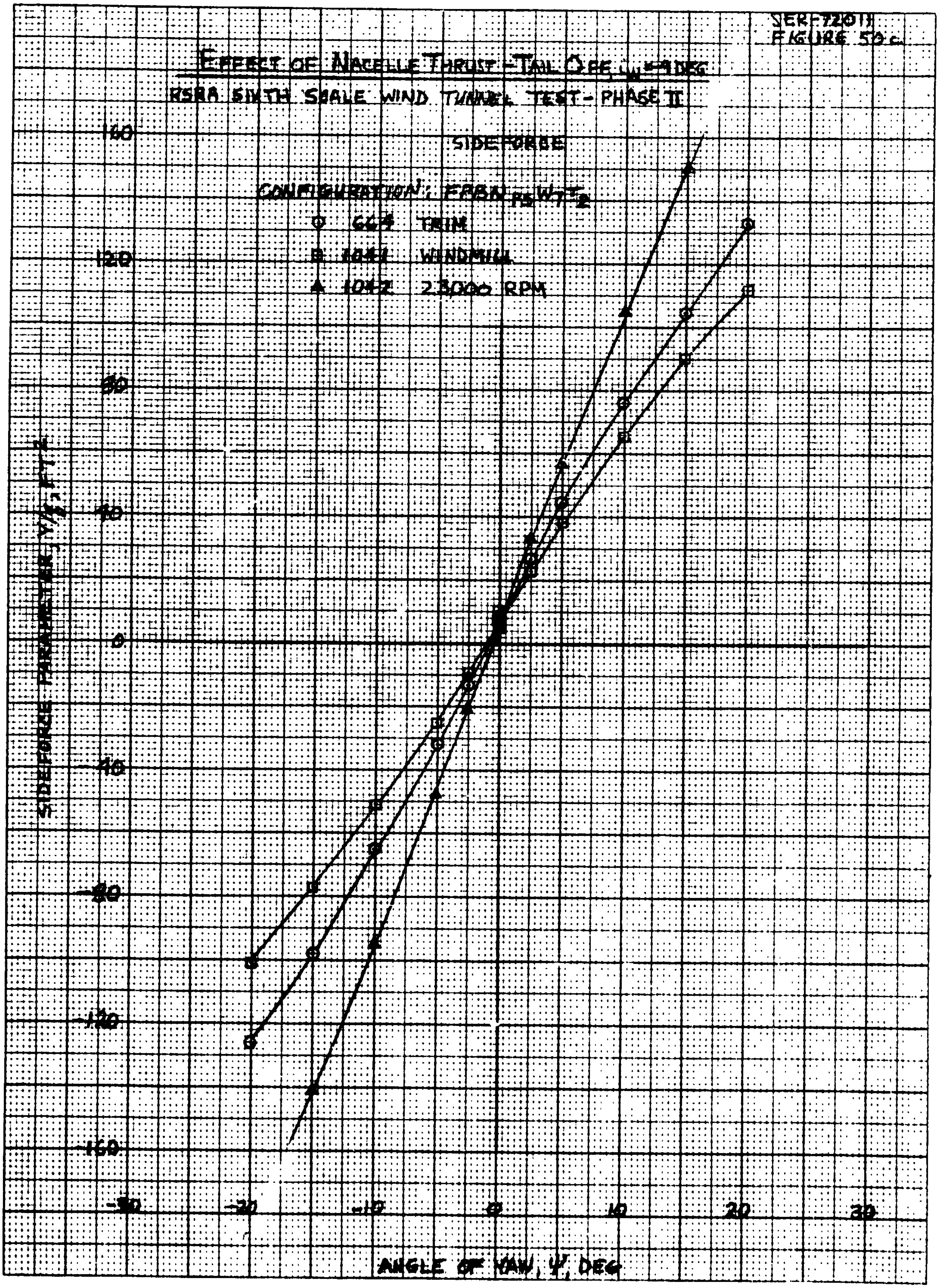
PITCHING MOMENT

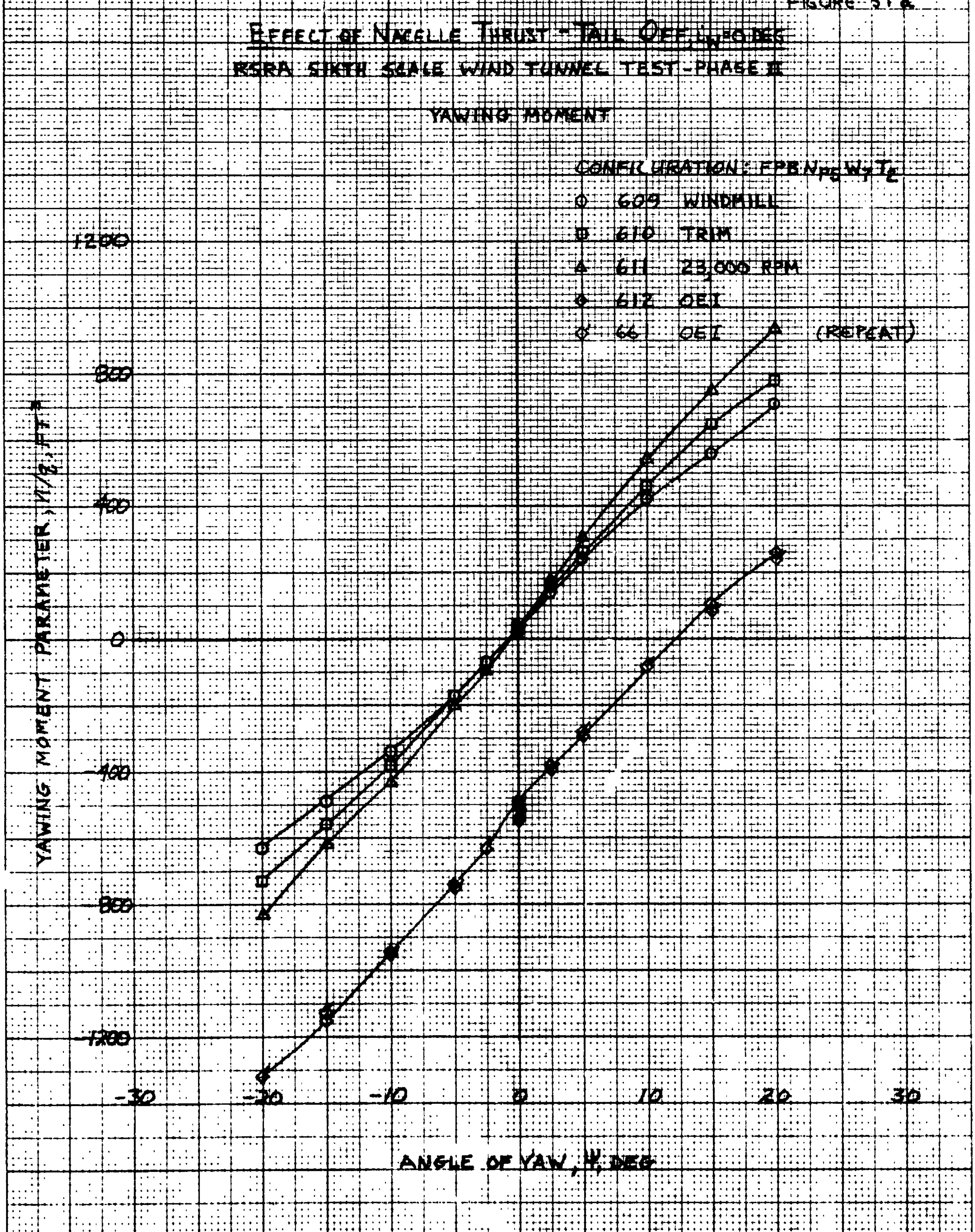




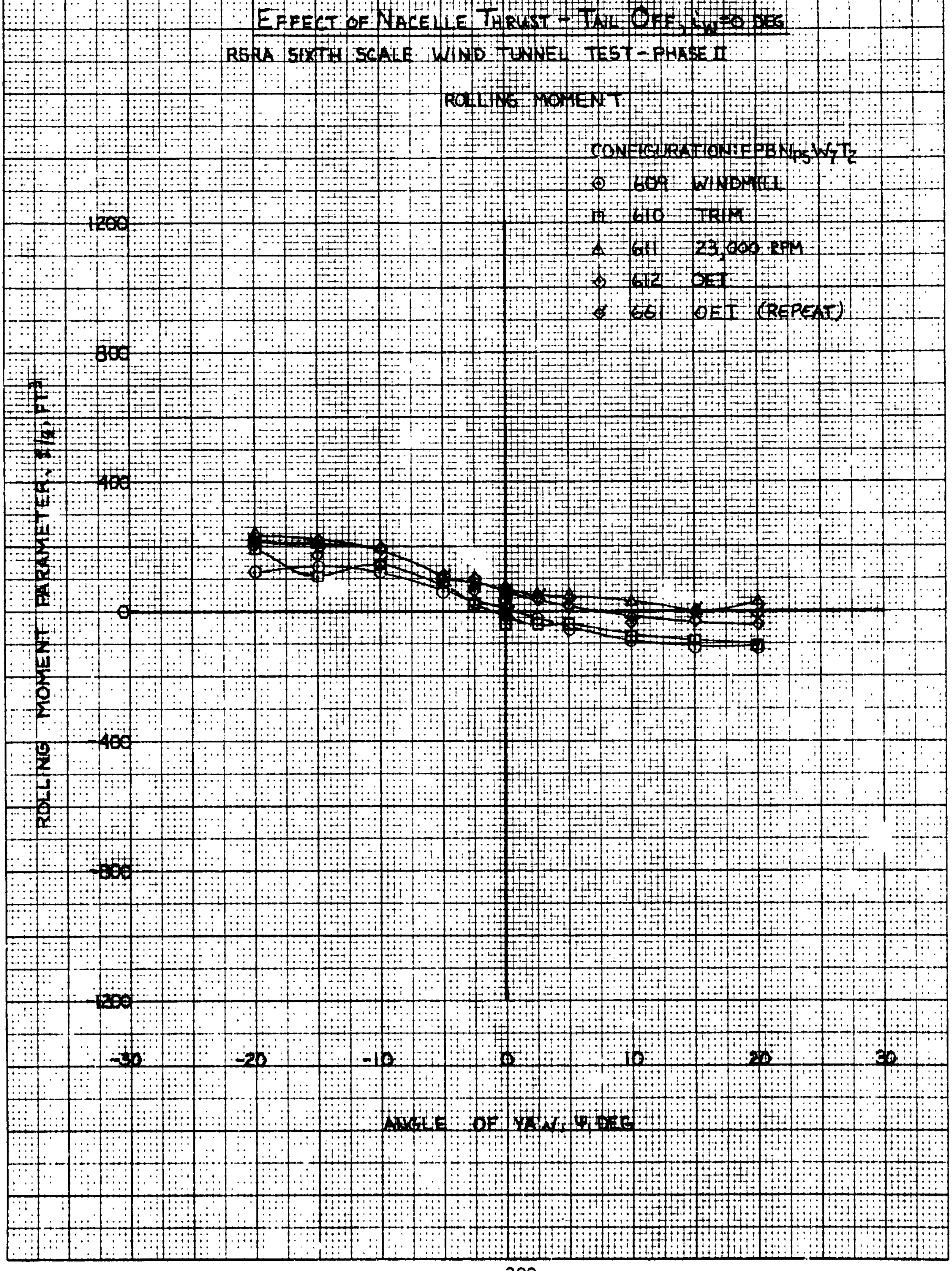
SER-72011
FIGURE 50a
EFFECT OF NACELLE THRUST - TAIL OFF, i_W = -9 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT
CONFIGURATION: FFBN₂₃W₇T₂
664 TRIM
1041 WINDMILL
1042 23,000 RPM
1200
800
400
0
-400
-800
-1200
YAWING MOMENT PARAMETER, N/q, FT³
-30
-20
-10
0
10
20
30
ANGLE OF YAW, Ψ, DEG

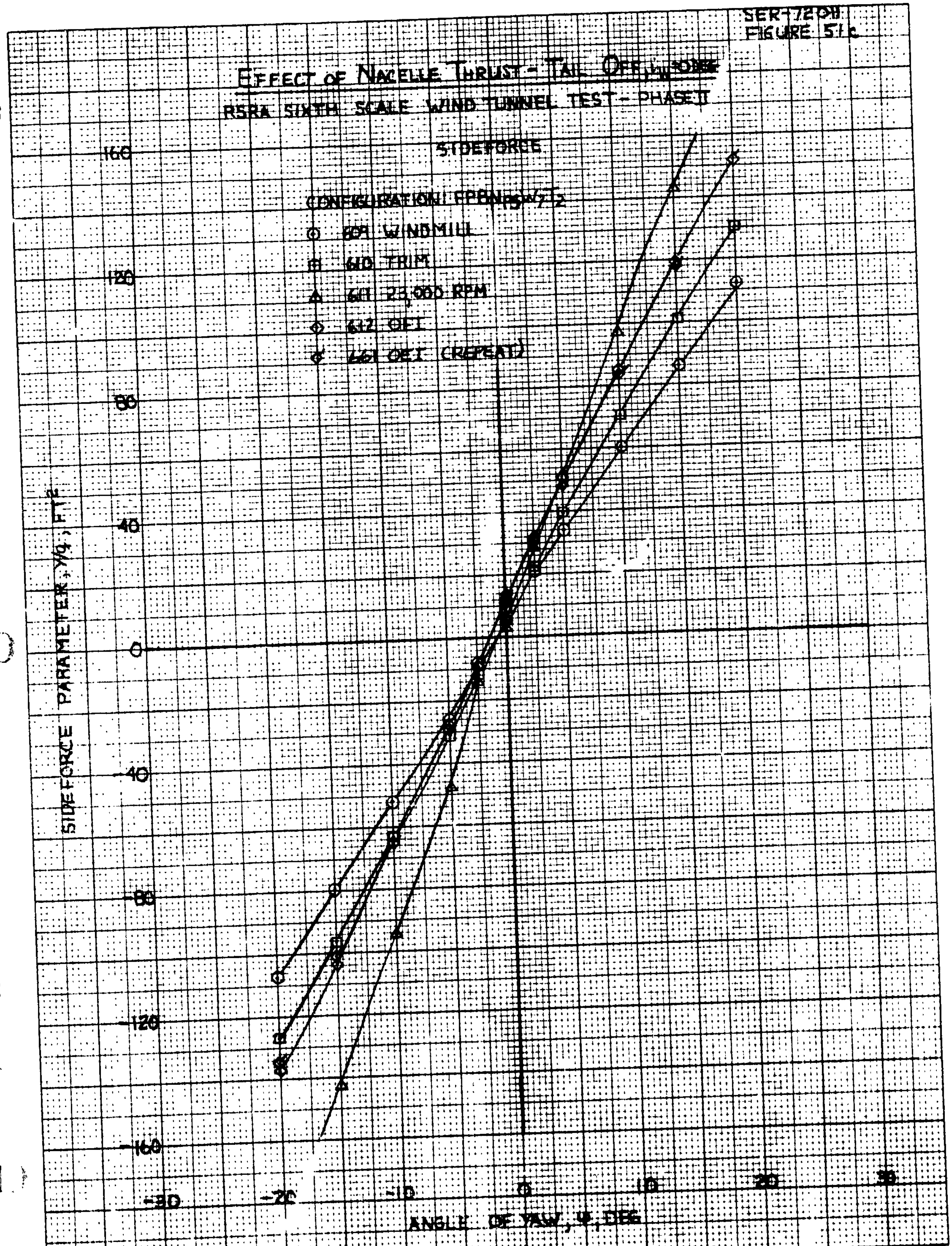

SER-72911
FIGURE 506
EFFECT OF NACELLE THRUST-TAIL OFF, i_W = -9 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
ROLLING MOMENT
CONFIGURATION: FPBN W7
664 TRIM
1041 WINDMILL
1042 23,000 RPM
ROLLING MOMENT PARAMETER
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF YAW, Ψ, DEG

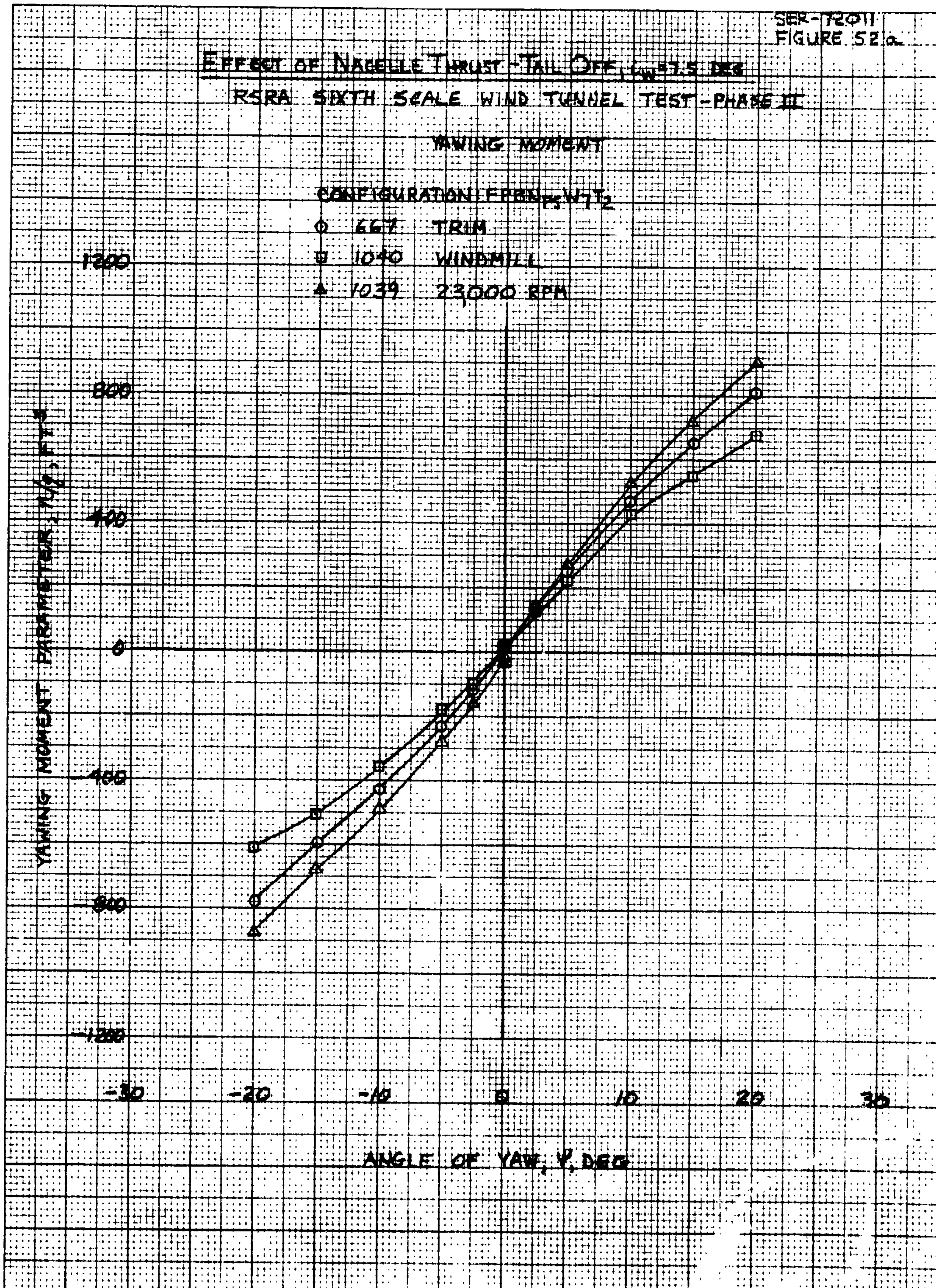

SER-72011
FIGURE 59c
EFFECT OF NACELLE THRUST - TAIL OFF, iW = 9 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
SIDEFORCE
CONFIGURATION: FPBN F5 W T2
664 TRIM
1041 WINDMILL
1042 23,000 RPM
SIDEFORCE PARAMETER, Y/q, FT²
ANGLE OF YAW, ψ, DEG
160
120
80
40
0
-40
-80
-120
-160
-30
-20
-10
0
10
20
30



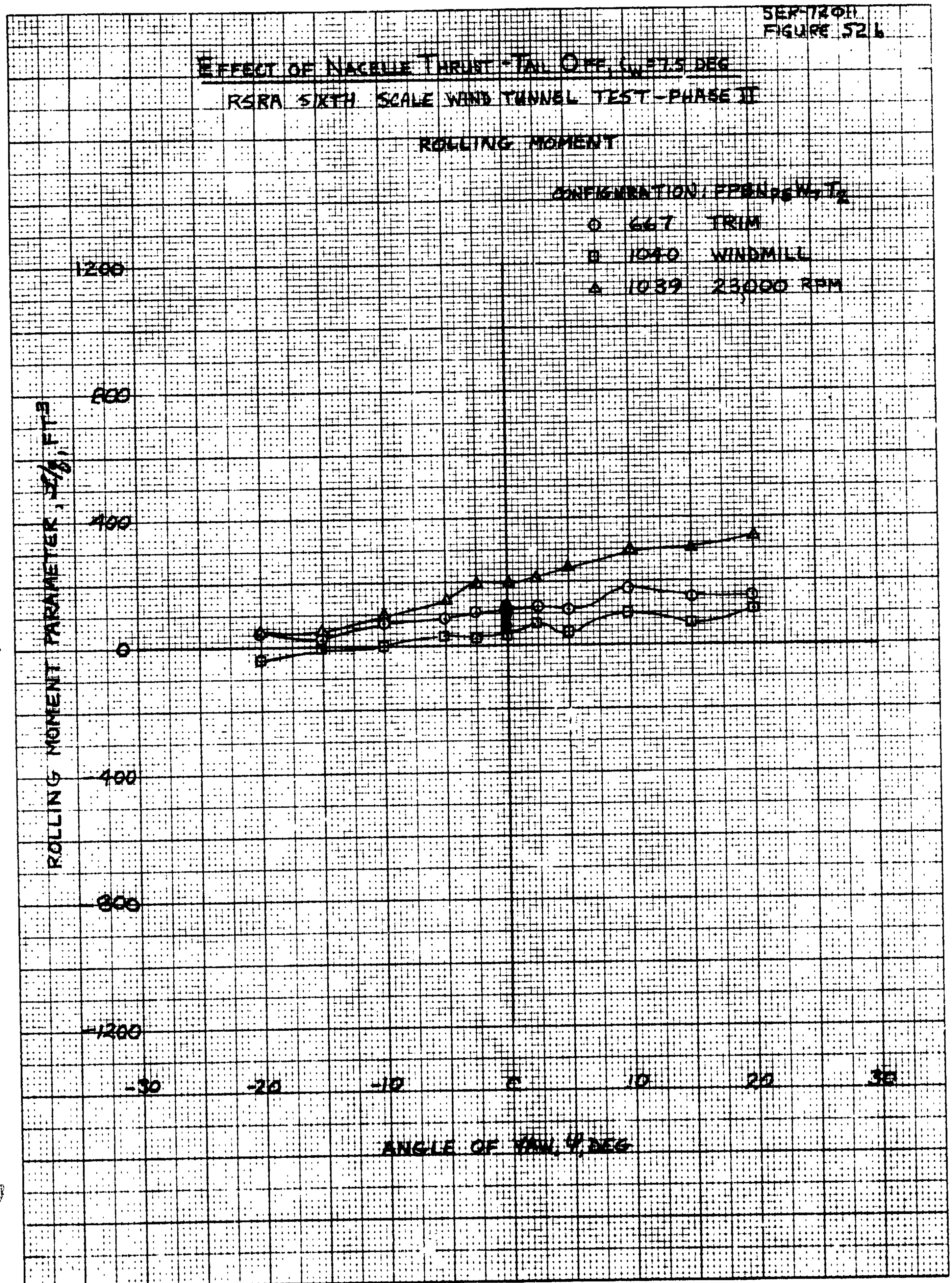
K•E 10 X 10 TO 1/2 INCH
46 1473


EFFECT OF NACELLE THRUST - TAIL OFF, iW=0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT
CONFIGURATION: FPBN WT
609 WINDMILL
610 TRIM
611 23,000 RPM
612 OEI
661 OEI (REPEAT)
1200
800
400
-400
-800
-1200
ROLLING MOMENT PARAMETER, L/q, FT3
-30
-20
-10
0
10
20
30
ANGLE OF YAW, Ψ, DEG

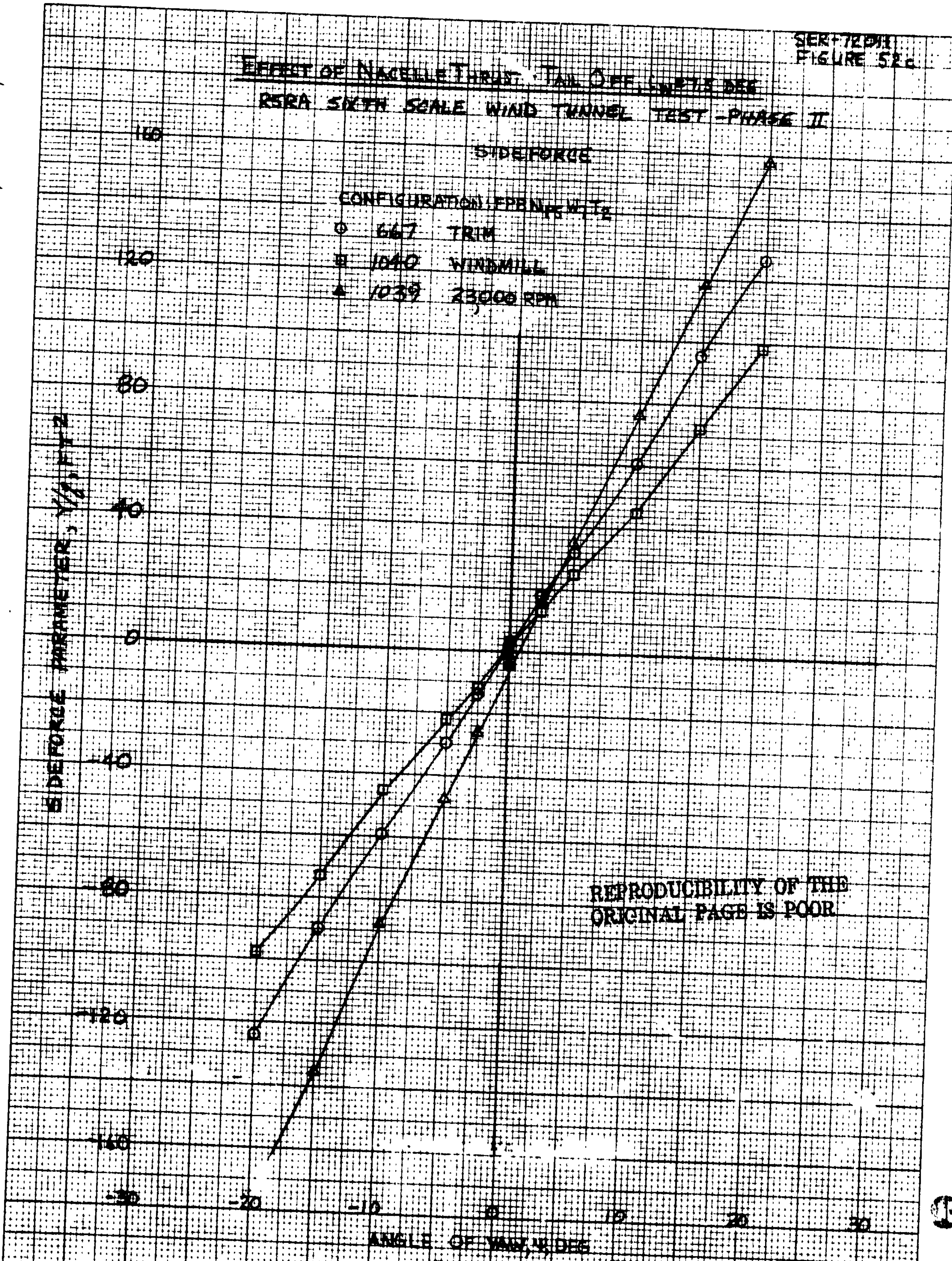

SER-72011
FIGURE 51c
EFFECT OF NACELLE THRUST - TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
SIDEFORCE
CONFIGURATION: FPBN
609 WINDMILL
610 TRIM
611 23,000 RPM
612 OEI
661 OEI (REPEAT)
SIDEFORCE PARAMETER, Y/q, FT²
160
120
80
40
0
-40
-80
-120
-160
-30
-20
-10
0
10
20
30
ANGLE OF YAW, Ψ, DEG

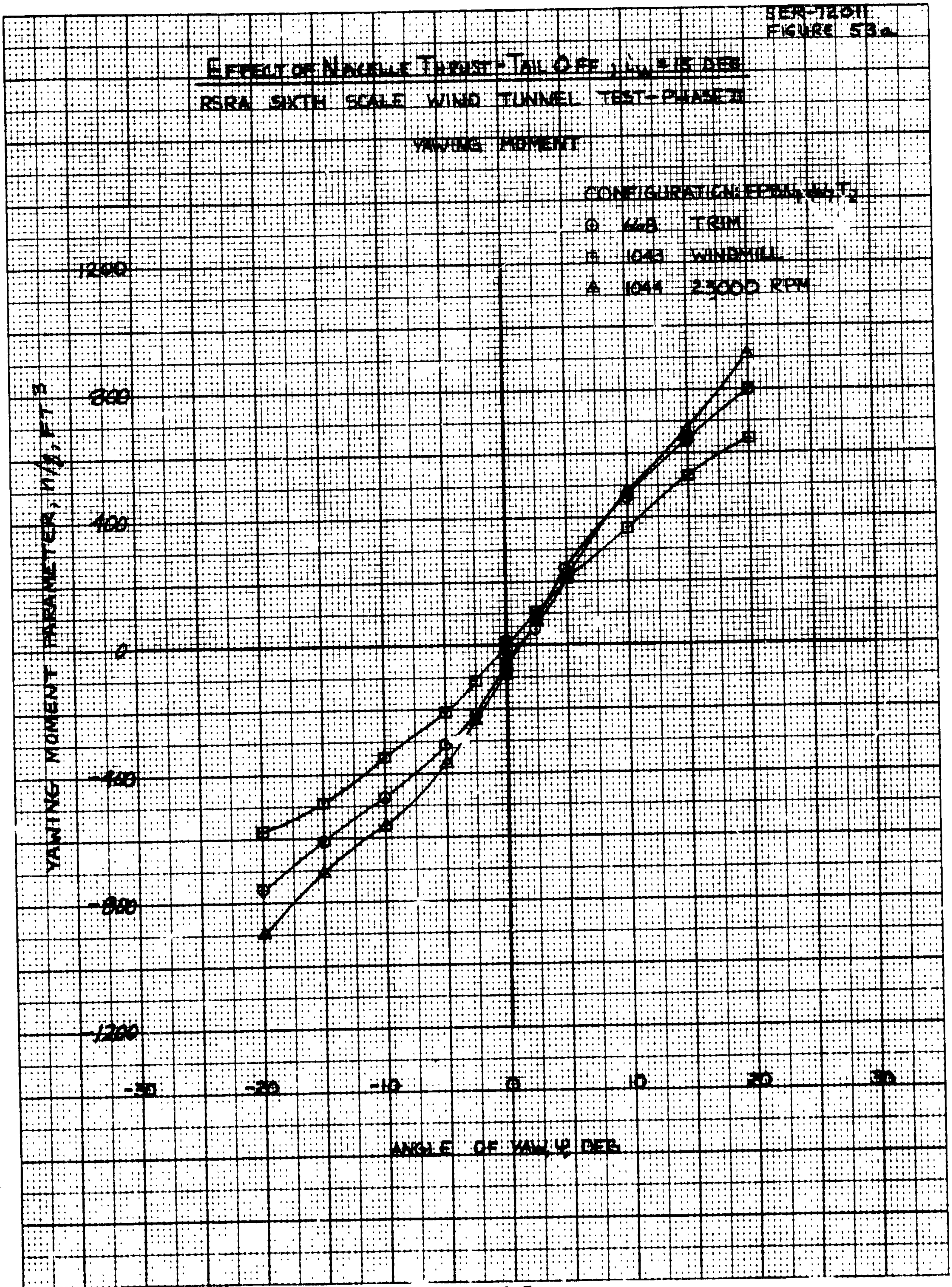


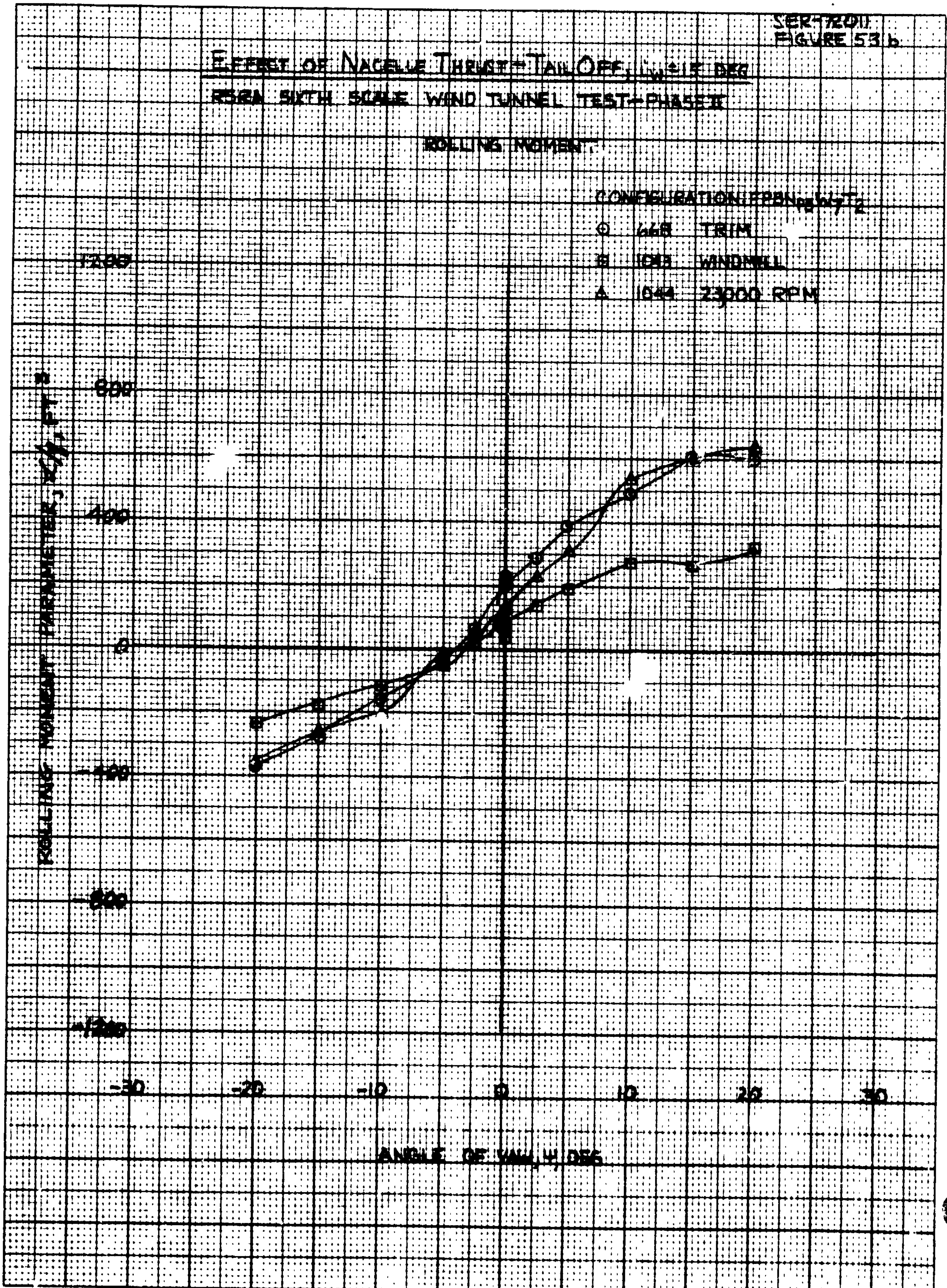
K•E 10 X 10 TO ½ INCH • 7½ X 10 INCHES KEUFFEL & ESSER CO.
46 1473



SER-72011
FIGURE 52b
EFFECT OF NACELLE THRUST - TAIL OFF, i_W = 7.5 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT
CONFIGURATION: FPBN₂₅W₇T₂
667 TRIM
1040 WINDMILL
1039 23,000 RPM
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ROLLING MOMENT PARAMETER, L/q, FT³
ANGLE OF YAW, ψ, DEG


SER-72011
FIGURE 52c
EFFECT OF NACELLE THRUST - TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
SIDEFORCE
CONFIGURATION: FPBN W T
667 TRIM
1040 WINDMILL
1039 23,000 RPM
160
120
80
40
0
-40
-80
-120
-160
-30
-20
-10
0
10
20
30
SIDEFORCE PARAMETER, Y/q, FT²
ANGLE OF YAW, ψ, DEG


SER-72011
FIGURE 53a
EFFECT OF NACELLE THRUST - TAIL OFF, i_{W} = 15 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT
CONFIGURATION:
1043 WINDMILL
1044 23000 RPM
TRIM
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
YAWING MOMENT PARAMETER, N/q, FT^3
ANGLE OF YAW, ψ, DEG


SER-72011
FIGURE 53b
EFFECT OF NACELLE THRUST – TAIL OFF, iw = 15 DEG
R5RA SIXTH SCALE WIND TUNNEL TEST – PHASE II
ROLLING MOMENT
CONFIGURATION: FPBNpgW7T2
⊙ 668 TRIM
⊡ 1043 WINDMILL
△ 1044 23000 RPM
ROLLING MOMENT PARAMETER, ℓ/q, FT³
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG

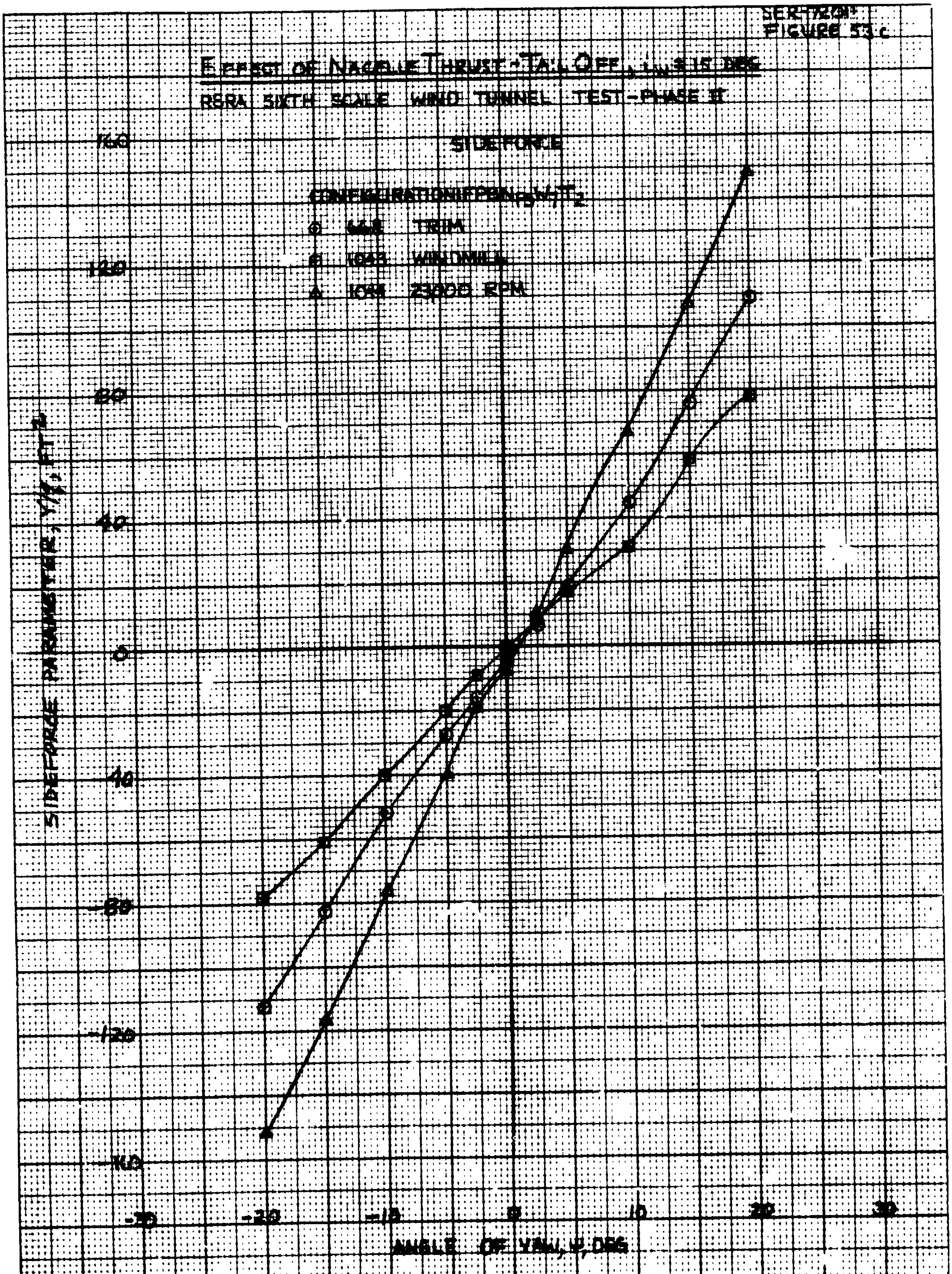
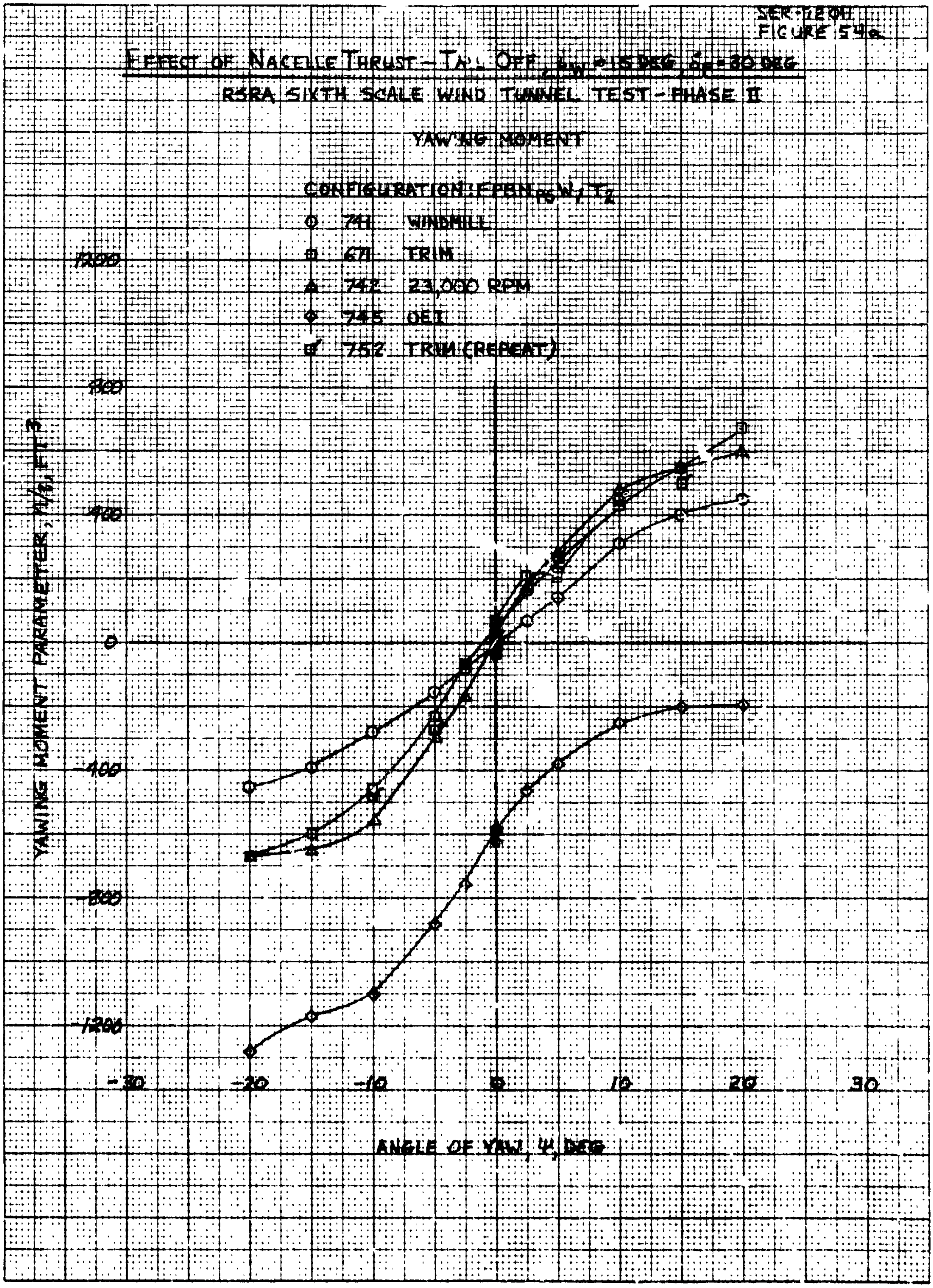
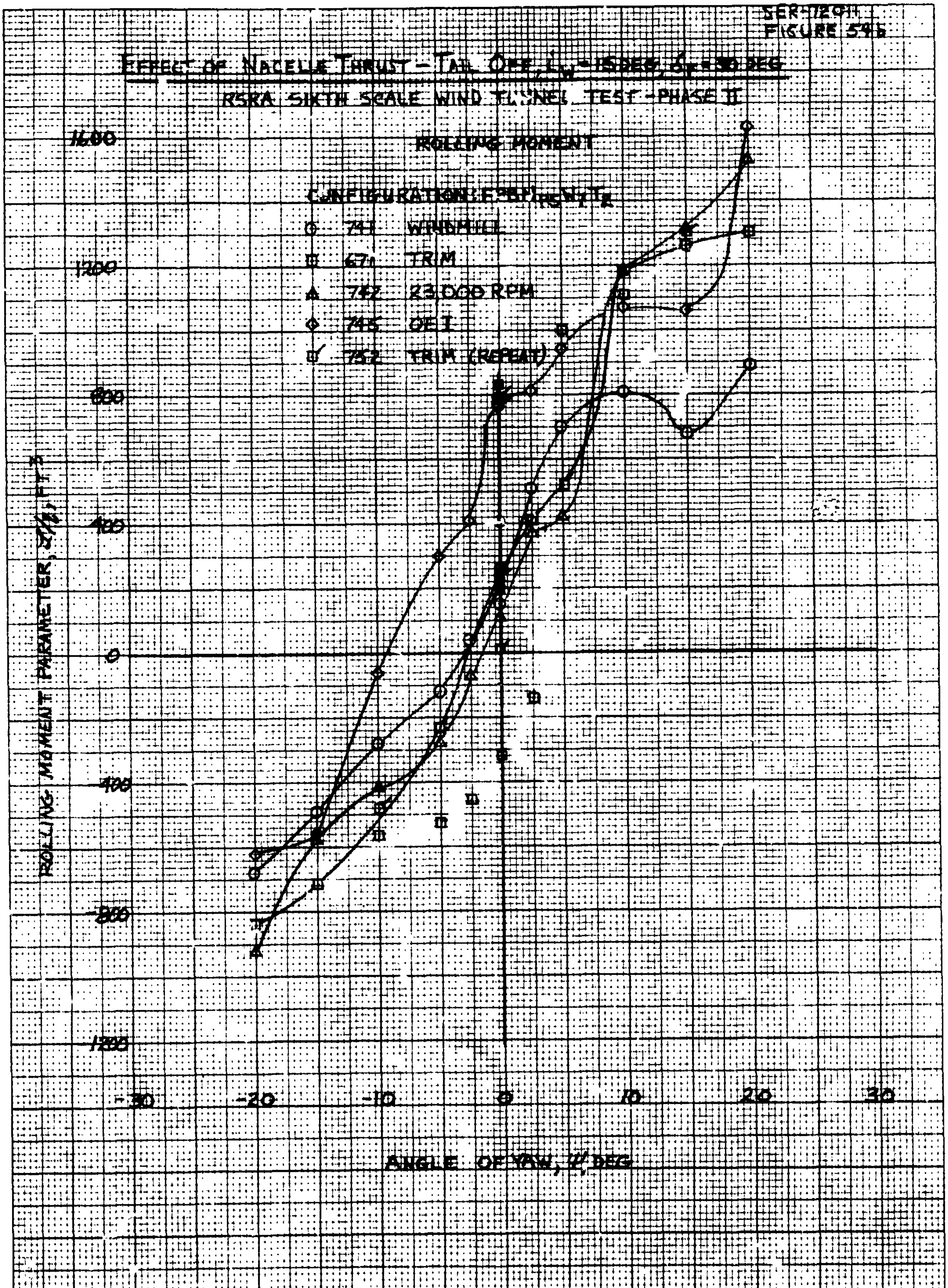
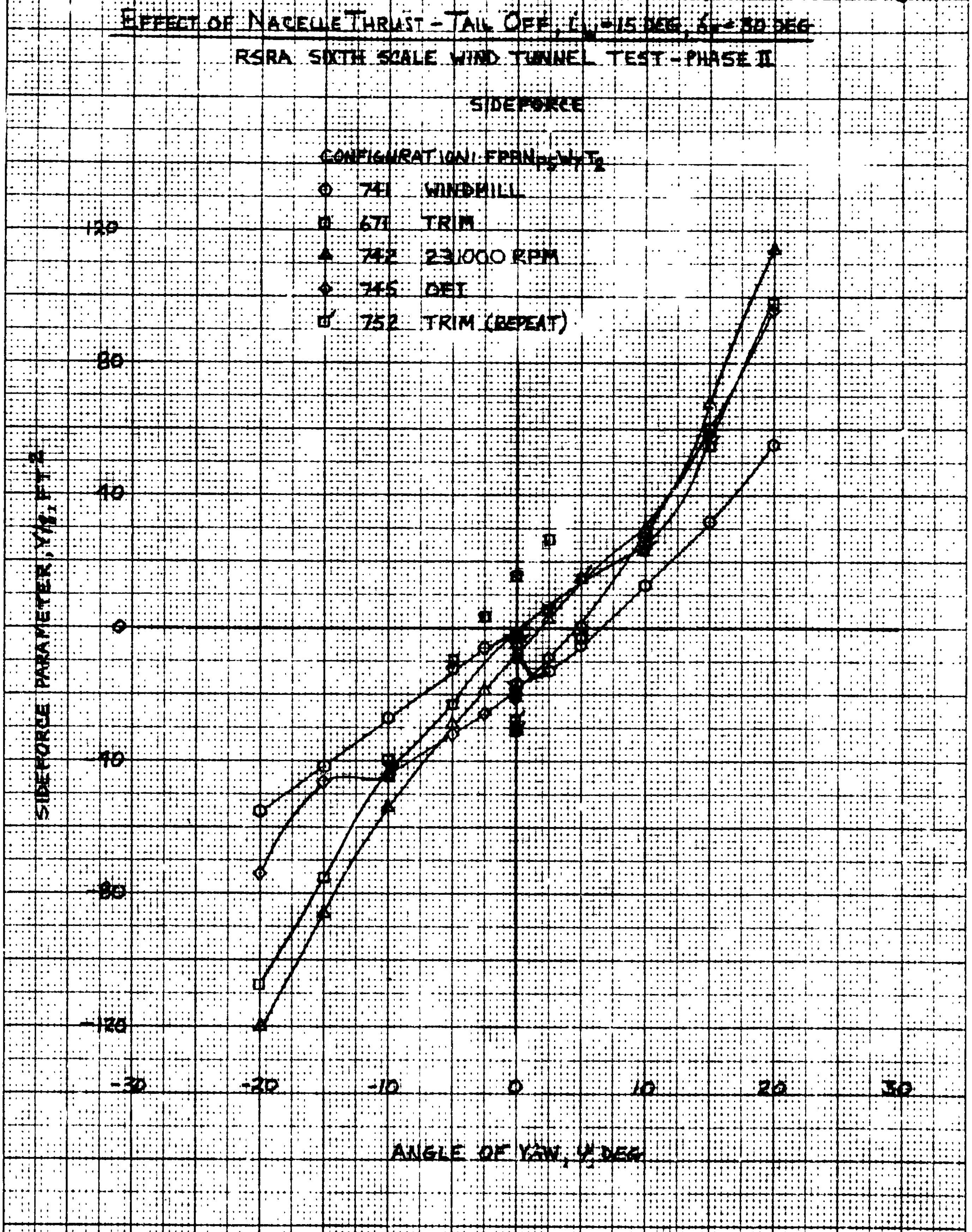


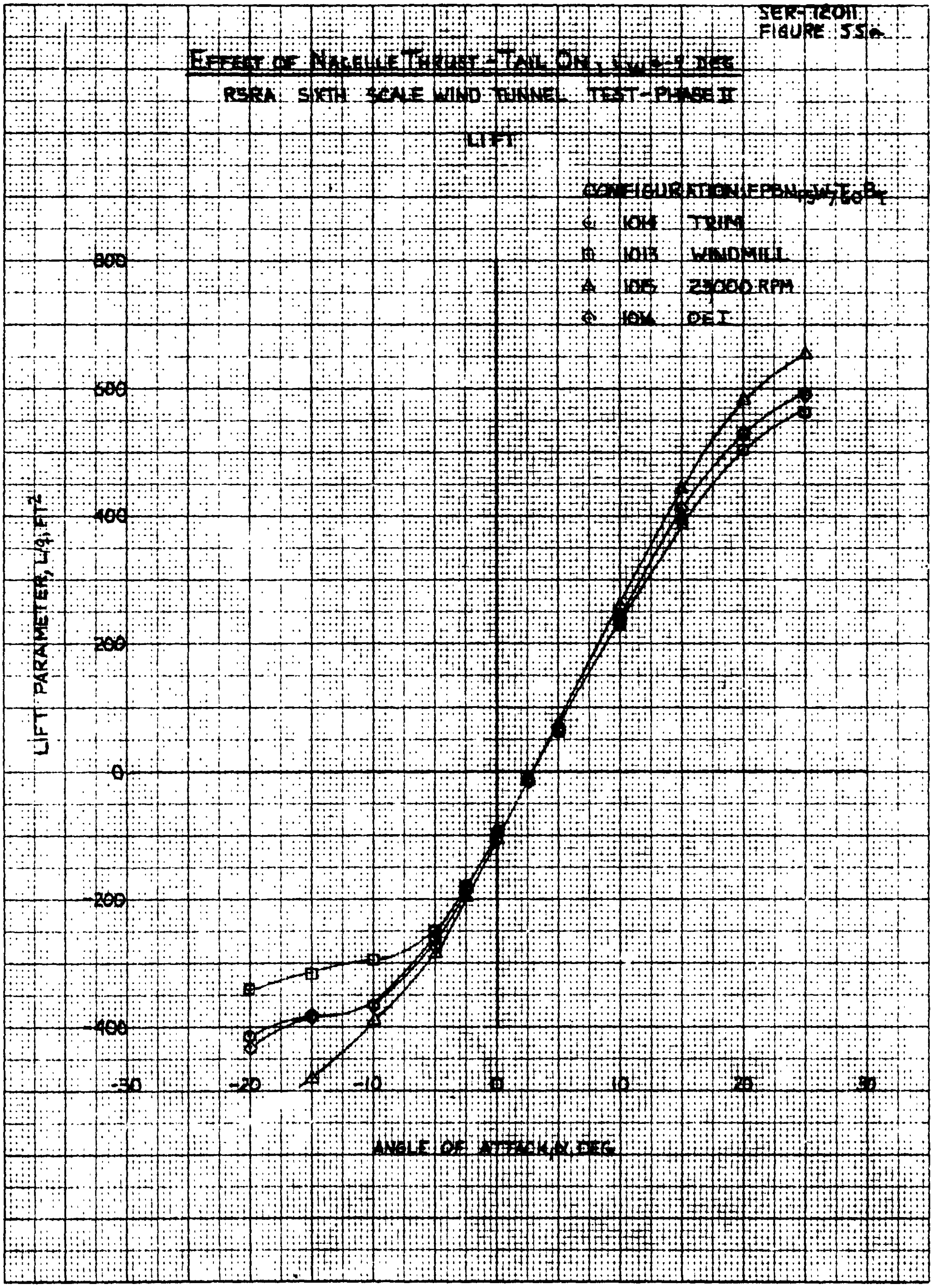
FIGURE 53c
EFFECT OF NACELLE THRUST - TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
SIDEFORCE
TRIM
WINDMILL
23000 RPM
160
120
80
40
0
-40
-80
-120
-160
SIDEFORCE PARAMETER, Y/q, FT²
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG


SER-72011
FIGURE 54a
EFFECT OF NACELLE THRUST - TAIL OFF, iW = 15 DEG, δF = 30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT
CONFIGURATION: FPBN15W1T2
741 WINDMILL
671 TRIM
742 23,000 RPM
745 OEI
752 TRIM (REPEAT)
1200
800
400
0
-400
-800
-1200
YAWING MOMENT PARAMETER, N/q, FT3
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG



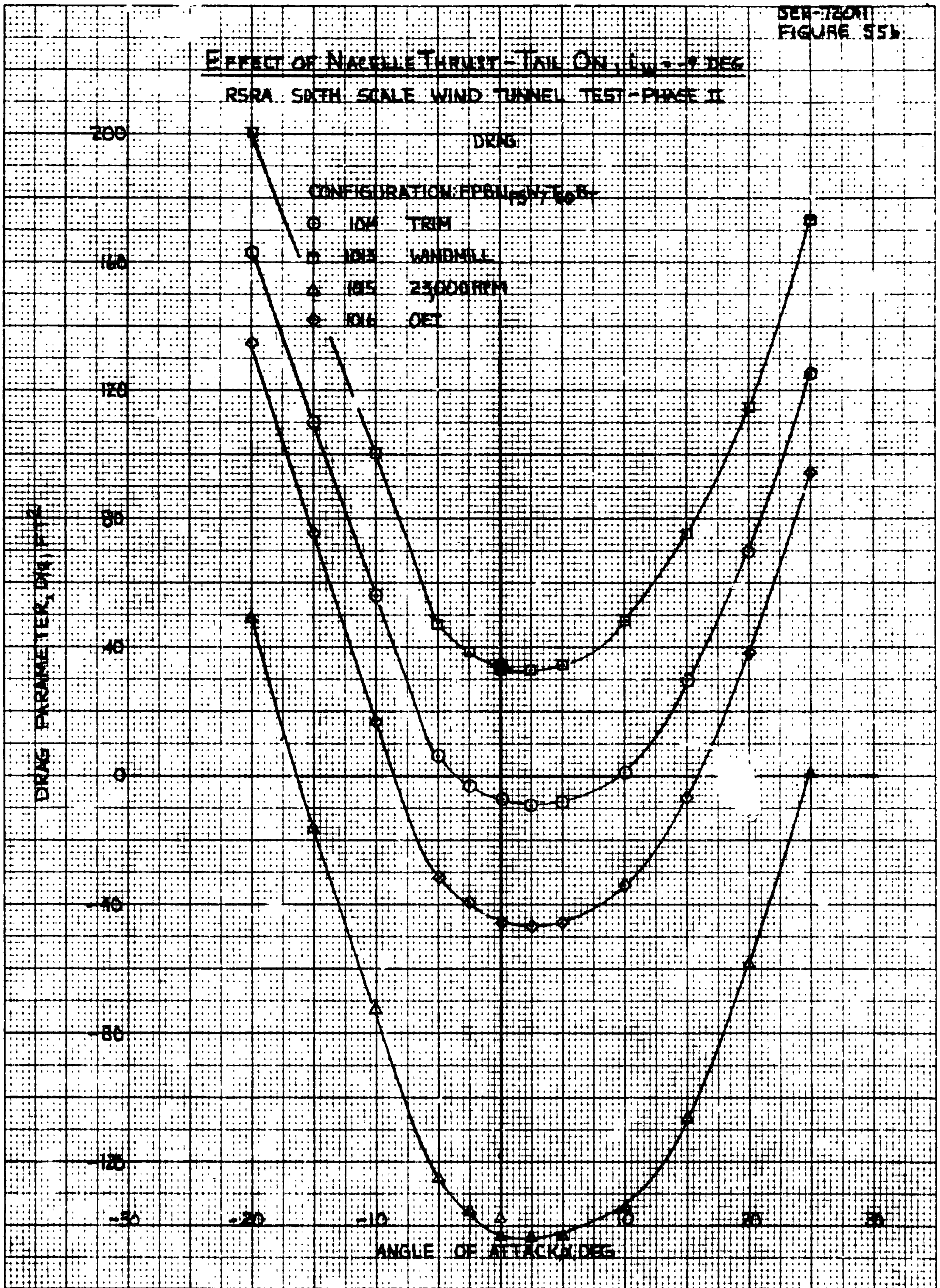
SER-72011
FIGURE 54b
EFFECT OF NACELLE THRUST - TAIL OFF, i_W=15 DEG, δ_F=30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT
CONFIGURATION: $F_{28}B_1P_{15}N_1T_8$
741 WINDMILL
671 TRIM
742 23,000 RPM
745 OEI
752 TRIM (REPEAT)
1600
1200
800
400
0
-400
-800
-1200
ROLLING MOMENT PARAMETER, $\mathscr{L}/q$, FT^3
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG

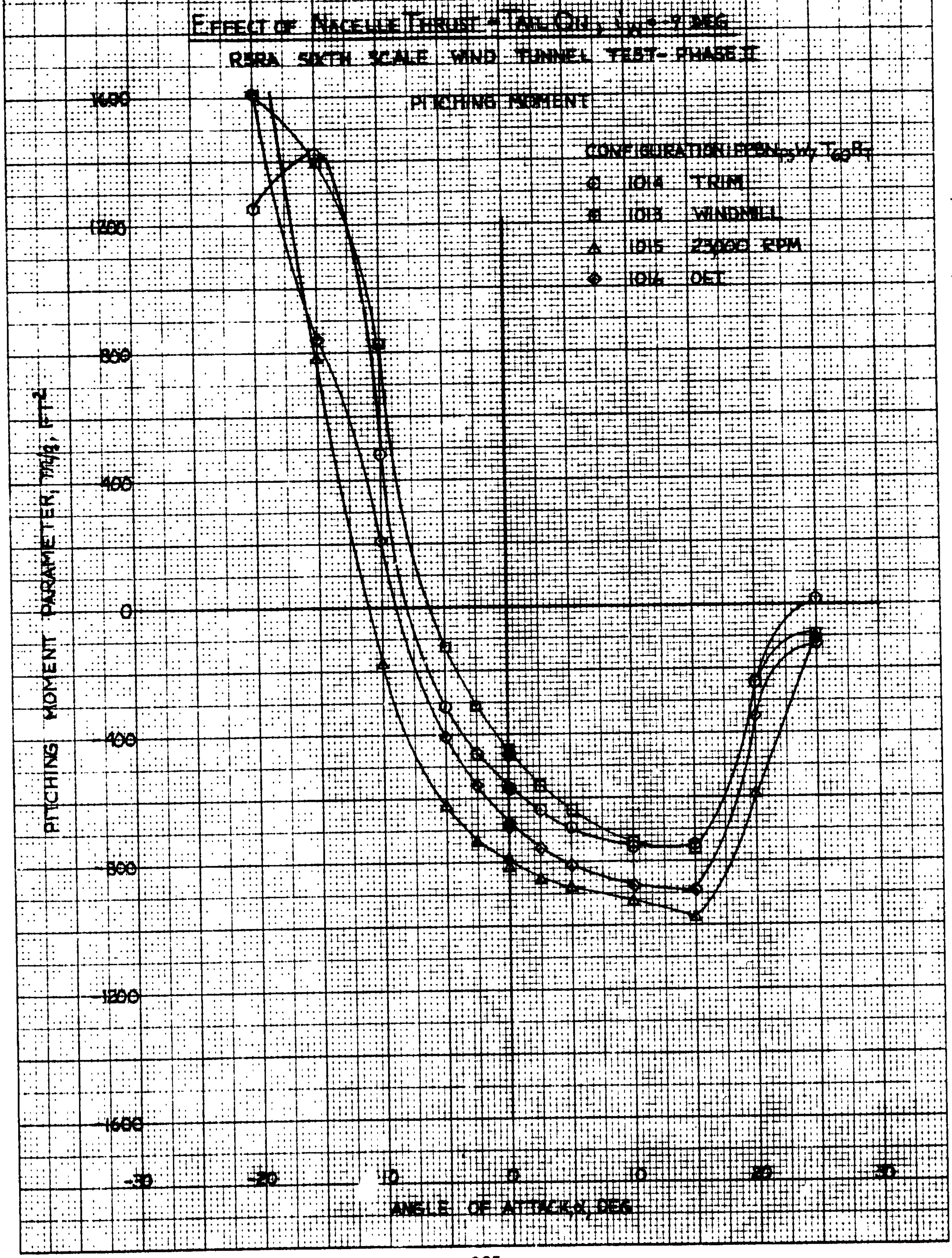

EFFECT OF NACELLE THRUST - TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
SIDEFORCE
CONFIGURATION: FPRN
741 WINDMILL
671 TRIM
742 23,000 RPM
745 OEI
752 TRIM (REPEAT)
120
80
40
0
-40
-80
-120
SIDEFORCE PARAMETER, Y/q, FT²
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG



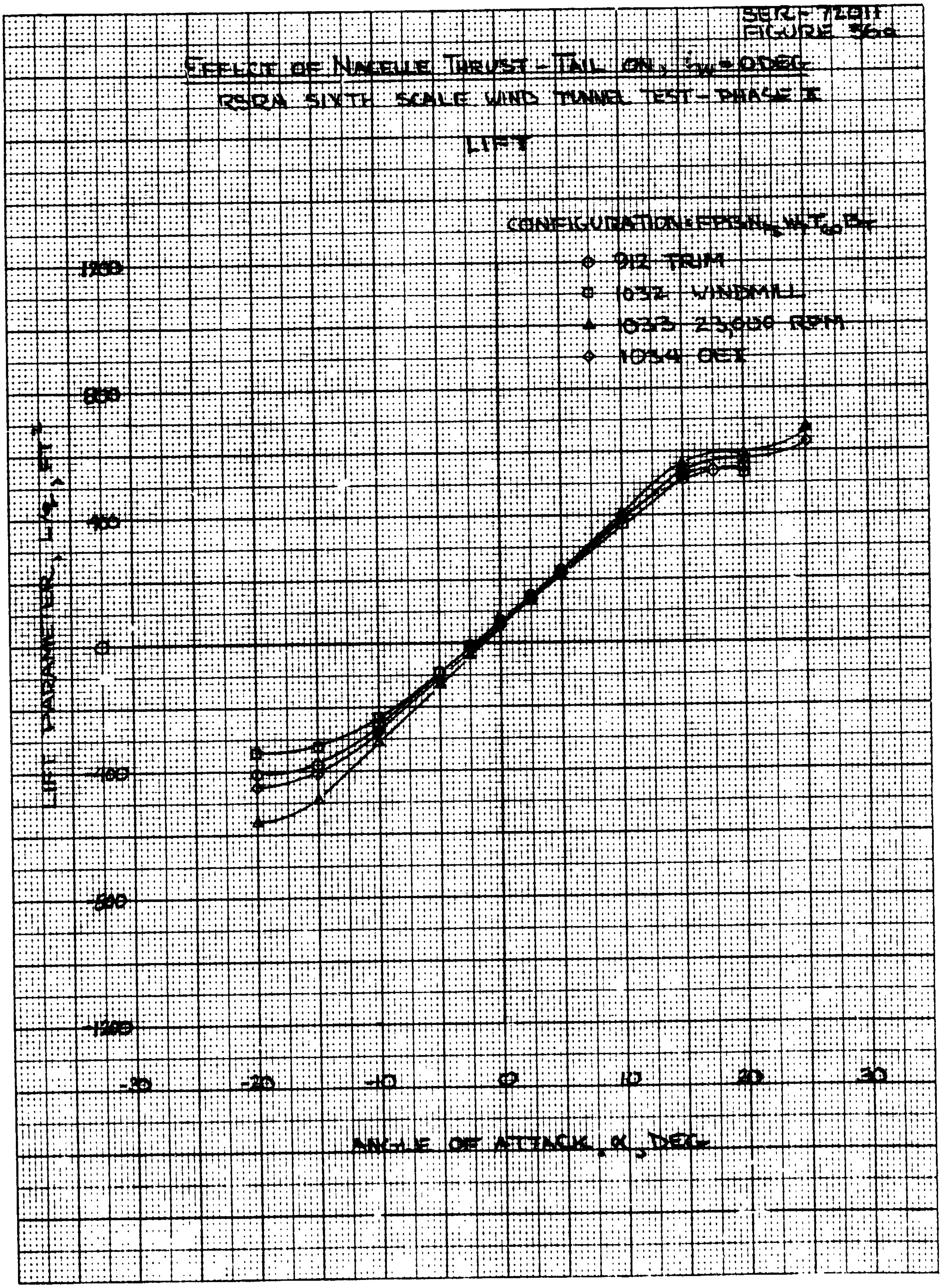
46 1473

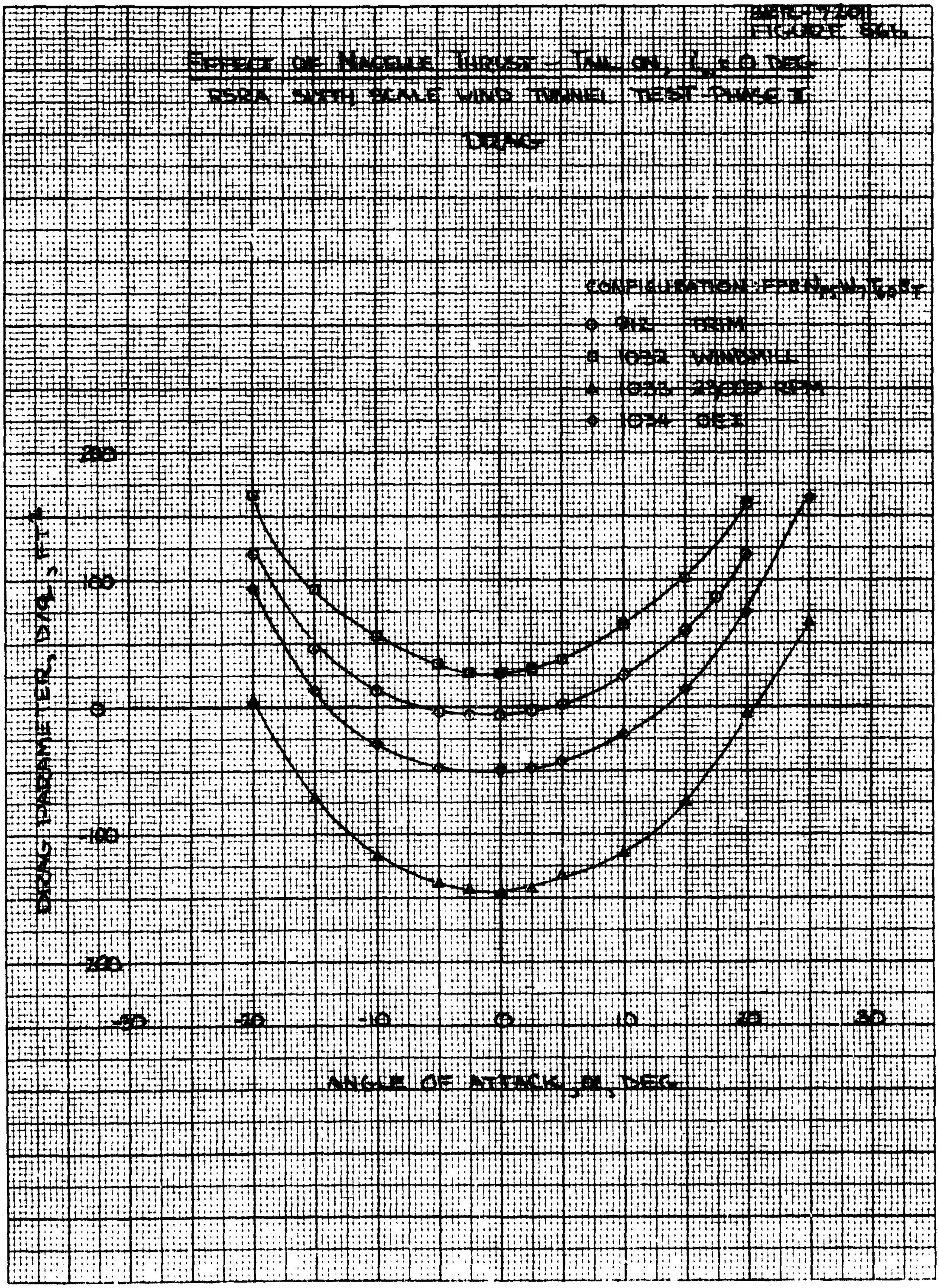
K•E 10 X 10 TO INCH • KEUFFEL & ESSER CO.

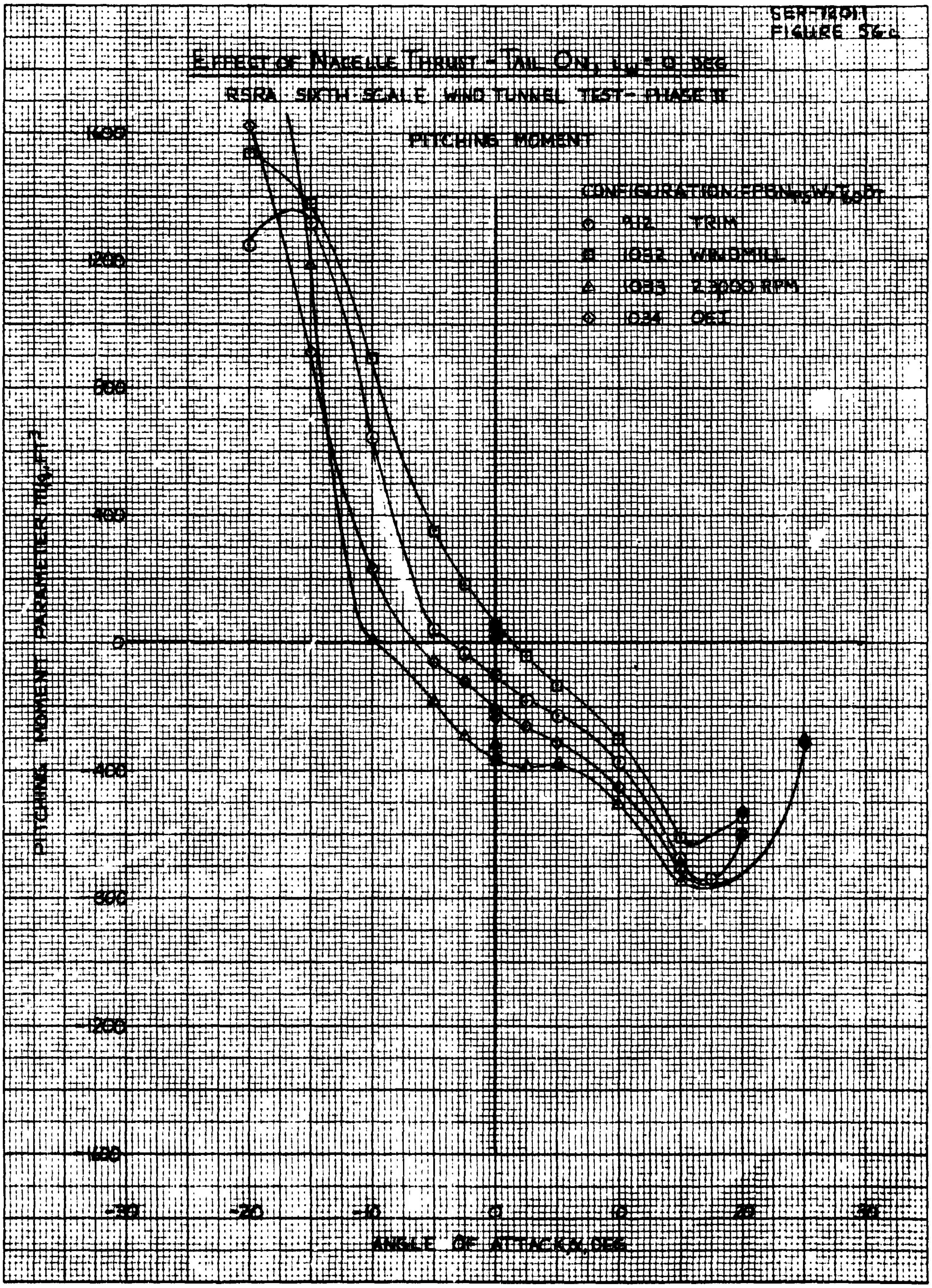

SER-72011
FIGURE 55b
EFFECT OF NACELLE THRUST - TAIL ON, i_w = -9 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
DRAG
CONFIGURATION: FPBN
1014 TRIM
1013 WINDMILL
1015 23000RPM
1016 OET
200
160
120
80
40
0
-40
-80
-120
DRAG PARAMETER, D/q, FT²
-30
-20
-10
10
20
30
ANGLE OF ATTACK, DEG

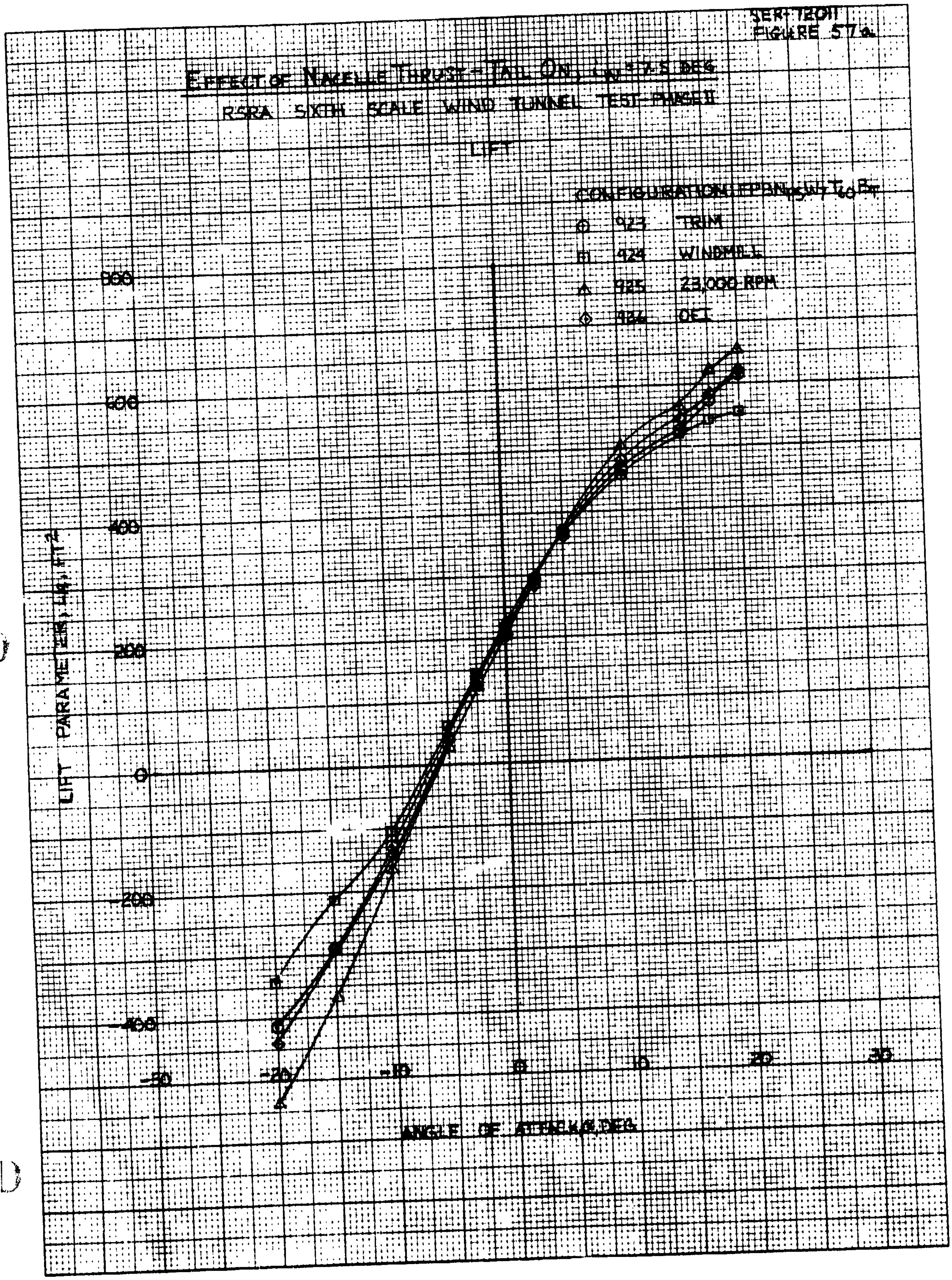


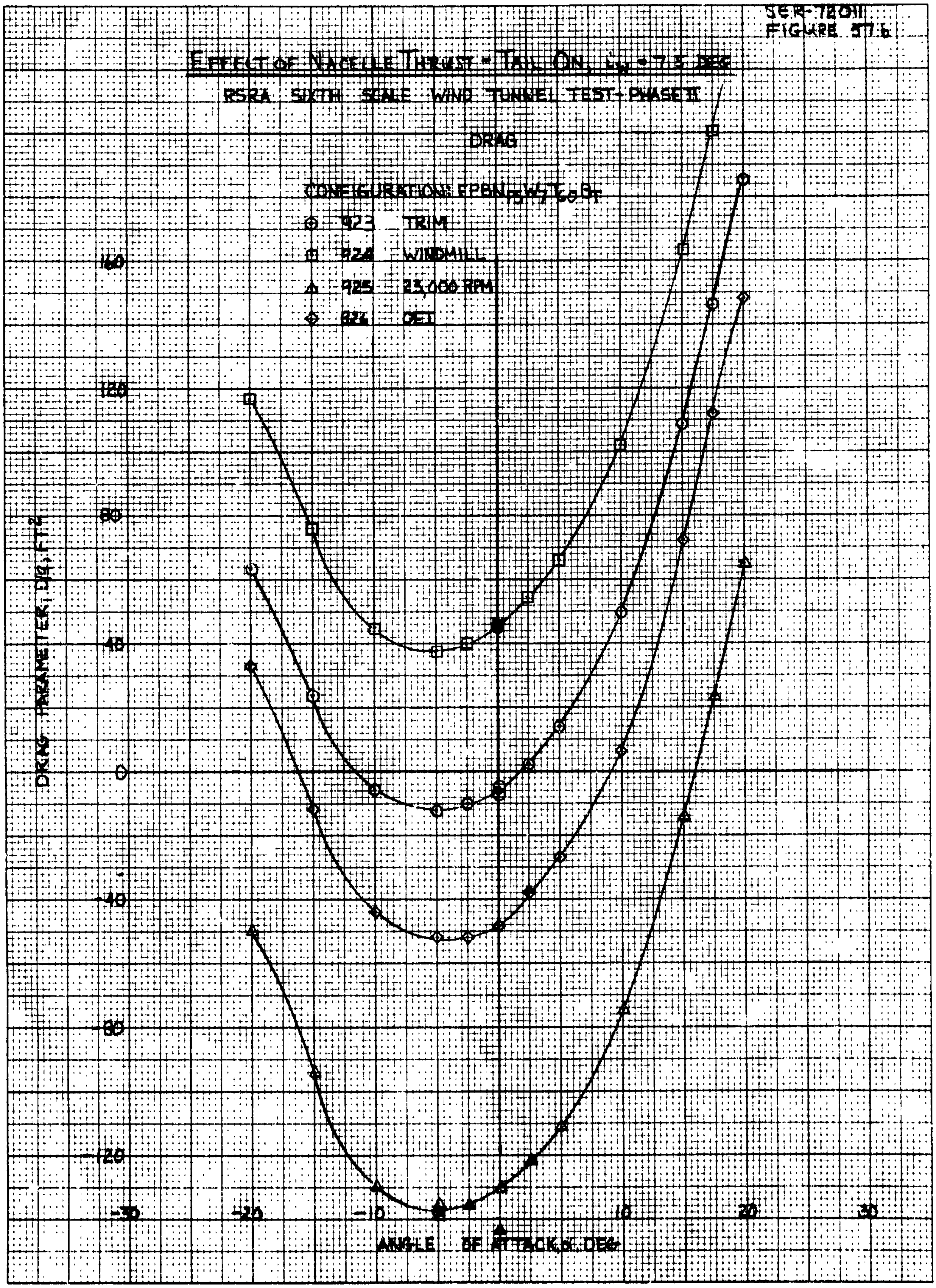
K•E 10 X 10 TO INCH • KEUFFEL & ESSER CO. 46 1473

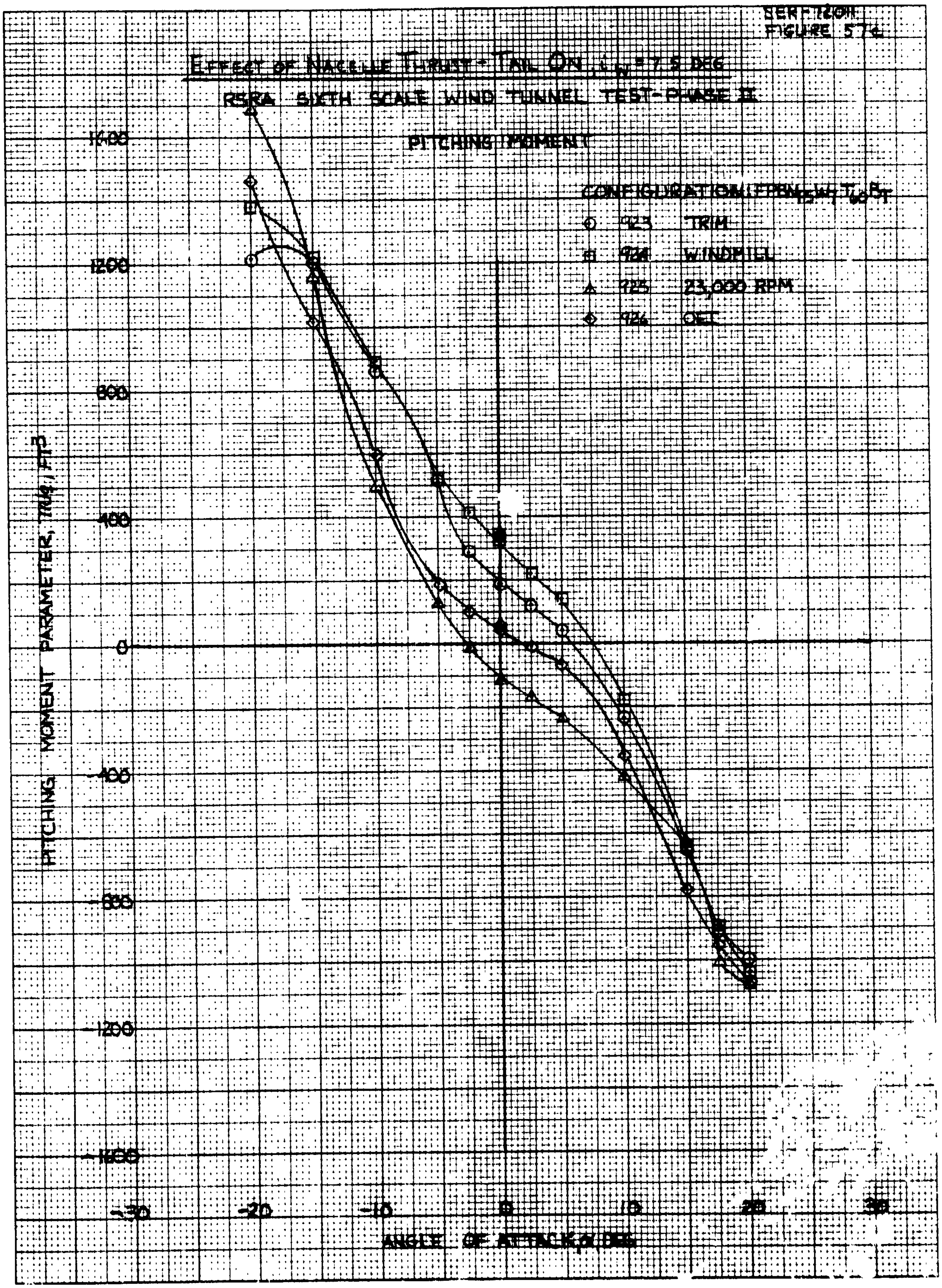

SER-72011
FIGURE 56a
EFFECT OF NACELLE THRUST - TAIL ON, iw = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT
912 TRIM
1032 WINDMILL
1033 23,000 RPM
1034 OEI
1600
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG


EFFECT OF NACELLE THRUST - TAIL ON
RSRA SIXTH SCALE WIND TUNNEL TEST PHASE II
DRAG
CONFIGURATION:
912 TRIM
1032 WINDMILL
200
100
0
-100
-200
-30
-20
-10
0
10
20
30
DRAG PARAMETER, D/q, FT²
ANGLE OF ATTACK, α, DEG

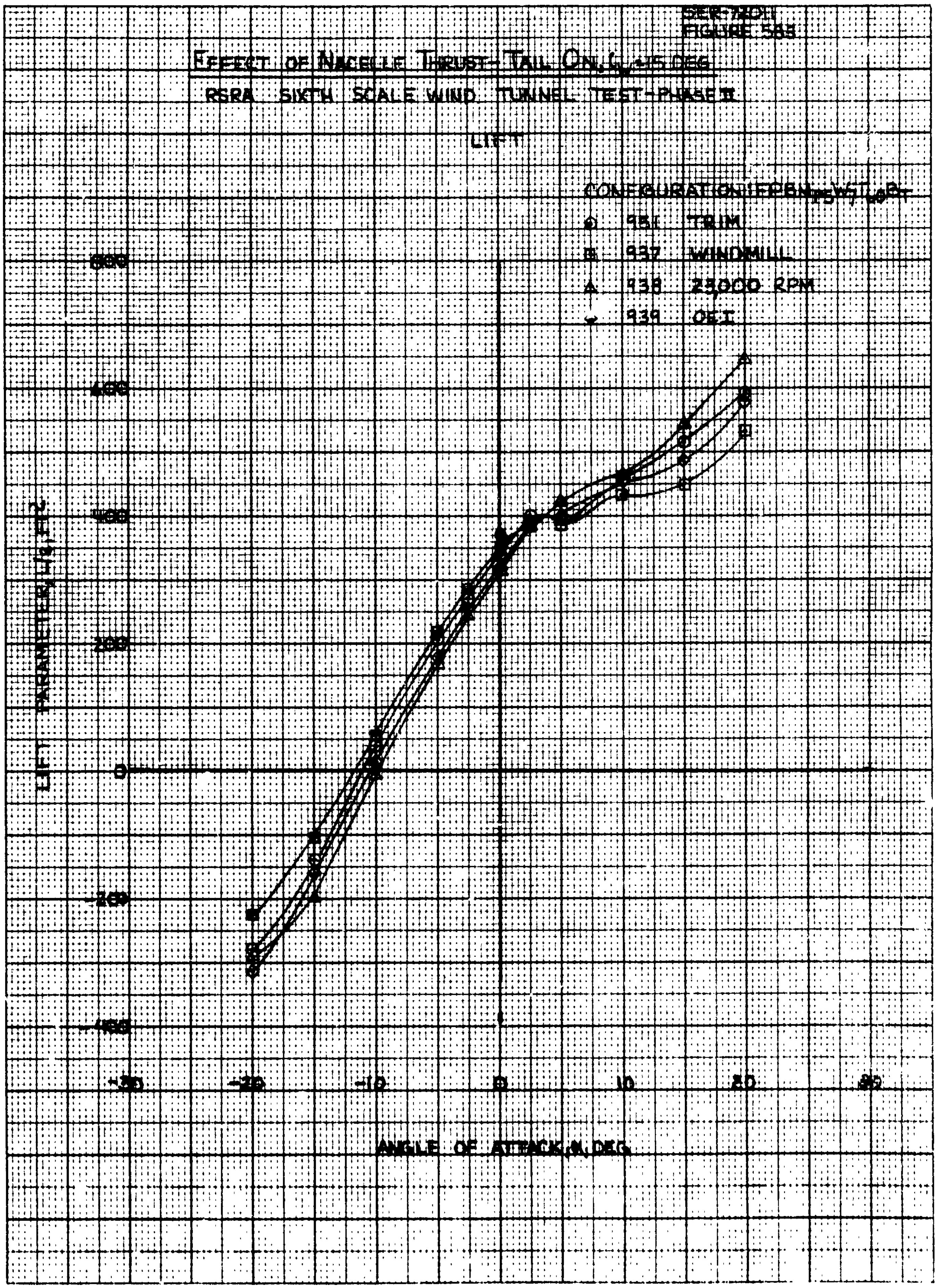

SER-72011
FIGURE 56c
EFFECT OF NACELLE THRUST - TAIL ON, i_w = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT
CONFIGURATION
912 TRIM
1032 WINDMILL
1033 23000 RPM
1034 OEI
1600
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG
PITCHING MOMENT PARAMETER

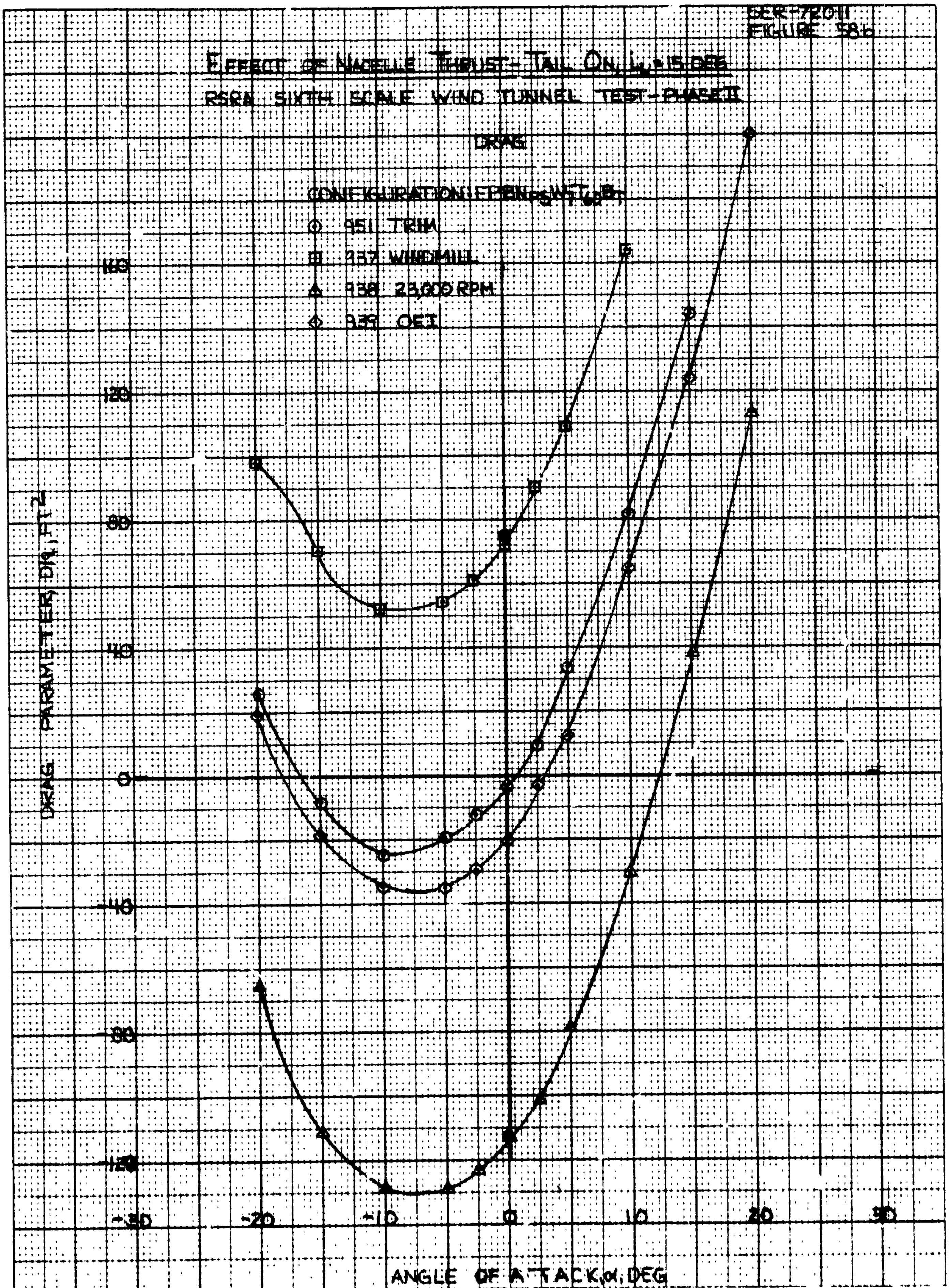

SER-72011
FIGURE 57a
EFFECT OF NACELLE THRUST - TAIL ON, i_W = 7.5 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
LIFT
CONFIGURATION: FPBN$_{05}$W$_7$T$_{40}$R$_{T}$
923 TRIM
924 WINDMILL
925 23,000 RPM
936 OEI
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
LIFT PARAMETER, L/q, FT2
ANGLE OF ATTACK α, DEG

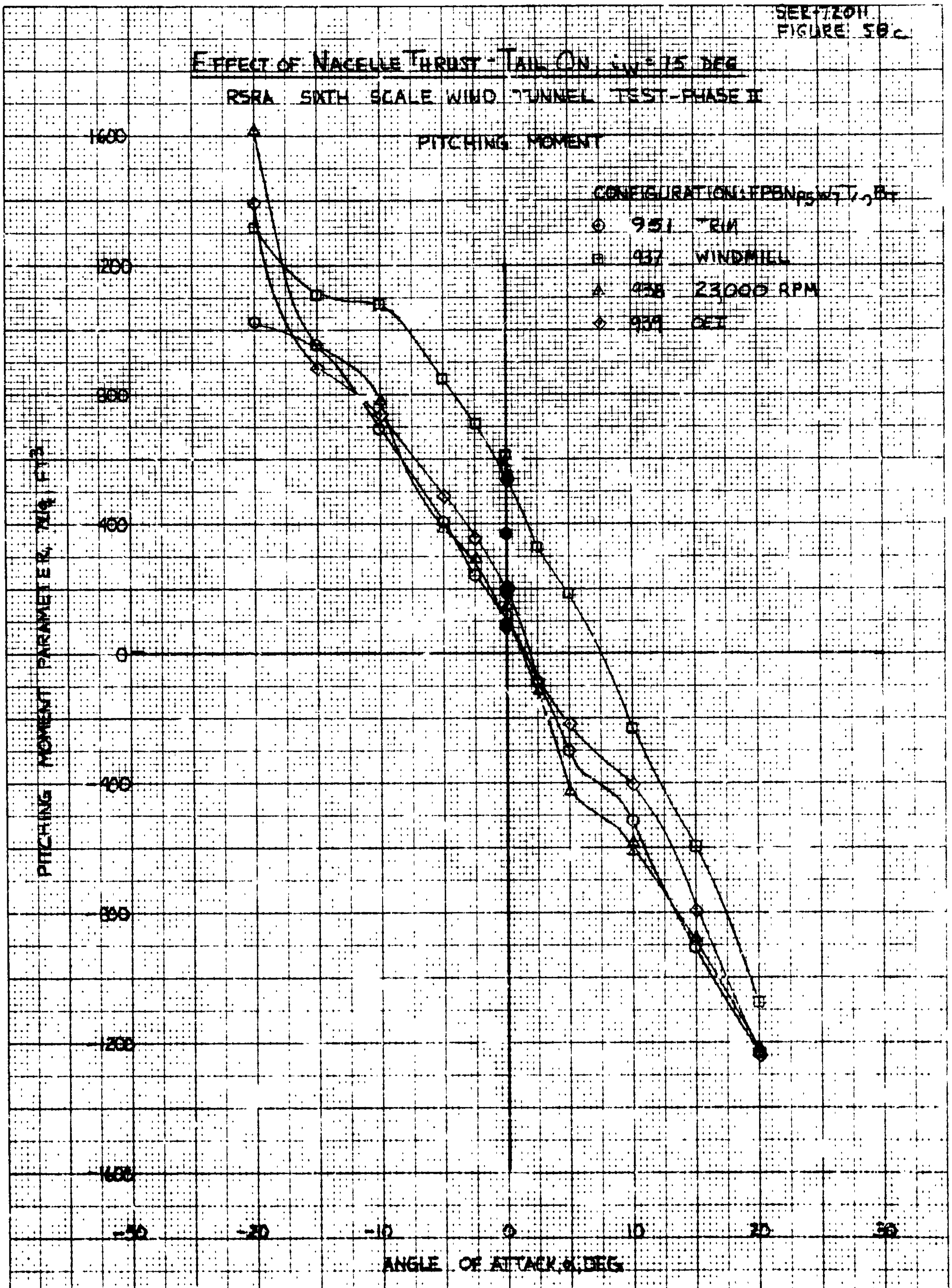

SER-72011
FIGURE 57.6
EFFECT OF NACELLE THRUST - TAIL ON, iW = 7.5 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
DRAG
CONFIGURATION: FPBN75W7T60BT
923 TRIM
924 WINDMILL
925 23,000 RPM
926 OEI
160
120
80
40
0
-40
-80
-120
-30
-20
-10
10
20
30
DRAG PARAMETER, D/q, FT²
ANGLE OF ATTACK, α, DEG


SER-72011
FIGURE 57c
EFFECT OF NACELLE THRUST - TAIL ON, i_W = 7.5 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
PITCHING MOMENT
CONFIGURATION: $FPBN_{15}W_1T_{60}B_T$
923 TRIM
924 WINDMILL
925 23,000 RPM
926 OEI
PITCHING MOMENT PARAMETER, M/q, FT3
1600
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

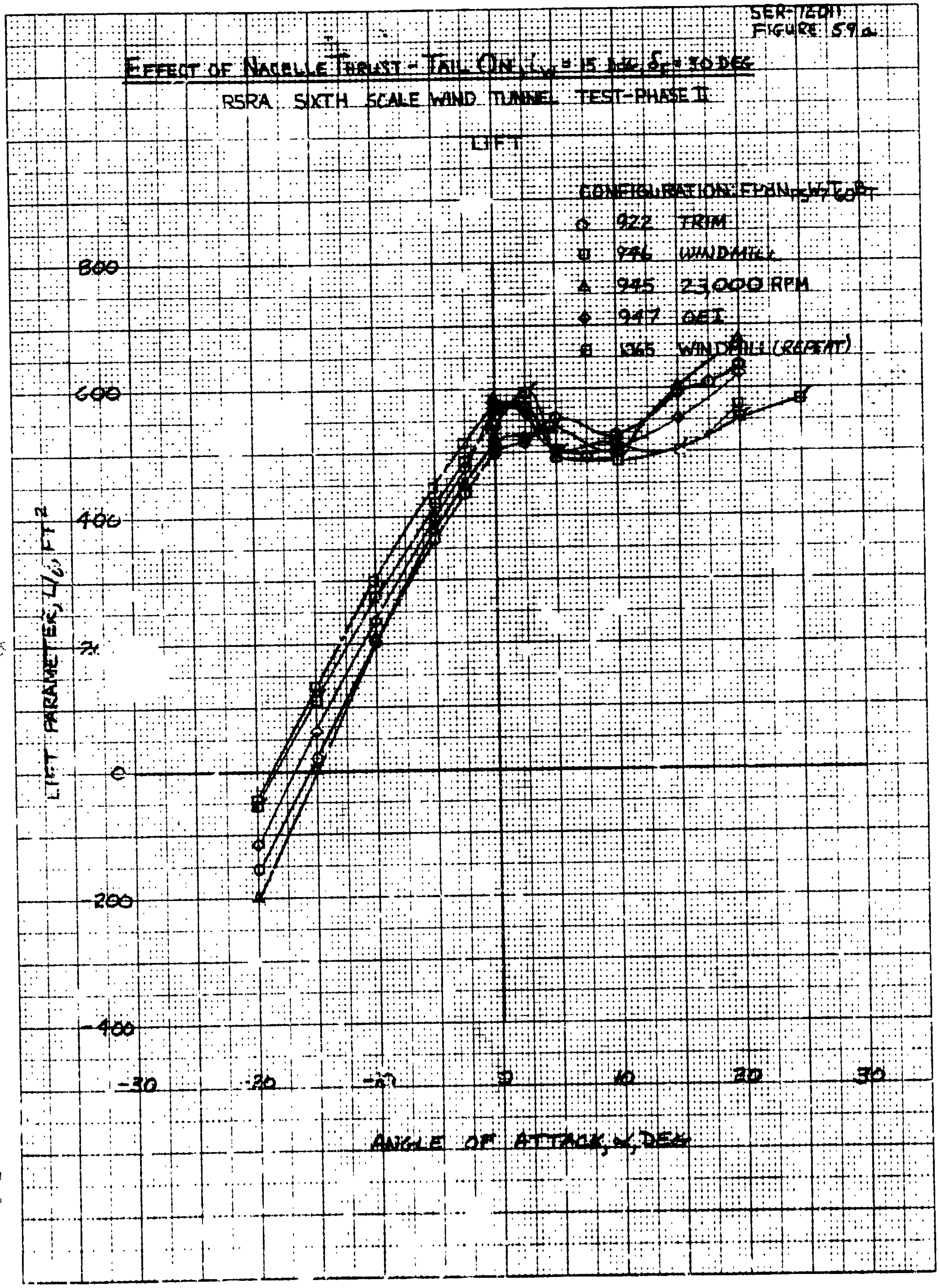
46 1473


SER-72011
FIGURE 588
EFFECT OF NACELLE THRUST - TAIL ON, i_H = +5 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT
CONFIGURATION: FPBN₂₅WT₁₀P₁
951 TRIM
937 WINDMILL
938 23,000 RPM
939 OEI
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
LIFT PARAMETER, L/q, FT²
ANGLE OF ATTACK, α, DEG


EFFECT OF NACELLE THRUST - TAIL ON, iH=15 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
CONFIGURATION: F7BNH5W1T4H8H7
951 TRIM
937 WINDMILL
938 23,000 RPM
939 OEI
DRAG PARAMETER, DR, FT2
160
120
80
40
0
-40
-80
-120
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

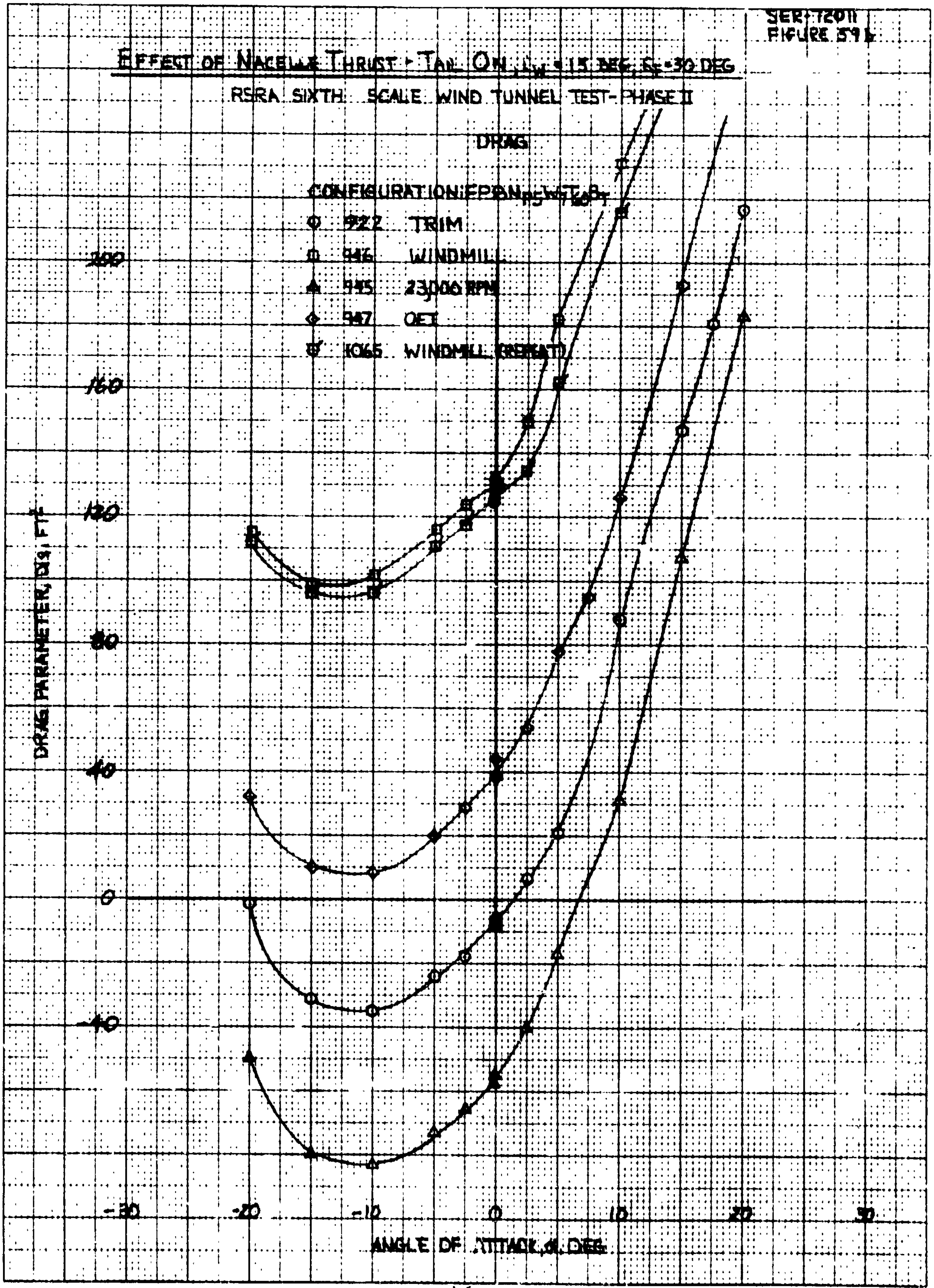


SEE-72011
FIGURE 58c
EFFECT OF NACELLE THRUST - TAIL ON, iw = 15 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
PITCHING MOMENT
CONFIGURATION: FPBN
951 TRIM
937 WINDMILL
938 23,000 RPM
939 OEI
1600
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG
PITCHING MOMENT PARAMETER, M/q, FT³



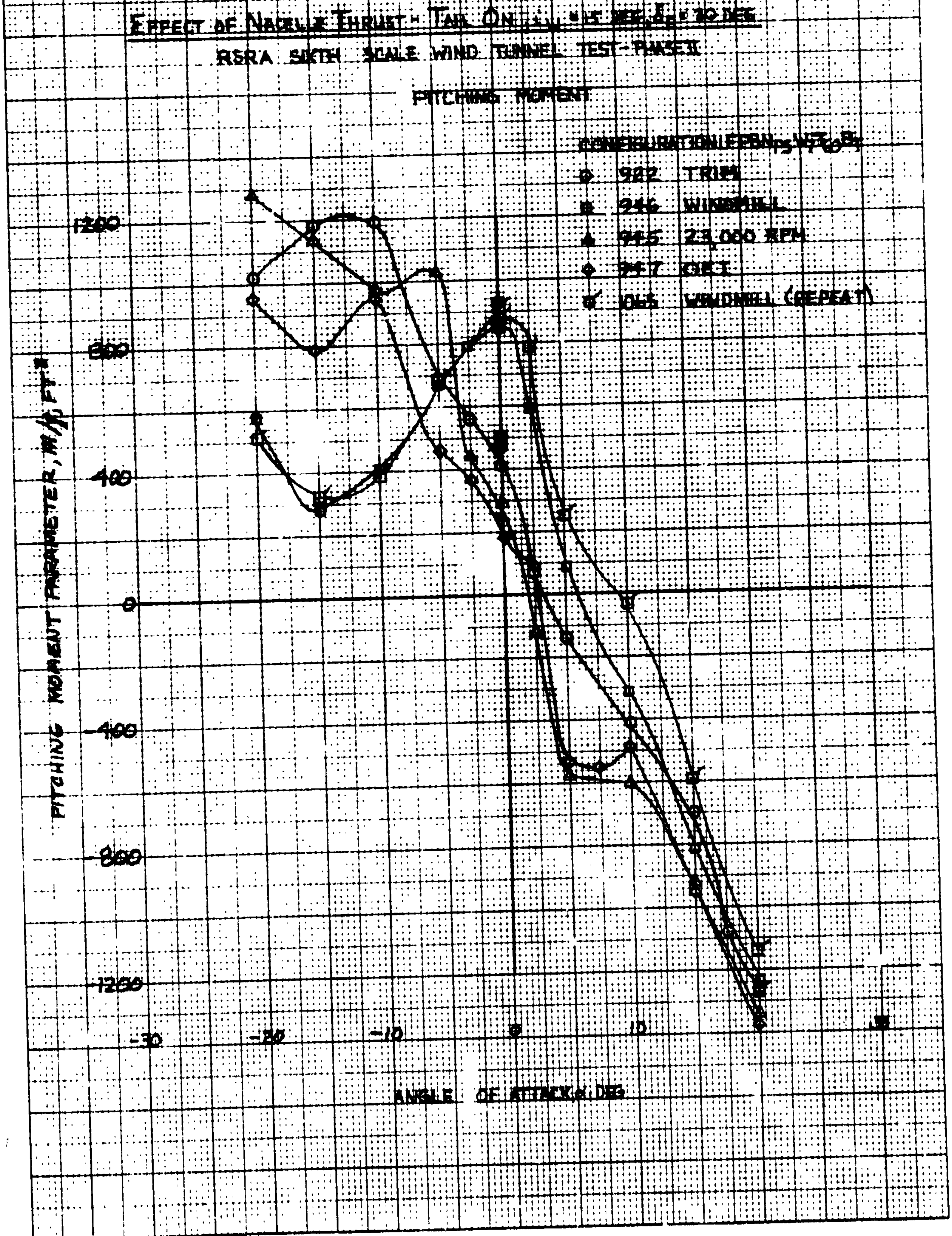
SER-TEDH
FIGURE 59a
EFFECT OF NACELLE THRUST - TAIL ON, i_w = 15 DEG δ_F = 30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
LIFT
CONFIGURATION: F P N W T
922 TRIM
946 WINDMILL
945 23,000 RPM
947 OEI
1365 WINDMILL (REPEAT)
800
600
400
0
-200
-400
-30
-20
0
10
20
30
LIFT PARAMETER, L/q, FT²
ANGLE OF ATTACK, α, DEG

46 1473

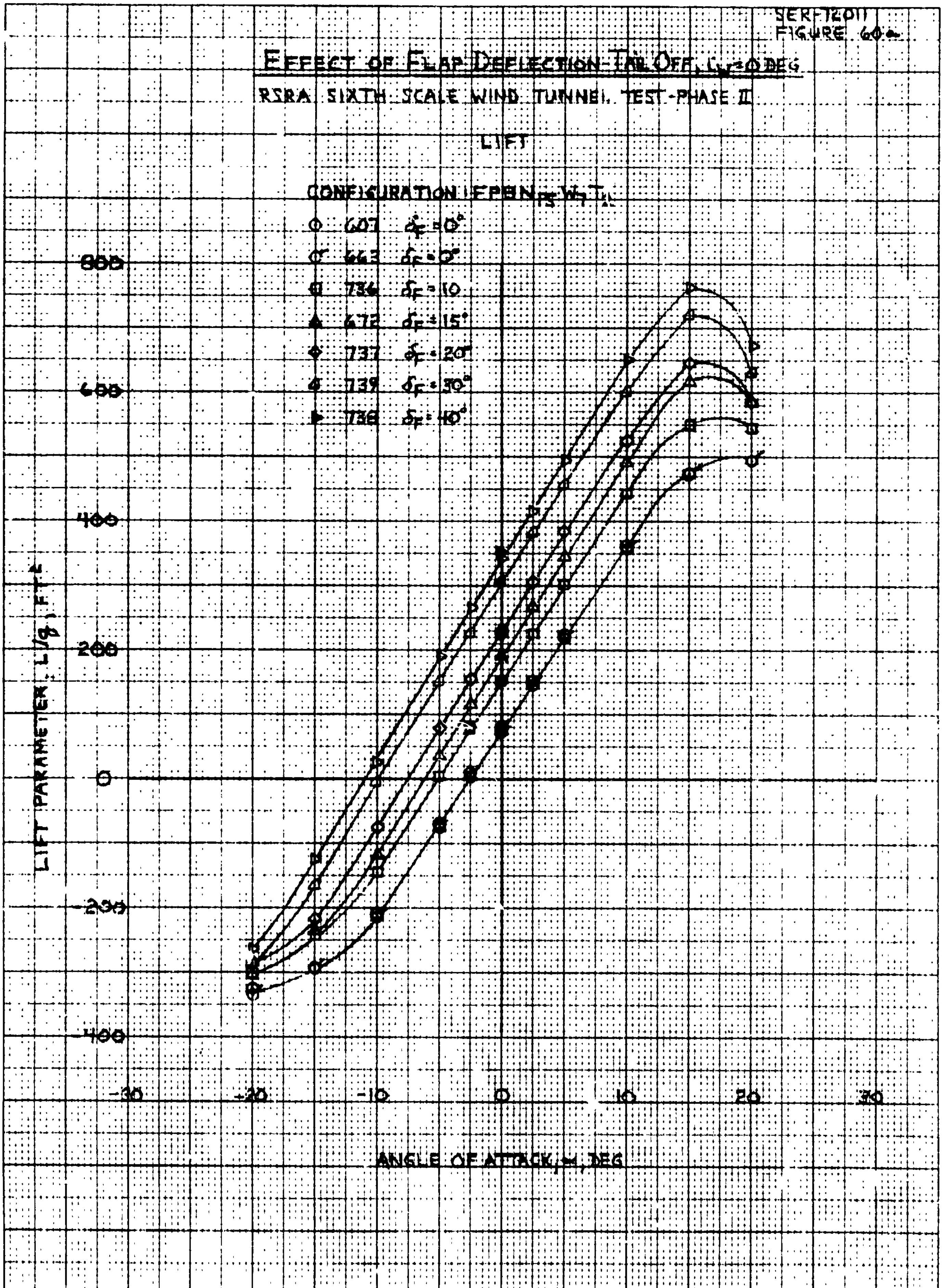


SER-72011
FIGURE 59 b
EFFECT OF NACELLE THRUST - TAIL ON, iw = 15 DEG, δf = 30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
DRAG
CONFIGURATION: F P B N
922 TRIM
946 WINDMILL
945 23,000 RPM
947 OEI
1065 WINDMILL (REPEAT)
DRAG PARAMETER, D/q, FT²
ANGLE OF ATTACK, α, DEG
200
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30

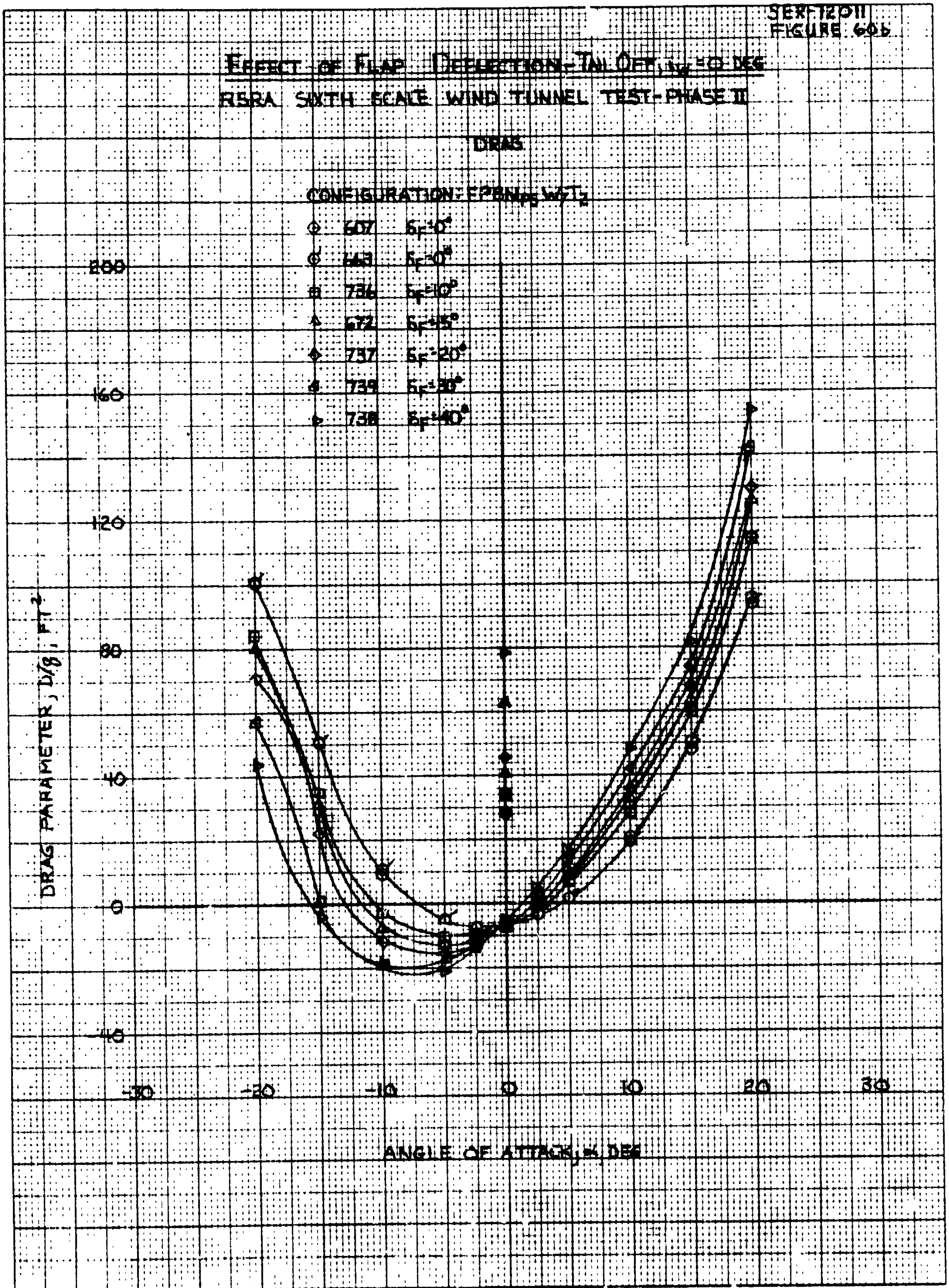
SER-112411
FIGURE 59

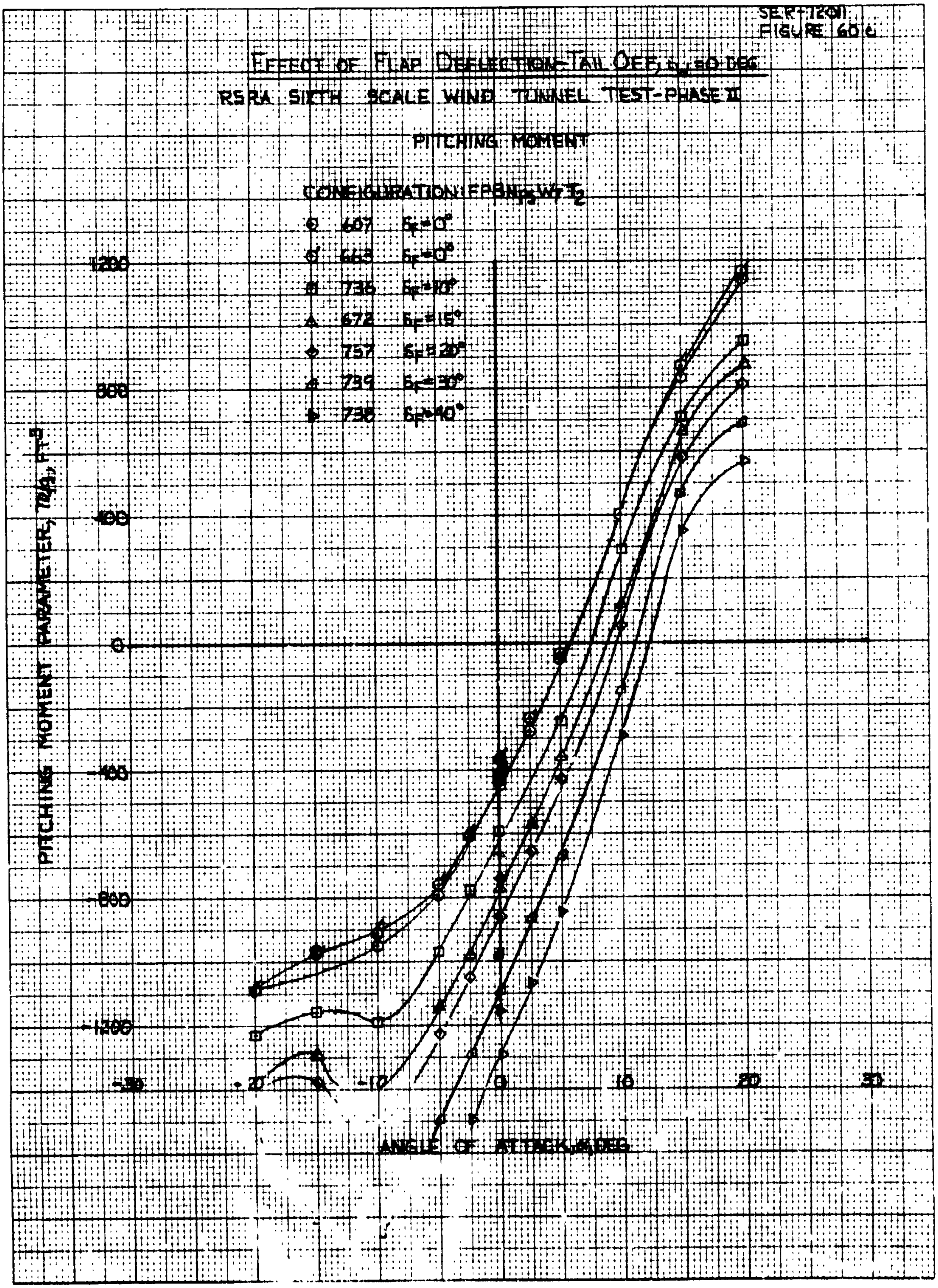


46 1473



SER-72011
FIGURE 60a
EFFECT OF FLAP DEFLECTION-TAIL OFF, ψ=0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
LIFT
CONFIGURATION: FPBN WT
607 δF=0°
663 δF=0°
736 δF=10
672 δF=15°
737 δF=20°
739 δF=30°
738 δF=40°
LIFT PARAMETER, L/q, FT²
ANGLE OF ATTACK, α, DEG
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30


SER-12011
FIGURE 60b
EFFECT OF FLAP DEFLECTION-TAIL OFF, i_W=0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
CONFIGURATION: FPBN W T
607 δ_F=0°
663 δ_F=0°
736 δ_F=10°
672 δ_F=15°
737 δ_F=20°
739 δ_F=30°
738 δ_F=40°
200
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30
DRAG PARAMETER, D/q, FT²
ANGLE OF ATTACK, α, DEG

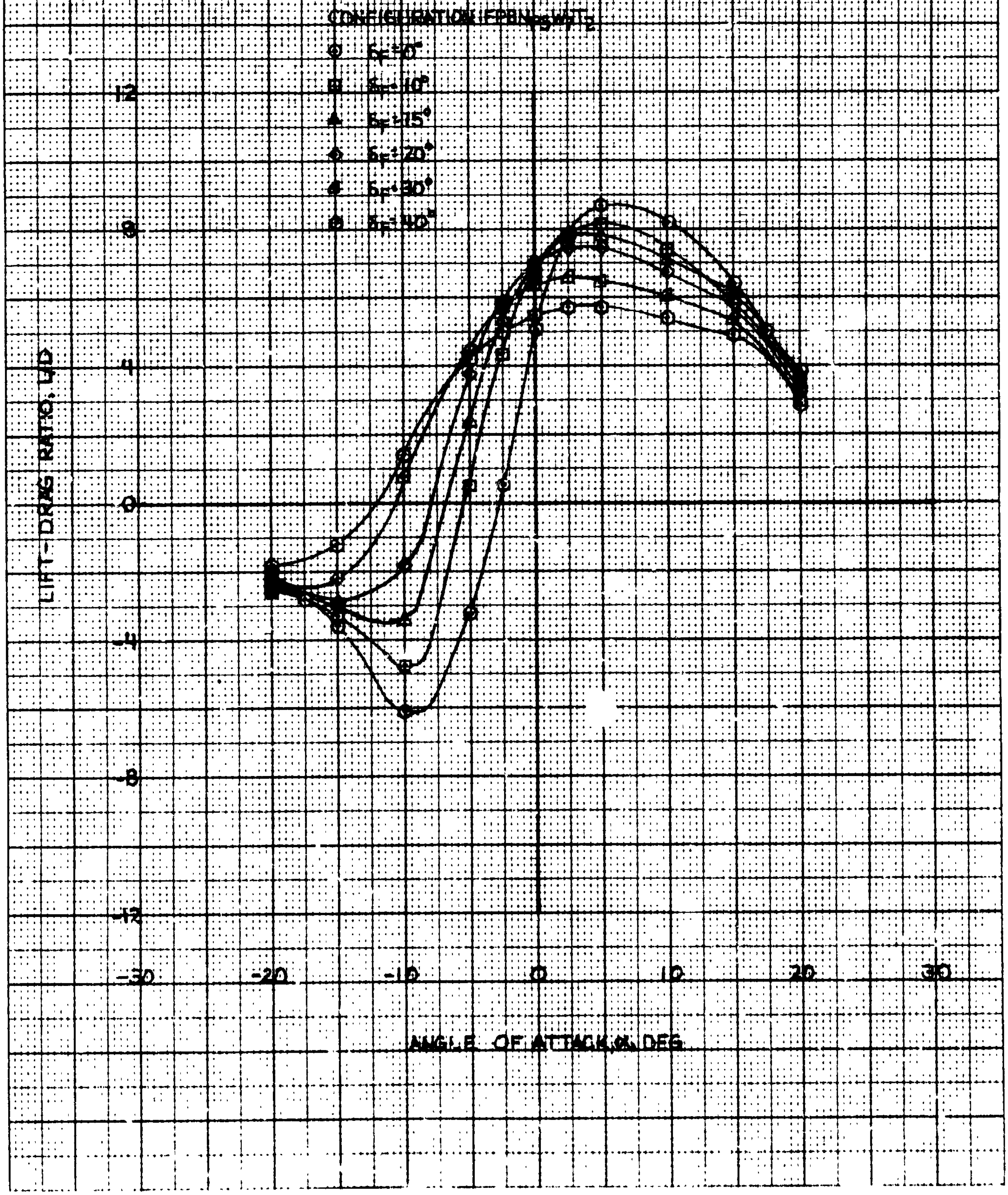

SER-72011
FIGURE 60 c
EFFECT OF FLAP DEFLECTION-TAIL OFF, i_w=0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
PITCHING MOMENT
CONFIGURATION: FPBN$_{15}$W$_7$T$_2$
607 δ_F=0°
663 δ_F=0°
736 δ_F=10°
672 δ_F=15°
757 δ_F=20°
739 δ_F=30°
738 δ_F=40°
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG
PITCHING MOMENT PARAMETER, M/q, FT³

SER-72011
FIGURE 61a

EFFECT OF FLAP DEFLECTION ON LIFT-DRAG RATIO

RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE I

L/D vs. α



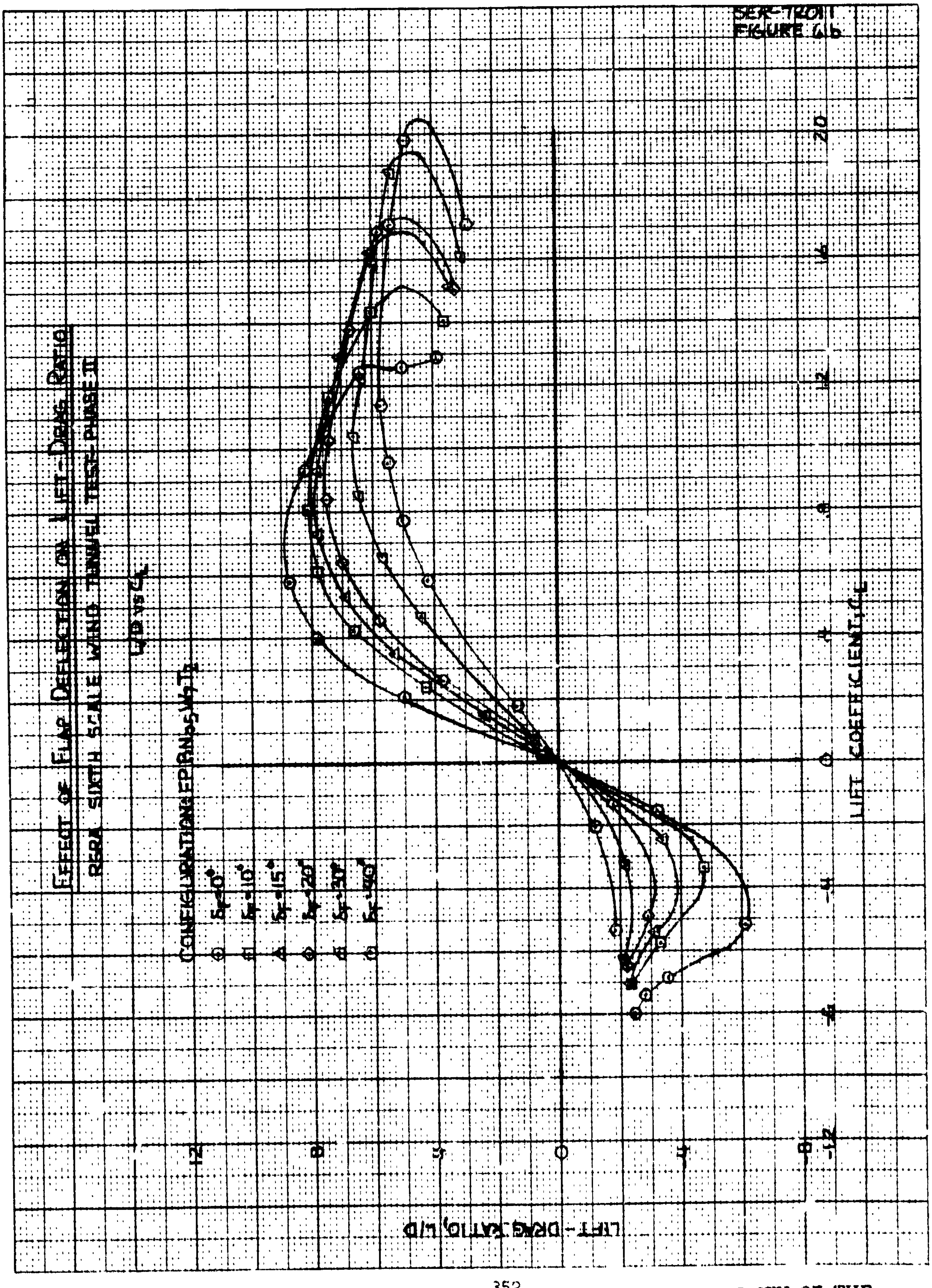
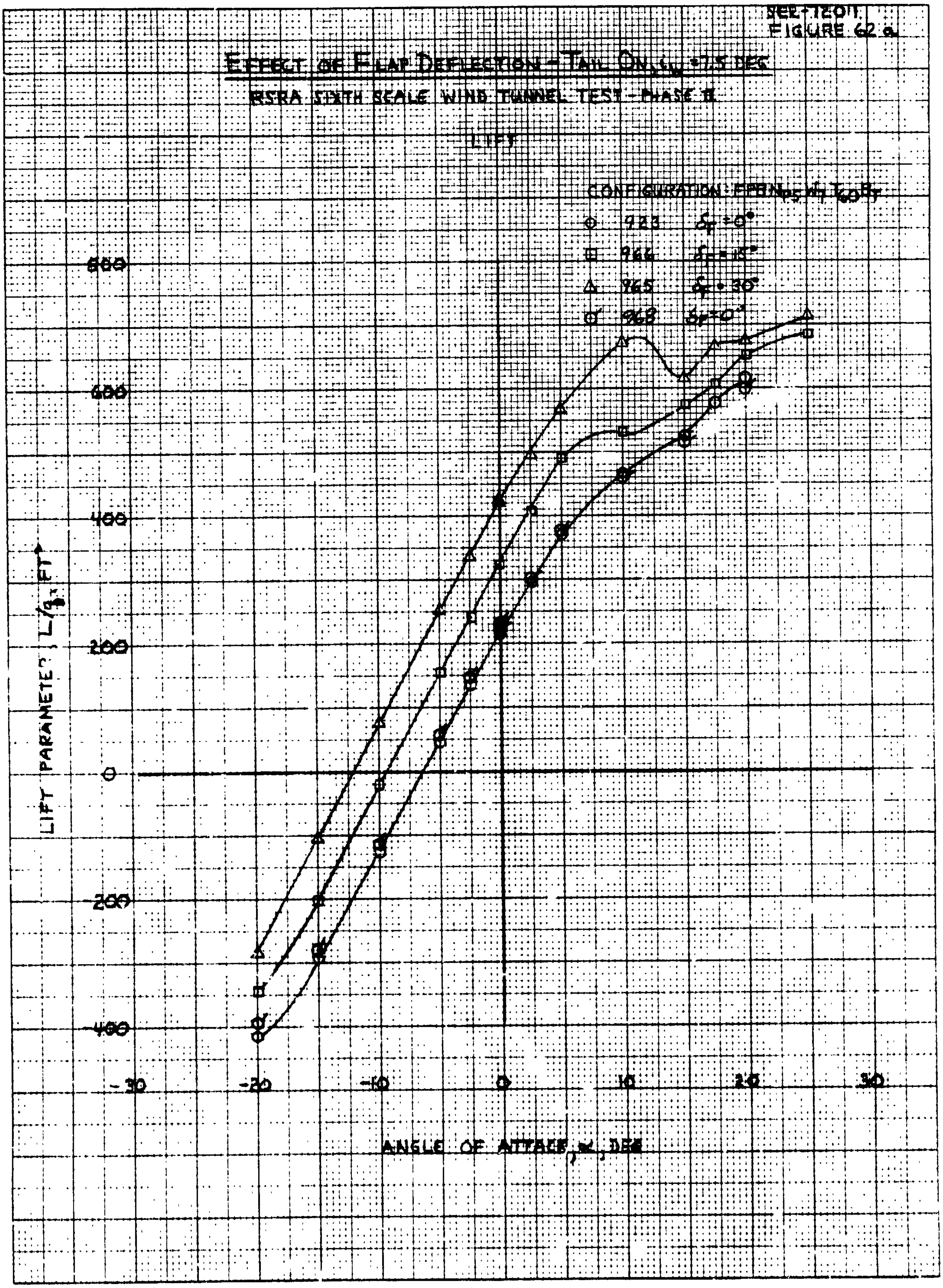
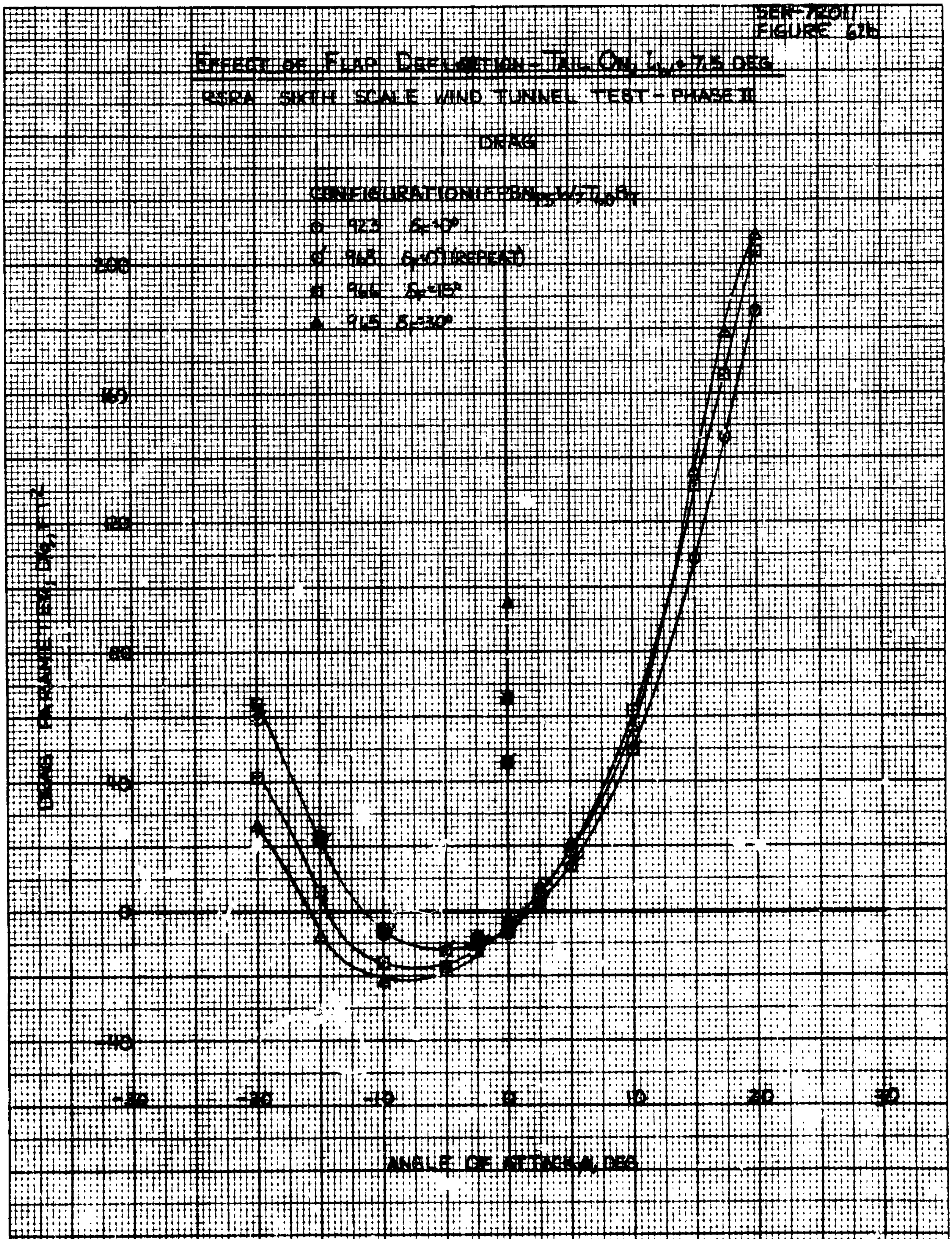
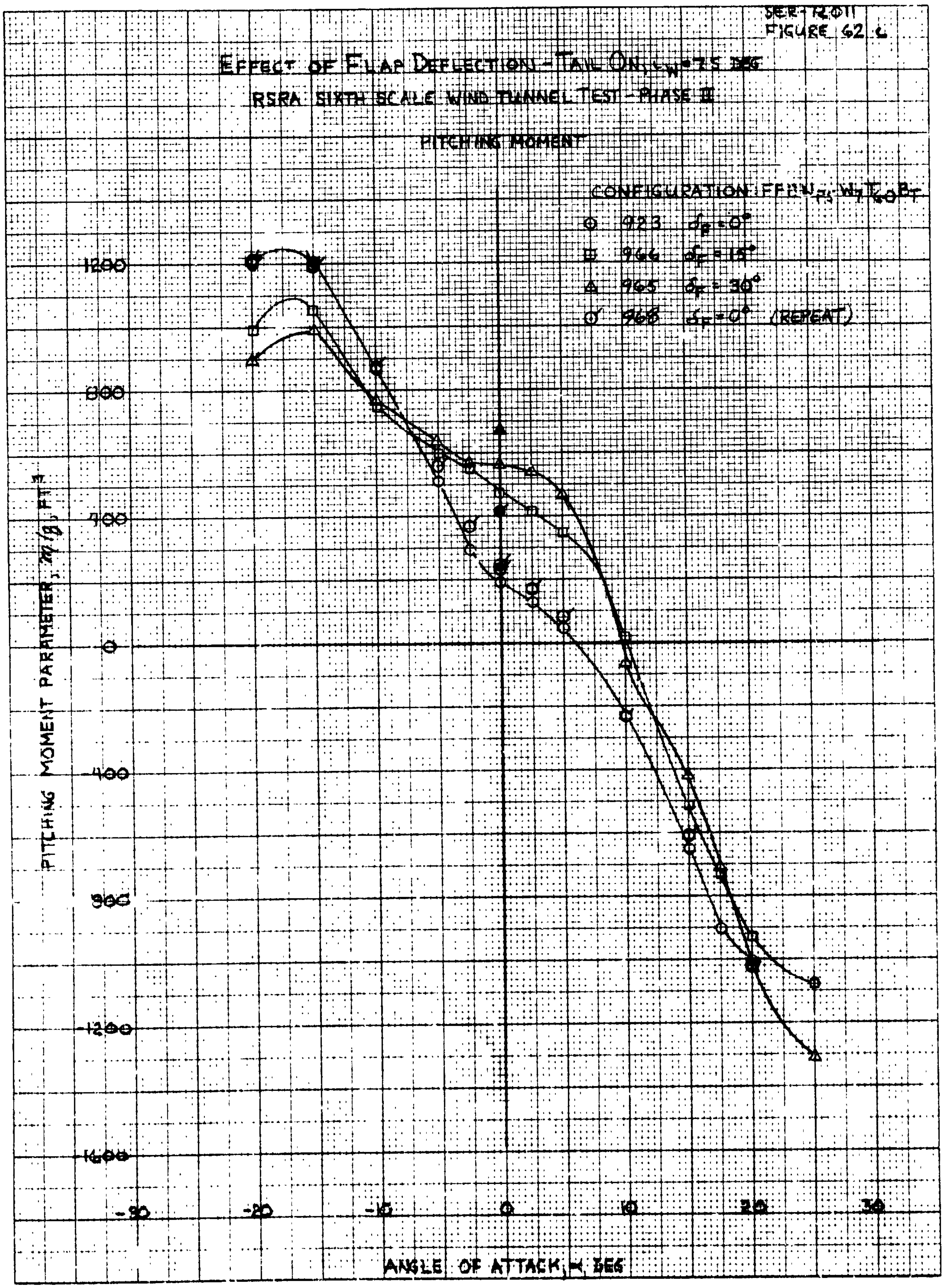


FIGURE 6b
EFFECT OF FLAP DEFLECTION ON LIFT-DRAG RATIO
RERA SIXTH SCALE WIND TUNNEL TEST-PHASE II
L/D vs CL
LIFT COEFFICIENT, CL
LIFT-DRAG RATIO, L/D

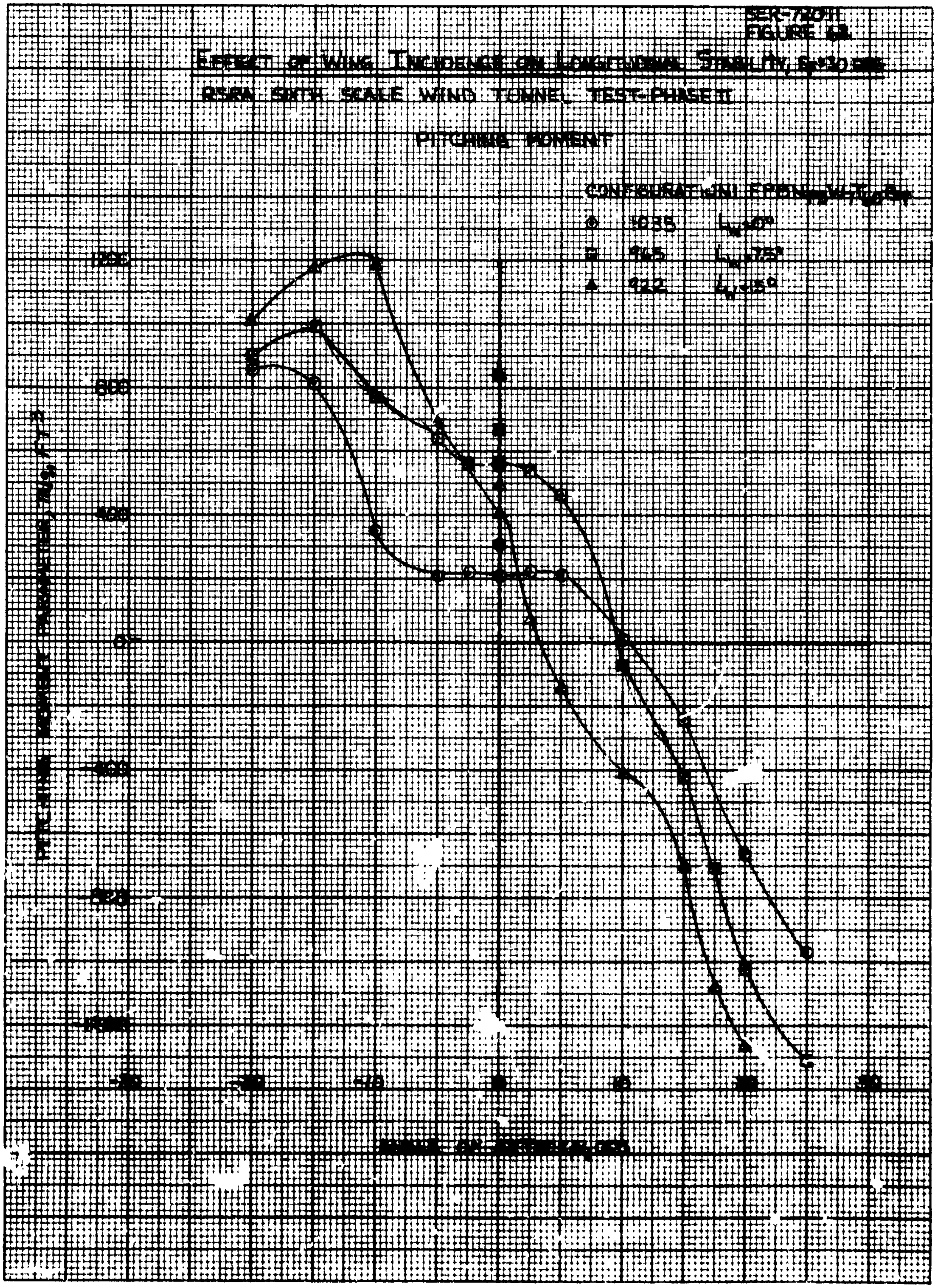

SEE-TE011
FIGURE 62a
EFFECT OF FLAP DEFLECTION - TAIL ON, i_w = 7.5 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT
CONFIGURATION: FPBN WT BY
923 δ_F = 0°
966 δ_F = 15°
965 δ_F = 30°
968 δ_F = 0°
LIFT PARAMETER, L/q, FT²
ANGLE OF ATTACK, α, DEG

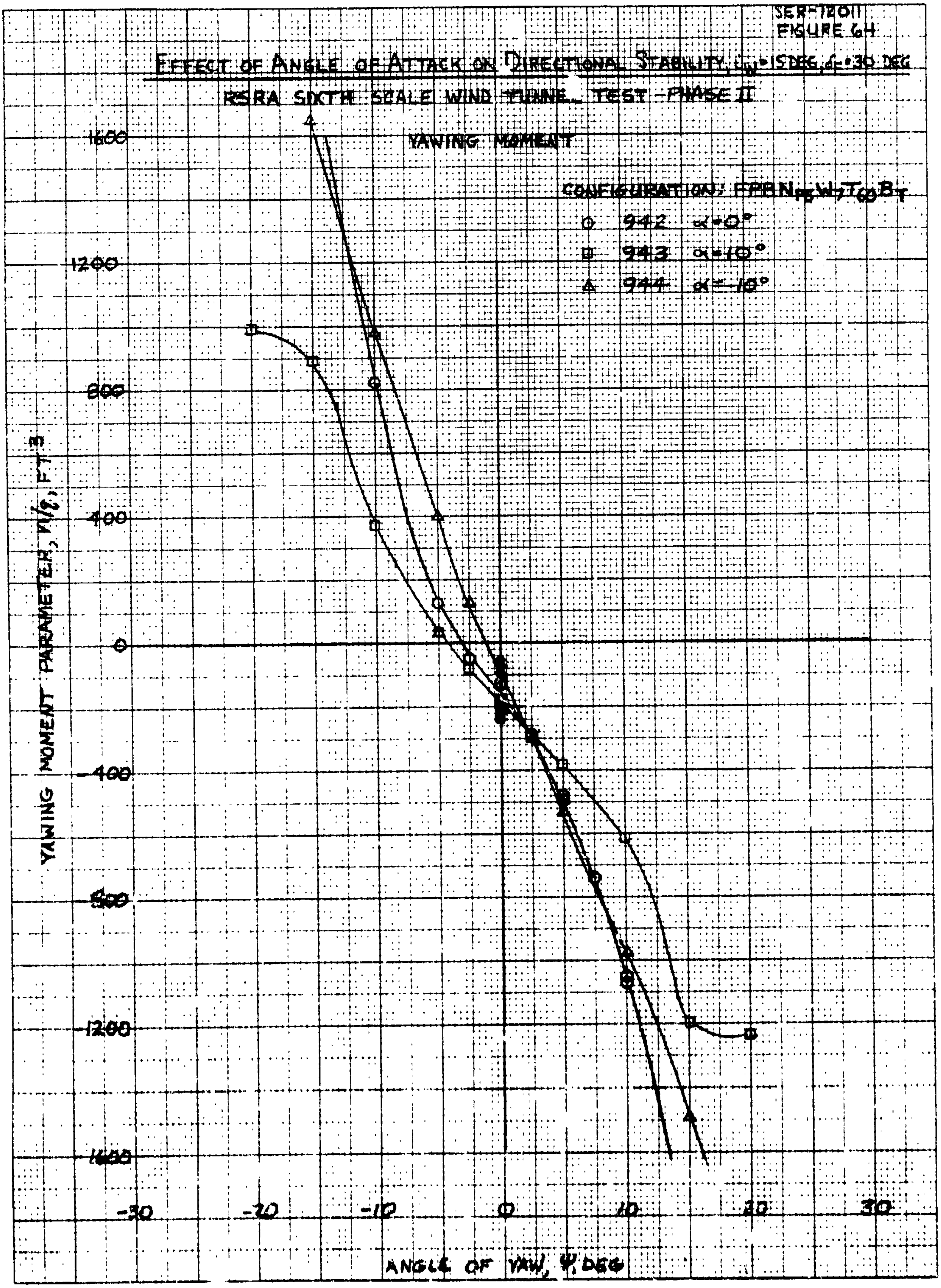

EFFECT OF FLAP DEFLECTION - TAIL ON
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
DRAG
200
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, DEG



SER-72011
FIGURE 62 c
EFFECT OF FLAP DEFLECTION - TAIL ON, i_W = 7.5 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT
CONFIGURATION
923 δF = 0°
966 δF = 15°
965 δF = 30°
968 δF = 0° (REPEAT)
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
PITCHING MOMENT PARAMETER, M/q, FT³
ANGLE OF ATTACK, α, DEG

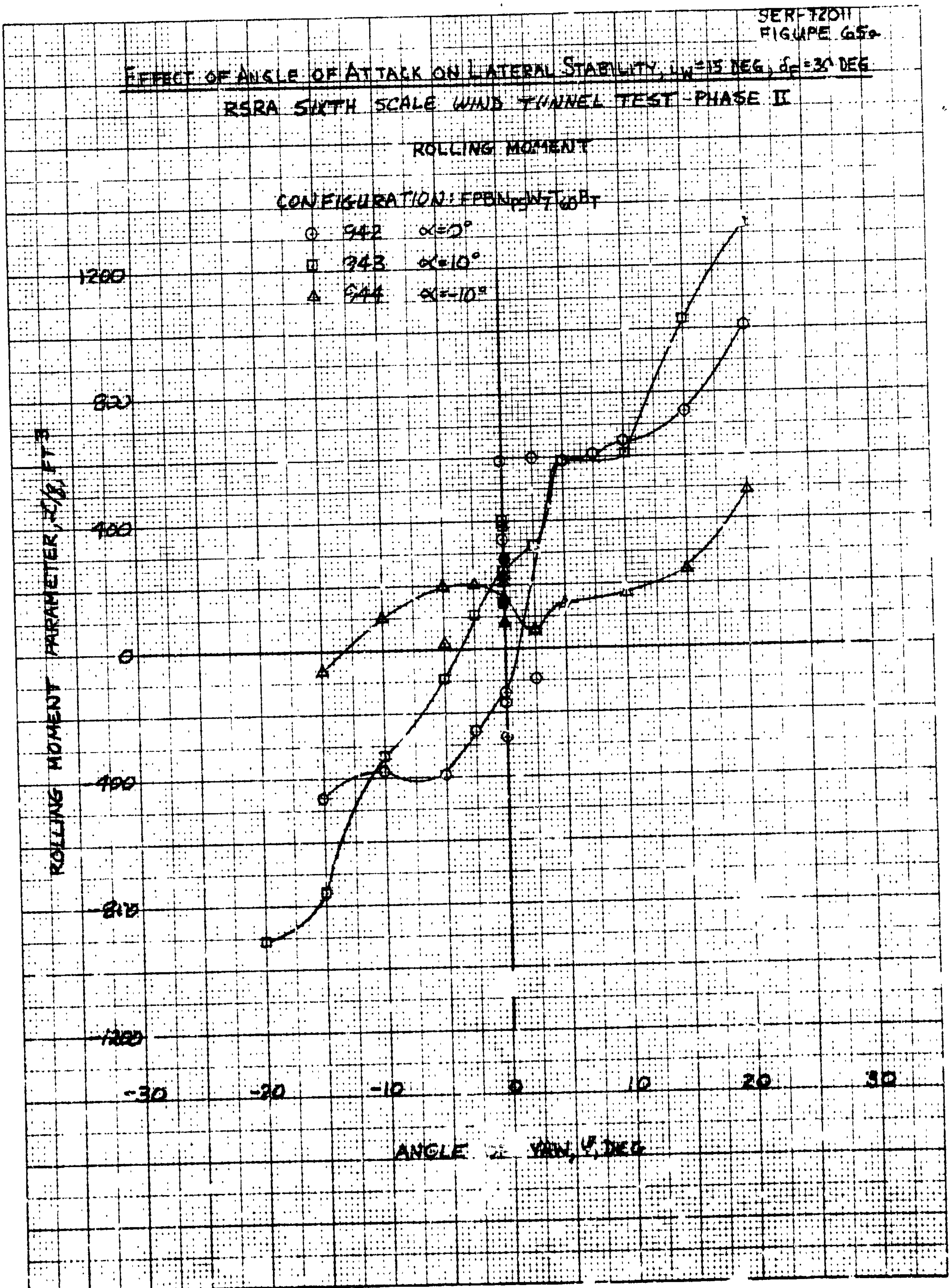
46 1473

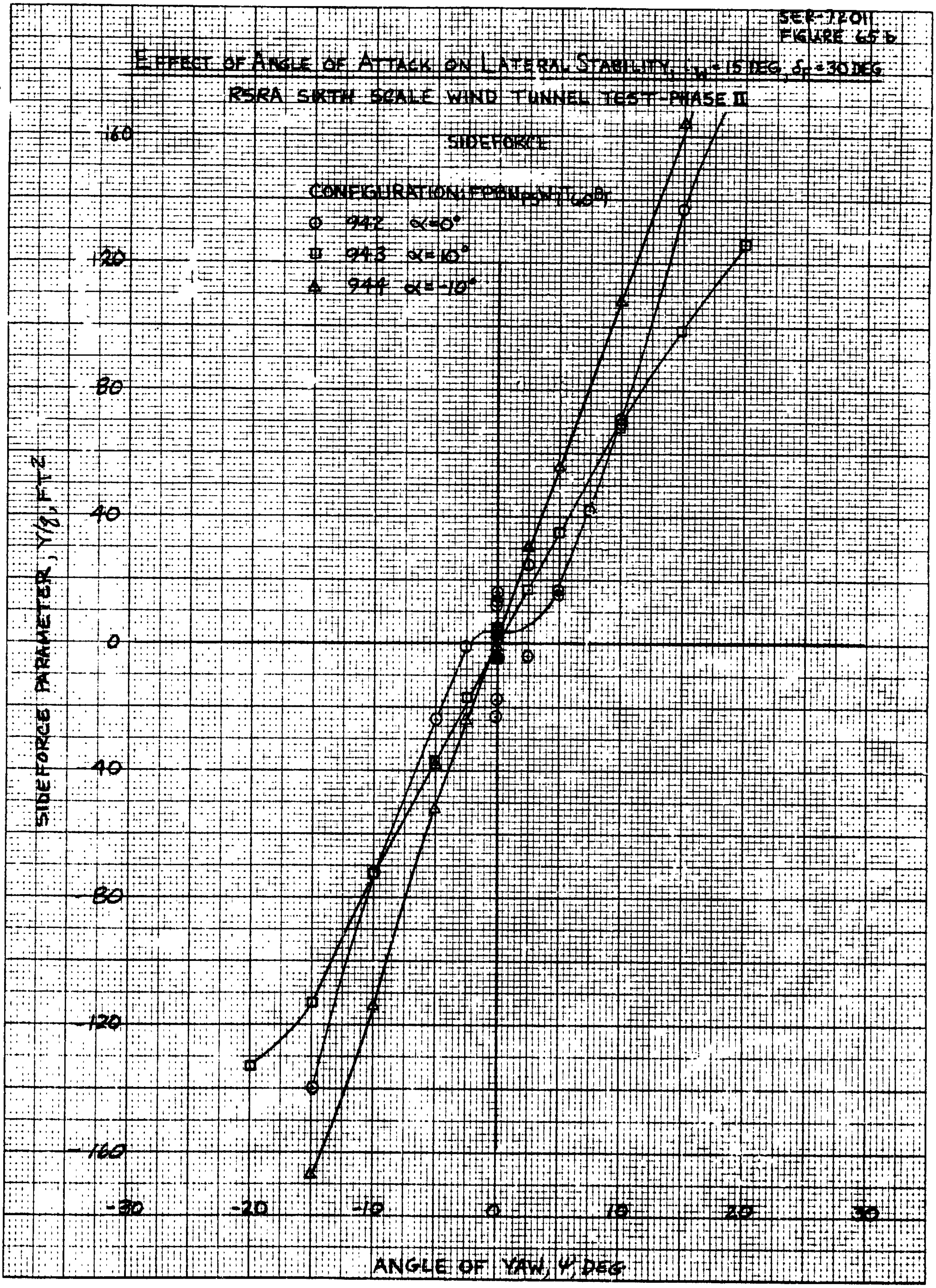

EFFECT OF WING INCIDENCE ON LONGITUDINAL STABILITY
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
PITCHING MOMENT
1035
965
922
1200
800
400
0
-400
-800
-20
-10
0
10
20
30



SER-72011
FIGURE 64
EFFECT OF ANGLE OF ATTACK ON DIRECTIONAL STABILITY
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT
CONFIGURATION:
942 α=0°
943 α=10°
944 α=-10°
1600
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
YAWING MOMENT PARAMETER
ANGLE OF YAW, Ψ, DEG

46 1473


EFFECT OF ANGLE OF ATTACK ON LATERAL STABILITY, i_W=15 DEG, δ_F=30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST PHASE II
ROLLING MOMENT
CONFIGURATION: FPBN$_{PF}$W$_7$T$_{60}$B$_T$
942 α=0°
943 α=10°
944 α=-10°
ROLLING MOMENT PARAMETER, C_l/β, FT³
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG



K•E 10 X 10 TO ½ INCH • 7 X 10 INCHES KEUFFEL & ESSER CO. MADE IN U.S.A.

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C-5

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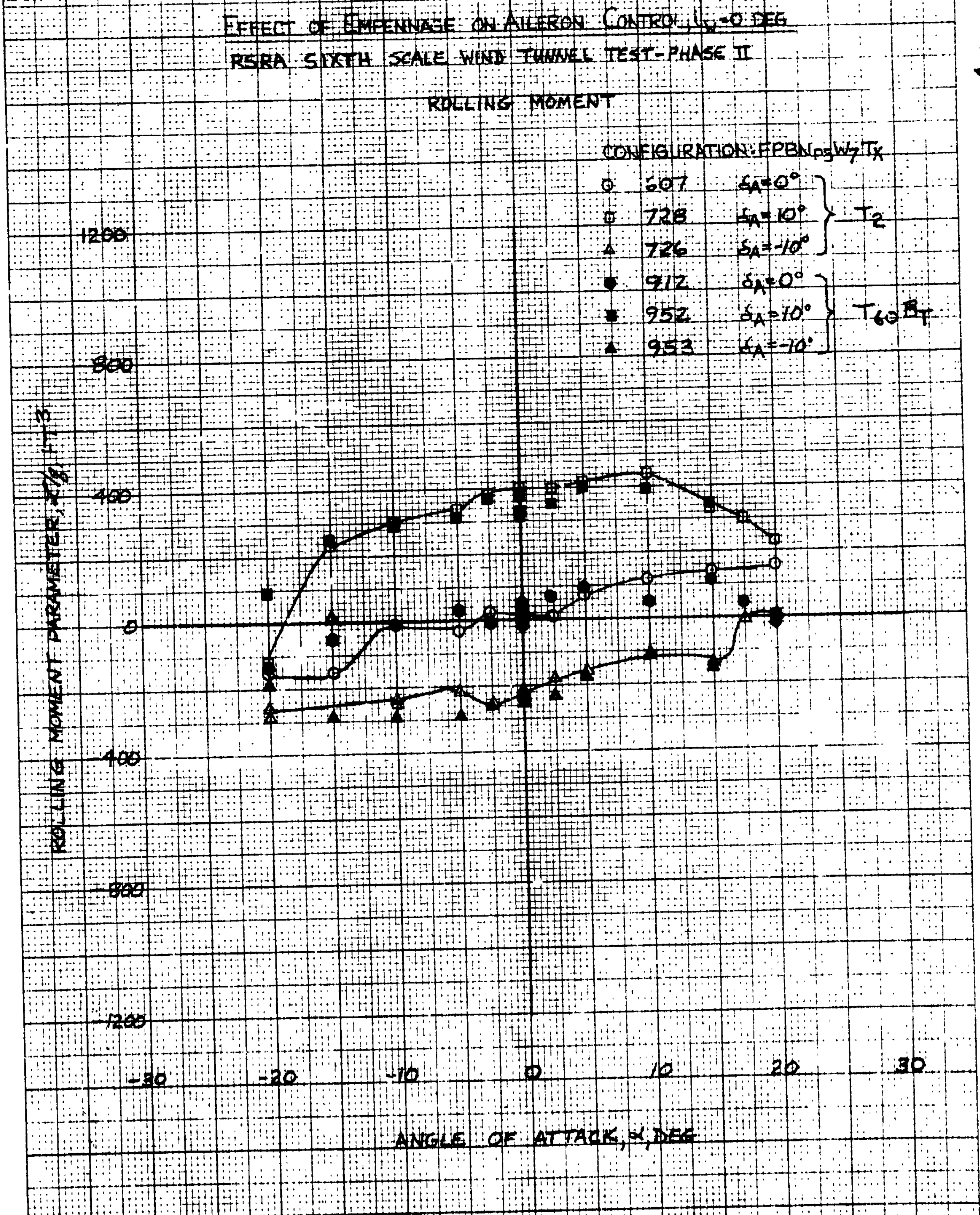
FIGURE 66a



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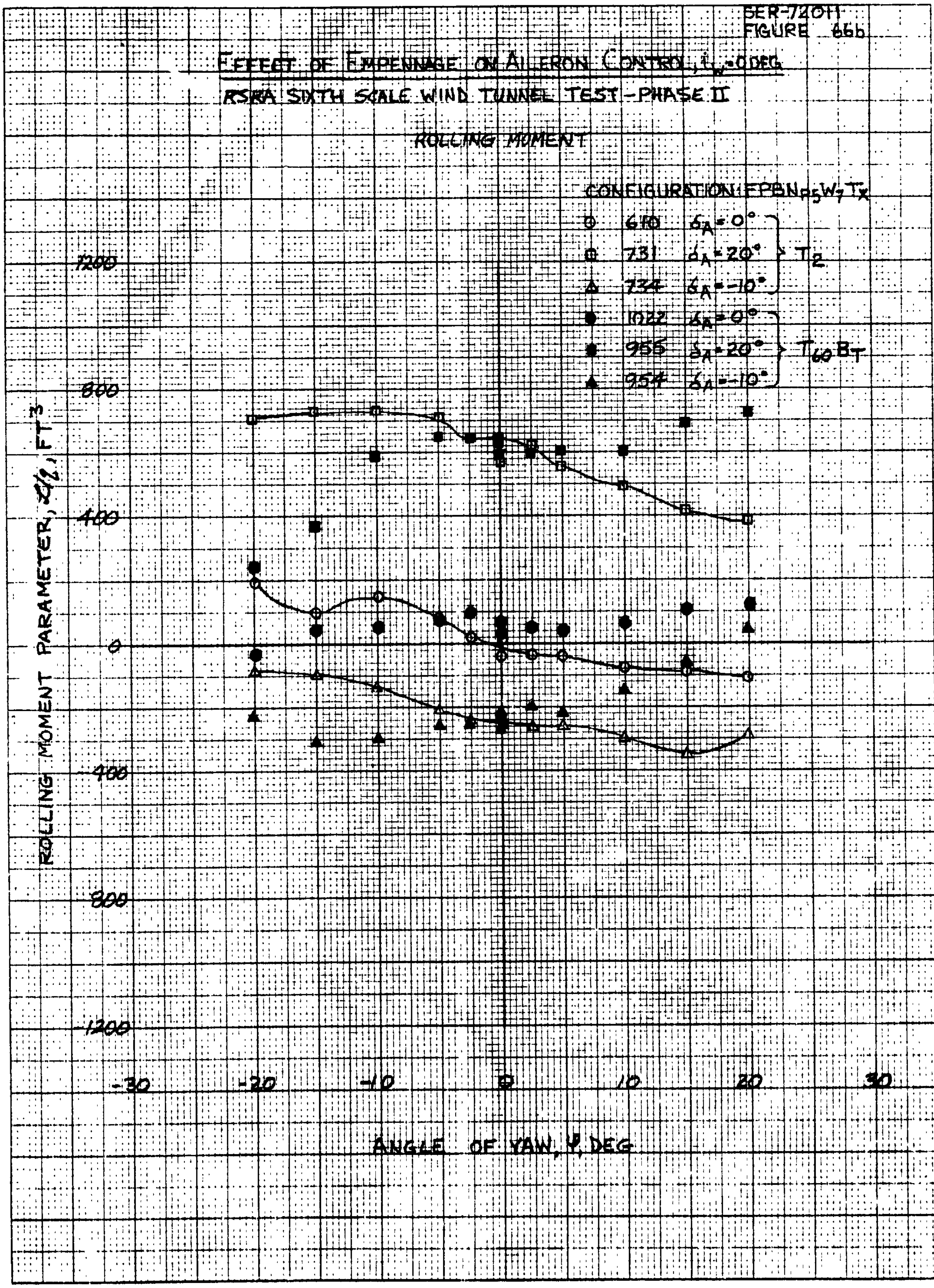
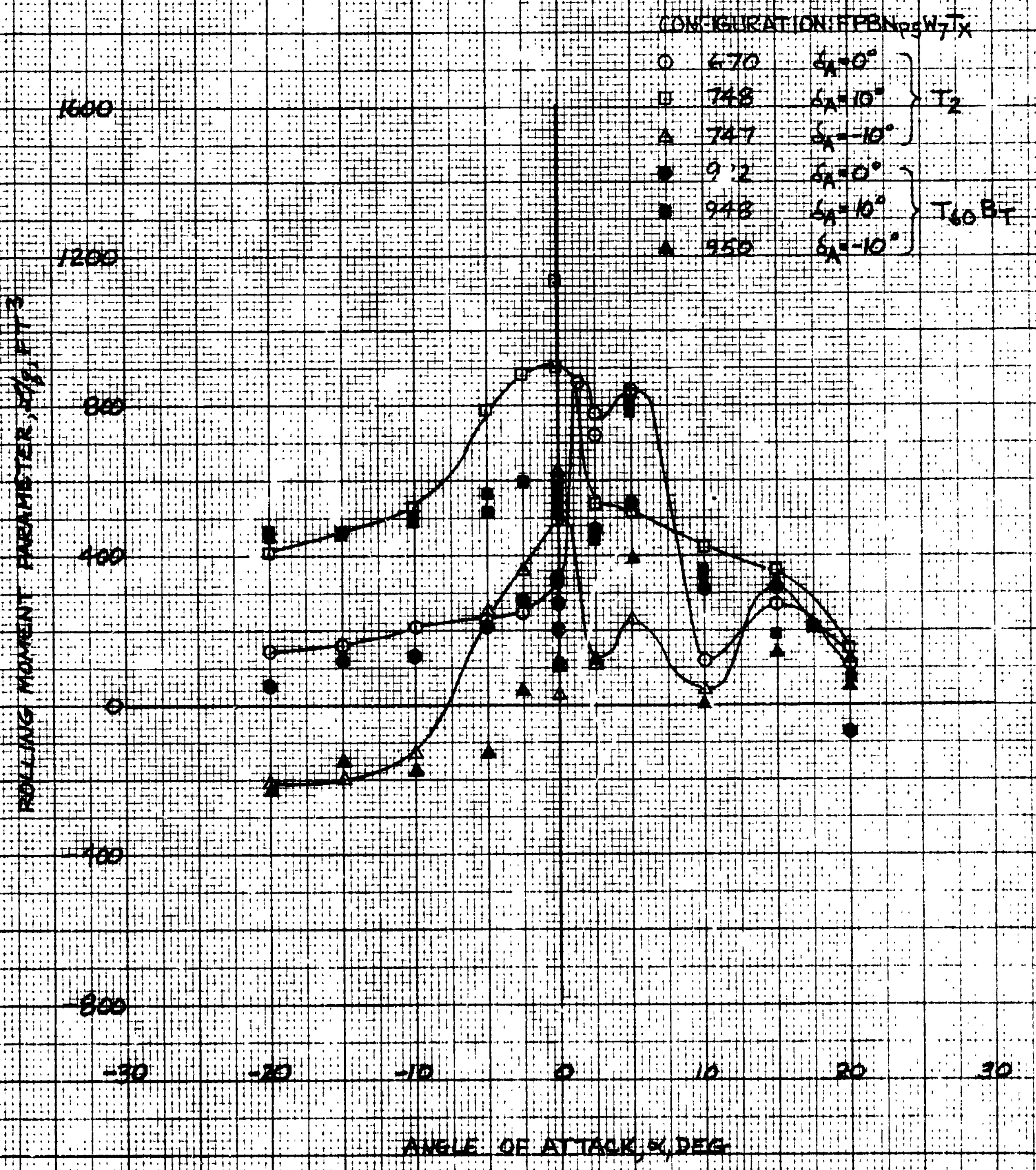

SER-72011
FIGURE 66b
EFFECT OF EMPENNAGE ON AILERON CONTROL, i_W=0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT
CONFIGURATION: FPBN$_{P5}$W$_7$T$_X$
610 δ_A=0°
731 δ_A=20°
734 δ_A=-10°
T$_2$
1022 δ_A=0°
955 δ_A=20°
954 δ_A=-10°
T$_{60}$B$_T$
1200
800
400
0
-400
-800
-1200
ROLLING MOMENT PARAMETER, $\mathcal{L}/q$, FT^3
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG

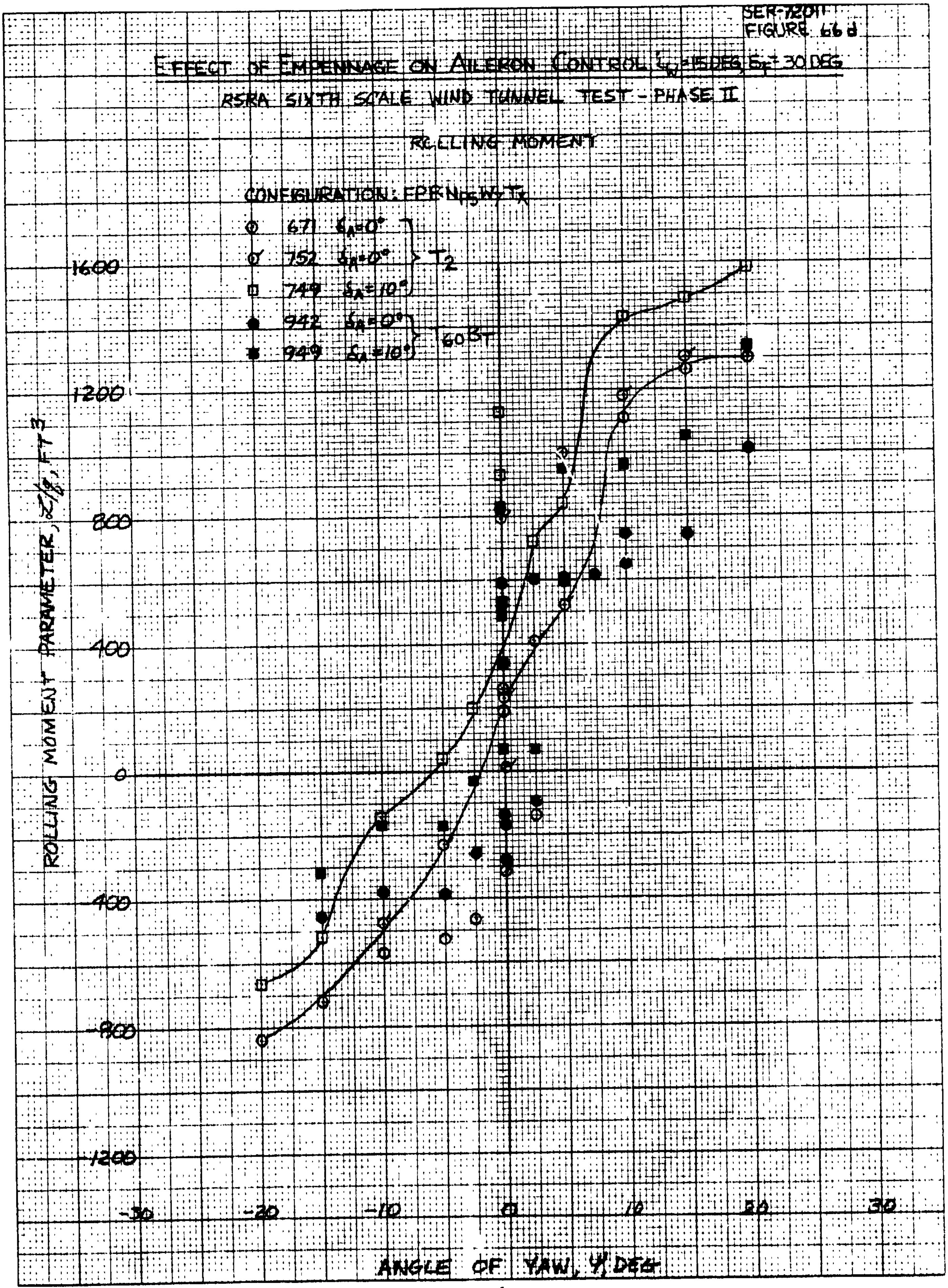
SER-72011
FIGURE 66c

EFFECT OF EMPENNAGE ON ALERON CONTROL, i_w=15 DEG, δ_F=30 DEG

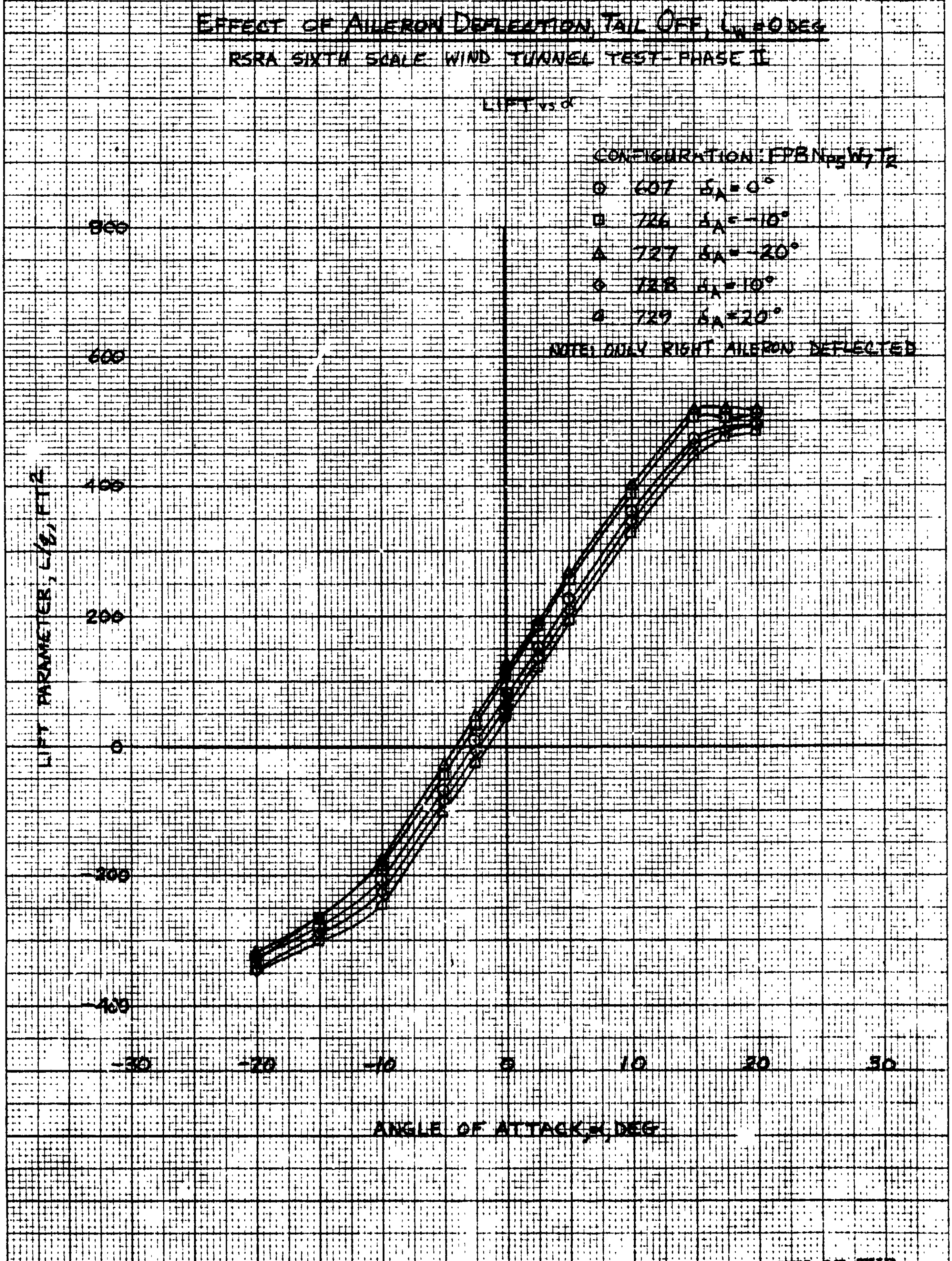
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II

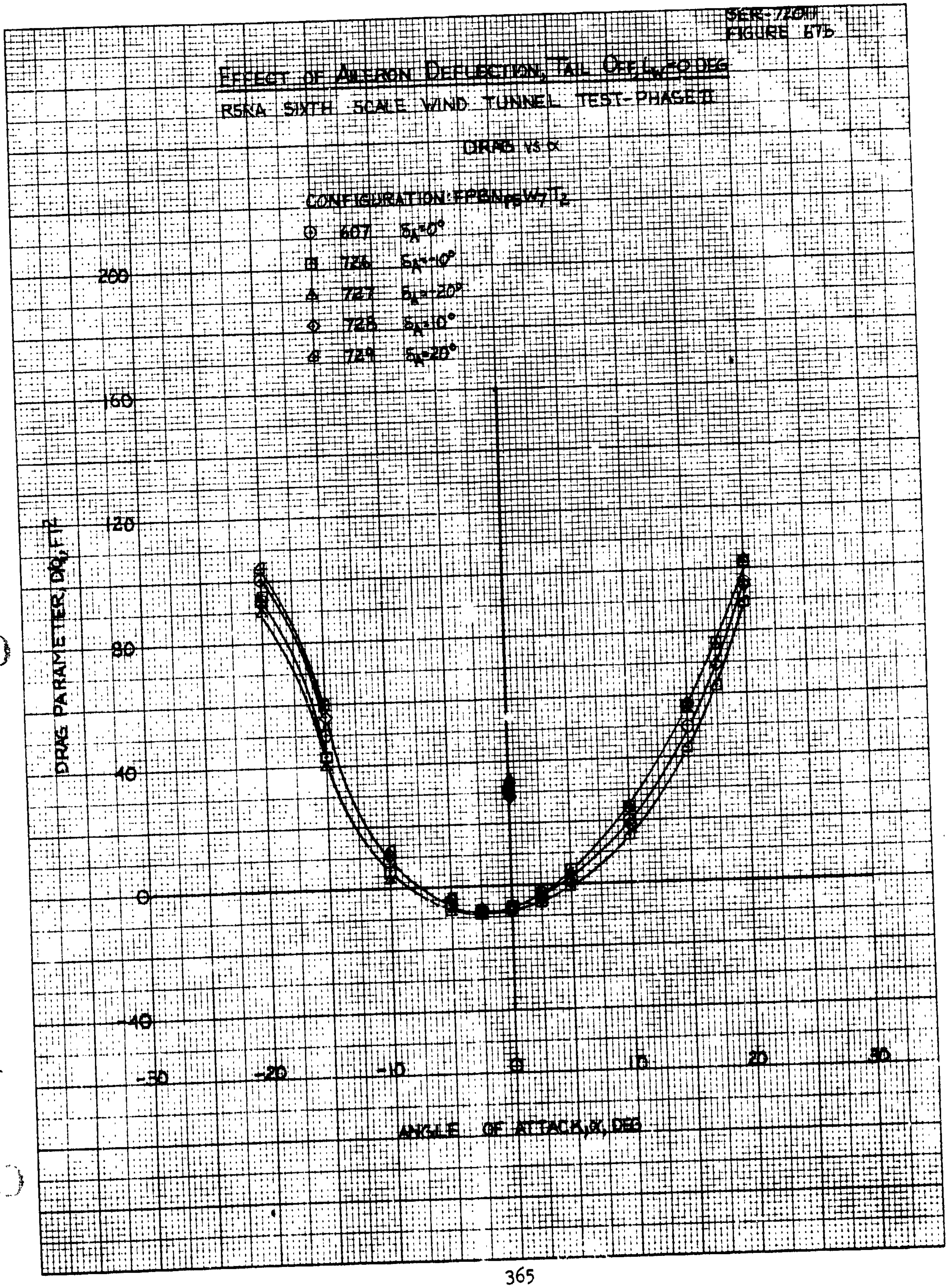
ROLLING MOMENT

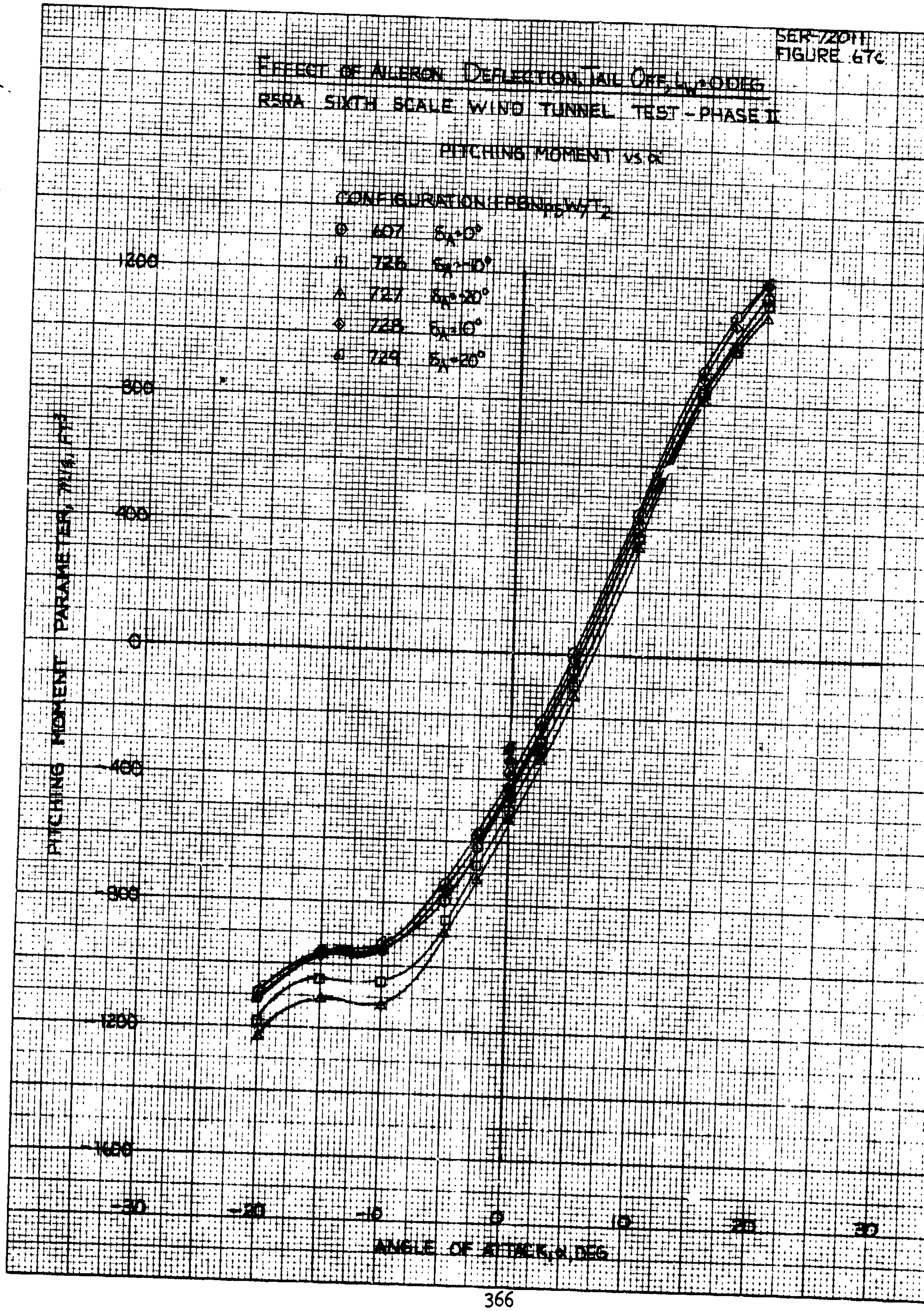




46 1473
K&E 10 X 10 TO 1/2 INCH 7 X 10 INCHES KEUFFEL & ESSER CO.


EFFECT OF AILERON DEFLECTION, TAIL OFF, i_W = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT vs α
CONFIGURATION: FPBN W T
607 δ_A = 0°
726 δ_A = -10°
727 δ_A = -20°
728 δ_A = 10°
729 δ_A = 20°
NOTE: ONLY RIGHT AILERON DEFLECTED
LIFT PARAMETER, L/q, FT2
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG


SER-72011
FIGURE 675
EFFECT OF AILERON DEFLECTION, TAIL OFF, i_W=0 DEG
R5KA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG VS α
CONFIGURATION: FPBN₁₅W₇T₂
607 δA=0°
726 δA=-10°
727 δA=-20°
728 δA=10°
729 δA=20°
DRAG PARAMETER, D/q, FT²
ANGLE OF ATTACK, α, DEG
200
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30


SER-72011
FIGURE 67c
EFFECT OF AILERON DEFLECTION, TAIL OFF, iW = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT vs α
CONFIGURATION: FPBNPS W7 T2
607 δA = 0°
726 δA = -10°
727 δA = -20°
728 δA = 10°
729 δA = 20°
1200
800
400
0
-400
-800
-1200
-1600
PITCHING MOMENT PARAMETER, M/q, FT³
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

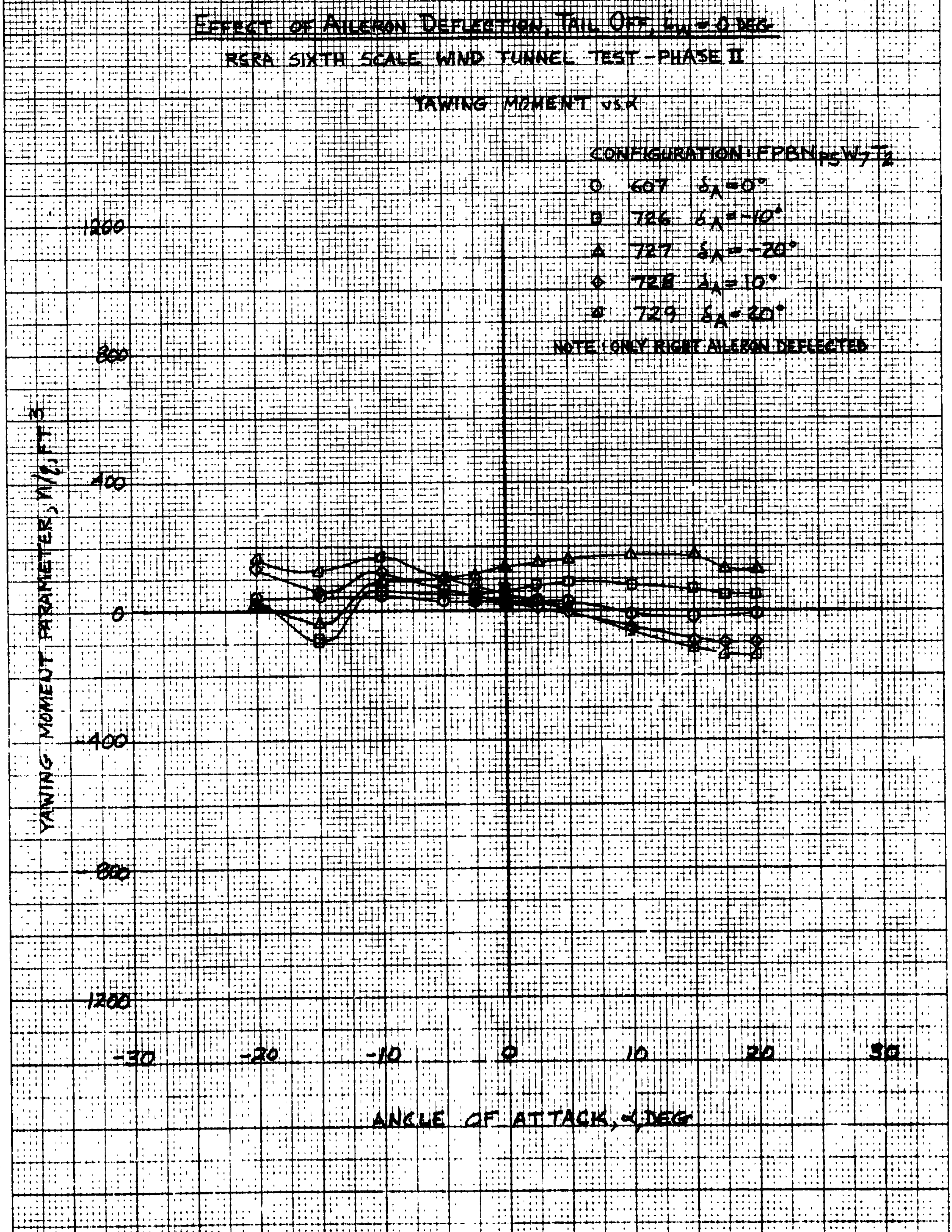

EFFECT OF AILERON DEFLECTION, TAIL OFF, i_W = 0 DEG
RERA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT vs α
CONFIGURATION: FPBN$_{P5}$W$_7$T$_2$
607 δ_A = 0°
726 δ_A = -10°
727 δ_A = -20°
728 δ_A = 10°
729 δ_A = 20°
NOTE: ONLY RIGHT AILERON DEFLECTED
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
YAWING MOMENT PARAMETER, N/q_∞ FT^3
ANGLE OF ATTACK, α DEG

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FIGURE 67e

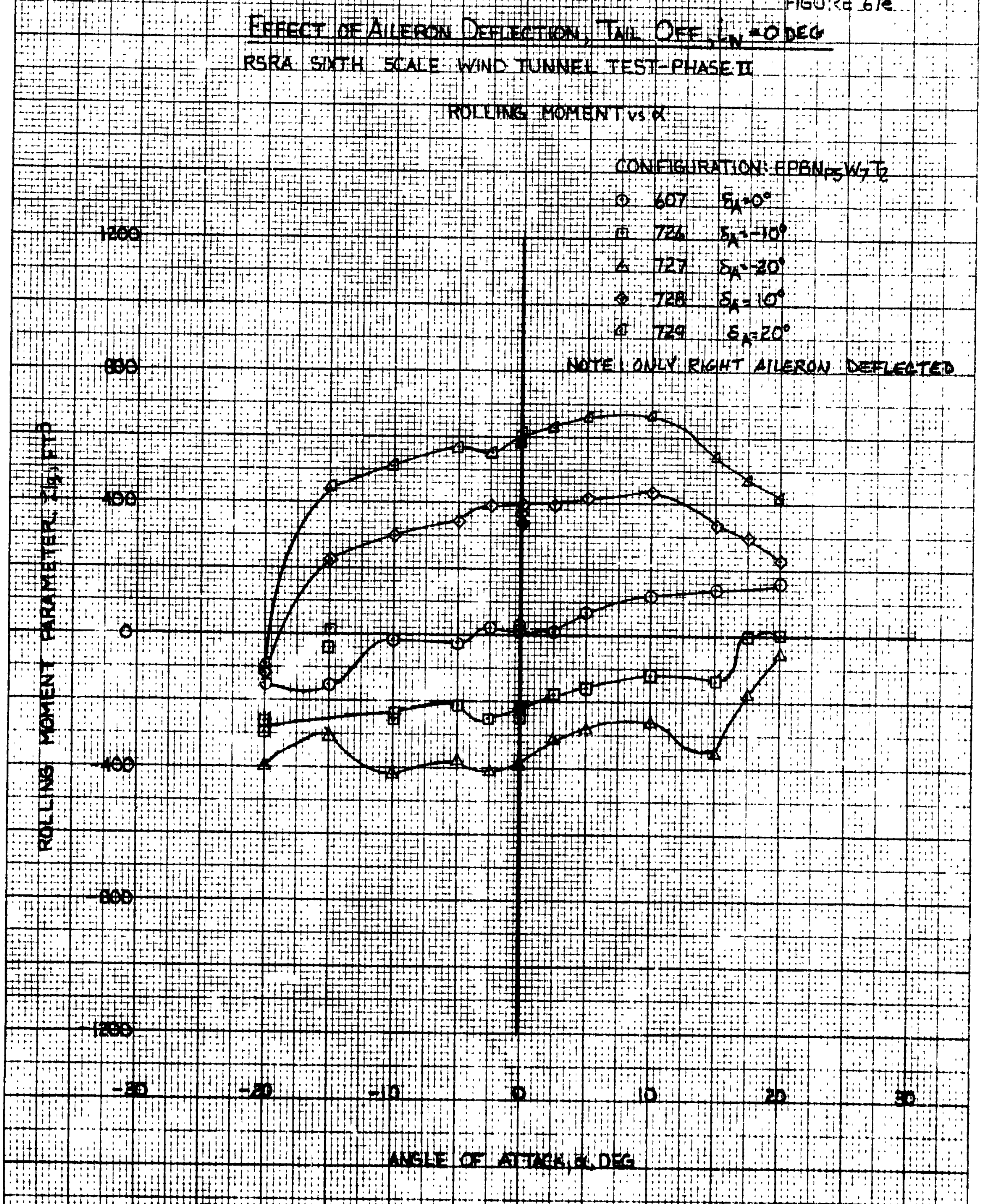

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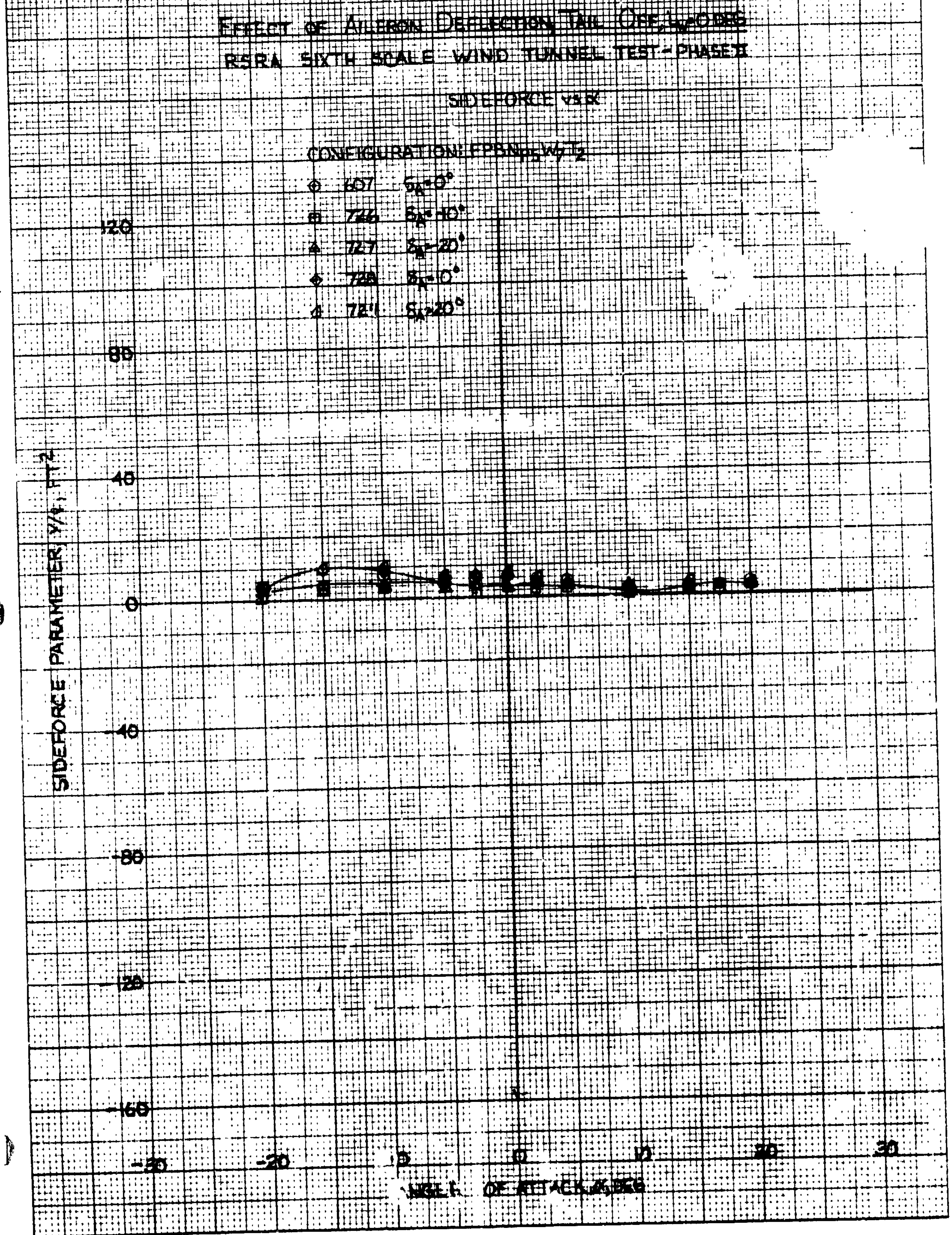
FIGURE 67-f



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K·E 10 X 10 TO INCH KEUFFEL & ESSER CO

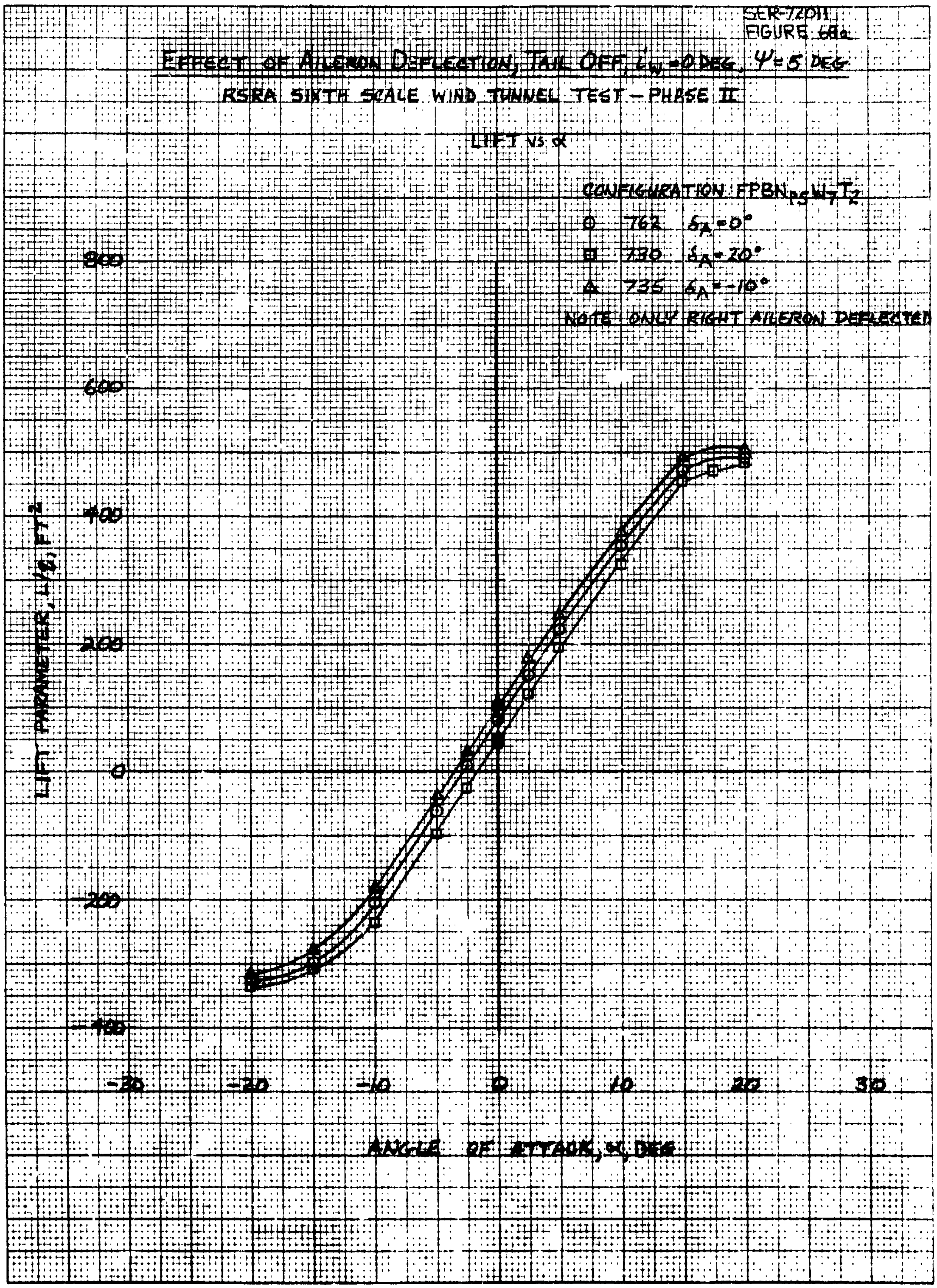

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FIGURE 68a
EFFECT OF AILERON DEFLECTION, TAIL OFF, i_W = 0 DEG, ψ = 5 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST – PHASE II
LIFT vs α
CONFIGURATION FPBN$_{P5}$W$_7$T$_2$
○ 762 δ_A = 0°
□ 730 δ_A = 20°
△ 735 δ_A = −10°
NOTE: ONLY RIGHT AILERON DEFLECTED
LIFT PARAMETER, L/q, FT^2
ANGLE OF ATTACK, α, DEG
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30

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K•E 10 X 1 TO INCH KEUFFEL & ESSER CO.

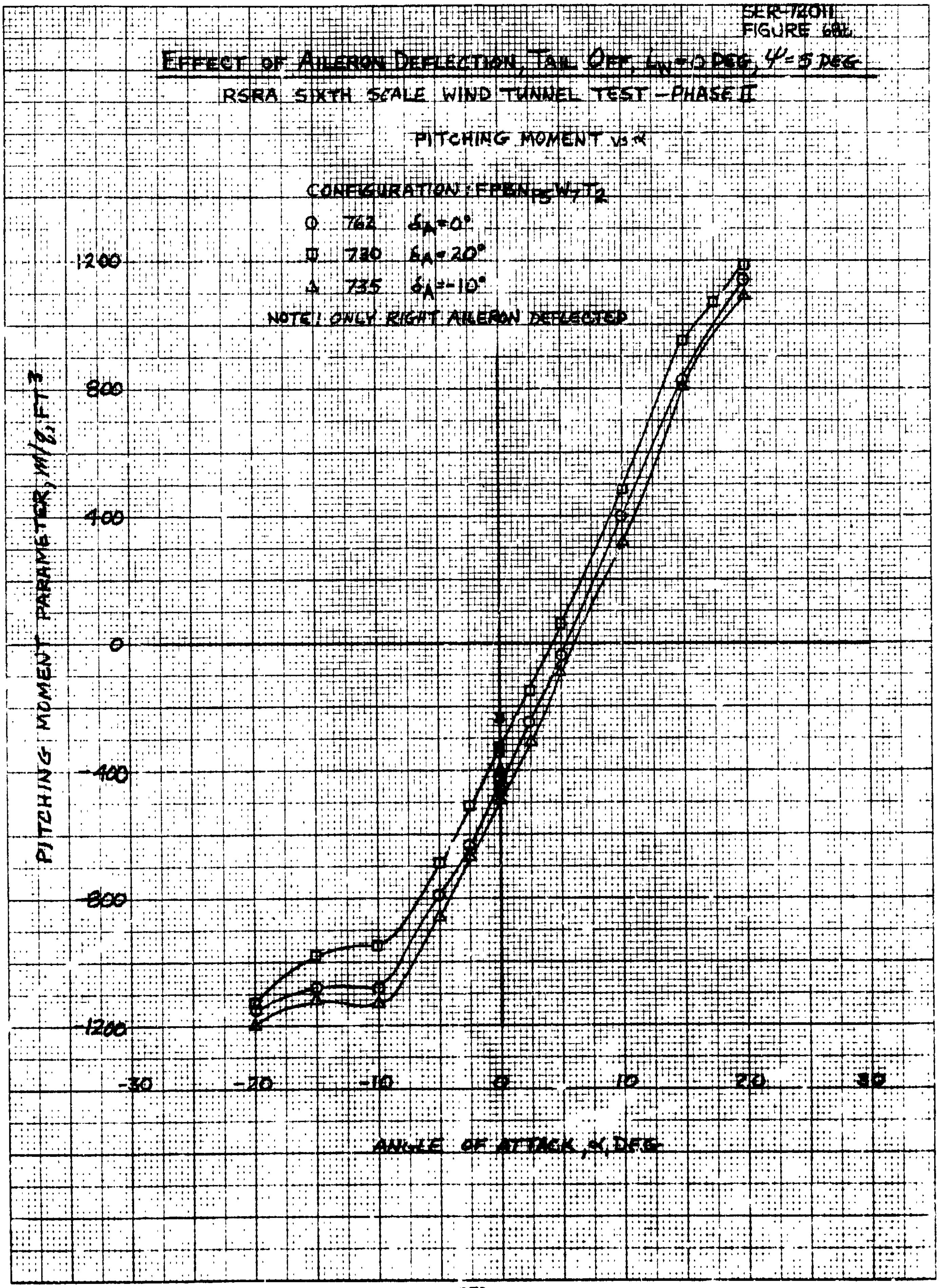

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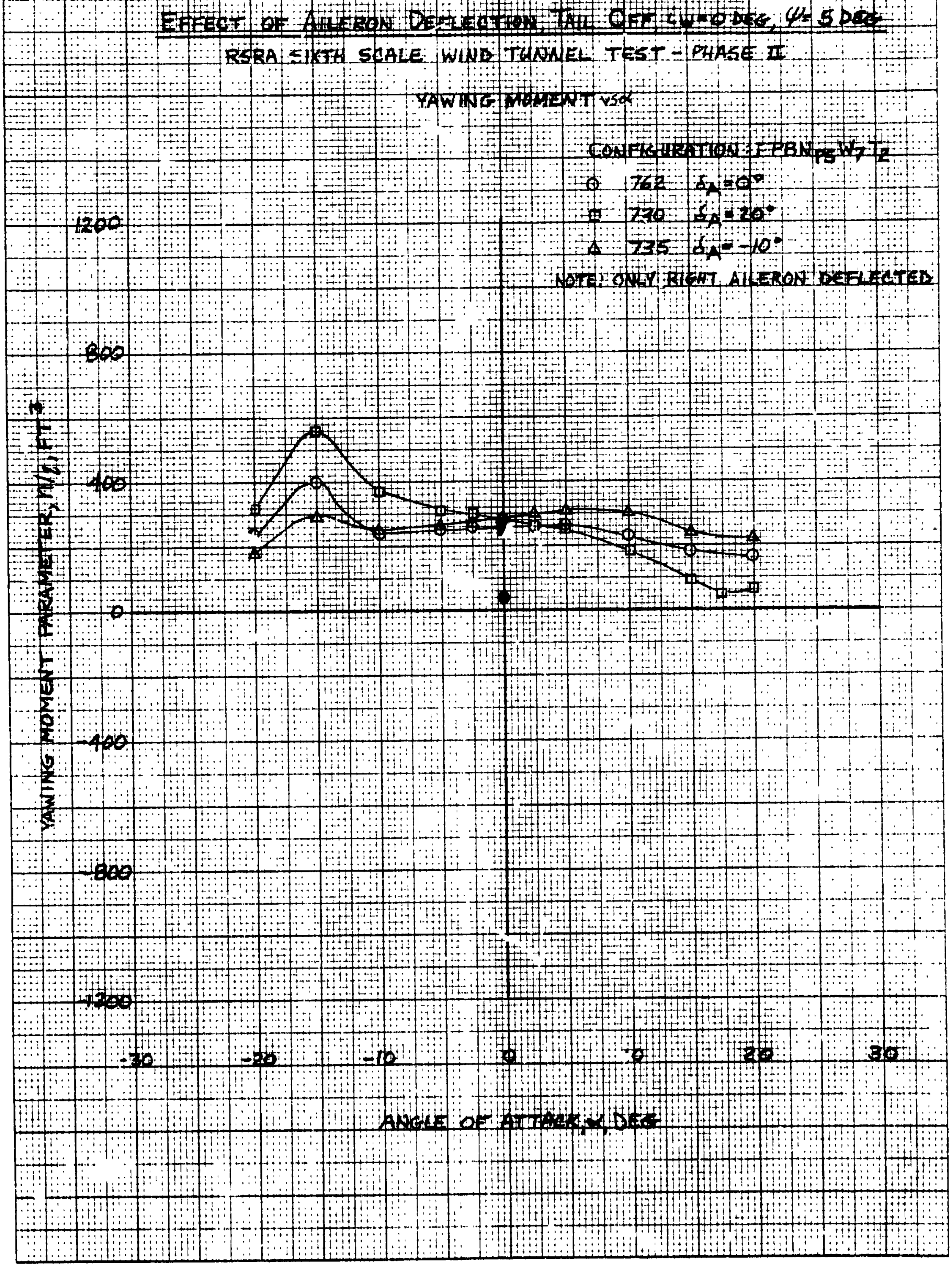
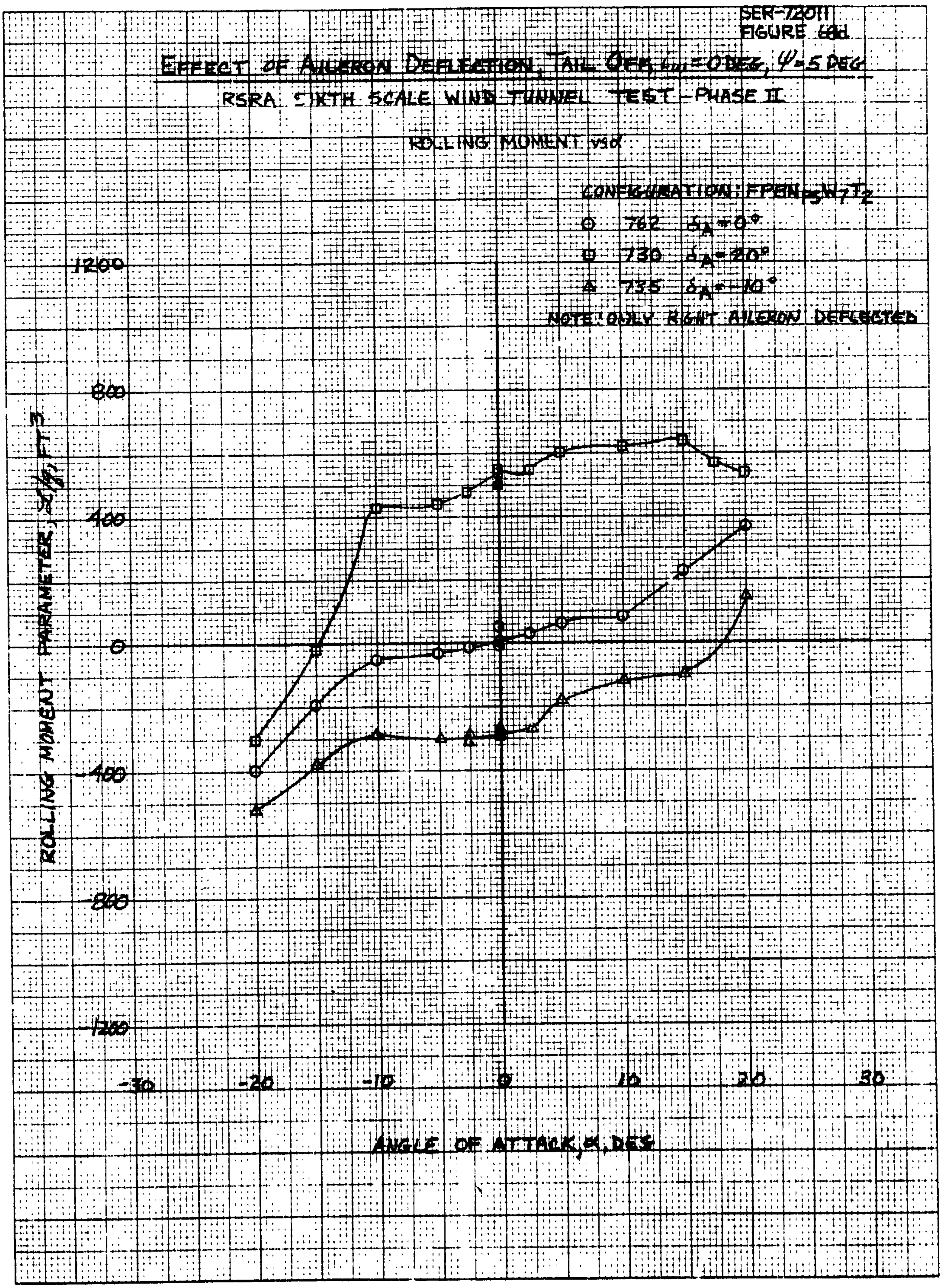
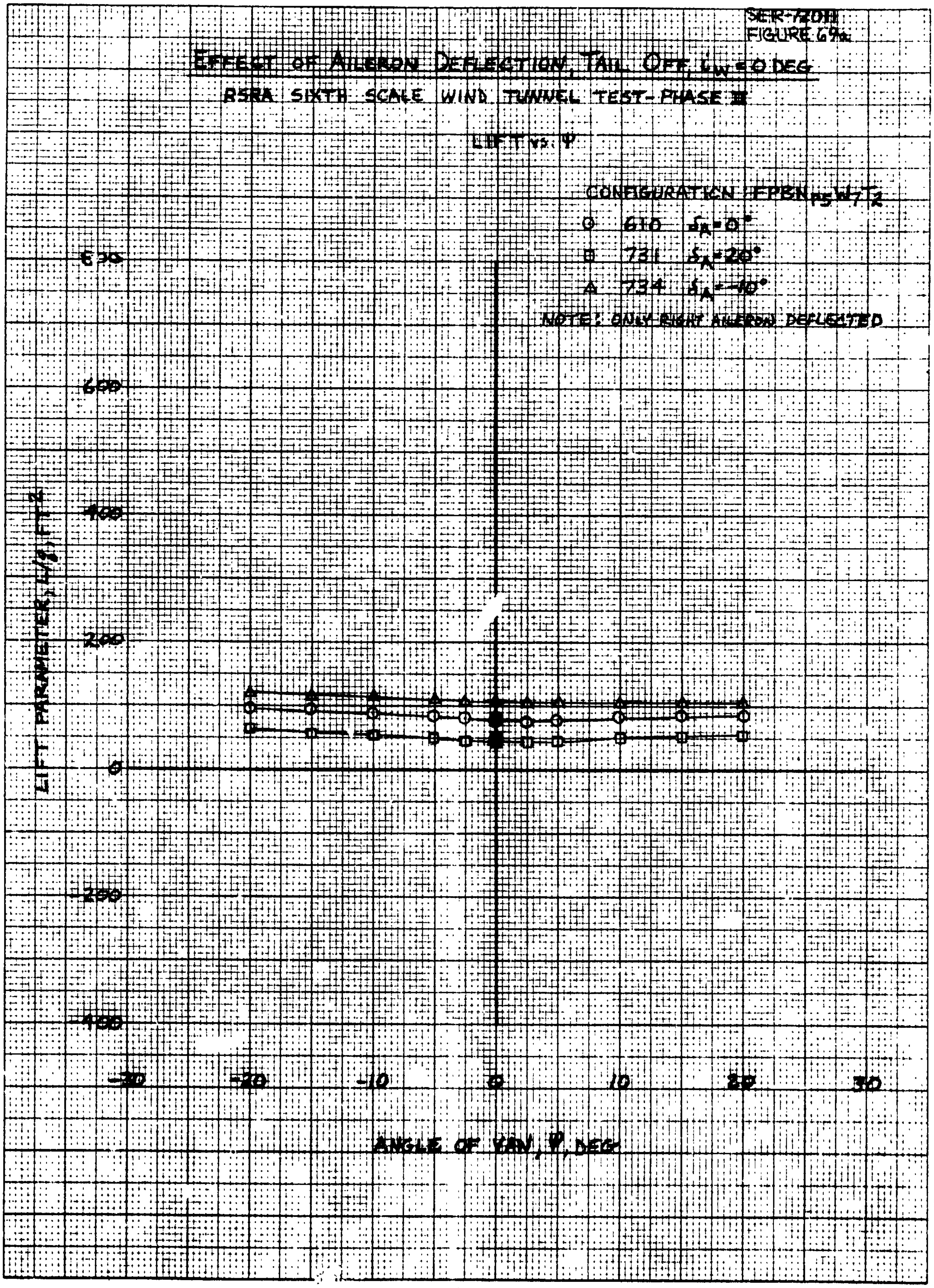
FIGURE 68c





K•E 10 X 10 TO INCH KEUFFEL & ESSER CO. 46 1473



SER-72011
FIGURE 69a
EFFECT OF AILERON DEFLECTION, TAIL OFF, i_W = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE III
LIFT vs. Ψ
CONFIGURATION FPBN$_{F5}$W$_7$T$_2$
○ 610 δ_A = 0°
□ 731 δ_A = 20°
△ 734 δ_A = -40°
NOTE: ONLY RIGHT AILERON DEFLECTED
LIFT PARAMETER, L/q, FT^2
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF YAW, Ψ, DEG

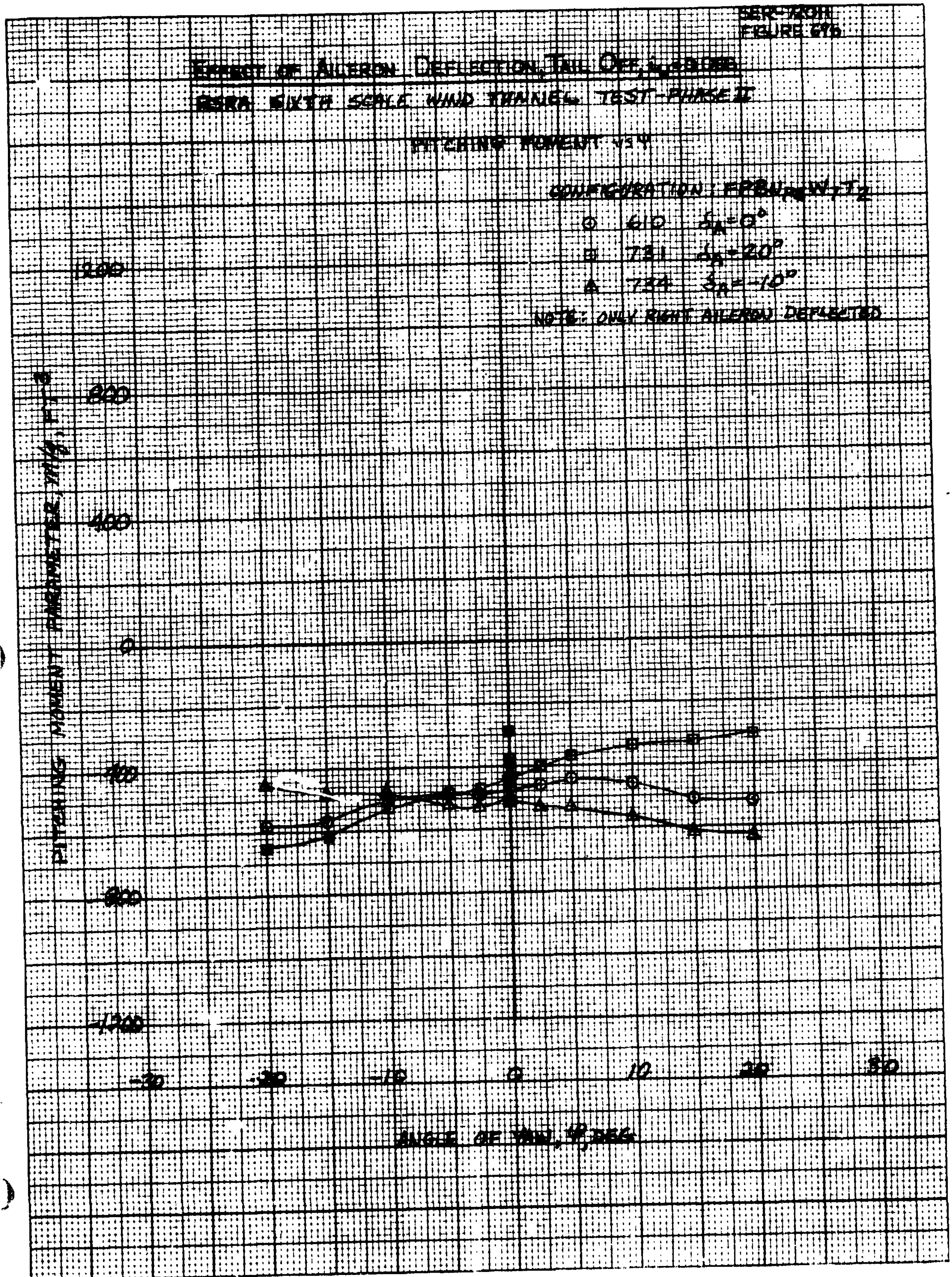
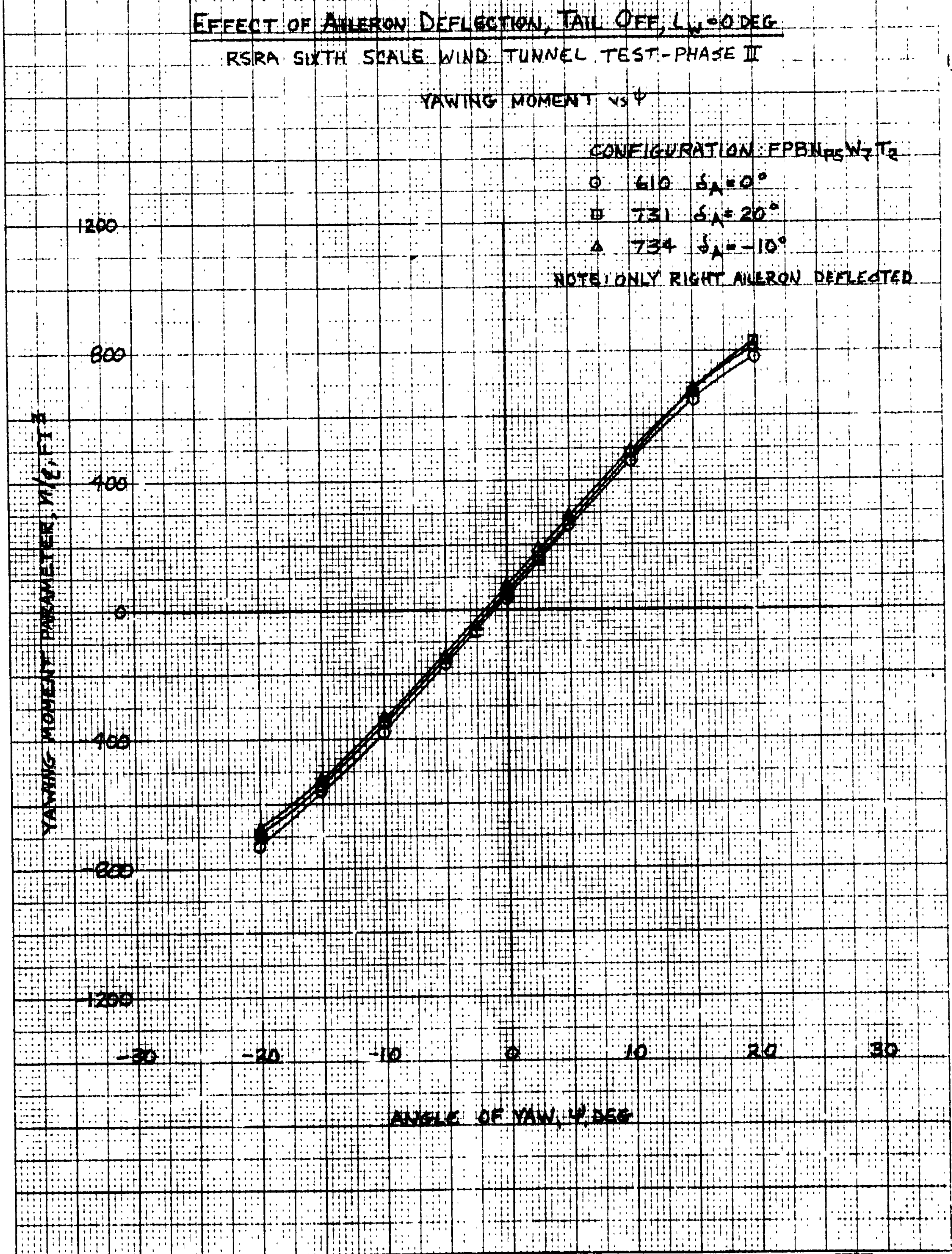
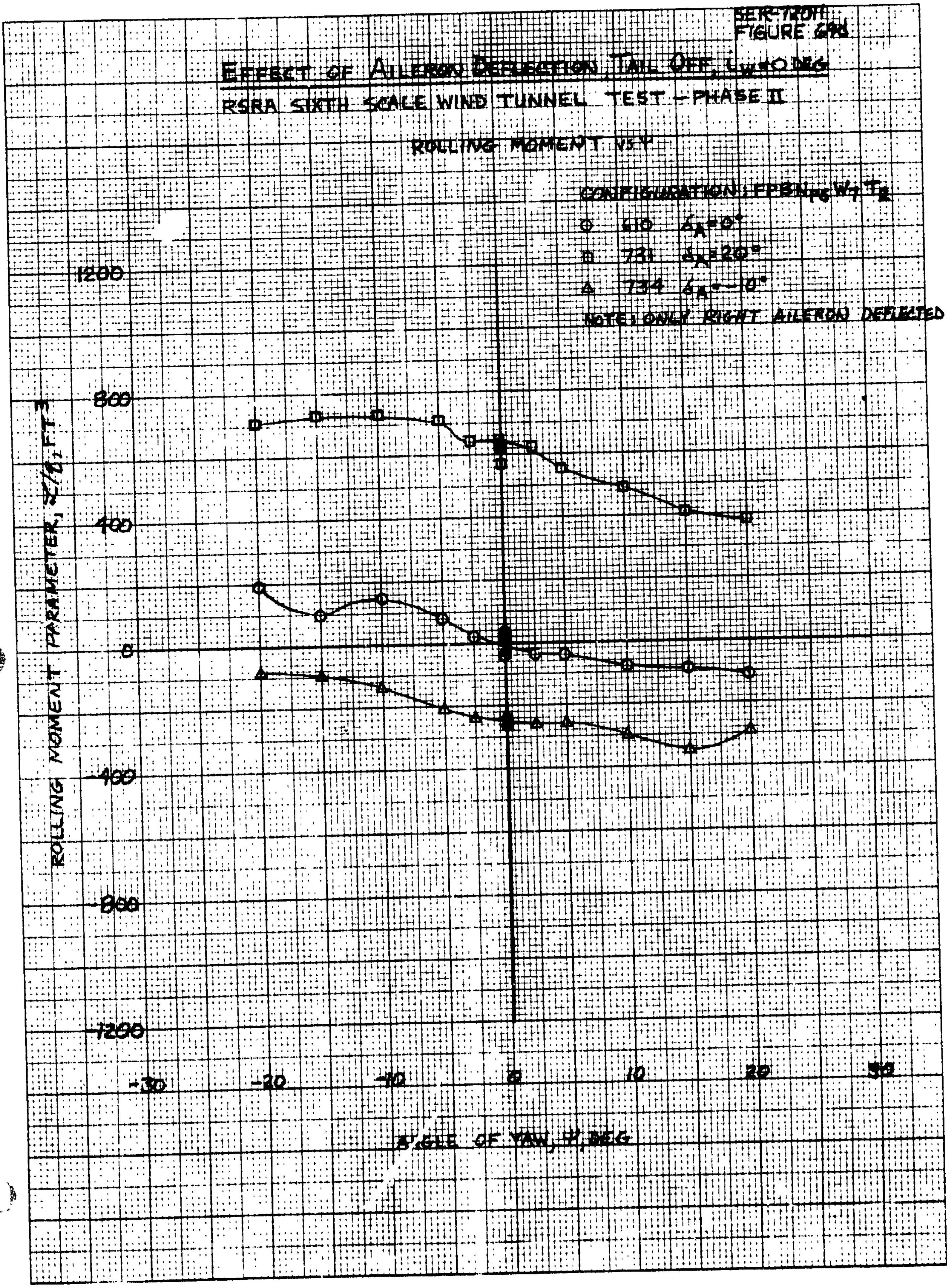


FIGURE 676
EFFECT OF AILERON DEFLECTION, TAIL OFF
SIXTH SCALE WIND TUNNEL TEST-PHASE II
PITCHING MOMENT VS Ψ
CONFIGURATION:
610 $\delta_A = 0°$
731 $\delta_A = 20°$
734 $\delta_A = -10°$
NOTE: ONLY RIGHT AILERON DEFLECTED
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
PITCHING MOMENT PARAMETER
ANGLE OF YAW, Ψ, DEG

SER-72011
FIGURE 69c





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K·E 10 X 15 TO INCH KEUFFEL & ESSER CO.

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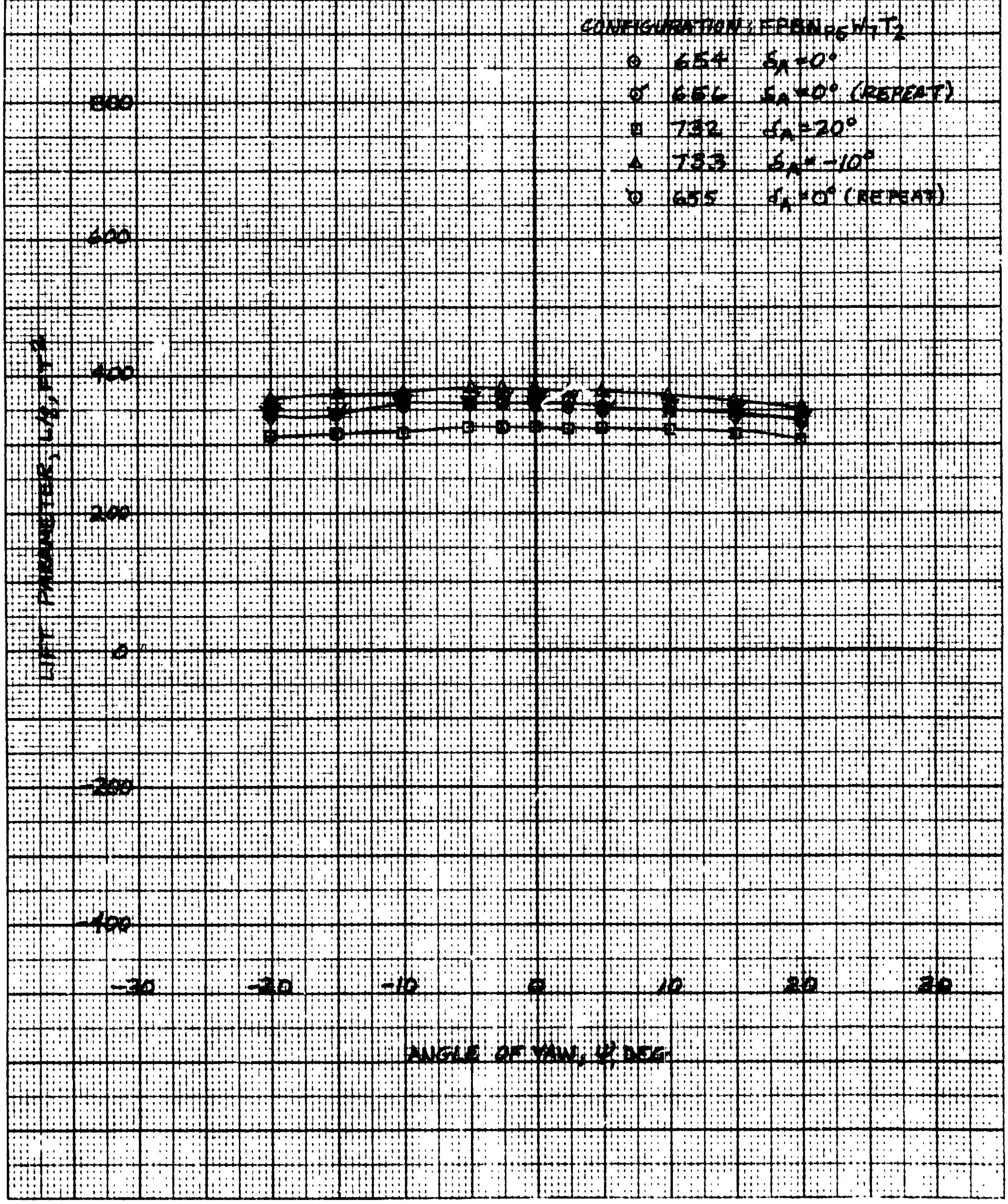
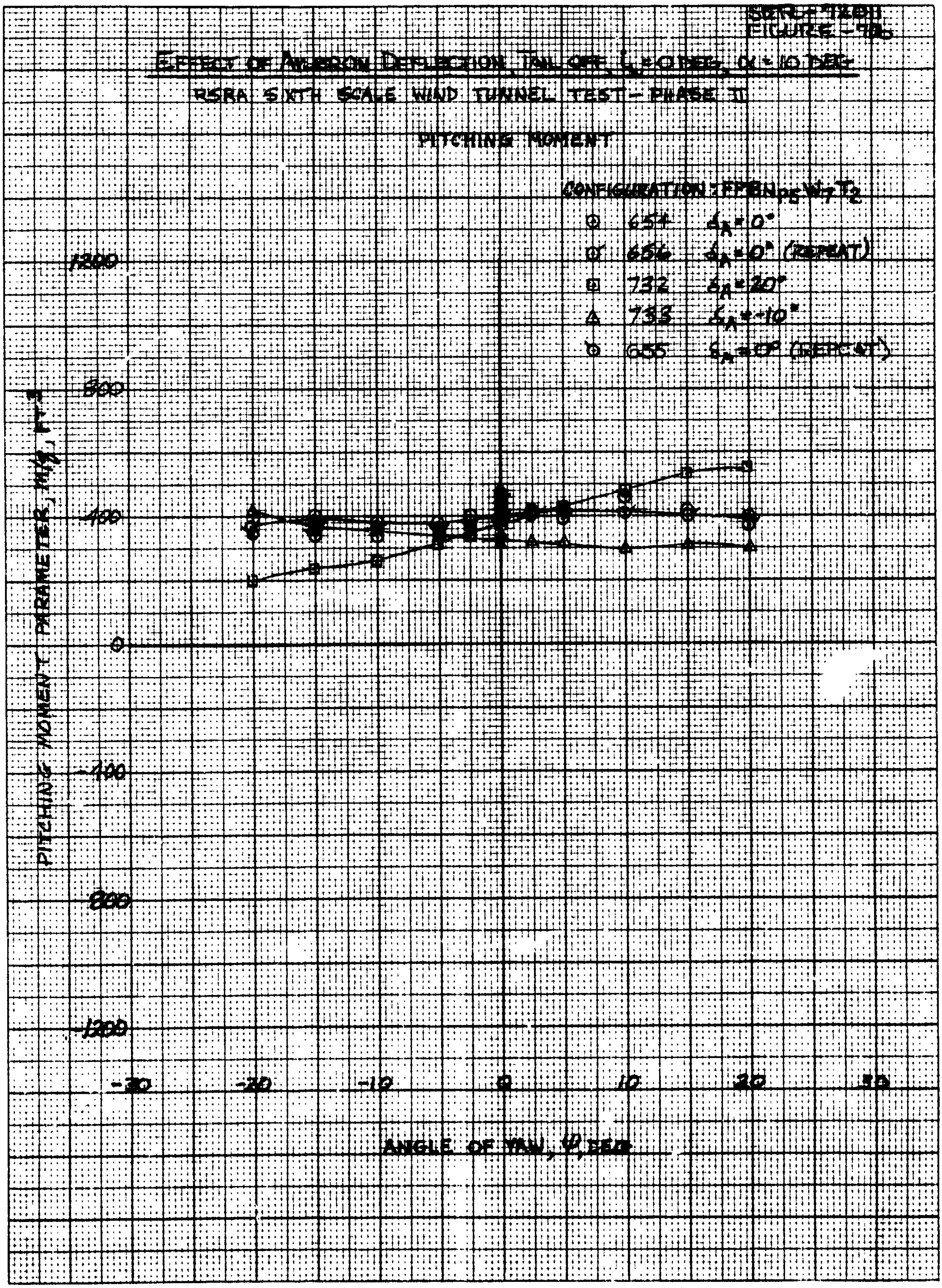
FIGURE 702

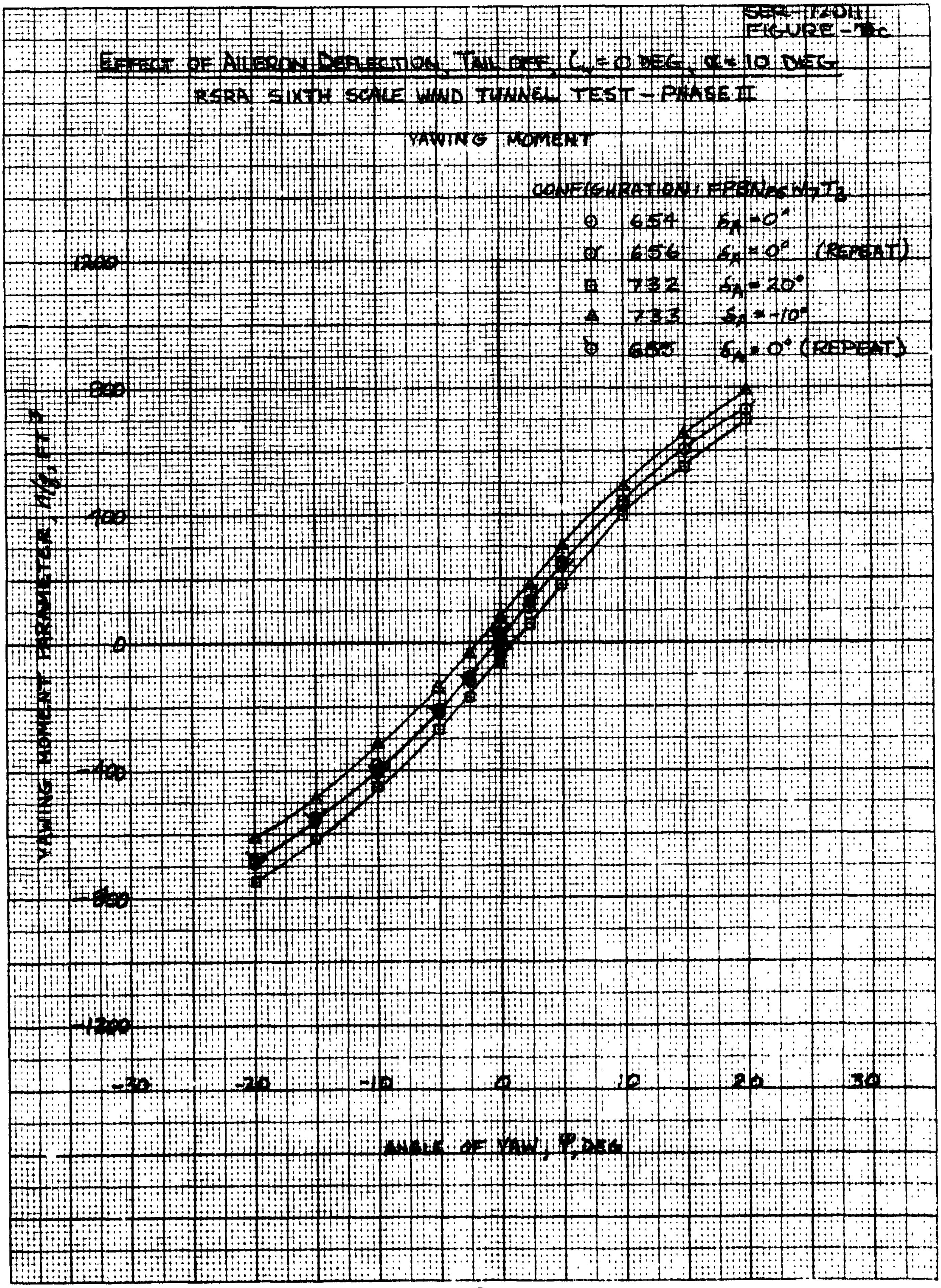
EFFECT OF AILERON DEFLECTION, TAIL OFF, i_w = 0 DEG., α = 10 DEG.

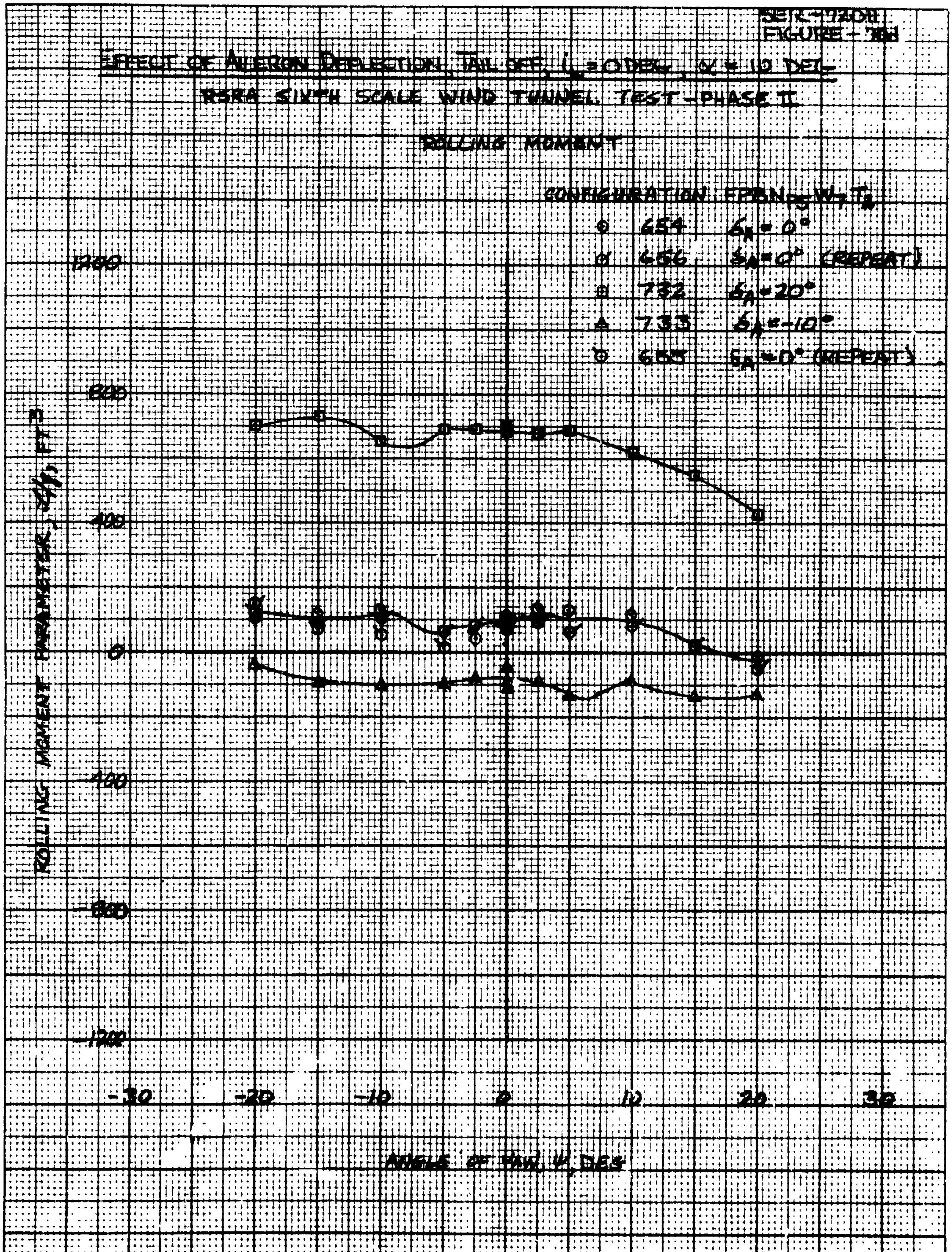
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II

LIFT

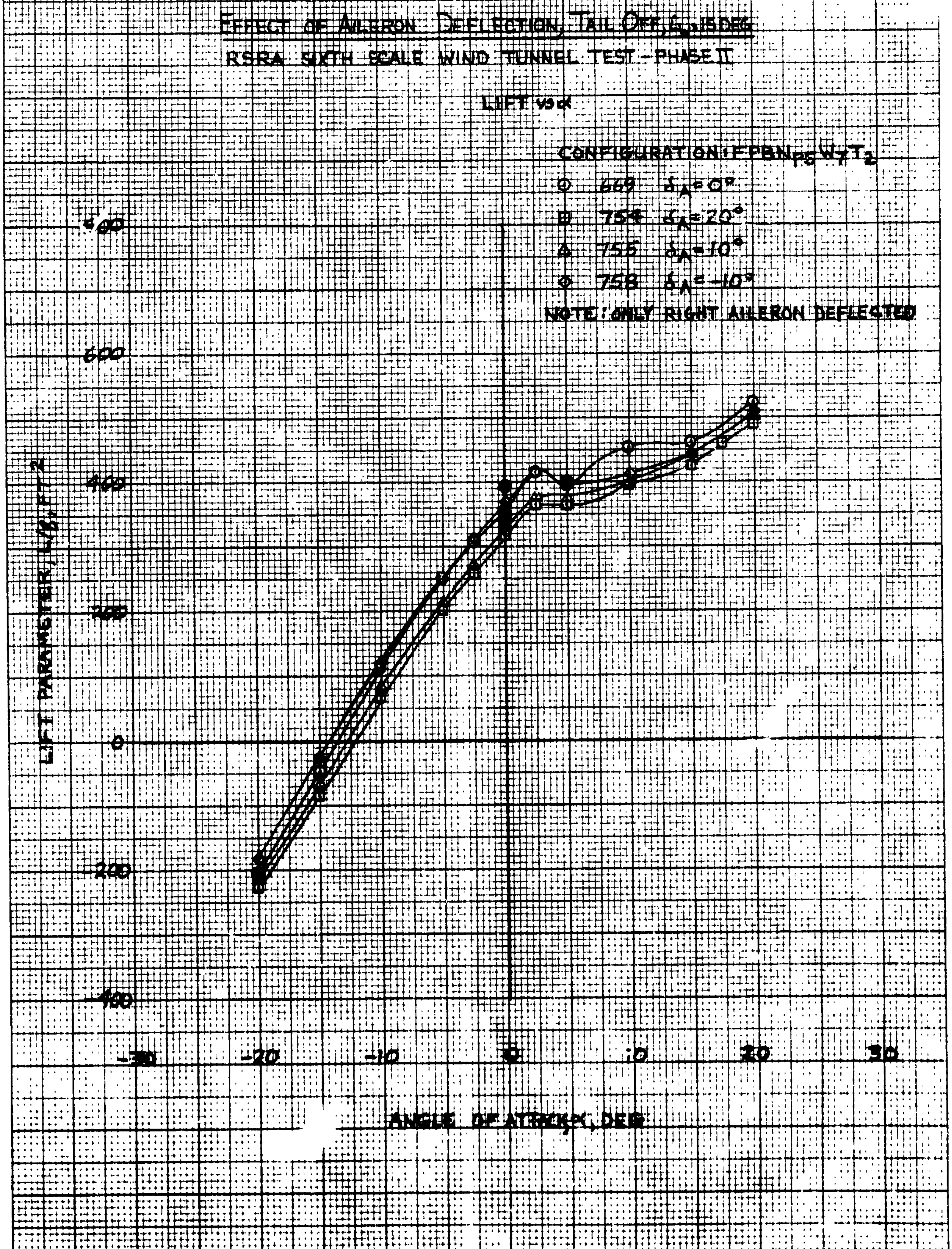



EFFECT OF AILERON DEFLECTION, TAIL OFF, i_W = 0 DEG, α = 10 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT
CONFIGURATION: FPBNPE W7 T2
654 $\delta_A = 0°$
656 $\delta_A = 0°$ (REPEAT)
732 $\delta_A = 20°$
733 $\delta_A = -10°$
655 $\delta_A = 0°$ (REPEAT)
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG
PITCHING MOMENT PARAMETER, M/q, FT^3


SER-72011
FIGURE - 78c
EFFECT OF AILERON DEFLECTION, TAIL OFF, i_w = 0 DEG, α = 10 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT
CONFIGURATION: FPBNacW$_7$T$_2$
654 δ_A = 0°
656 δ_A = 0° (REPEAT)
732 δ_A = 20°
733 δ_A = -10°
655 δ_A = 0° (REPEAT)
YAWING MOMENT PARAMETER, N/q, FT^3
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF YAW, Ψ, DEG



SER-72011
FIGURE - 361
EFFECT OF AILERON DEFLECTION, TAIL OFF, i_t = 0 DEG, α = 10 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT
CONFIGURATION FPBN$_{FS}$W$_7$T$_H$
654 δ_A = 0°
656 δ_A = 0° (REPEAT)
732 δ_A = 20°
733 δ_A = -10°
655 δ_A = 0° (REPEAT)
1200
800
400
0
-400
-800
-1200
ROLLING MOMENT PARAMETER, L/q, FT³
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG


EFFECT OF AILERON DEFLECTION, TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT vs α
CONFIGURATION: FPBN W T
○ 669 δA = 0°
□ 754 δA = 20°
△ 755 δA = 10°
◇ 758 δA = -10°
NOTE: ONLY RIGHT AILERON DEFLECTED
LIFT PARAMETER, L/q, FT²
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG
KEUFFEL & ESSER CO.

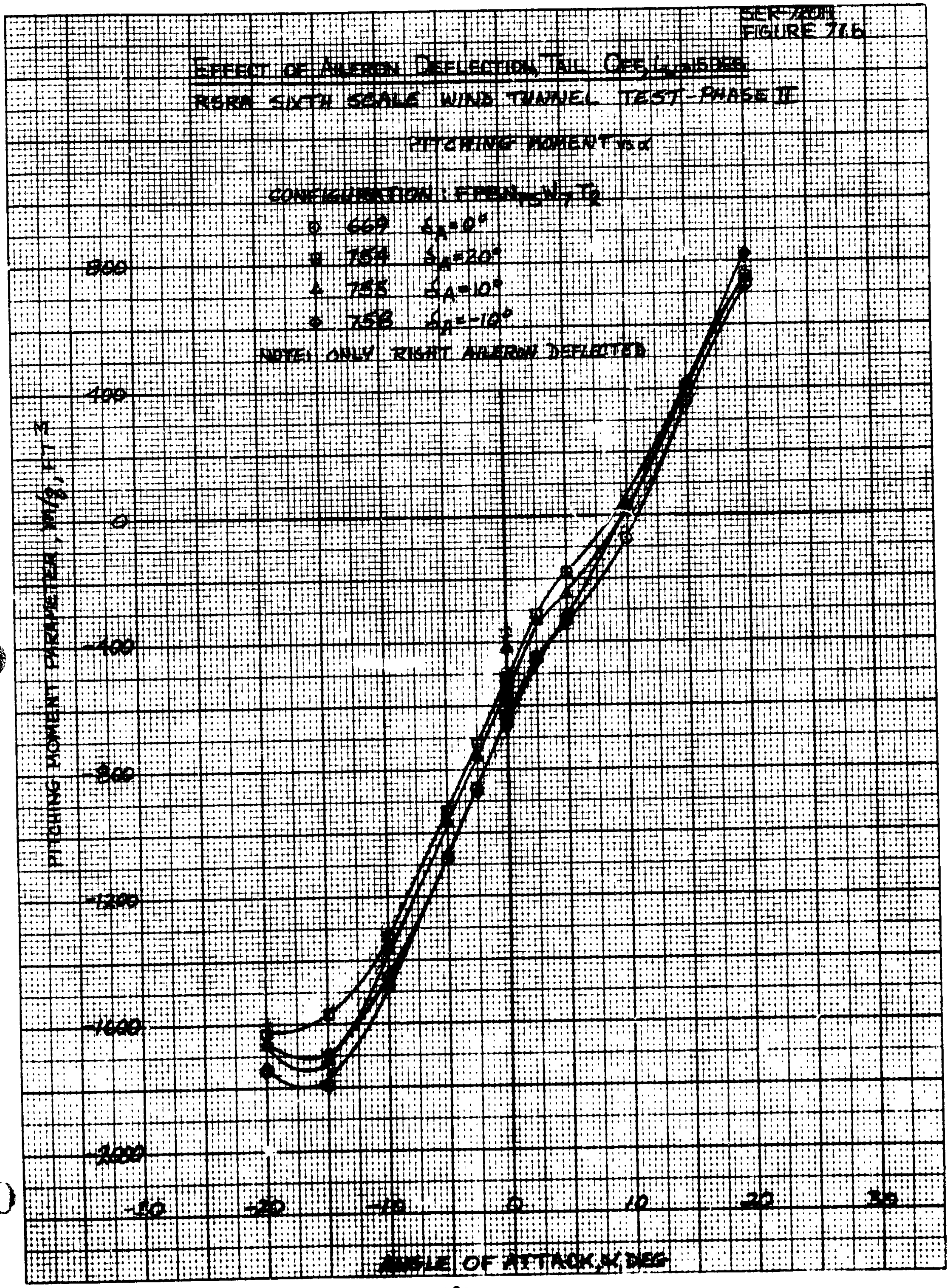
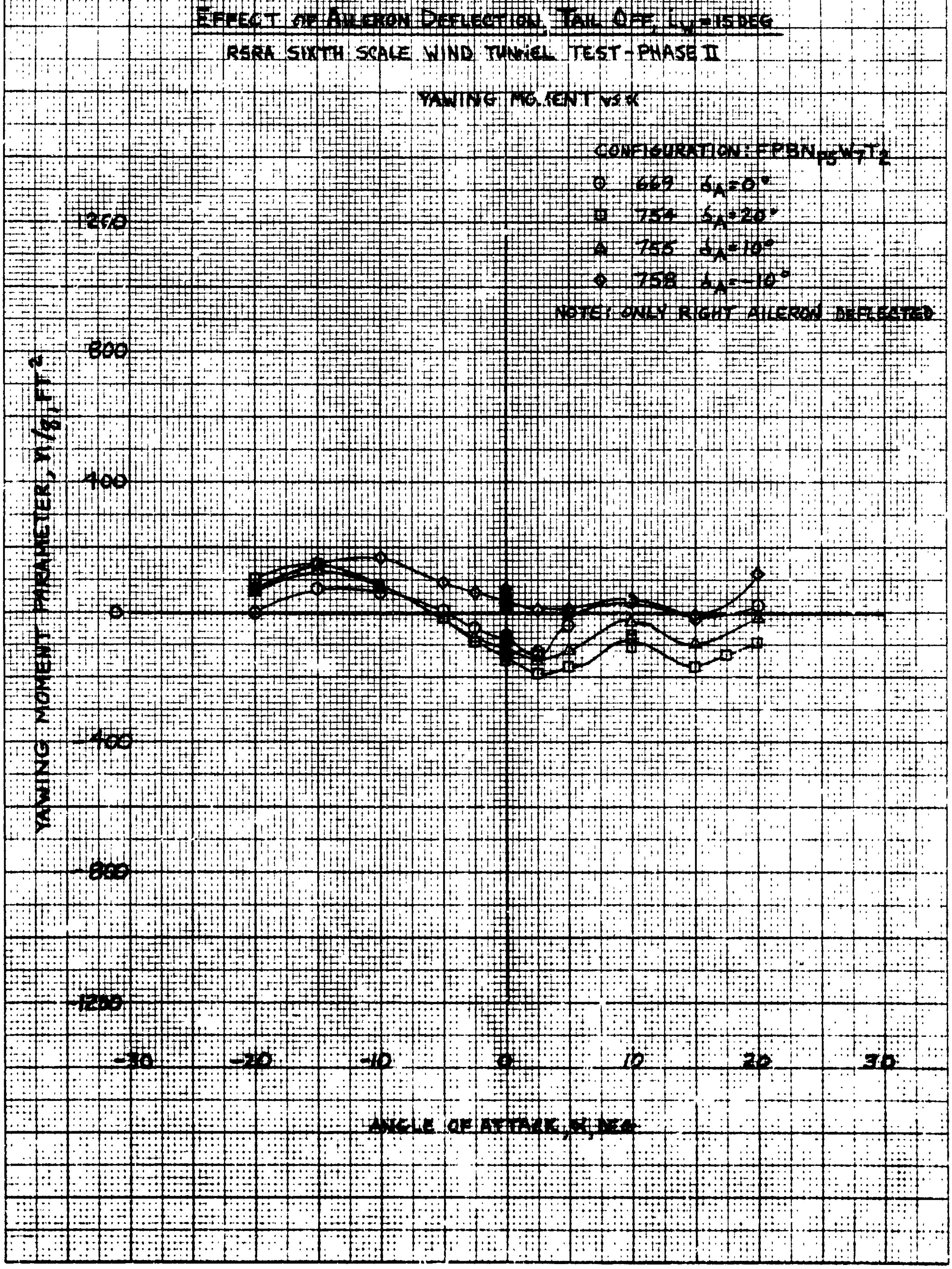


FIGURE 71b
EFFECT OF AILERON DEFLECTION, TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
PITCHING MOMENT vs α
CONFIGURATION
669 δA=0°
754 δA=20°
755 δA=10°
758 δA=-10°
NOTE: ONLY RIGHT AILERON DEFLECTED
800
400
0
-400
-800
-1200
-1600
-2000
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG
PITCHING MOMENT PARAMETER, M/q, FT³

SER-72011
FIGURE 71C



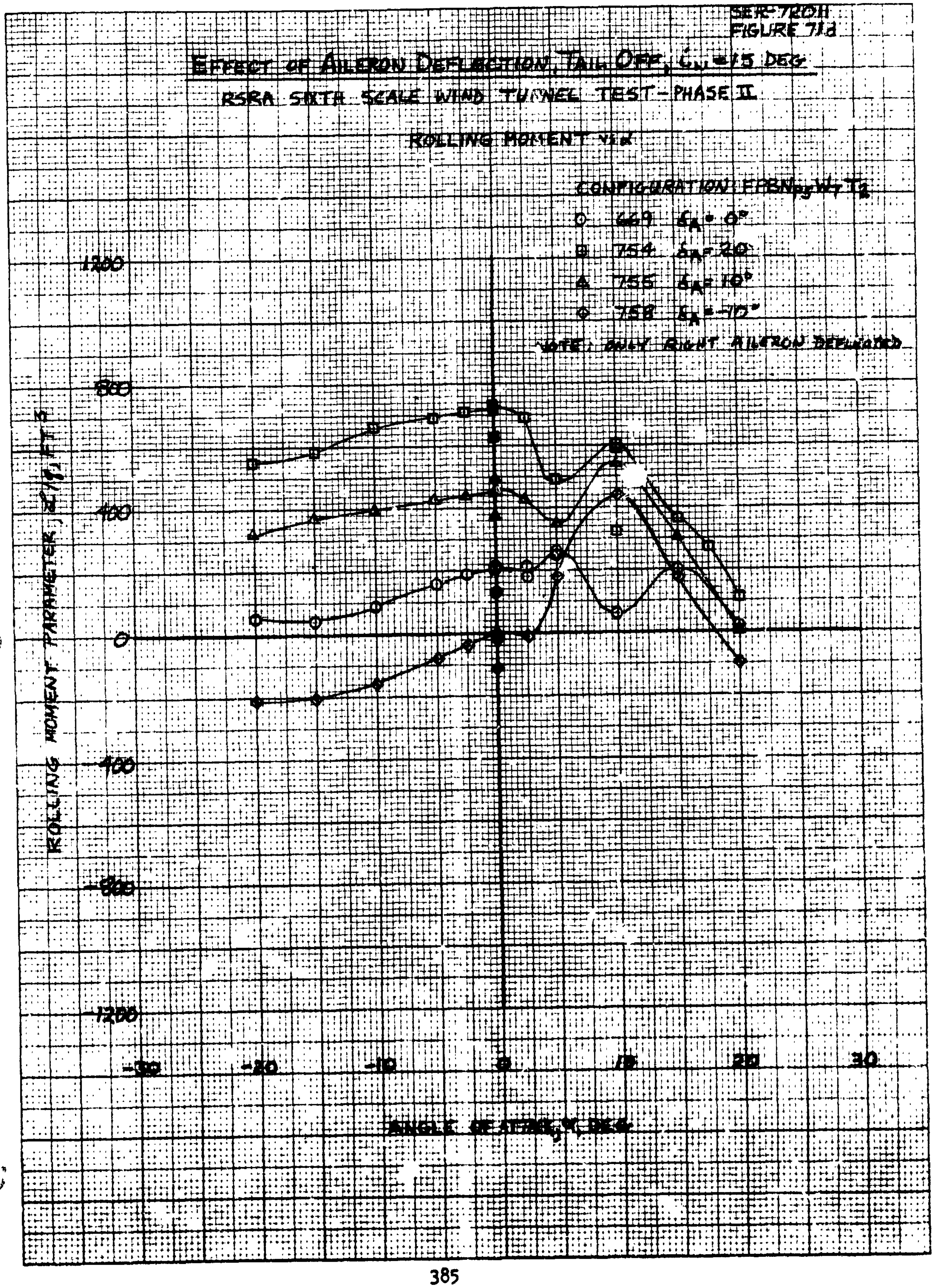

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FIGURE 71d
EFFECT OF AILERON DEFLECTION, TAIL OFF, i_N =15 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT vs α
CONFIGURATION: FPBN W T
○ 669 δ_A = 0°
□ 754 δ_A = 20°
△ 755 δ_A = 10°
◇ 758 δ_A = -10°
NOTE: ONLY RIGHT AILERON DEFLECTED
ROLLING MOMENT PARAMETER, $\mathcal{L}/q$, FT³
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

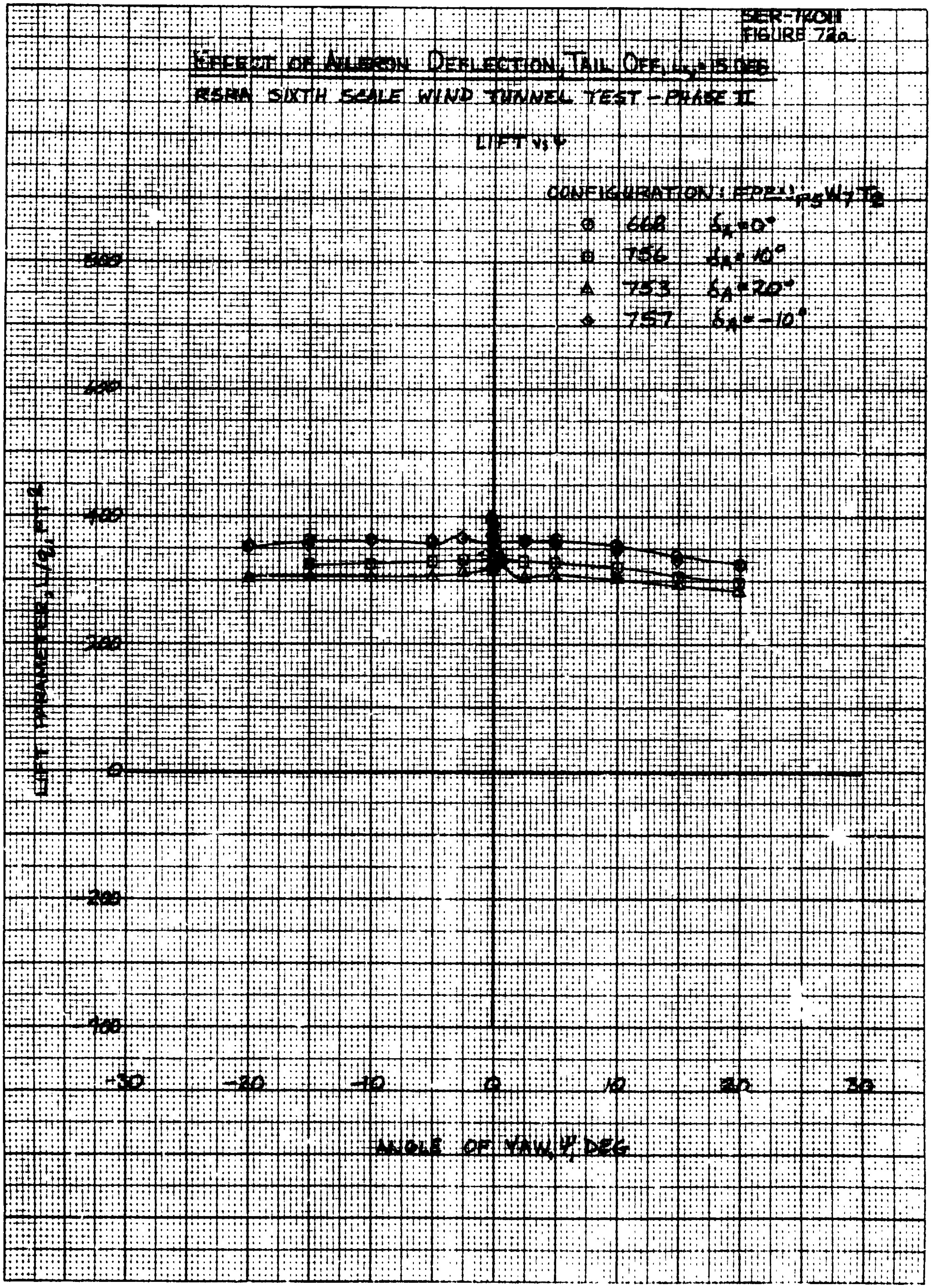
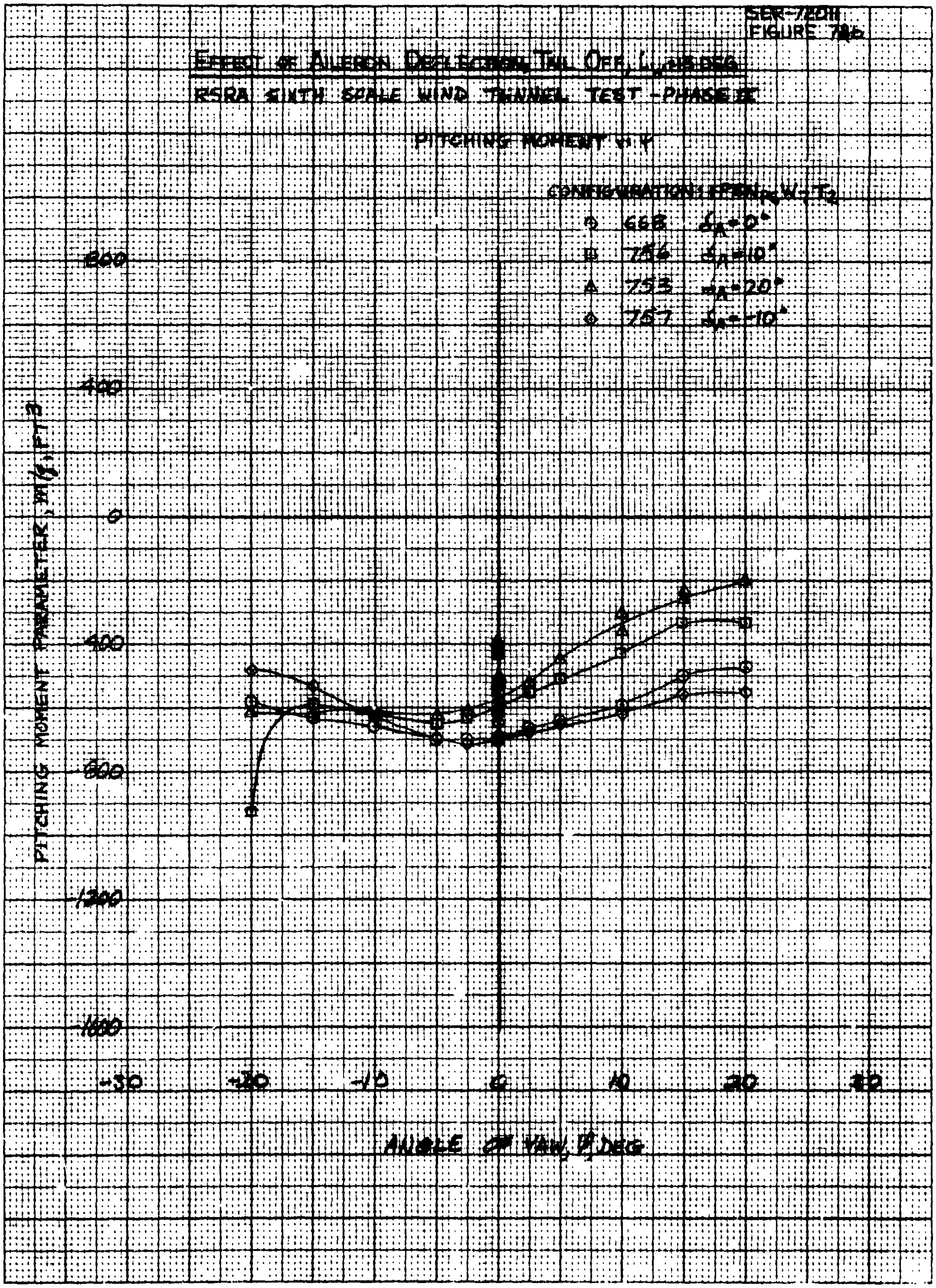


FIGURE 72a
SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT vs Ψ
CONFIGURATION:
668 δA=0°
756 δA=10°
753 δA=20°
757 δA=-10°
0
-30
-20
-10
0
10
20
30
ANGLE OF YAW, Ψ, DEG


SER-72011
EFFECT OF AILERON DEFLECTION, TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE
PITCHING MOMENT vs ψ
CONFIGURATION
668 δA = 0°
756 δA = 10°
753 δA = 20°
757 δA = -10°
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
PITCHING MOMENT PARAMETER
ANGLE OF YAW, ψ, DEG

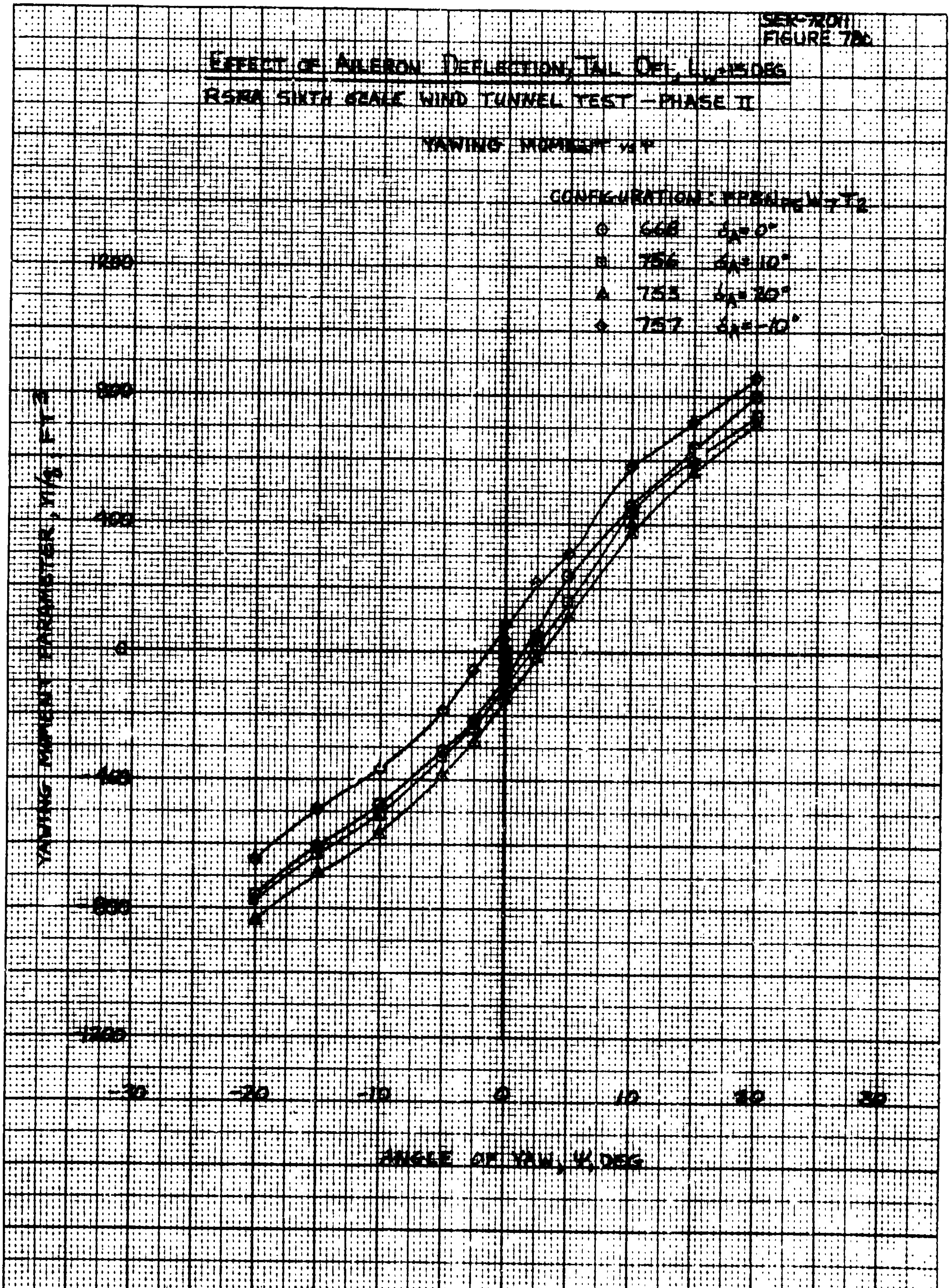


FIGURE 78c
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING
CONFIGURATION:
668 $\delta_A = 0°$
756 $\delta_A = 10°$
755 $\delta_A = 20°$
757 $\delta_A = -10°$
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
YAWING MOMENT PARAMETER, N/q, FT^3
ANGLE OF YAW, ψ, DEG

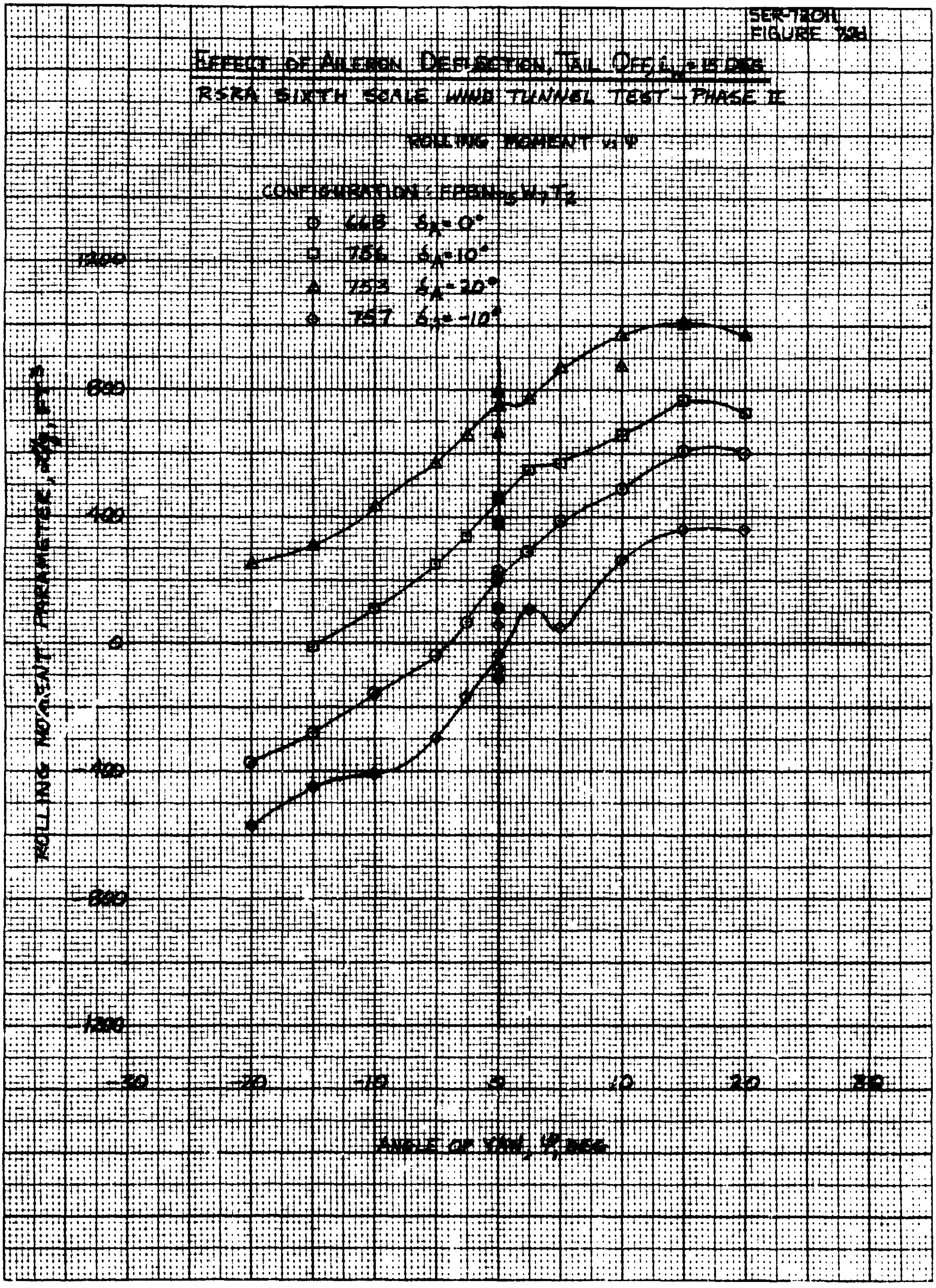


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FIGURE 72d
EFFECT OF AILERON DEFLECTION, TAIL OFF, i_W = 15 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT vs Ψ
CONFIGURATION: FPBN W T
○ 448 δ_A = 0°
□ 756 δ_A = 10°
△ 753 δ_A = 20°
◇ 757 δ_A = -10°
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ROLLING MOMENT PARAMETER
ANGLE OF YAW, Ψ, DEG

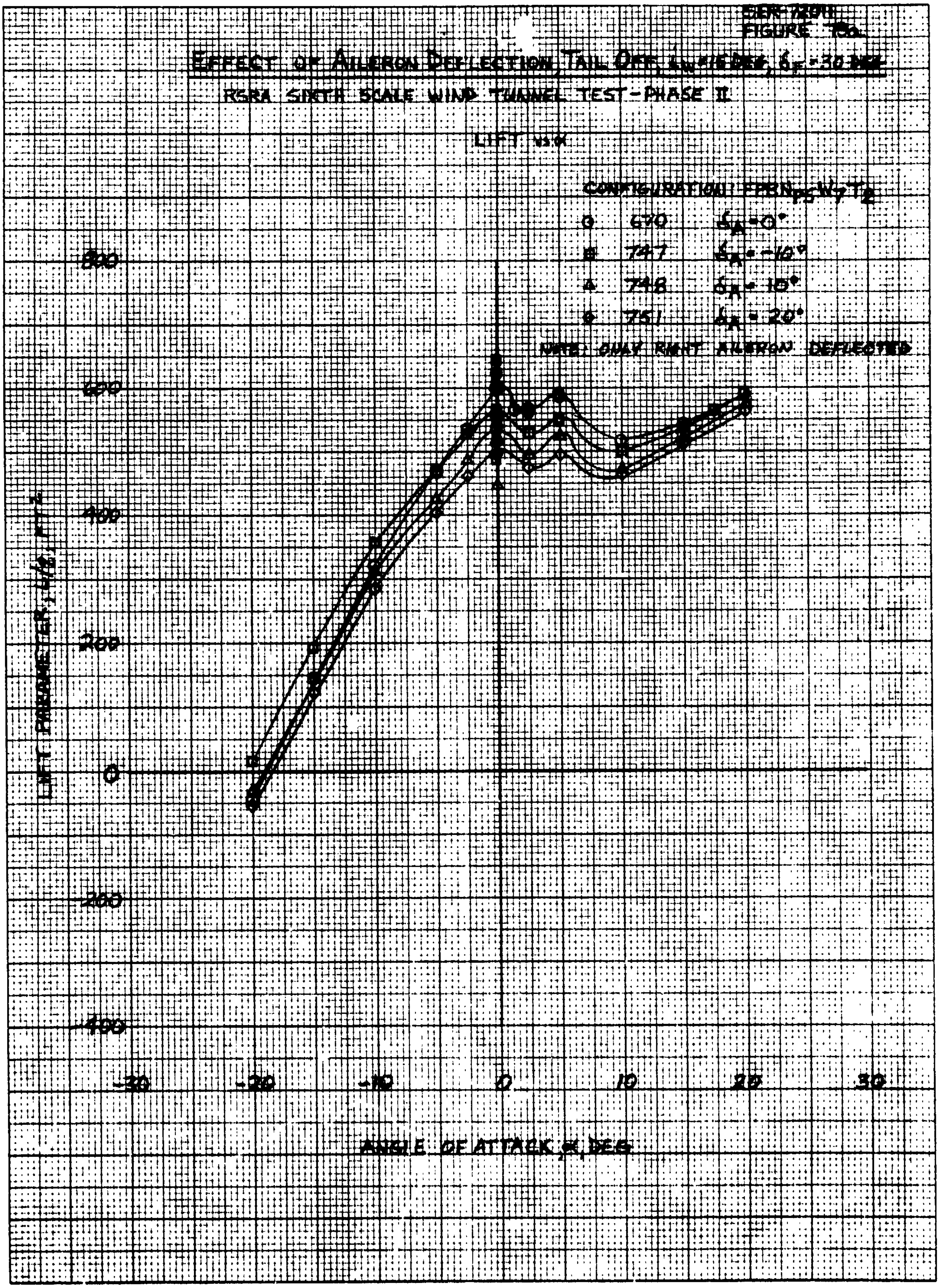


FIGURE
EFFECT OF AILERON DEFLECTION, TAIL OFF, i_w=16 DEG, δ_F=30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT vs α
CONFIGURATION: FPBNpsW7T2
670 δ_A=0°
747 δ_A=-10°
748 δ_A=10°
751 δ_A=20°
NOTE: ONLY RIGHT AILERON DEFLECTED
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

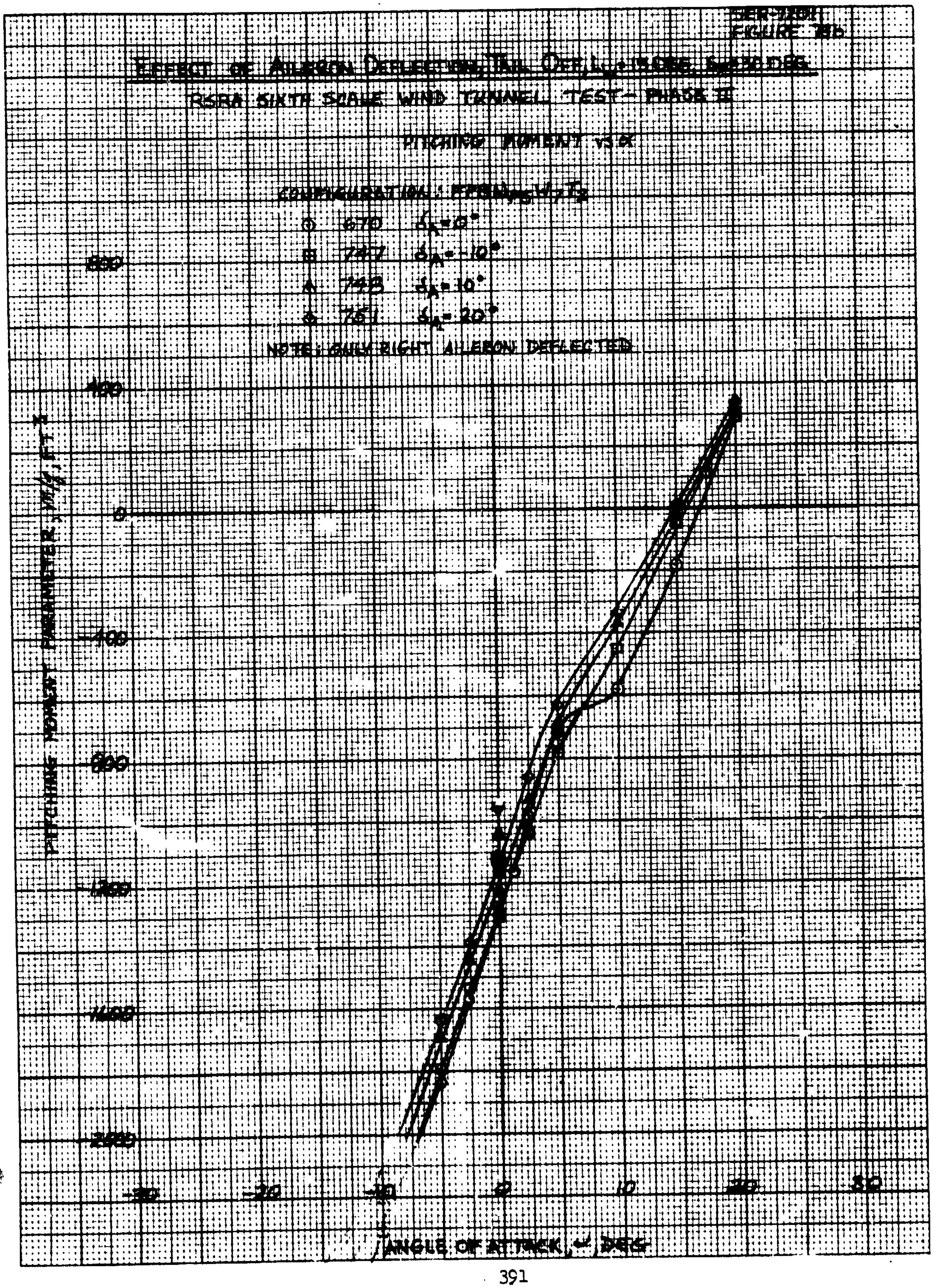
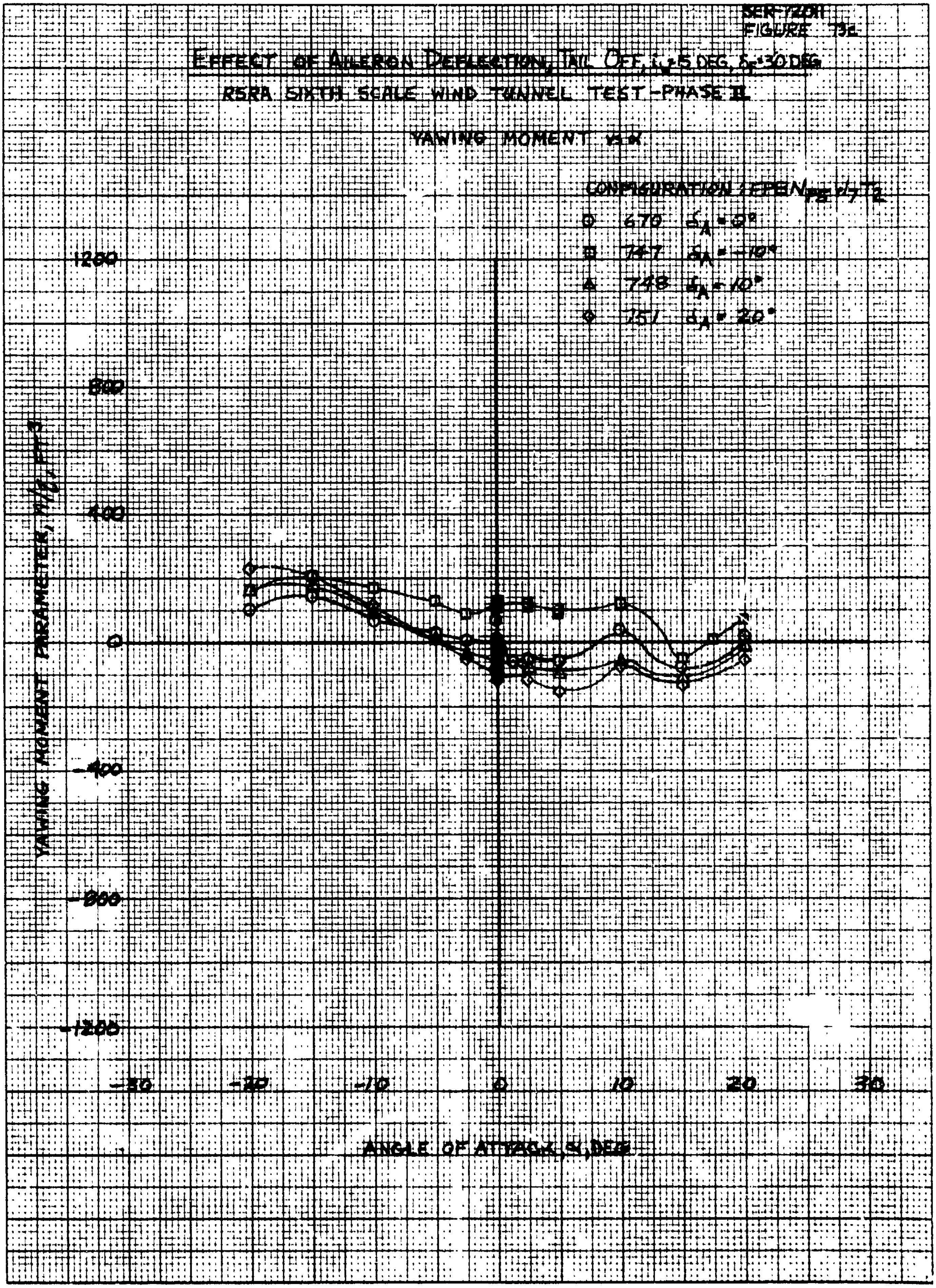
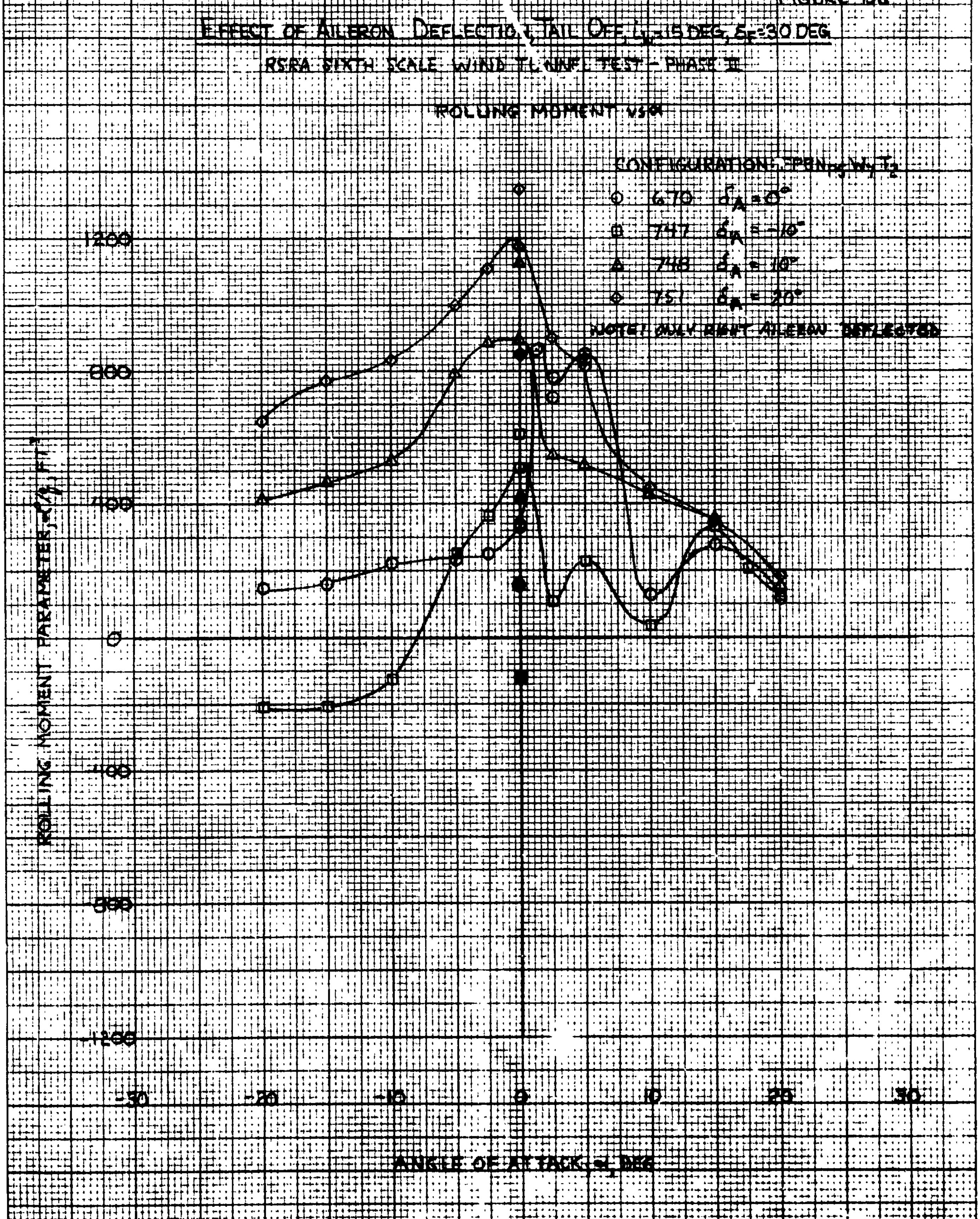
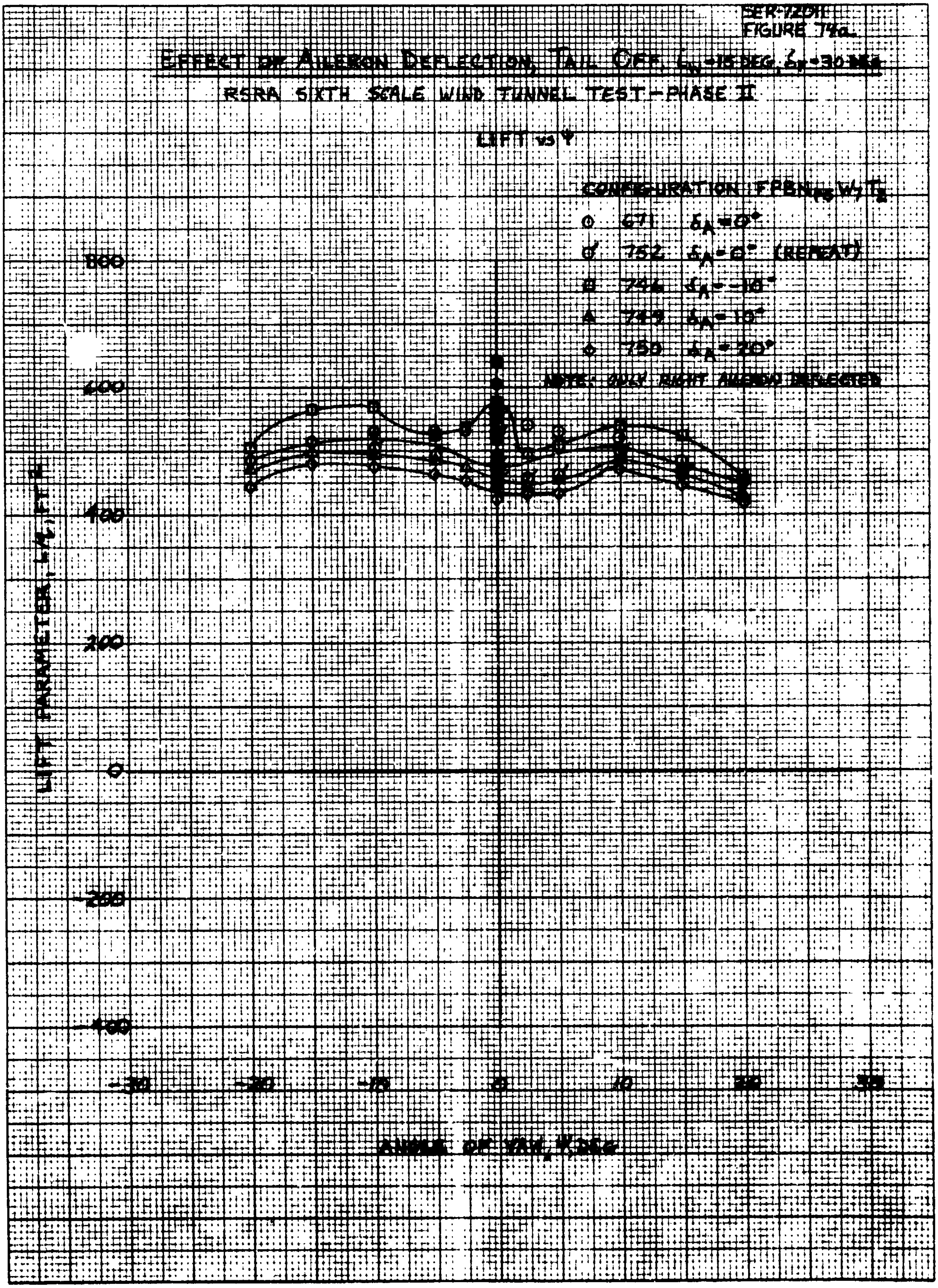


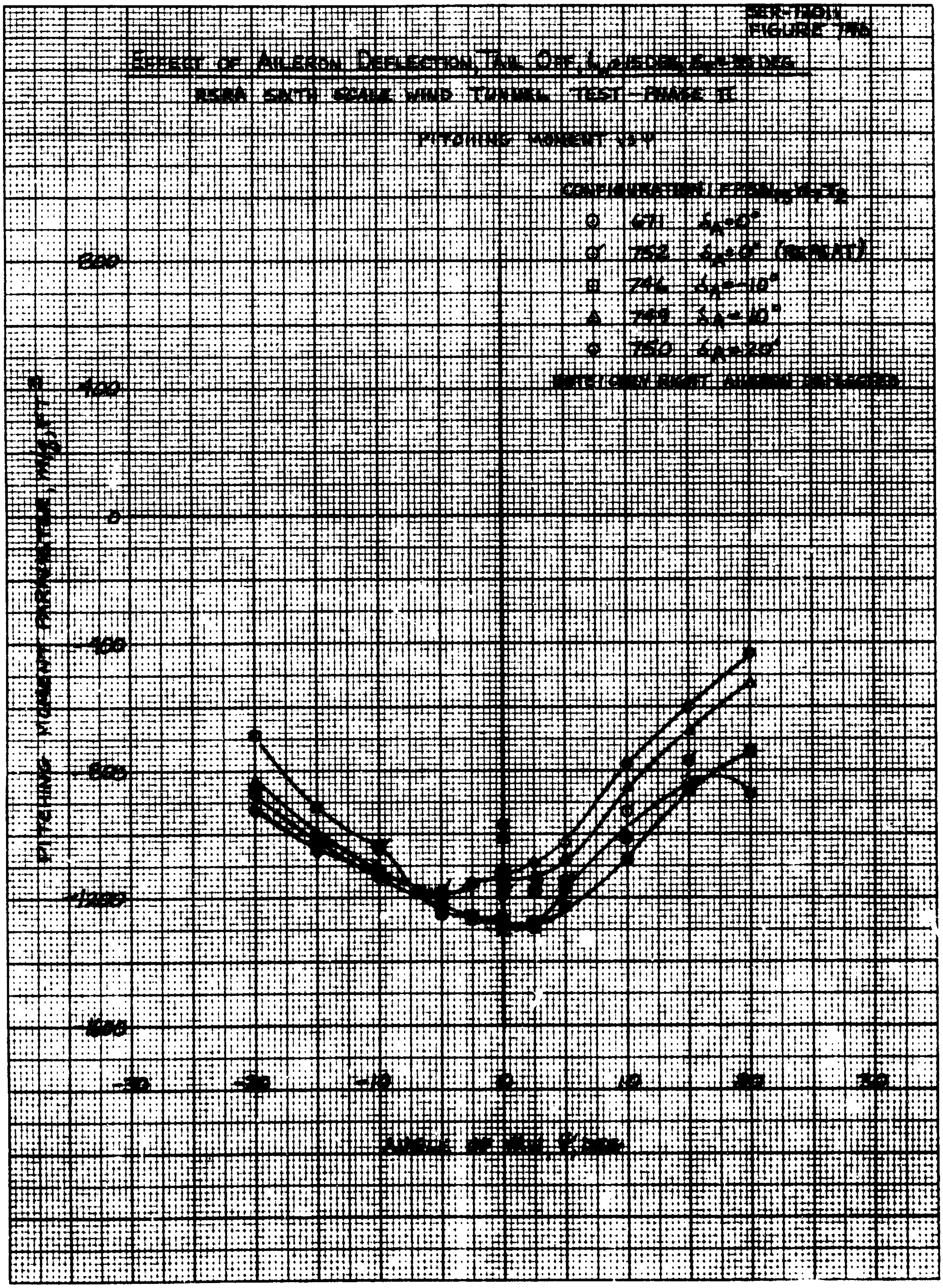
FIGURE
EFFECT OF AILERON DEFLECTION, TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT vs α
CONFIGURATION:
670 $\delta_A = 0°$
747 $\delta_A = -10°$
748 $\delta_A = 10°$
761 $\delta_A = 20°$
NOTE: ONLY RIGHT AILERON DEFLECTED
800
400
0
-400
-800
-1200
-1600
-2000
PITCHING MOMENT PARAMETER, M/q, FT³
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α DEG

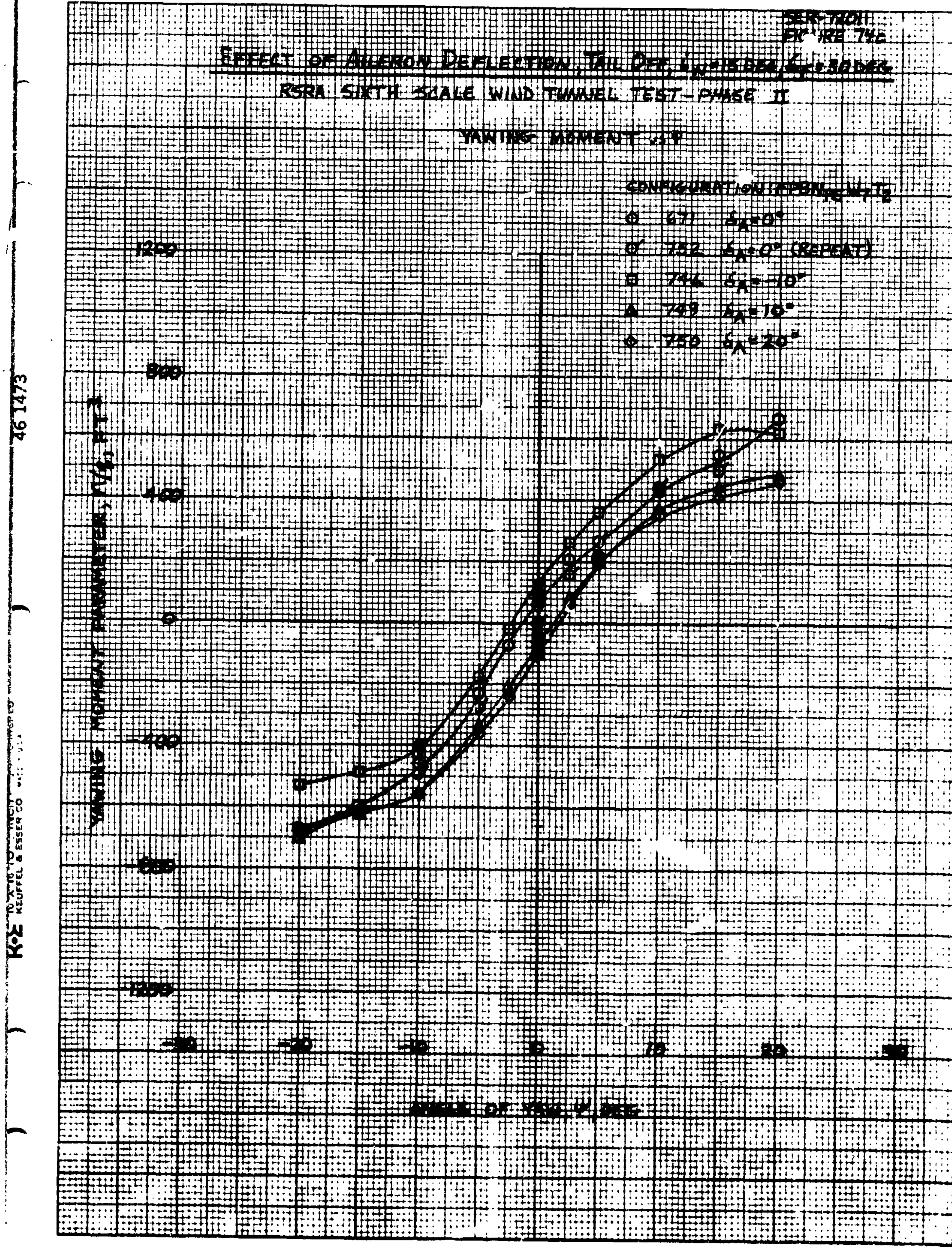

SER-72011
FIGURE 73c
EFFECT OF AILERON DEFLECTION, TAIL OFF, i_W=5 DEG, δ_F=30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
YAWING MOMENT vs α
CONFIGURATION: FPEN$_{F2}$ V_7 T_2
670 δ_A = 0°
747 δ_A = -10°
748 δ_A = 10°
751 δ_A = 20°
YAWING MOMENT PARAMETER, N/q, FT^3
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG



K·E 10 X 10 TO 1/2 INCH • 7 1/2 X 10 INCHES KEUFFEL & ESSER CO. MADE IN U.S.A.
46 1473


SER-72011
FIGURE 74a
EFFECT OF AILERON DEFLECTION, TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT vs Ψ
CONFIGURATION: FPBN W T
671 $\delta_A = 0°$
752 $\delta_A = 0°$ (REPEAT)
746 $\delta_A = -10°$
749 $\delta_A = 10°$
750 $\delta_A = 20°$
LIFT PARAMETER, L/q, FT²
600
400
200
0
-200
-30
-20
-10
0
10
20
30
ANGLE OF YAW, Ψ, DEG


RSRA SIXTH SCALE WIND TUNNEL TEST—PHASE II
PITCHING MOMENT VS Ψ
671
752
749
750
400
0
-400
-800
-1200
-20
-10
0
10
20


EFFECT OF AILERON DEFLECTION, TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT vs Ψ
CONFIGURATION
671 δA=0°
752 δA=0° (REPEAT)
746 δA=-10°
749 δA=10°
750 δA=20°
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
YAWING MOMENT PARAMETER
46 1473
KEUFFEL & ESSER CO.

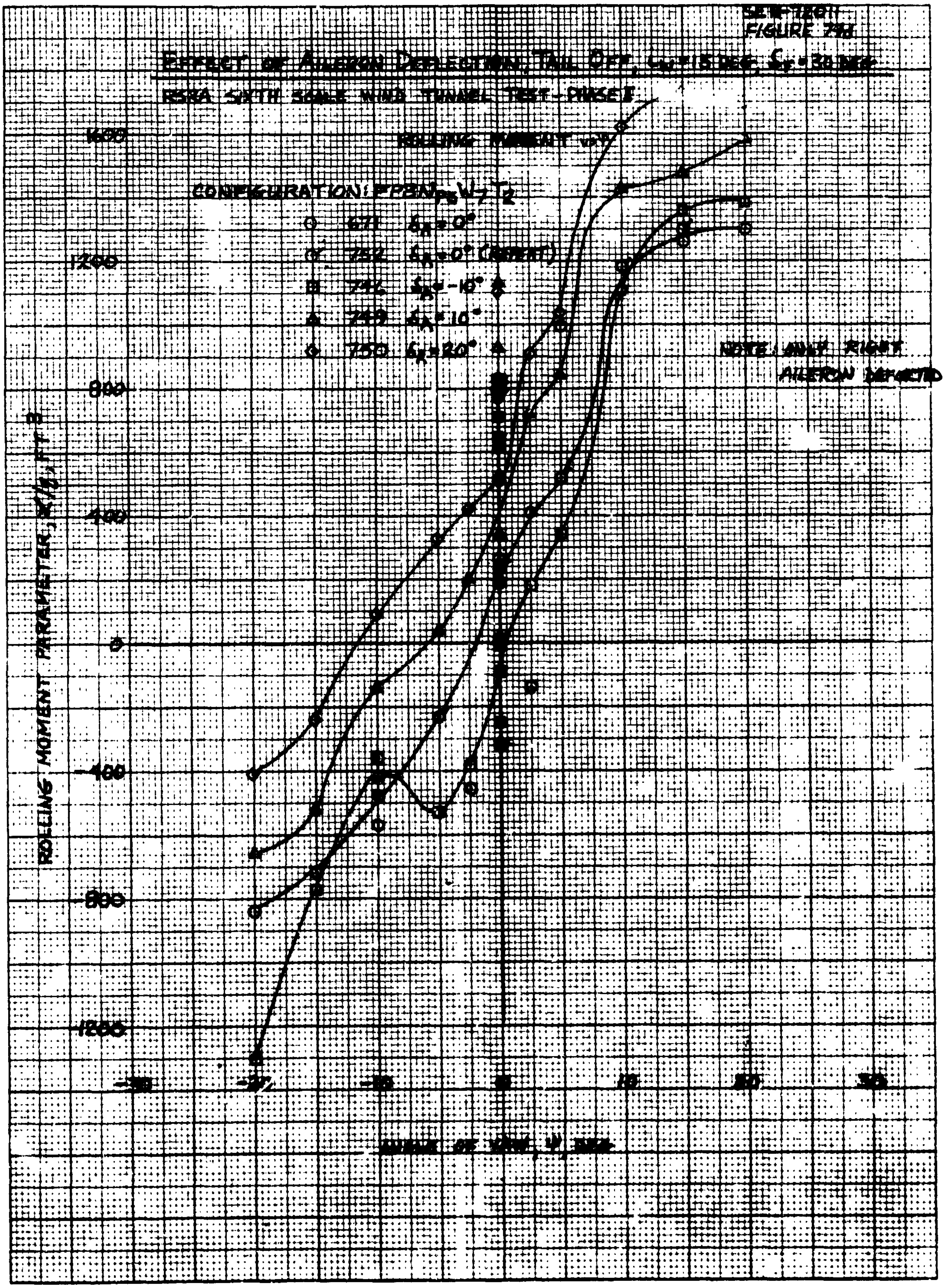


FIGURE
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION:
671
752
749
750
NOTE: RIGHT
AILERON
1600
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ROLLING MOMENT PARAMETER

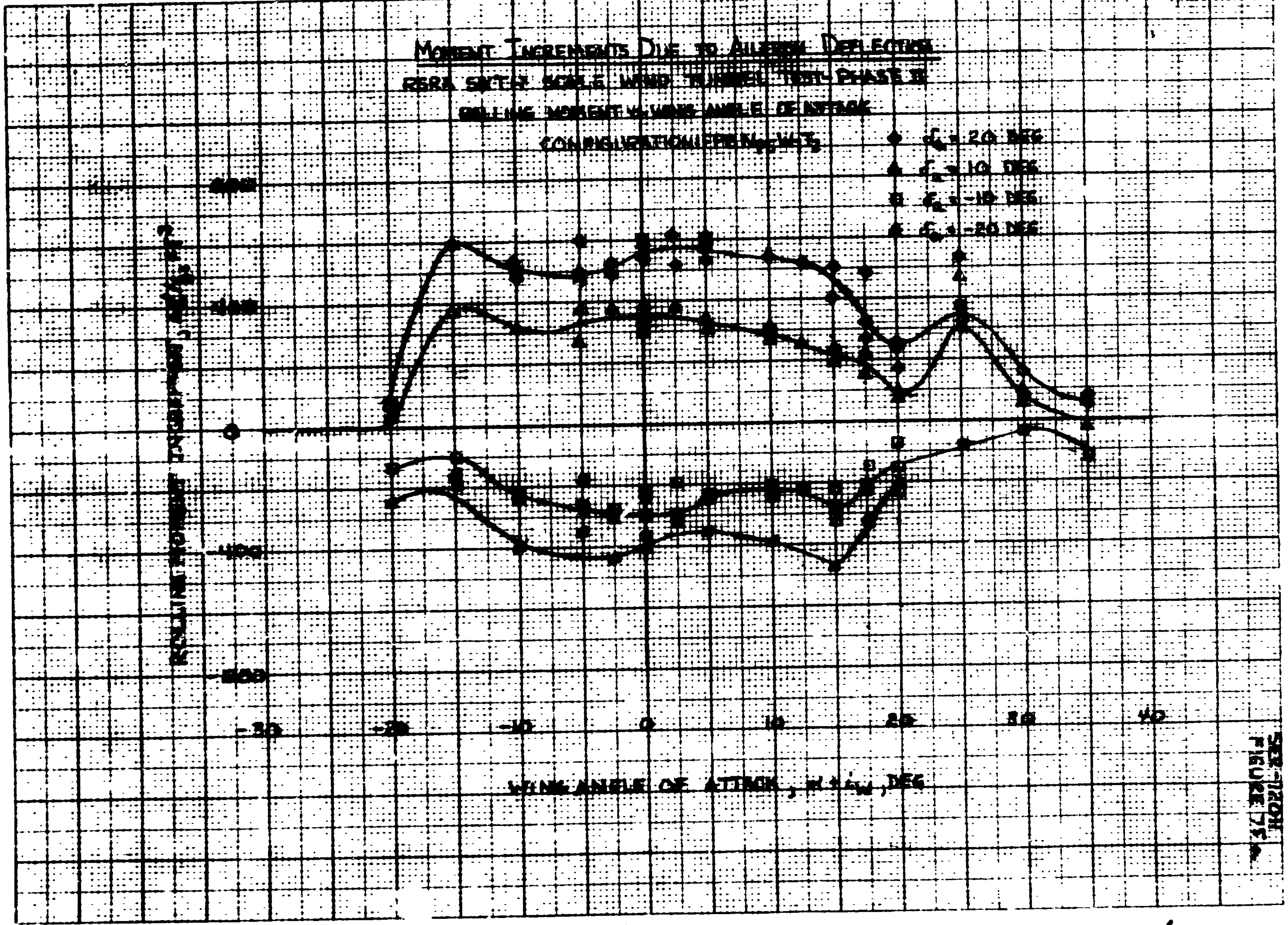

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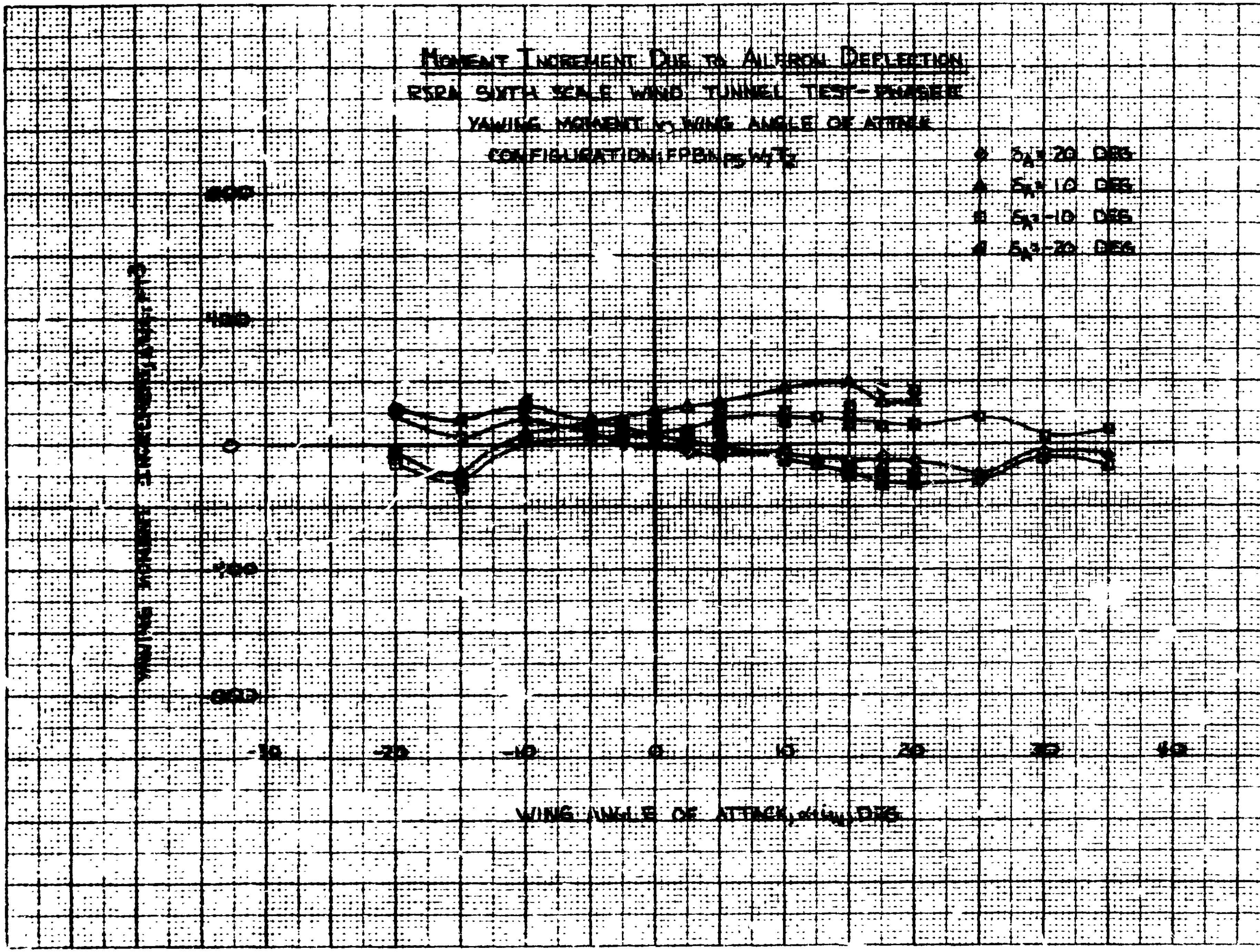
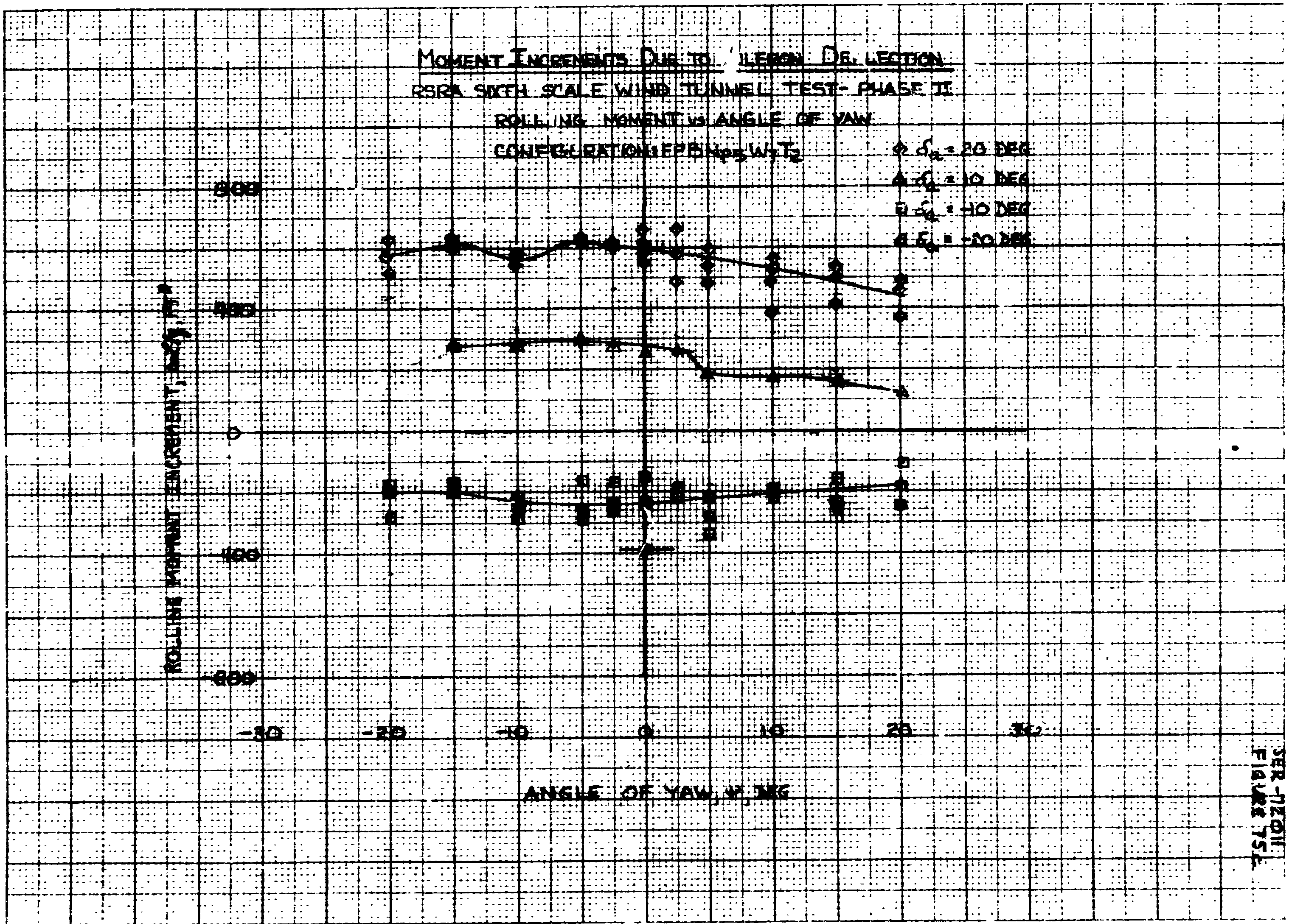
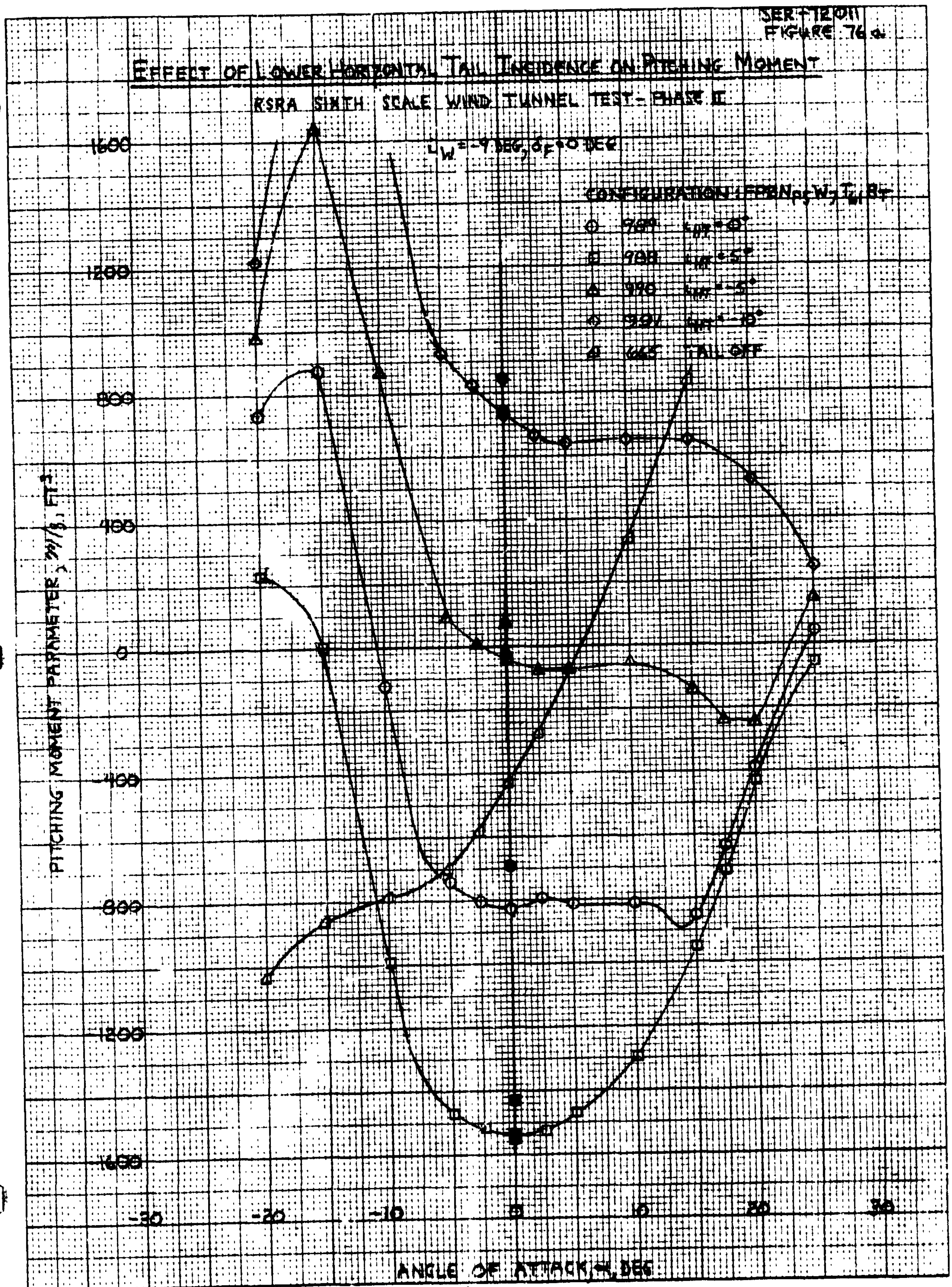
FIGURE 75
MOMENT INCREMENTS DUE TO AILERON DEFLECTION
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT vs WING ANGLE OF ATTACK
δa = 20 DEG
δa = 10 DEG
δa = -10 DEG
δa = -20 DEG
200
100
0
-100
-200
-30
-20
-10
0
10
20
30
40
WING ANGLE OF ATTACK, α + iW, DEG

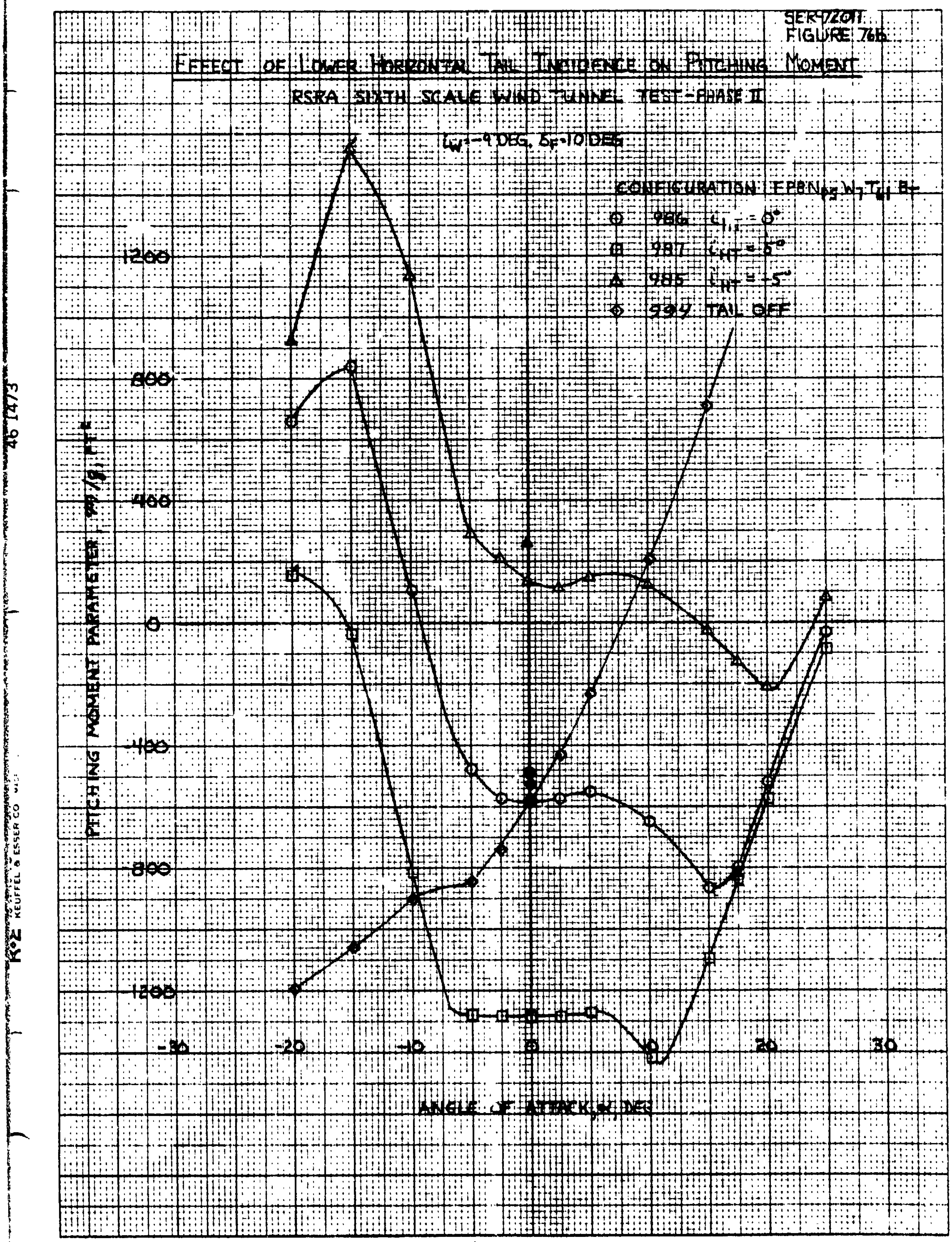


MOMENT INCREMENT DUE TO AILERON DEFLECTION
YAWING MOMENT vs WING ANGLE OF ATTACK
δA = 20 DEG
δA = 10 DEG
δA = -10 DEG
δA = -20 DEG
800
400
0
-400
-800
-30
-20
-10
0
10
20
30
40
WING ANGLE OF ATTACK, DEG

FIGURE 75b


MOMENT INCREMENTS DUE TO AILERON DEFLECTION
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT vs ANGLE OF YAW
CONFIGURATION: F P B N W T2
◇ δa = 20 DEG
△ δa = 10 DEG
□ δa = -10 DEG
δa = -20 DEG
800
400
0
-400
-800
ROLLING MOMENT INCREMENT
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG


EFFECT OF LOWER HORIZONTAL TAIL INCIDENCE ON PITCHING MOMENT
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
$i_W = -9$ DEG, $\delta_F = 0$ DEG
CONFIGURATION: $FPBN_{PS}W_7T_{W1}B_T$
989 $i_{HT}=0°$
908 $i_{HT}=5°$
990 $i_{HT}=-5°$
991 $i_{HT}=-10°$
665 TAIL OFF
1600
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
PITCHING MOMENT PARAMETER, M/q, FT^3
ANGLE OF ATTACK, α, DEG


SER-72011
FIGURE 766
EFFECT OF LOWER HORIZONTAL TAIL INCIDENCE ON PITCHING MOMENT
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
CONFIGURATION
986
987
985
999 TAIL OFF
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG
PITCHING MOMENT PARAMETER
46 1473
K+E KEUFFEL & ESSER CO.

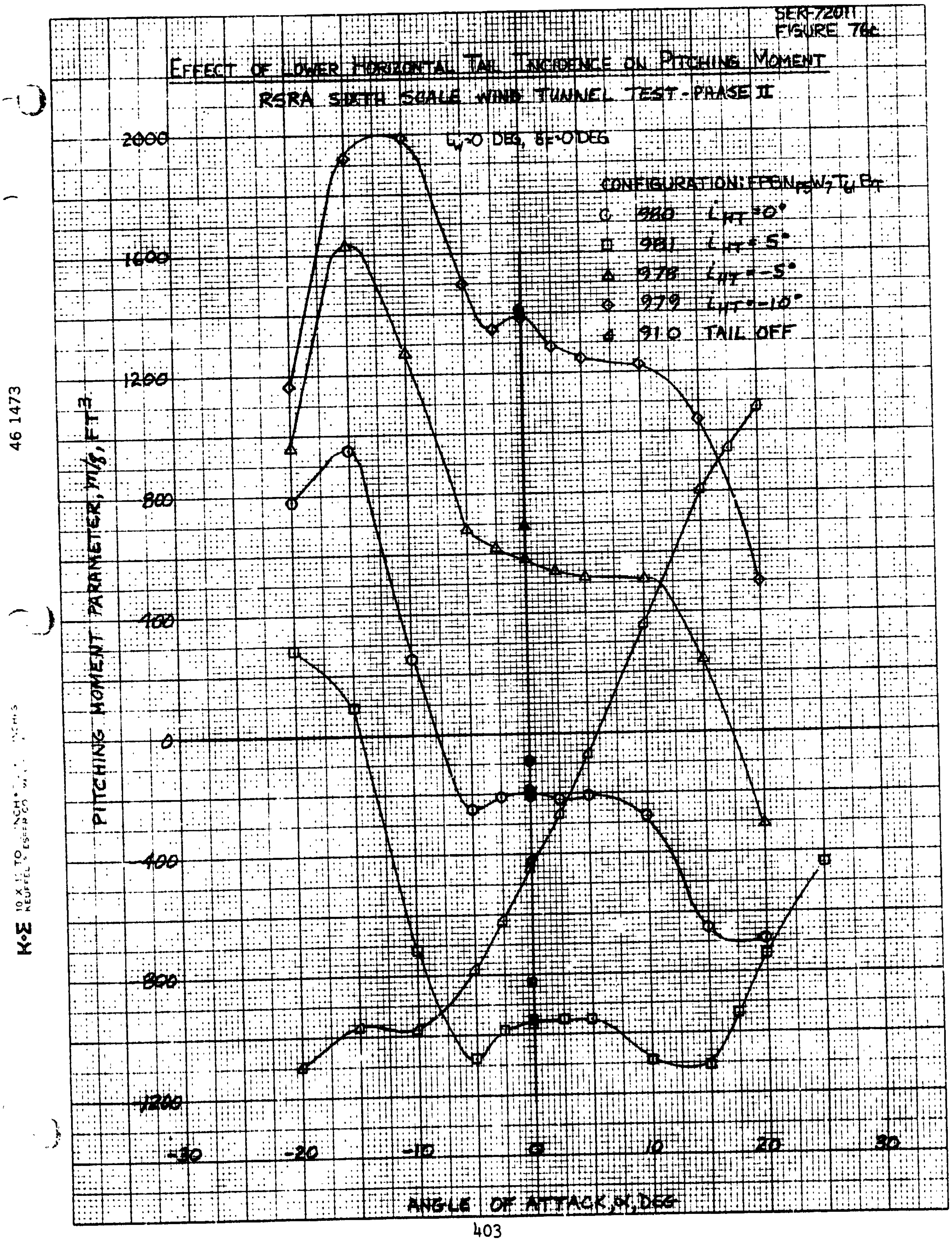


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FIGURE 76c
EFFECT OF LOWER HORIZONTAL TAIL INCIDENCE ON PITCHING MOMENT
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
i_W=0 DEG, δ_F=0 DEG
CONFIGURATION: $F_P G N_{PS} W_7 T_{U} E_T$
980 i_{HT}=0°
981 i_{HT}=5°
978 i_{HT}=-5°
979 i_{HT}=-10°
910 TAIL OFF
PITCHING MOMENT PARAMETER, M/q, FT^3
2000
1600
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG
46 1473
K•E 10 X 10 TO THE INCH KEUFFEL & ESSER CO.

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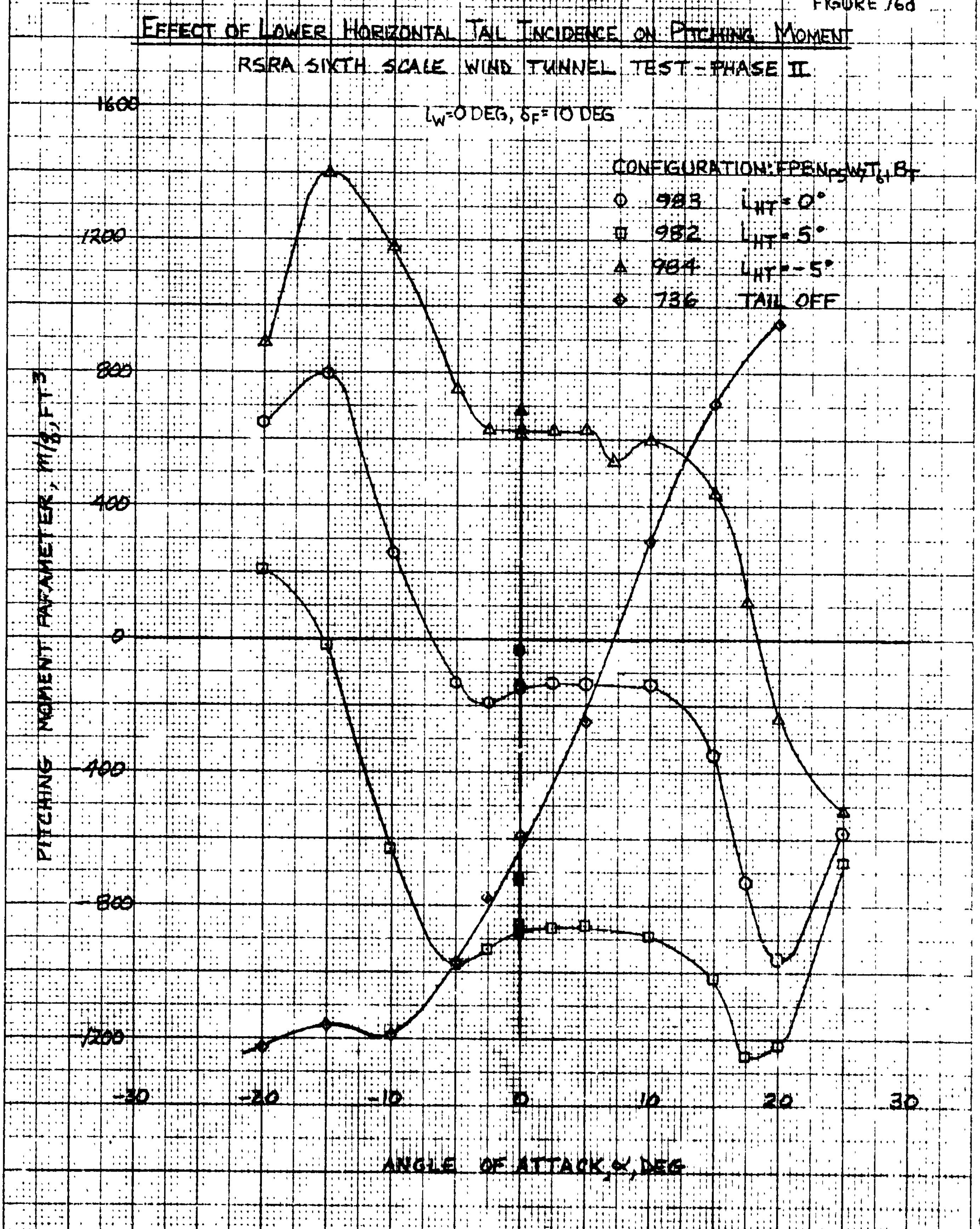
FIGURE 76d



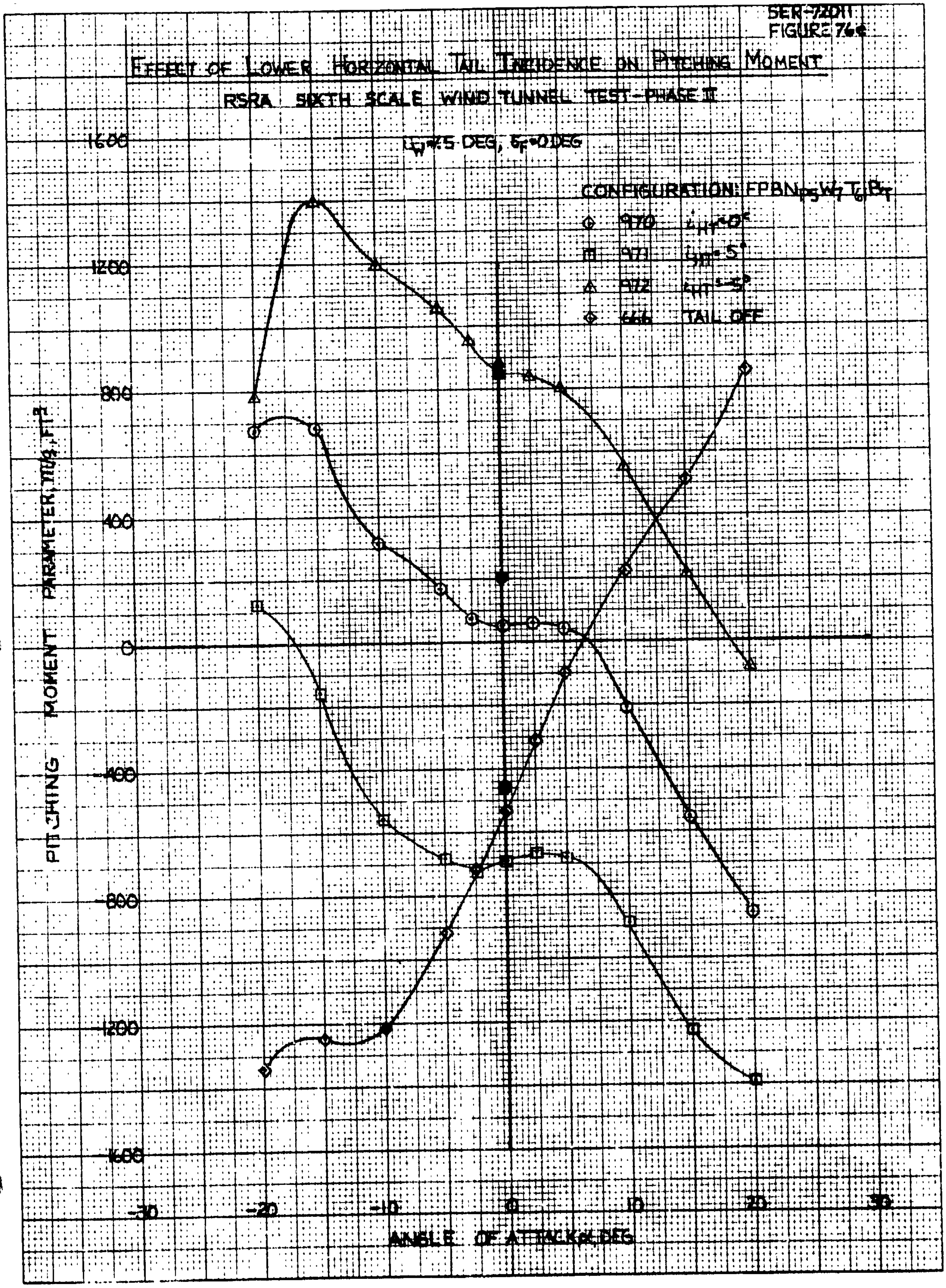


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FIGURE 76e
EFFECT OF LOWER HORIZONTAL TAIL INCIDENCE ON PITCHING MOMENT
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
1600
1200
800
400
0
-400
-800
-1200
-1600
CONFIGURATION: FPBN
970
971
972
666 TAIL OFF
PITCHING MOMENT PARAMETER
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, DEG

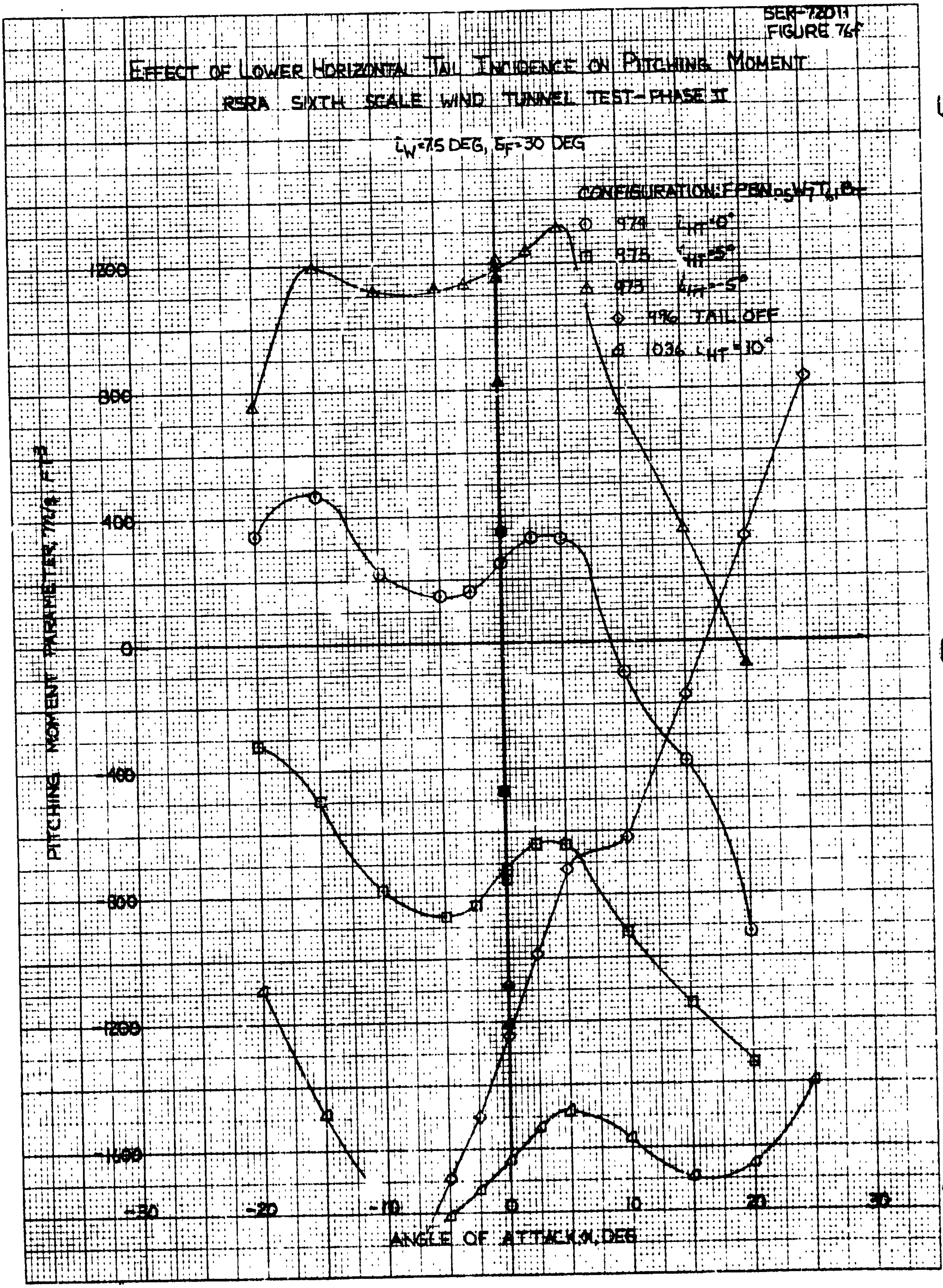

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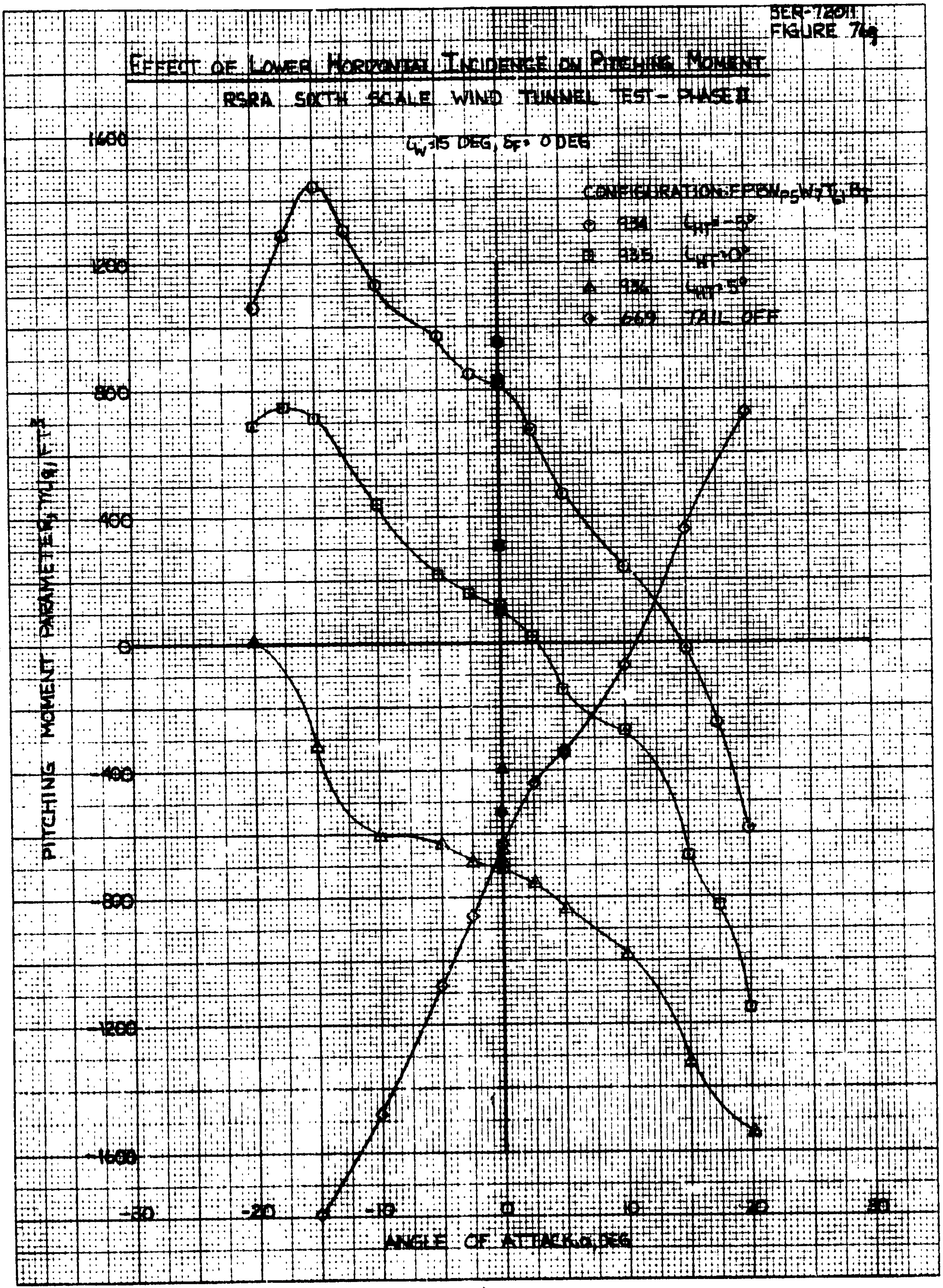
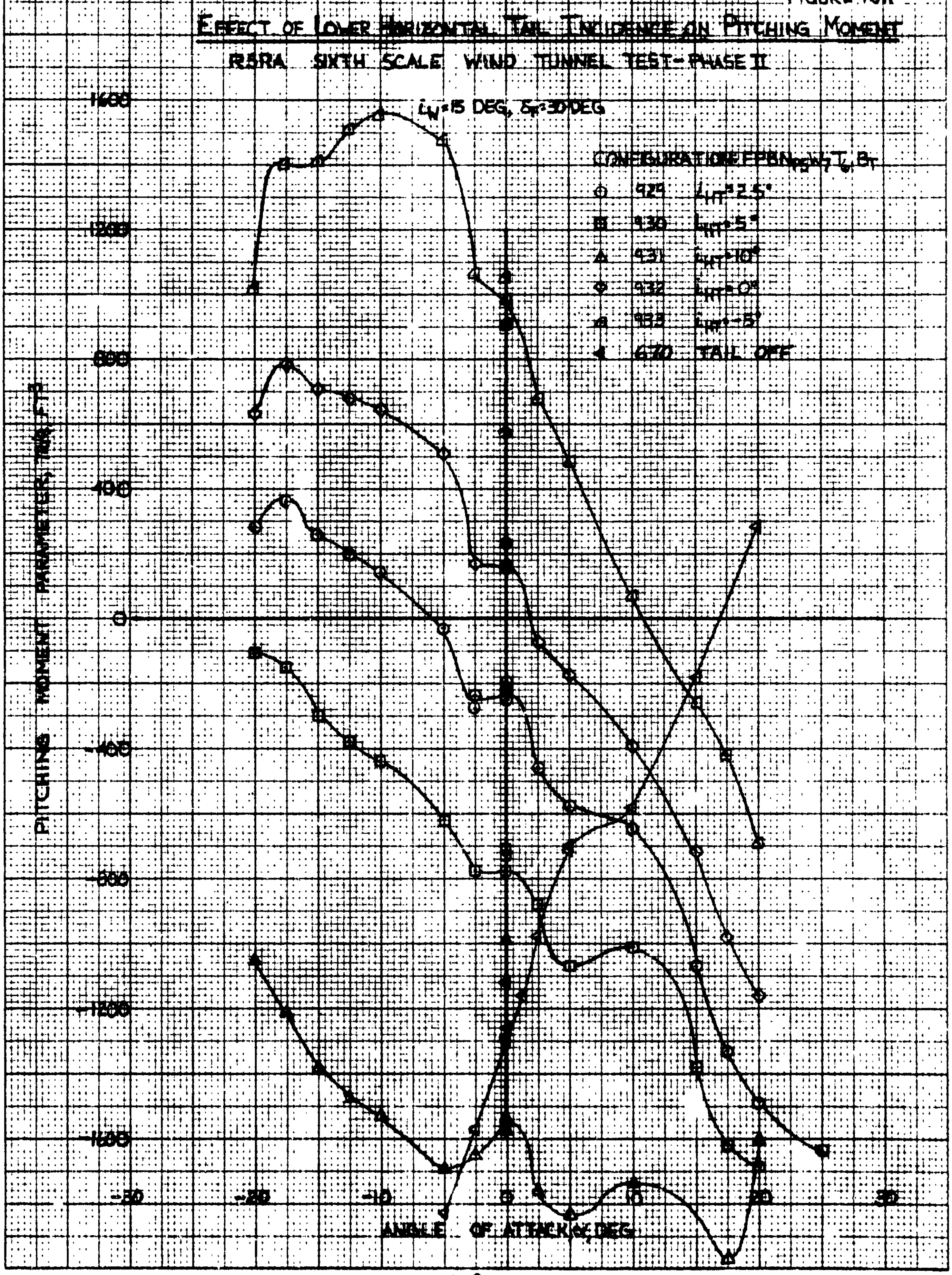
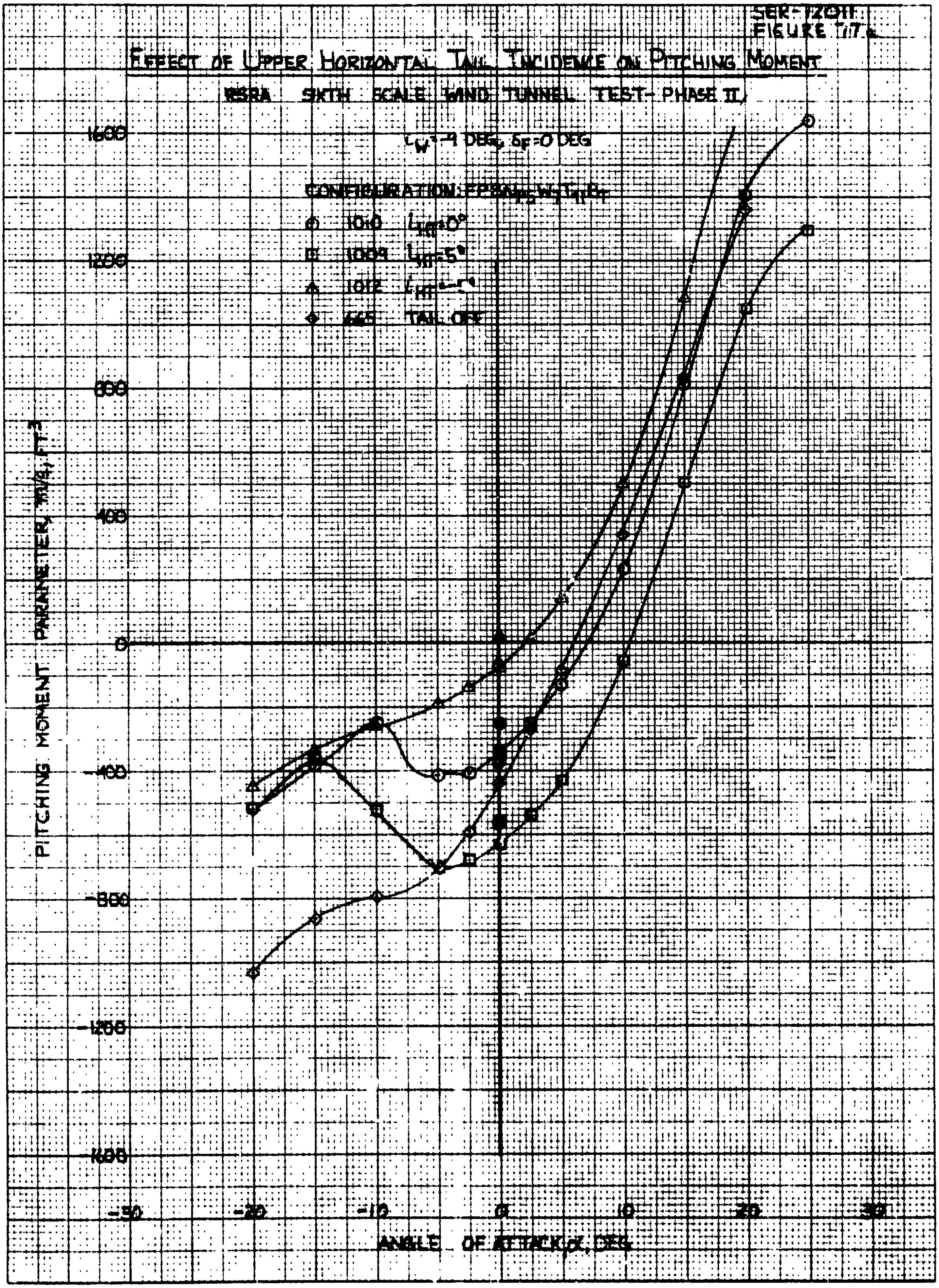
FIGURE 76f
EFFECT OF LOWER HORIZONTAL TAIL INCIDENCE ON PITCHING MOMENT
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
i_W=7.5 DEG, δ_F=30 DEG
CONFIGURATION: FPBN.5W7T61B
974 i_{HT}=0°
975 i_{HT}=5°
973 i_{HT}=-5°
996 TAIL OFF
1036 i_{HT}=10°
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG
PITCHING MOMENT PARAMETER, M/q, FT³


SER-72011
FIGURE 76g
EFFECT OF LOWER HORIZONTAL INCIDENCE ON PITCHING MOMENT
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
i_W = 15 DEG, δ_F = 0 DEG
CONFIGURATION: $F_7 P_5 W_7 T_{L_1} B_7$
934 i_{HT} = -5°
935 i_{HT} = 0°
936 i_{HT} = 5°
669 TAIL OFF
PITCHING MOMENT PARAMETER, M/q, FT³
1600
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

SER-72011
FIGURE 76h





46 1473

K•E 10 X 10 TO INCH KEUFFEL & ESSER CO.

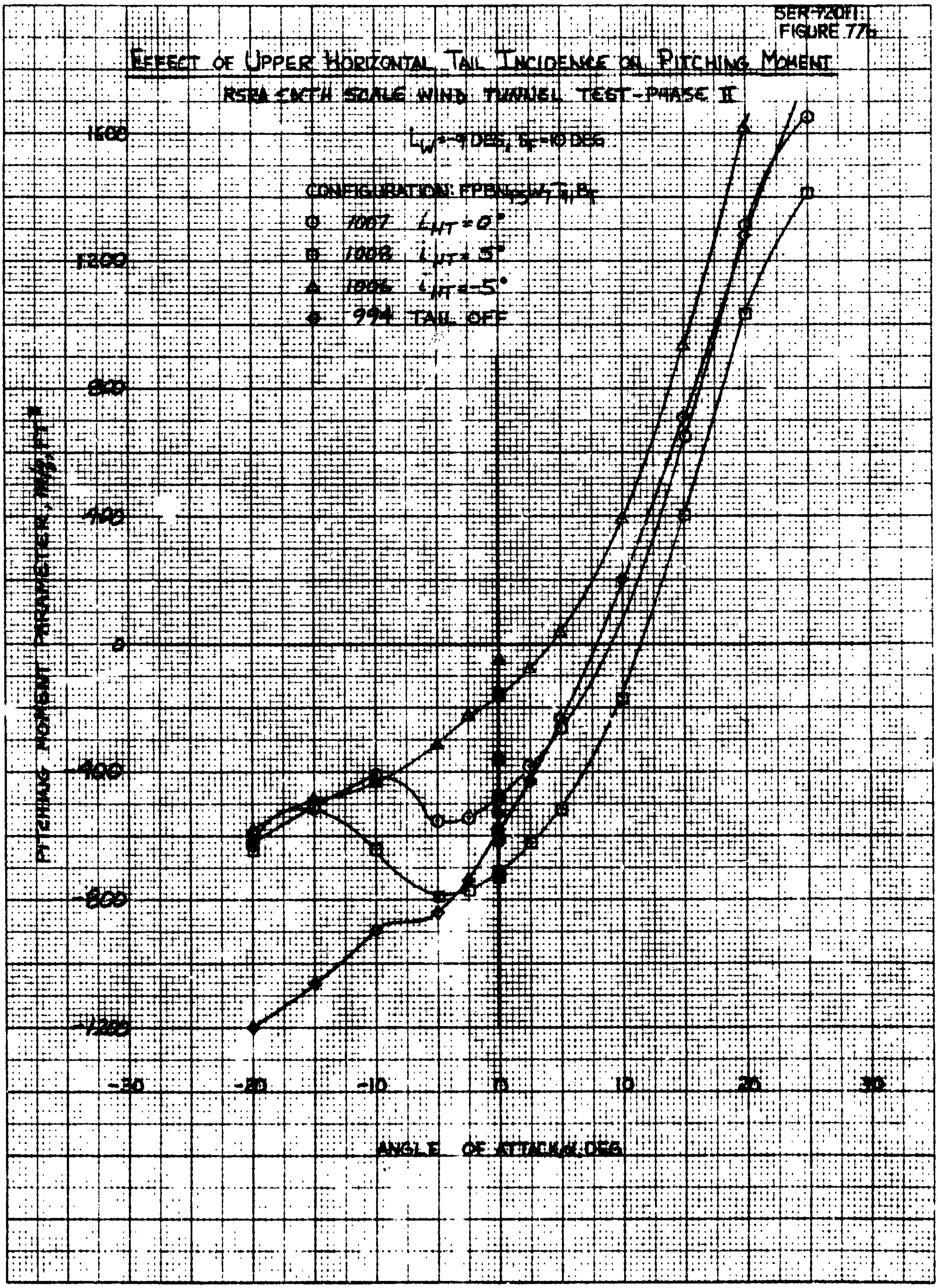


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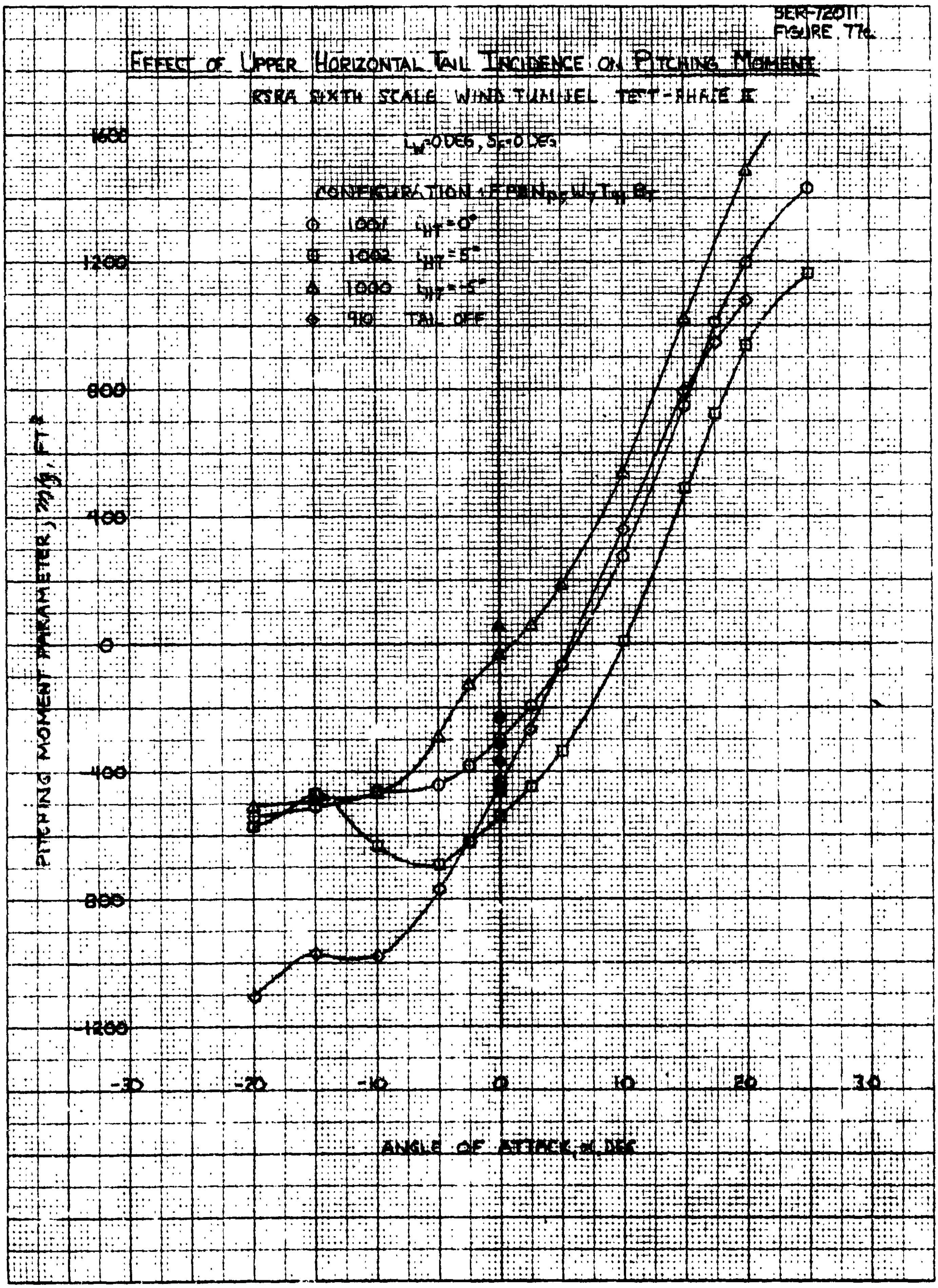
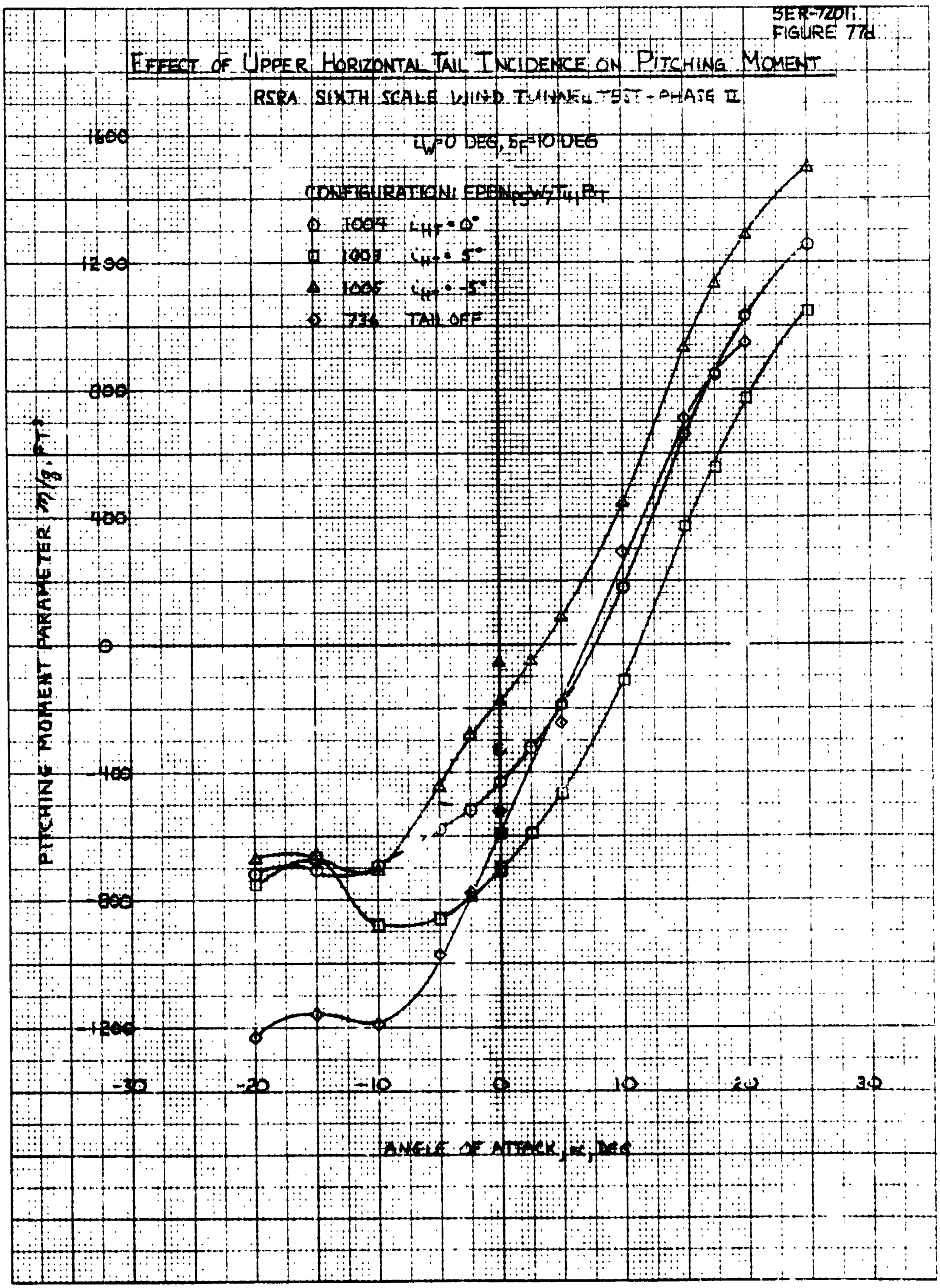
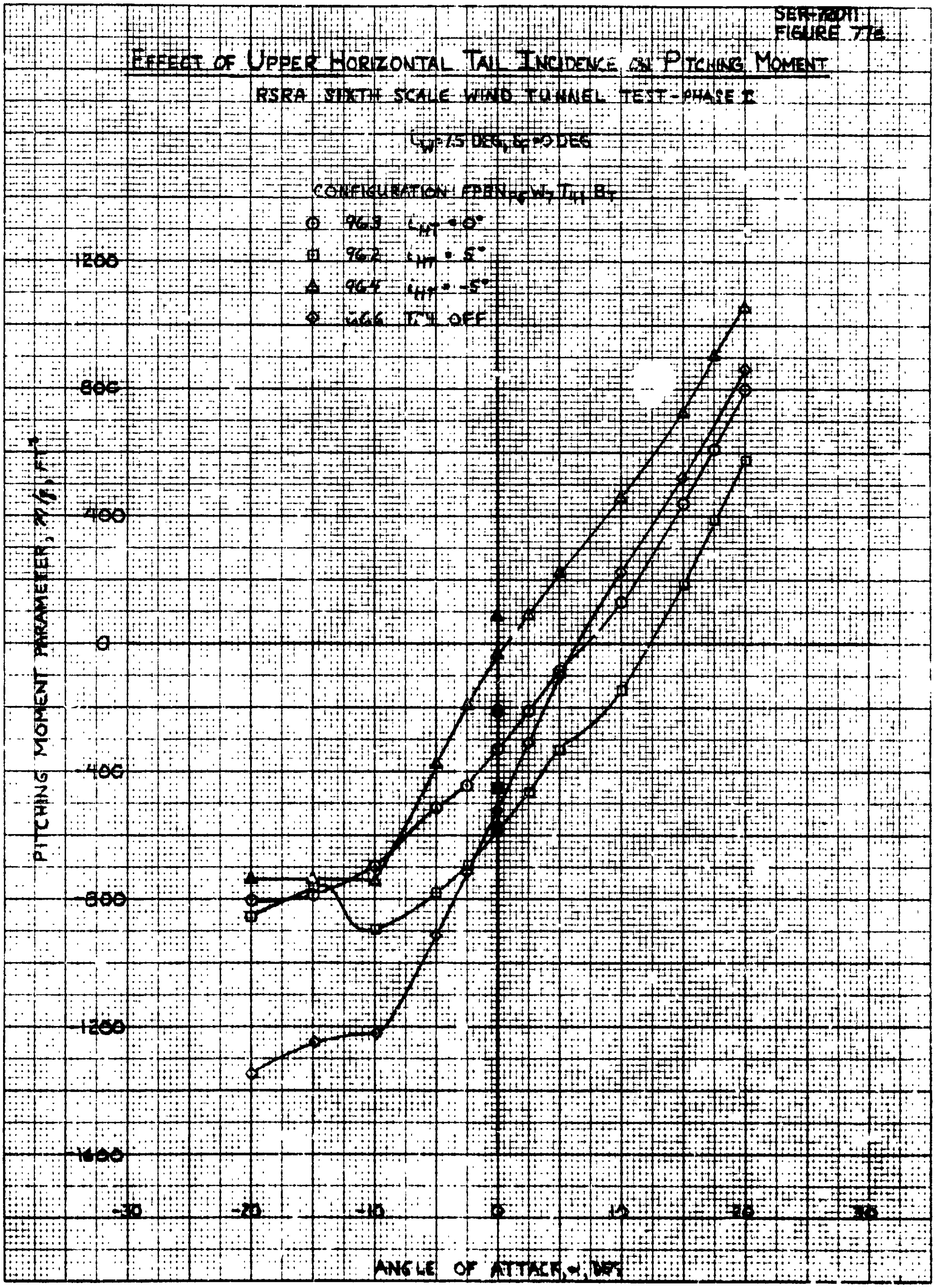
FIGURE 77b
EFFECT OF UPPER HORIZONTAL TAIL INCIDENCE ON PITCHING MOMENT
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
CONFIGURATION:
1007 $i_{HT} = 0°$
1008 $i_{HT} = 5°$
1006 $i_{HT} = -5°$
994 TAIL OFF
1600
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, DEG

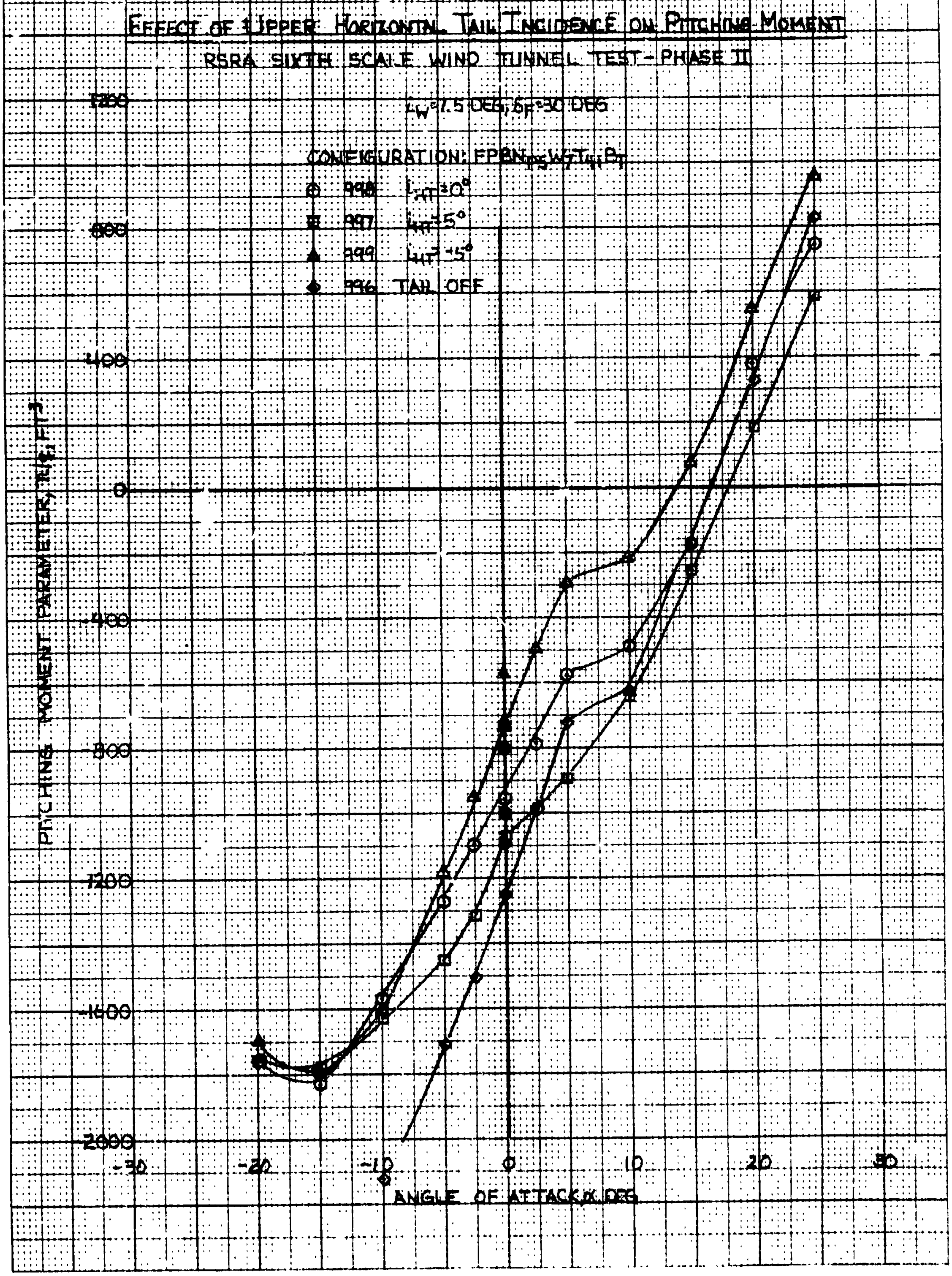


46 1473

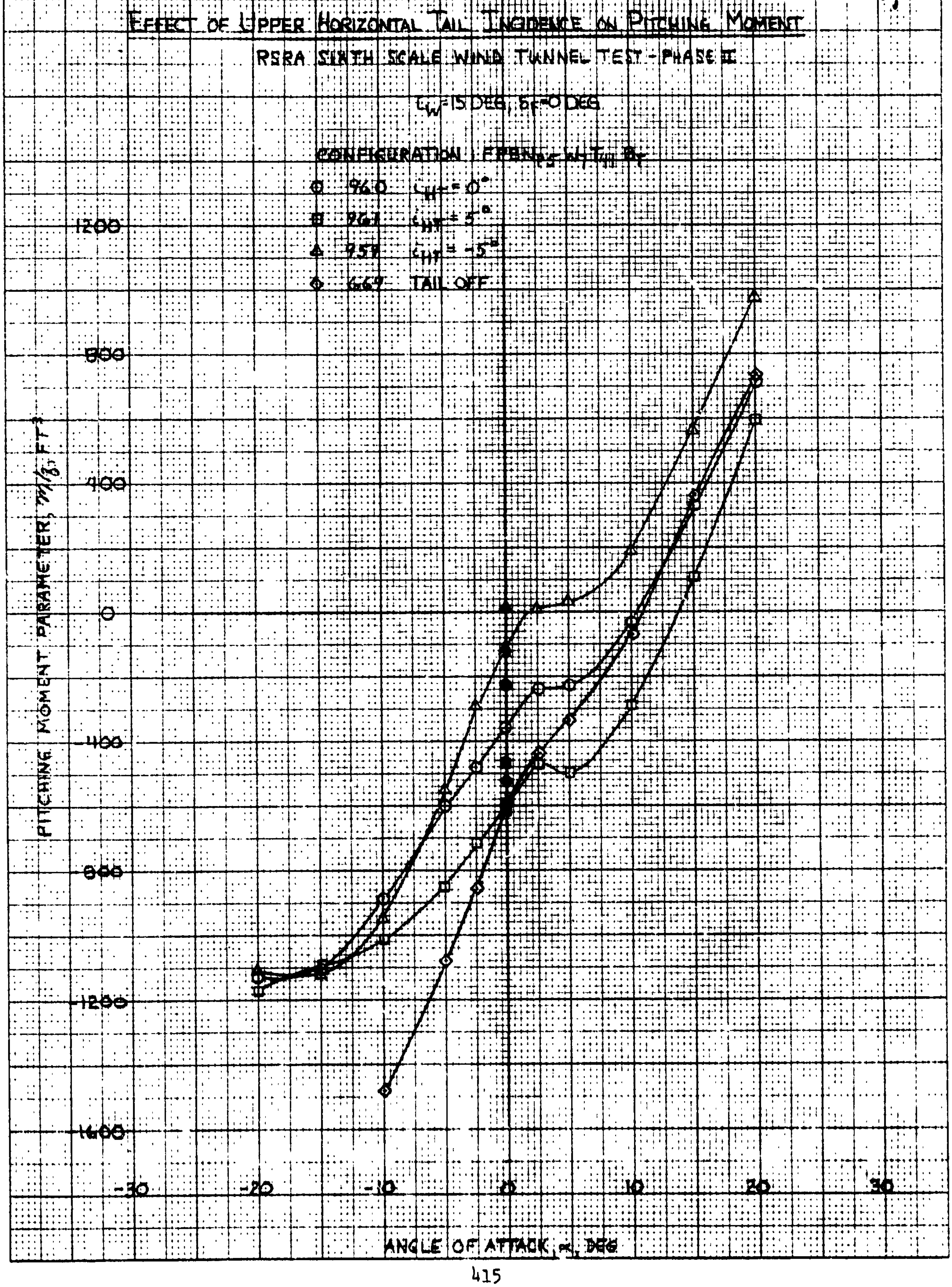
K•E 10 X 10 TO 1/2 INCH KEUFFEL & ESSER CO.

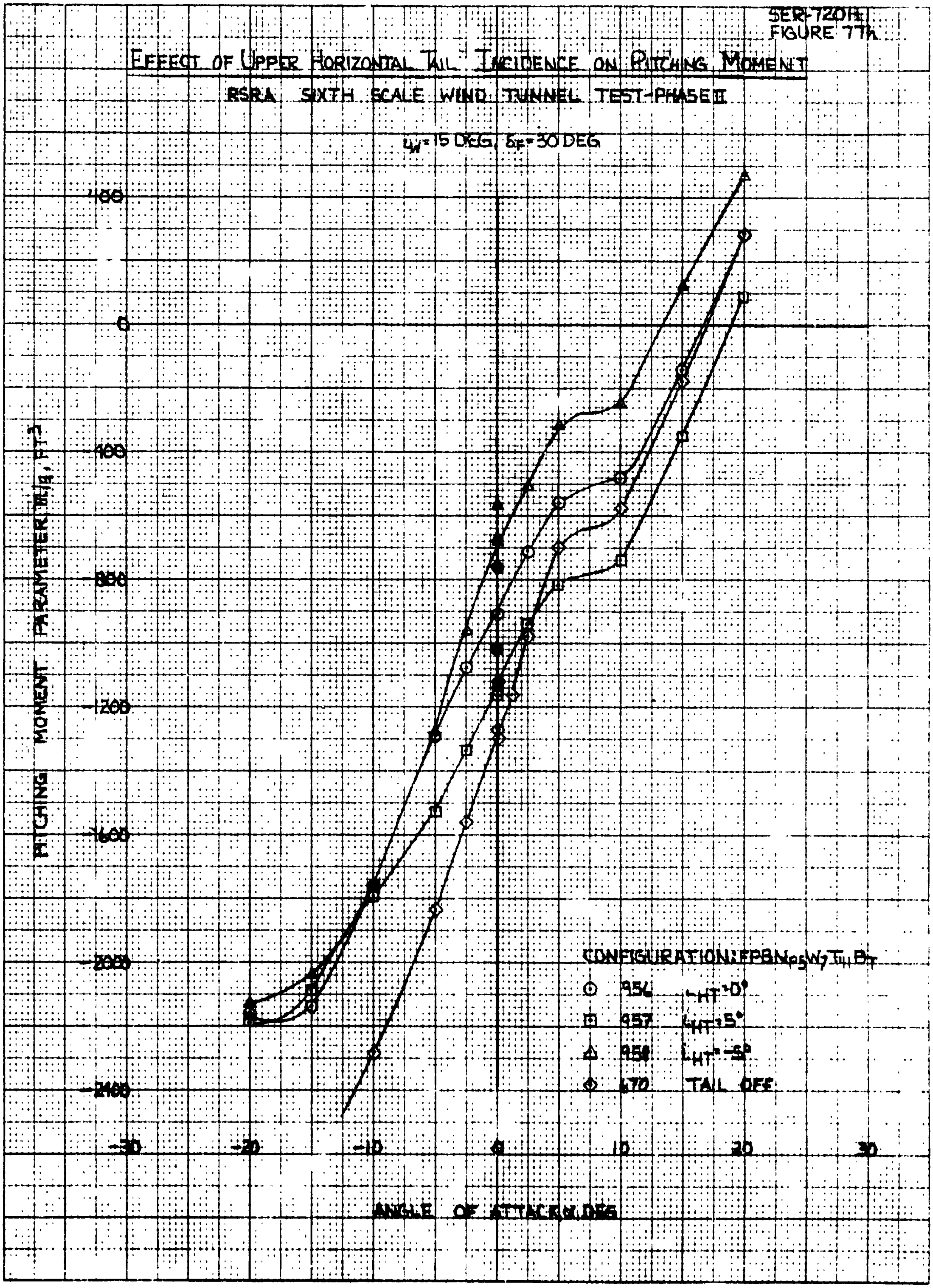

SER-72011
FIGURE 77d
EFFECT OF UPPER HORIZONTAL TAIL INCIDENCE ON PITCHING MOMENT
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
1004
1003
1005
736 TAIL OFF
PITCHING MOMENT PARAMETER
ANGLE OF ATTACK, α, DEG
1600
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30


SER-72011
FIGURE 77B
EFFECT OF UPPER HORIZONTAL TAIL INCIDENCE ON PITCHING MOMENT
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE I
CONFIGURATION
963 i_{HT} = 0°
962 i_{HT} = 5°
964 i_{HT} = -5°
966 T_H OFF
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
PITCHING MOMENT PARAMETER
ANGLE OF ATTACK, α, DEG


EFFECT OF UPPER HORIZONTAL TAIL INCIDENCE ON PITCHING MOMENT
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION:
998
997
999
996 TAIL OFF
PITCHING MOMENT PARAMETER
1200
800
400
0
-400
-800
-1200
-1600
-2000
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

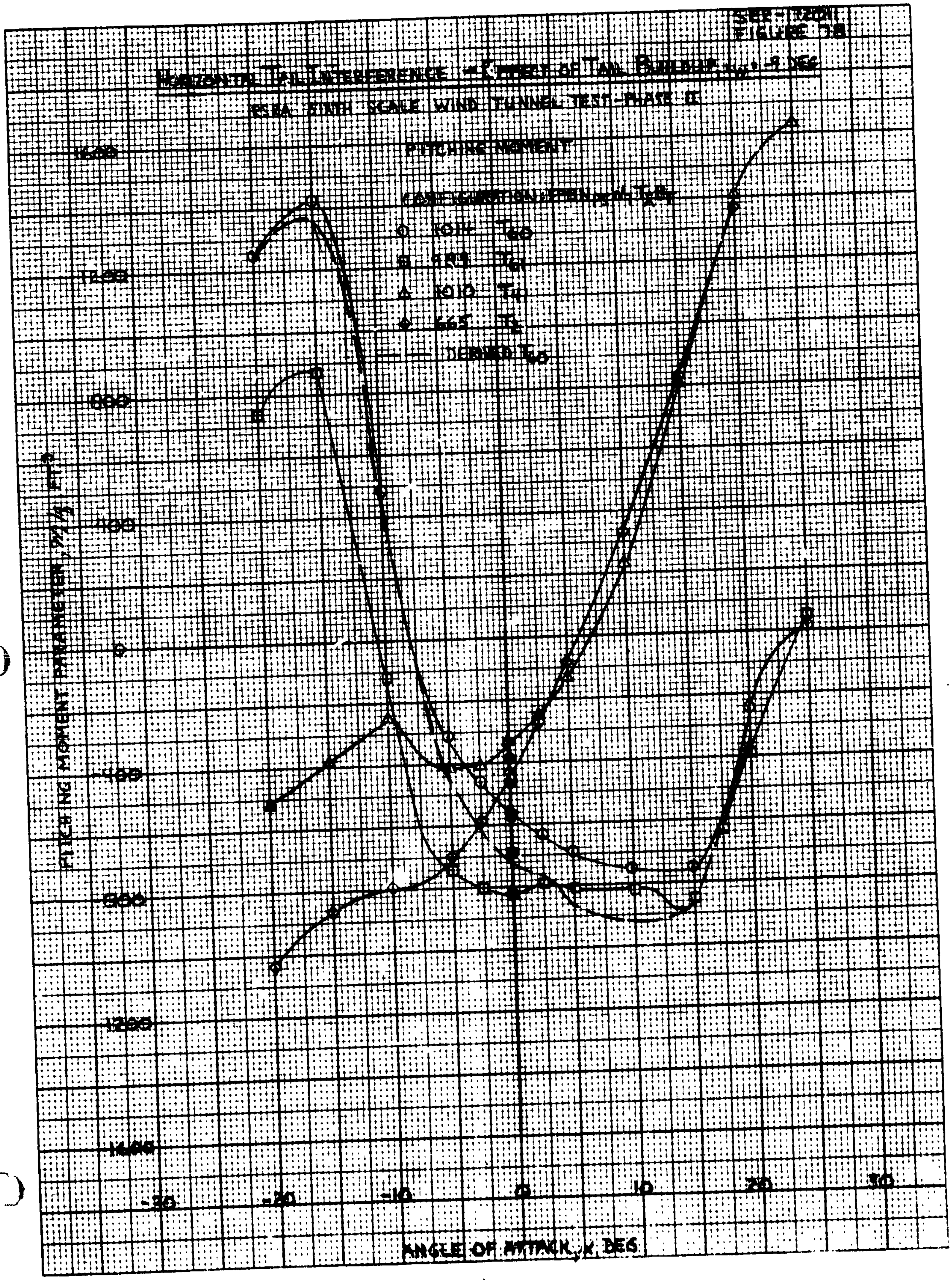
SER-72011
FIGURE 7.19





46 1473

K-E 10 X 10 TO INCH KEUFFEL & ESSER CO.


HORIZONTAL TAIL INTERFERENCE
WIND TUNNEL TEST-PHASE II
PITCHING MOMENT
1014
1010
665
DERIVED
1600
1200
800
400
0
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

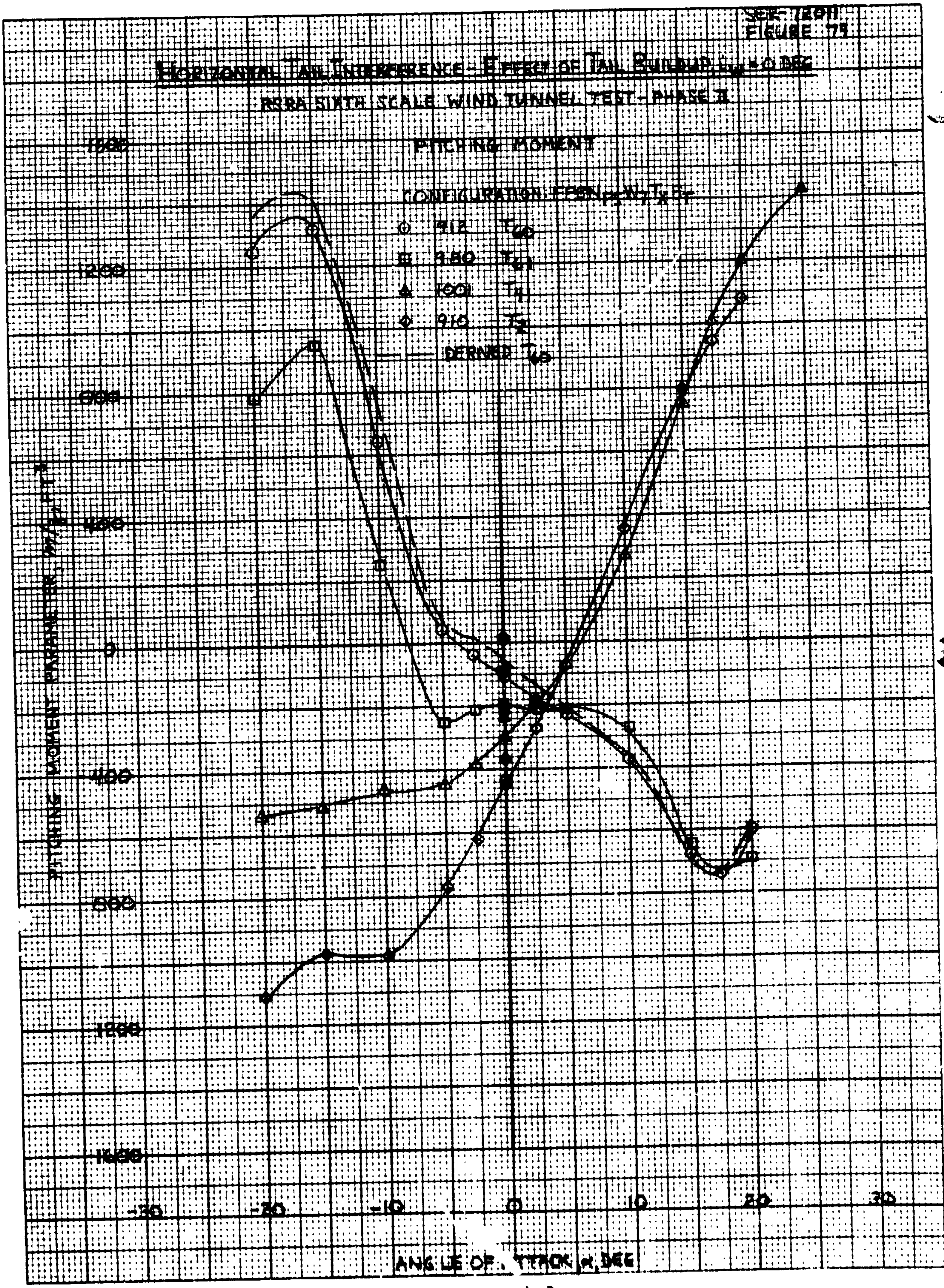


FIGURE 79
HORIZONTAL TAIL INTERFERENCE - EFFECT OF TAIL BUILDUP
SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT
CONFIGURATION
912 T40
980 T41
1001 T4
910 T2
T40
1600
1200
800
400
0
400
800
1200
1600
-30
-20
-10
0
10
20
30
PITCHING MOMENT PARAMETER
ANGLE OF TTACK α, DEG

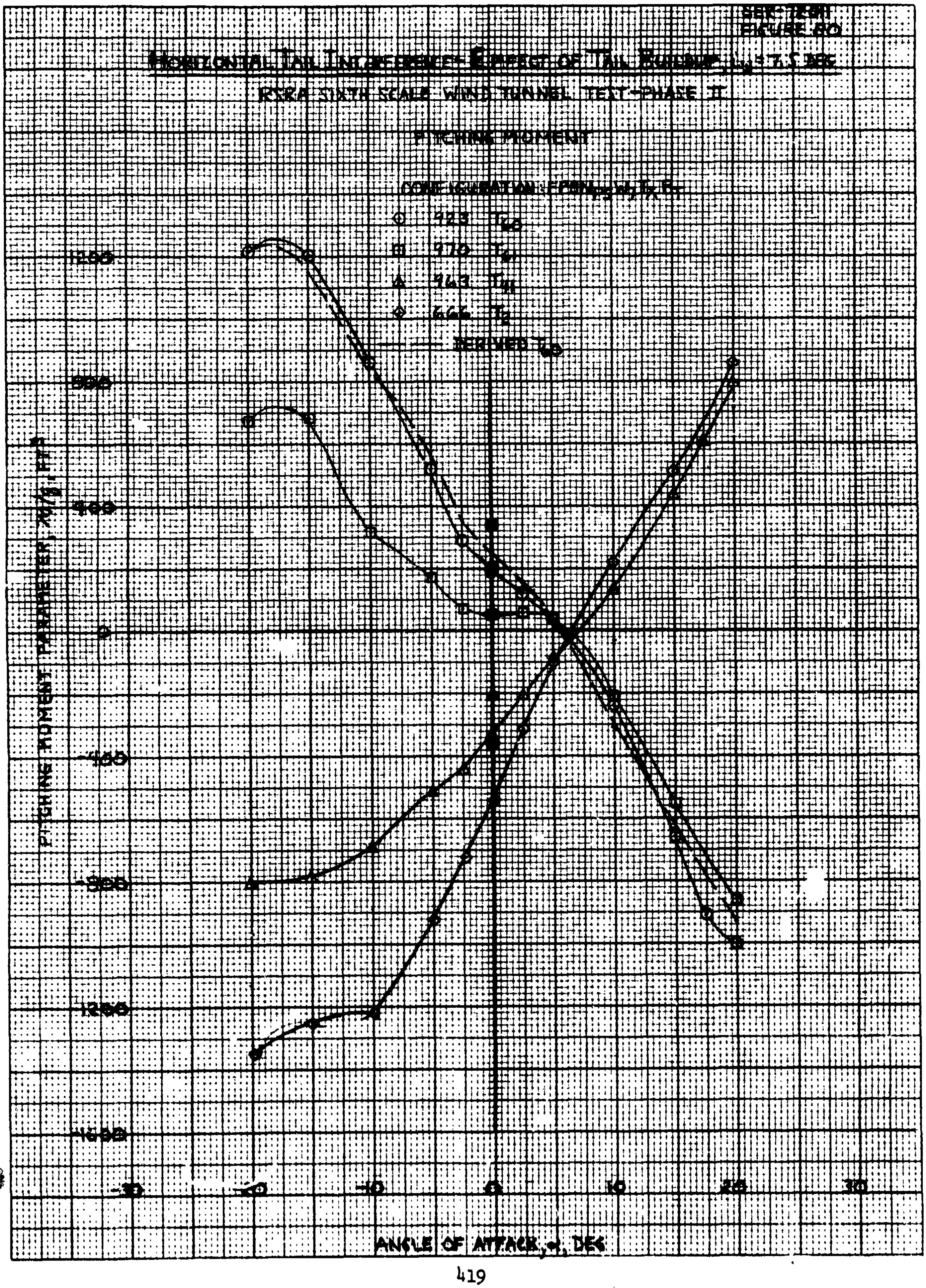
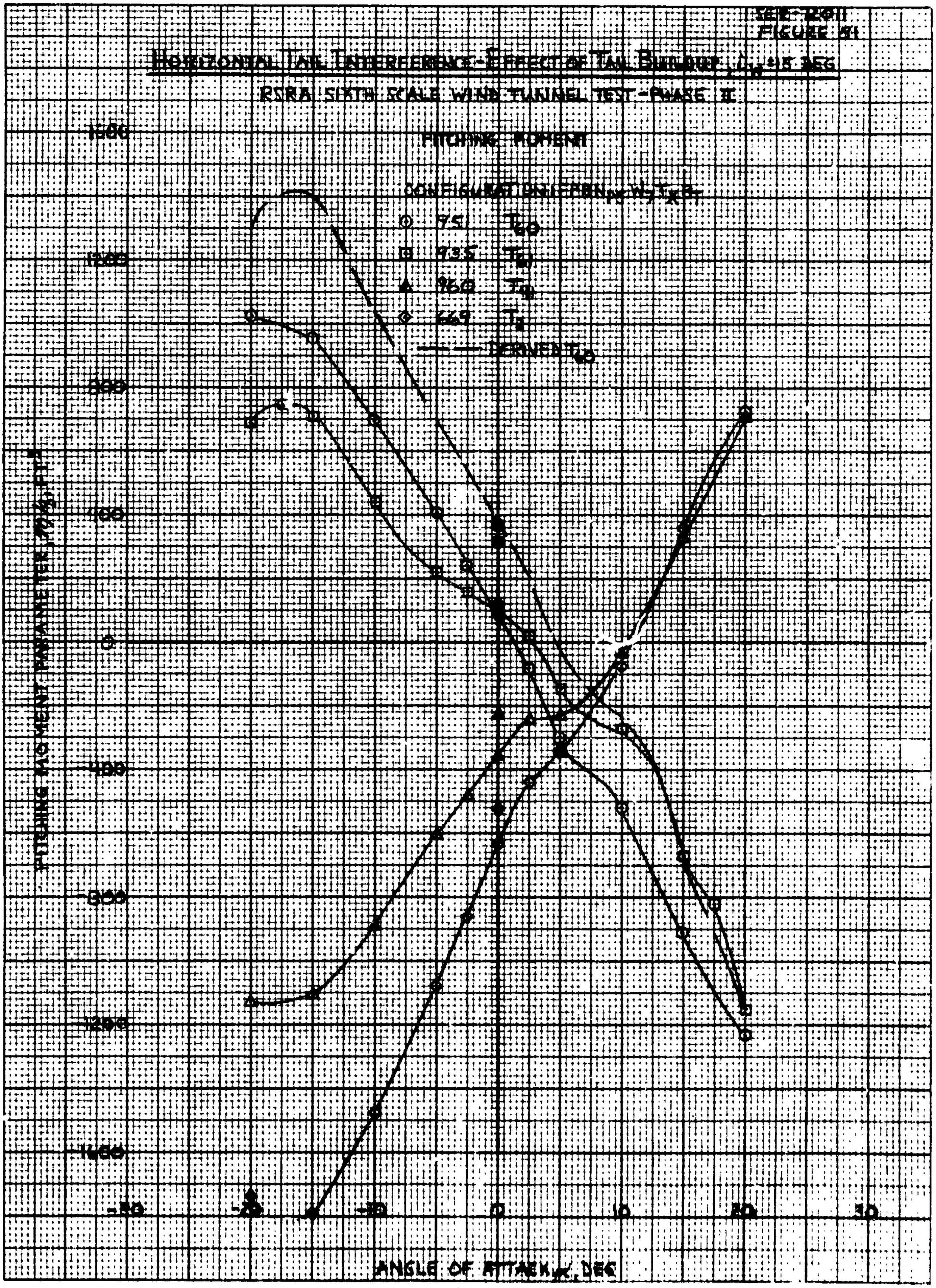
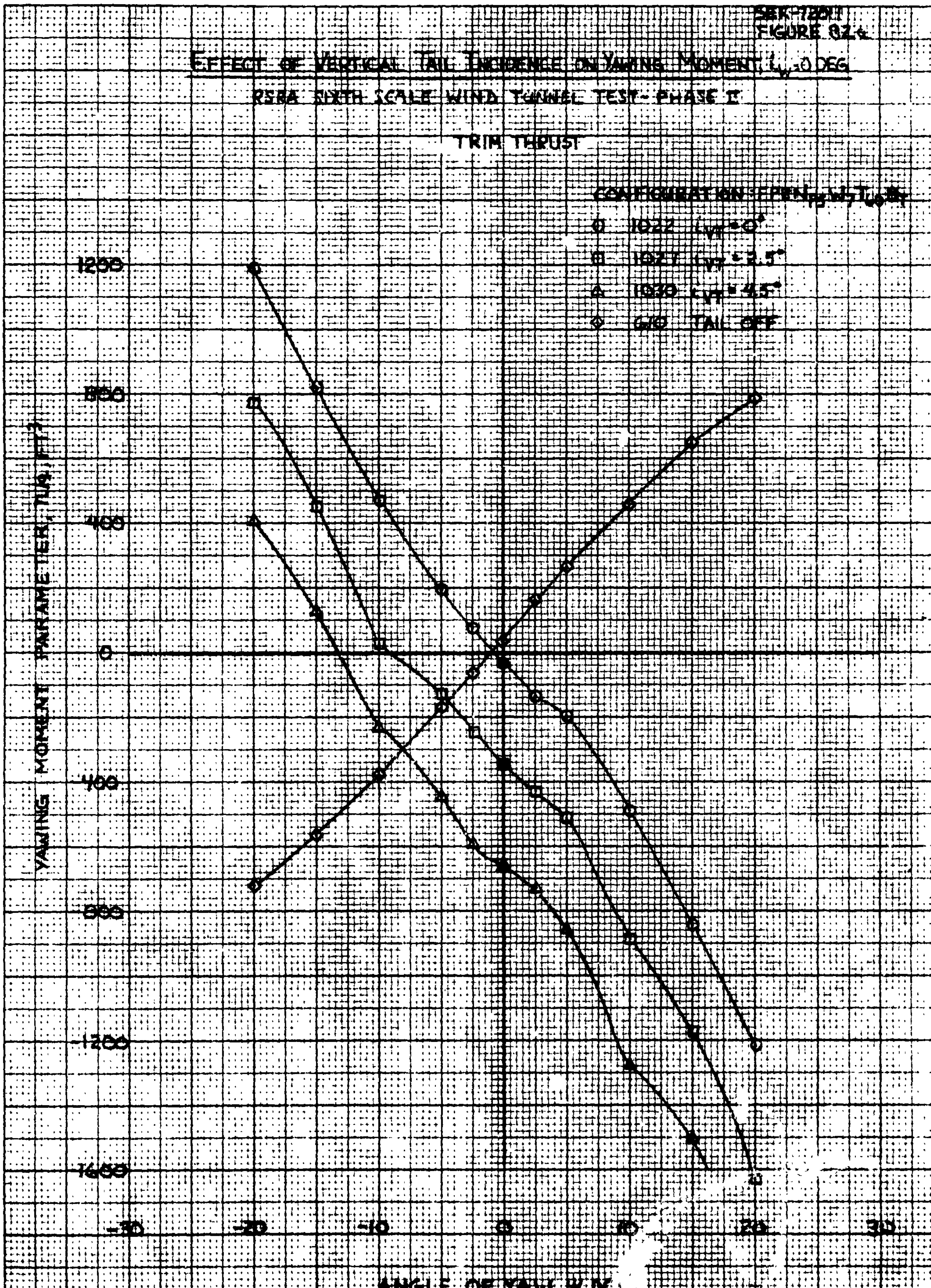


FIGURE 80
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
PITCHING MOMENT
CONFIGURATION
923
970
963
666
DERIVED
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

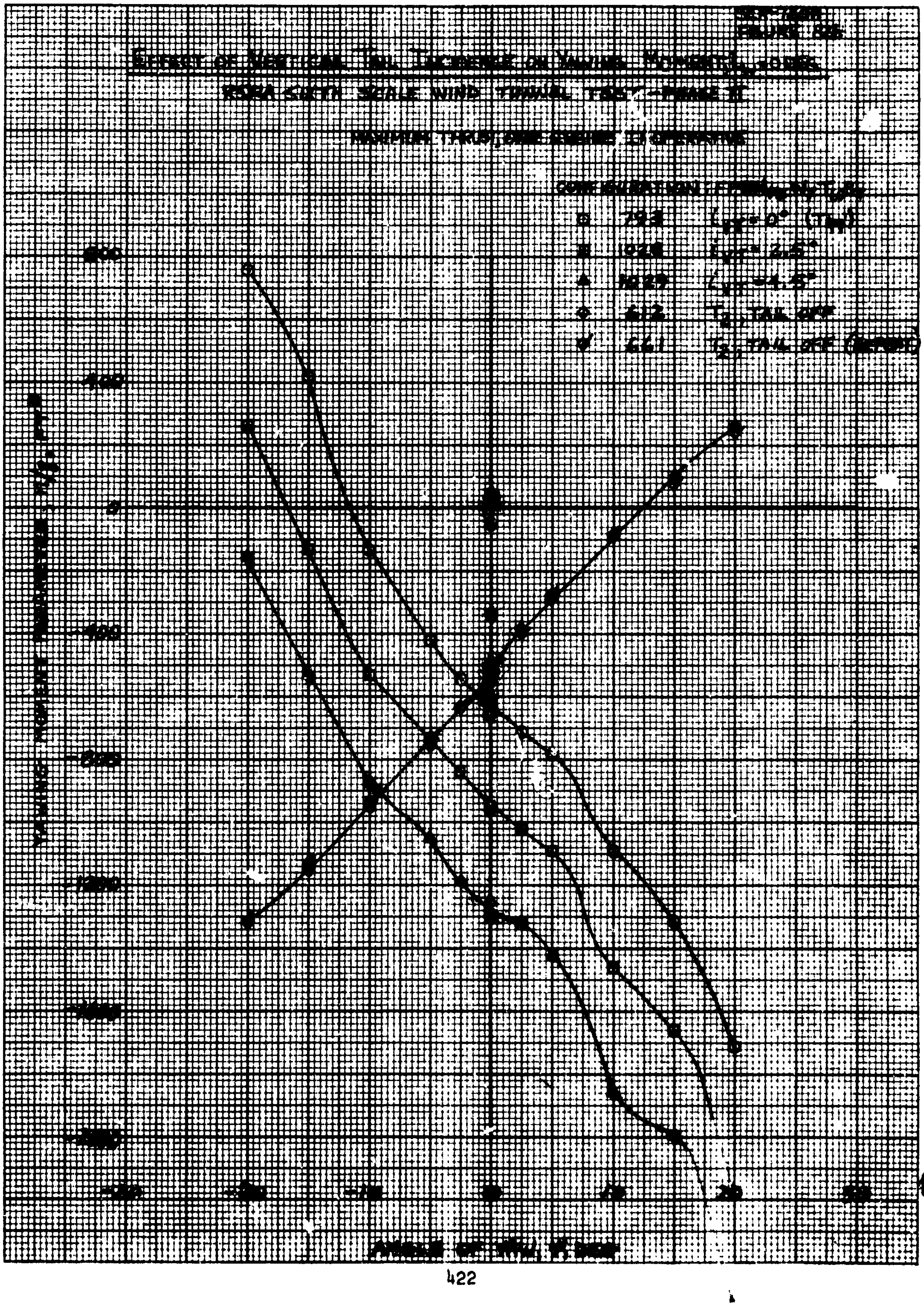


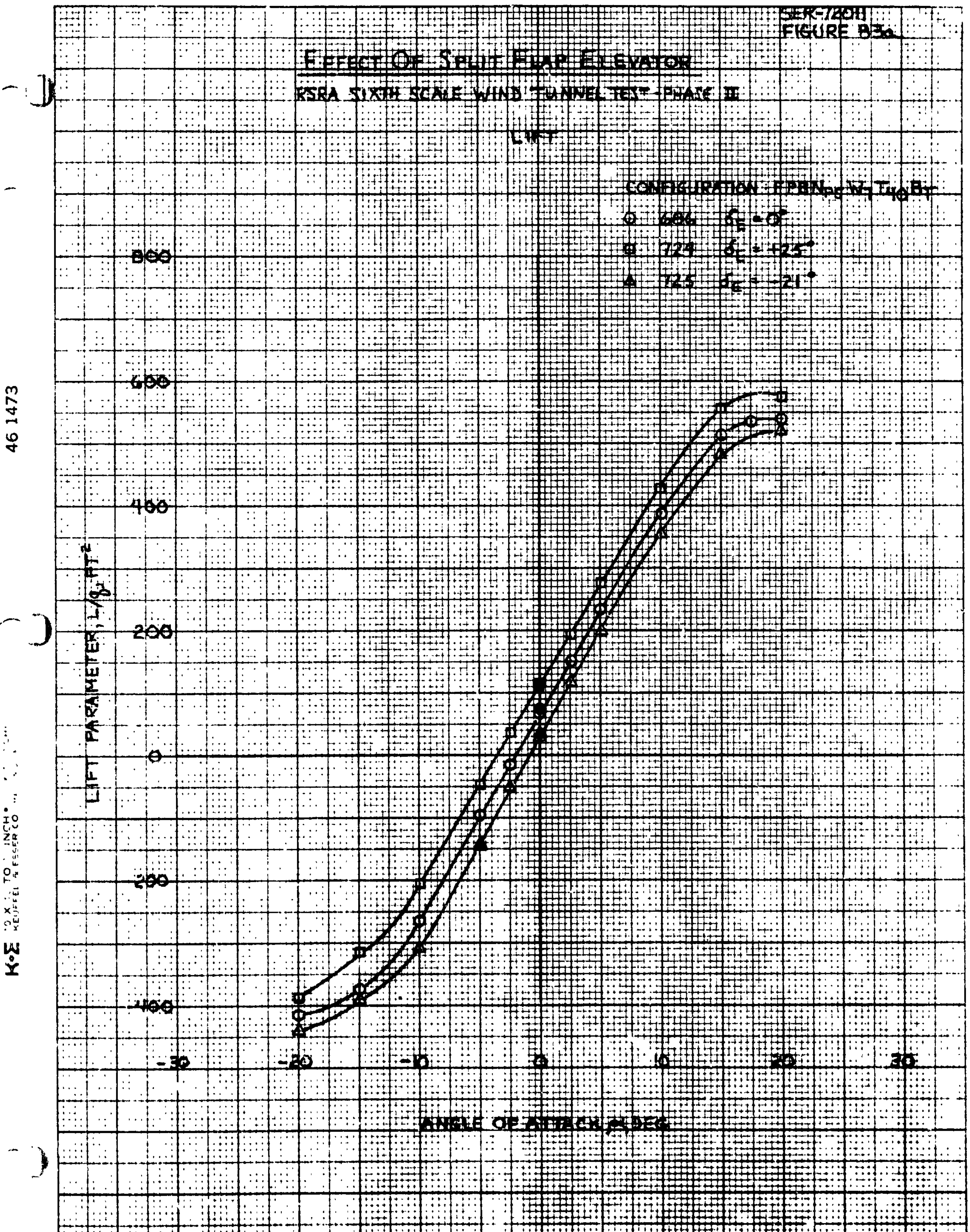
HORIZONTAL TAIL INTERFERENCE - EFFECT OF TAIL BUILDUP
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT
975
935
960
669
DERIVED
1600
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG



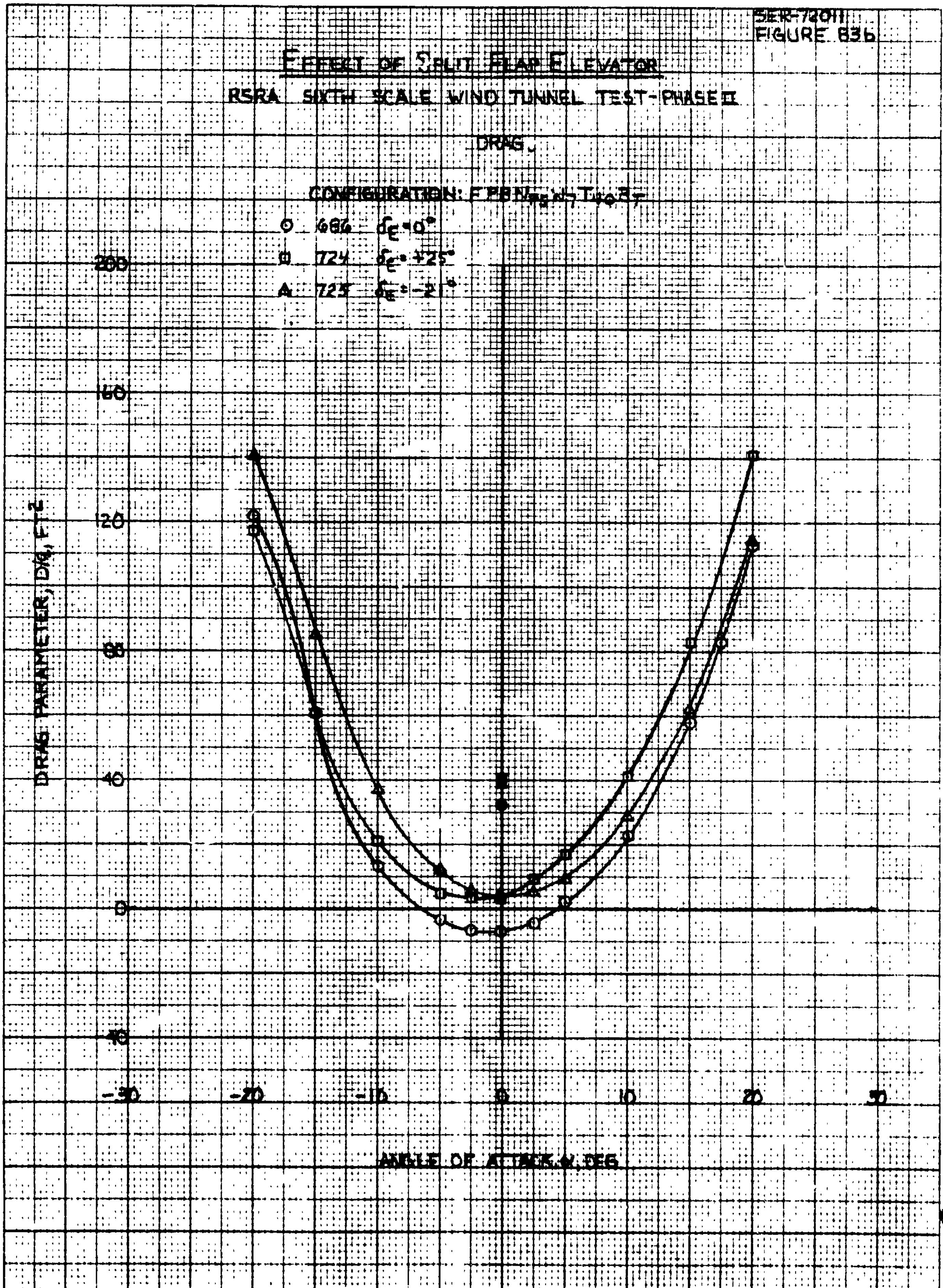
46 1473

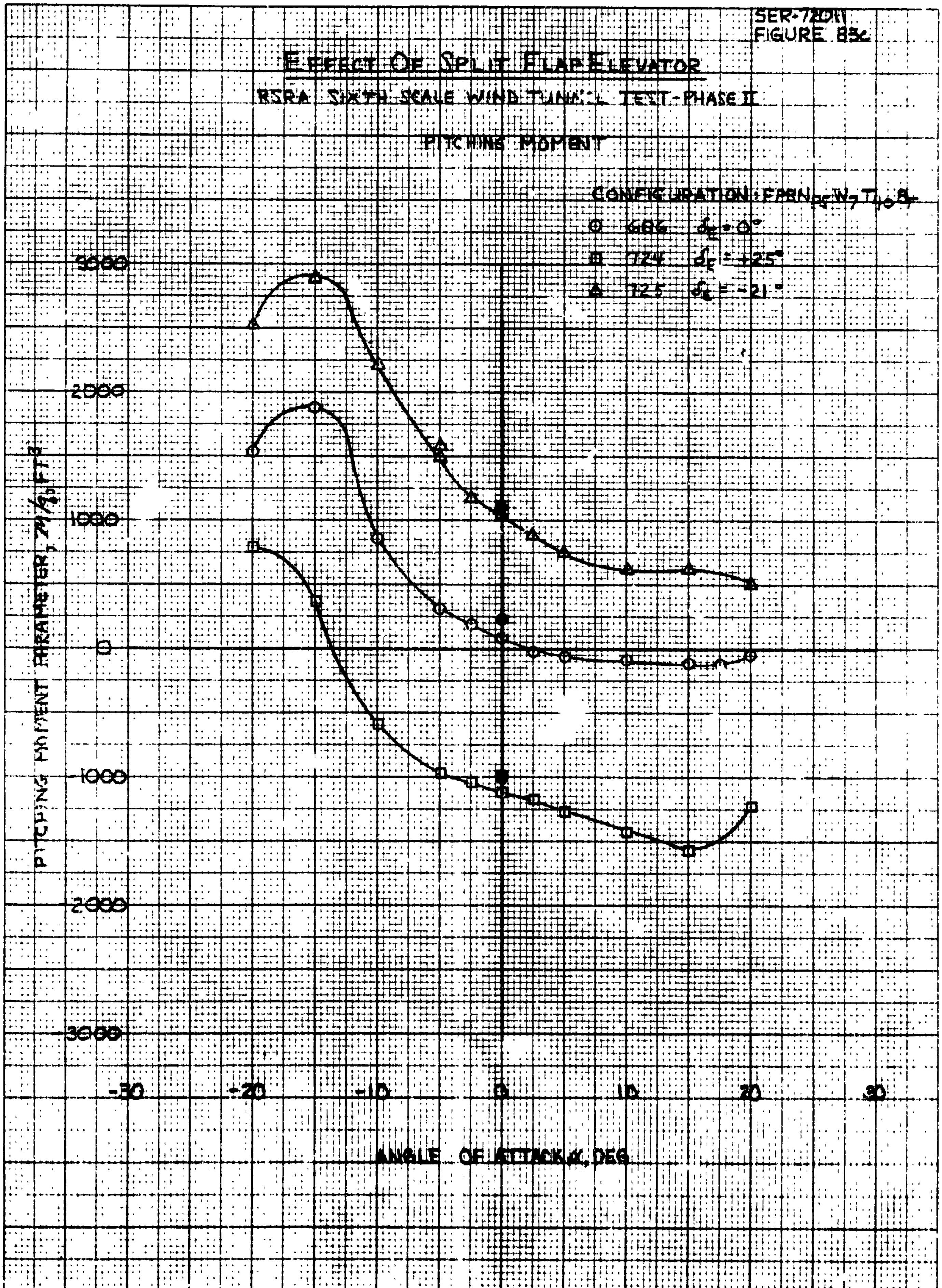
K•E 10 X 10 TO ½ INCH
KEUFFEL & ESSER CO.


EFFECT OF VERTICAL TAIL INCIDENCE ON YAWING MOMENT
SIXTH SCALE WIND TUNNEL TEST
TAIL OFF
TAIL OFF
YAWING MOMENT PARAMETER
800
400
0
-400
-800
-1200
-1600
-2000
-20
-10
0
10
20
30
ANGLE OF YAW

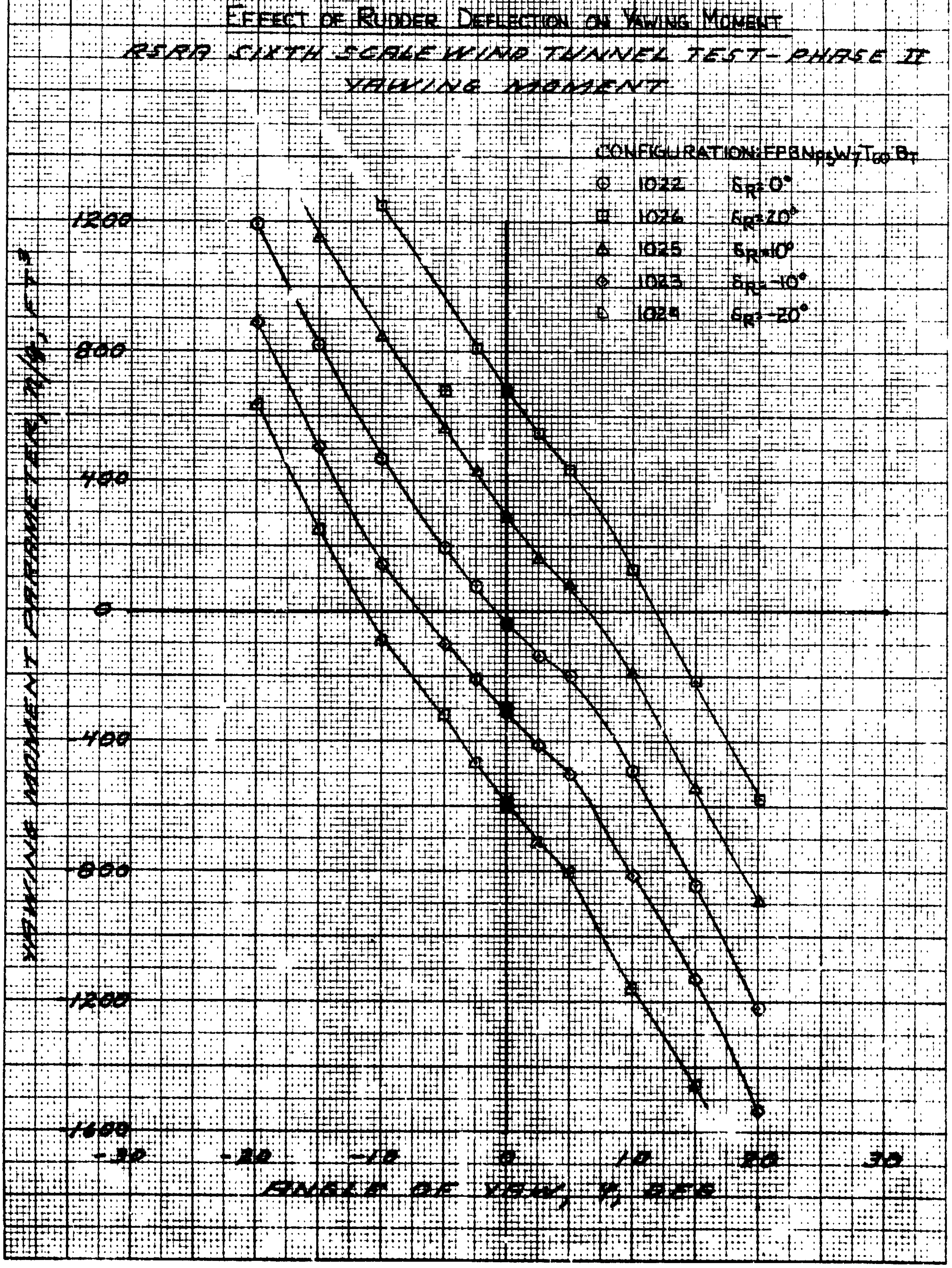


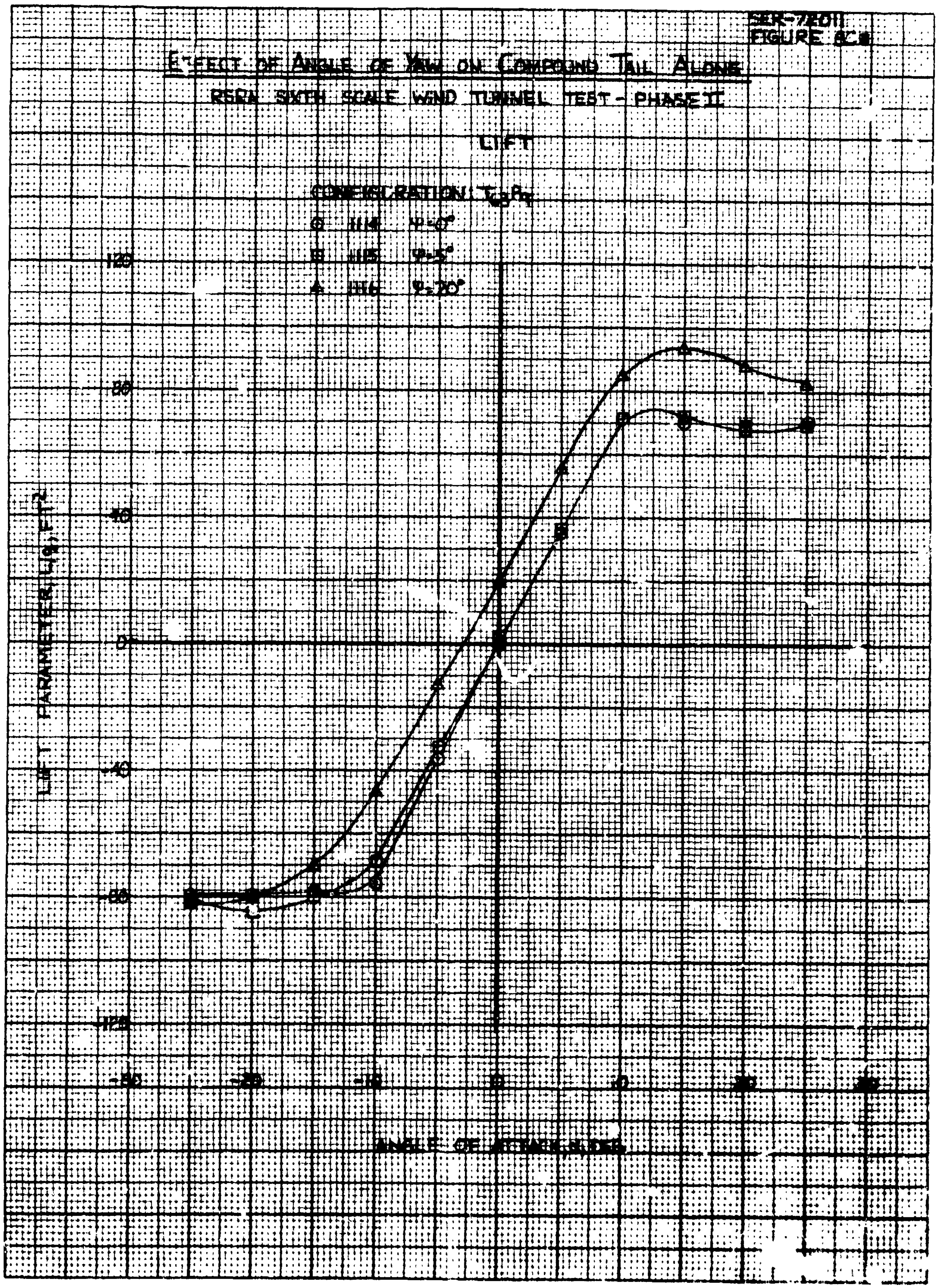
SER-72011
FIGURE B3a
EFFECT OF SPLIT FLAP ELEVATOR
KSRA SIXTH SCALE WIND TUNNEL TEST - PHASE III
LIFT
CONFIGURATION
686 $\delta_E = 0°$
724 $\delta_E = +25°$
725 $\delta_E = -21°$
800
600
400
200
0
-200
-400
LIFT PARAMETER, L/q, FT²
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

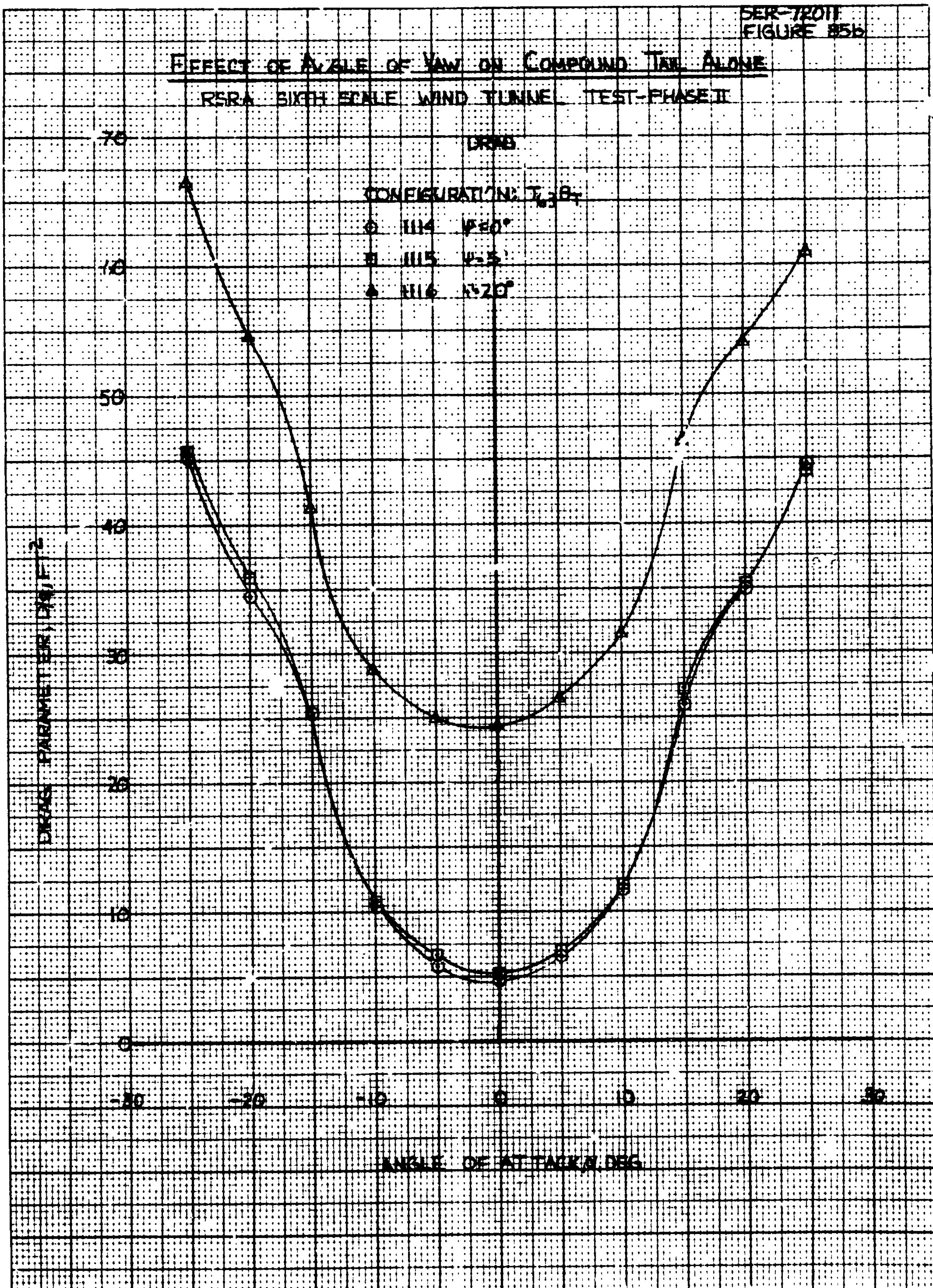

SER-72011
FIGURE 836
EFFECT OF SPLIT FLAP ELEVATOR
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
CONFIGURATION:
○ 686 $\delta_E = 0°$
□ 724 $\delta_E = +25°$
△ 725 $\delta_E = -21°$
DRAG PARAMETER, D/q, FT^2
ANGLE OF ATTACK, α, DEG
200
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30
46 1473
K•E 10 X 10 TO THE INCH • 7 X 10 INCHES KEUFFEL & ESSER CO.

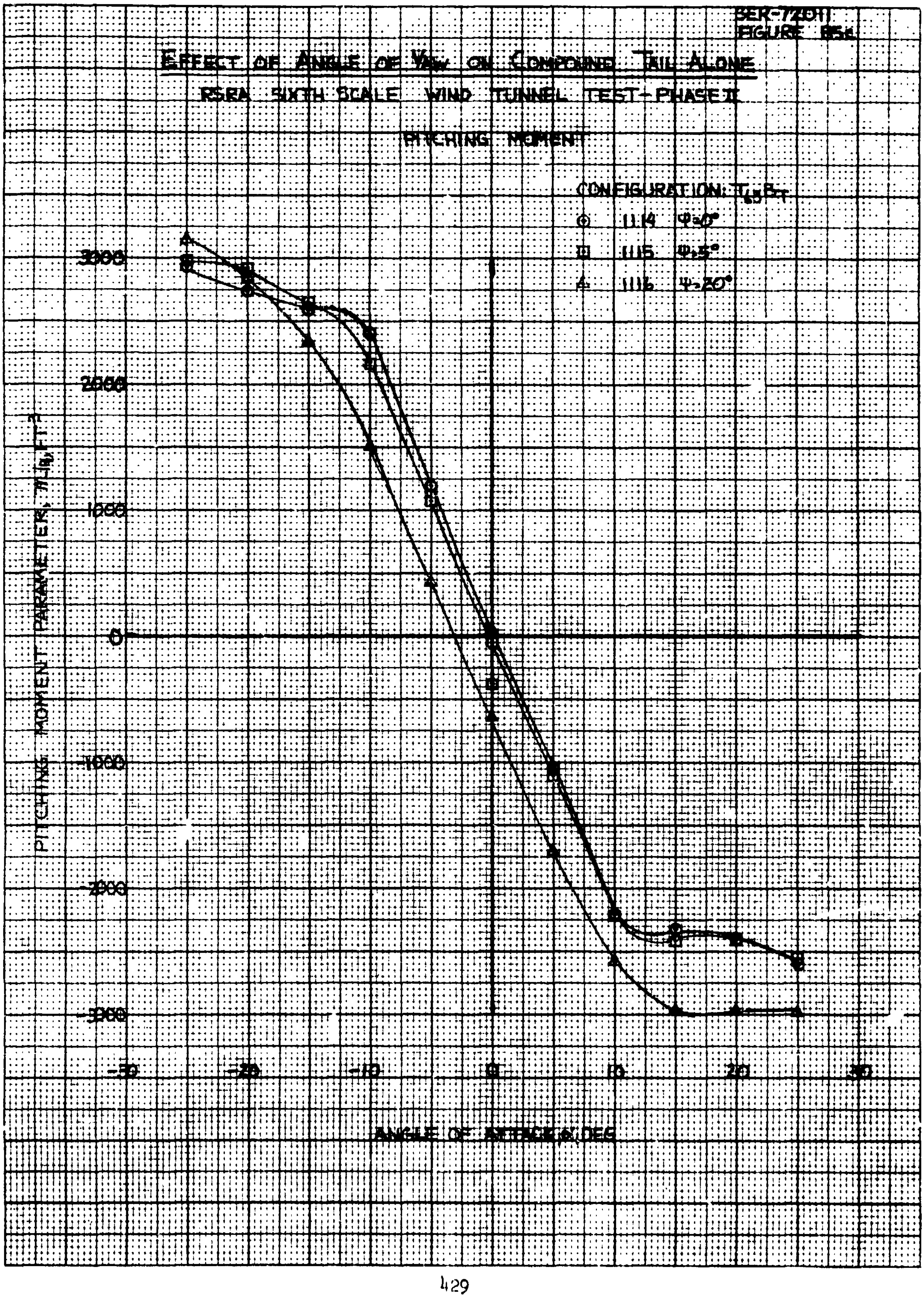

SER-72011
FIGURE 85c
EFFECT OF SPLIT FLAP ELEVATOR
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT
CONFIGURATION: FPRN W7 T40 B
686 δE = 0°
724 δE = +25°
725 δE = -21°
3000
2000
1000
0
-1000
-2000
-3000
-30
-20
-10
0
10
20
30
PITCHING MOMENT PARAMETER, M/q, FT³
ANGLE OF ATTACK α, DEG

SER-72011
FIGURE 84

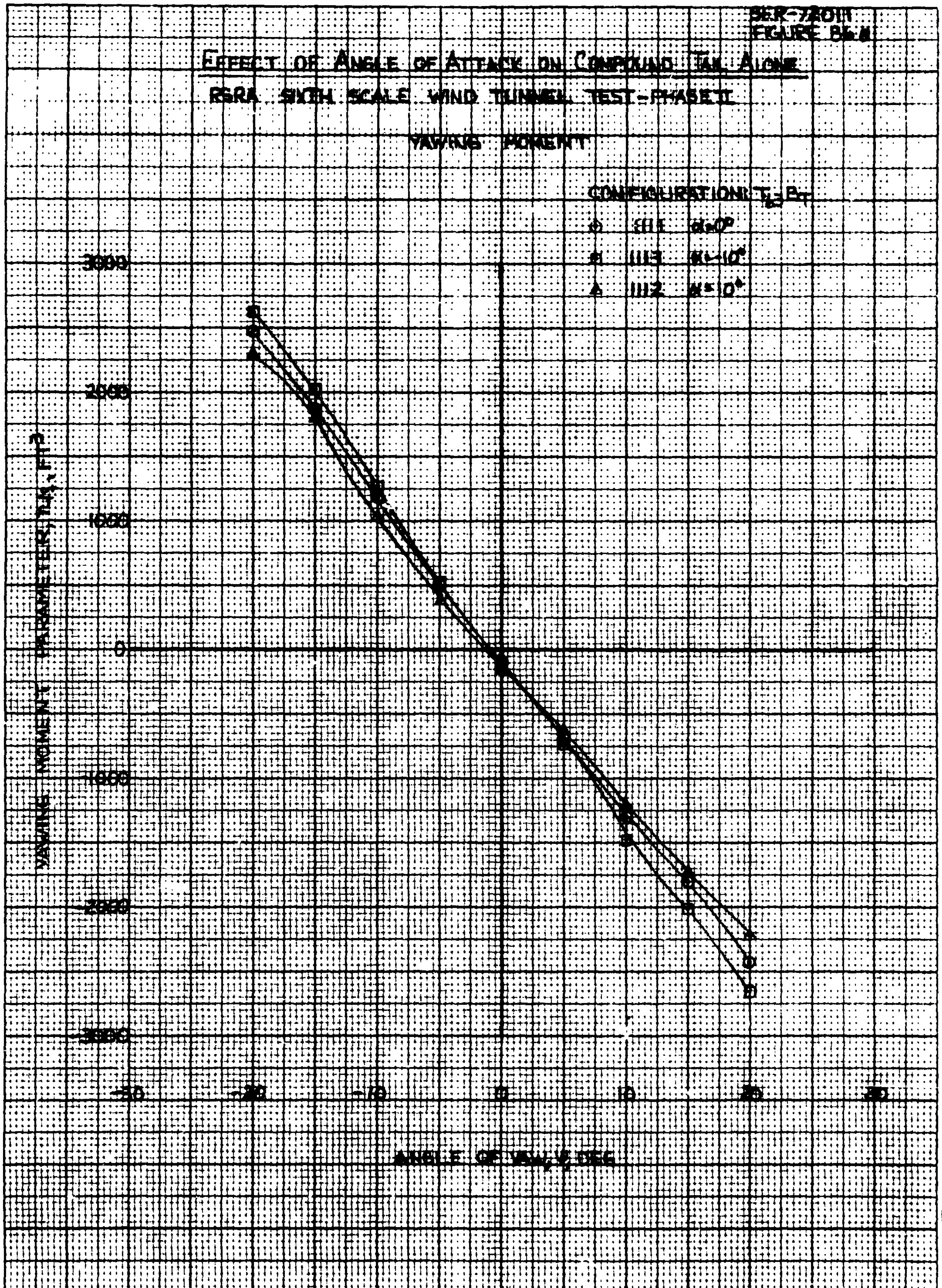



SER-72011
FIGURE 8C
EFFECT OF ANGLE OF YAW ON COMPOUND TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT
CONFIGURATION:
114 Ψ=0°
115 Ψ=5°
116 Ψ=20°
120
80
40
0
-40
-80
-120
-30
-20
-10
0
10
20
30
LIFT PARAMETER, L/q, FT²
ANGLE OF ATTACK, α, DEG

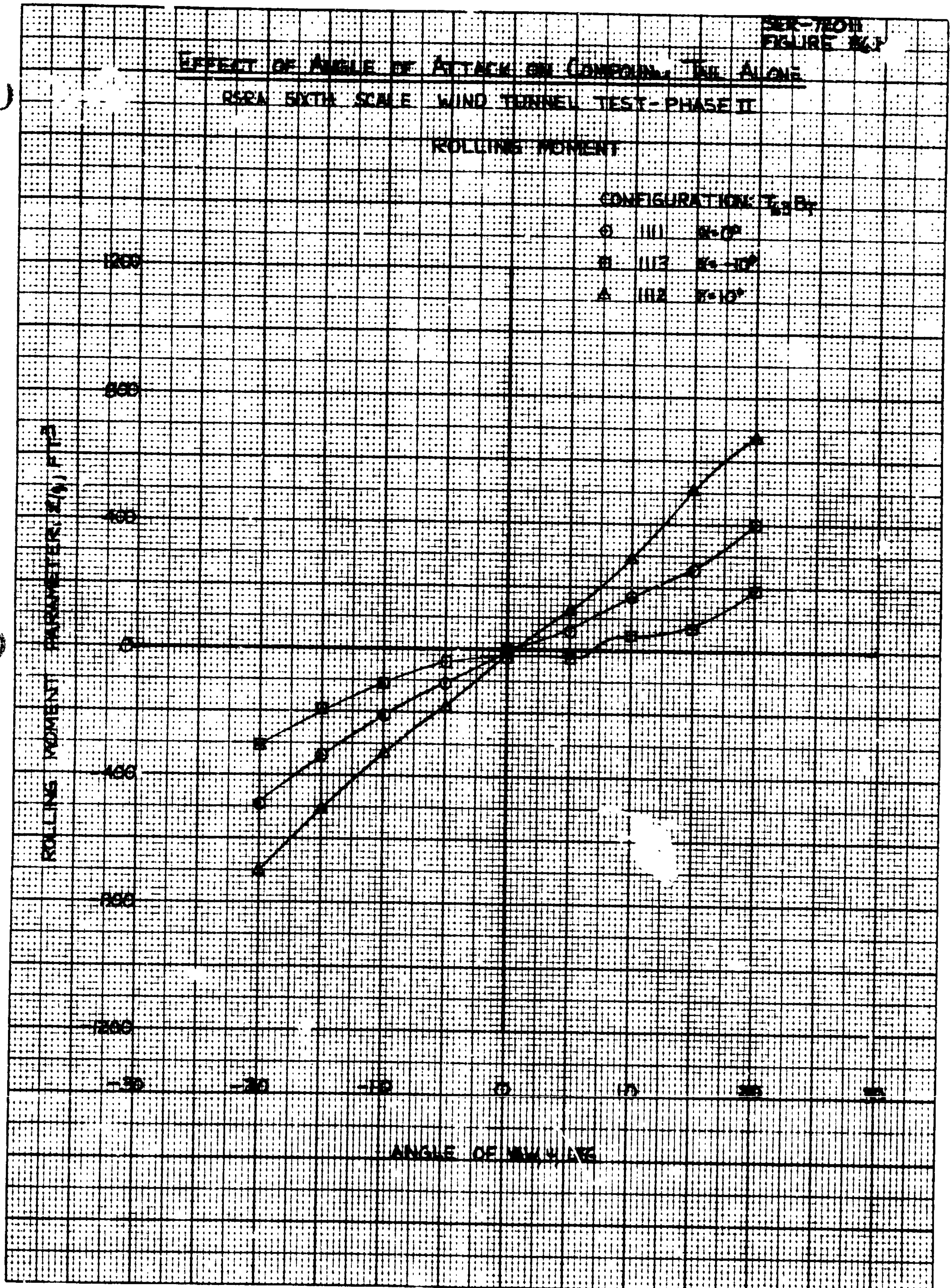

SER-72011
FIGURE 85b
EFFECT OF ANGLE OF YAW ON COMPOUND TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
CONFIGURATION: $T_{63}B_T$
1114 ψ=0°
1115 ψ=5°
1116 ψ=20°
70
60
50
40
30
20
10
0
-30
-20
-10
0
10
20
30
DRAG PARAMETER, D/q, FT²
ANGLE OF ATTACK, α, DEG

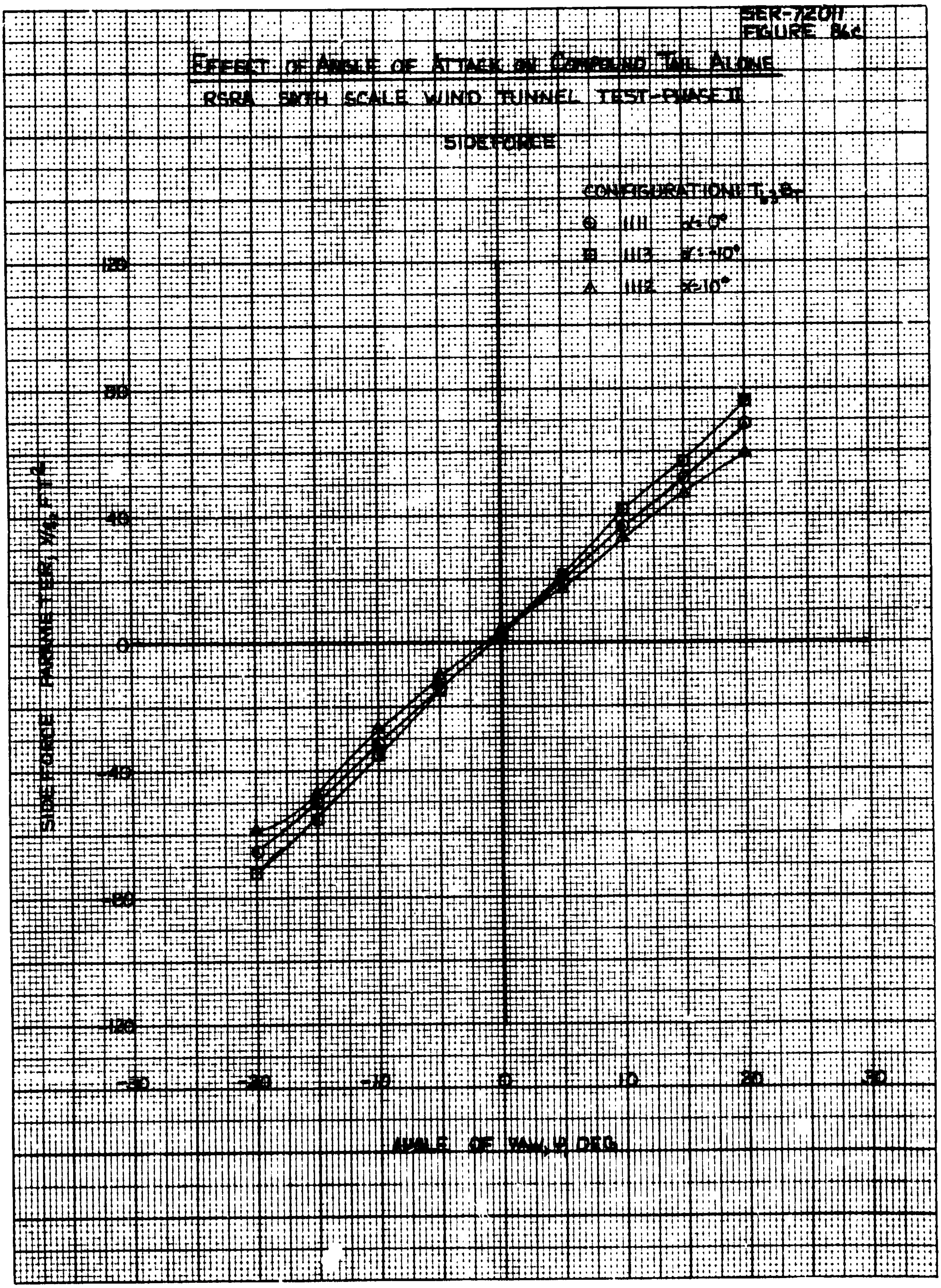


SER-72011
FIGURE 85A
EFFECT OF ANGLE OF YAW ON COMPOUND TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
PITCHING MOMENT
CONFIGURATION: T
⊙ 1114 Ψ=0°
⊡ 1115 Ψ=5°
△ 1116 Ψ=20°
3000
2000
1000
0
-1000
-2000
-3000
-30
-20
-10
0
10
20
30
PITCHING MOMENT PARAMETER, M/q, FT³
ANGLE OF ATTACK, α, DEG

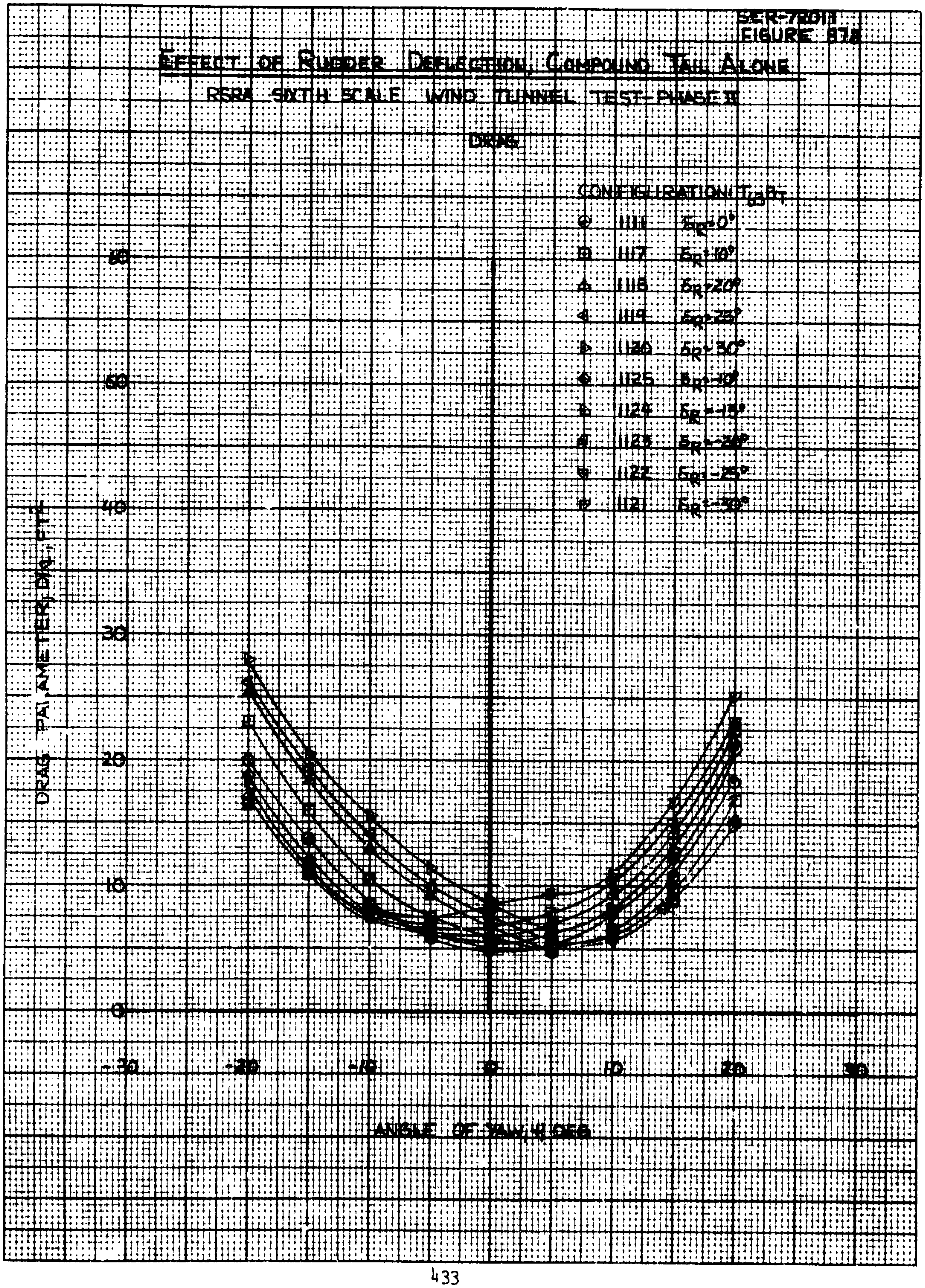


EFFECT OF ANGLE OF ATTACK ON COMPOUND TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
YAWING MOMENT
CONFIGURATION:
1113
1112
3000
2000
1000
0
-1000
-2000
-3000
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG


SER-?
FIGURE ?
EFFECT OF ANGLE OF ATTACK ON COMPOUND TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT
CONFIGURATION: $T_{63}B_7$
○ 1111 α=0°
⊞ 1113 α=-10°
△ 1112 α=10°
ROLLING MOMENT PARAMETER, L/q, FT³
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG



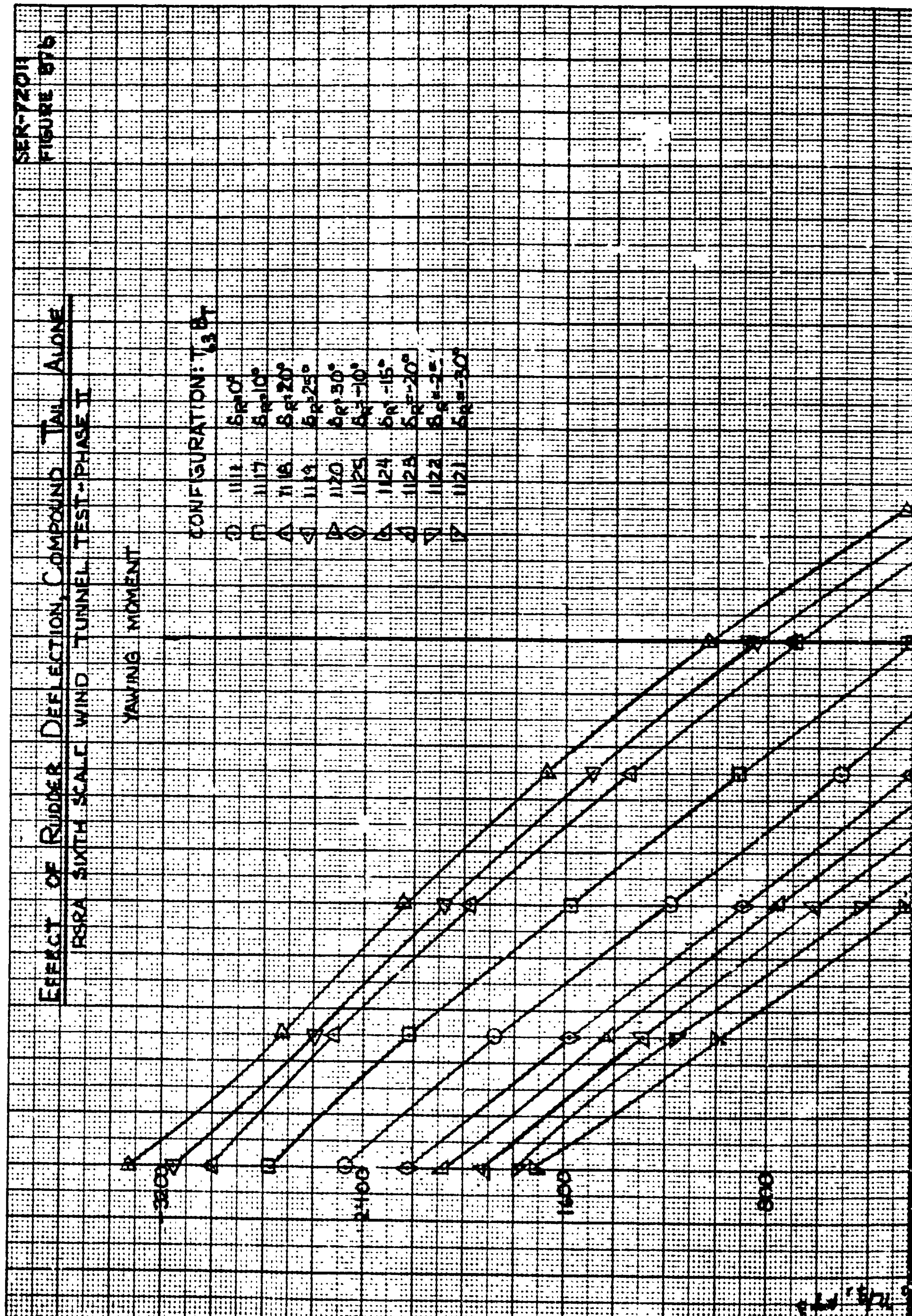
SER-72011
FIGURE B6c
EFFECT OF ANGLE OF ATTACK ON COMPOUND TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
SIDEFORCE
CONFIGURATION: $T_{13}B_{T}$
1111 α=0°
1113 α=+10°
1112 α=-10°
120
80
40
0
-40
-80
-120
-30
-20
-10
0
10
20
30
SIDEFORCE PARAMETER, Y/q, FT²
ANGLE OF YAW, ψ, DEG



SER-72011
FIGURE 878
EFFECT OF RUDDER DEFLECTION, COMPOUND TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
CONFIGURATION: T₄₃R₇
1111 δR=0°
1117 δR=10°
1118 δR=20°
1119 δR=25°
1120 δR=30°
1125 δR=-10°
1124 δR=-15°
1123 δR=-20°
1122 δR=-25°
1121 δR=-30°
DRAG PARAMETER, D/q, FT²
80
60
40
30
20
10
0
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG.

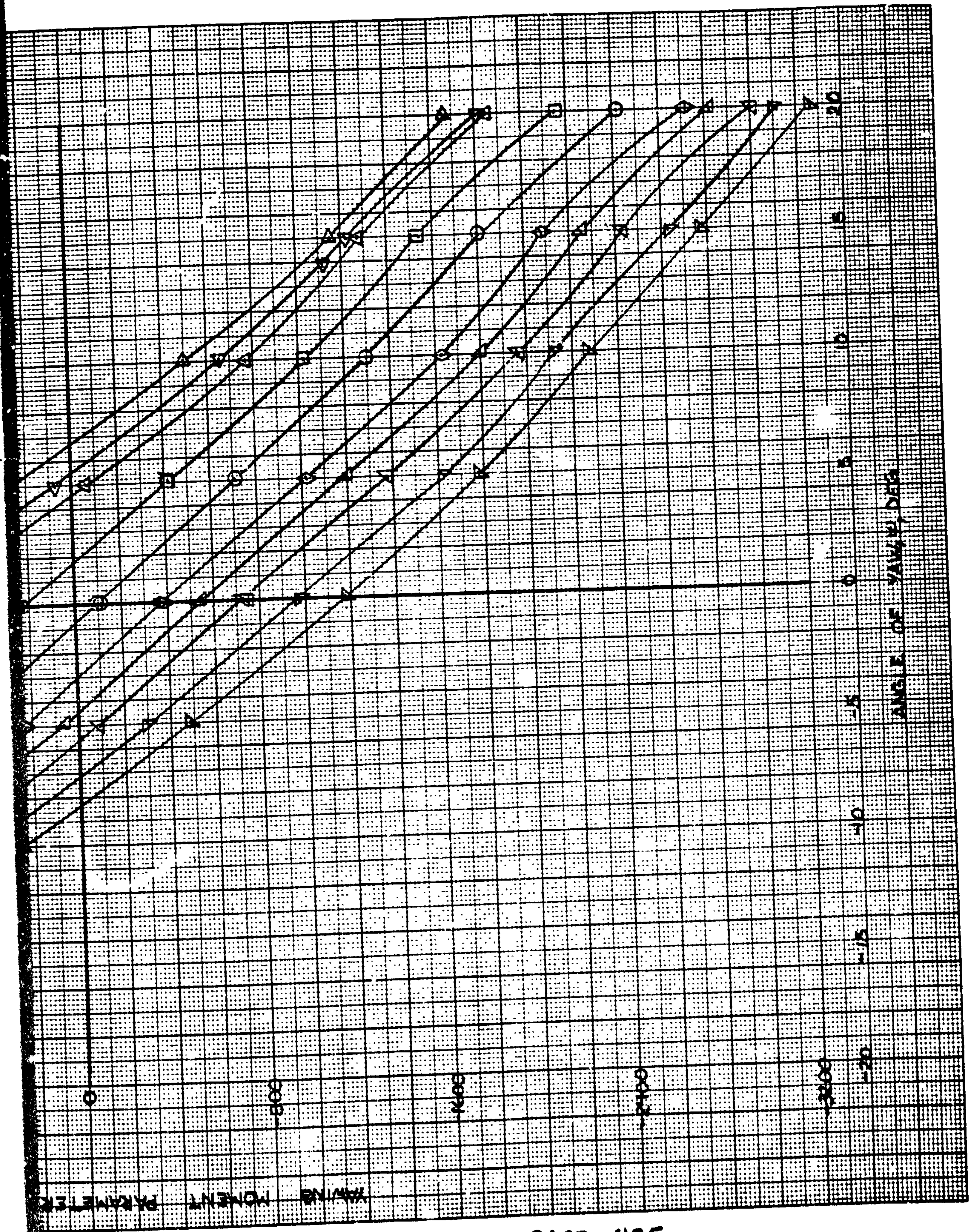
FOLDOUT FRAME

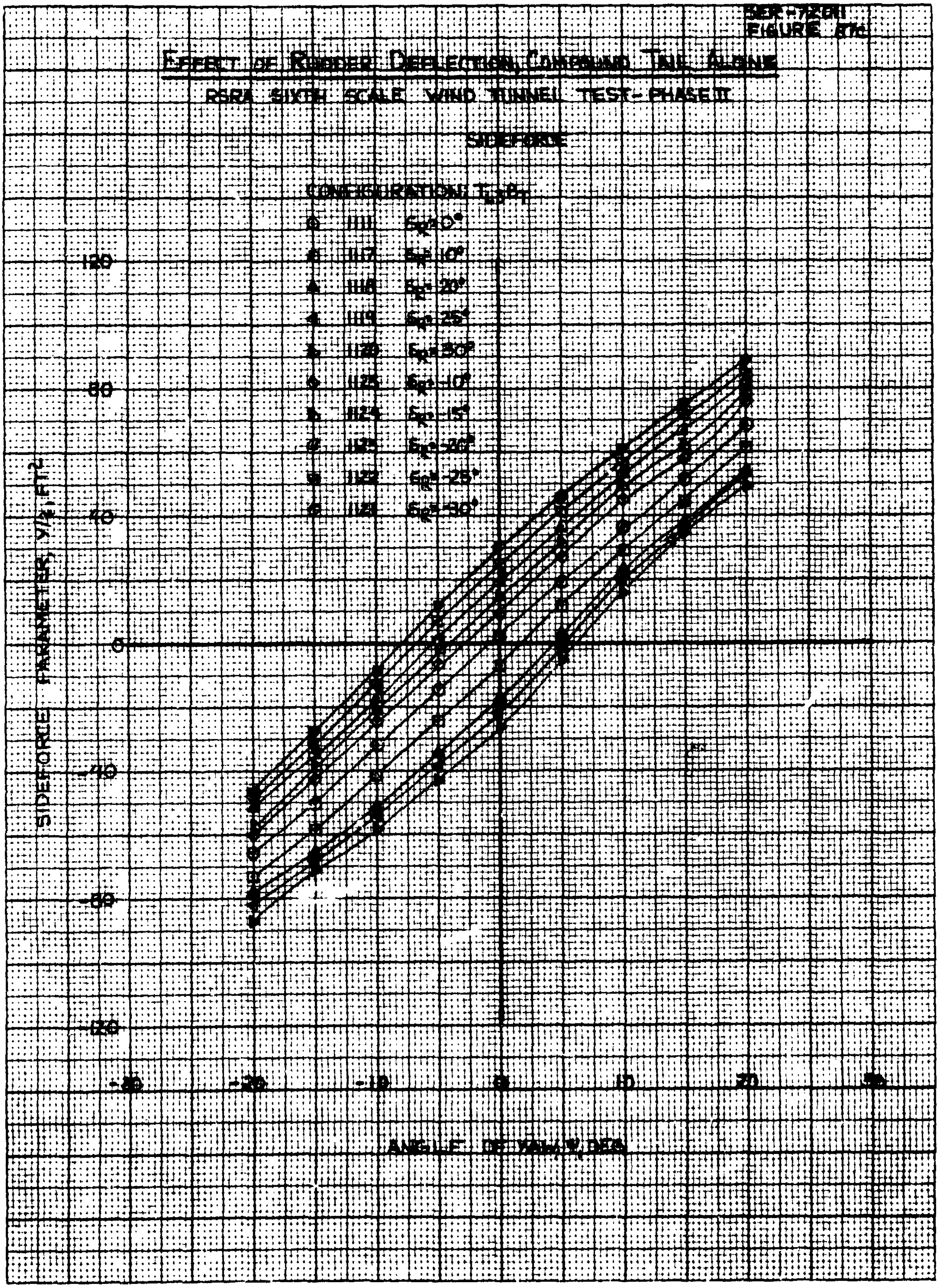
PRECEDING PAGE BLANK NOT FILMED



REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

FOLDOUT FRAME 2





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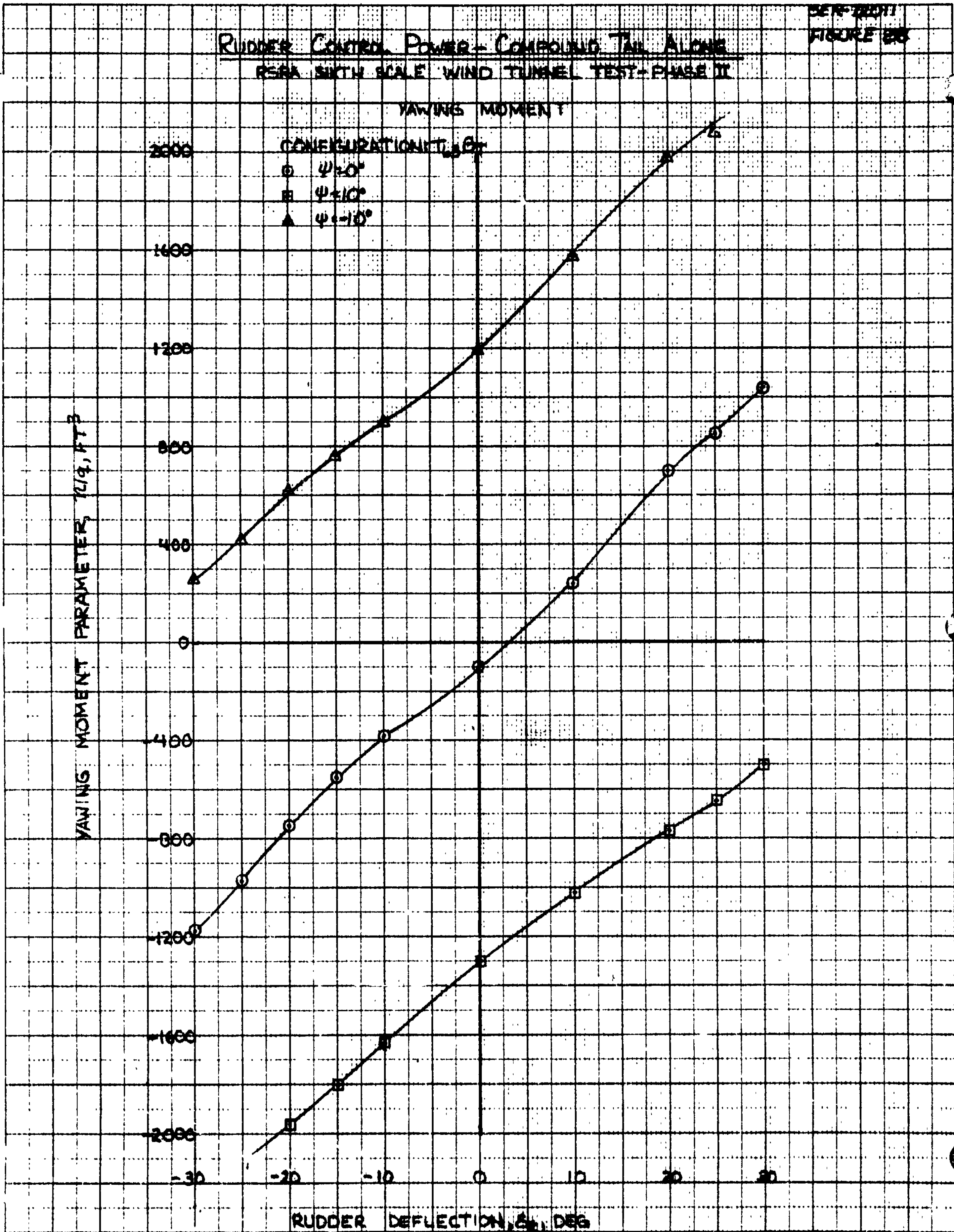
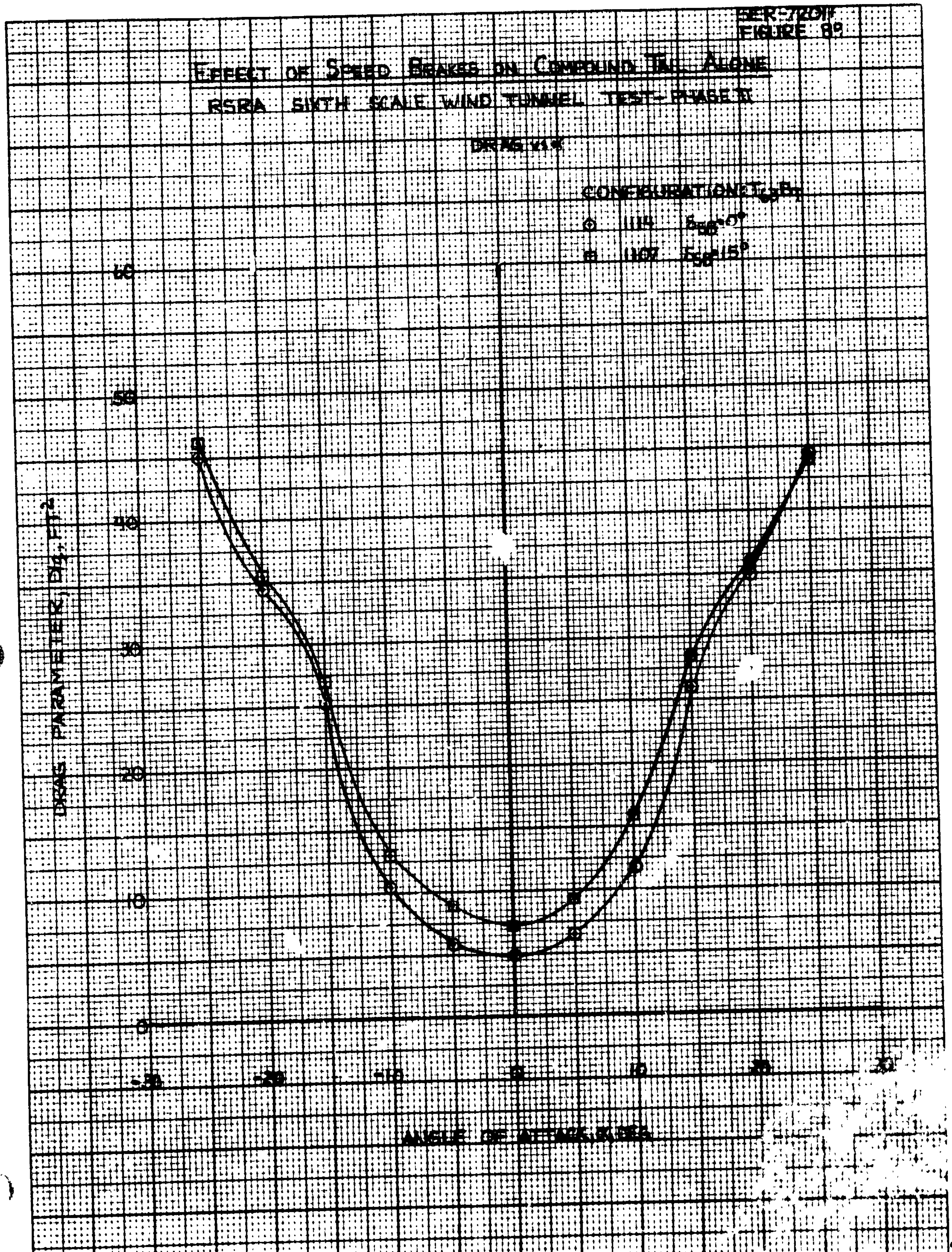
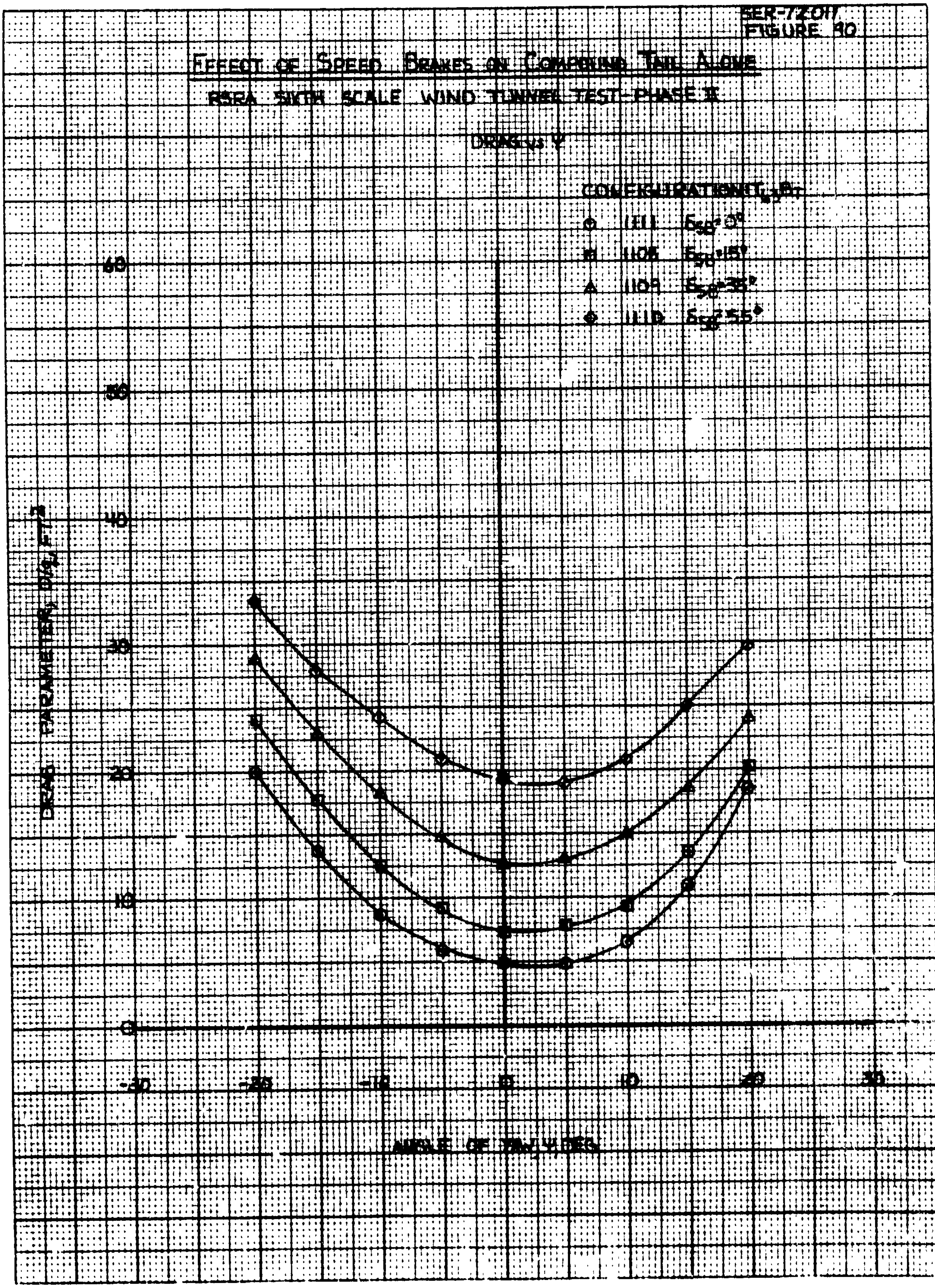
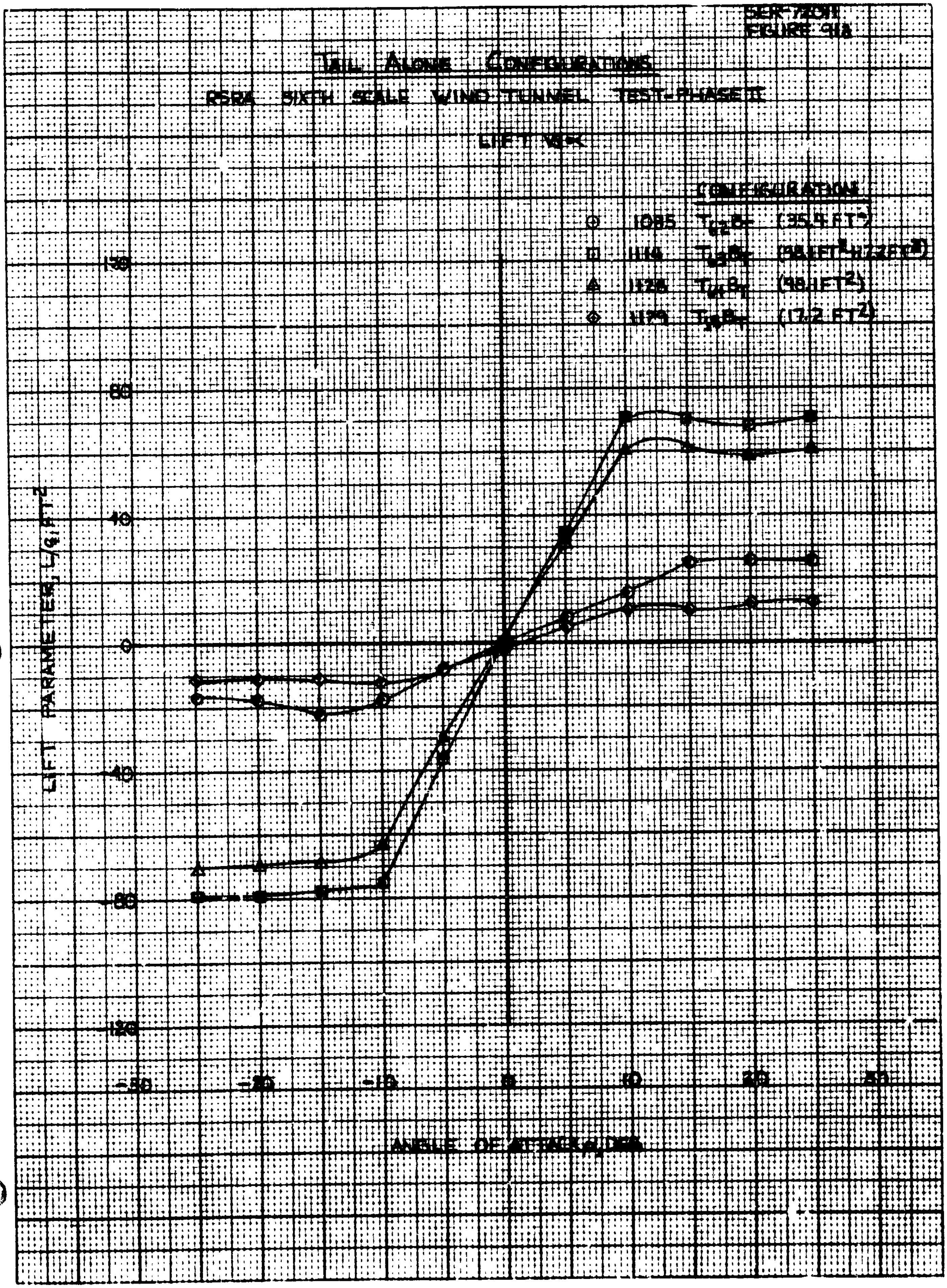

RUDDER CONTROL POWER - COMPOUND TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT
CONFIGURATION
YAWING MOMENT PARAMETER, N/q, FT³
RUDDER DEFLECTION, DEG
2000
1600
1200
800
400
0
-400
-800
-1200
-1600
-2000
-30
-20
-10
0
10
20
30


SER-72011
FIGURE 89
EFFECT OF SPEED BRAKES ON COMPOUND TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST- PHASE II
DRAG vs α
CONFIGURATION: $T_{6}B_{7}$
1114 $\delta_{SB}=0°$
1107 $\delta_{SB}=15°$
DRAG PARAMETER, D/q, FT^2
ANGLE OF ATTACK, α, DEG.
60
50
40
30
20
10
0
-30
-20
-10
0
10
20
30



SER-72011
FIGURE 30
EFFECT OF SPEED BRAKES ON COMPOUND TAIL ALONE
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG vs ψ
CONFIGURATION
1111 δSB=0°
1108 δSB=15°
1109 δSB=35°
1110 δSB=55°
60
50
40
30
20
10
0
-30
-20
-10
0
10
20
30
DRAG PARAMETER, D/q, FT²
ANGLE OF YAW, ψ, DEG.


SER-72011
FIGURE 91a
TAIL ALONE CONFIGURATIONS
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
LIFT VS α
CONFIGURATION
1085 $T_{12}B_7$ (35.9 FT²)
1116 $T_{13}B_7$ (98.1 FT² + 17.2 FT²)
1128 $T_{11}B_7$ (98.1 FT²)
1179 $T_{14}B_7$ (17.2 FT²)
LIFT PARAMETER, L/q, FT²
120
80
40
0
-40
-80
-120
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

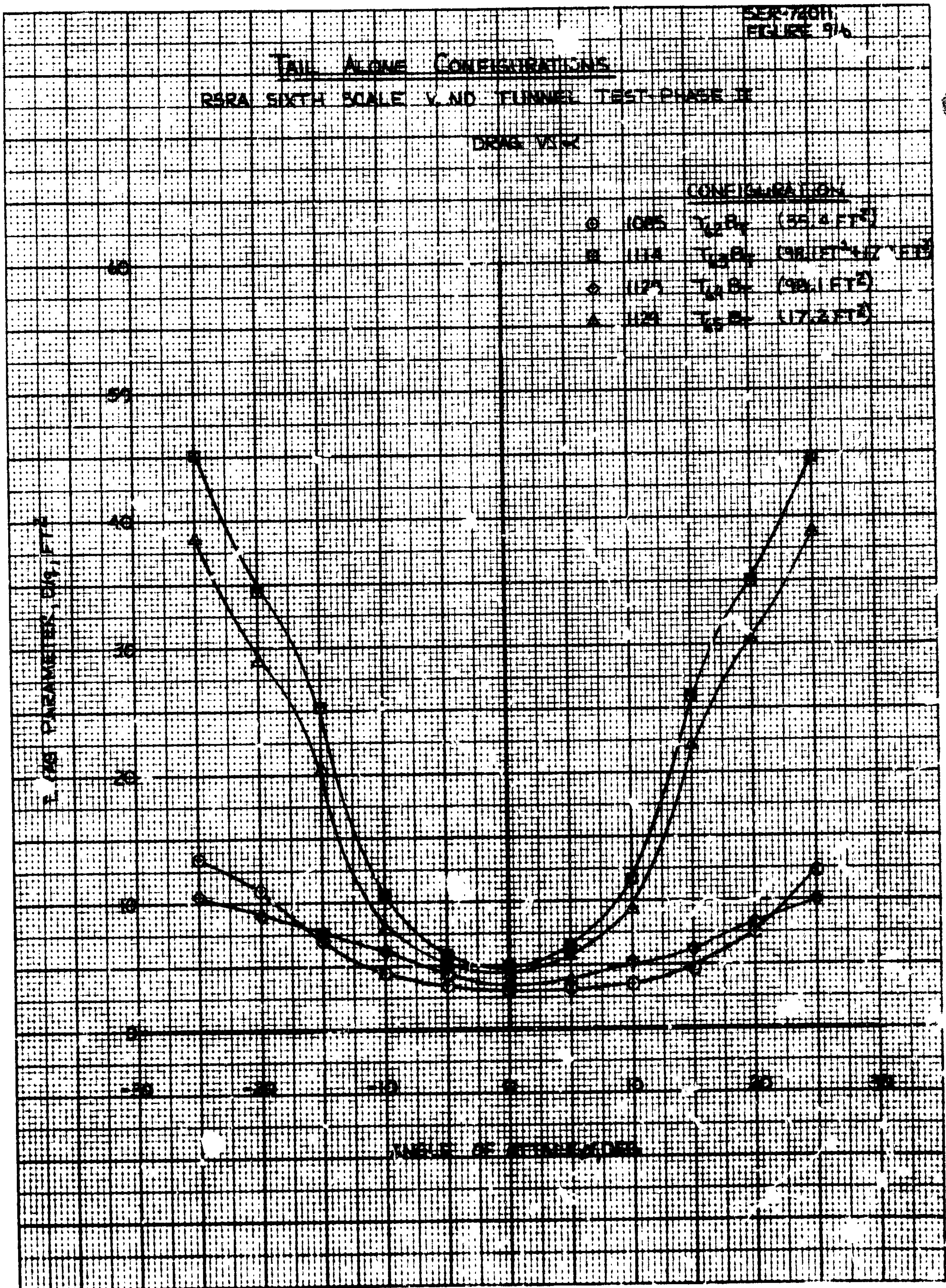
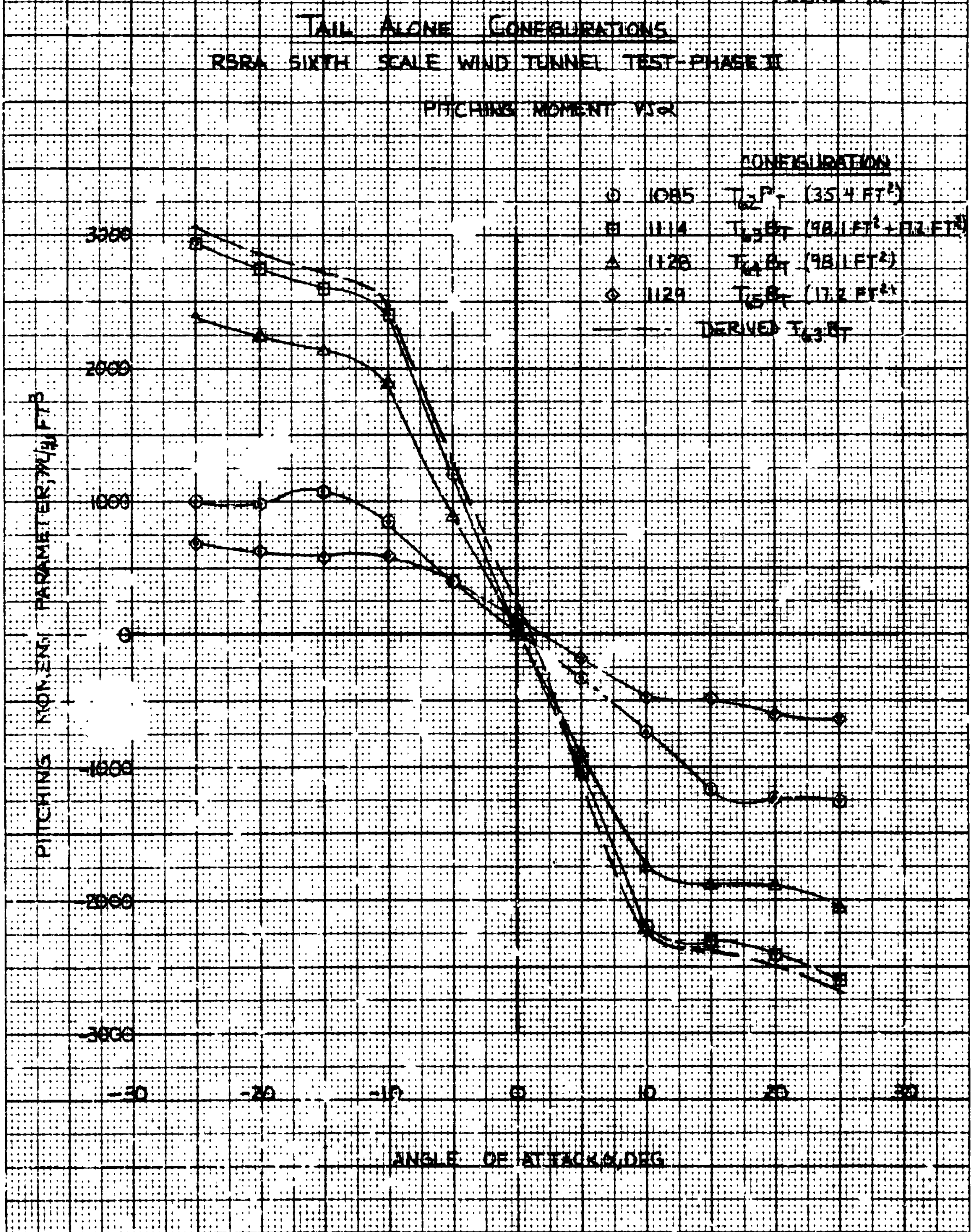
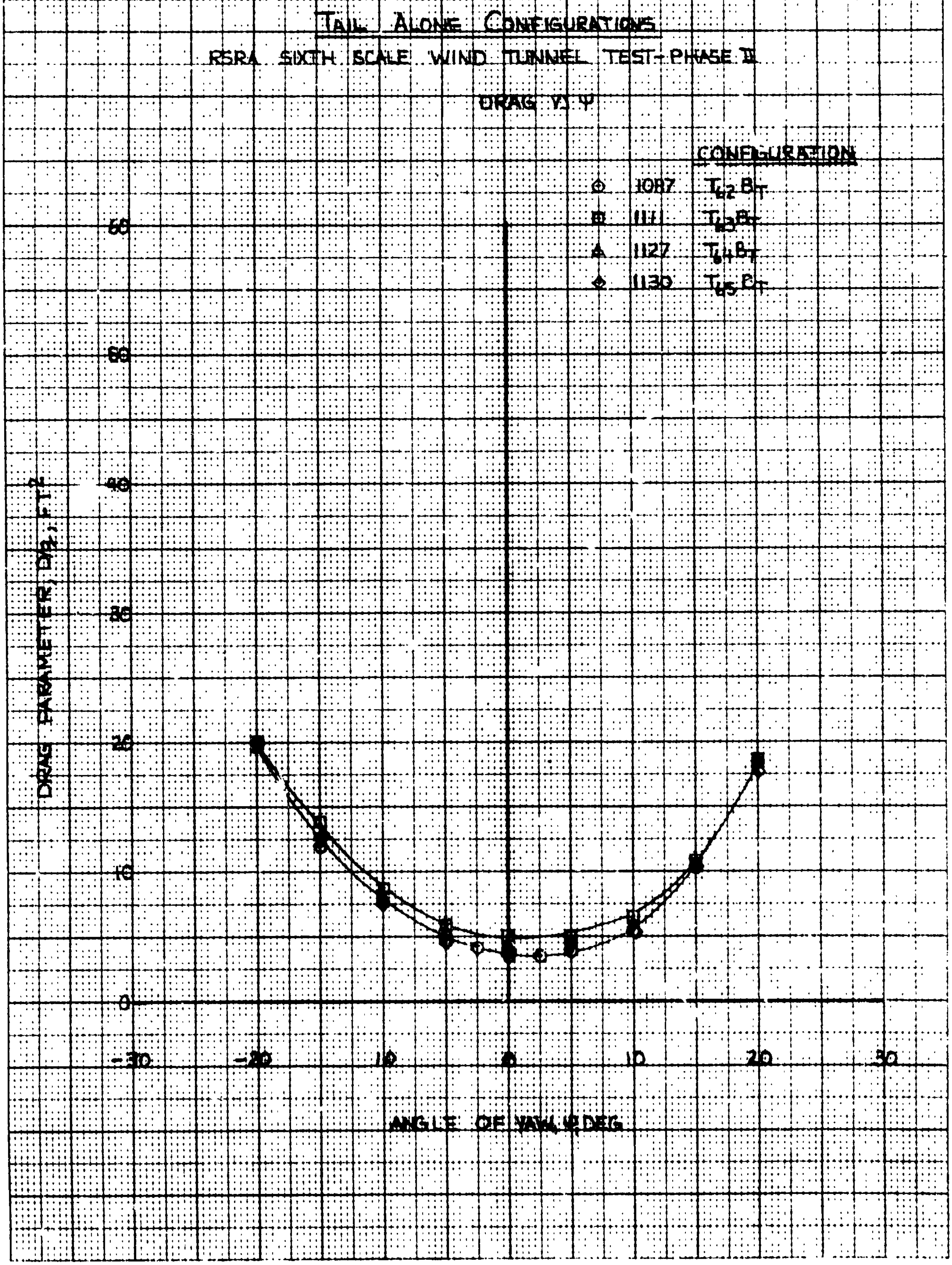


FIGURE 9
TAIL ALONE CONFIGURATIONS
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG VS α
CONFIGURATION
1085
1114
1129
(17.2 FT²)
60
50
40
30
20
10
0
-30
-20
-10
0
10
20
30


TAIL ALONE CONFIGURATIONS
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
PITCHING MOMENT VS α
CONFIGURATION
1085 $T_{62}P_T$ (35.4 FT²)
1114 $T_{63}B_T$ (98.1 FT² + 17.2 FT²)
1128 $T_{64}B_T$ (98.1 FT²)
1129 $T_{65}B_T$ (17.2 FT²)
DERIVED $T_{63}B_T$
PITCHING MOMENT PARAMETER, M/q, FT³
3000
2000
1000
0
-1000
-2000
-3000
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG

SER-72011
FIGURE 92B



SER-72011
FIGURE 92.6

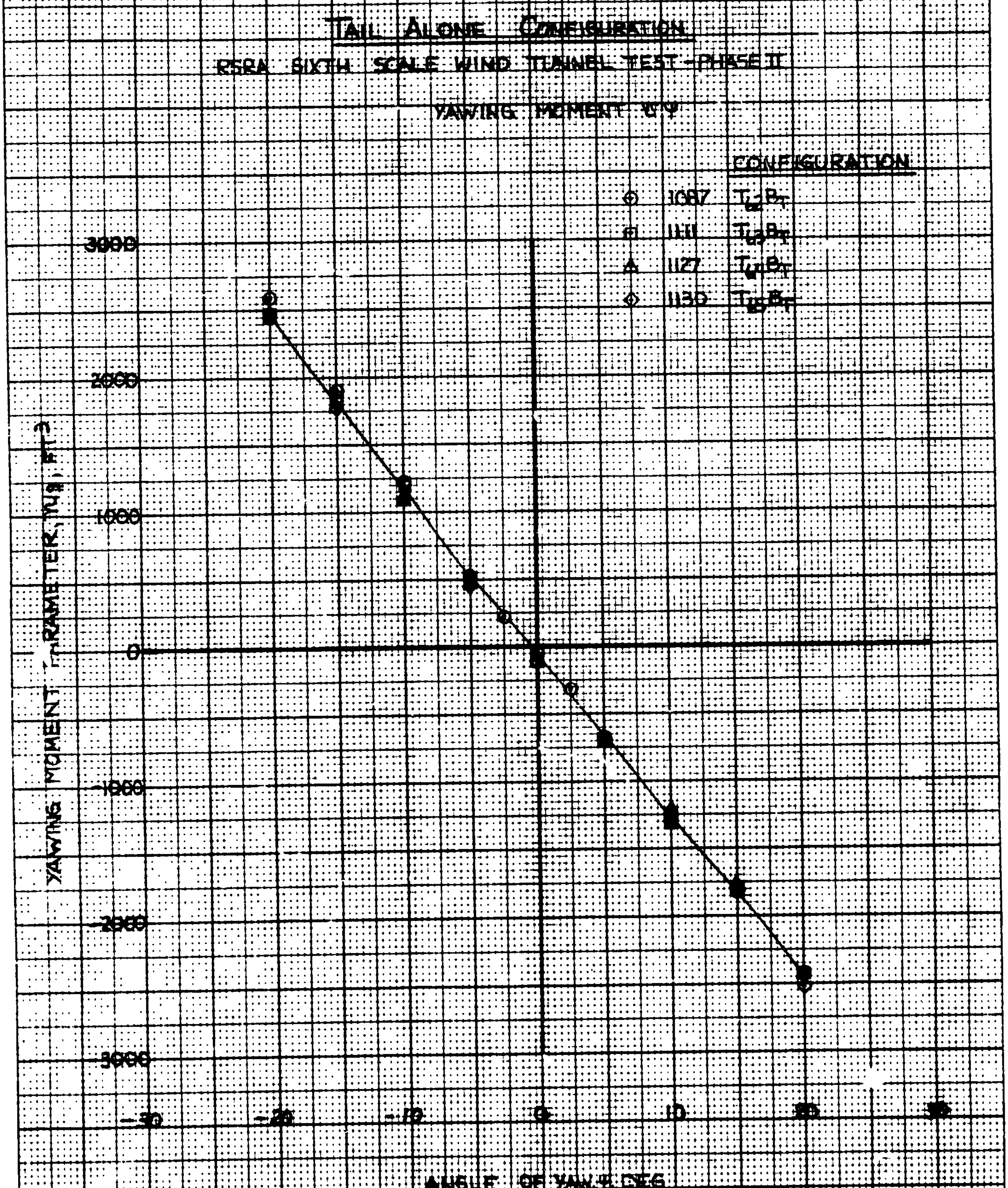


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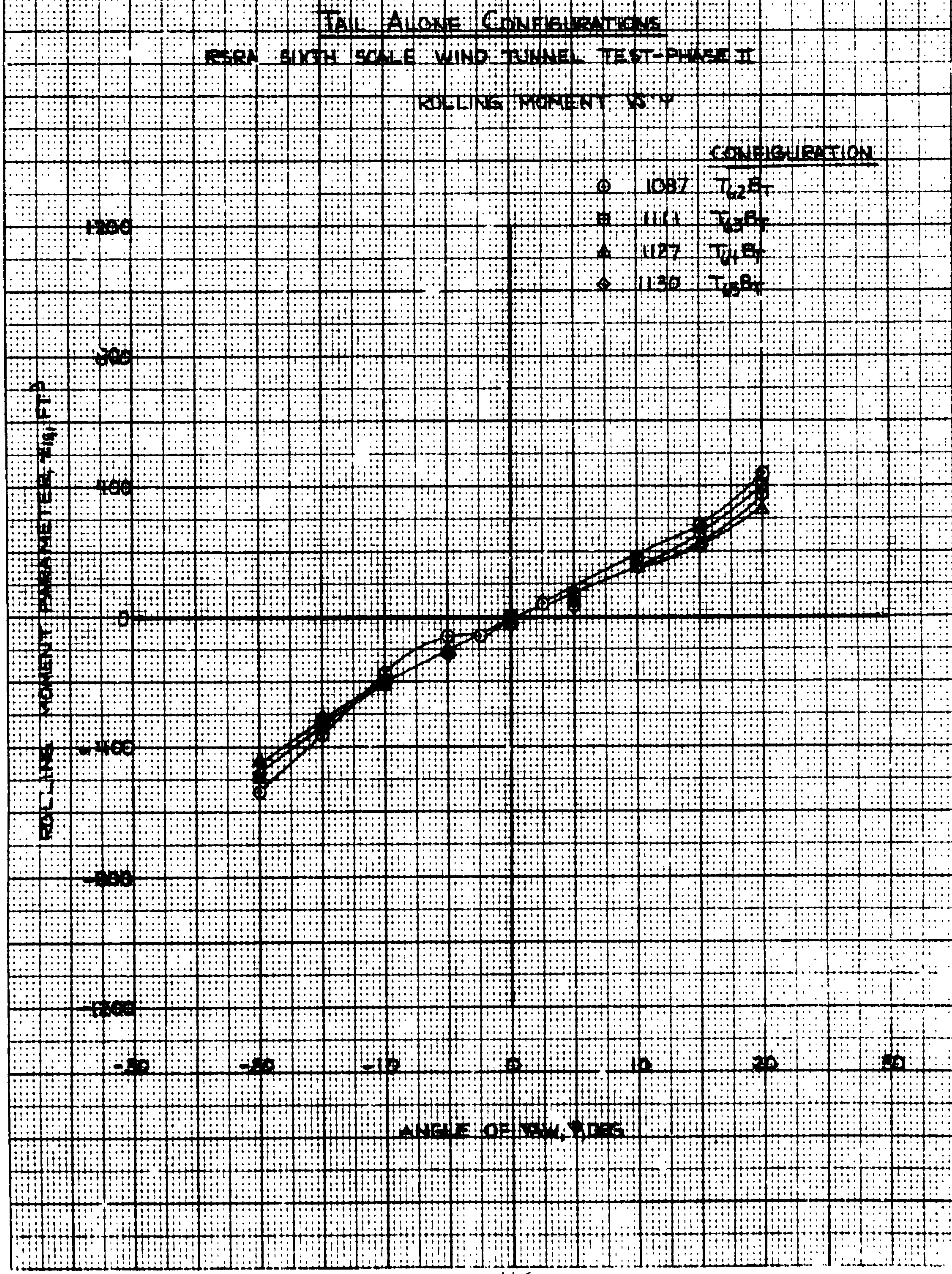
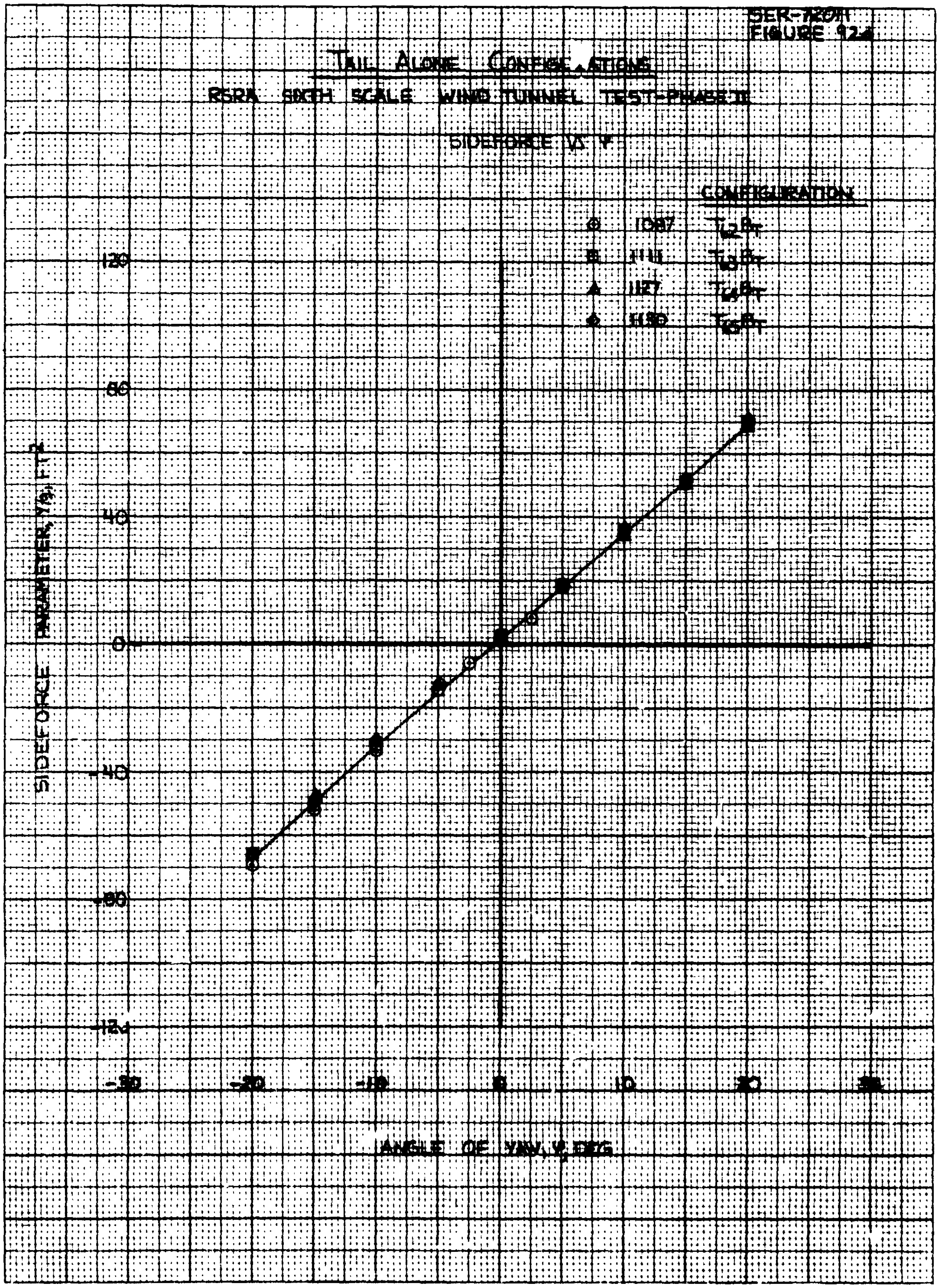
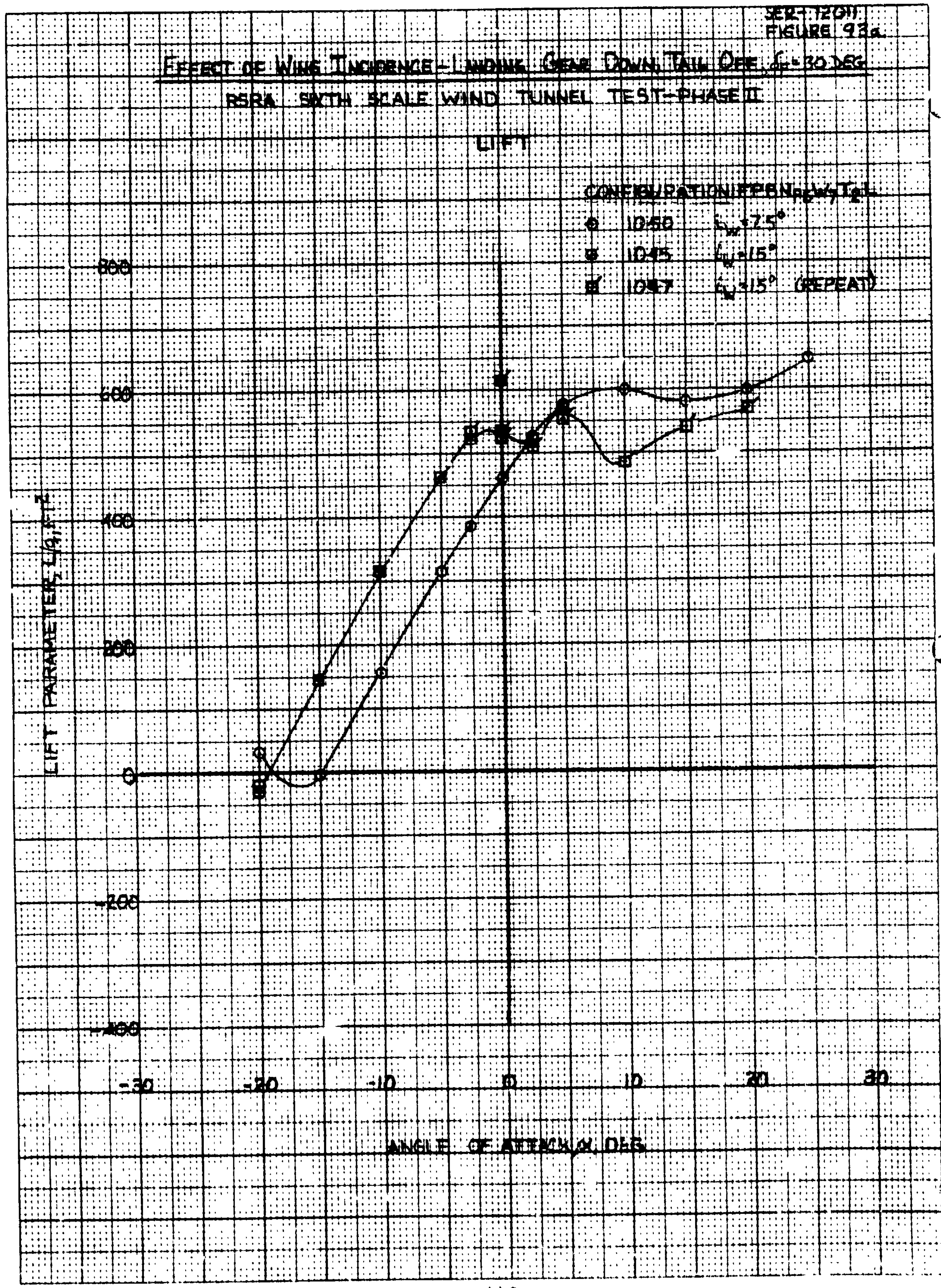
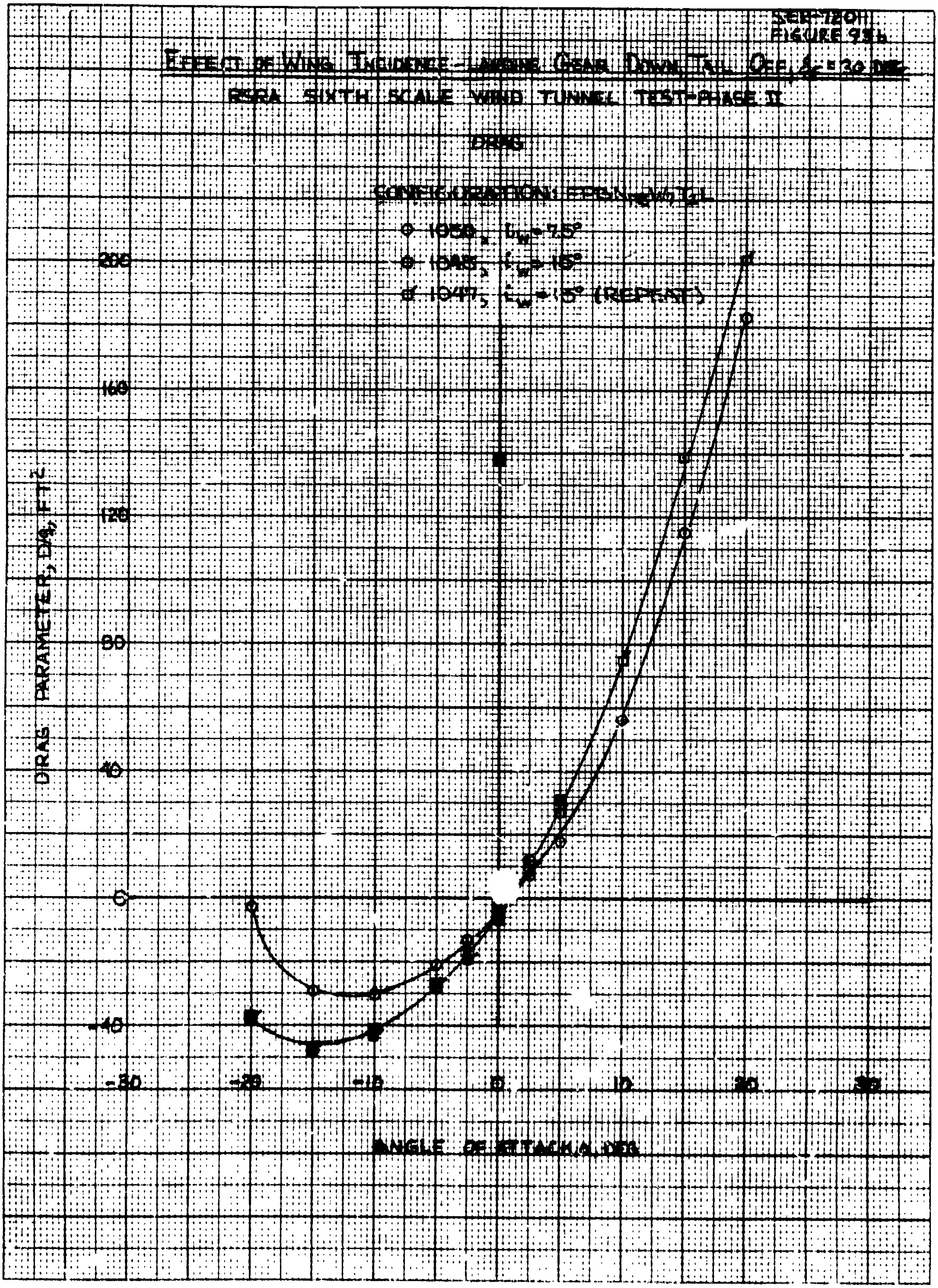
FIGURE 92c

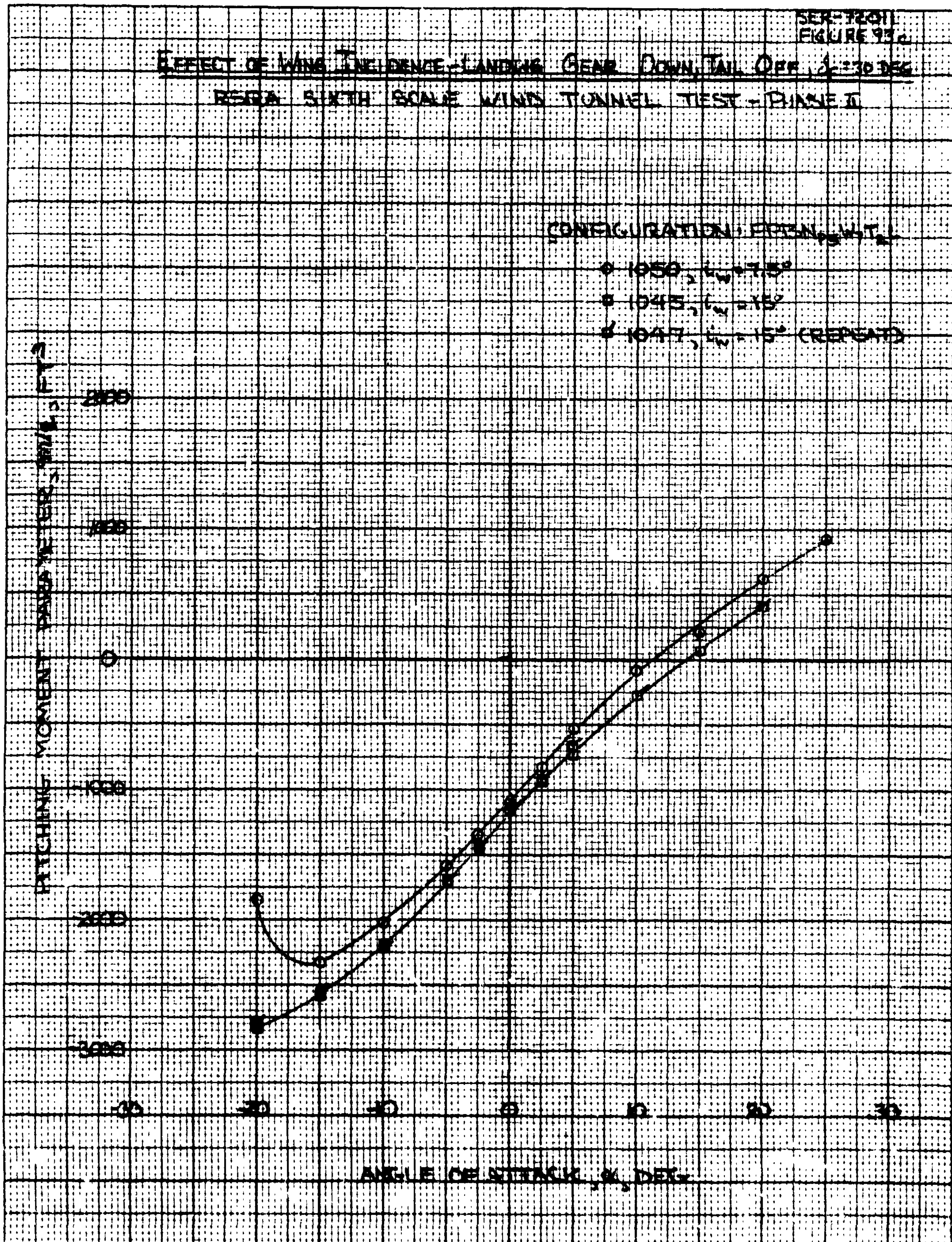


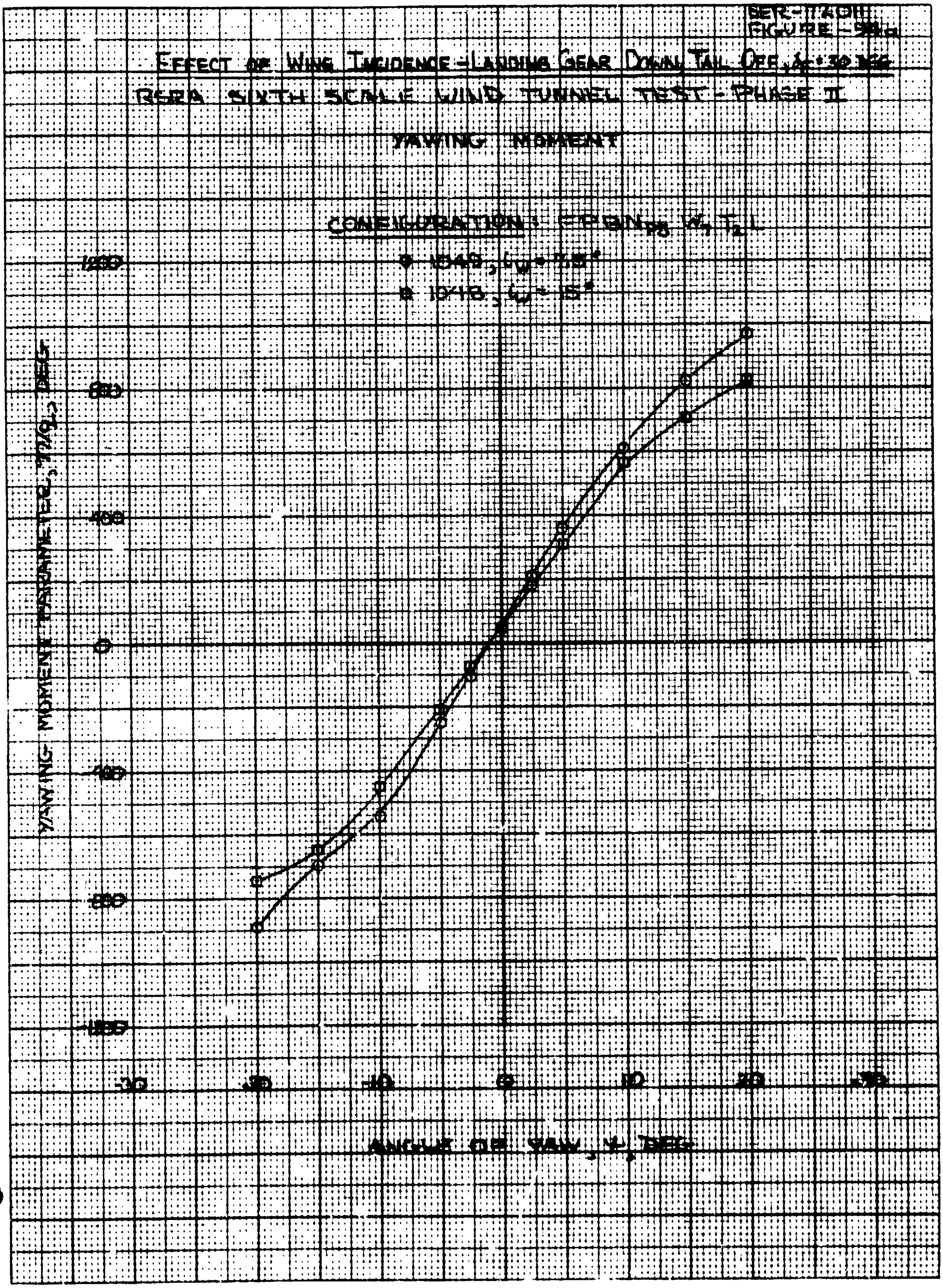


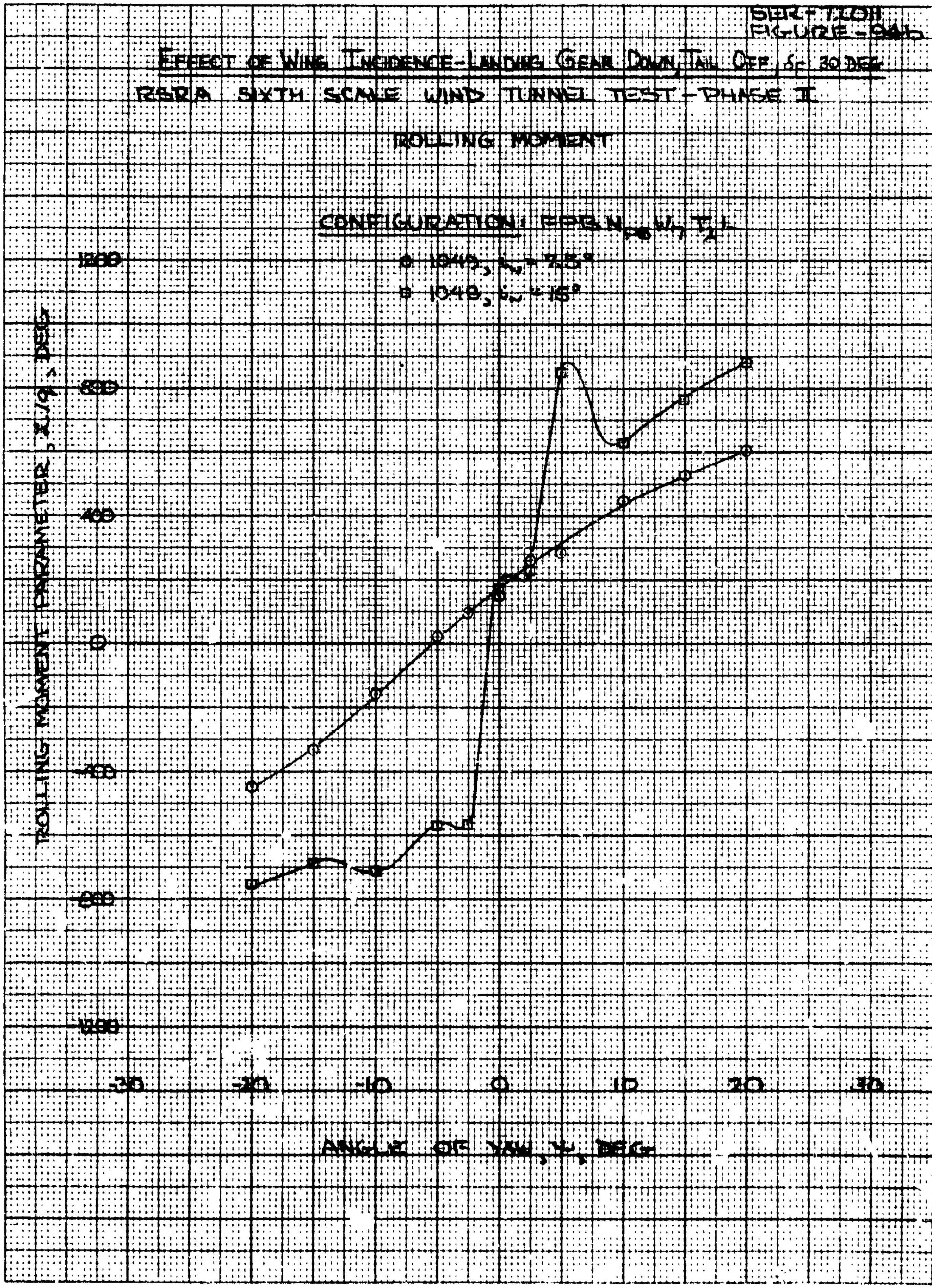
SER-72011
FIGURE 924
TAIL ALONE CONFIGURATIONS
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
SIDEFORCE VS Ψ
CONFIGURATION
1087
1111
1127
1130
120
80
40
0
-40
-80
-120
SIDEFORCE PARAMETER, Y/q, FT²
-30
-20
-10
0
10
20
30
ANGLE OF YAW, Ψ, DEG

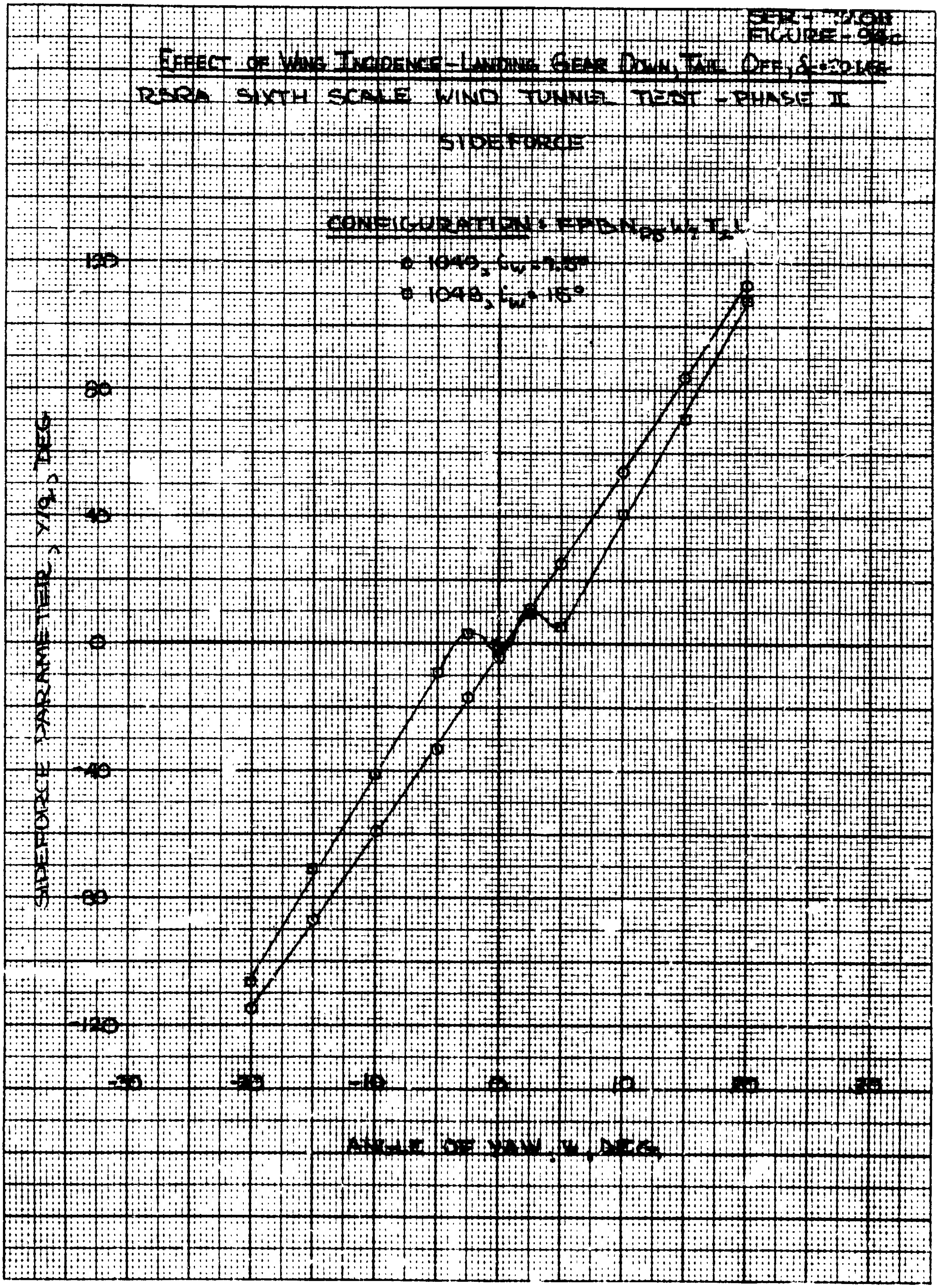

SER-72011
FIGURE 93a
EFFECT OF WING INCIDENCE - LANDING GEAR DOWN, TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
LIFT
1050
1045
1047
(REPEAT)
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG.
LIFT PARAMETER


SER-72011
FIGURE 93b
EFFECT OF WING INCIDENCE - LANDING GEAR DOWN, TAIL OFF, δ_F = 30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
CONFIGURATION: FPGN$_R$W$_7$T$_R$L
1058, i_W = 7.5°
1045, i_W = 15°
1047, i_W = 15° (REPEAT)
DRAG PARAMETER, D/q, FT^2
200
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, DEG


SER-72011
FIGURE 93c
EFFECT OF WING INCIDENCE - LANDING GEAR DOWN, TAIL OFF, δf = 30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION: F P3 N W T
1050, iw = 7.5°
1045, iw = 15°
1047, iw = 15° (REPEAT)
PITCHING MOMENT PARAMETER, M/q, FT³
2000
1000
0
-1000
-2000
-3000
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG.


EFFECT OF WING INCIDENCE - LANDING GEAR DOWN TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT
CONFIGURATION:
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG
YAWING MOMENT PARAMETER


SER-72011
FIGURE-96b
EFFECT OF WING INCIDENCE-LANDING GEAR DOWN, TAIL OFF, δF 30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
ROLLING MOMENT
CONFIGURATION: FPGN V T L
1049, iw = 7.5°
1048, iw = 15°
ROLLING MOMENT PARAMETER, L/q, DEG
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG


EFFECT OF WING INCIDENCE - LANDING GEAR DOWN, TAIL OFF
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
SIDEFORCE
CONFIGURATION
1048, i_w = 15°
120
80
40
0
-40
-80
-120
-30
-20
-10
0
10
20
30
ANGLE OF YAW, ψ, DEG

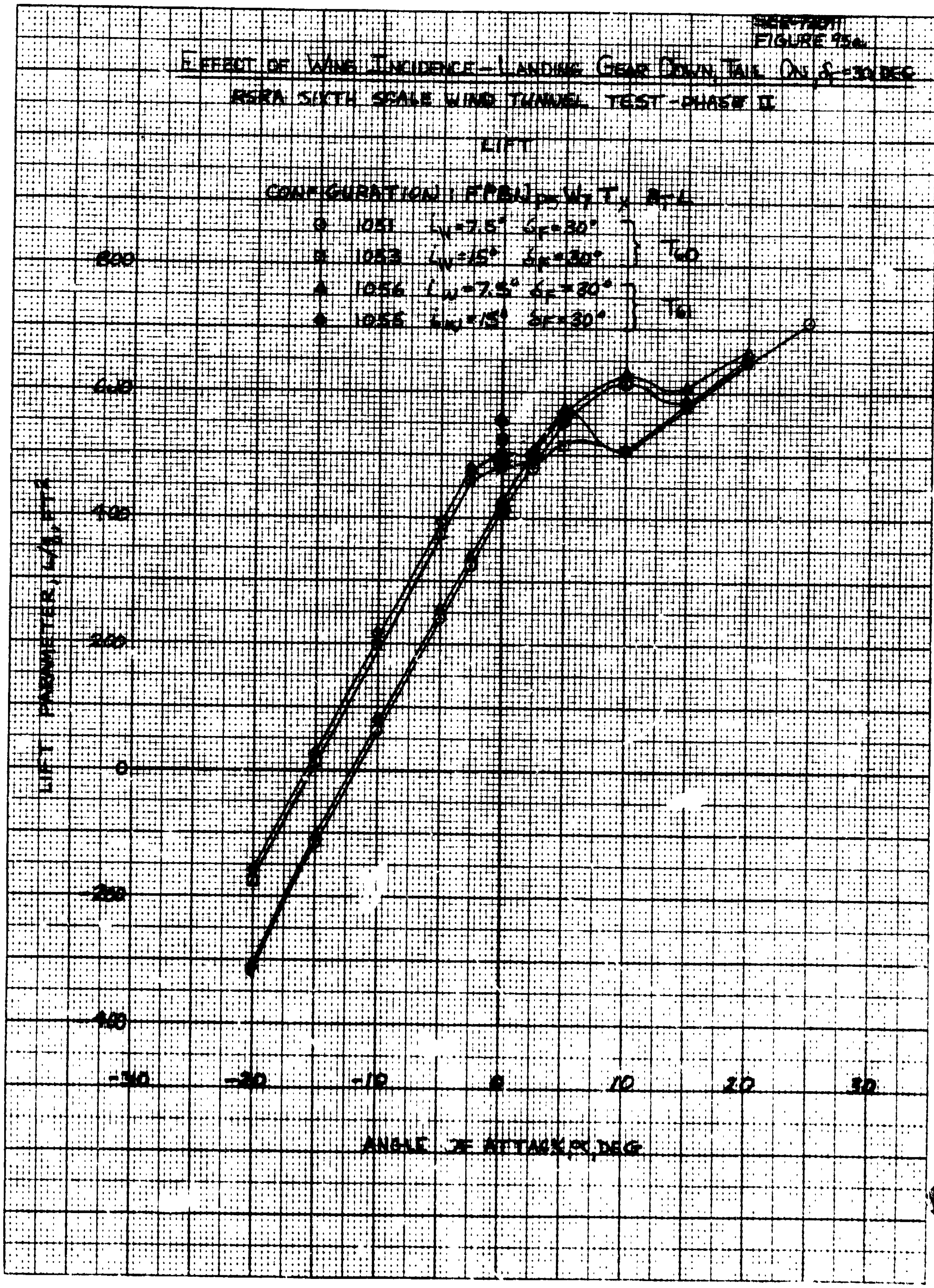
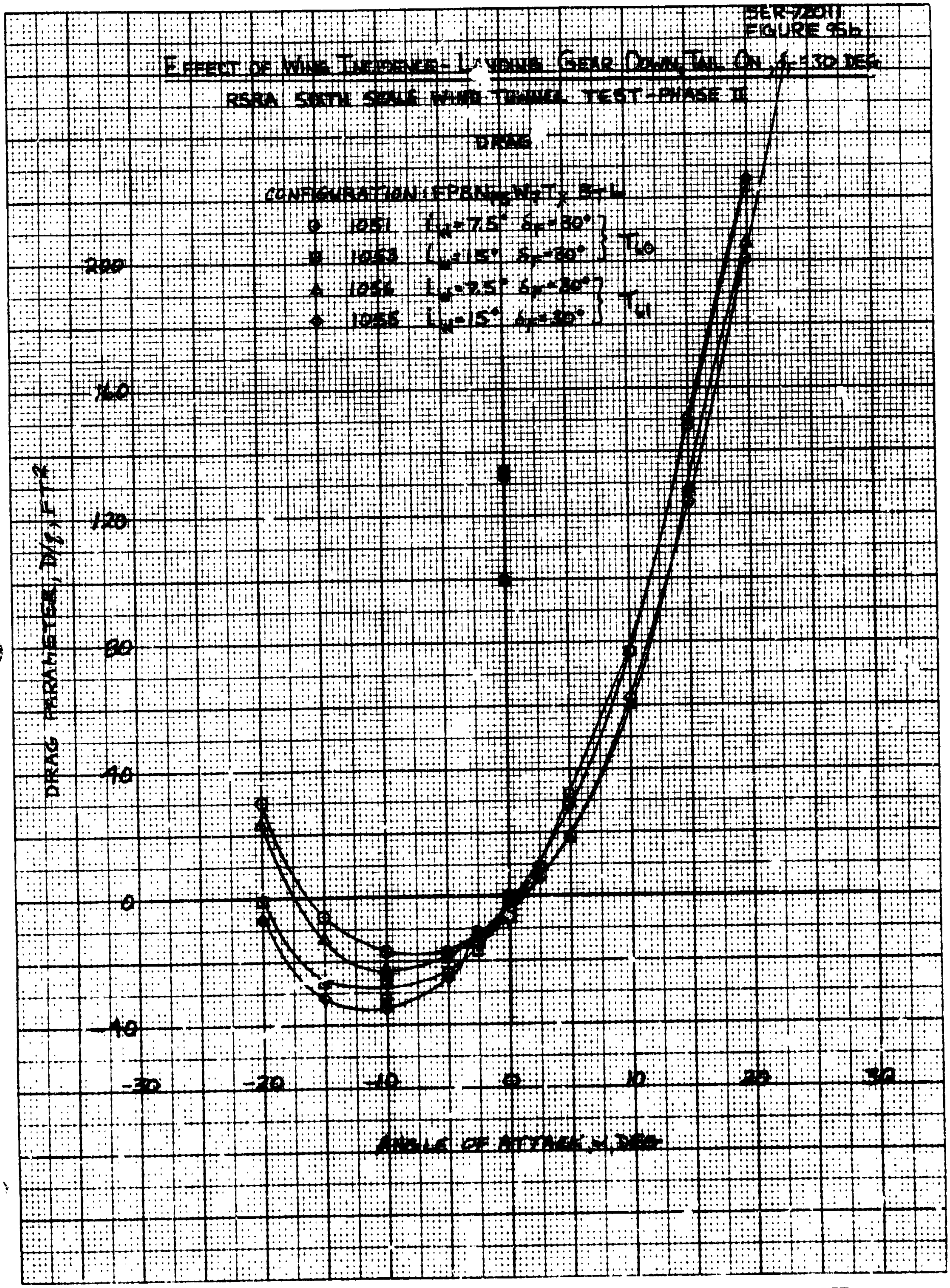
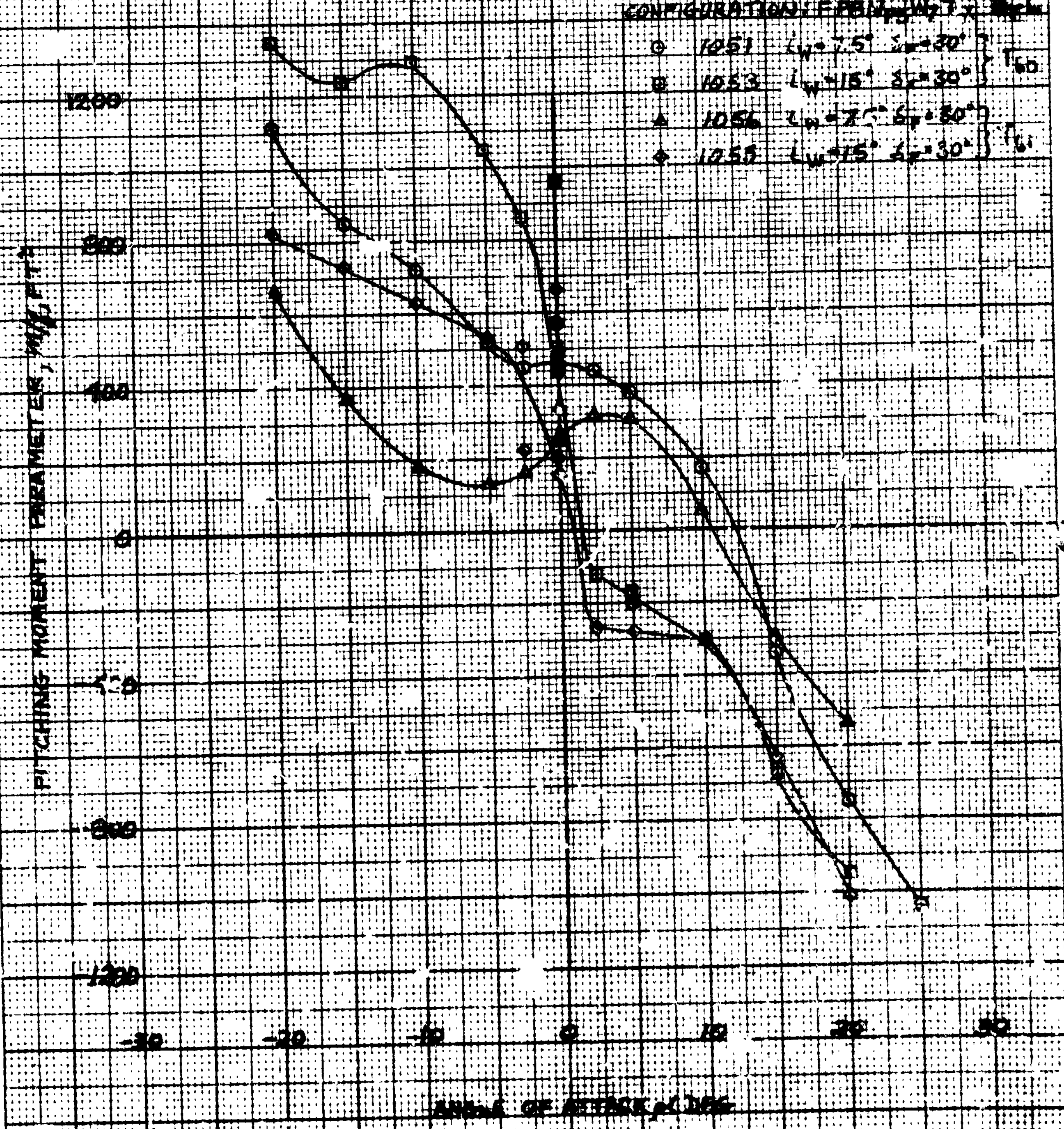


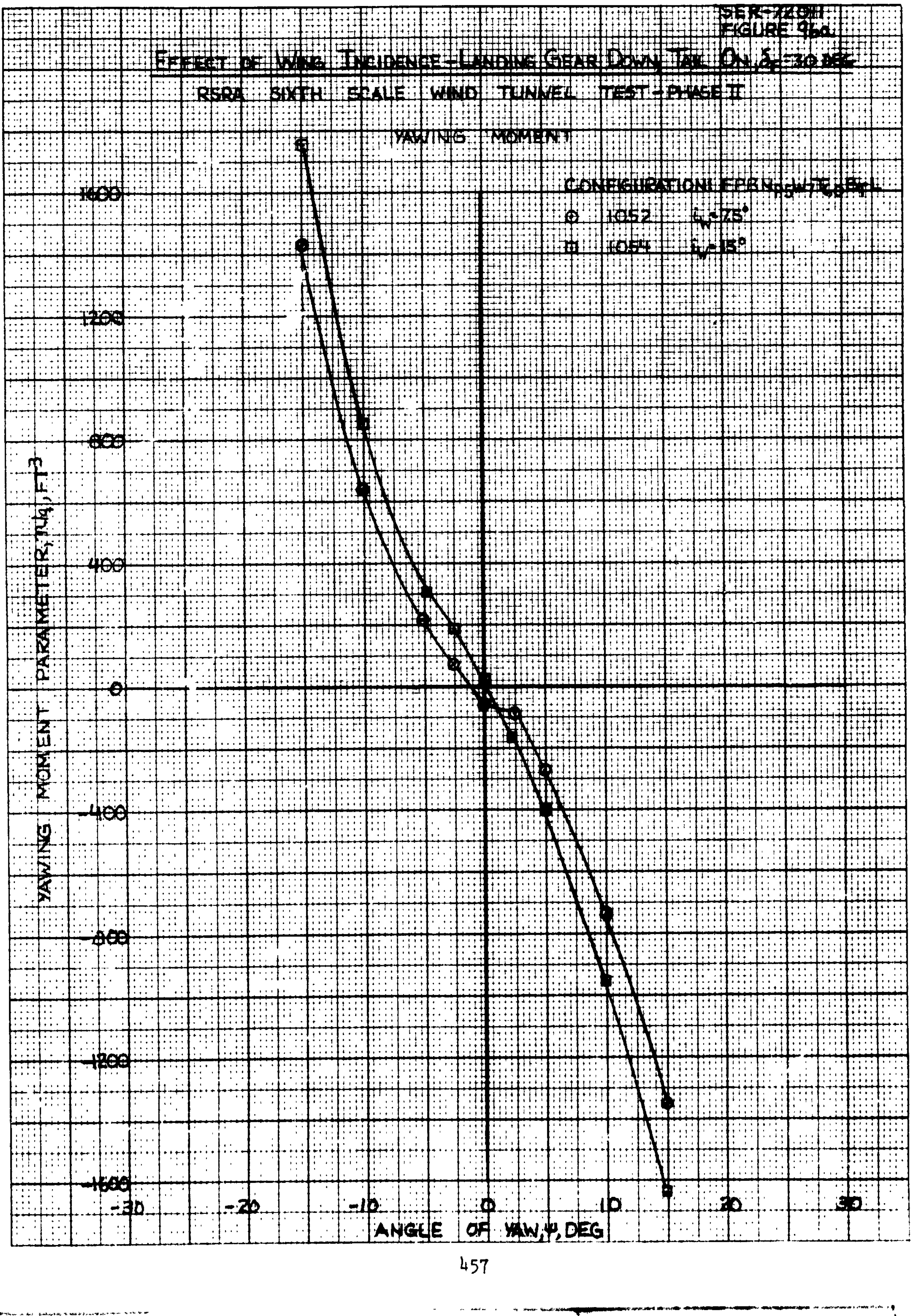
FIGURE 95a
EFFECT OF WING INCIDENCE - LANDING GEAR DOWN, TAIL ON, δF = 30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT
1051
1053
1056
1055
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG


SER-72011
FIGURE 95b
DRAG
DRAG PARAMETER, D/q, FT²
ANGLE OF ATTACK, α, DEG
200
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30

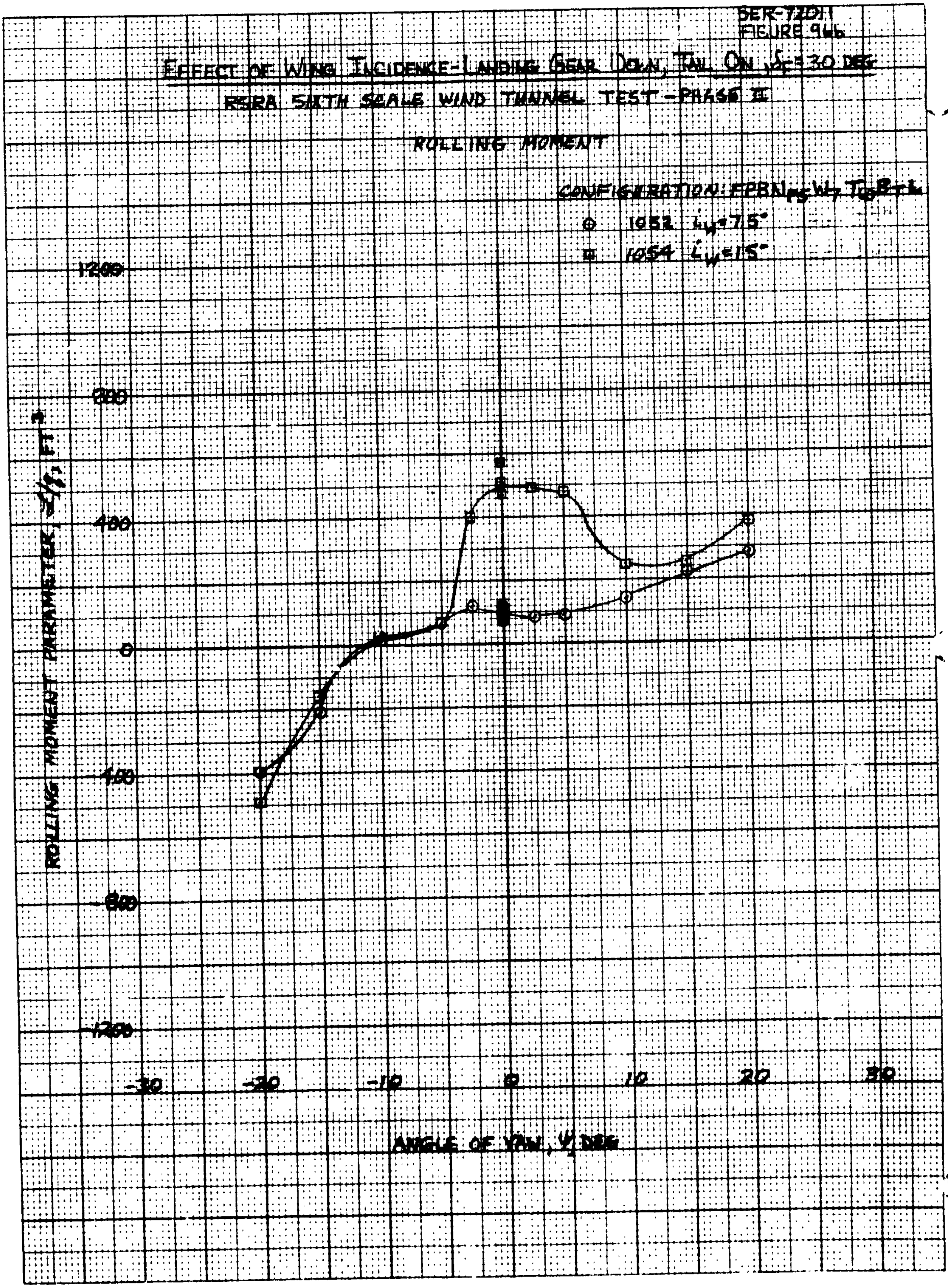
EFFECT OF WING INCIDENCE – LANDING GEAR DOWN, TAIL ON, δ_F = 30 DEG.
RSRA SIXTH SCALE WIND TUNNEL TEST – PHASE II

PITCHING MOMENT



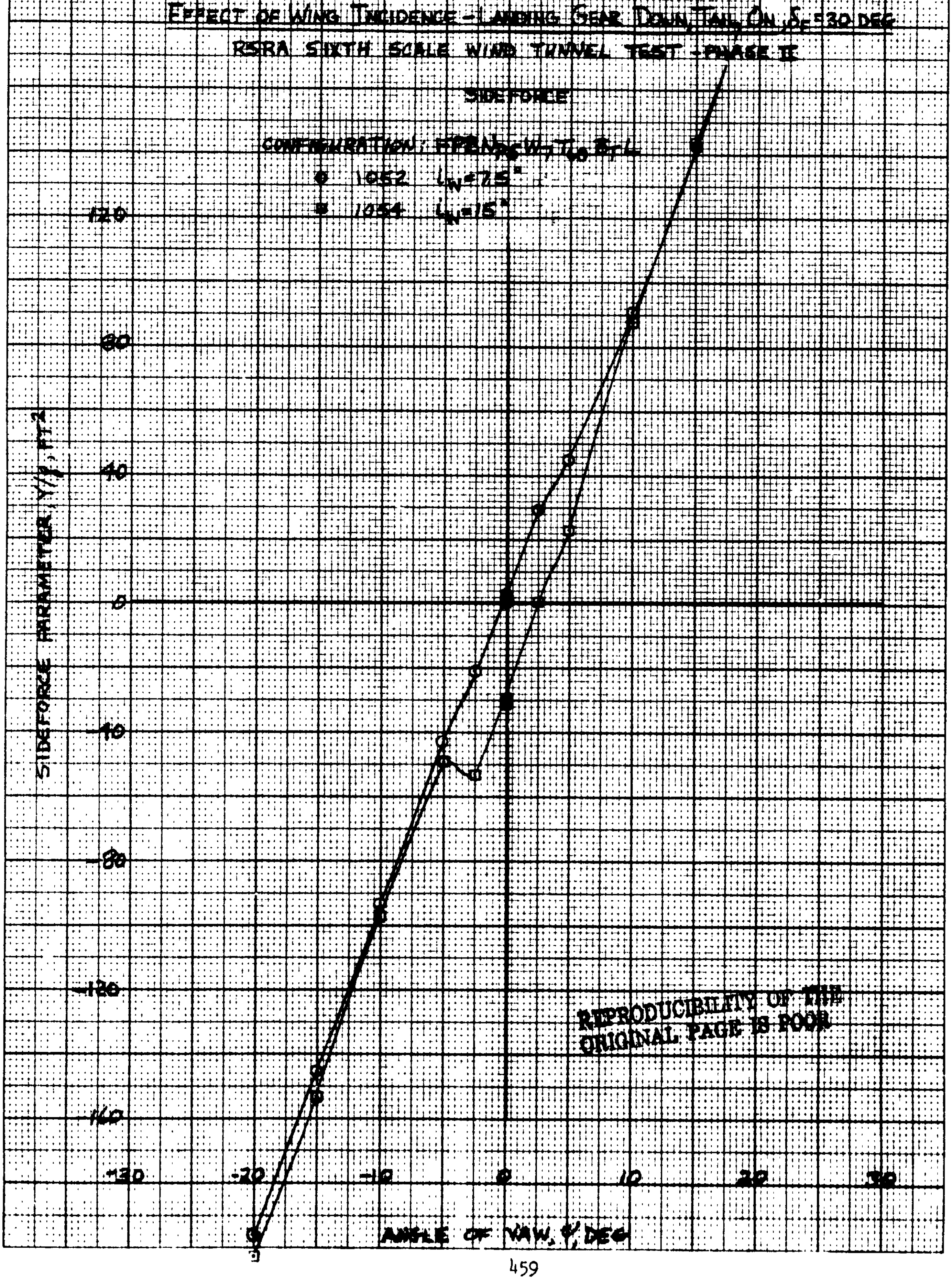


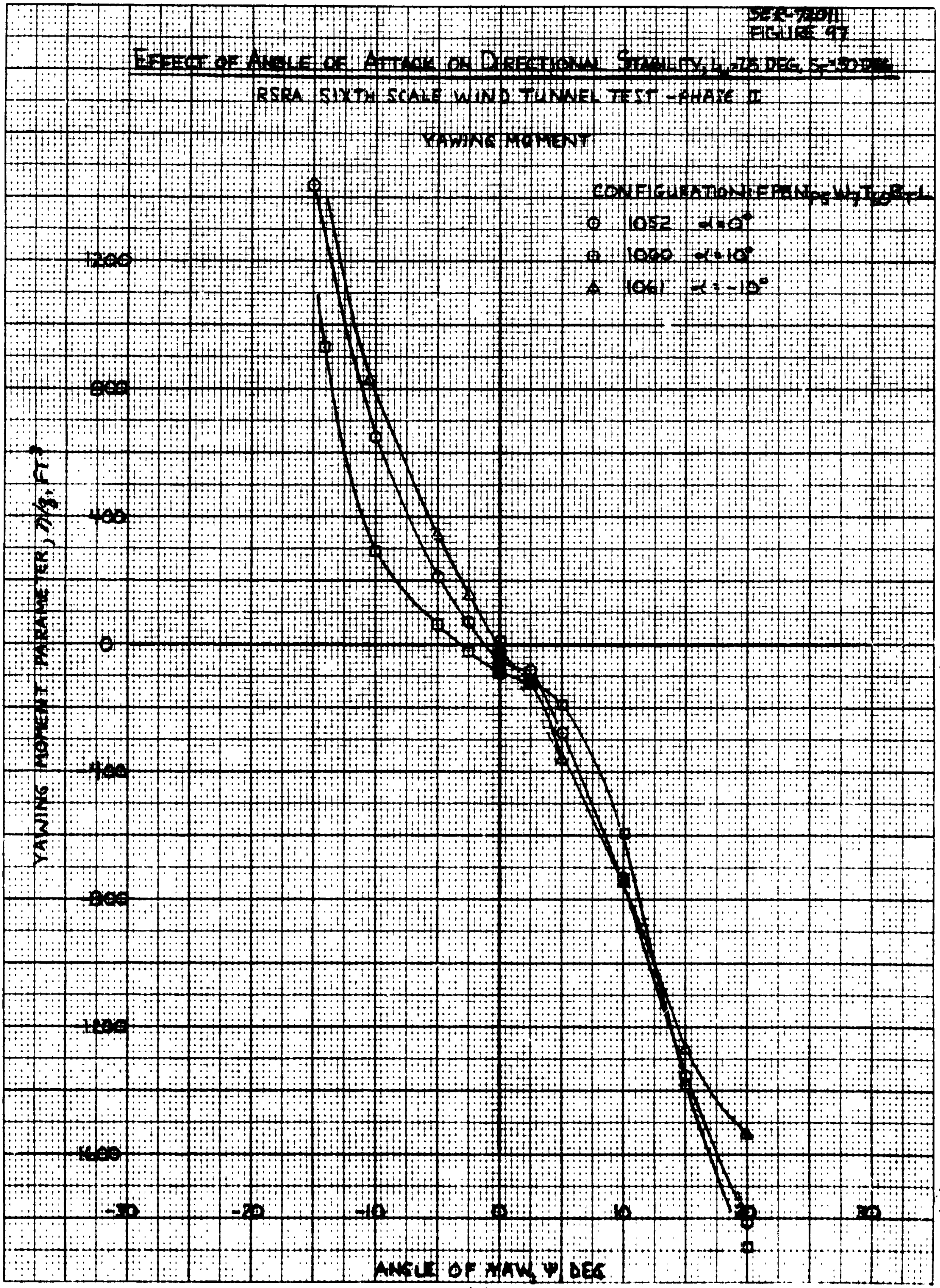
SER-72011
FIGURE 96a
EFFECT OF WING INCIDENCE - LANDING GEAR DOWN, TAIL ON, δ_F=30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
YAWING MOMENT
CONFIGURATION:
1052 i_W=7.5°
1054 i_W=15°
1600
1200
800
400
0
-400
-800
-1200
-1600
-30
-20
-10
0
10
20
30
ANGLE OF YAW, Ψ, DEG
YAWING MOMENT PARAMETER, N/q, FT³



SER-72011
FIGURE 966
EFFECT OF WING INCIDENCE - LANDING GEAR DOWN, TAIL ON, δ_F = 30 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ROLLING MOMENT
CONFIGURATION: FPBN
⊙ 1052 i_W = 7.5°
⊡ 1054 i_W = 15°
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30
ROLLING MOMENT PARAMETER, $\mathcal{L}/q$, FT³
ANGLE OF YAW, ψ, DEG

SER-72011
FIGURE 96

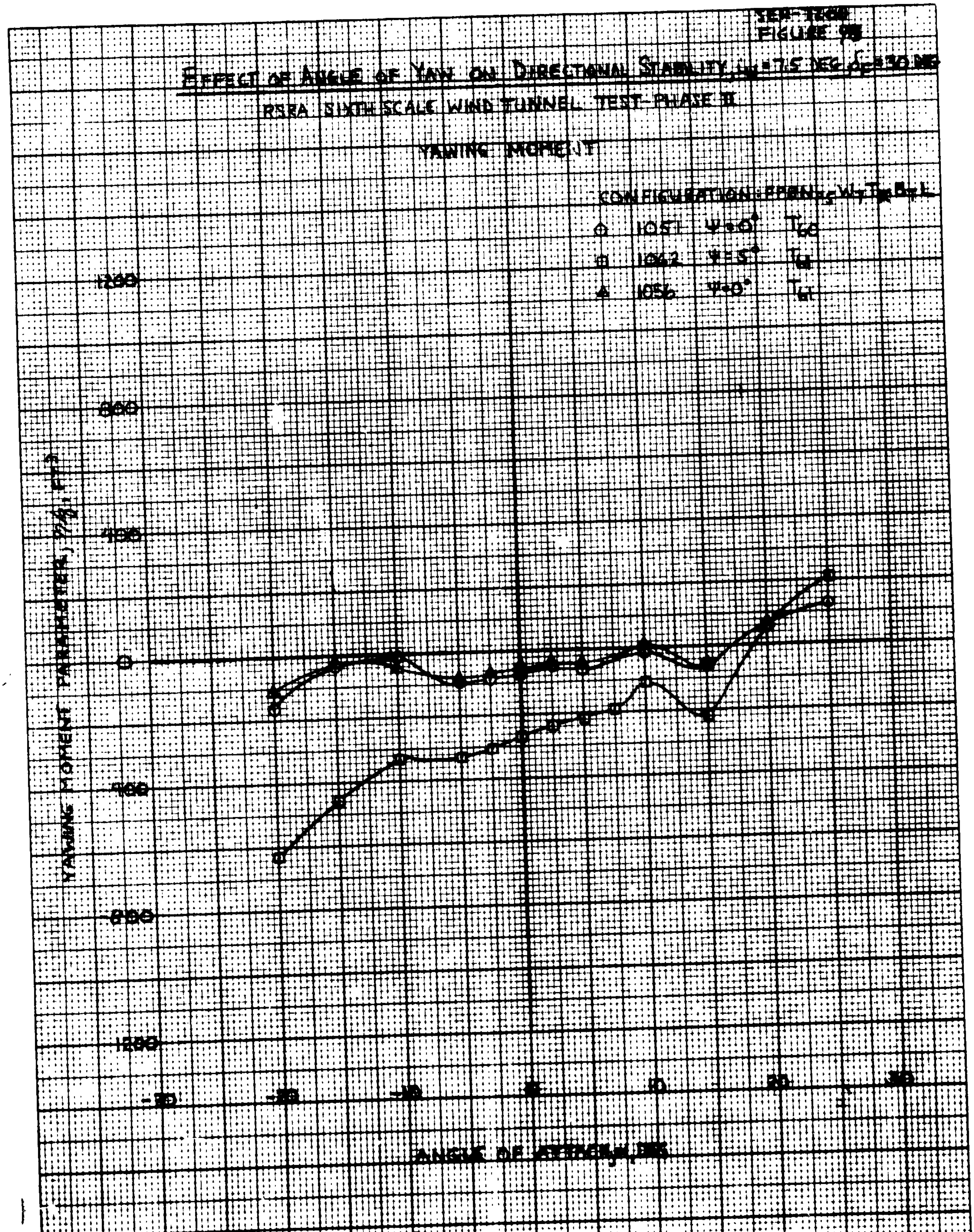




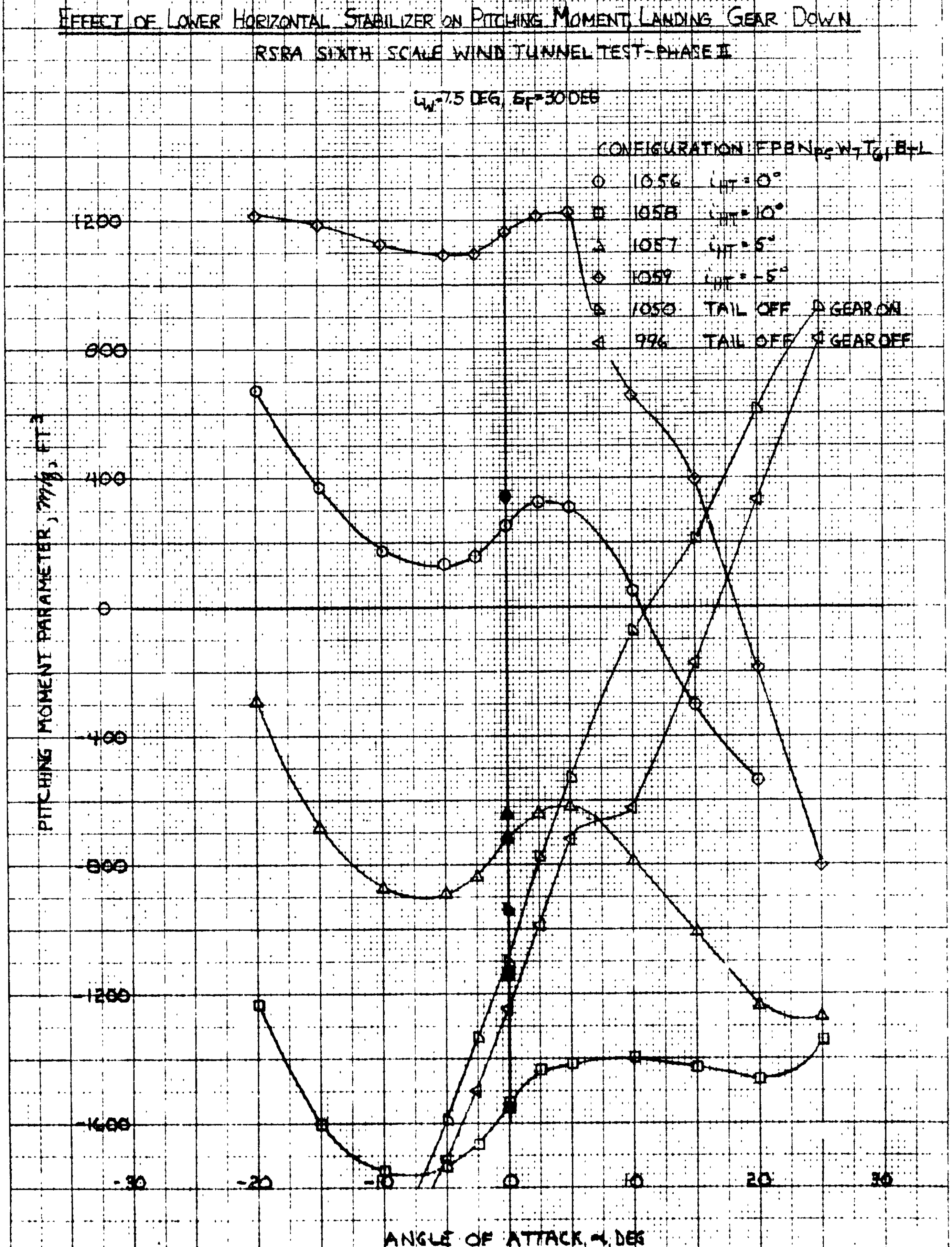
SER-72011
FIGURE 97

EFFECT OF ANGLE OF ATTACK ON DIRECTIONAL STABILITY, i_w=75 DEG, δ_F=30 DEG

RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II


RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
YAWING MOMENT
1051
1062
1056
1200
800
400
0
-400
-800
-1200
-30
-20
-10
0
10
20
30

SER-72011
FIGURE 99



K·E 10 X 10 TO 1/2 INCH 46 1473 KEUFFEL & ESSER CO.

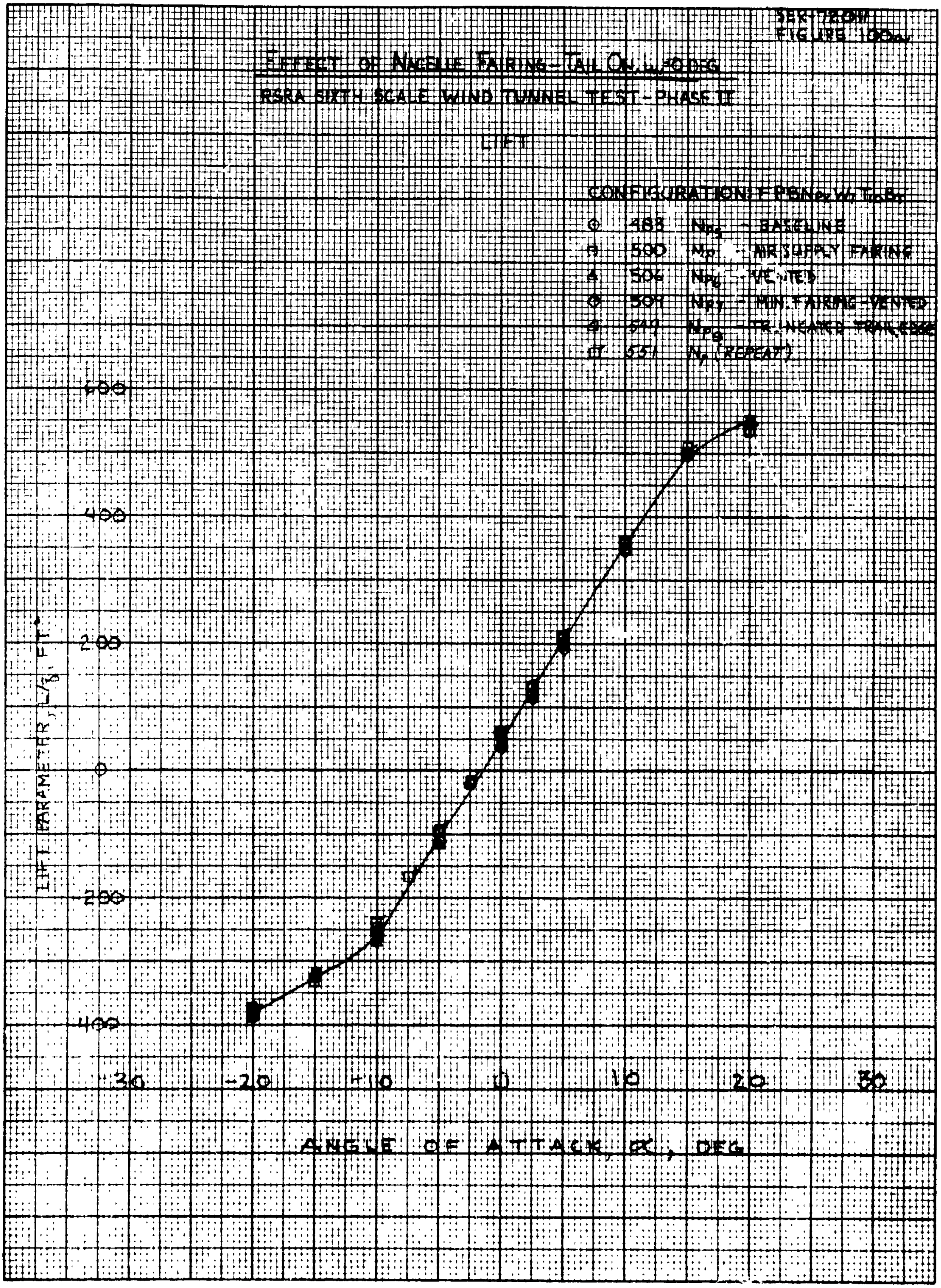
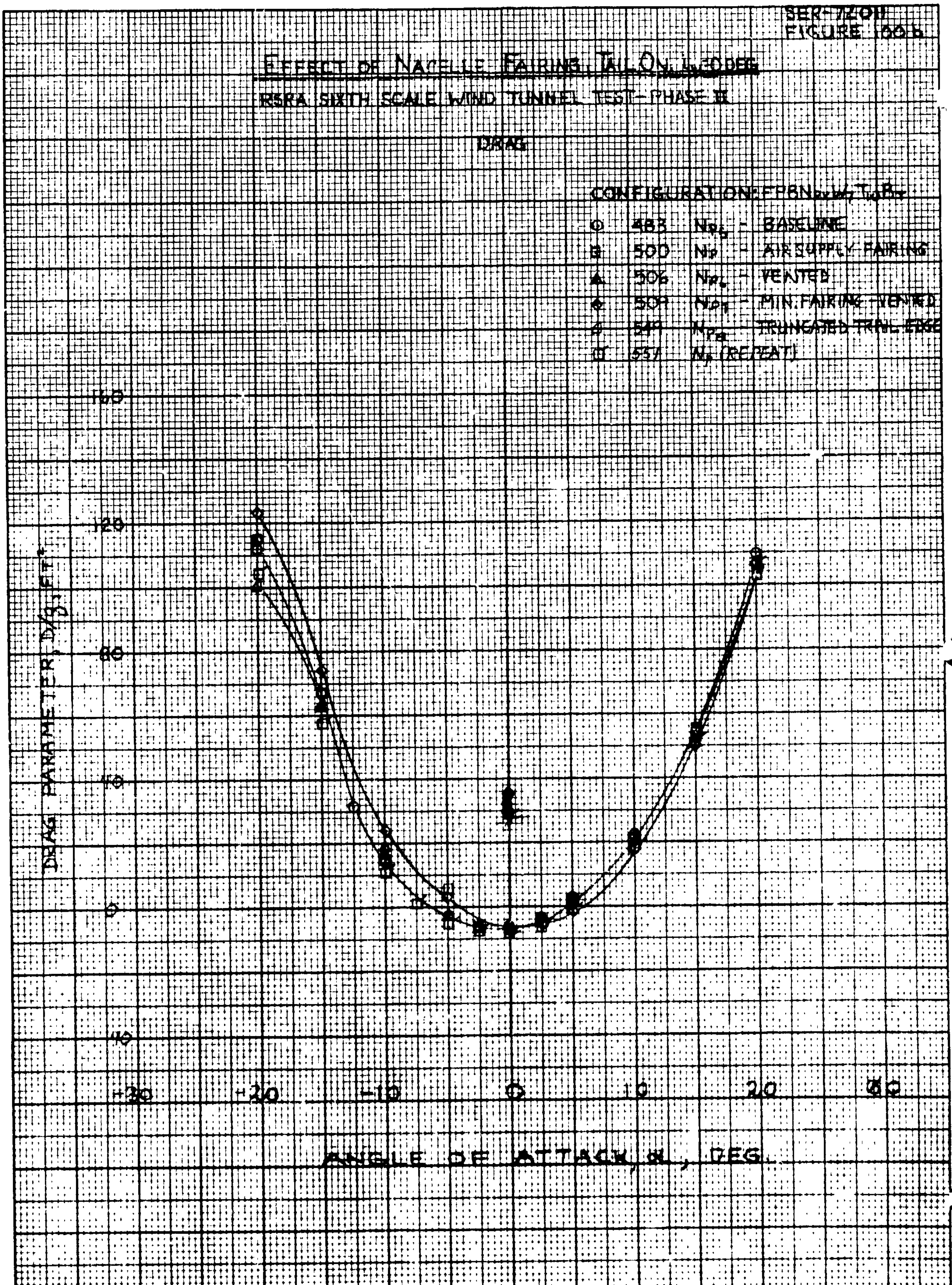
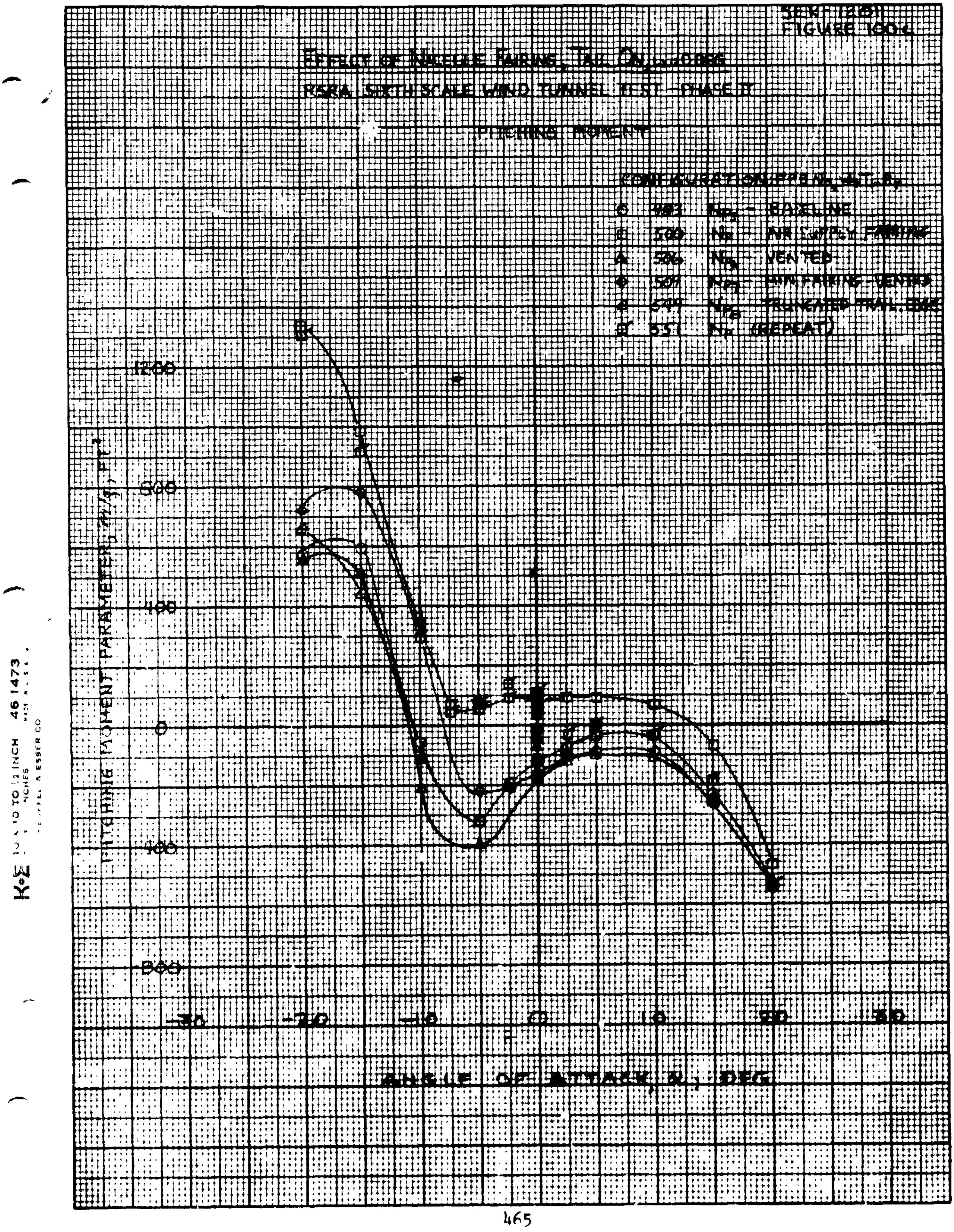


FIGURE 100a
EFFECT OF NACELLE FAIRING - TAIL ON, ω=0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT
CONFIGURATION: F PBN W T B
488 - BASELINE
590 - AIR SUPPLY FAIRING
506 - VENTED
509 - MIN. FAIRING - VENTED
551 (REPEAT)
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG
LIFT PARAMETER, L/q, FT²



SER-72011
FIGURE 006
EFFECT OF NACELLE FAIRING, TAIL ON
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
CONFIGURATION:
483 - BASELINE
500 - AIR SUPPLY FAIRING
506 - VENTED
509 - MIN. FAIRING - VENTED
549 - TRUNCATED TRAIL EDGE
557 (REPEAT)
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30
DRAG PARAMETER
ANGLE OF ATTACK, α, DEG.


SER-72151
FIGURE 100c
EFFECT OF NACELLE FAIRING, TAIL ON, ..0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
PITCHING MOMENT
CONFIGURATION: F78 N T B
○ 483 N - BASELINE
□ 500 N - AIR SUPPLY FAIRING
△ 506 N - VENTED
◇ 507 N - MIN FAIRING - VENTED
551 N (REPEAT)
1200
800
400
0
-400
-800
-30
-20
-10
0
10
20
30
PITCHING MOMENT PARAMETER, M/q, FT^3
ANGLE OF ATTACK, α, DEG
K+E 10 X 10 TO 1/2 INCH 46 1473
KEUFFEL & ESSER CO.

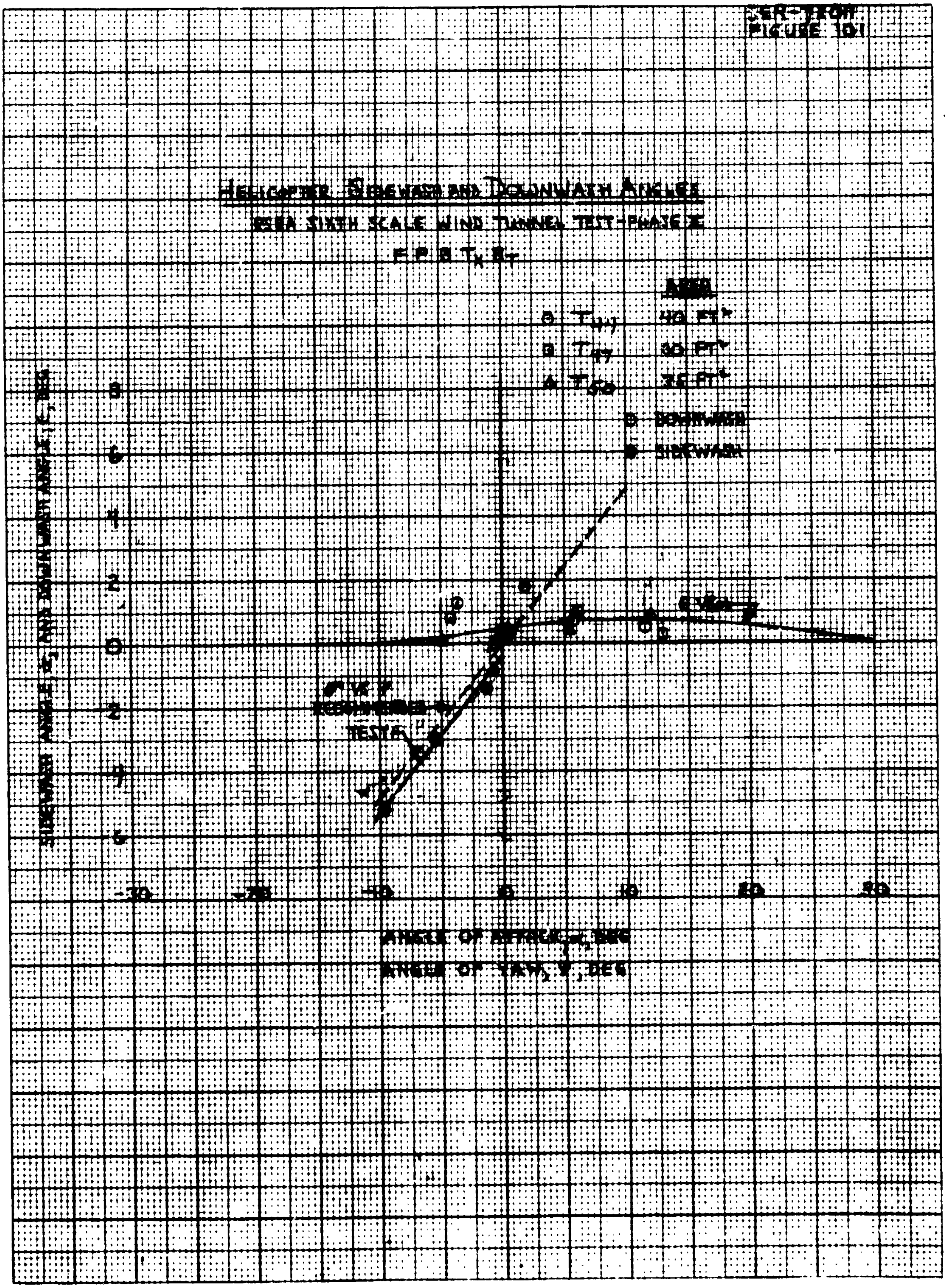
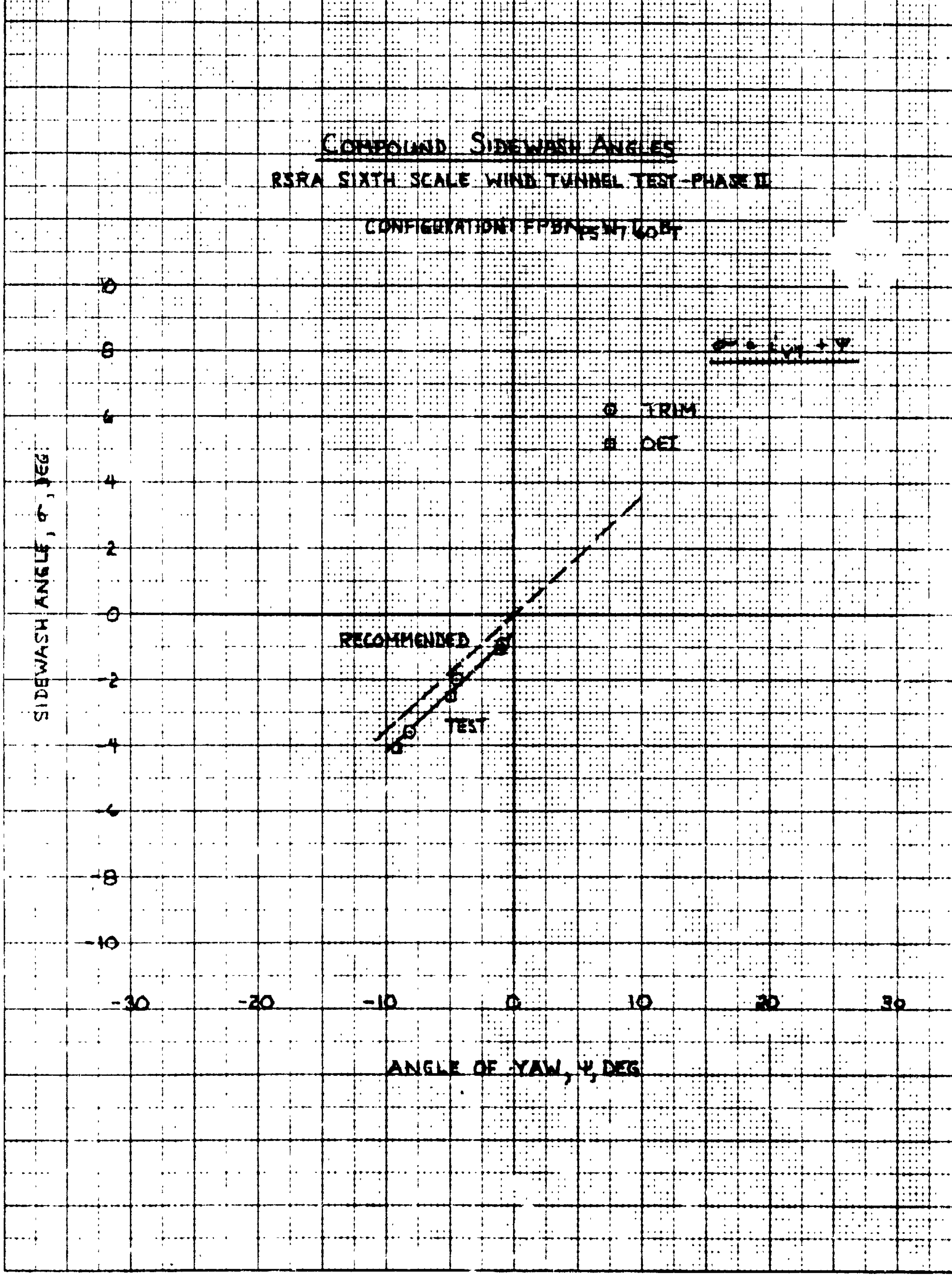


FIGURE 101
HELICOPTER SIDEWASH AND DOWNWASH ANGLES
SIXTH SCALE WIND TUNNEL TEST-PHASE
T₄₇
T₅₀
40 FT²
30 FT²
DOWNWASH
SIDEWASH
8
6
2
0
-2
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK
ANGLE OF YAW

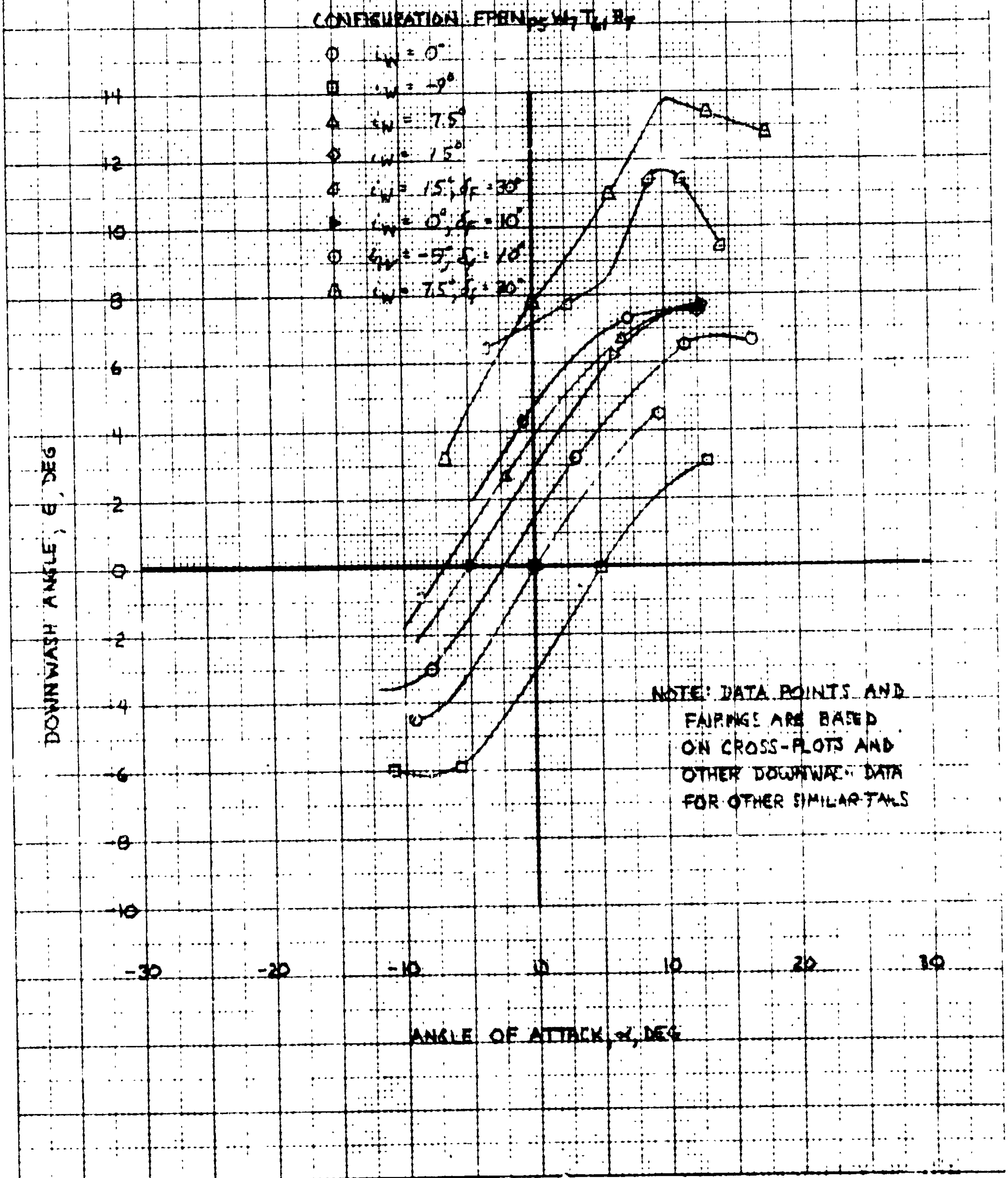
SER-72011
FIGURE 102

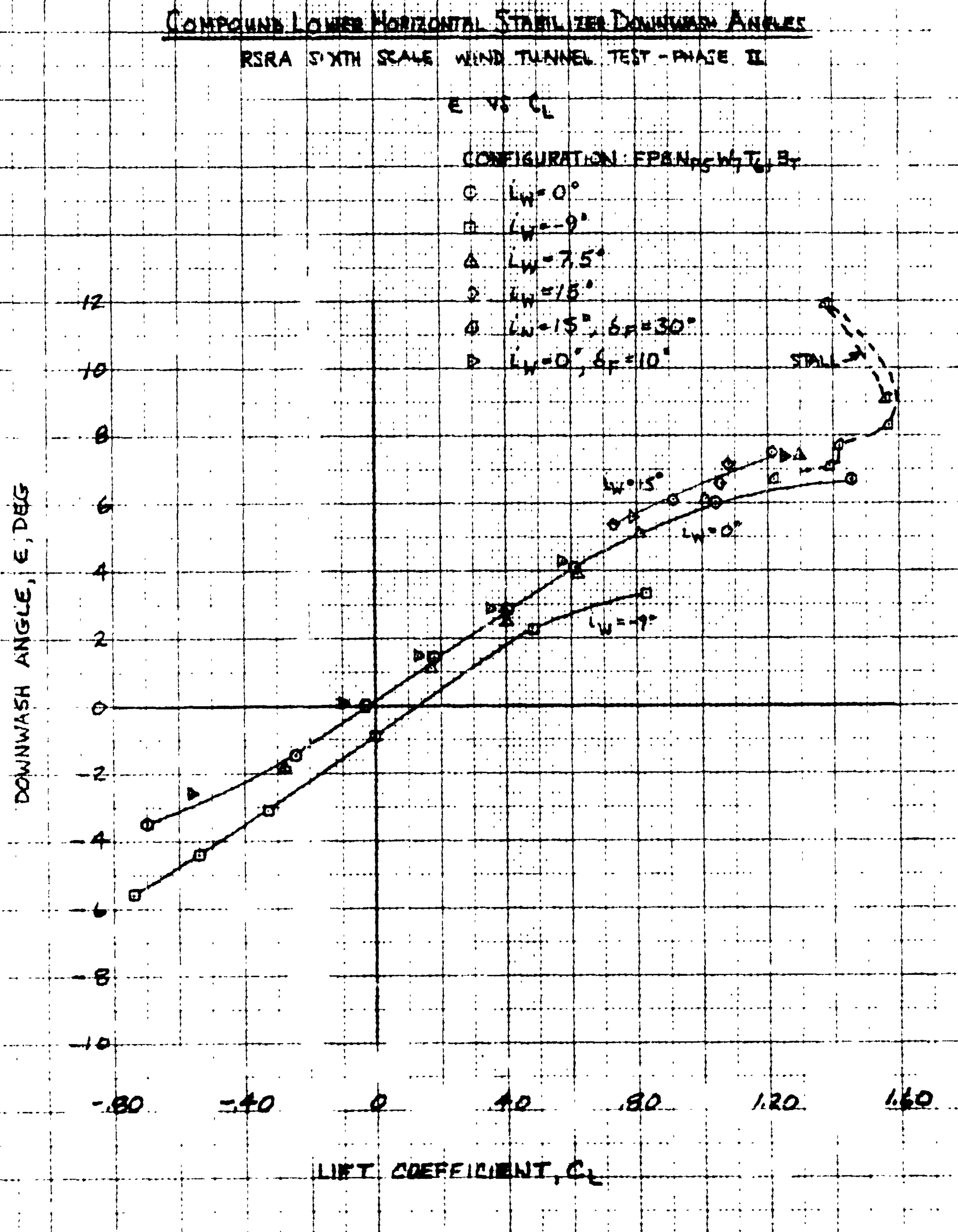


COMPOUND LOWER HORIZONTAL STABILIZER DOWNWASH ANGLES

RSRA SIXTH SCALE WIND TUNNEL TEST – PHASE II

ϵ VS α

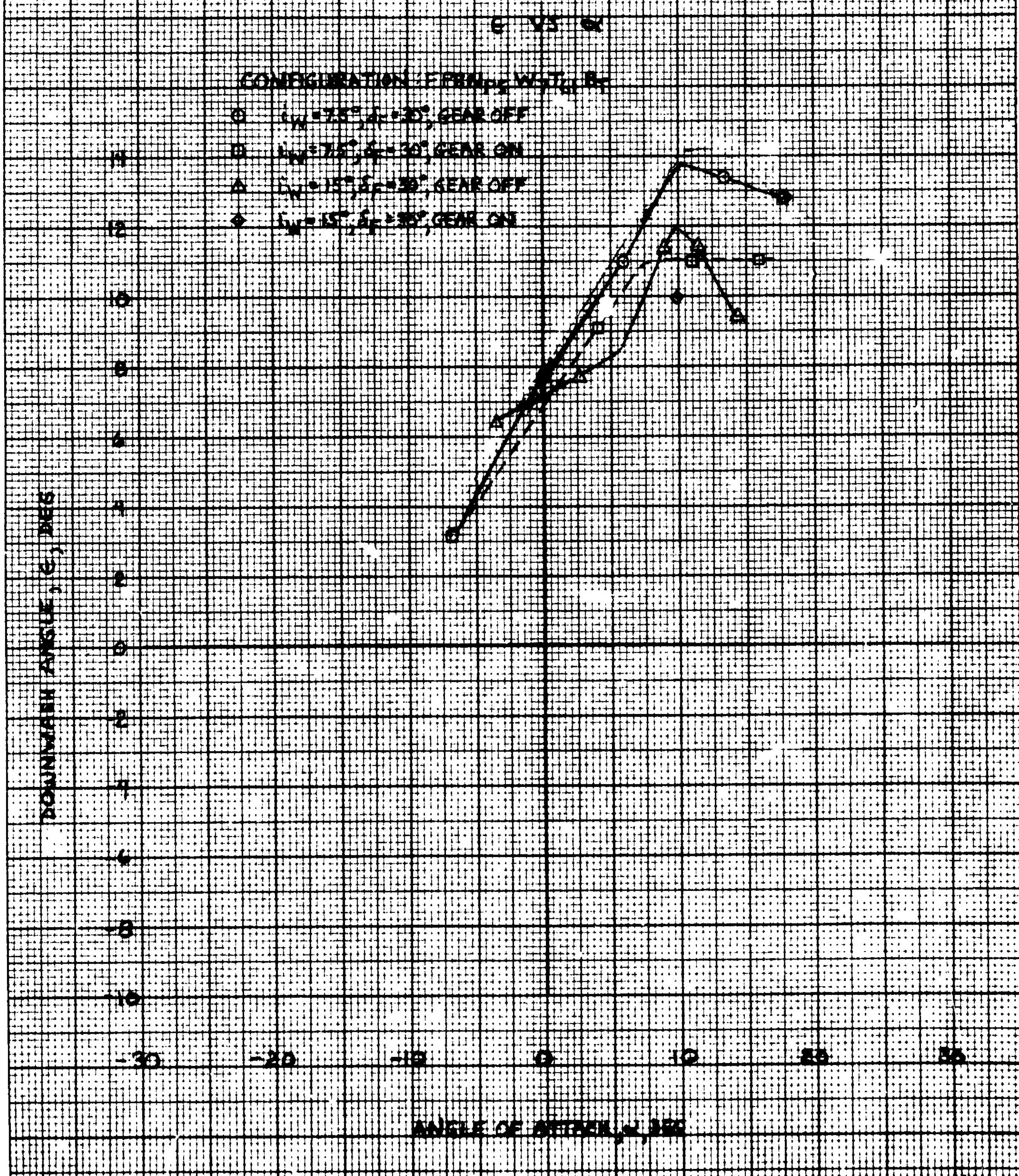



COMPOUND LOWER HORIZONTAL STABILIZER DOWNWASH ANGLES
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
ε VS C_L
CONFIGURATION: FPBN W T B
$i_W = 0°$
$i_W = -9°$
$i_W = 7.5°$
$i_W = 15°$
$i_W = 15°, \delta_F = 30°$
$i_W = 0°, \delta_F = 10°$
STALL
$i_W = 15°$
$i_W = 0°$
$i_W = -9°$
DOWNWASH ANGLE, ε, DEG
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-.80
-.40
0
.40
.80
1.20
1.60
LIFT COEFFICIENT, C_L

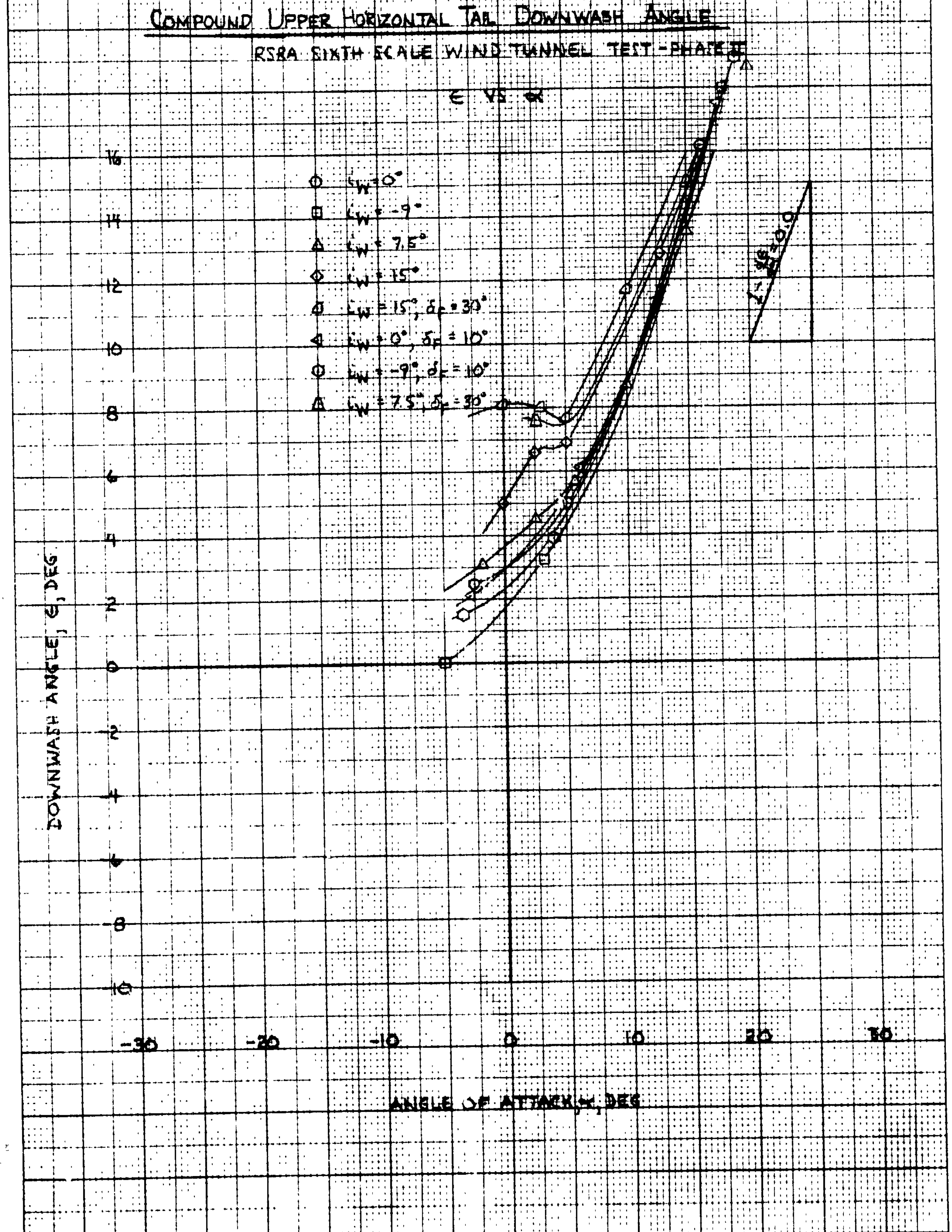
SER-72011
FIGURE 105

LANDING GEAR EFFECT ON LOWER HORIZONTAL STABILIZER DOWNWASH ANGLES

RSRA SIXTH SCALE WIND TUNNEL TEST – PHASE II



SER-72011
FIGURE 106

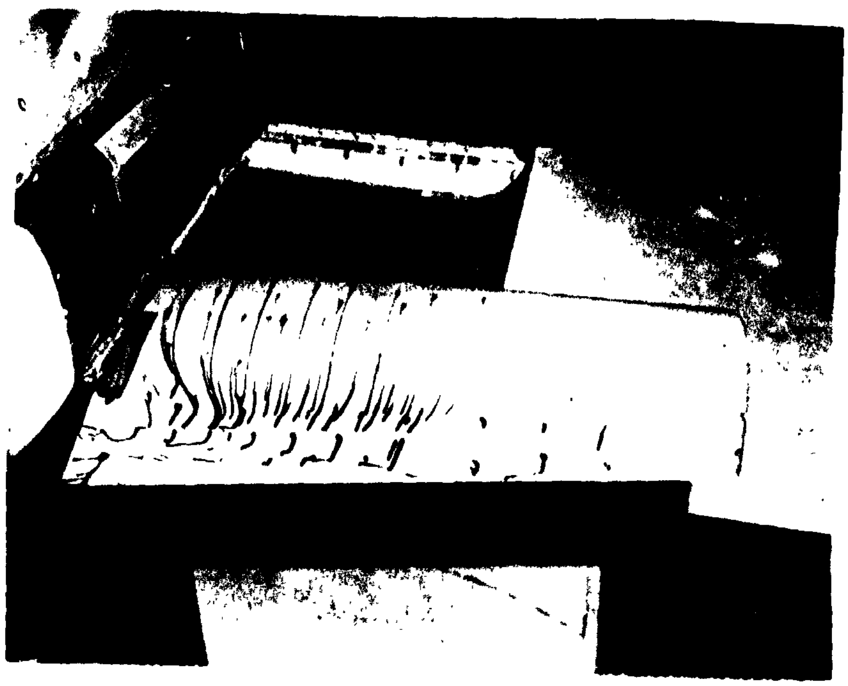


a Run 77 - WN, I_w = 10, α = 5

b Run 77 - WN, I_w = 10, α = 5

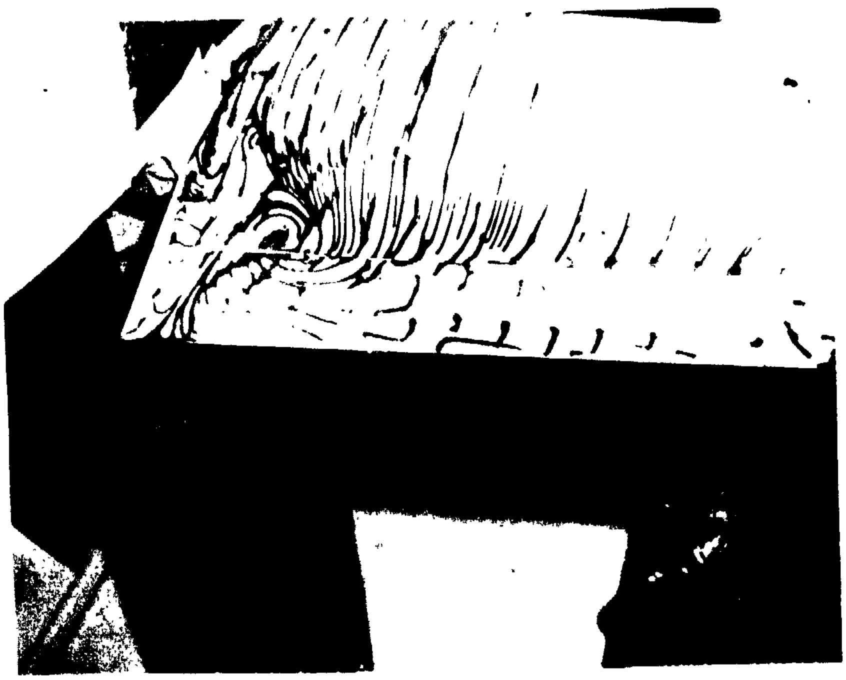
Figure 107. Wing Oil Flow Patterns - Unpowered.

c Run 78 - W, I_W = 10, α = 5

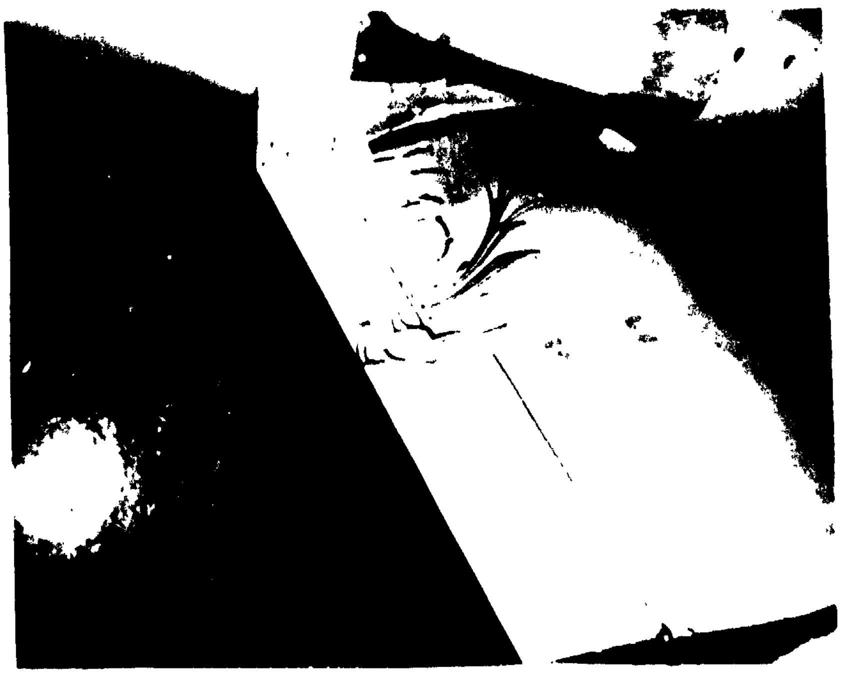


d Run 78 - W, I_W = 10, α = 5

Figure 107 - Continued



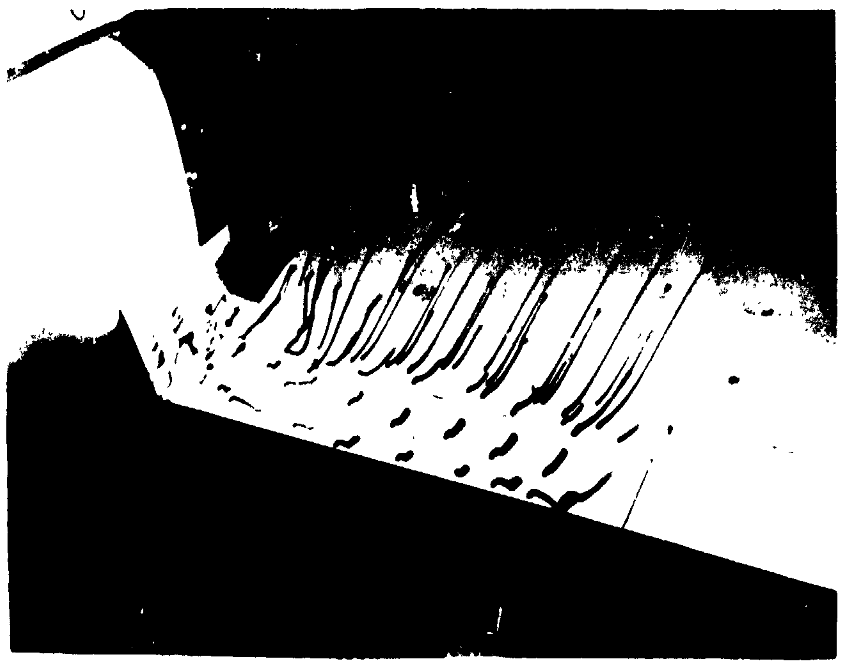
e Run 79 - W, I_W = 15, α = 5



f Run 80 - W_1N, I_W = 15, α = 0

Figure 107 - Continued

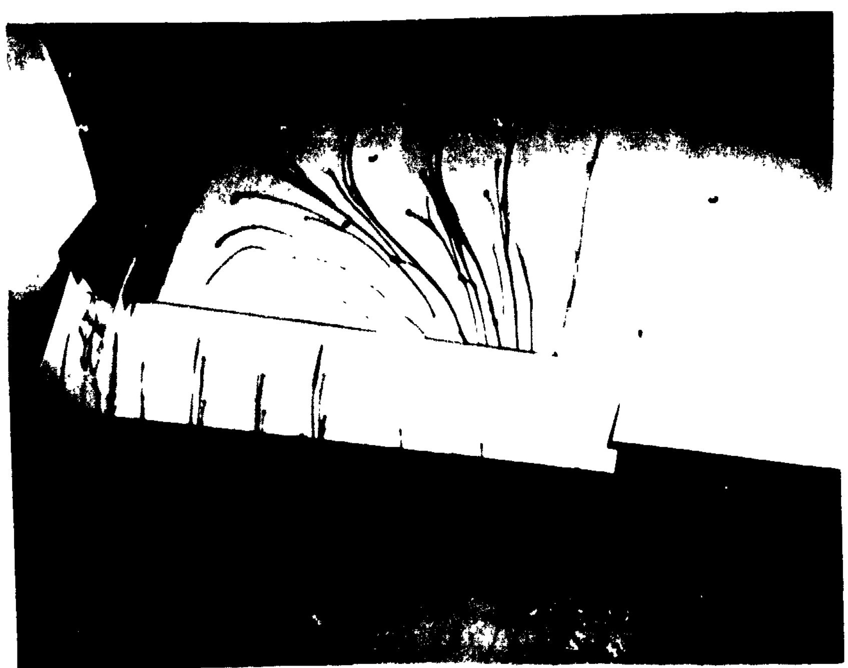
g Run 80 - W_1N, $I_w = 15$, $\alpha = 0$



h Run 81 - W_1, $I_w = 15$, $\alpha = 0$

Figure 107 - Continued

i Run 83 - W_1, $l_w = 15$, $\alpha = 2.5$



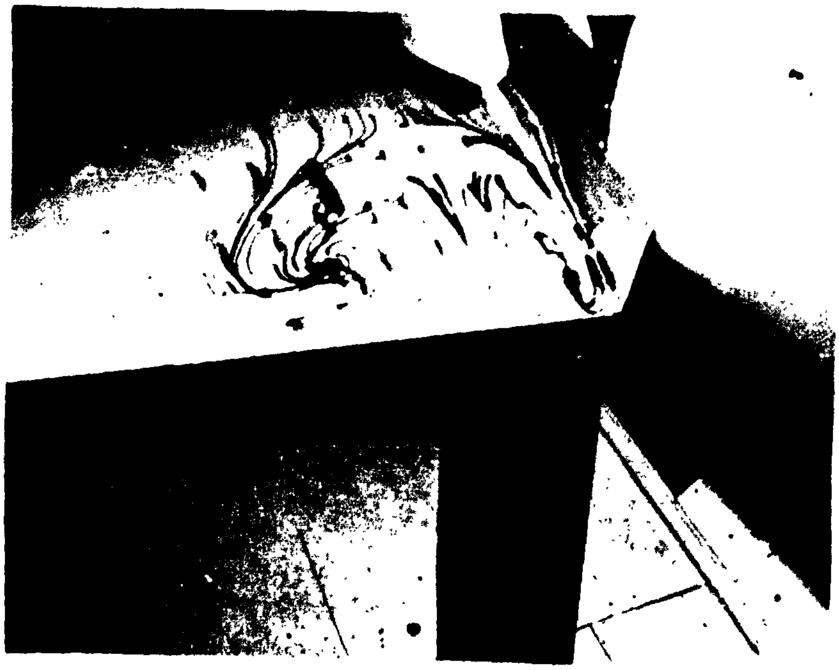
j Run 86 - W_1, $l_w = 15$, $\delta_f = 30$, $\alpha = 2.5$

Figure 107 - Continued

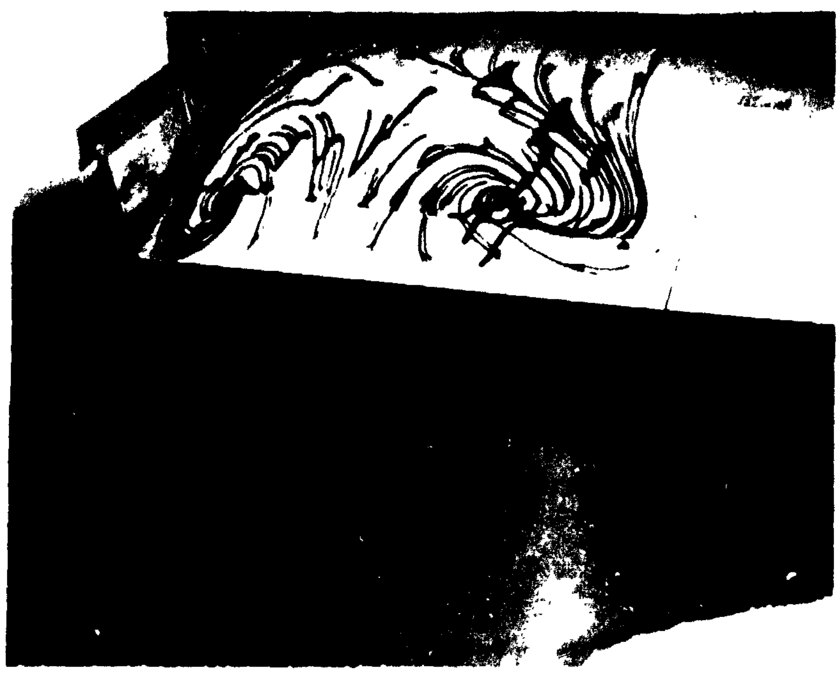
k Run 92 - W_1N, $I_w = 15$, $\alpha = 0$

l Run 92 - W_1N, $I_w = 15$, $\alpha = 0$

Figure 107 - Continued

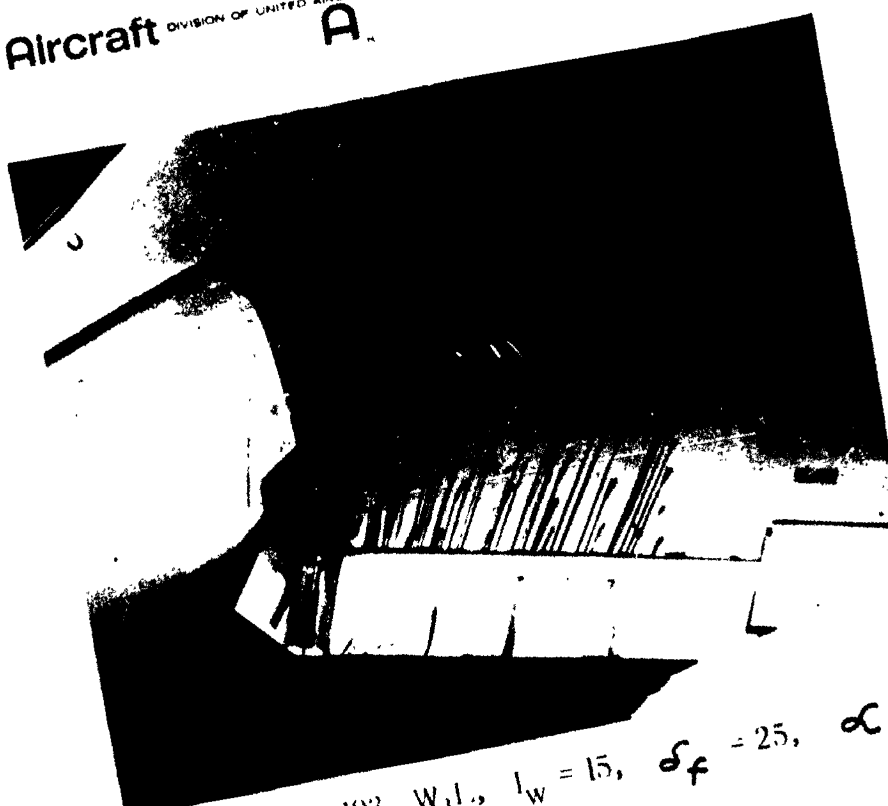


m Run 97 - W_1N, $I_W = 15$, $\alpha = 0$

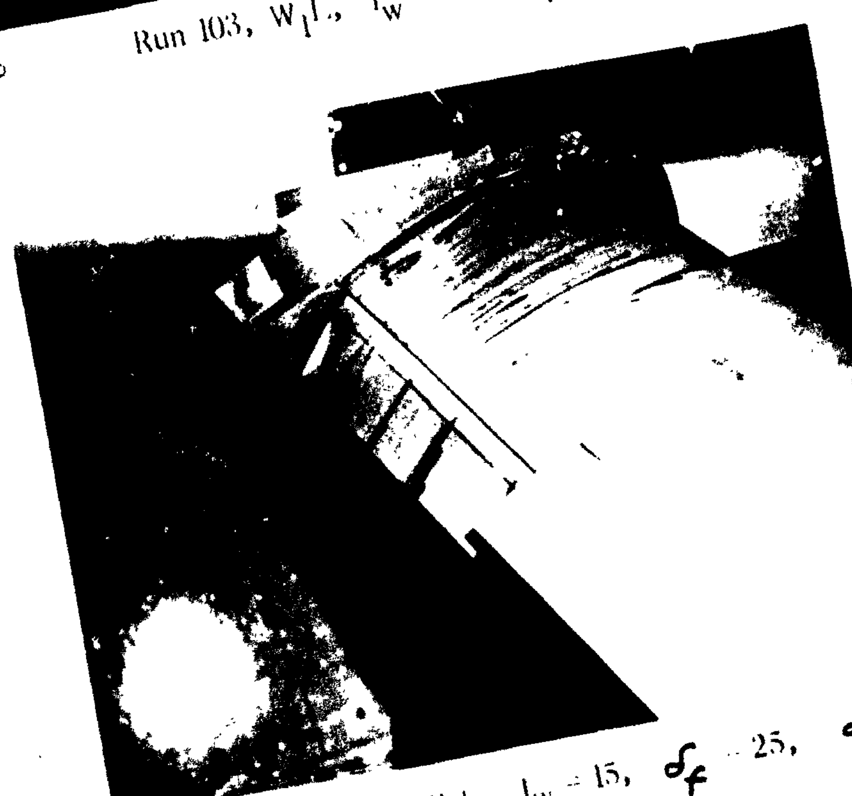


n Run 97 - W_1N, $I_W = 15$, $\alpha = 0$

Figure 107 - Continued

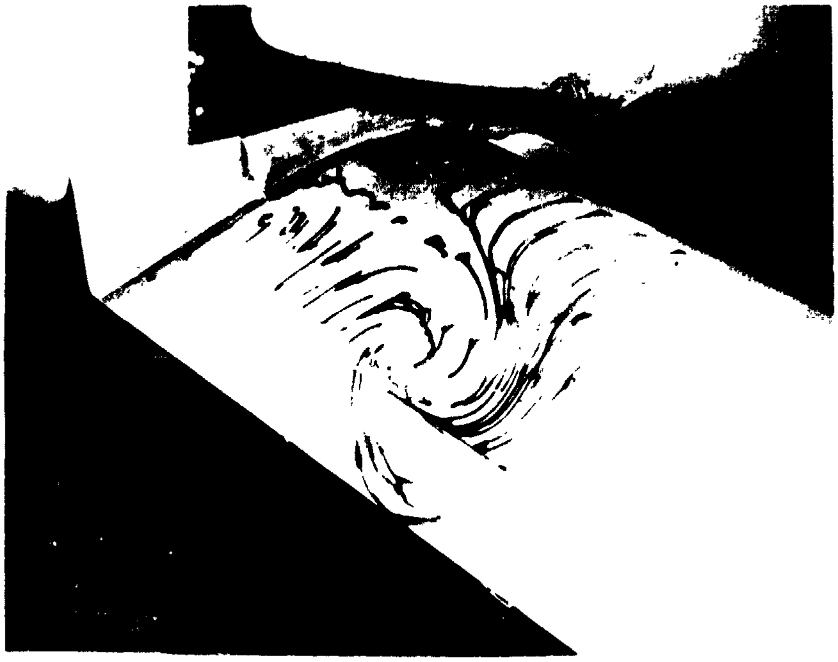


Run 103, W_1L, $I_w = 15$, $\delta_f = 25$, $\alpha = 0$

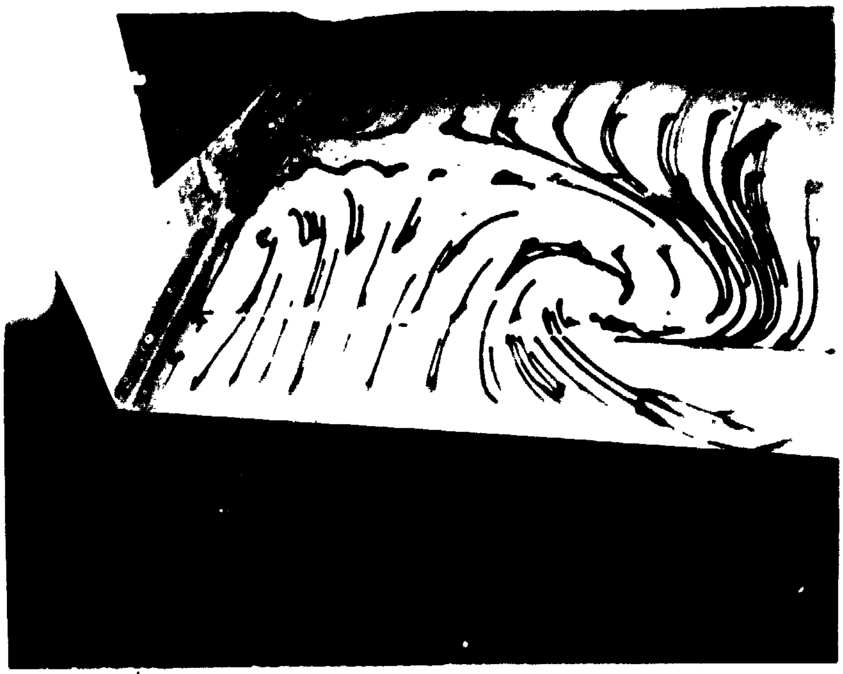


Run 103, W_1L, $I_w = 15$, $\delta_f = 25$, $\alpha = 0$

Figure 107 - Continued

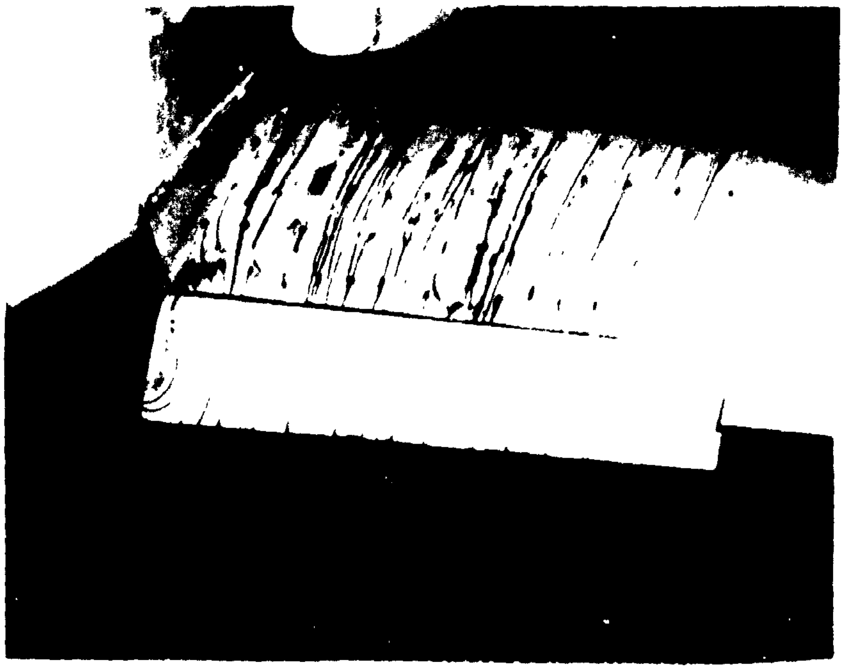


t Run 109, W_1N + Spoiler, $I_w = 15$, $\alpha = 0$



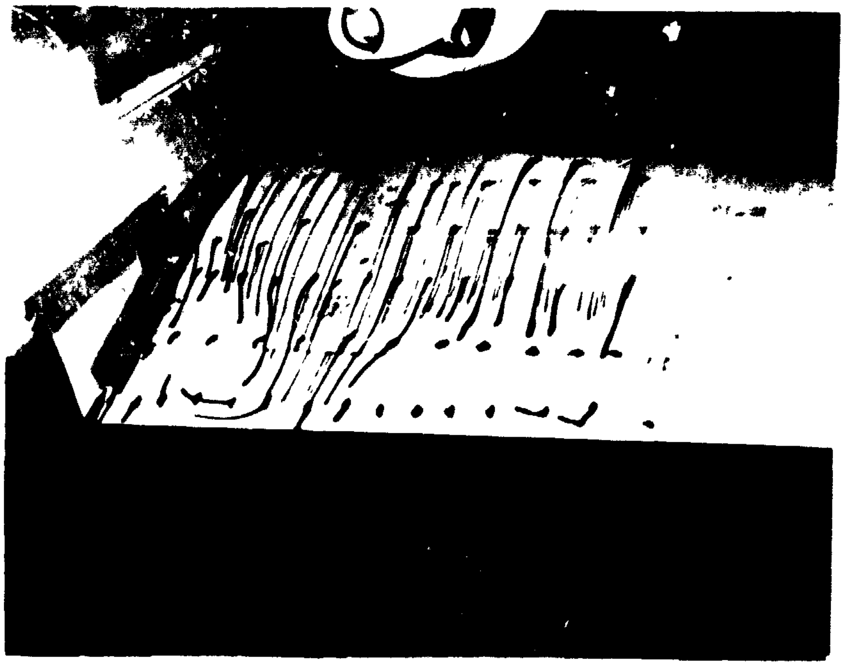
r Run 109, W_1N + Spoiler, $I_w = 15$, $\alpha = 0$

Figure 107 - Con

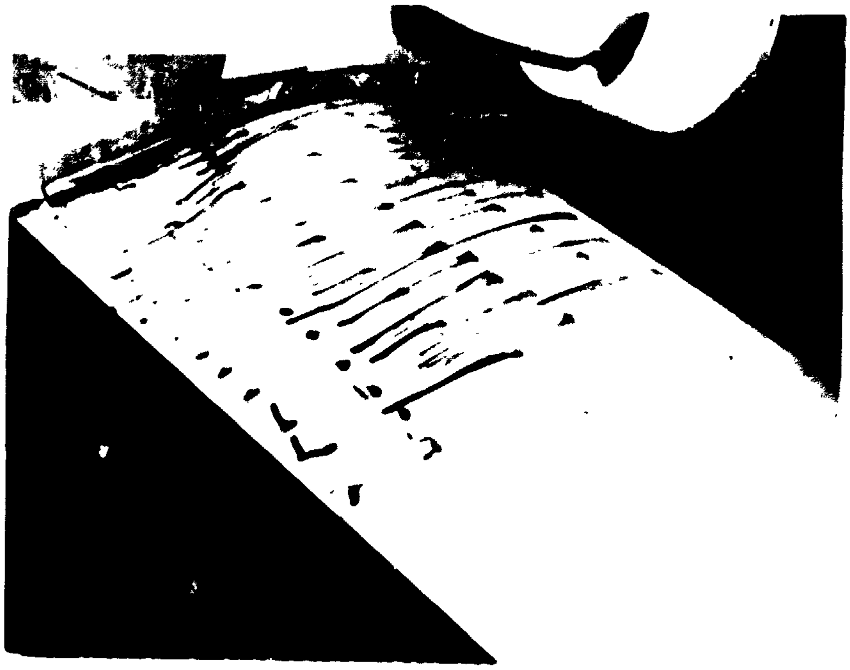


Run 281, W_5N, $I_w = 15$, $\delta_f = 30$

Figure 108. Wing Oil Flow With Wing Fences Installed - Unpowered.

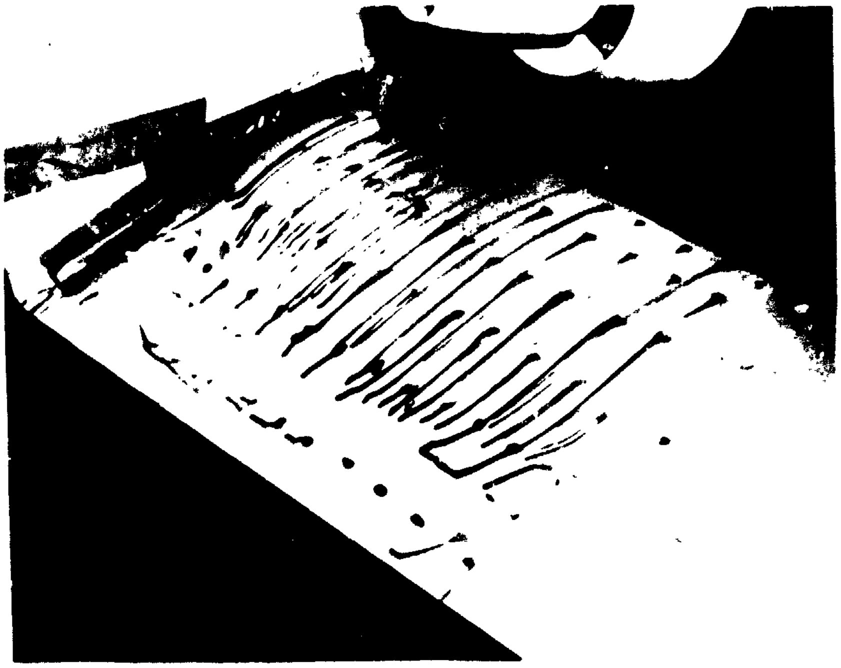


a Run 124, W_1N_p, Windmill, i_w = 15, α = 0

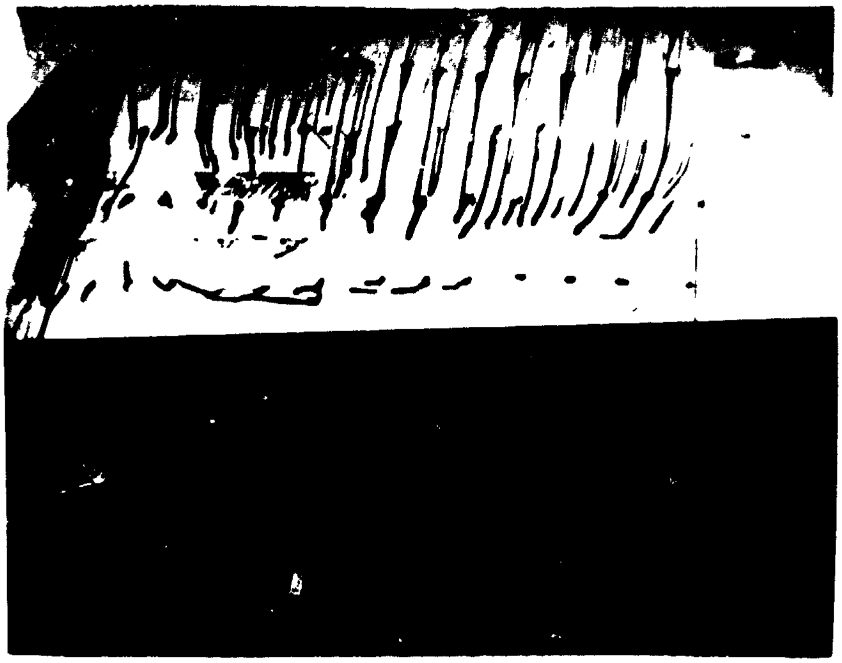


b Run 124, W_1N_p, Windmill, i_w = 15, α = 0

Figure 109. Wing Oil Flow Patterns - Powered.

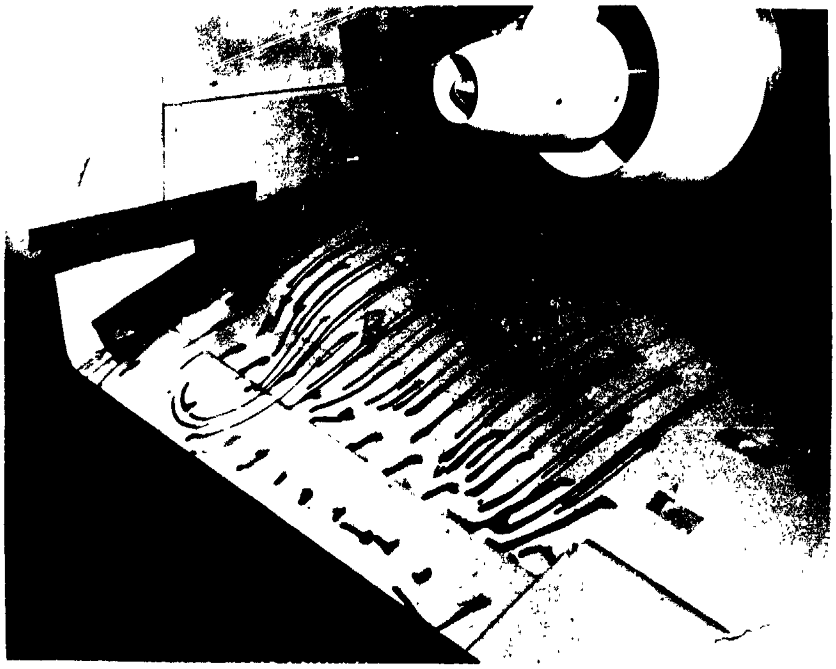


c. Run 125, W_1N_p, Trim, $I_w = 15$, $\alpha = 0$

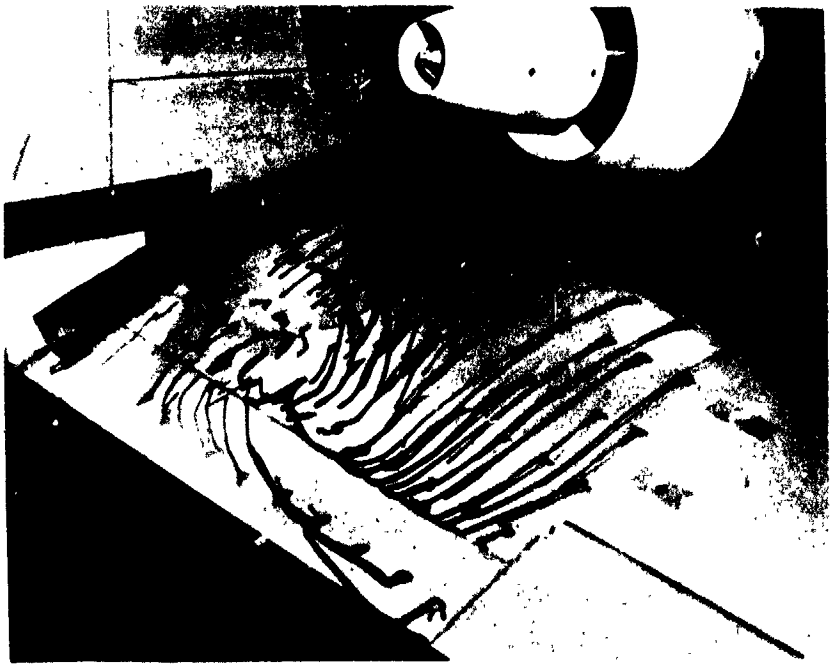


d. Run 125, W_1N_p, Trim, I_w 15, α 0

Figure 1?? - Continued

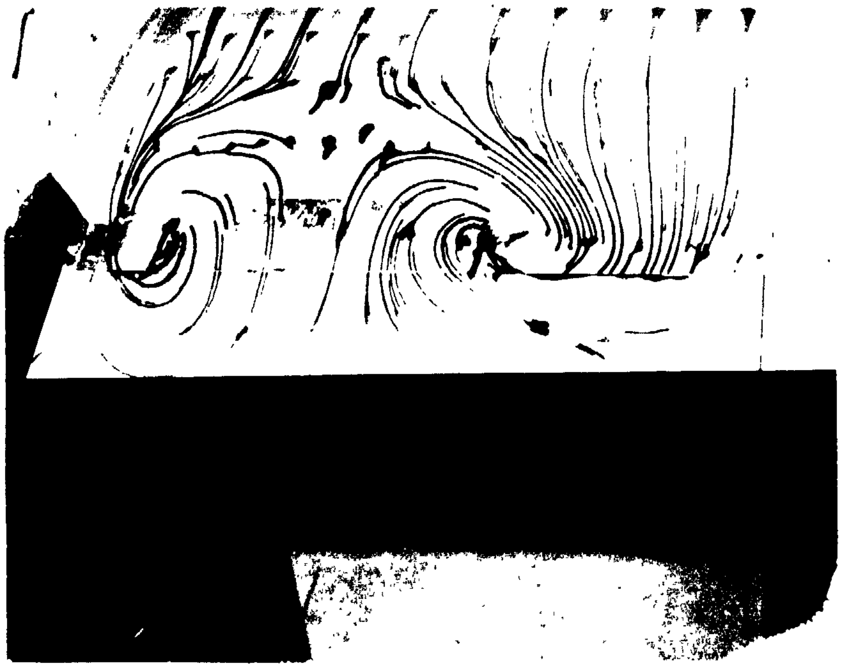


e Run 126, W_1N_{p2}, Windmill, I_w = 15, $\alpha = 0$

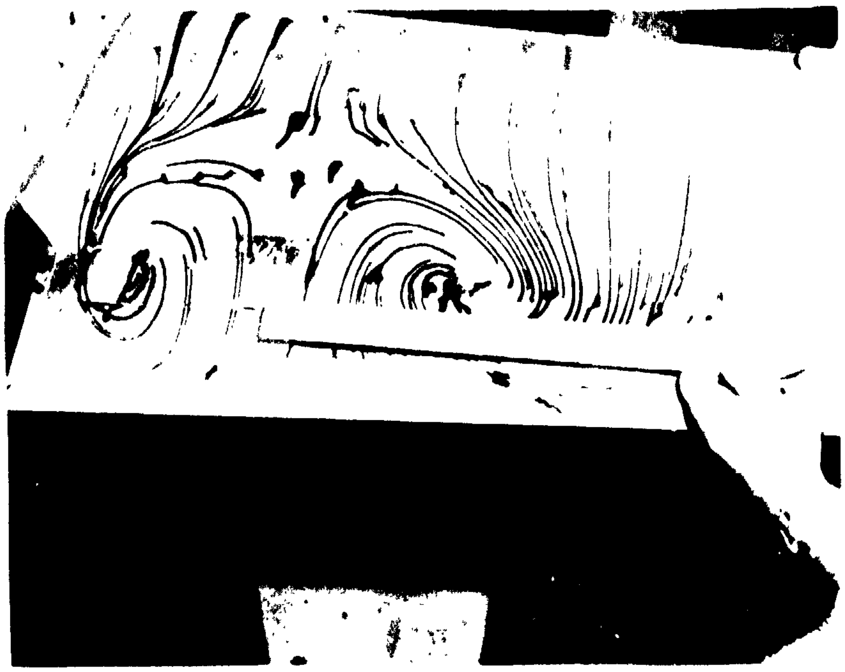


f Run 127, W_1N_{p2}, Trim, I_w = 15, $\alpha = 0$

Figure 109 - Continued

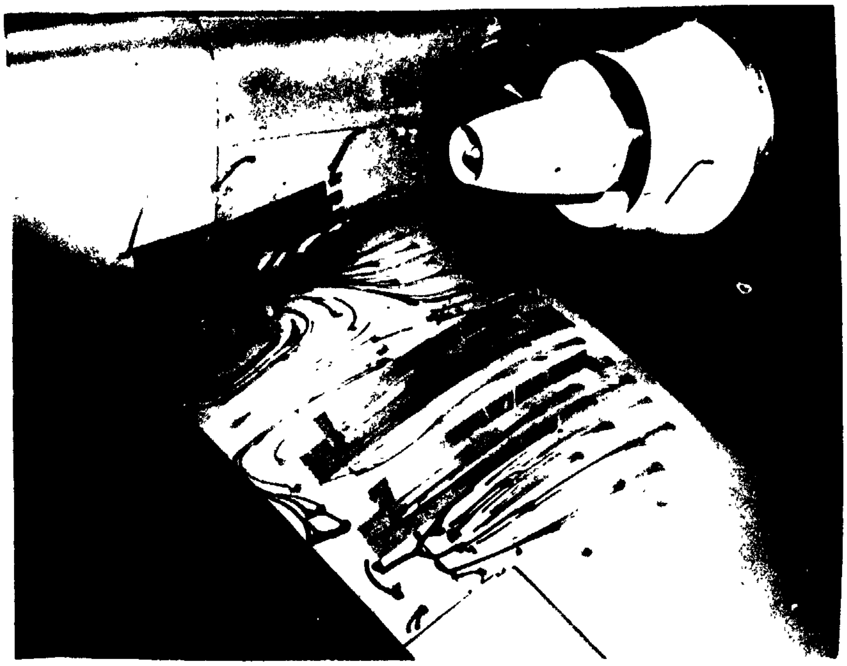


g Run 148, WN_{pl} + Splitter, Trim, I_w = 15, α = 0

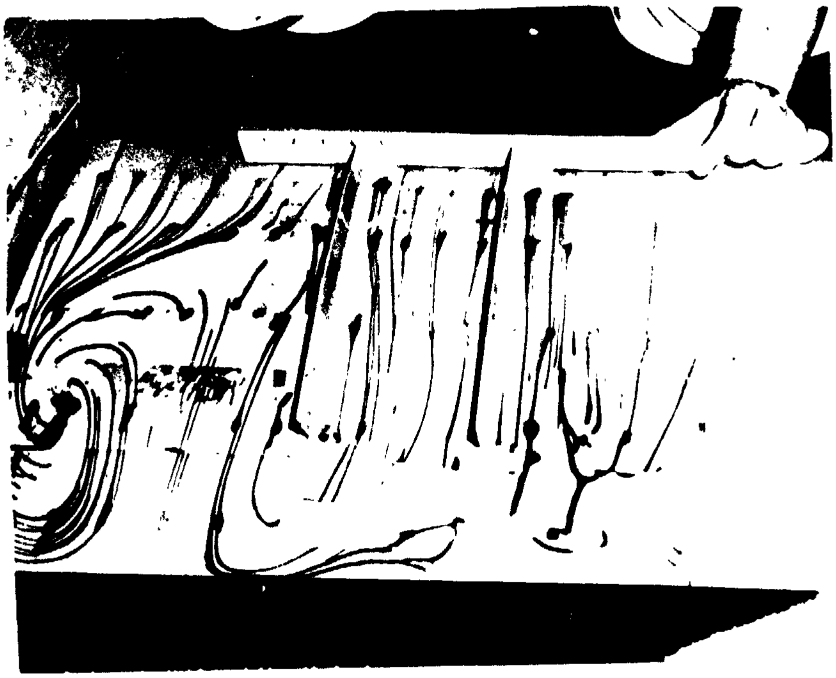


h Run 148, WN_{pl} + Splitter, Trim, I_w = 15, α = 0

Figure 109 - Continued

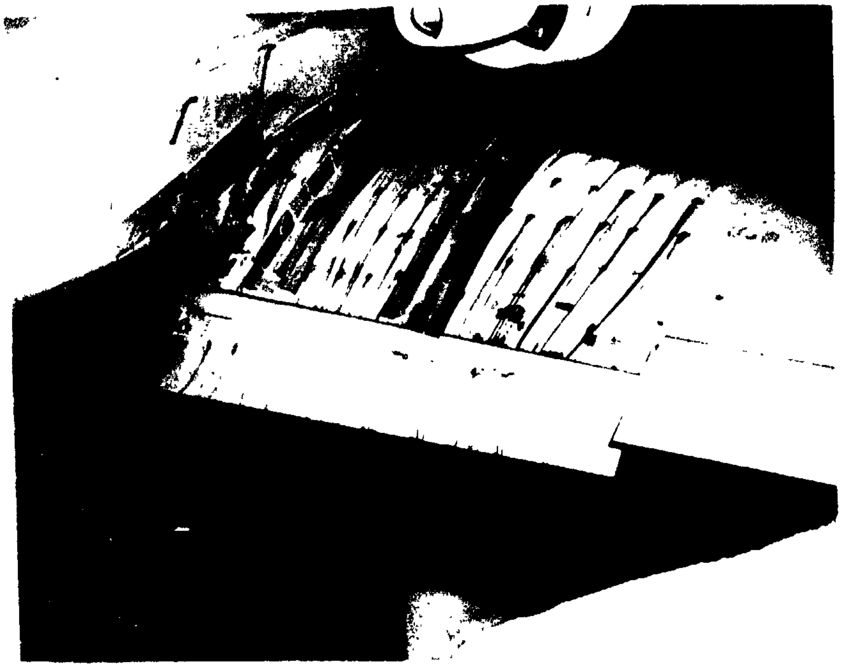


i Run 149, W_2N_{pl}, Trim, $I_w = 15$, $\alpha = 0$

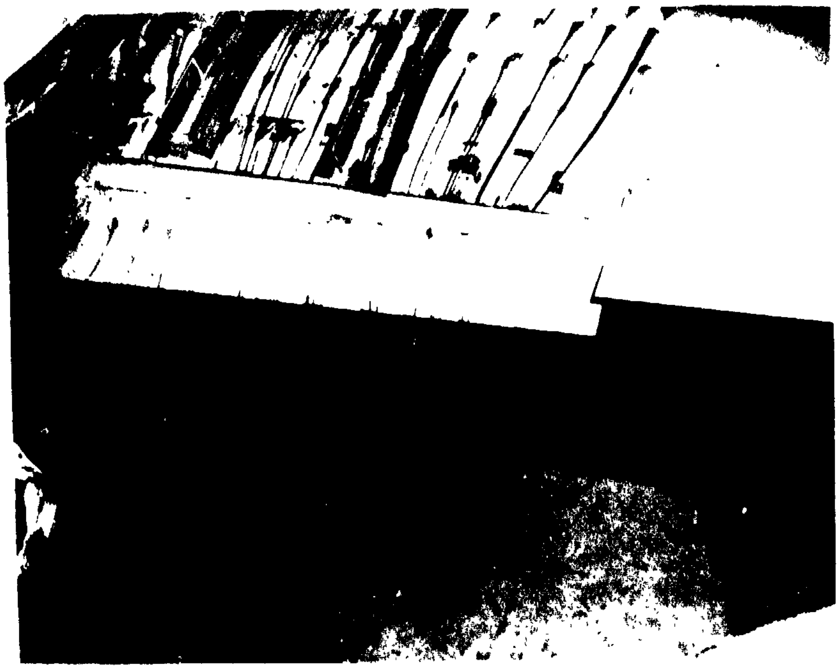


j Run 149, W_2N_{pl}, Trim, $I_w = 15$, $\alpha = 0$

Figure 109 - Continued



k Run 152, $W_3 N_{pl}$, Trim, $I_w = 15$, $\delta_f = 25$, $\alpha = 0$

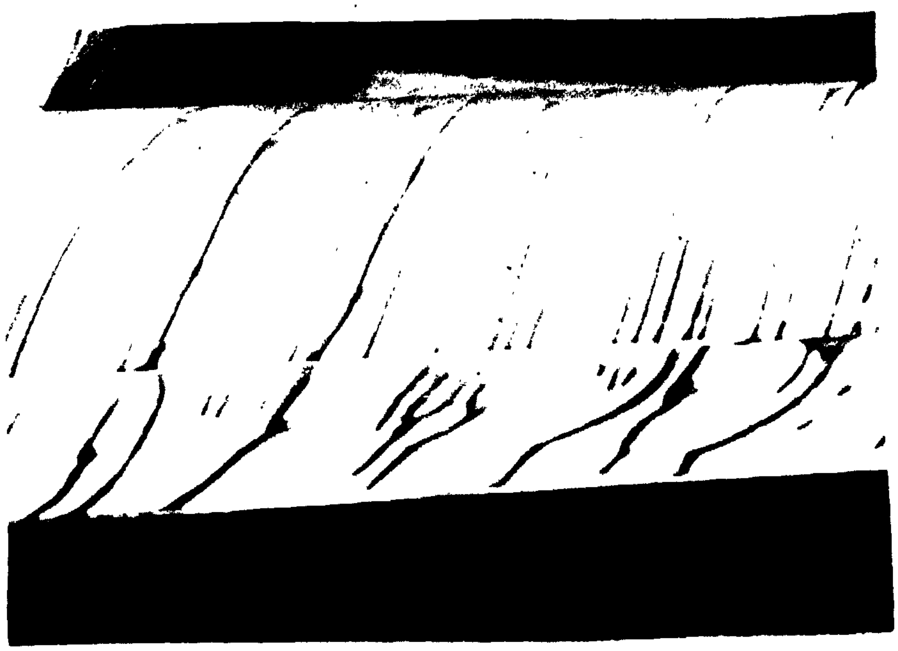


l Run 152, $W_3 N_{pl}$, Trim, $I_w = 15$, $\delta_f = 25$, $\alpha = 0$

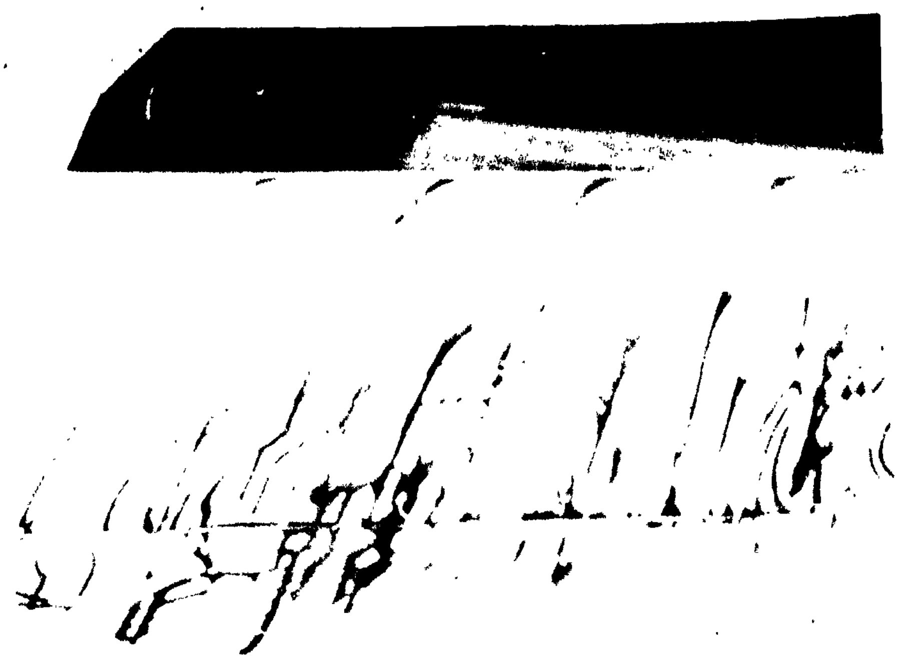
Figure 109 - Continued

m Run 155, W_3N_{p1}, Trim, $I_w = 15$, $\alpha = 0$

Figure 109 - Concluded



a. Run 478, $N_{P5}W_8$, Trim Power, i_w = [illegible]°, $\alpha = 10^\circ$



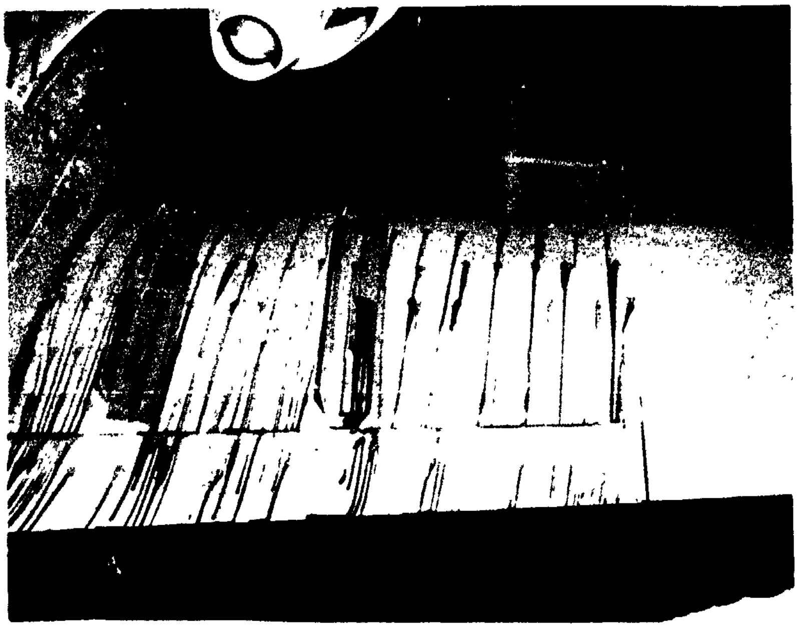
b. Run 479, $N_{P5}W_8$, Trim Power, $i_w = 0^\circ$, $\alpha = 15^\circ$

Figure 110. Wing Oil Flow Without Fences - Powered.

c. Run 473, $N_{P5}W_8$, Trim Power, $i_w = 15^{\circ}$, $\alpha = 2.5^{\circ}$.

d. Run 475, $N_{P5}W_8$, Trim Power, $i_w = 15^{\circ}$, $_F = 30^{\circ}$, $\alpha = 2.5^{\circ}$

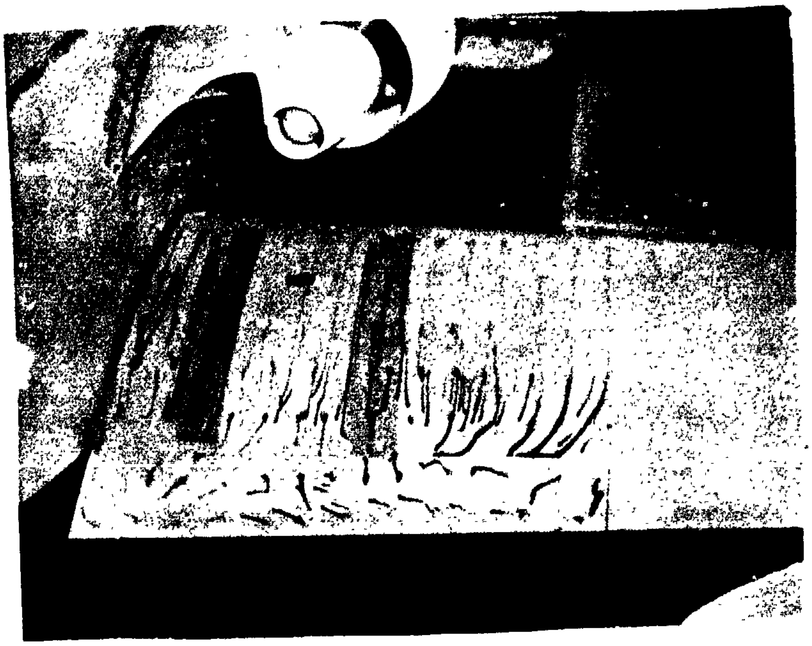
Figure 110 - Concluded.



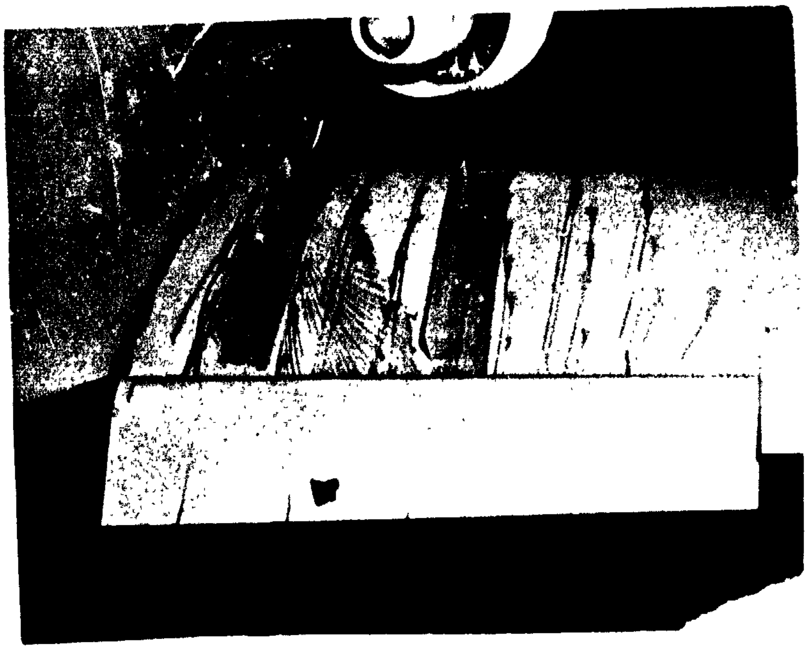
a. Run 484, $N_{P5}W_7$, Trim Power, $i_w = 0^\circ$, $\alpha = 0^\circ$

b. Run 484, $N_{P5}W_7$, Trim Power, $i_w = 0^\circ$, $\alpha = 15^\circ$

Figure 111. Wing Oil Flow With Fences - Powered.



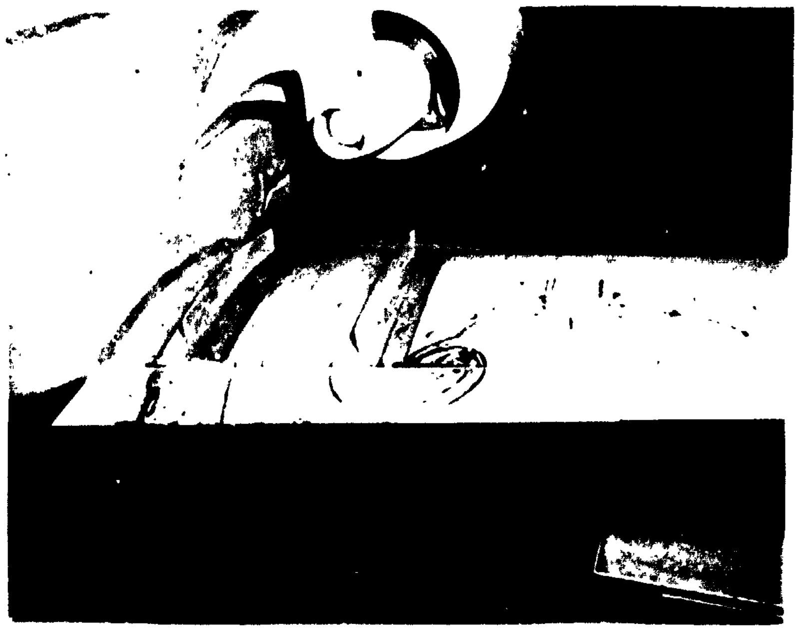
c. Run 489, $N_{P5}W_7$, Trim Power, $i_W = 15^\circ$, $\alpha = 2.5^\circ$



d. Run 490, $N_{P5}W_7$, Trim Power, $i_W = 15^\circ$, $\delta_F = 30^\circ$, $\alpha = 2.5^\circ$

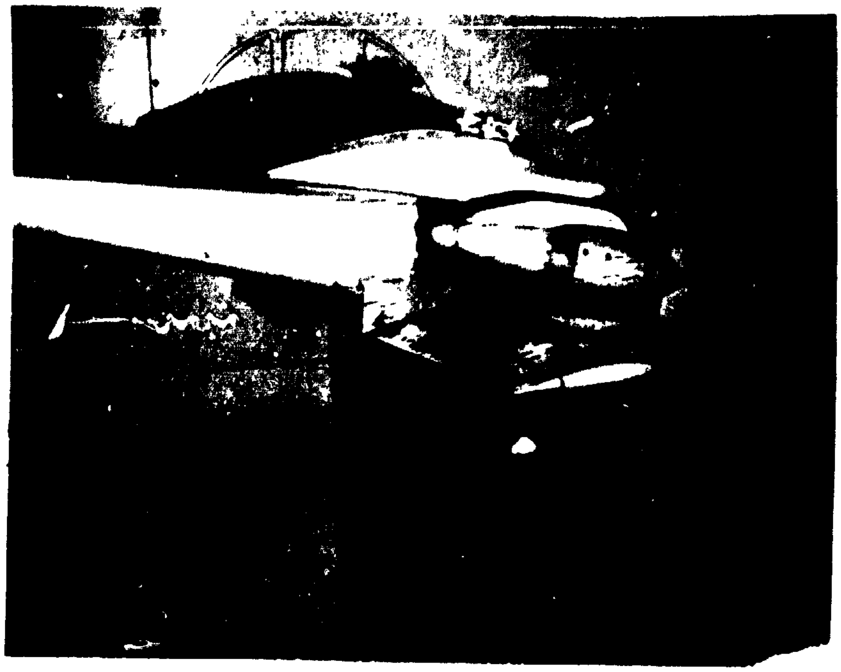
Figure 111 - Continued

e. Run 493, $N_{P5}W_7$, Trim Power, $i_w = 0^\circ$ $\alpha = 15^\circ$, $i_N = 0^\circ$

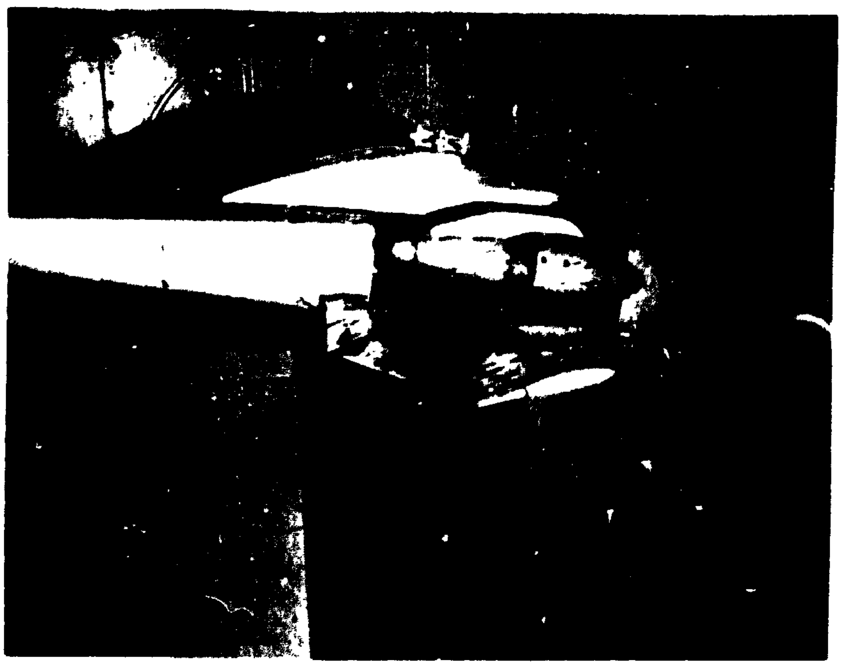


f. Run 495, $N_{P5}W_7$, Trim Power, i_w = [illegible]°, $\alpha = 15^\circ$, $i_N = 5^\circ$

Figure 111 - Concluded

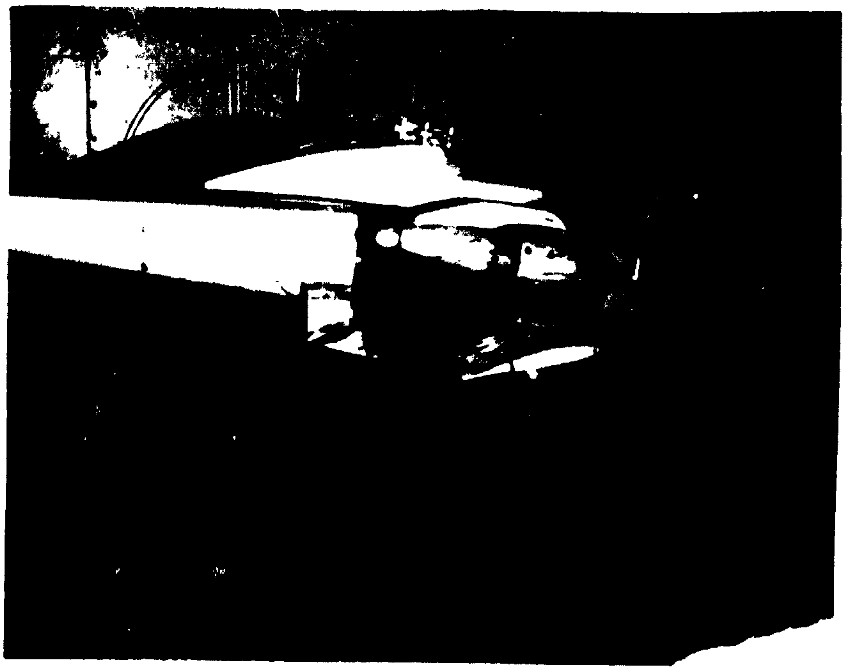


a Run 94 - W_1N, $i_w = 15$, α = -10

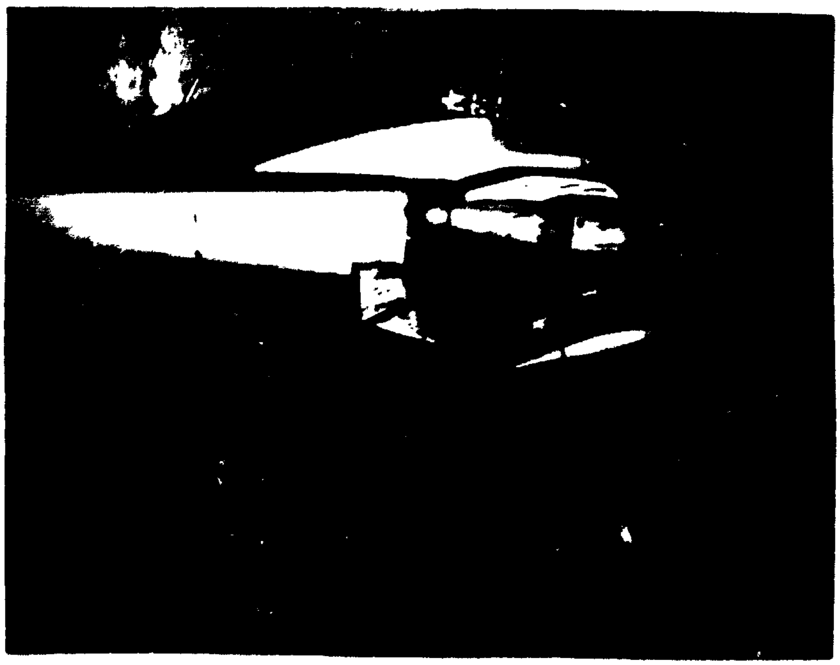


b Run 94 - W_1N, i_w 15, α = -8

Figure 112. Wing and Nacelle Flow vs. Angle of Attack, i_w = 15 Deg.

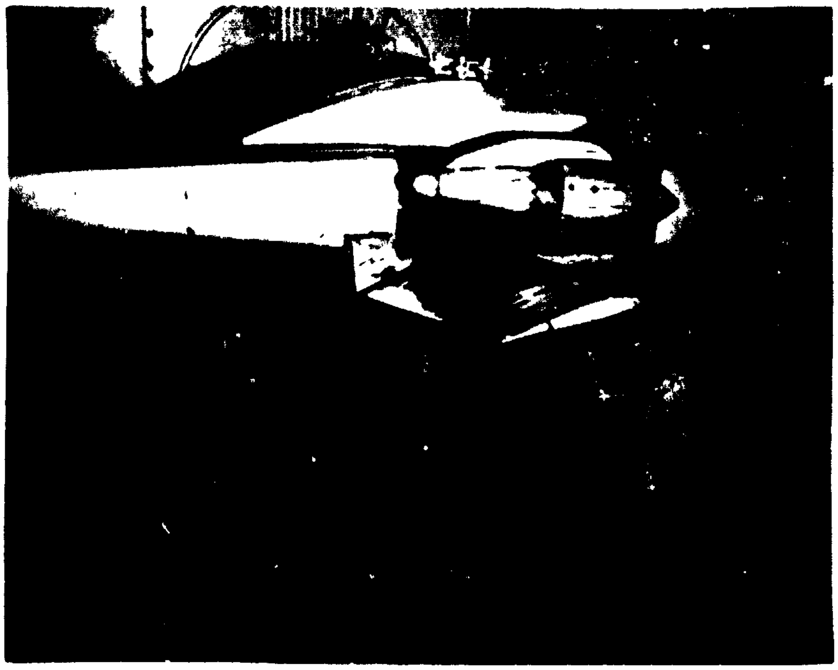


c Run 94 - W_1N, $I_w = 15$ $\alpha = -6$

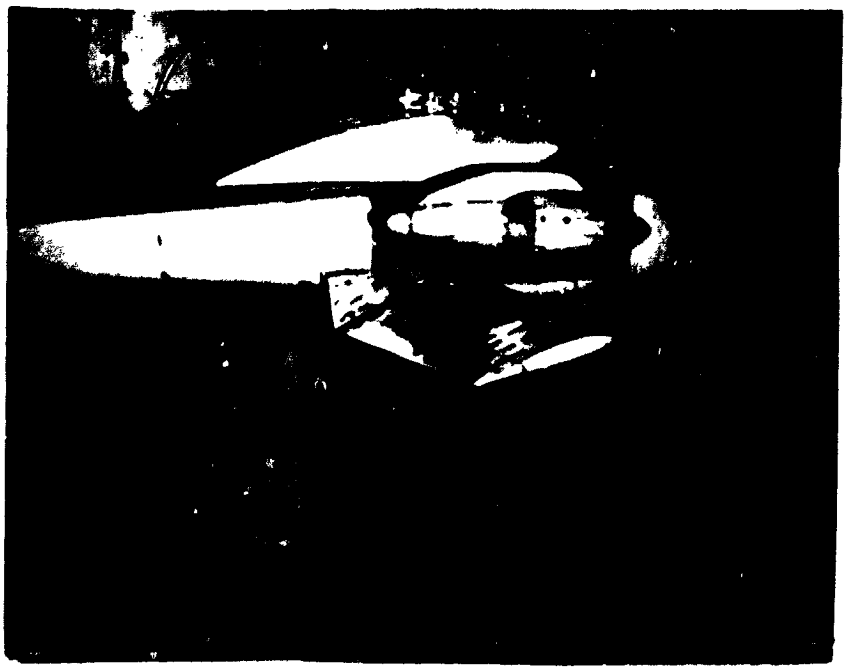


d Run 94 - W_1N, $I_w = 15$, $\alpha = -4$

Figure 112 - Continued

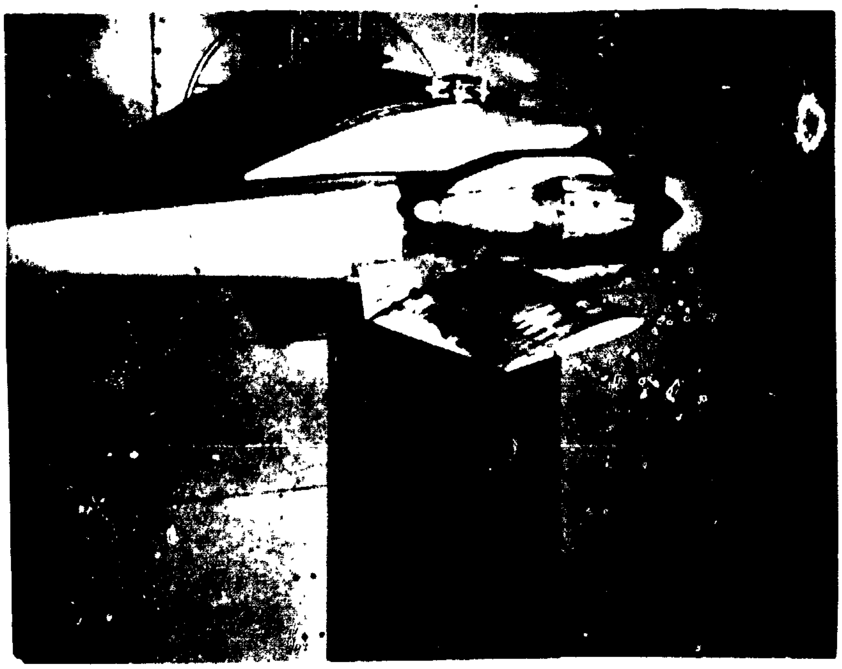


e Run 94 - W_1N, $I_w = 15$, α -2

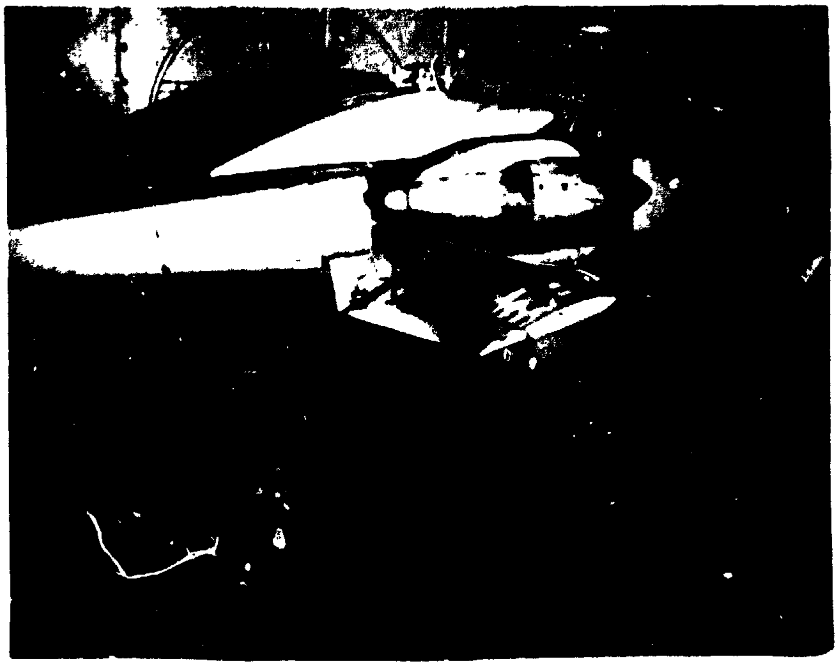


f Run 94 - W_1N, $I_w = 15$, α 0

Figure 112-Continued

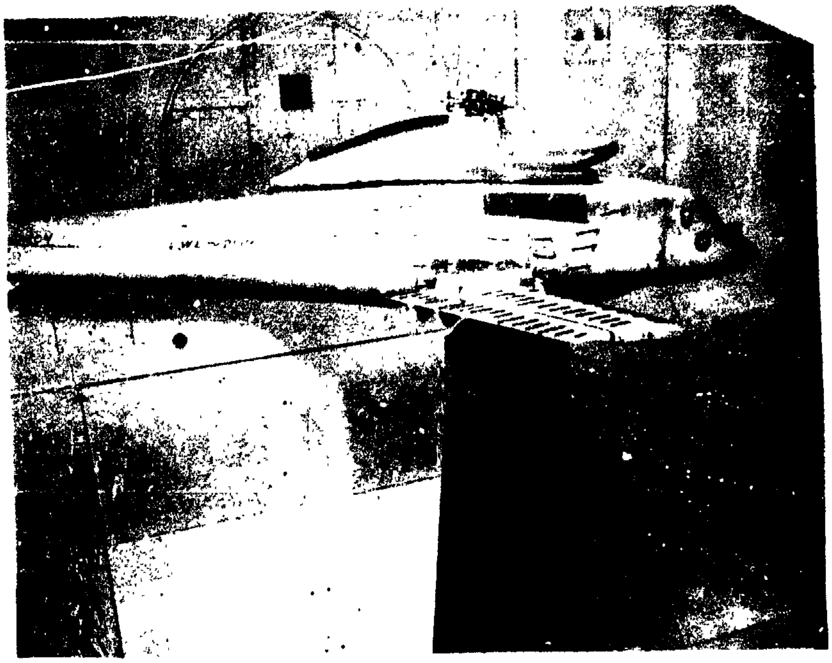


g Run 94 - W_1N, $i_w = 15$, $\alpha = 2$

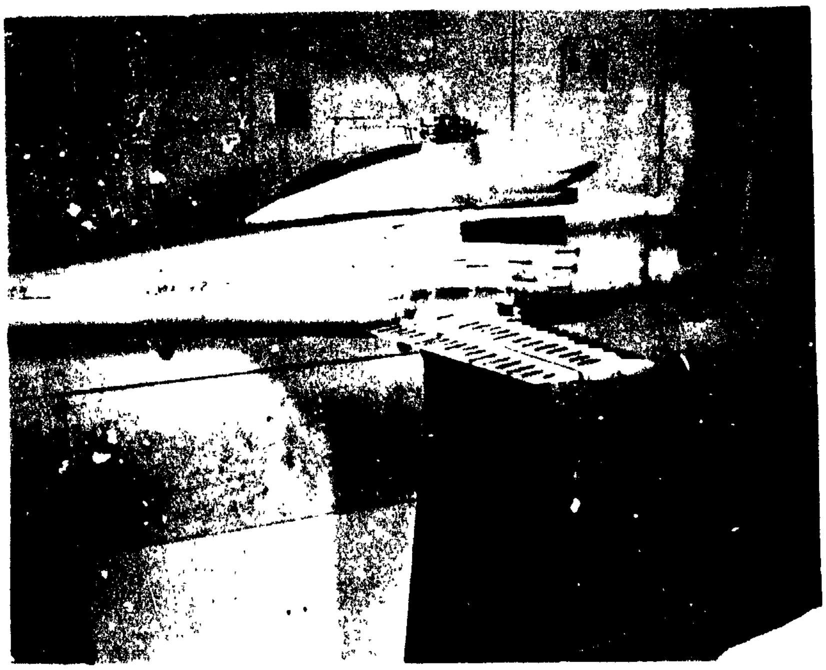


h Run 94 - W_1N, i_w 15, α 4

Figure 112 - Concluded

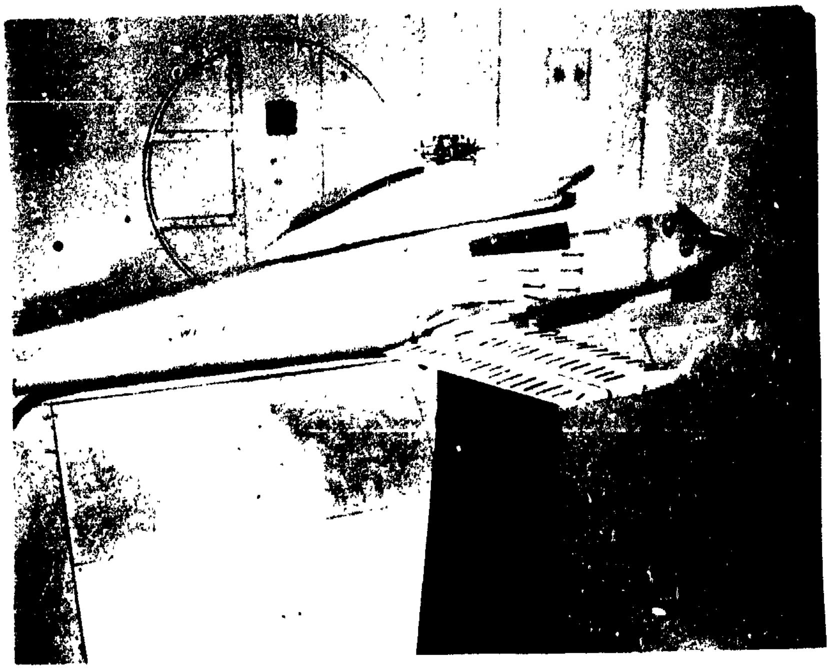


a Run 416, W_5, I_W = 0, α = -5

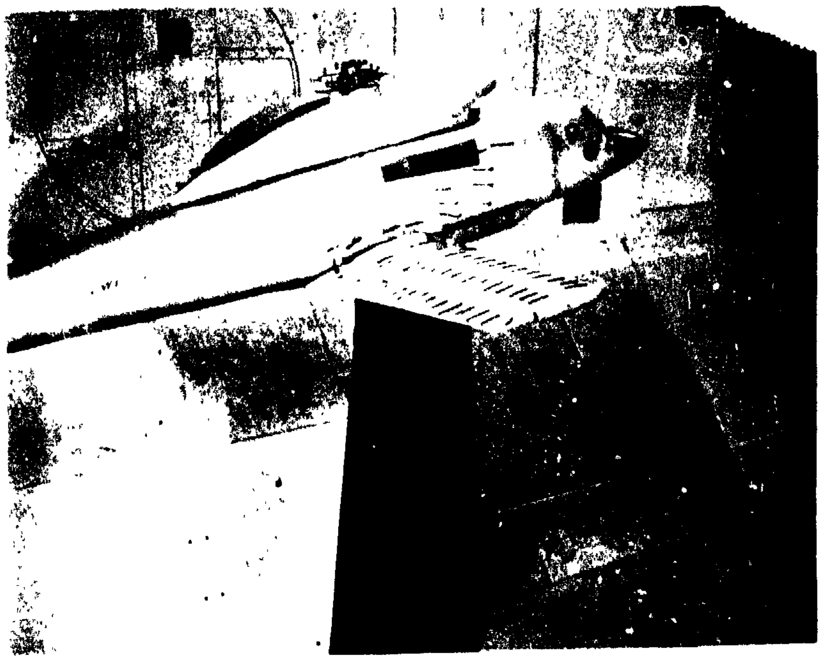


b Run 416, W_5, I_W = 0, α = 0

Figure 113. Wing Flow Vs. Angle of Attack, i_e = 0 Deg.

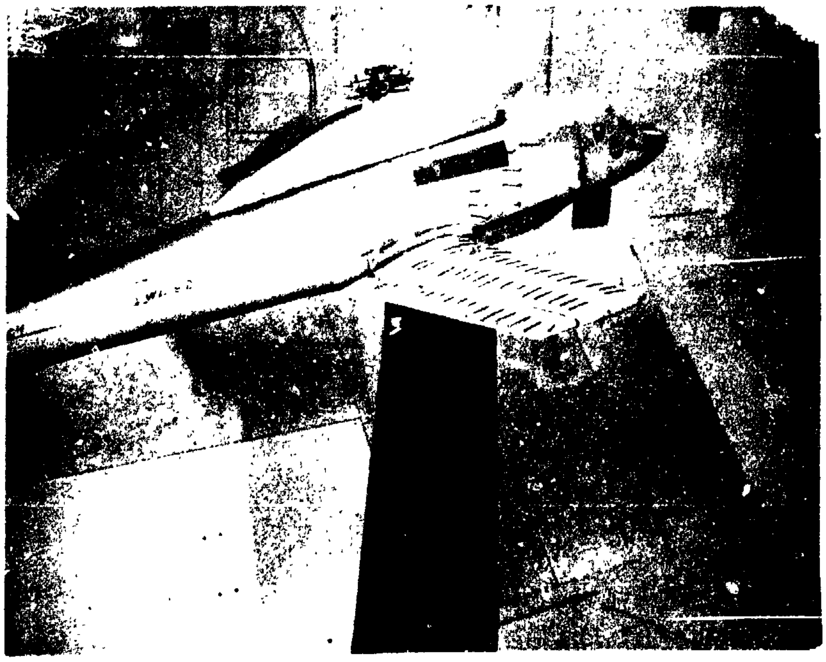


c Run 416, W_5, i_w = 0, α = 5

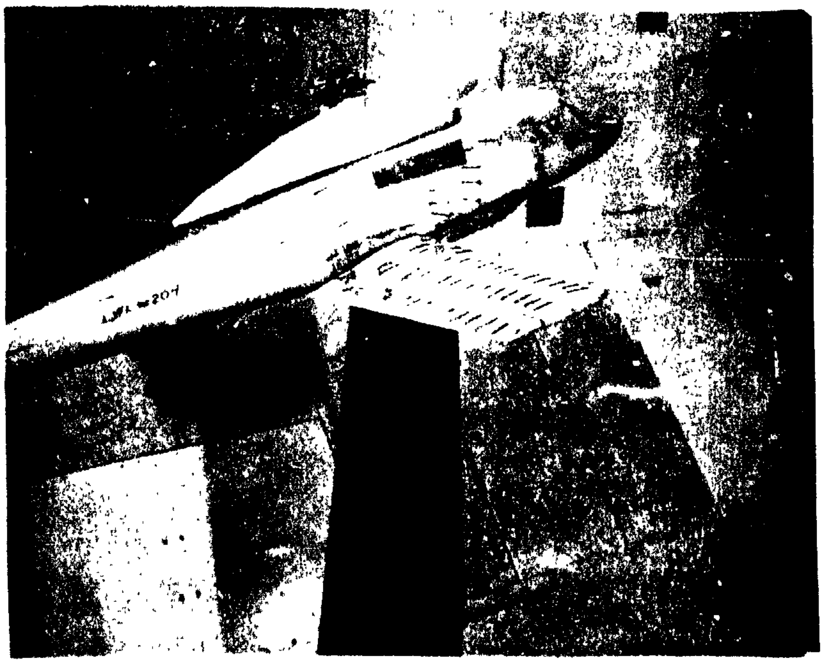


d Run 416, W_5, i_w = 0, α = 10

Figure 113 - Continued

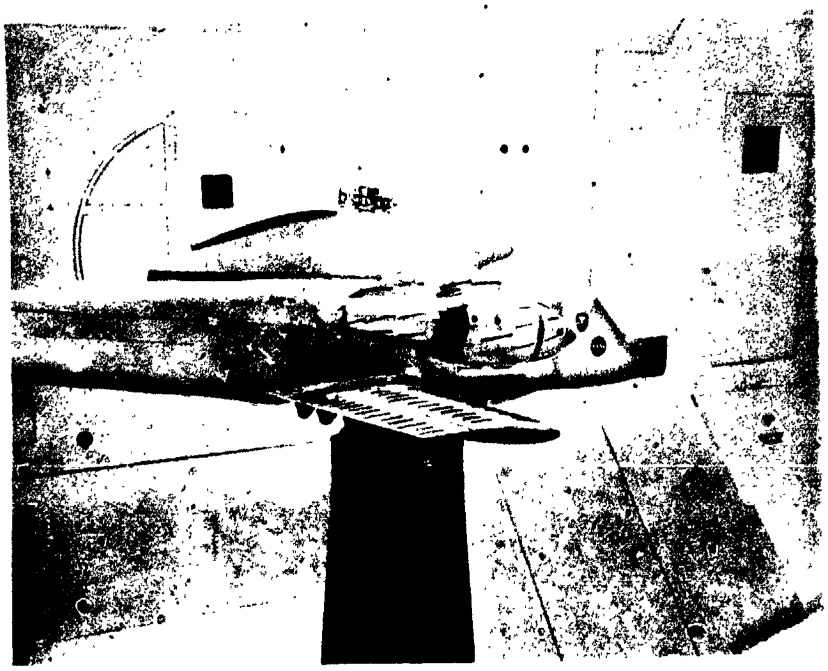


e Run 416, W_5, $I_W = 0$, $\alpha = 12.5$

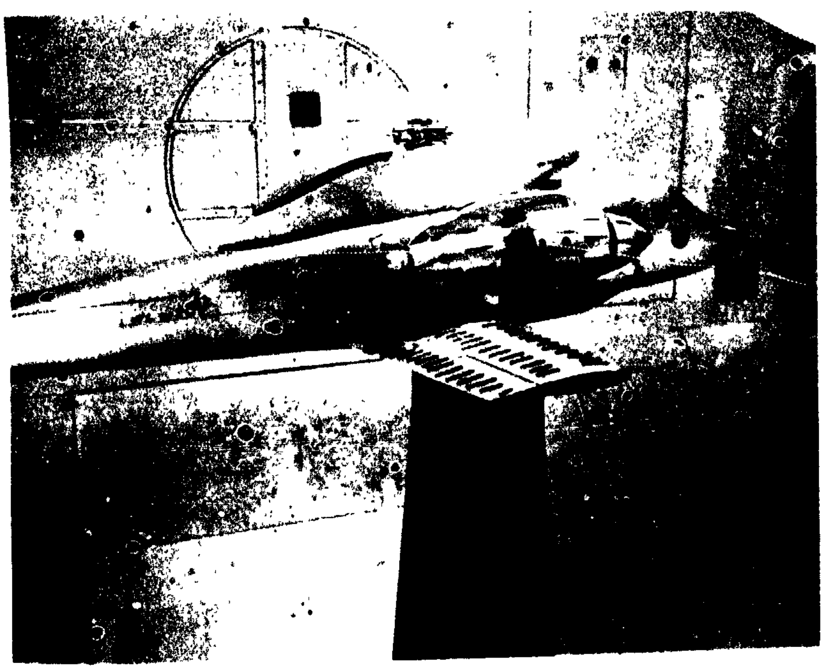


f Run 416, W_5, $I_W = 0$, $\alpha = 15$

Figure 113 - Concluded

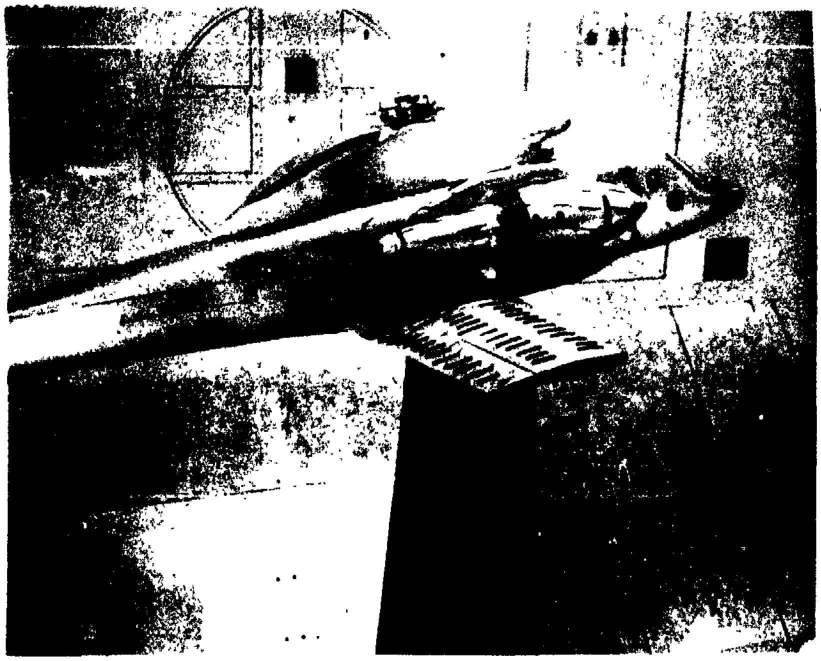


a Run 413, W_5 N, $I_W = 0$, $\alpha = -5$

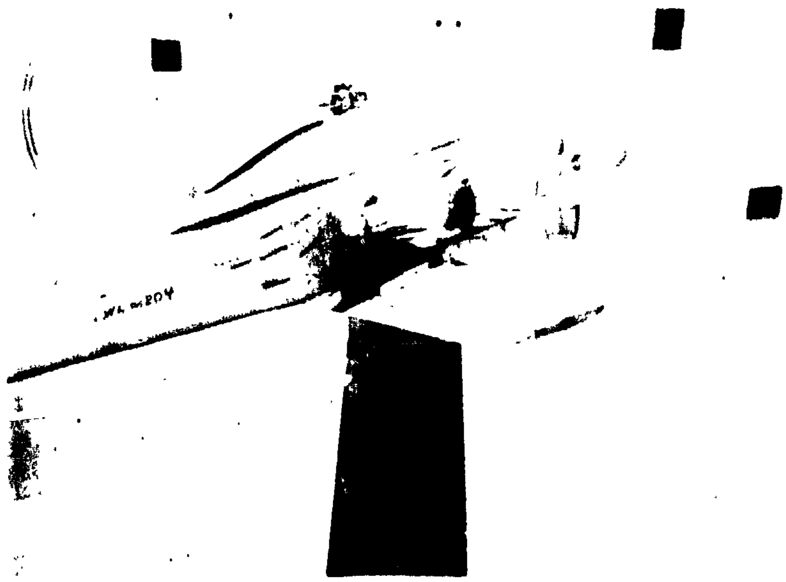


b Run 413, W_5N, $I_W = 0$, $\alpha = 5$

Figure 114. Wing and Nacelle Flow Vs. Angle of Attack, $i_W = 0$ Deg.

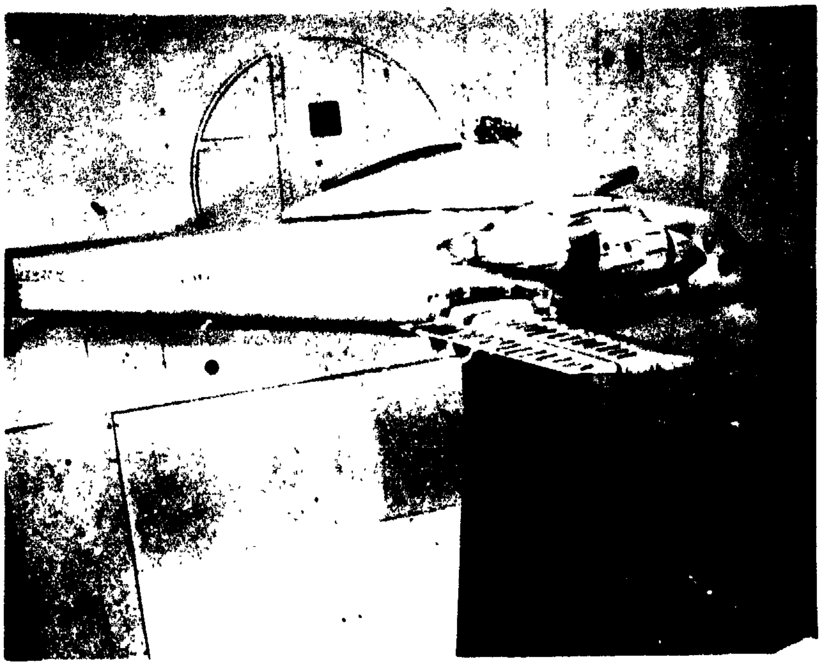


c Run 413, W_5N, $I_W = 0$, $\alpha = 10$

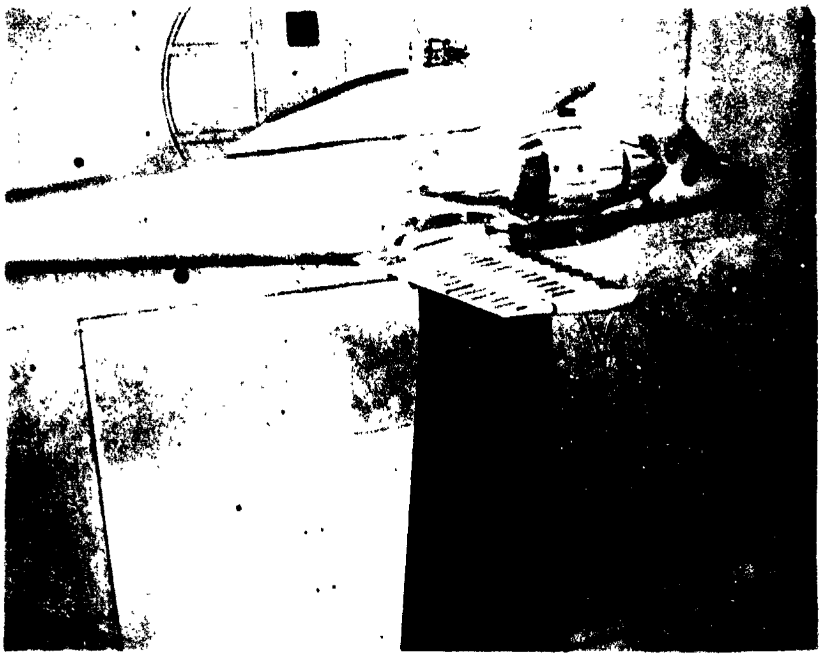


d Run 413, W_5N, $I_W = 0$, $\alpha = 12.5$

Figure 114 - Continued

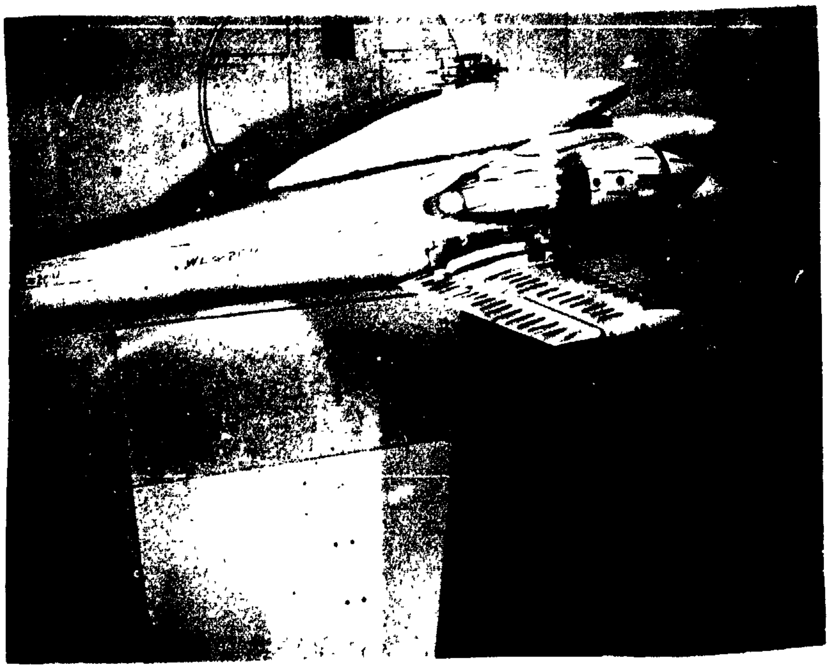


e Run 414, W_5N, $I_w = 0$, $\alpha = -5$

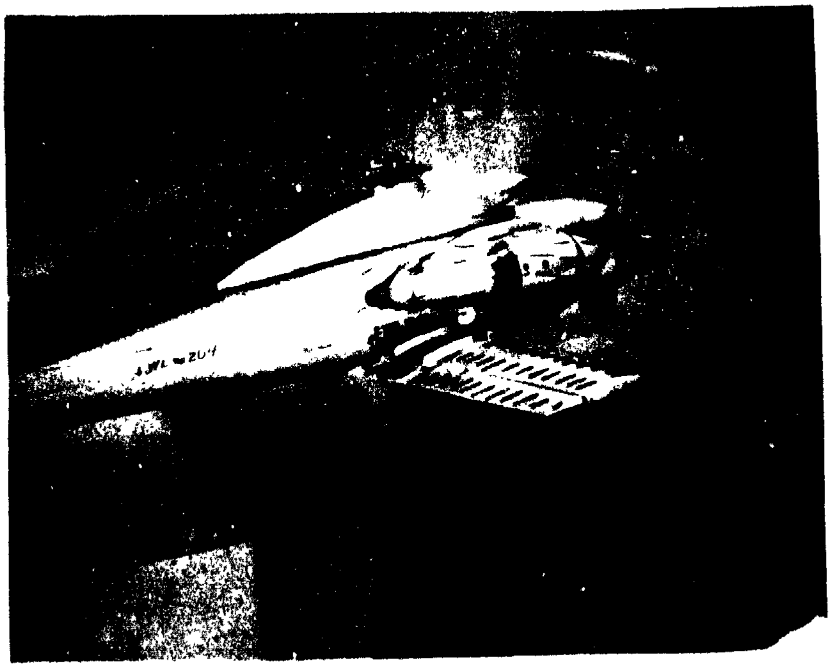


f Run 414, W_5N, $I_w = 0$, $\alpha = 0$

Figure 114 - Continued

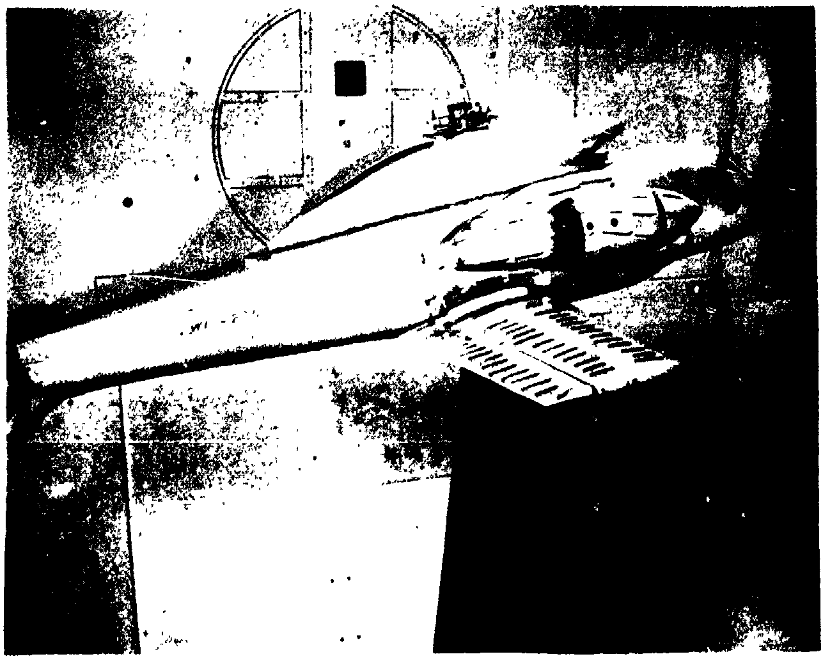


g Run 414, W_5N, $I_w = 0$, $\alpha = 5$

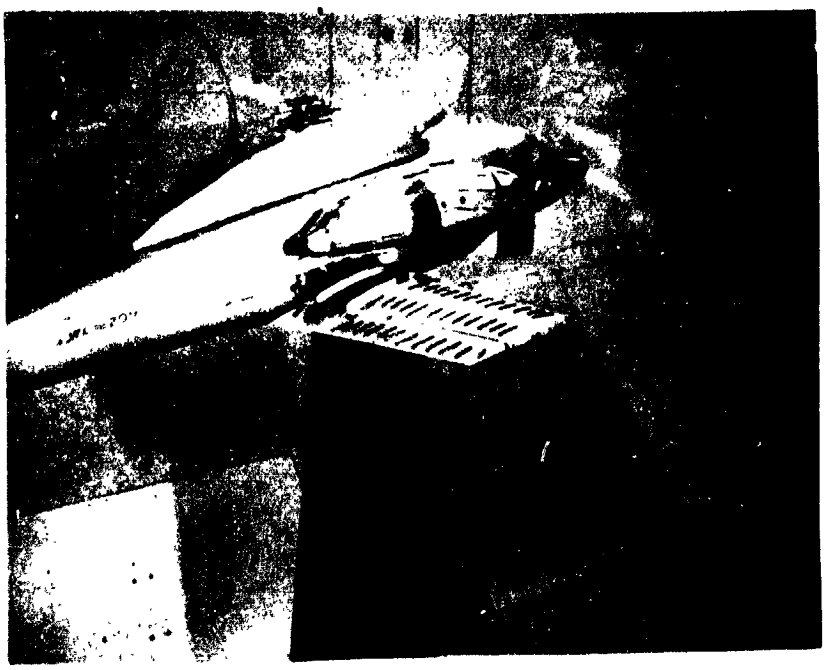


h Run 414, W_5N, $I_w = 0$, $\alpha = 7.5$

Figure 114 - Continued

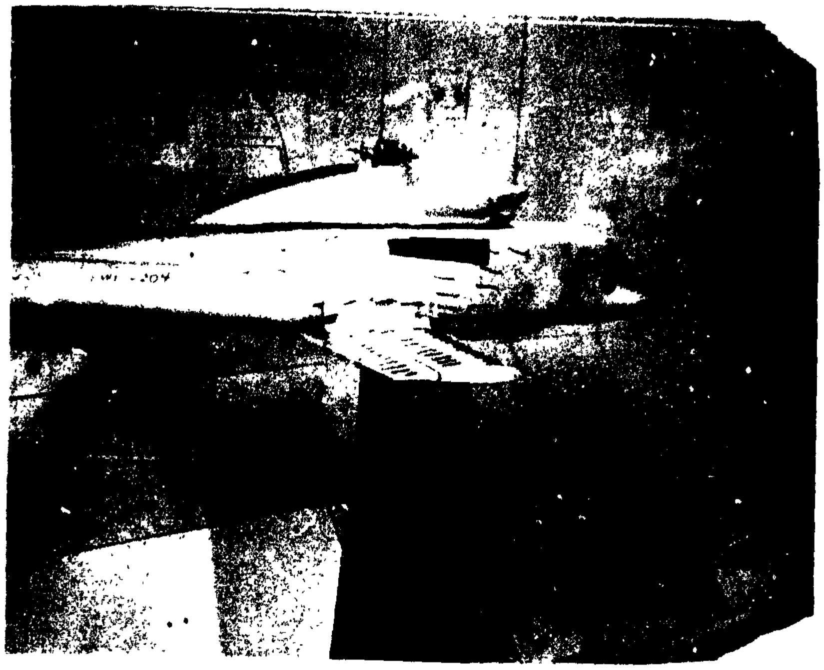


i Run 414, W_5N, $I_w = 0$, $\alpha = 10$

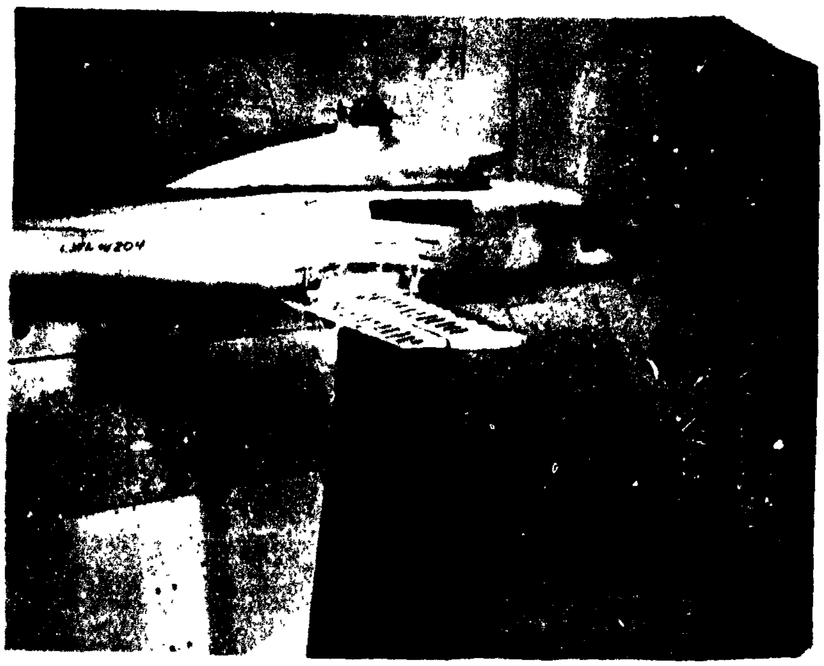


j Run 414, W_5N, $I_w = 0$, $\alpha = 12.5$

Figure 114 - Concluded

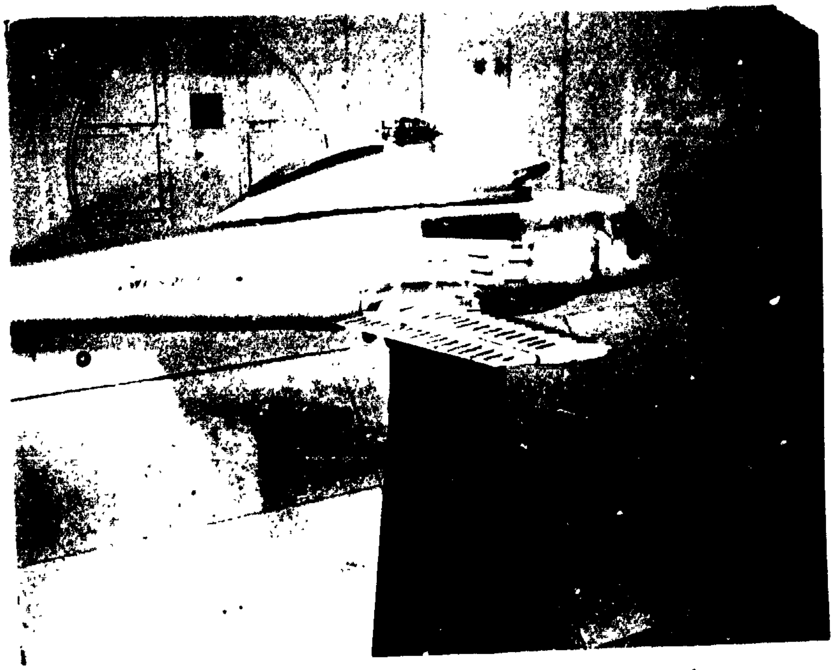


a Run 415, W_5, $I_W = 0$, $\psi = 15$



b Run 415, W_5, $I_W = 0$, $\psi = 10$

Figure 115. Wing Flow Vs Angle of Yaw, i_w = 0 Deg.



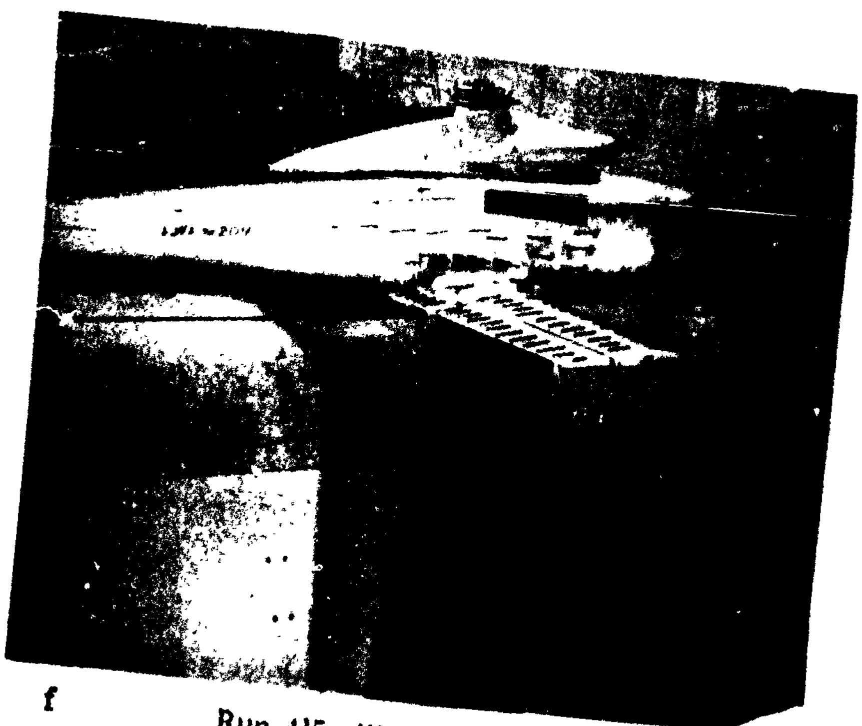
c Run 415, W_5, $I_w = 0$, $\psi = 5$

d Run 415, W_5, $I_w = 0$, $\psi = 2.5$

Figure 115 - Continued

e

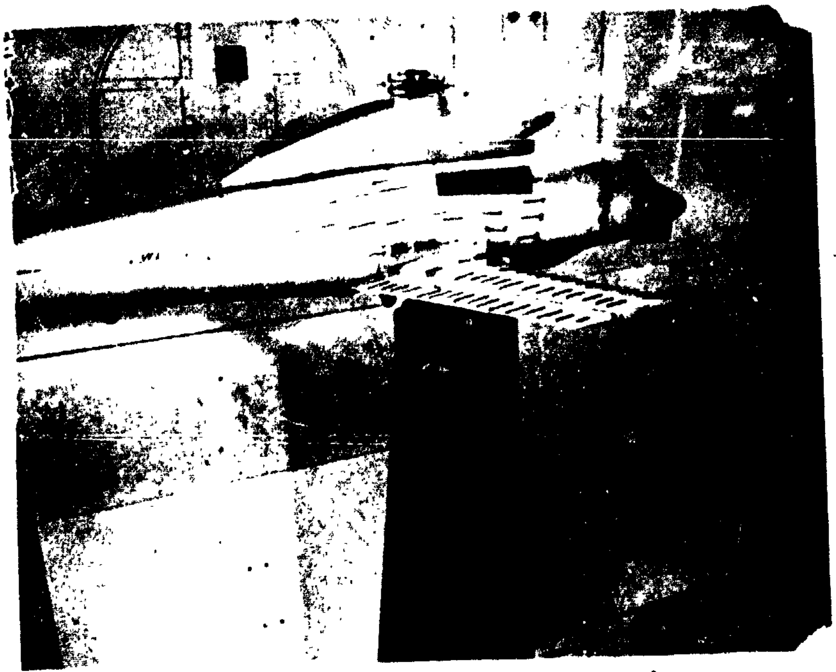
Run 415, W_5, $i_w = 0$, $\psi = 0$



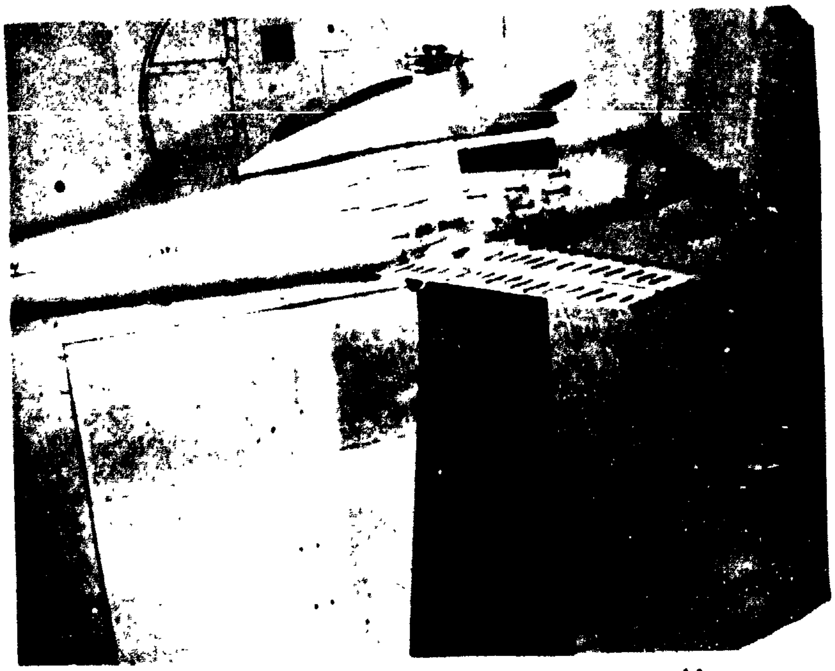
f

Run 415, W_5, $i_w = 0$, $\psi = -2.5$

Figure 115 - Continued

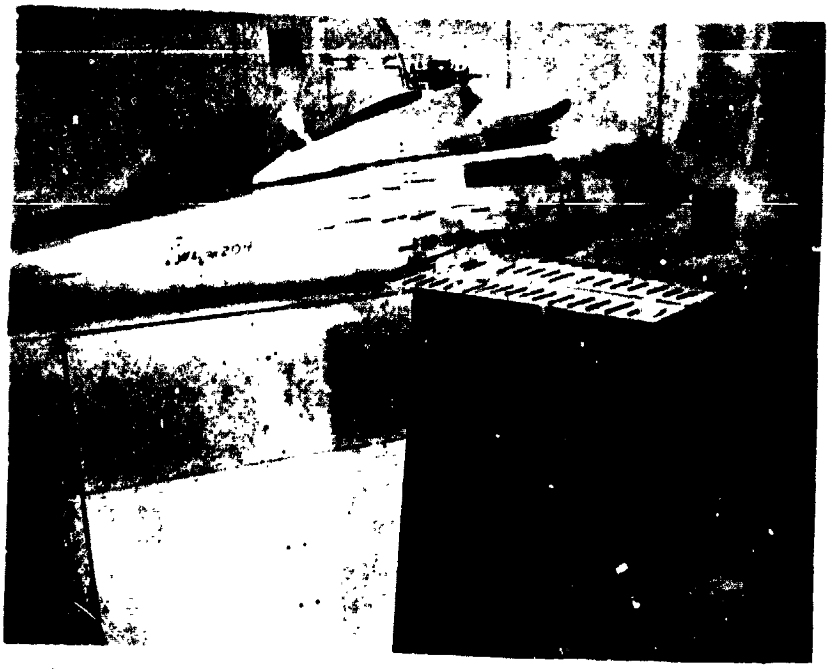


g Run 415, W_5, $i_w = 0$, $\psi = -5$



h Run 415, W_5, $i_w = 0$, $\psi = -10$

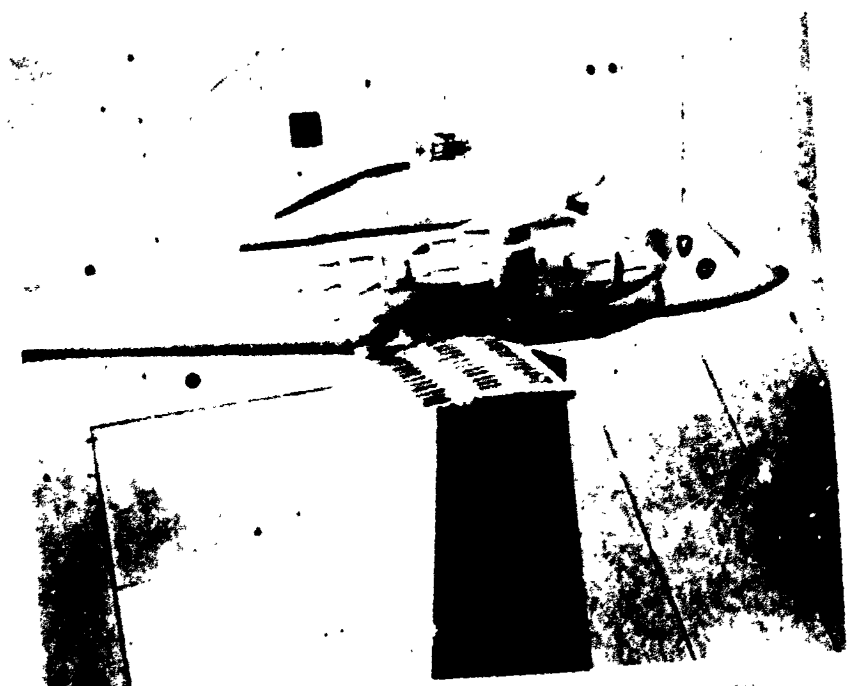
Figure 115 - Continued



Run 415, W_5, $i_w = 0$, $\psi = -15$

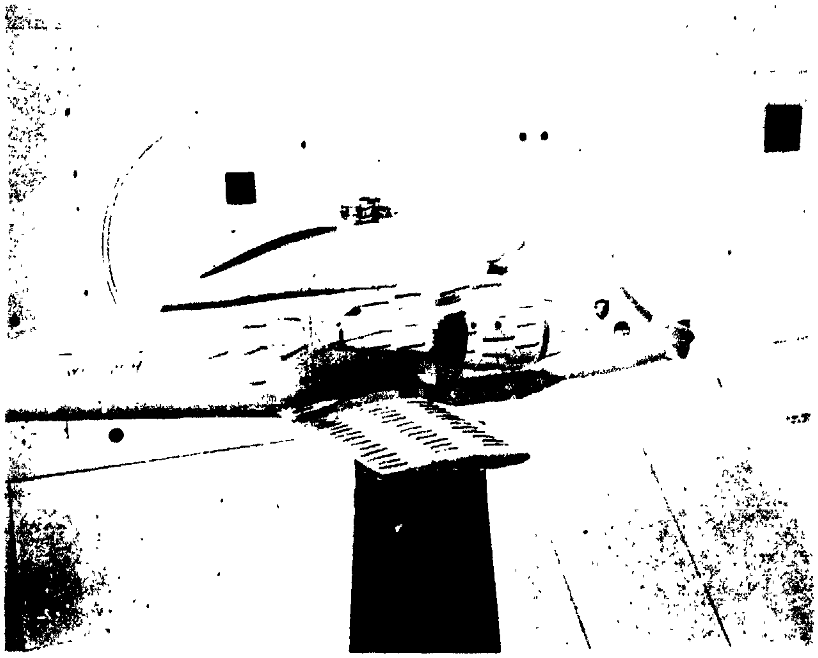
Figure 115 - Concluded

a Run 412, W_5 N, I_w = 0, ψ = 15

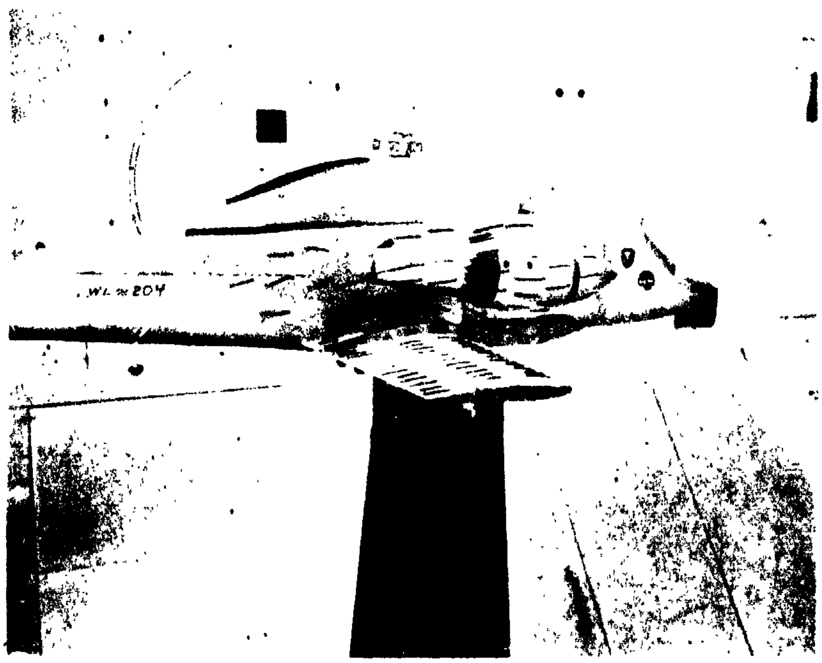


b Run 412, W_5 N, I_w = 0, ψ = 10

Figure 11[illegible]. Wing and Nacelle Flow Vs. Angle of Yaw, I_w = [illegible] Deg.

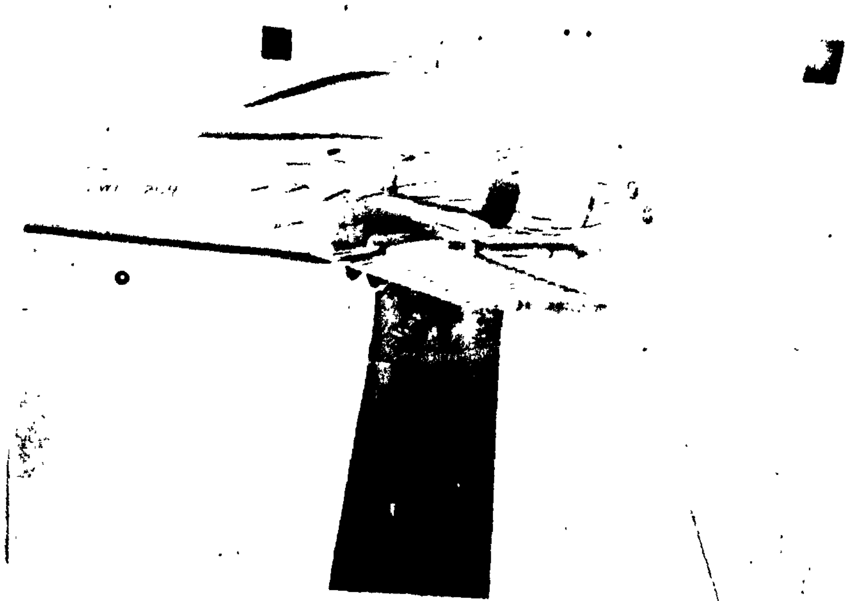


c Run 412, W_5 N, $I_w = 0$, $\psi = 5$

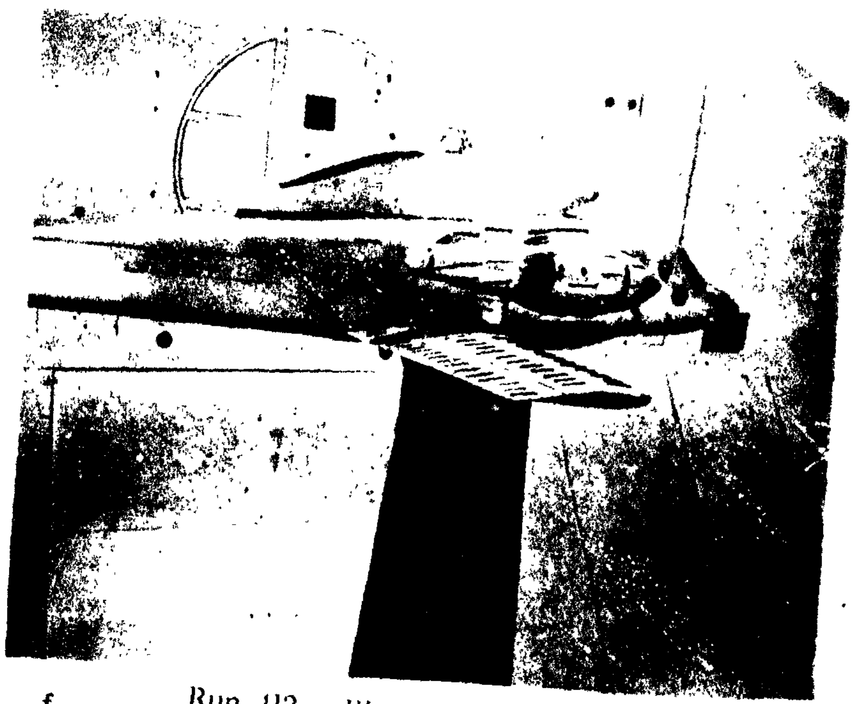


d Run 412, W_5N_1, $I_w = 0$, $\psi = 2.5$

Figure 116 - Continued

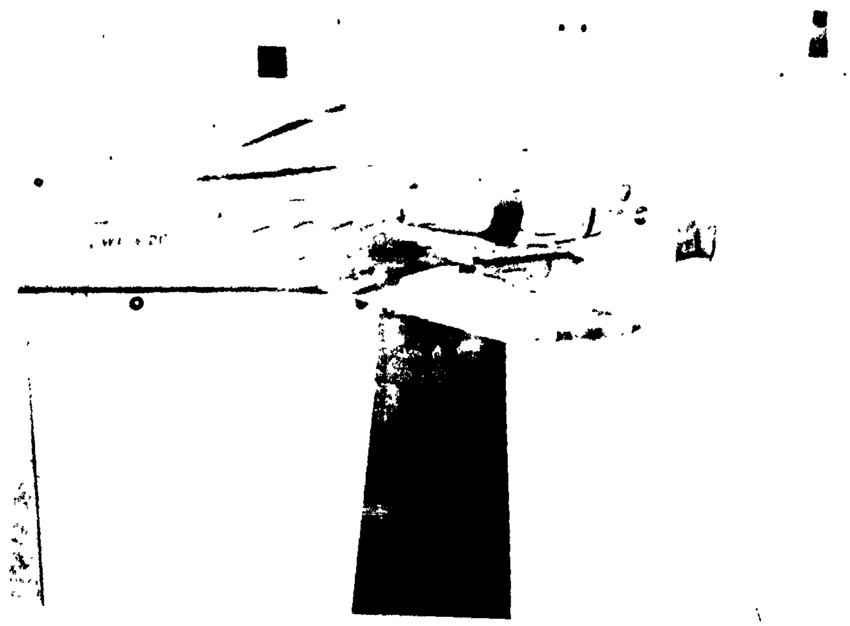


e Run 412, W_5 N, $I_w = 0$, $\psi = 0$

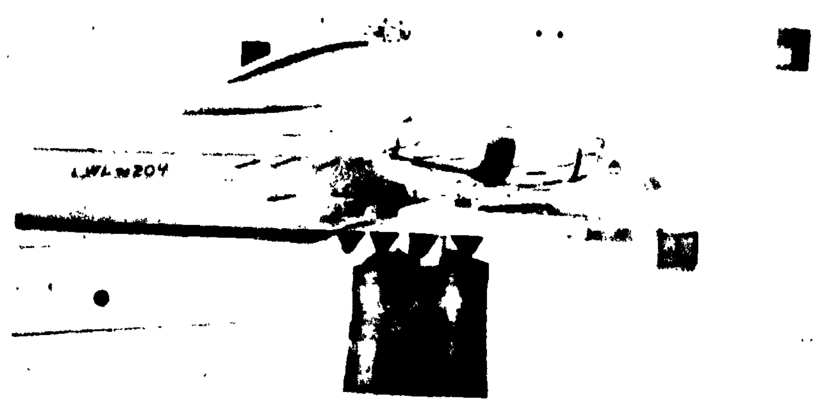


f Run 412, W_5 N, $I_w = 0$, $\psi = -2.5$

Figure 116 - Continued

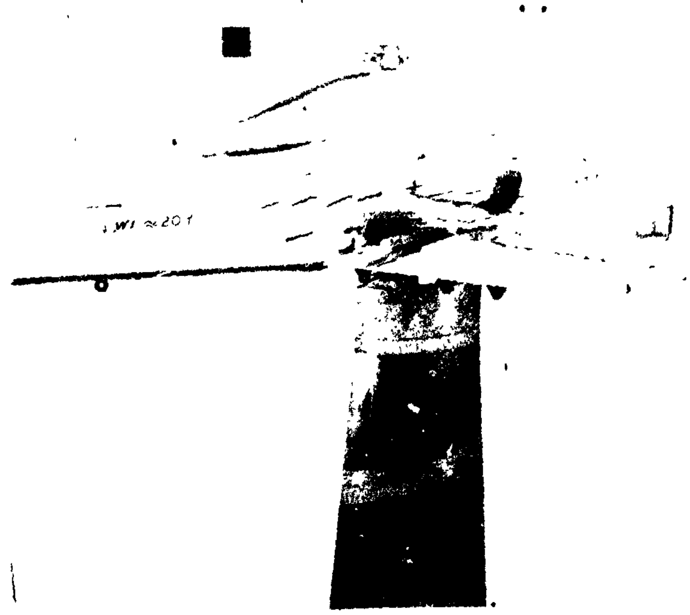


g Run 412, W_5 N, $I_w = 0$, $\psi = -5$



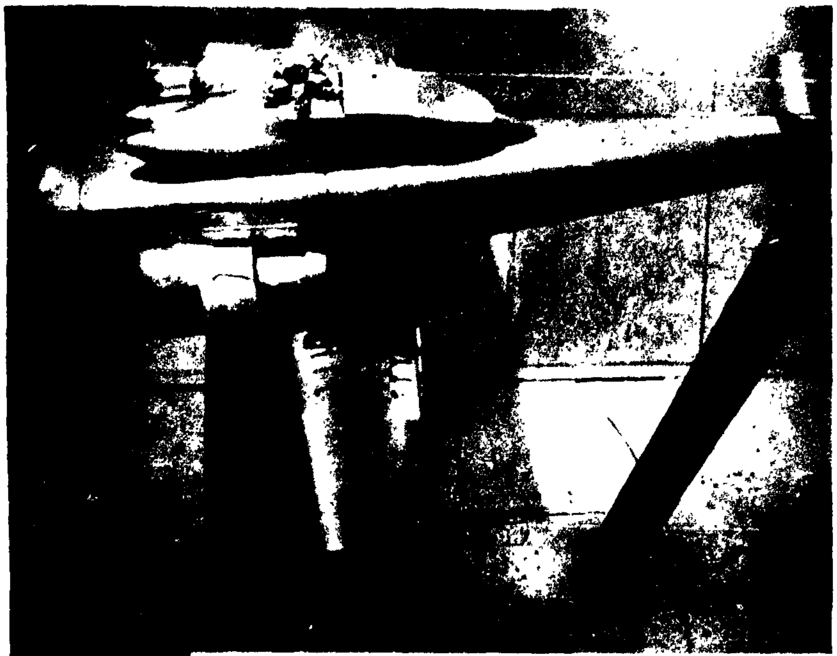
h Run 412, W_5 N, $I_w = 0$, $\psi = -10$

Figure 116 - Continued



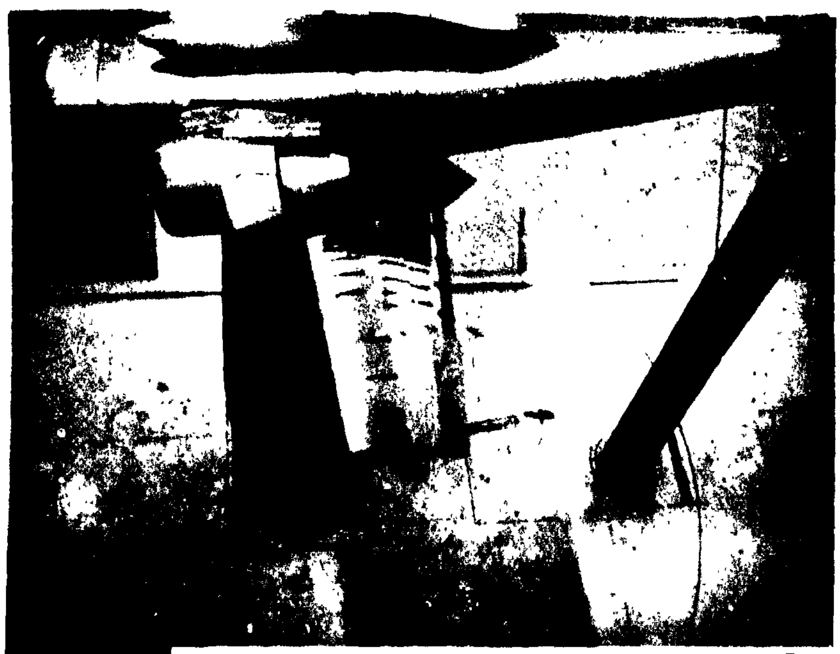
Run 412, W_5N, $I_w = 0$, $\psi = -15$

Figure 116 - Concluded



a Run 176, W_4N_{pl}, Trim, I_w = 15, δ_f = 40,

δ_a = 10 , α = -8



b Run 176, W_4N_{pl}, Trim, I_w = 15, δ_f = 40,

δ_a = 10 , α = -4

Figure 117. Wing and Nacelle Flow Vs. Angle of Attack - Powered.

c Run 176, $W_4 N_{p1}$, Windmill , I_w = 15, δ_f = 40, δ_a = 10 , α = 0

d Run 176, $W_4 N_{p1}$, Trim, I_w = 15, δ_f = 40, δ_a = 10 , α = 0

Figure 117 - Continued

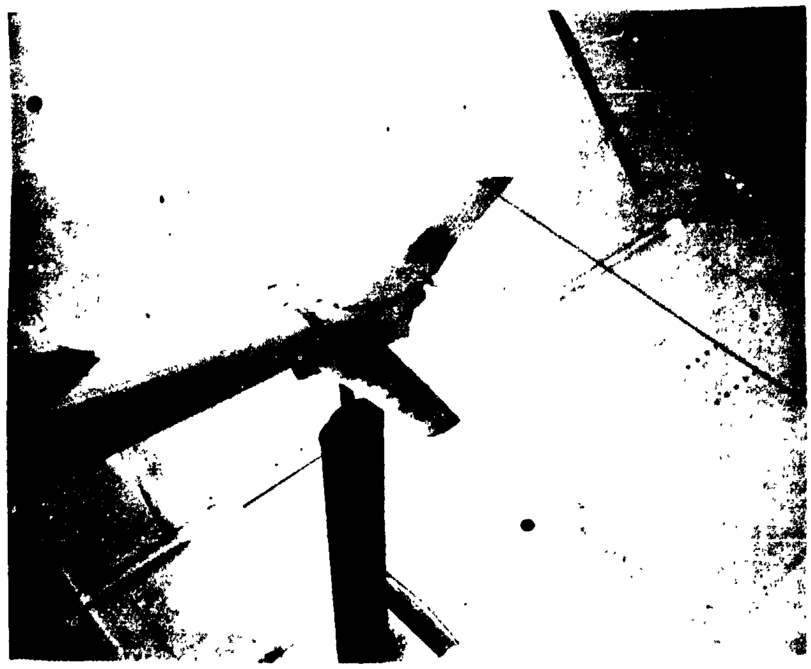
e Run 176, W_4N_{p1}, Trim, I_w = 15, δ_f = 40,

δ_a = 10 , α = 2.5

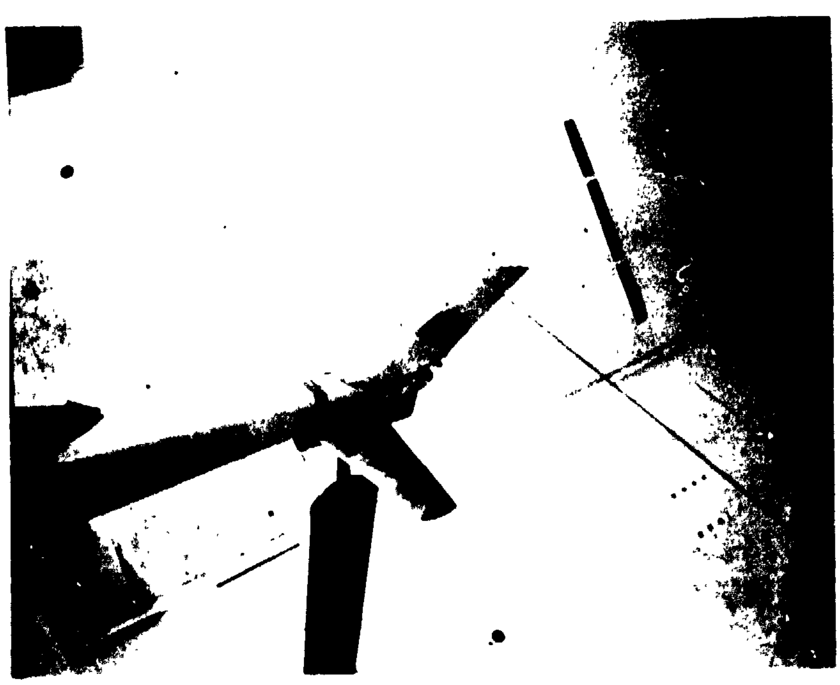
f Run 176, $W_4 N_{p1}$, Trim, I_w = 15, δ_f = 40,

δ_a = 10 , α = 5

Figure 117 - Concluded

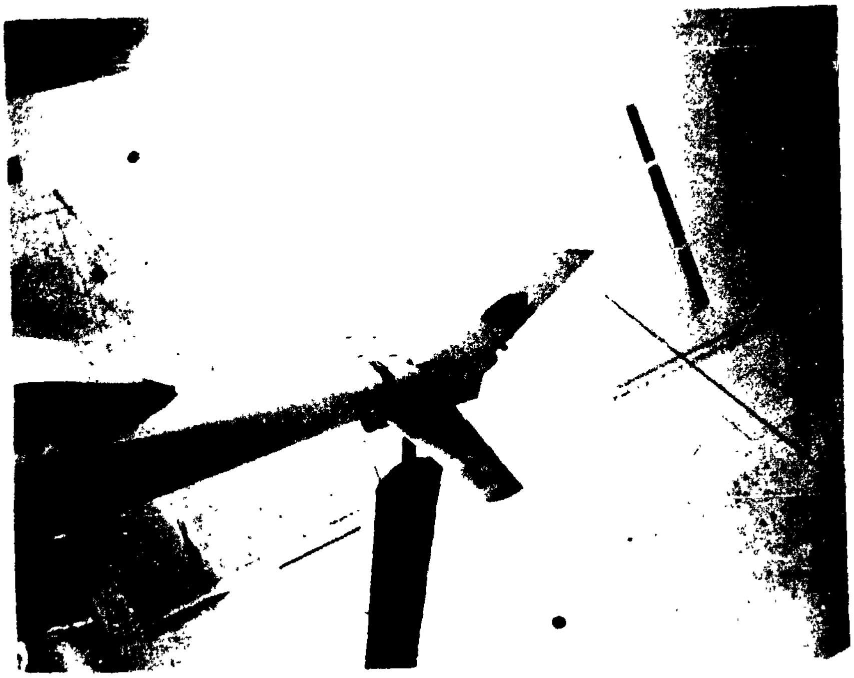


a Run 303, W_5N_{p4}, $I_w=0$, $\alpha = 0$

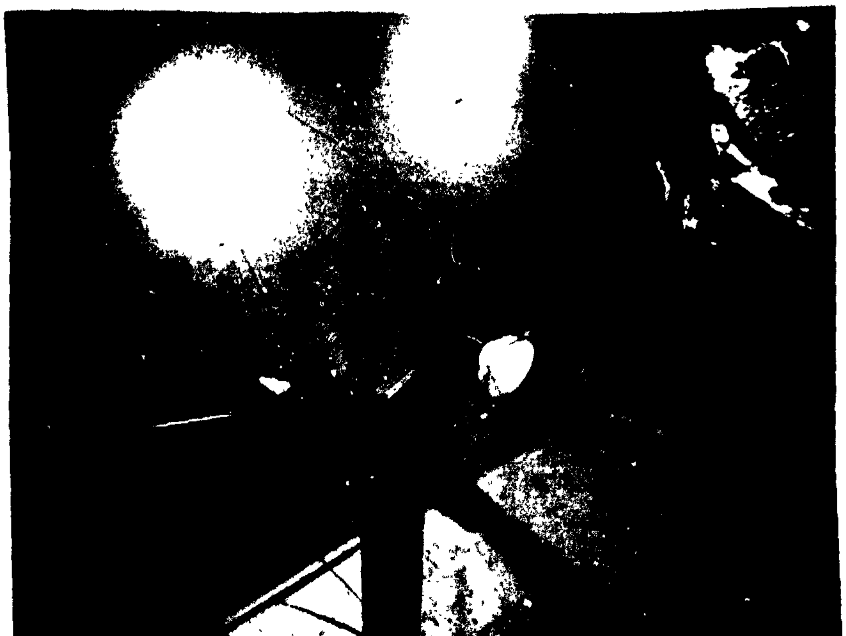


b Run 303, $W_5 N_{p4}$, $I_w = 0$, $\alpha = 10$

Figure 118. Empennage Flow - Configuration $FPBE_{p4}W_5TB_T$.



c Run 303, W_5 N_{p4}, I_w = 0, α = 12.5



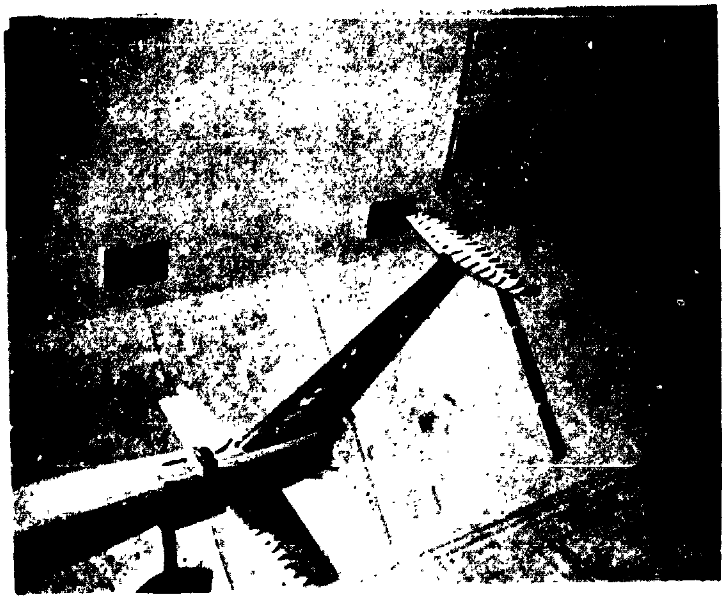
d Run 303, W_5 N_{p4}, I_w = 0, α = 15

Figure 118 - Continued

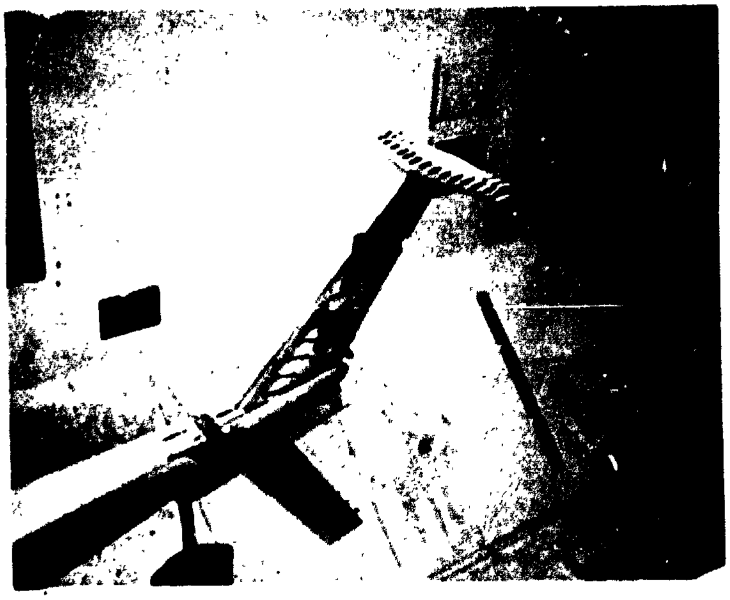
e Run 303, $W_5 N_{p4}$, $I_w = 0$, $\alpha = 17.5$

f Run 303, $W_5 N_{p4}$, $I_w = 0$, $\alpha = 20$

Figure 118 - Concluded

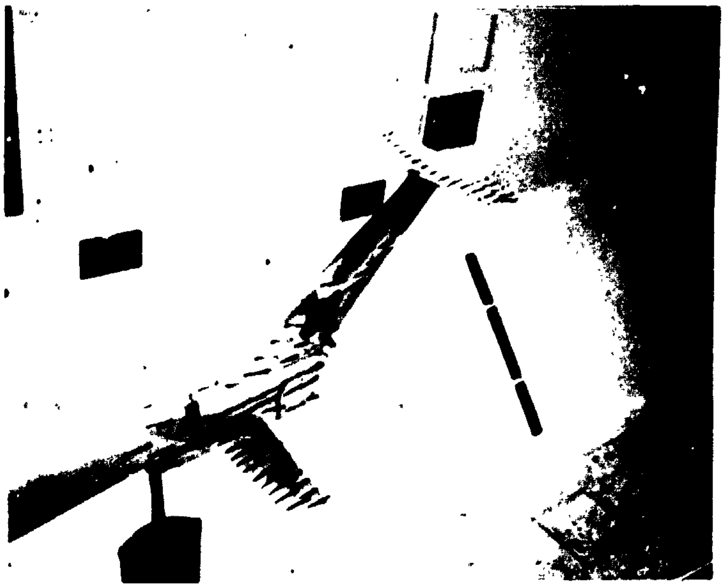


a Run 651, $\alpha = 0°$, q = 0 psf, Fan RPM = 11150

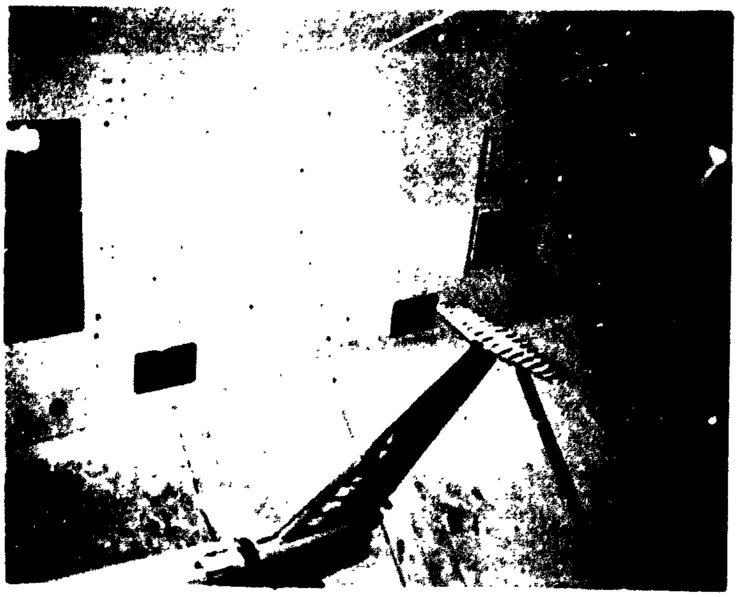


b Run 651, α = -10° , q = 55 psf, Fan RPM = 11150

Figure 119. Empennage Flow - Configuration $FPEN_{P5}W_7T_{36}B_T$.

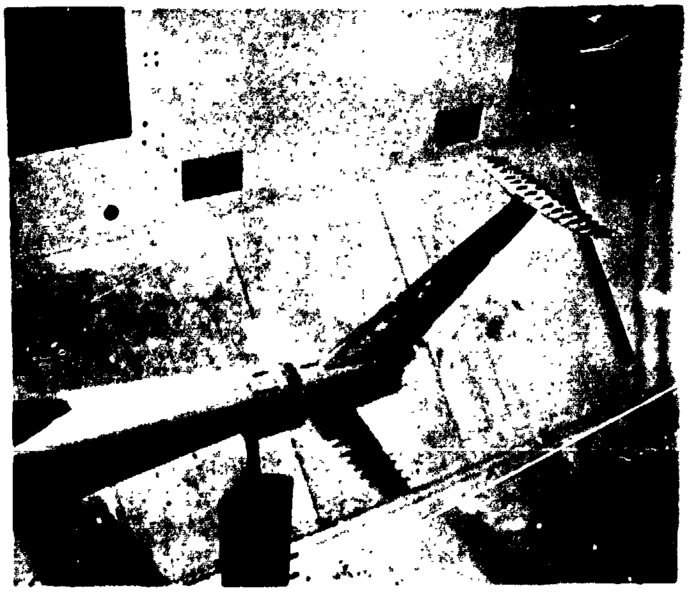


c Run 651, α = -3°, q= 55psf, Fan RPM = 11150

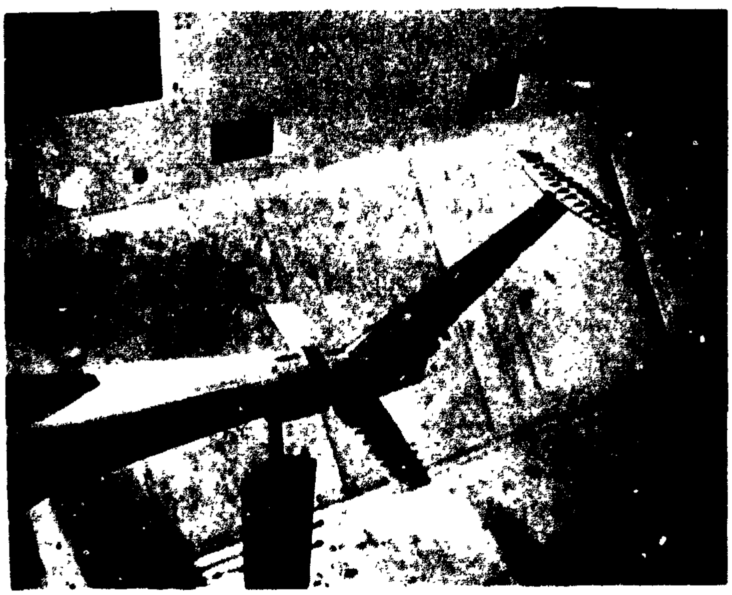


d Run 651, α = 0°, q= 55psf, Fan RPM = 11150

Figure 119 - Continued

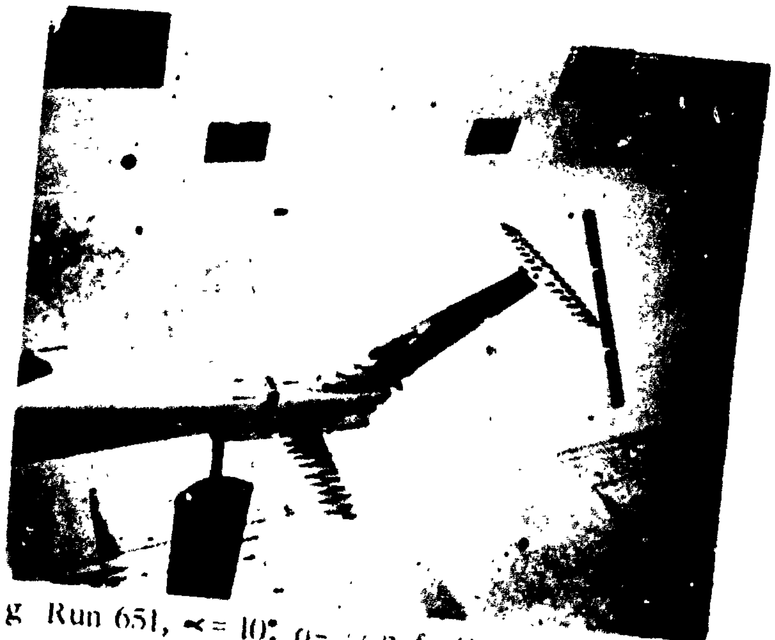


e Run 651, $\alpha = 5°$, q= 55psf, Fan RPM = 11150



f Run 651, $\alpha = 7.5°$, q= 55psf, Fan RPM = 11150

Figure 119 - Continued



g Run 651, $\alpha = 10°$, q= 55 psf, Fan RPM = 1150

h Run 651, α = 12.5°, q = [illegible] psf, Fan RPM [illegible] 1150

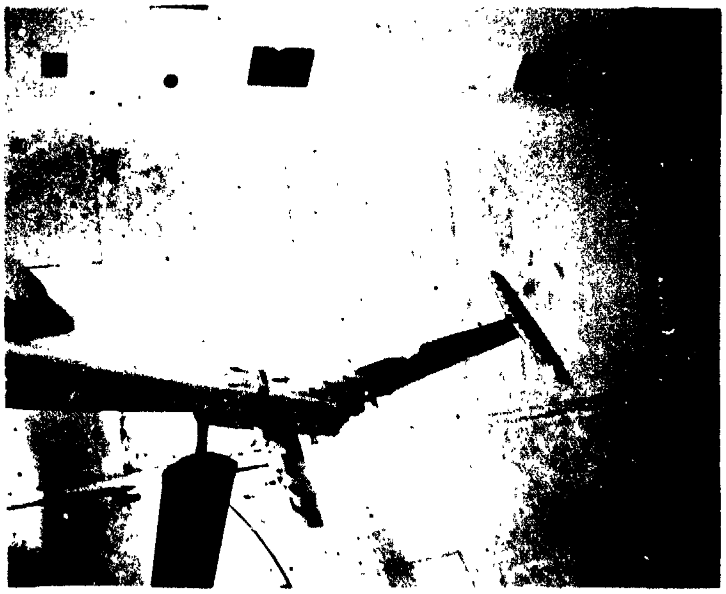
Figure 19 - Continued

i Run 651, $\alpha = 15°$, q= 55psf Fan RPM = 11150

j Run 651, $\alpha = 17.5°$, q= 55psf, Fan RPM = 11150

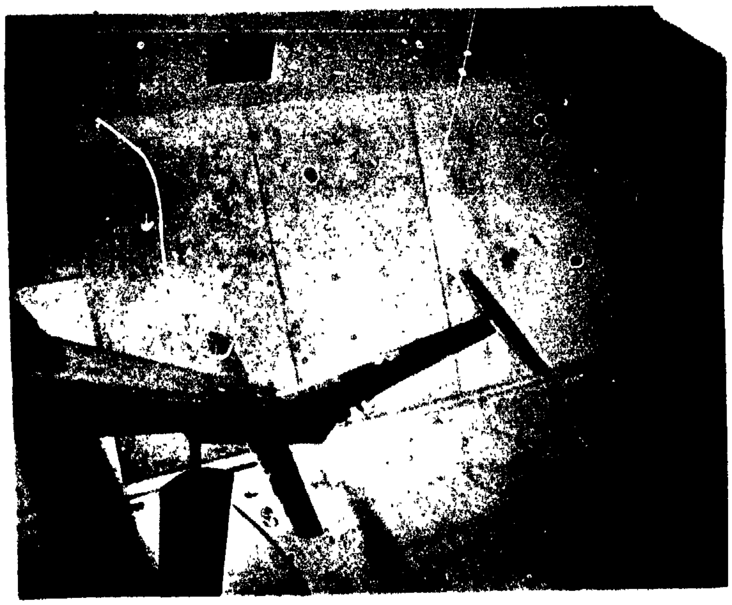
Figure 119 - Continued

k Run 651, $\alpha = 20°$, q= 55 psf, Fan RPM = 11150



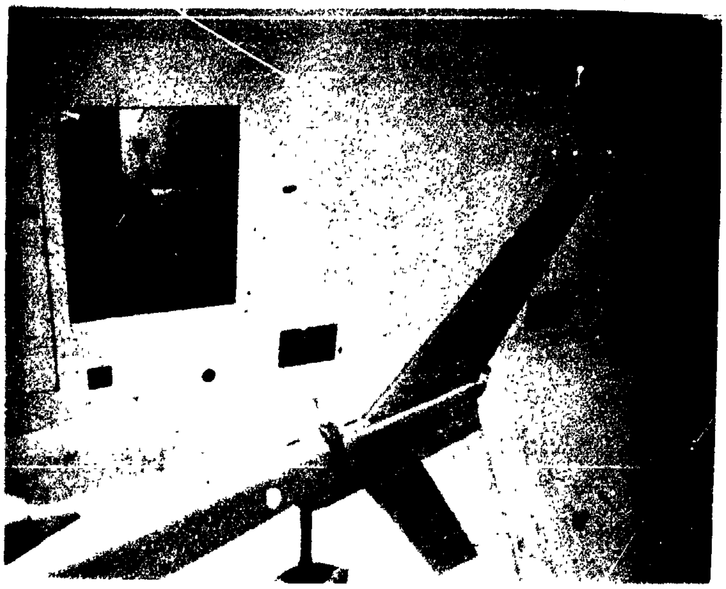
l Run 651, $\alpha = 22.5°$ q= 55 psf, Fan RPM = 11150

Figure 119 - Continued

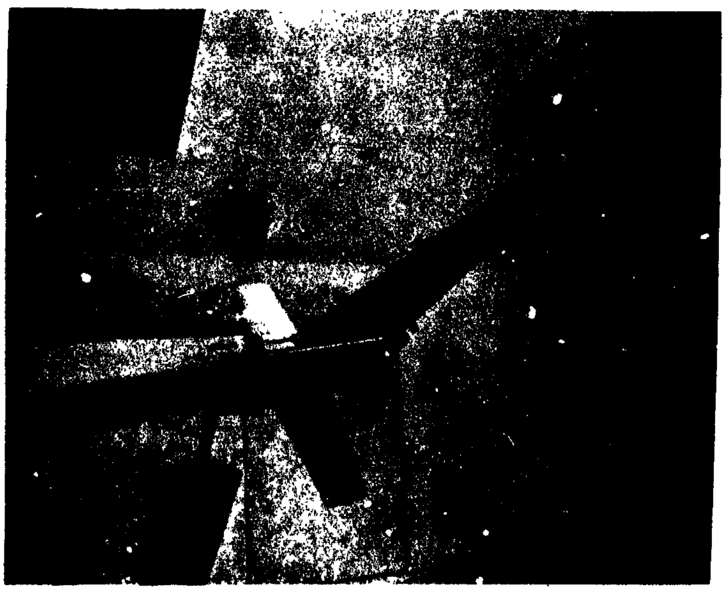


m Run 651, $\alpha = 25°$; $q = 55$ psf, Fan RPM = 11150

Figure 119 - Concluded

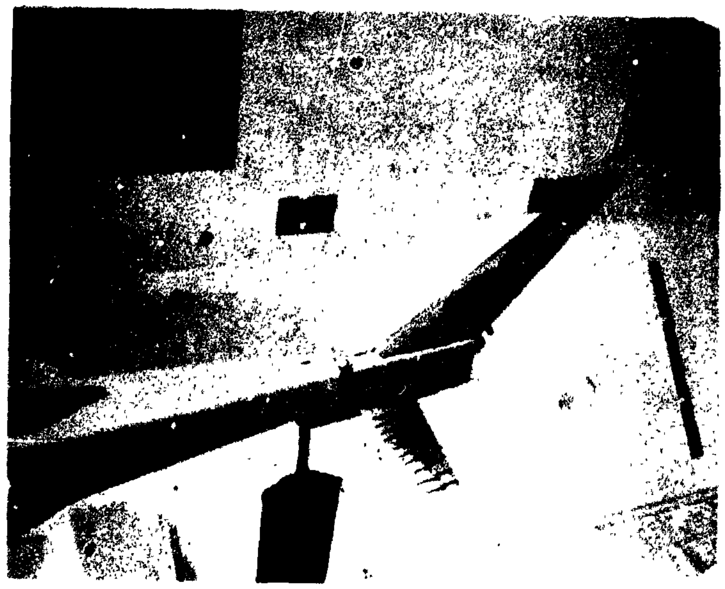


a Run 650, α = -15°



b Run 650, α = - 10°

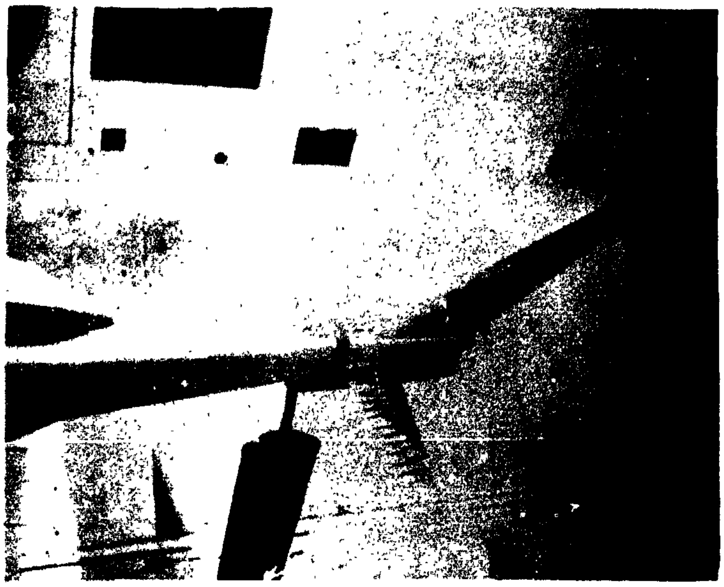
Figure 120. Empennage Flow - Configuration $FPBN_{P5}W_7T_{37}B_T$.



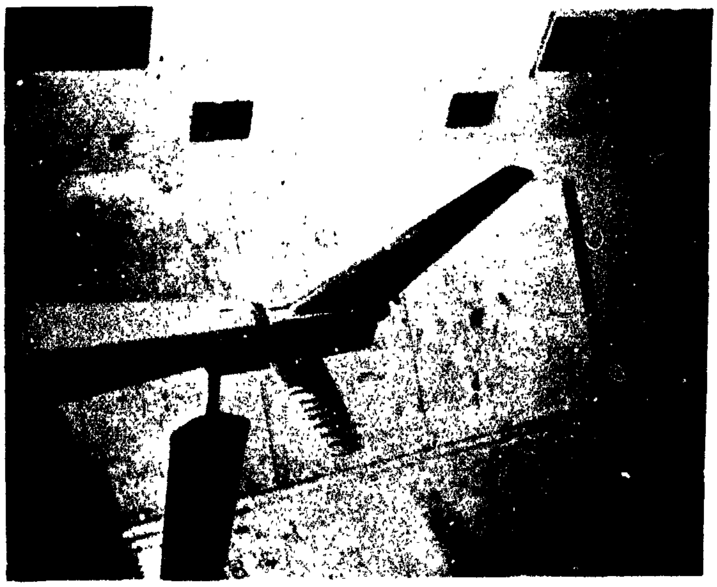
c Run 650, $\alpha = -5°$

d Run 650, $\alpha = -2.5°$

Figure 120 - Continued



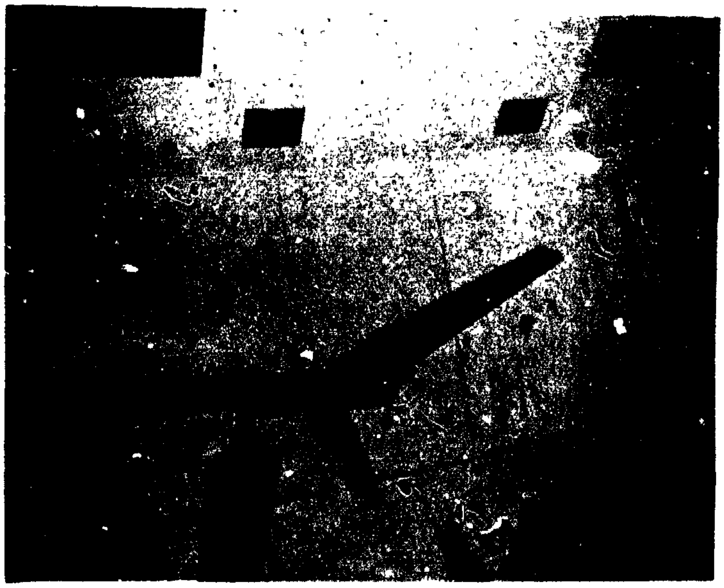
e Run 650, $\alpha = 0°$



f Run 650, $\alpha = 2.5°$

Figure 120 - Continued

g Run 650, $\alpha = 5°$



h Run 650, $\alpha = 10°$

Figure 120 - Continued

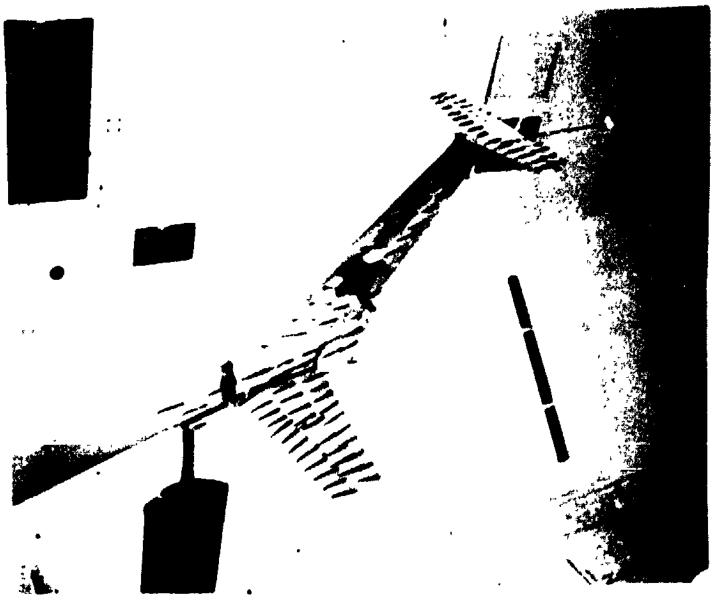
i Run 650, $\alpha = 15°$

j Run 650, $\alpha = 17.5°$

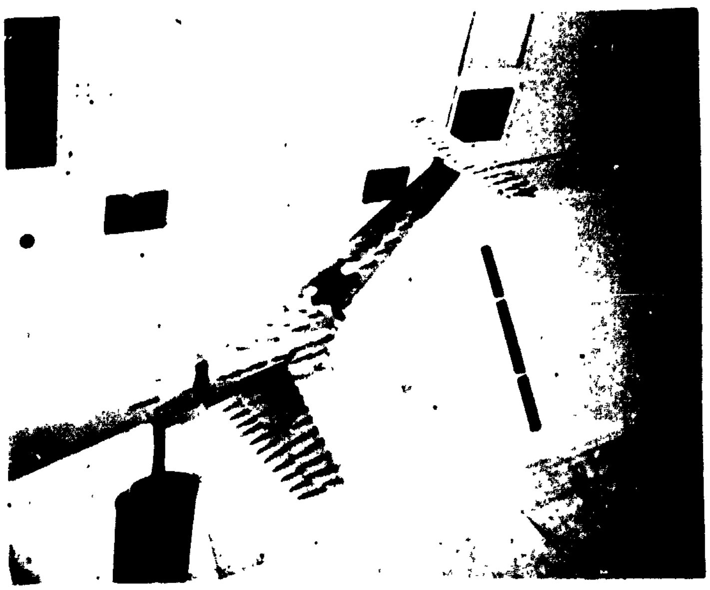
Figure 120 - Continued

k Run 650, α = 20°

Figure 120 - Concluded

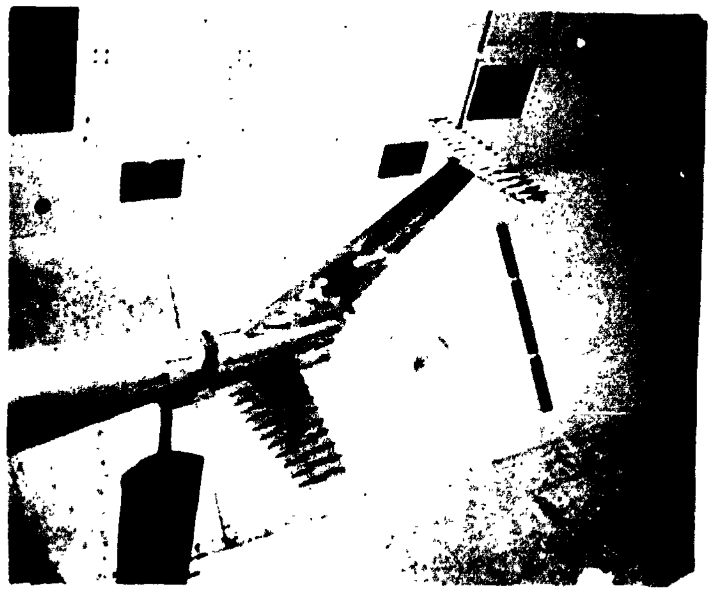


a Run 652, $\alpha = -10°$

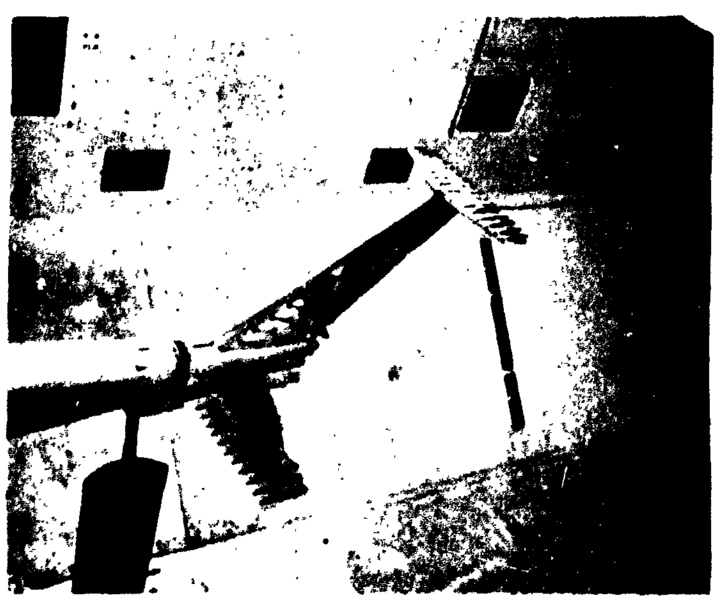


b Run 652, $\alpha = -5°$

Figure 121. Empennage Flow Configuration $FPBN_{P5}W_7T_{29}B_T$.

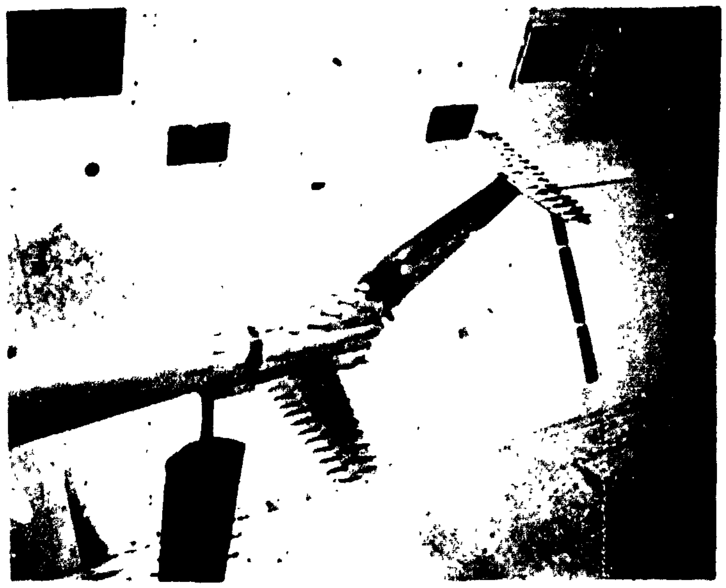


c Run 652, α =-2.5°

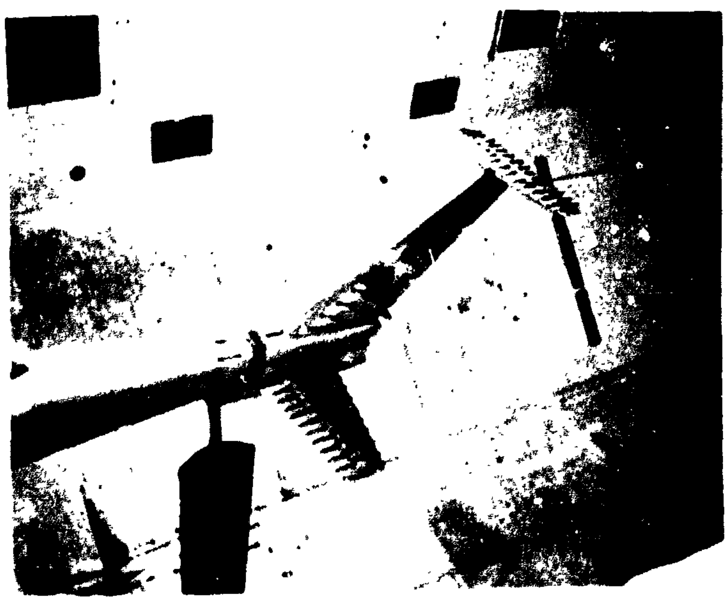


d Run 652, α =0°

Figure 121 - Continued



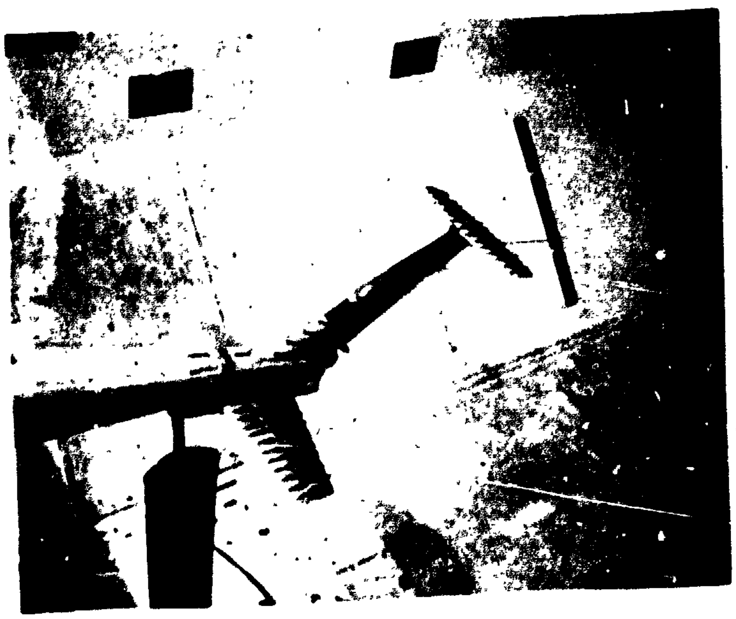
e Run 652, α = 2.5°



f Run 652, α = 5°

Figure 121 - Continued

g Run 652, $\alpha = 10°$



h Run 652, $\alpha = 15°$

Figure 121 - Continued

i Run 652 α = 17.5°

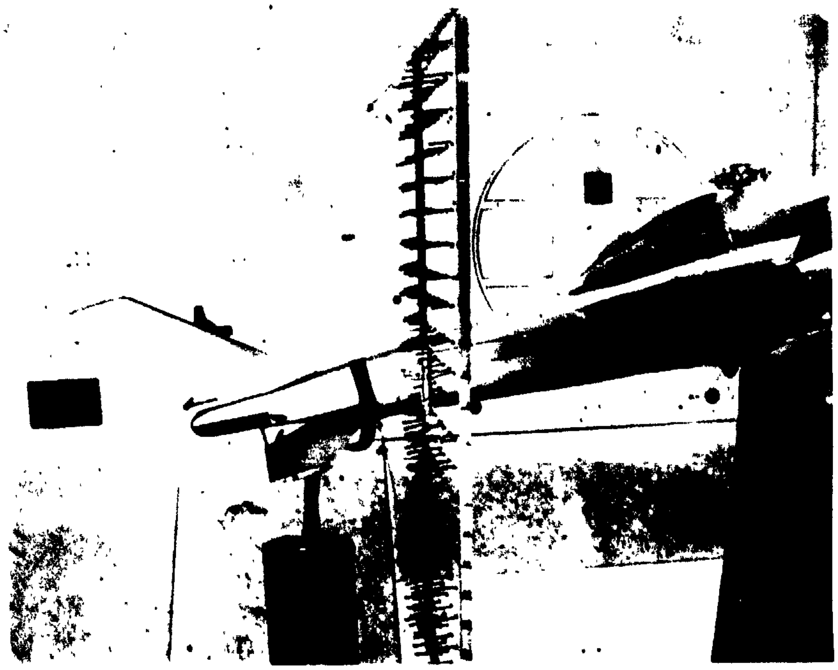
j Run 652, α = 20°

Figure 121 - Continued

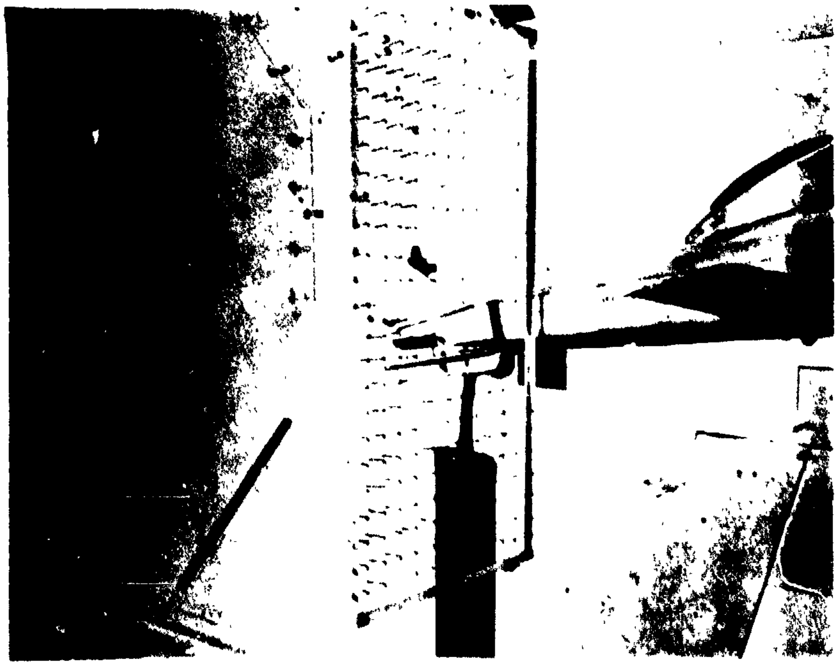
k Run 652, $\alpha = 22.5°$

l Run 652, $\alpha = 25°$

Figure 121 - Concluded

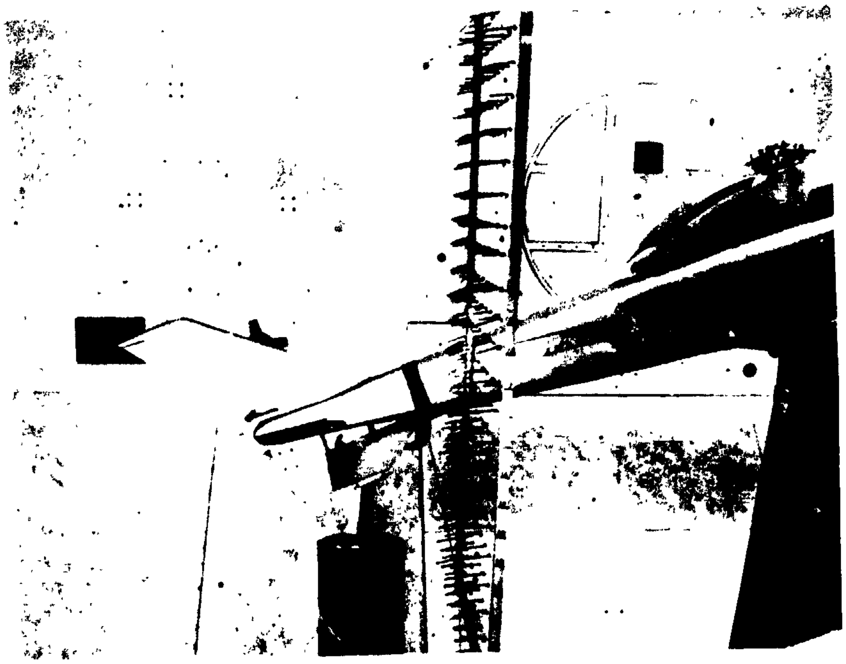


a Run 301, W_5N_{pl}, Trim, $I_w = 0$, V=25 Kts, α=10

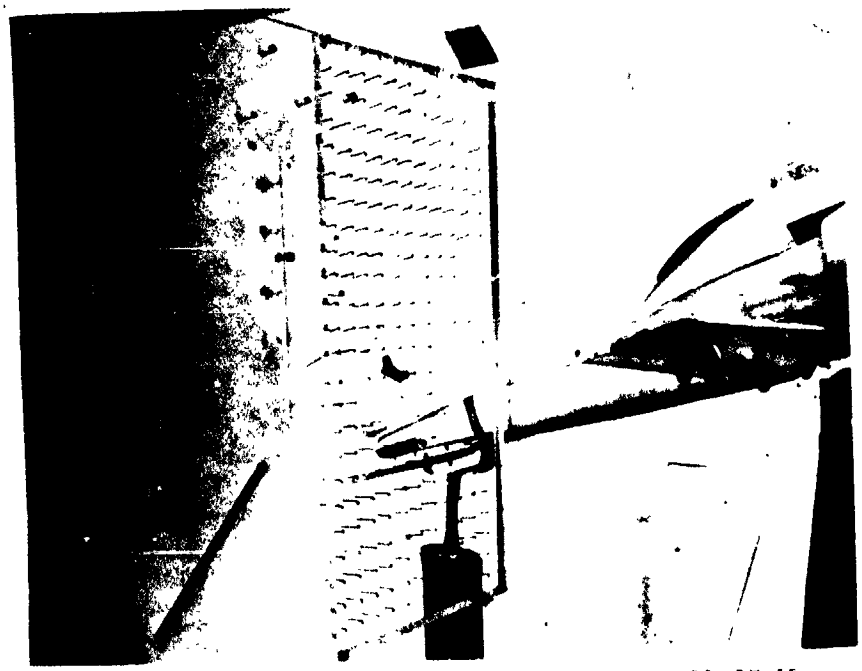


b Run 301, W_5N_{pl}, Trim, $I_w = 0$, V=25 Kts, α=10

Figure 122 Tail flow environment

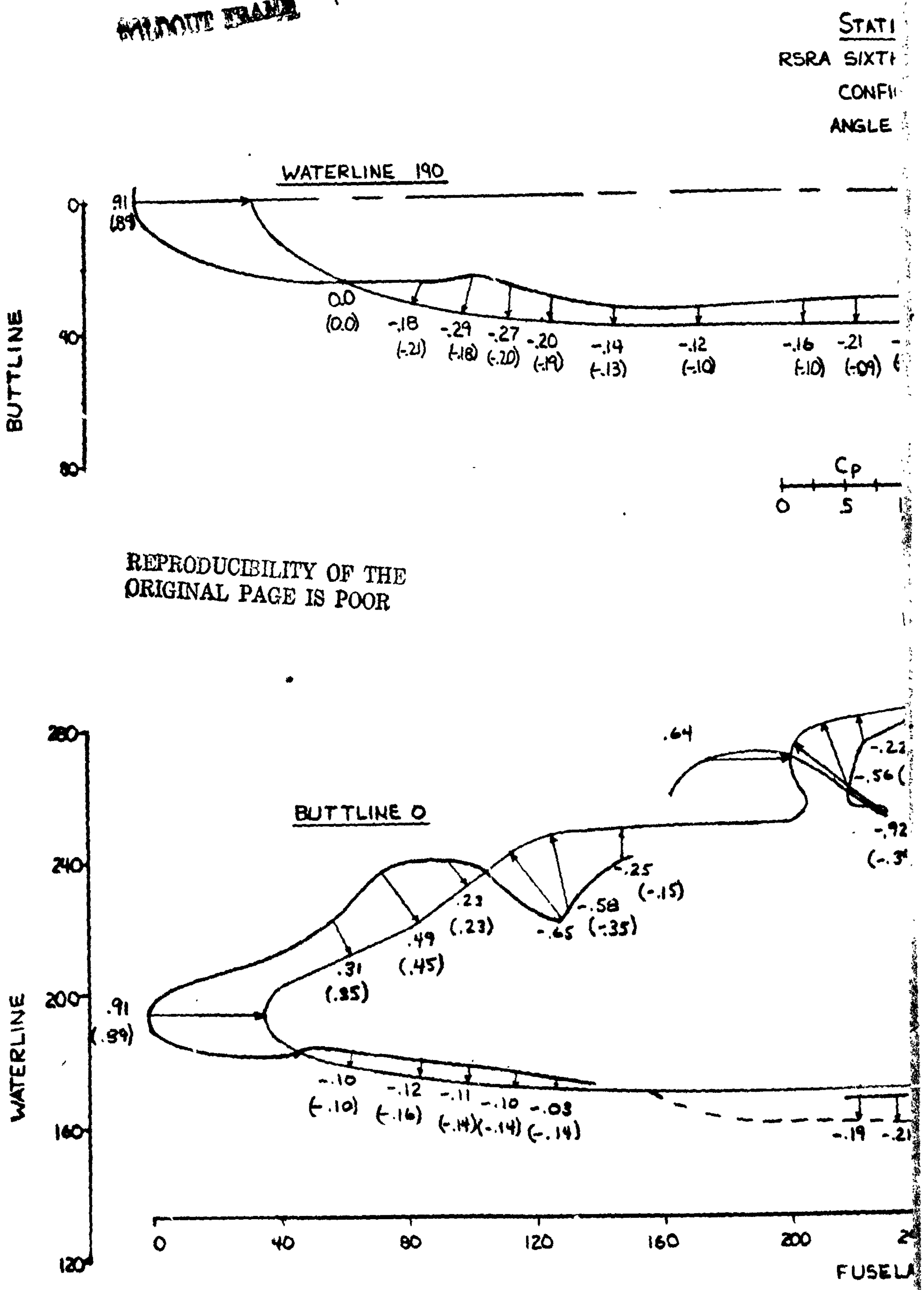


c Run 301, W_5N_{pl}, Trim, $I_w = 0$, V=25 Kts, α =17. 5



d Ru 301, W_5N_{pl}, Trim, $I_w = 0$, V=25 Kts, α =17. 5

Figure 122 Tail flow environment (concluded)


STATI
RSRA SIXTI
CONFI
ANGLE
WATERLINE 190
BUTTLINE
0
40
80
.91
(.89)
0.0
(0.0)
-.18
(-.21)
-.29
(-.18)
-.27
(-.20)
-.20
(-.19)
-.14
(-.13)
-.12
(-.10)
-.16
(-.10)
-.21
(-.09)
C_p
0
.5
BUTTLINE 0
WATERLINE
280
240
200
160
120
.91
(.89)
.31
(.35)
.49
(.45)
.23
(.23)
-.65
-.58
(-.35)
.25
(-.15)
.64
-.22
-.56
-.92
-.10
(-.10)
-.12
(-.16)
-.11
(-.14)
-.10
(-.14)
-.08
(-.14)
-.19
-.21
0
40
80
120
160
200
FUSELA

FOLDOUT FRAME 2

SER-72011

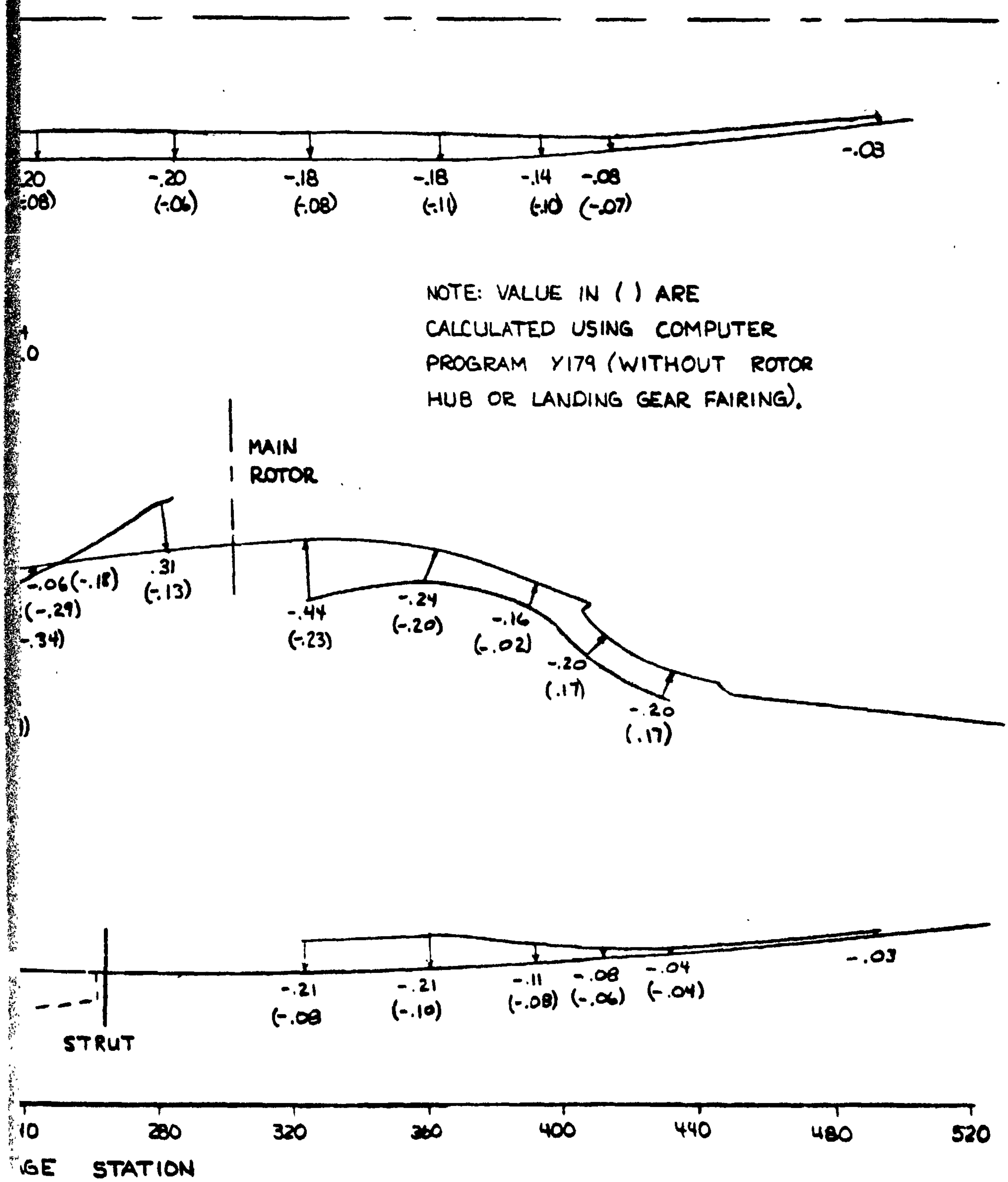
FIGURE 123

c PRESSURE DISTRIBUTION

I SCALE WIND TUNNEL TEST

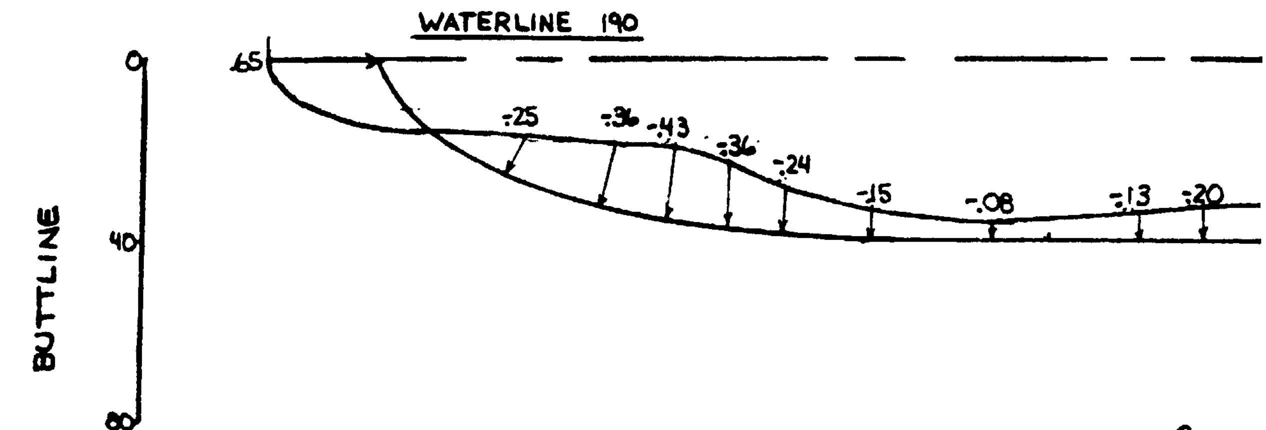
GURATION: FPBTB$_T$, q=80 PSF

OF ATTACK=0 DEG, ANGLE OF YAW=0 DEG

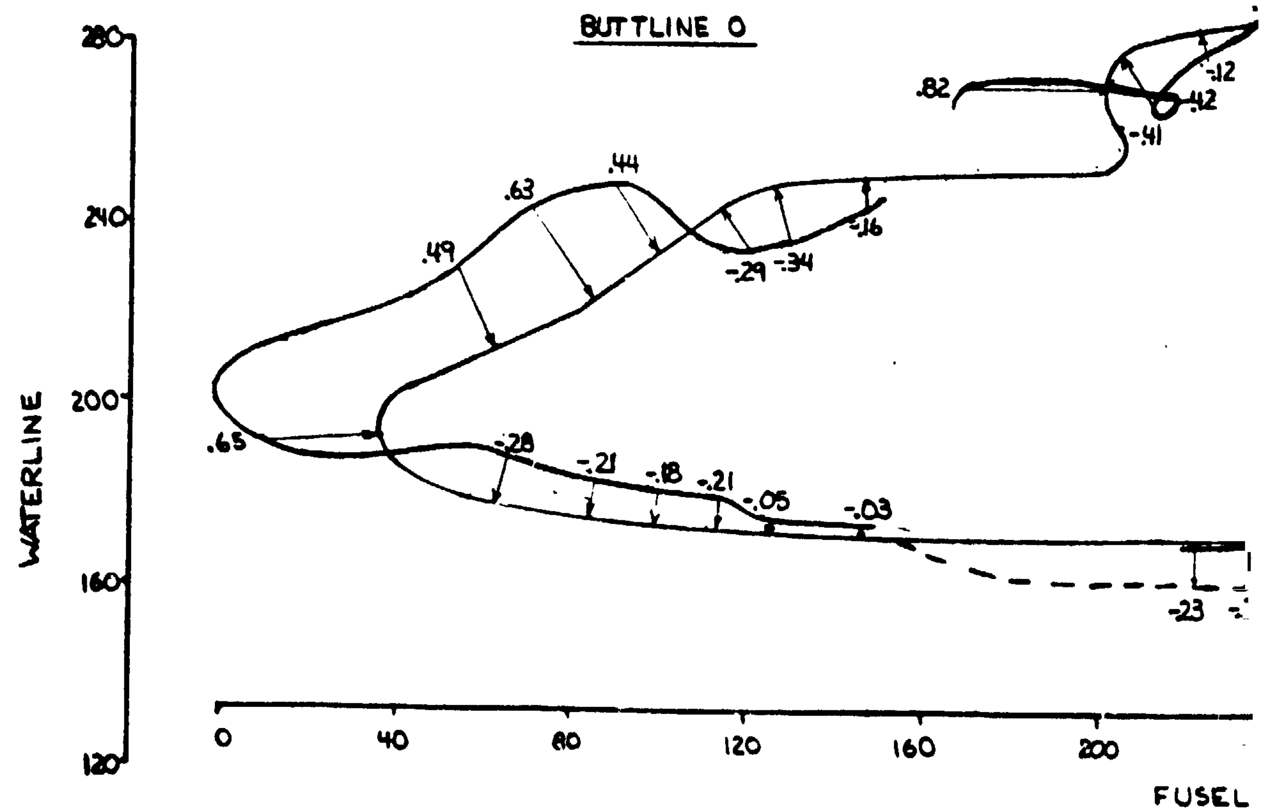


FOLDOUT FRAME 1

STAT
RSRA SIXT
CONF.
ANGLE



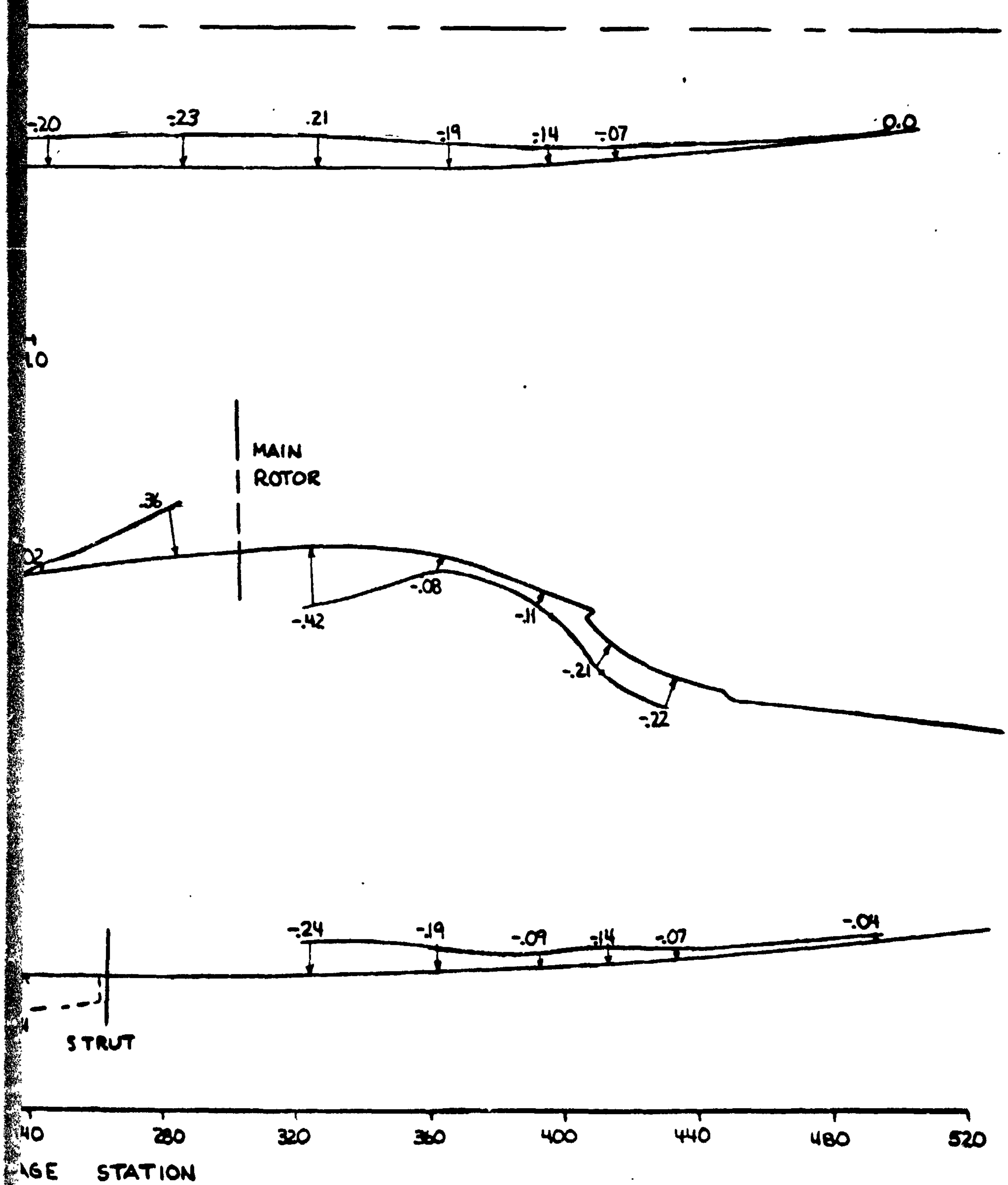
REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR



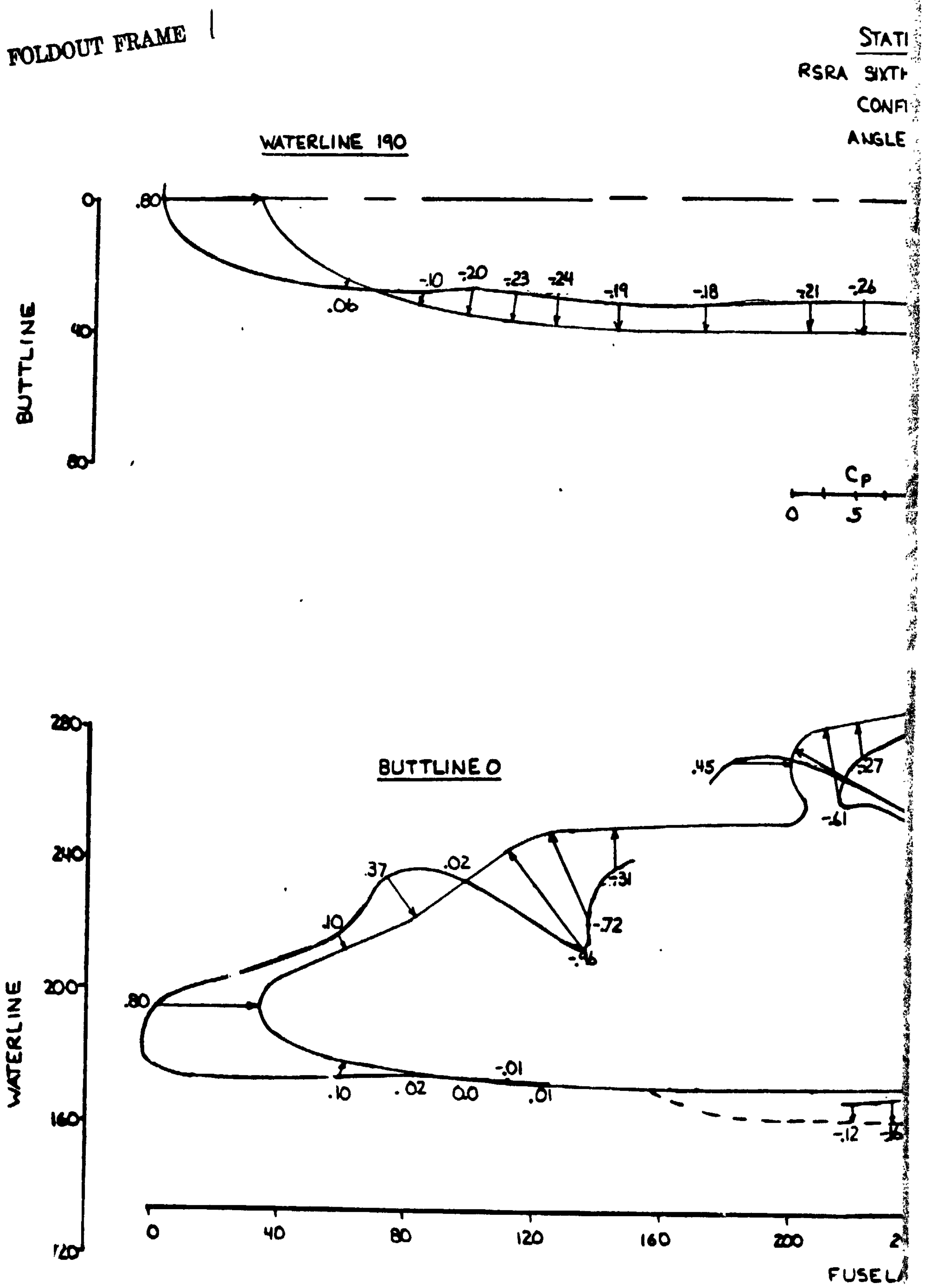
544

C PRESSURE DISTRIBUTION
SCALE WIND TUNNEL TEST
GURATION: FPBTB$_T$, q=80 PSF
OF ATTACK=-10 DEG, ANGLE OF YAW=0 DEG

SER-72011
FIGURE 124



FOLDOUT FRAME 1



546

FOLDOUT FRAME 2

c PRESSURE DISTRIBUTION

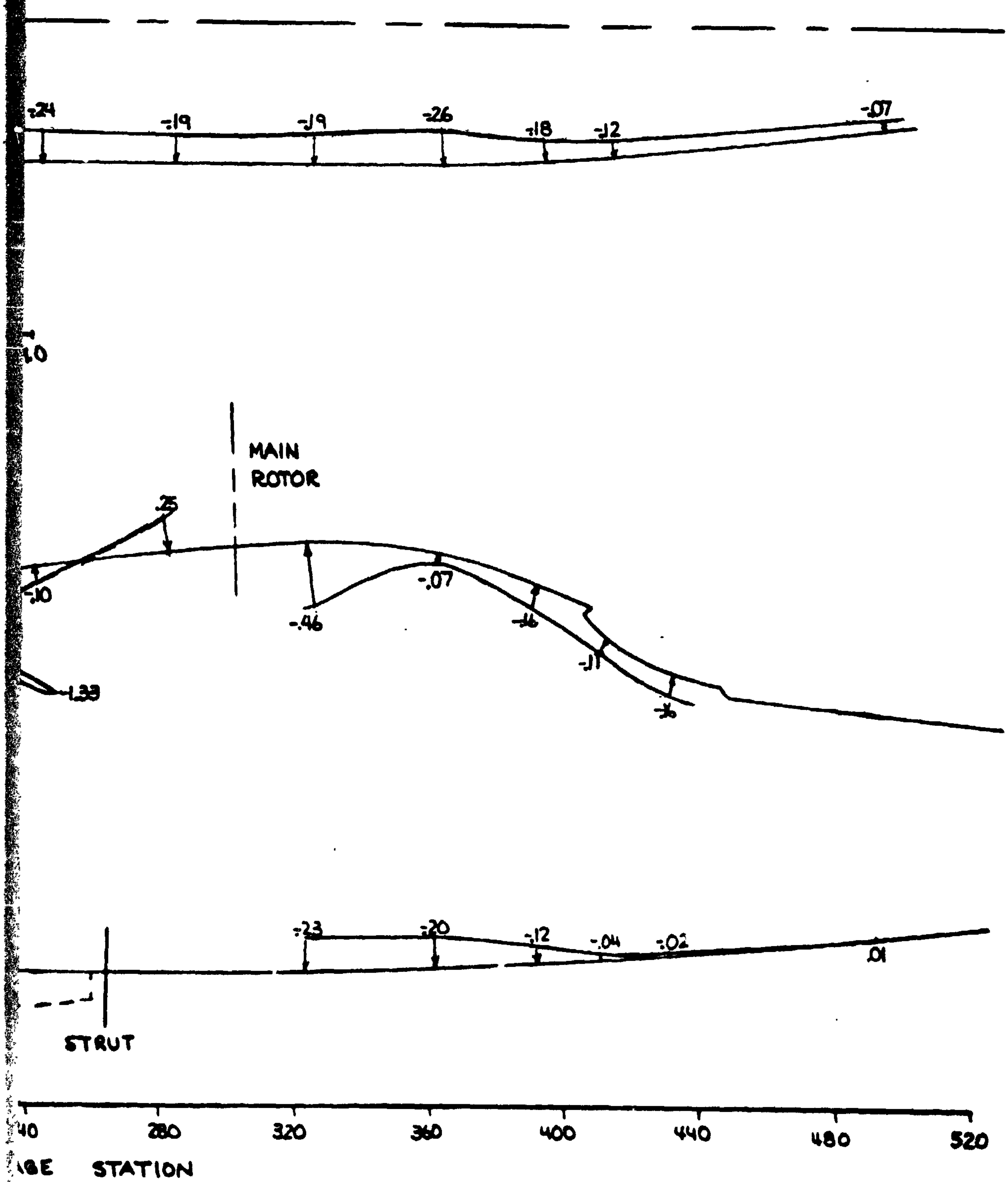
SCALE WIND TUNNEL TEST

GURATION: FPBTB$_T$, q=80PSF

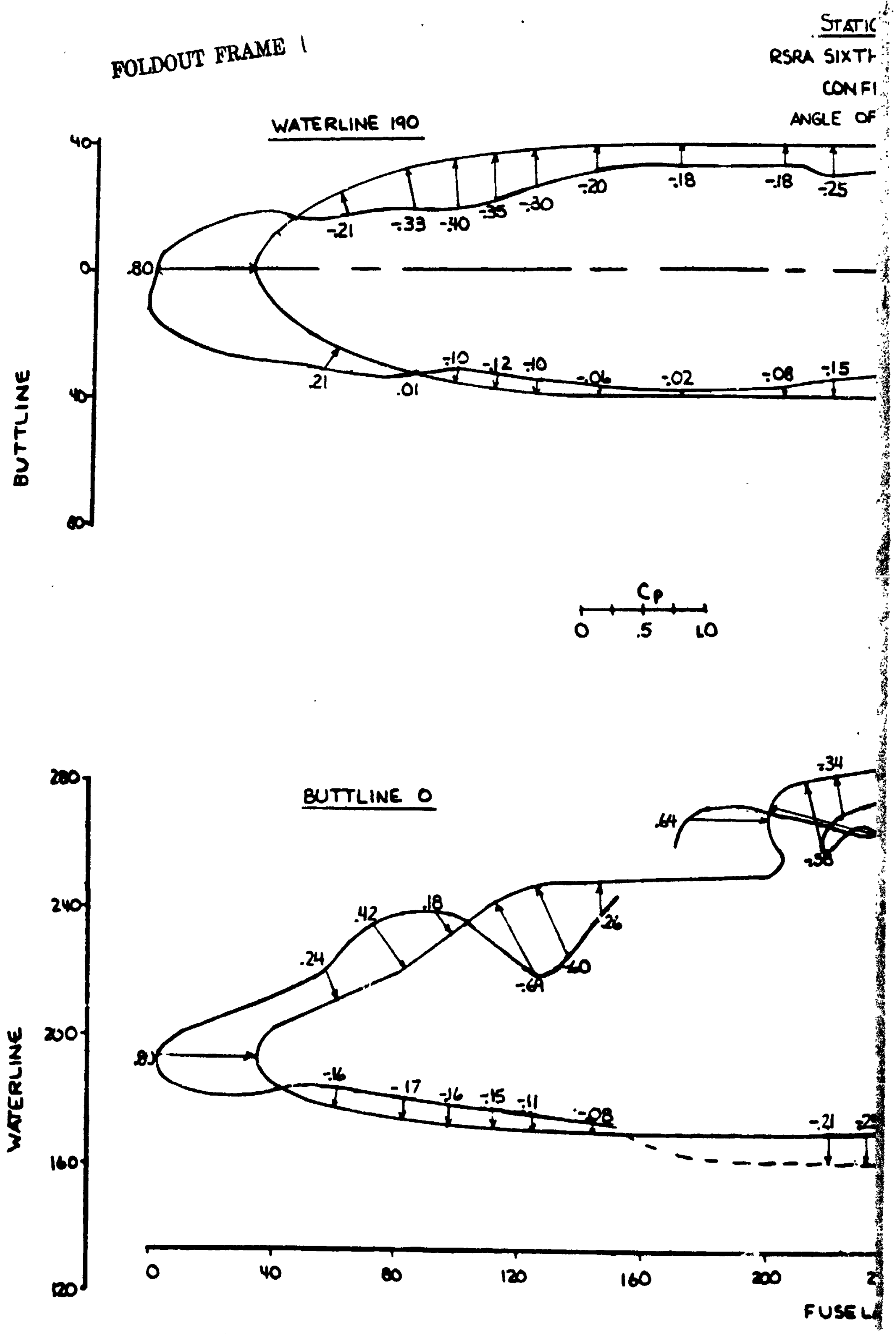
OF ATTACK=10DEG, ANGLE OF YAW=0 DEG

SER-72011

FIGURE 125



FOLDOUT FRAME 1



548

PRESSURE DISTRIBUTION

SCALE WIND TUNNEL TEST

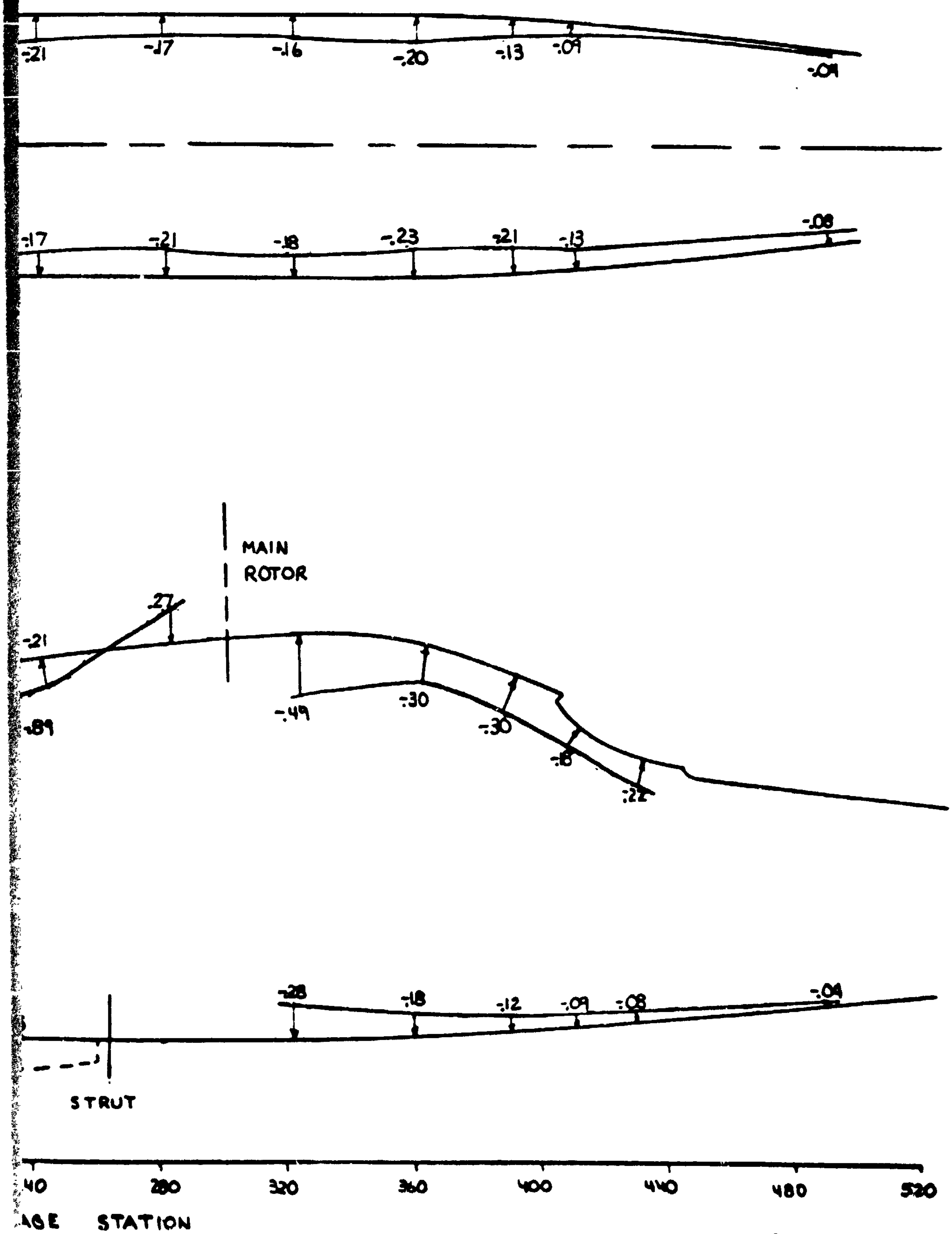
GURATION: FPBTB$_T$, q=80 PSF

ATTACK: 0 DEG, ANGLE OF YAW: 10 DEG

SER-72011

FIGURE 126

FOLDOUT FRAME 2



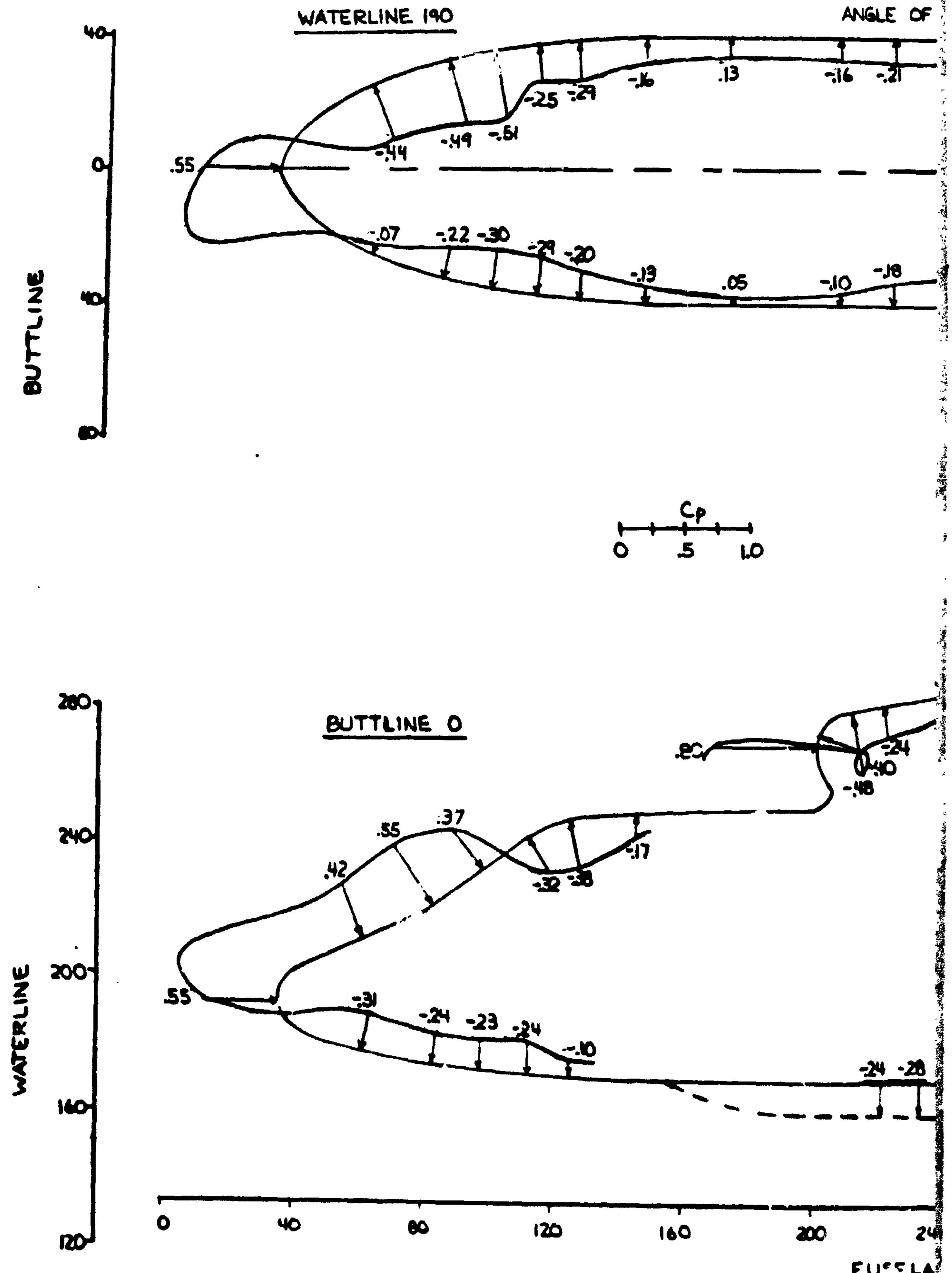
FOLDOUT FRAME 1

STATIC

RSRA SIXTH

CONFIG

ANGLE OF



550

PRESSURE DISTRIBUTION

SCALE WIND TUNNEL TEST

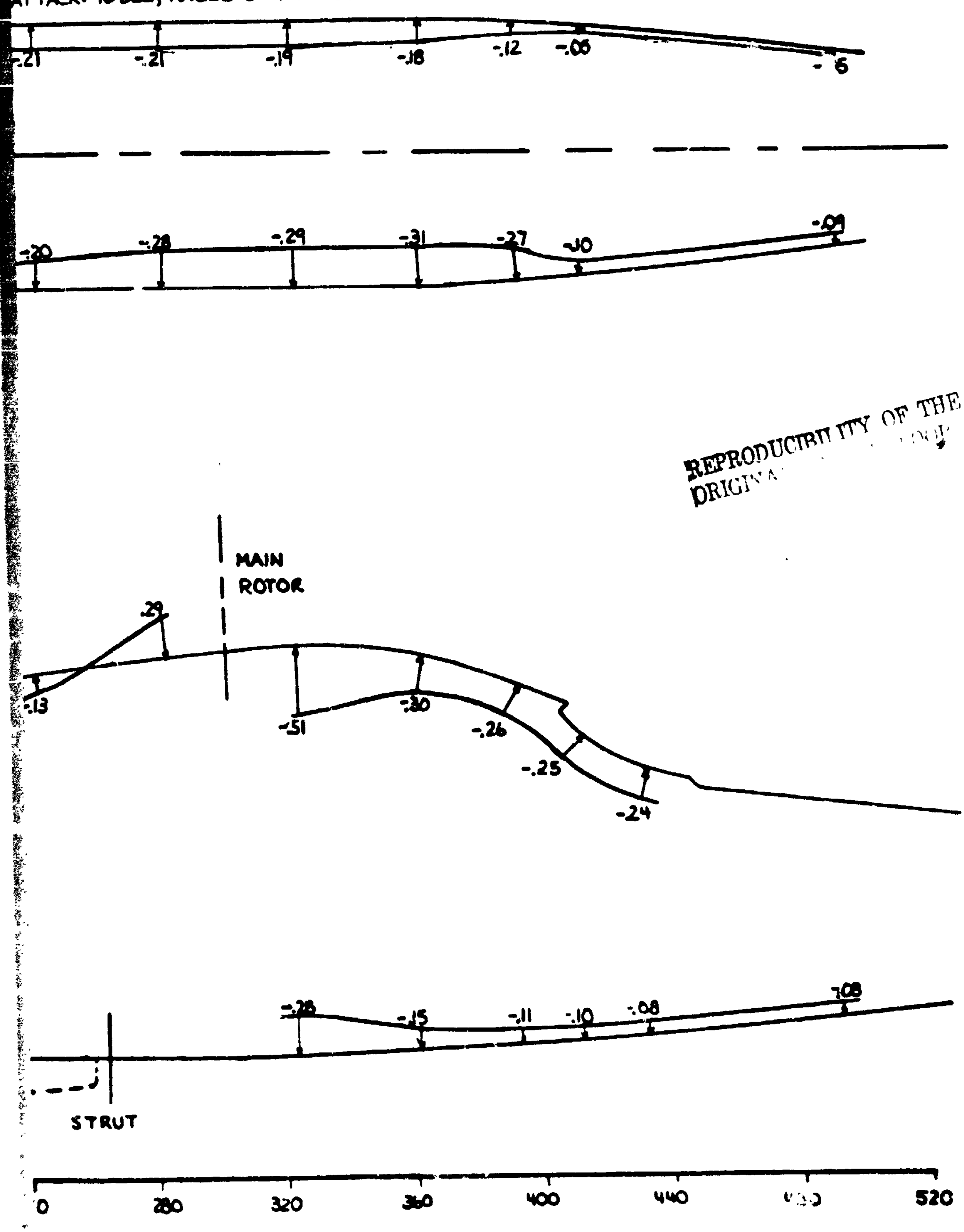
SURATION: FPBTB$_T$, q=80 PSF

ATTACK: -10 DEG, ANGLE OF YAW = 10 DEG

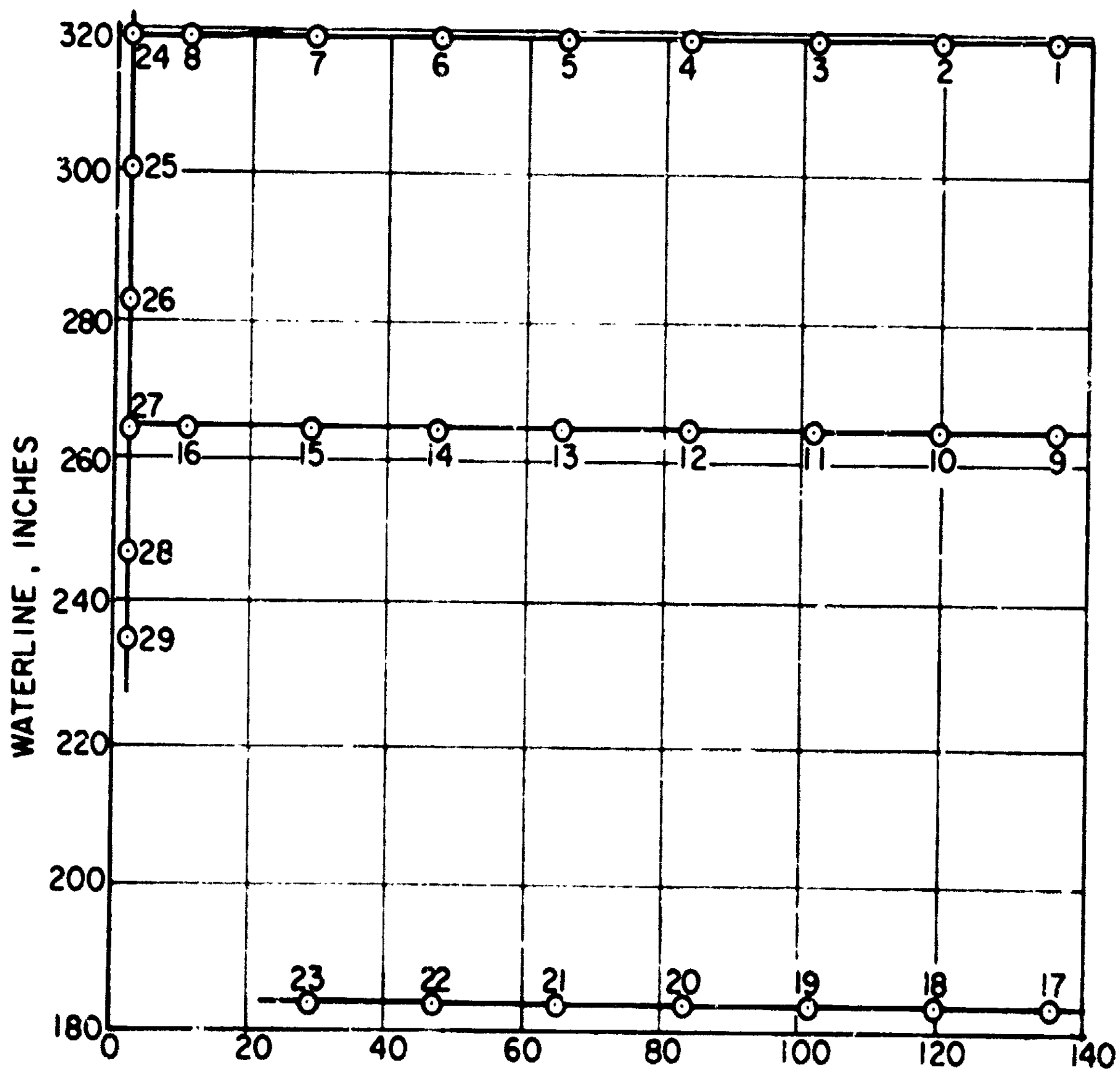
SER-72011

FIGURE 127

FOLDOUT FRAME 2



TOTAL PRESSURE RAKE PROBE LOCATIONS



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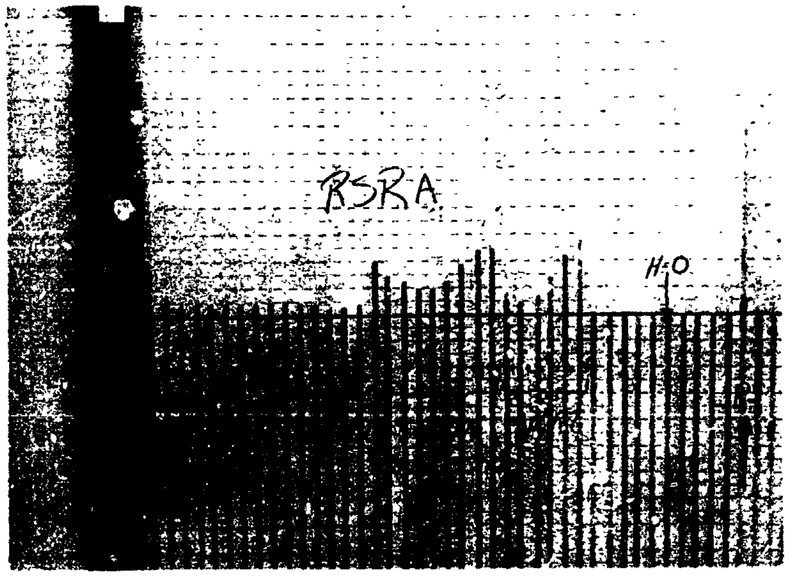
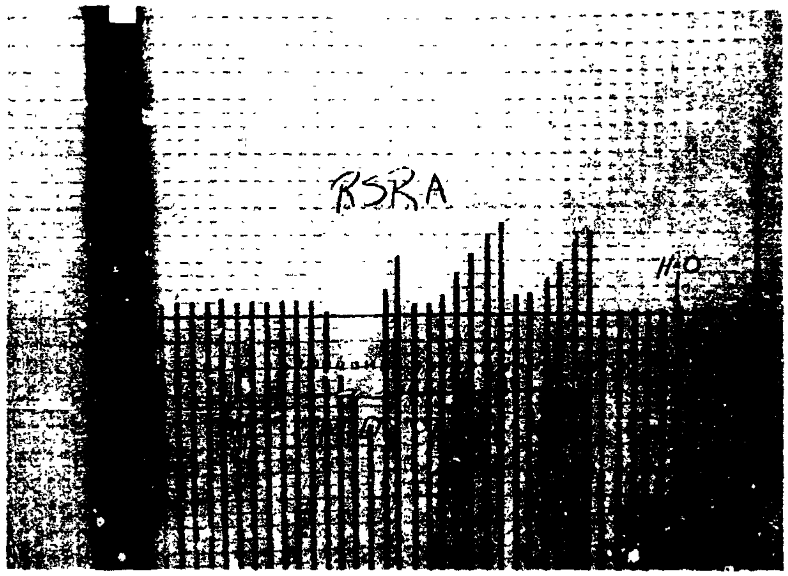


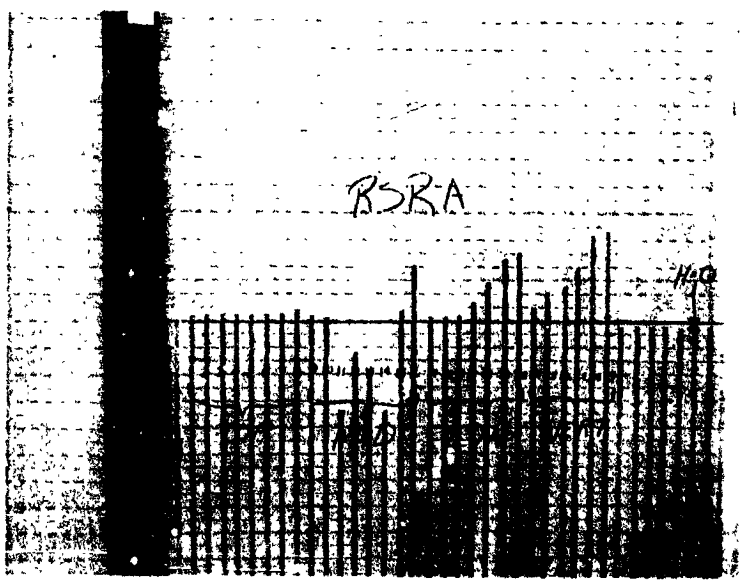
a. $\alpha = -8°$, $\Psi = 0°$

b. $\alpha = -4°$, $\Psi = 0°$

Figure 129 Total Pressure Rake Data
Run 343, Configuration $FPBN_{P_1}W_5T_q$
$i_W = -9°$, $\delta_F = 0°$, TRIM POWER

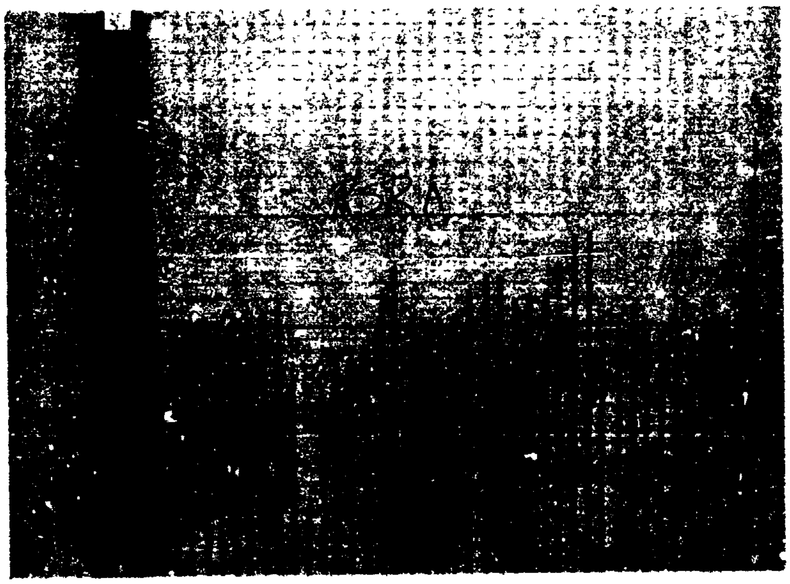


c. $\alpha = 0°$, $\psi = 0°$



d. $\alpha = 5°$, $\psi = 0°$

Figure 129 (Continued)



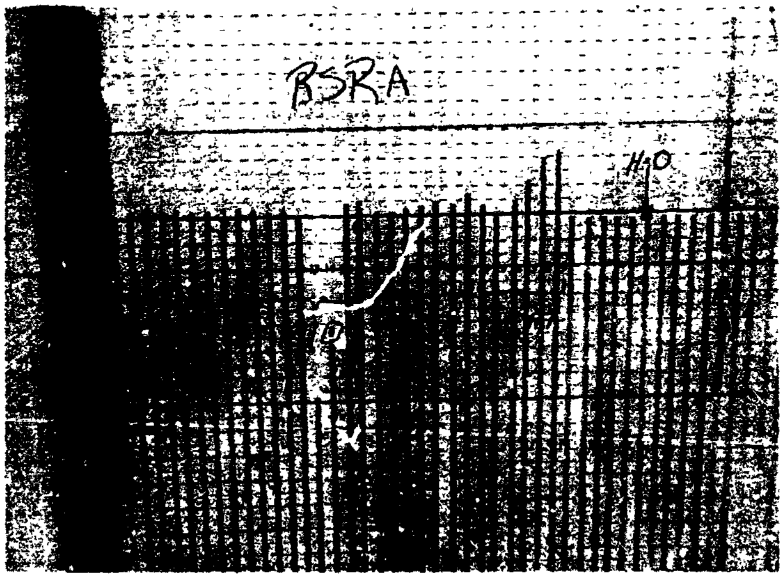
e. $\alpha = 10°$, $\Psi = 0°$

f. $\alpha = 15°$, $\Psi = 0°$

Figure 129 (Continued)

g. $\alpha = 20°$, $\psi = 0°$

Figure 129 (Concluded)



a. $\alpha = 0°$, $\psi = -15°$

b. $\alpha = 0°$, $\psi = -10°$

Figure 130 Total Pressure Rake Data
RUN 345 , Configuration $FPBN_{P1}W_5T_4$
$i_W = -9°$, $\delta_f = 0°$, TRIM POWER

c. $\alpha = 0°$, $\Psi = -5°$

d. $\alpha = 0°$, $\Psi = 0°$

Figure 130 (Concluded)

a. $\alpha = -8^\circ$, $\Psi = 0^\circ$

b. $\alpha = -4^\circ$, $\Psi = 0^\circ$

Figure 131 Total Pressure Rake Data
Run 346 , Configuration $FPBN_{P1}W_5T_9$
$i_W = 0^\circ$, $\delta_f = 0^\circ$, TRIM POWER

c. $\alpha = 0°$, $\Psi = 0°$

d. $\alpha = 5°$, $\Psi = 0°$

Figure 131 (Continued)

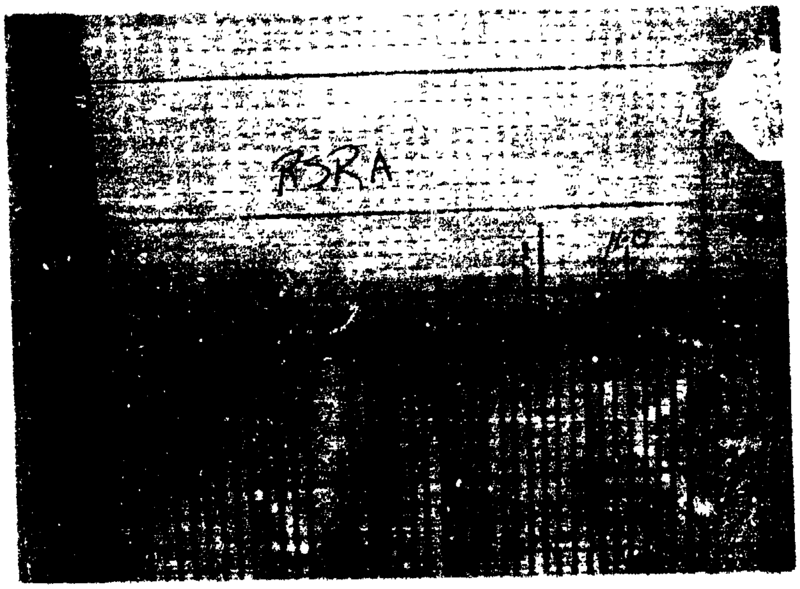
e. $\alpha = 10°$, $\Psi = 0°$

f. $\alpha = 15°$, $\Psi = 0°$

Figure 131 (Continued)

g. $\alpha = 20°$, $\psi = 0°$

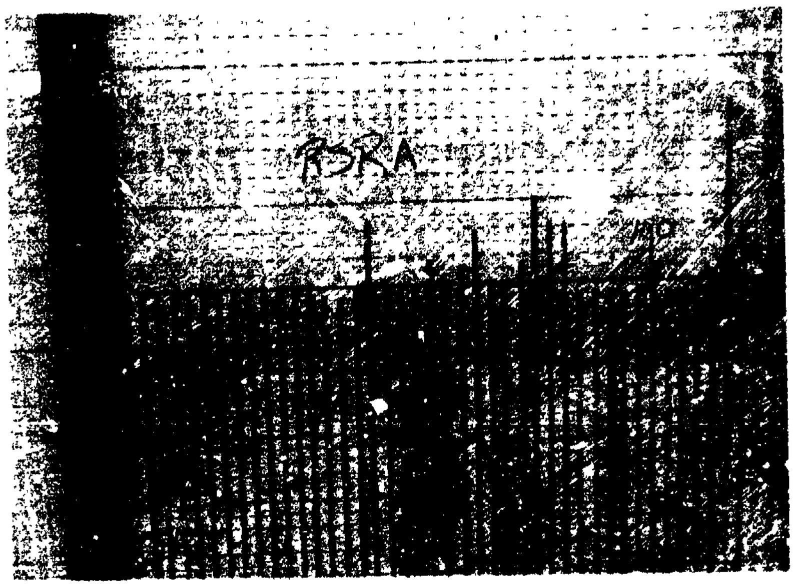
Figure 131 (Concluded)



a. $\alpha = 0°$, $\psi = -15°$

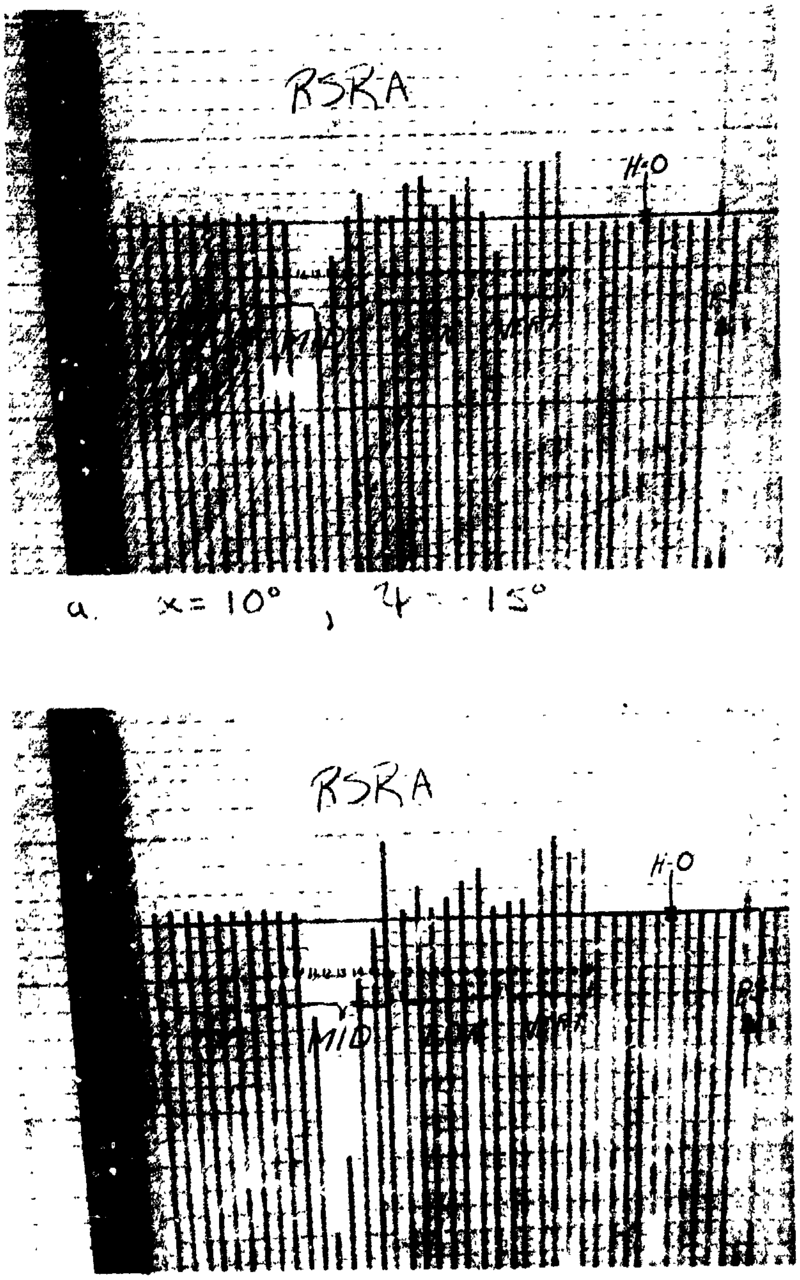
b. $\alpha = 0°$, $\psi = -10°$

Figure 132 Total Pressure Rake Data
Run 347 , Configuration $FPBN_9W_5T_9$
$i_w = 0°$, $\delta_f = 0°$, TRIM POWER



c, $\alpha = 0°$, $\psi = 5°$

Figure 132 (Concluded)



a. $\alpha = 10°$, $\psi = -15°$

b. $\alpha = 10°$, $\psi = -10°$

Figure 133 Total Pressure Rake Data
Run 348 , Configuration FPBNpW5I4
$i_W = 0°$, δ_f 0° , TRIM POWER

c. $\alpha = 10°$, $\psi = -5°$

d. $\alpha = 10°$, $\psi = 0°$

Figure 133 (Concluded)

a. $\alpha = -8^\circ$, $\psi = 0^\circ$.

b. $\alpha = -4^\circ$, $\psi = 0^\circ$

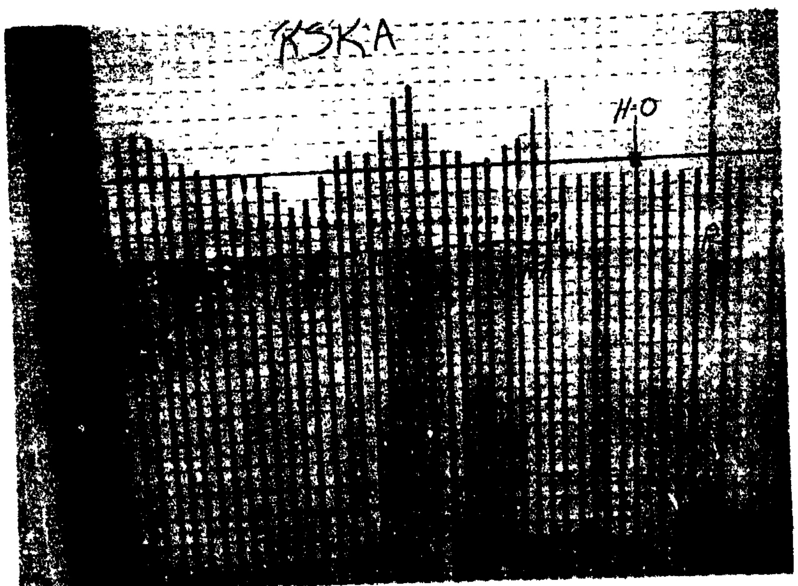
Figure 134 Total Pressure Rake Data
Run 349 , Configuration $FPBN_{P_1}W_5T_9$
$i_W = 15^\circ$, $\delta_f = 0^\circ$, TRIM POWER

c. $\alpha = 0°$, $\psi = 0°$

d. $\alpha = 5°$, $\psi = 0°$

Figure 134 (Continued)

e. $\alpha = 10°$, $\Psi = 0°$



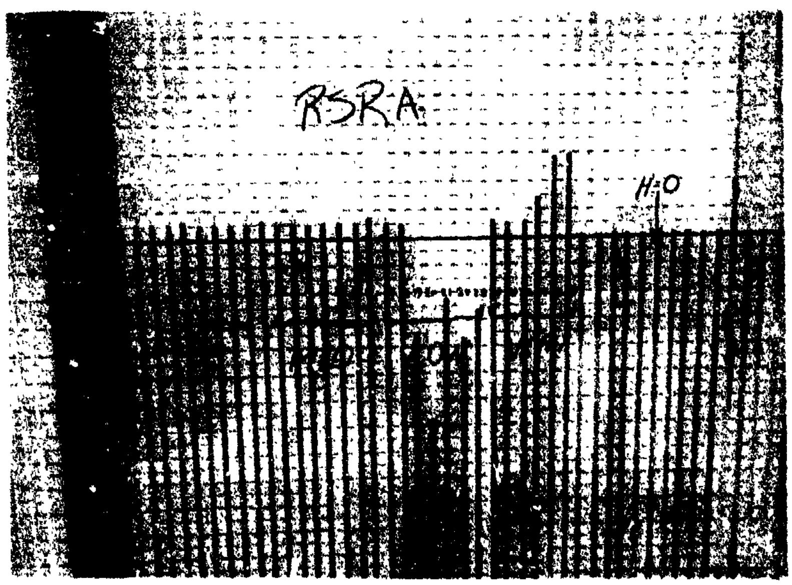
f. $\alpha = 15°$, $\Psi = 0°$

Figure 134 (Continued)

g. $\alpha = 20°$, $\psi = 0°$

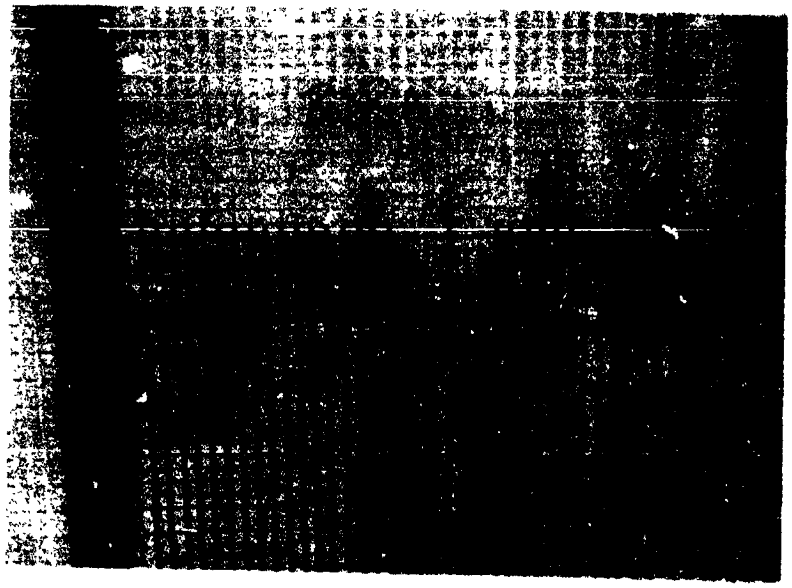
Figure 134 (Concluded)

a. $\alpha = 0°$, $\psi = -15°$



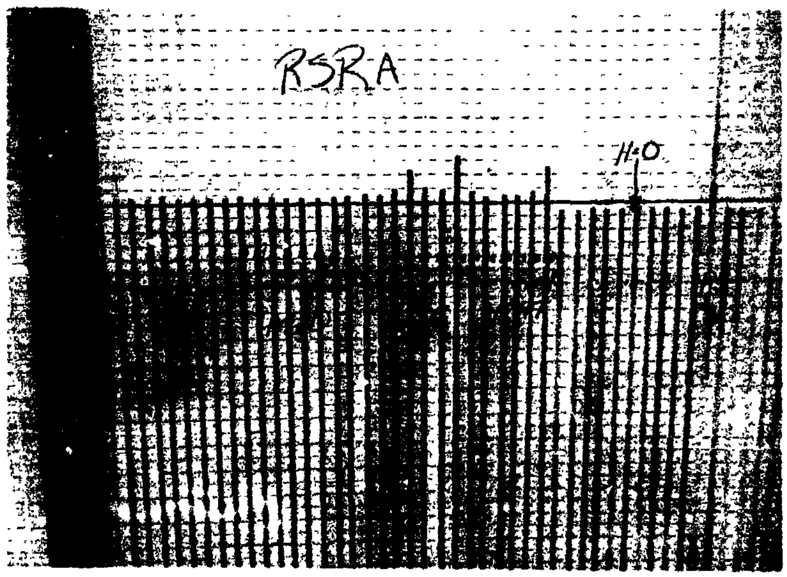
b. $\alpha = 0°$, $\psi = -10°$

Figure 135 Total Pressure Rake Data
Run 350 , Configuration $F_P B N_{P1} W_5 T_9$
$i_W = 15°$, $\delta_f = 0°$, TRIM POWER

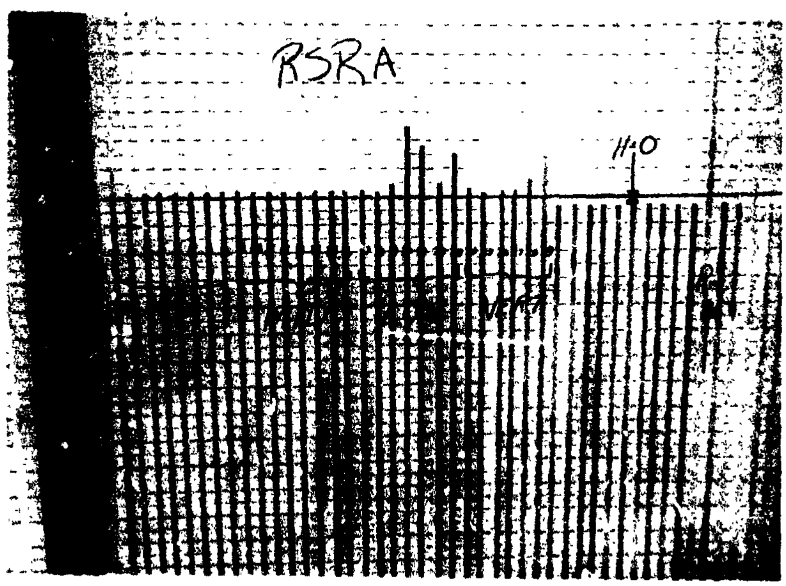


c. $\alpha = 0°$, $\psi = -5°$

Figure 135 (Concluded)

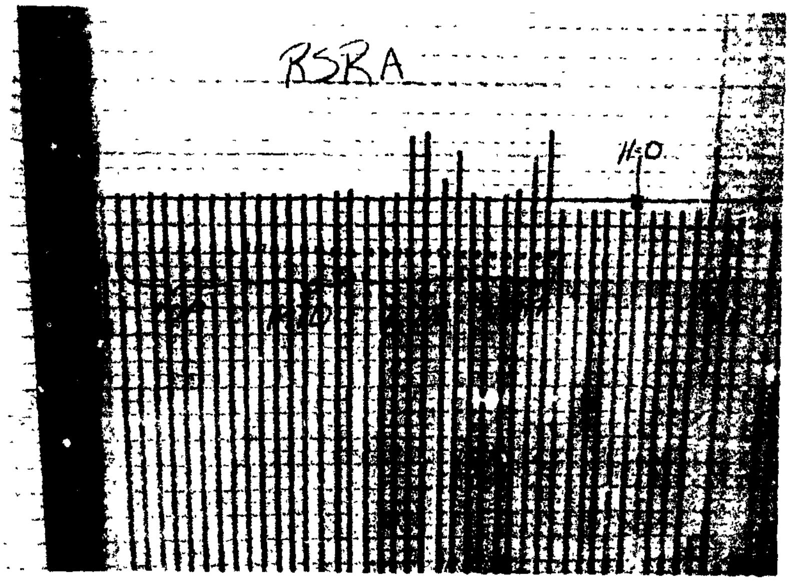


a. $\alpha = -8°$, $\psi = 0°$

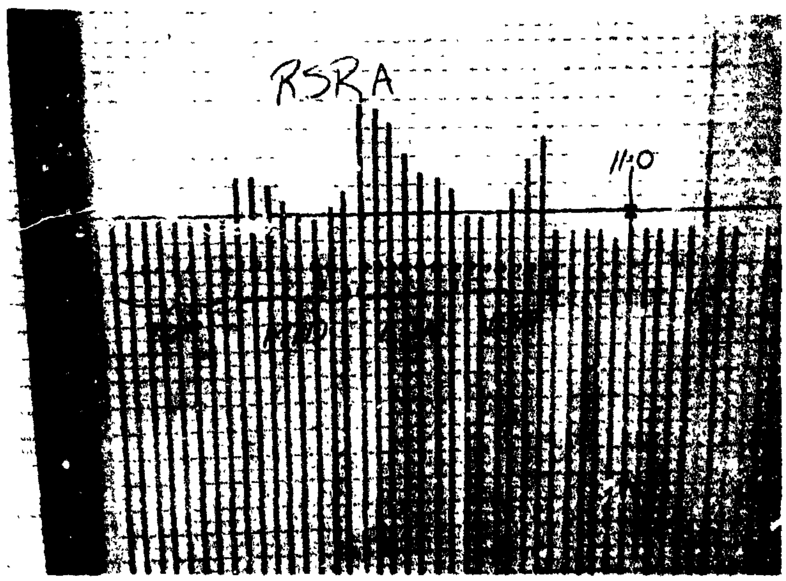


b. $\alpha = -4°$, $\psi = 0°$

Figure 136 Total Pressure Rake Data
Run 351, Configuration $FPBN_{P1} W_5 T_1$
$i_W = 15°$, δ_f 30°, WINDMILL

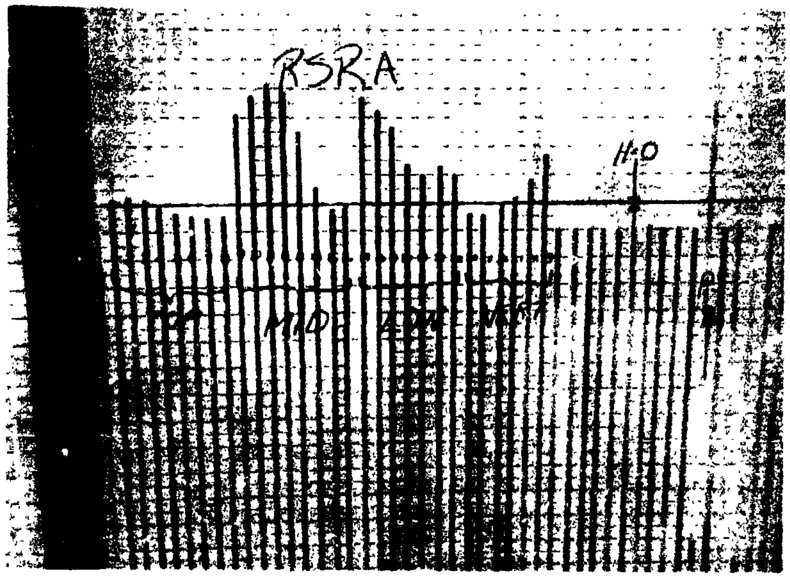


c. $\alpha = 0°$, $\psi = 0°$

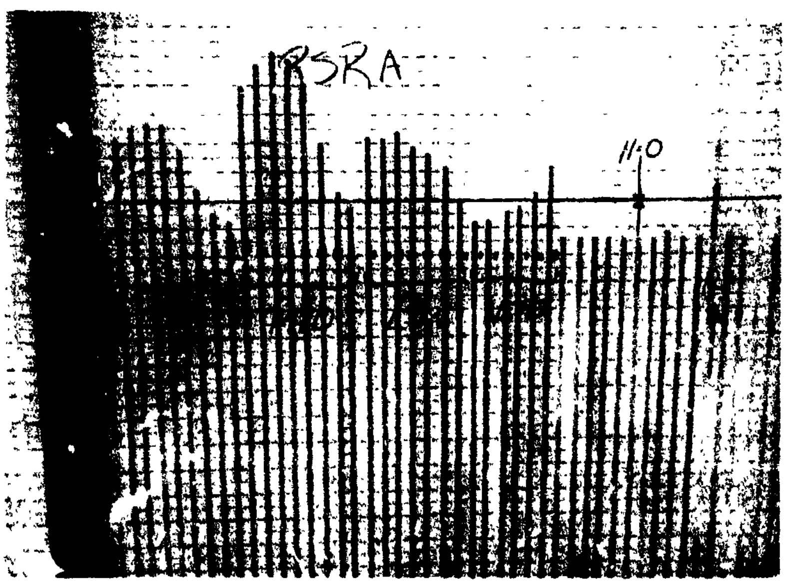


d $\alpha = 5°$, $\psi = 0°$

Figure 1[illegible] (Continued)

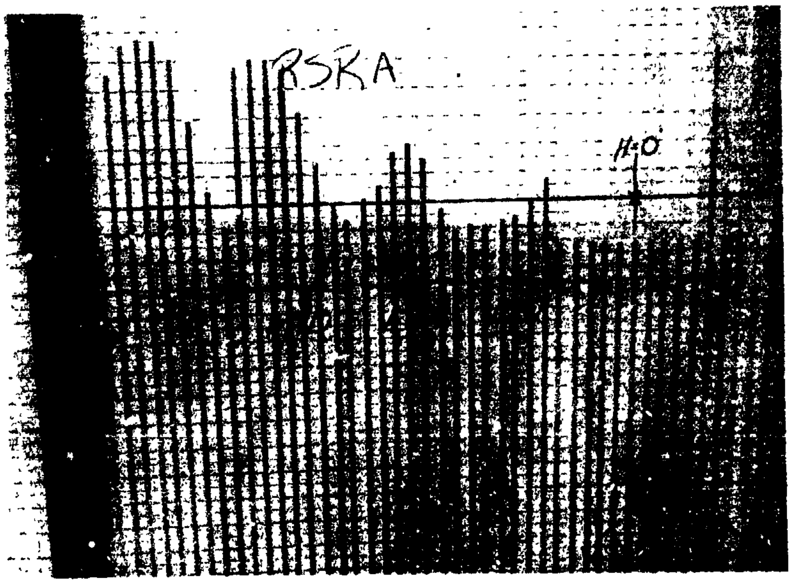


e $\alpha = 10°$, $\psi = 0°$



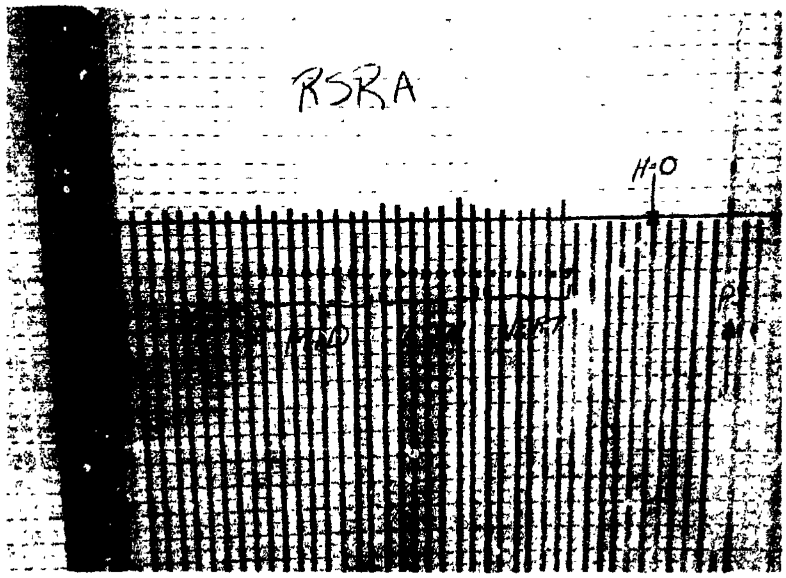
f $\alpha = 15°$, $\psi = 0°$

Figure 136 (Continued)

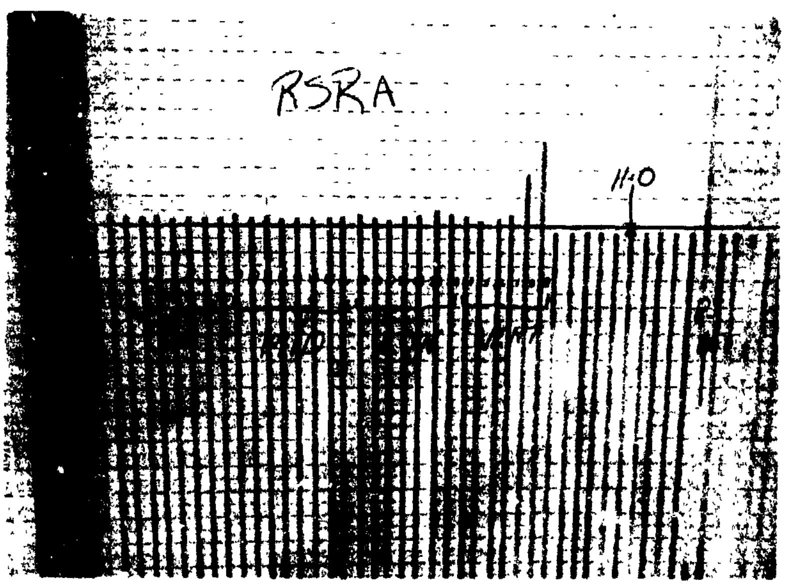


g $\alpha = 20°$, $\psi = 0°$

Figure 136 (Concluded)

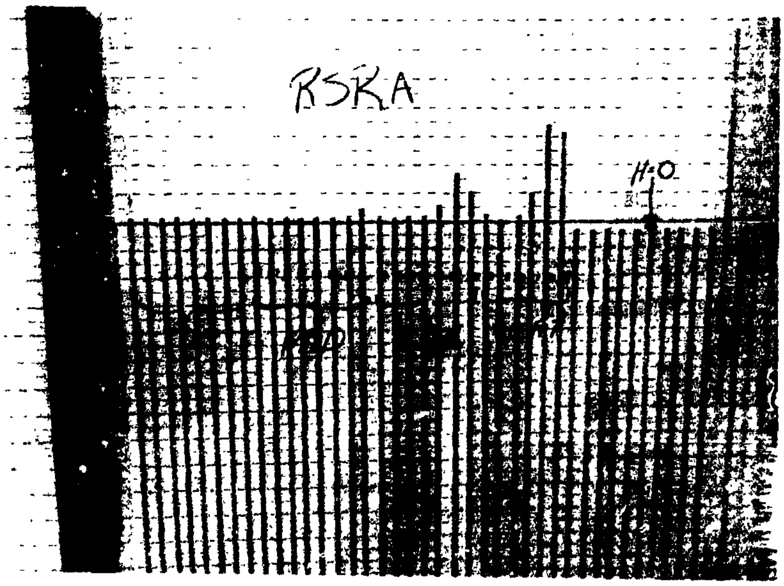


a. $\alpha = 0°$, $\psi = -15°$



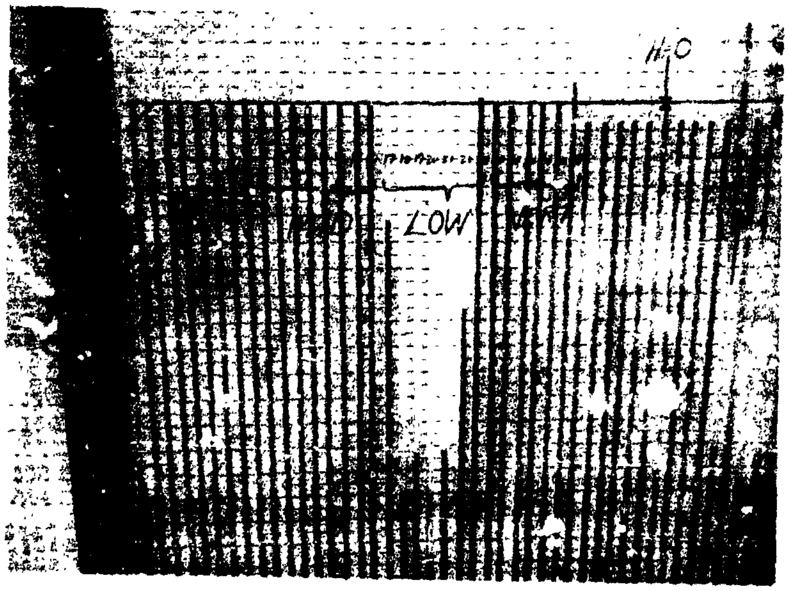
b. $\alpha = 0°$, $\psi = -10°$

Figure 137 Total Pressure Rake Data
Run 352 , Configuration $FPEN_{P_1}W_5T_9$
i_w 15° , $\delta_f = 30°$, WINDMILL

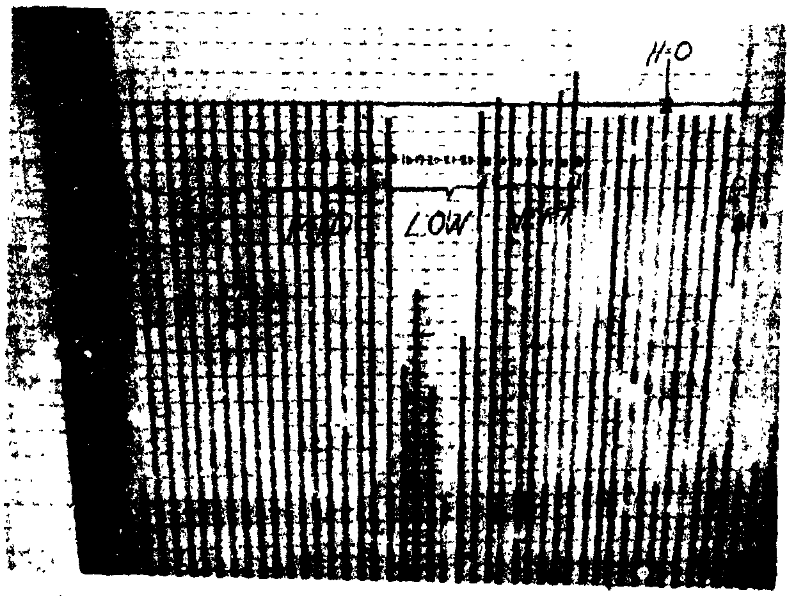


c $\alpha = 0°$, $\psi = -5°$

Figure 137 (Concluded)

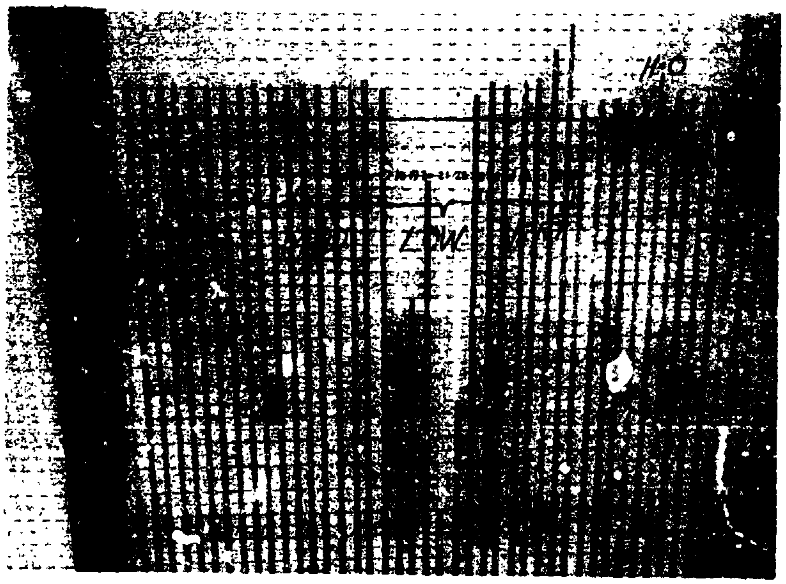


a. $\alpha = -8°$, $\psi = 0°$

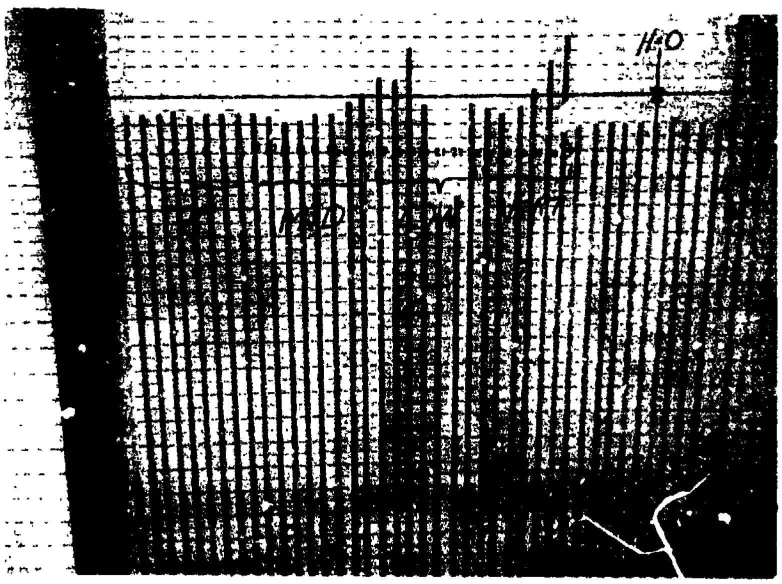


b. $\alpha = 4°$, $\psi = 0°$

Figure 133 Total Pressure Rake Data
Run 35.3 , Configuration $FPBN_{p1}W_ST_9$
$i_W = 15°$, $\delta_f = 30°$, TRIM POWER

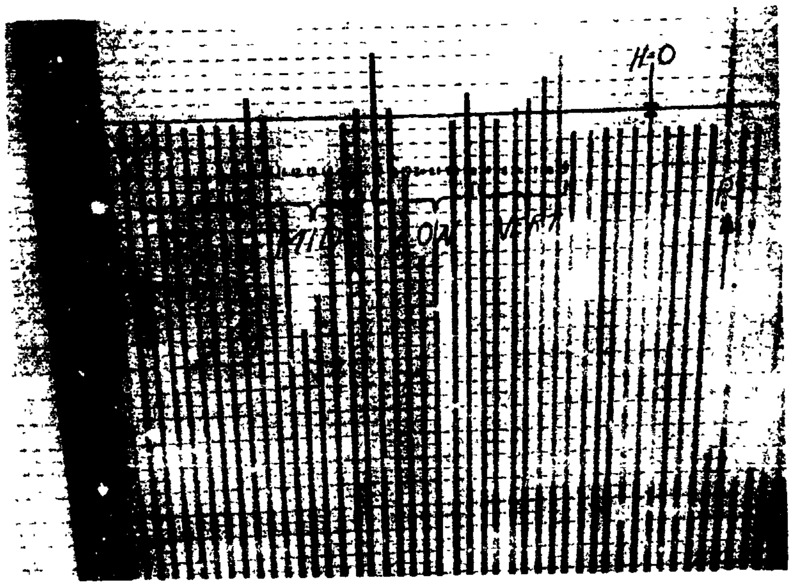


c. $\alpha = 0°$, $\Psi = 0°$

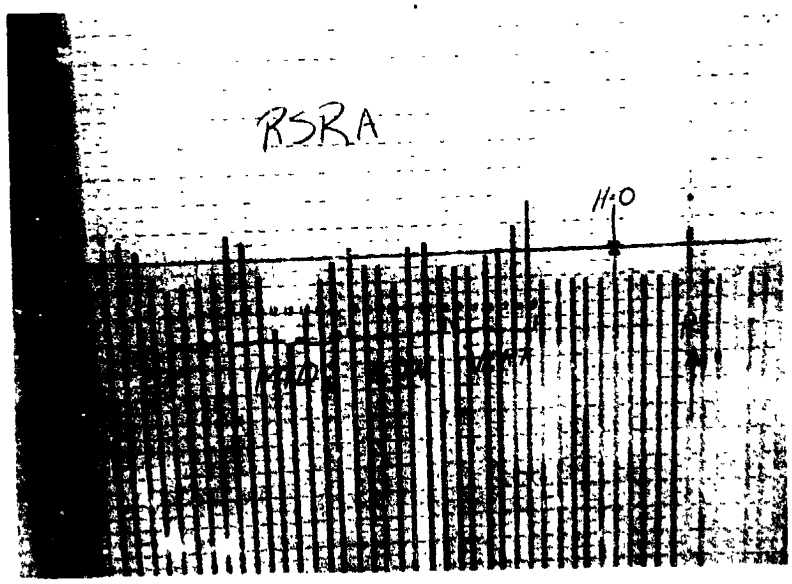


d. $\alpha = 5°$, $\Psi = 0°$

Figure 133 (Continued)

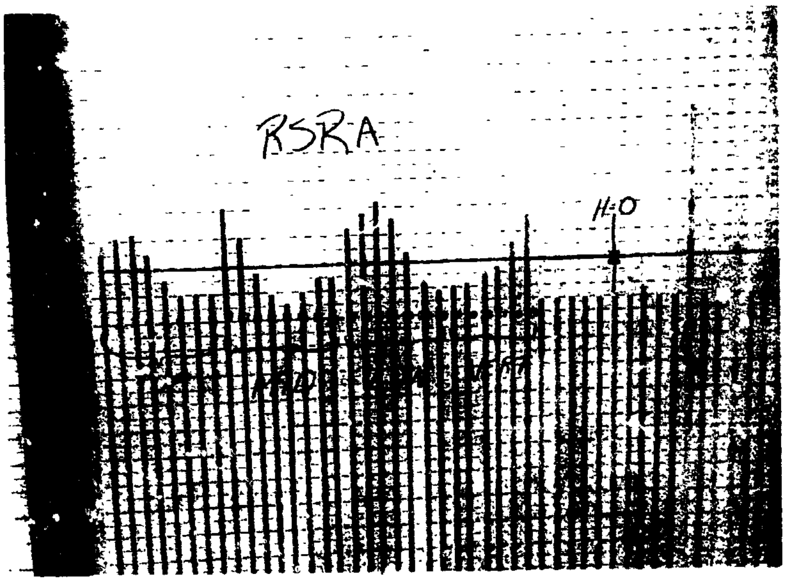


e. $\alpha = 10°$, $\Psi = 0°$



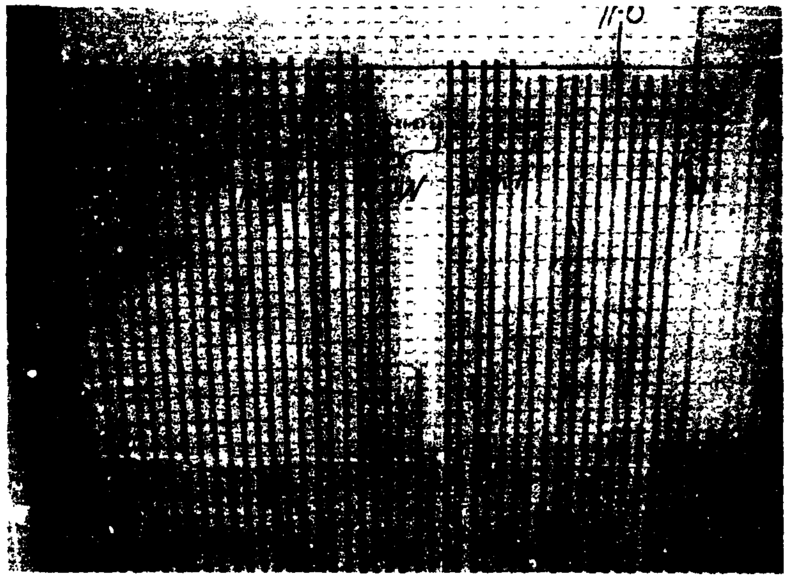
f. $\alpha = 15°$, $\Psi = 0°$

Figure 138 (Continued)

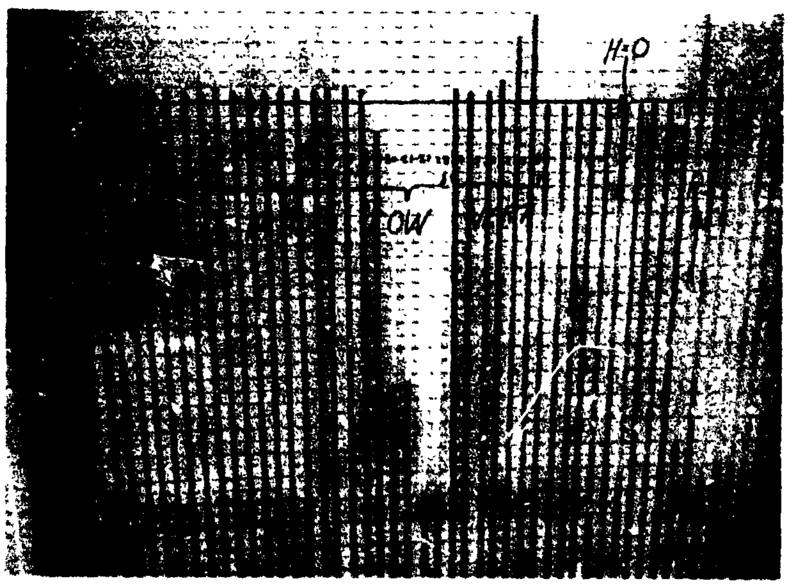


g. $\alpha = 20°$, $\psi = 0°$

Figure 133 (Concluded)

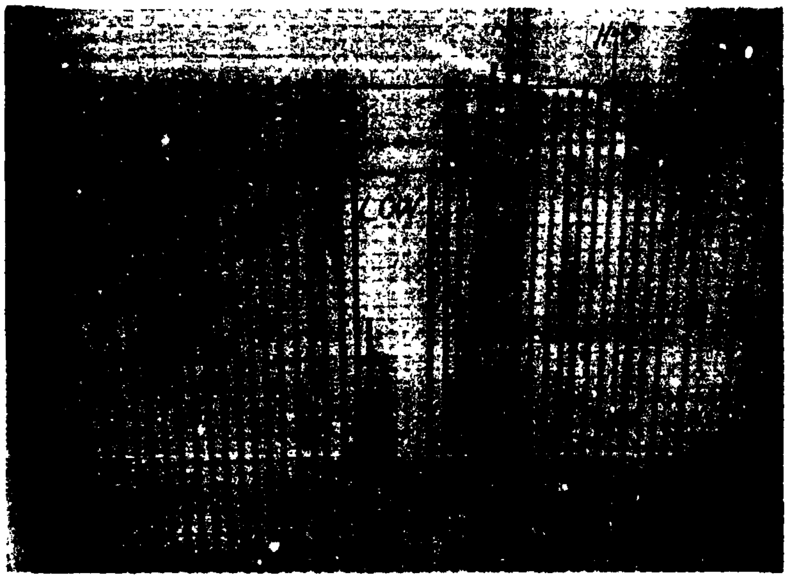


a. $\alpha = 0°$, $\psi = -15°$



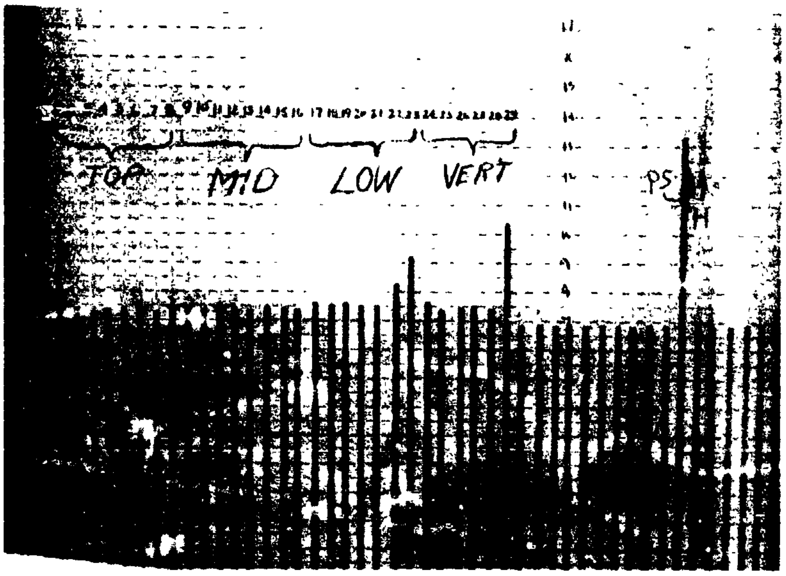
b. $\alpha = 0°$, $\psi = -10°$

Figure 139 Total Pressure Rake Data
Run 354, Configuration $FPBN_P W_5 T_9$
$i_W = 15°$, $\delta_f = 30°$, TRIM POWER

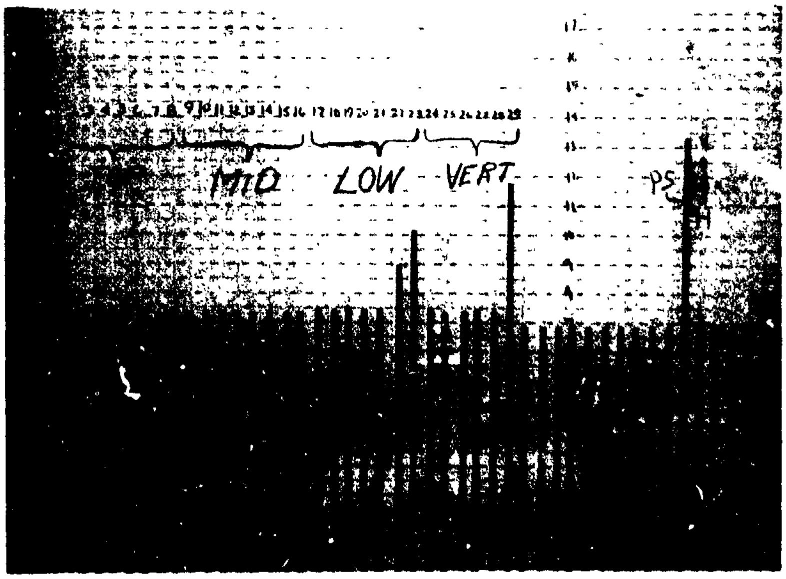


c. $\alpha = 0°$, $\psi = -5°$

Figure 137 (Concluded)

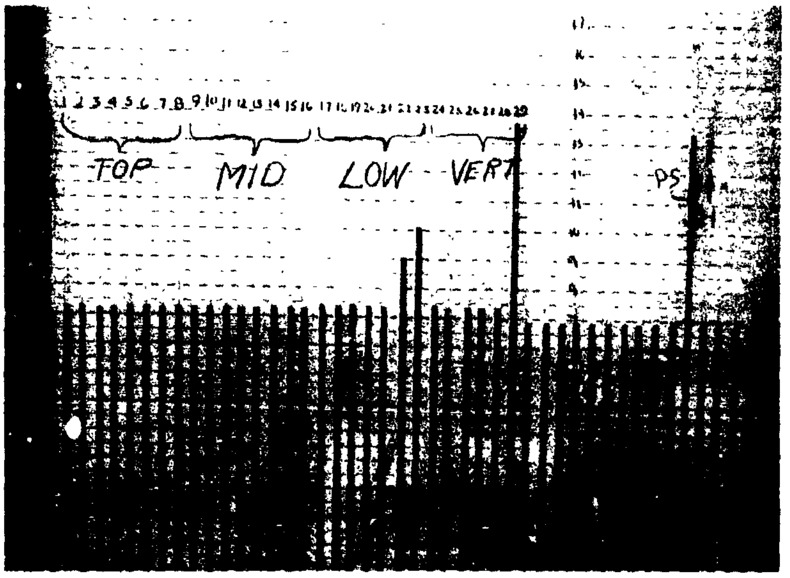


a. $\alpha = -20°$, $\psi = 0°$

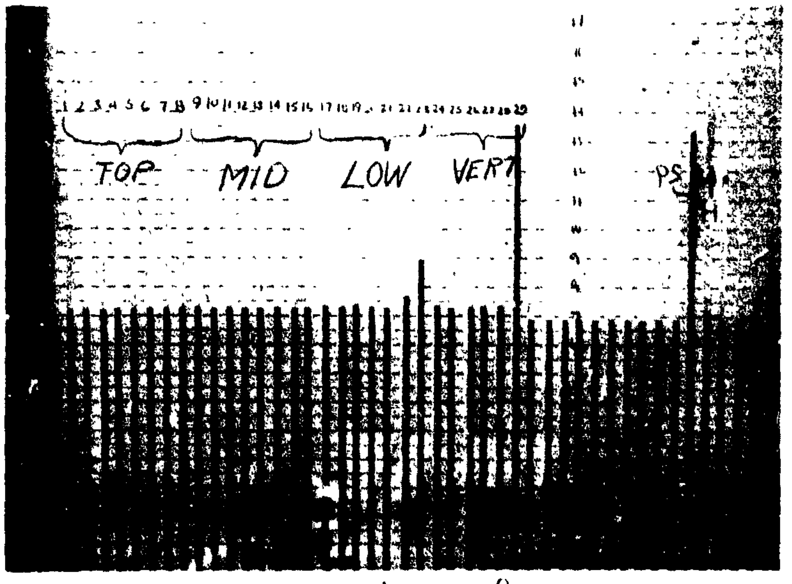


b. $\alpha = -16°$, $\psi = 0°$

Figure 140 Total Pressure Rake Data
Run 375, Configuration FPBWS T_9
$i_W = 15°$, $\delta_f = 0°$

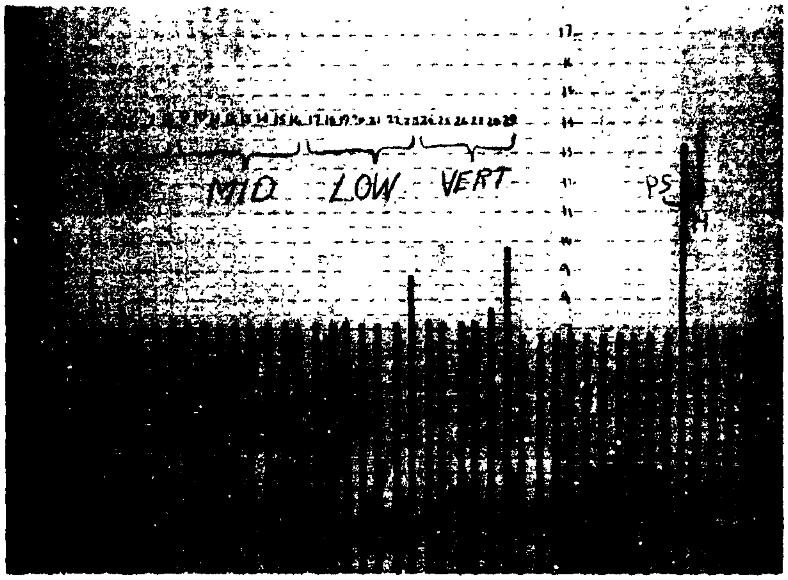


c $\alpha = -12°$, $\Psi = 0°$

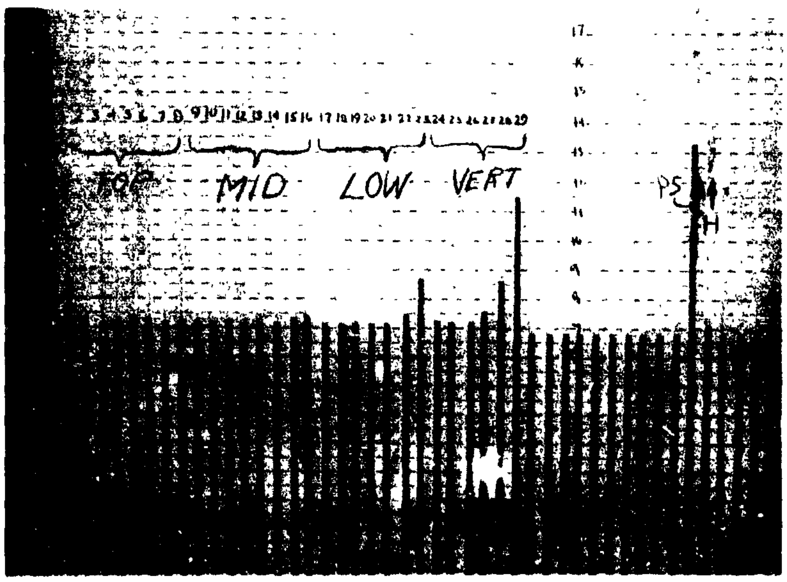


d $\alpha = -8°$, $\Psi = 0°$

Figure ?? (Continued)

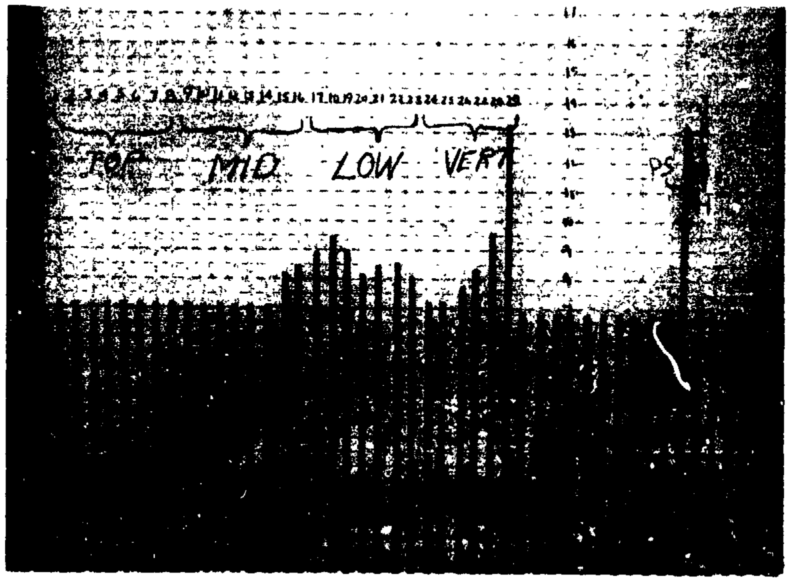


e. $\alpha = -4°$, $\psi = 0°$

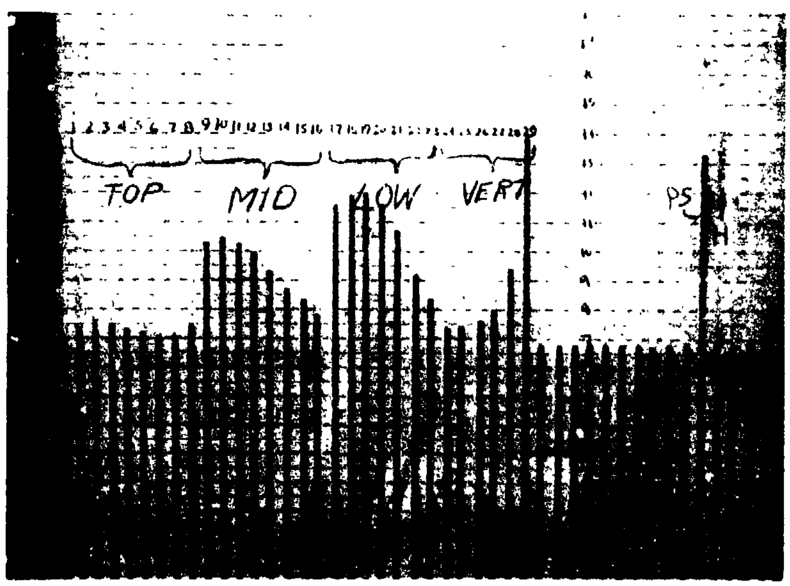


f. $\alpha = 0°$, $\psi = 0°$

Figure 140 (Continued)

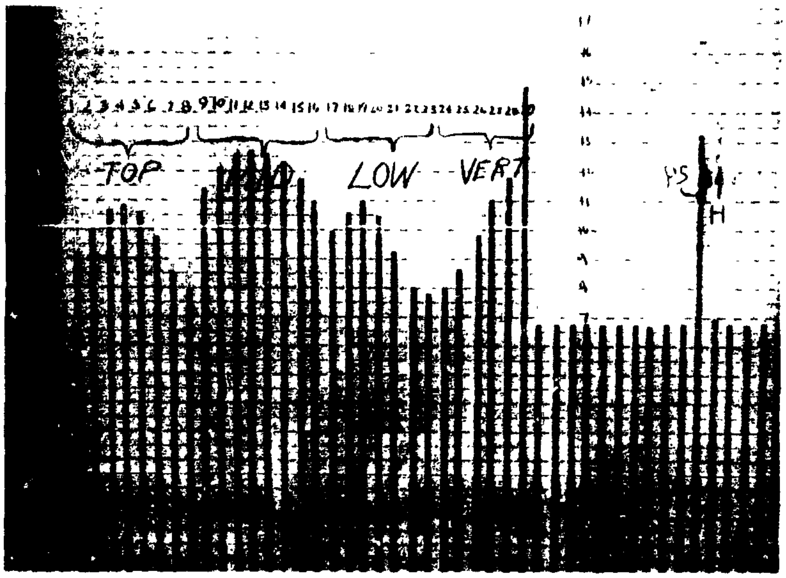


a [illegible]

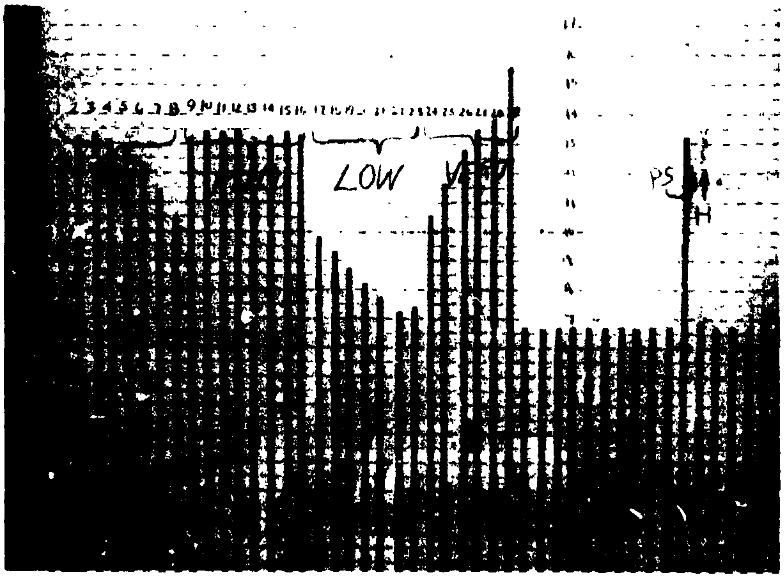


b $\alpha = 10°$, $\psi = 0°$

Figure 14[illegible] (Continued)

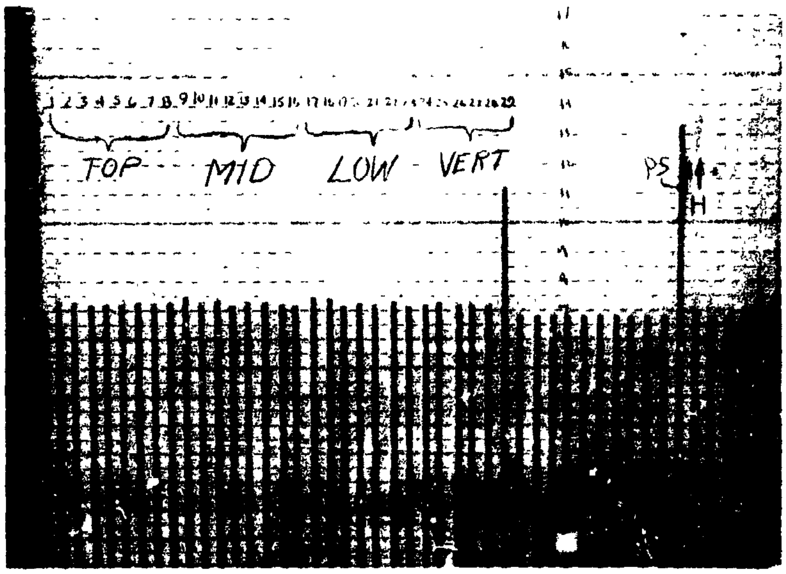


i. $\alpha = 15^\circ$, $\psi = 0^\circ$

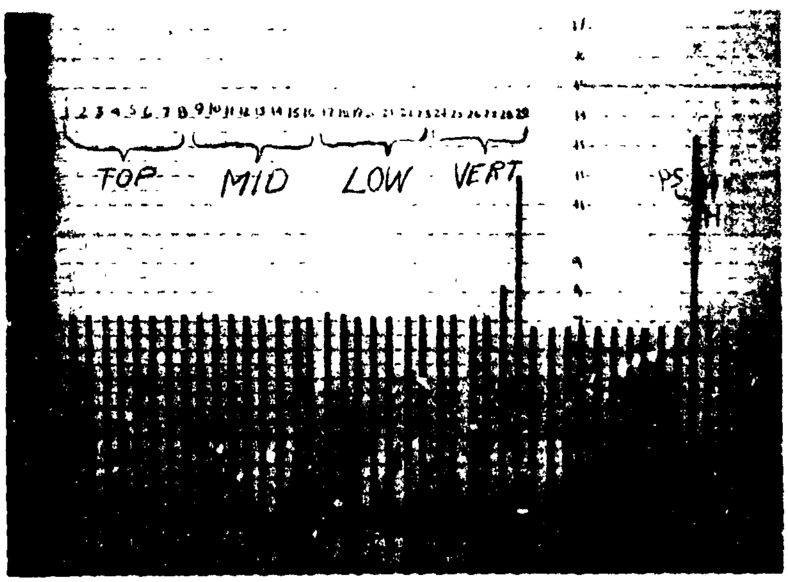


j. $\alpha = 20^\circ$, $\psi = 0^\circ$

Figure 140 (Concluded)

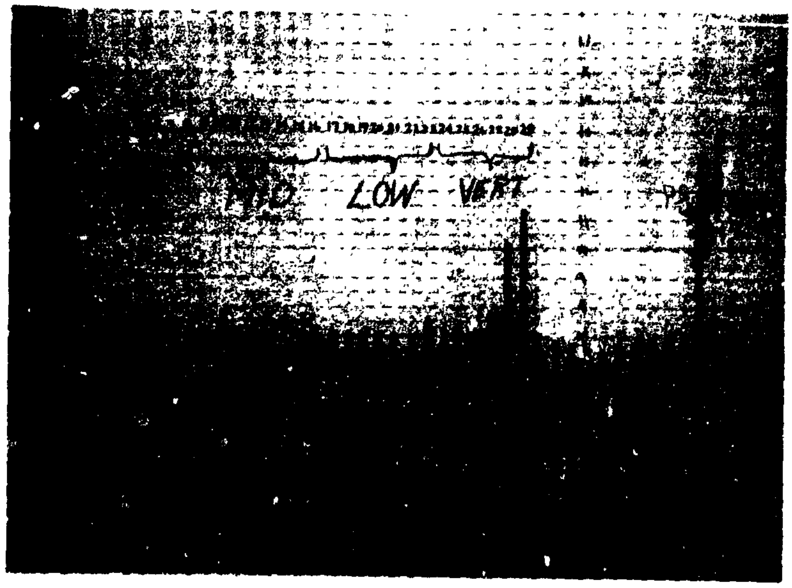


a. $\alpha = 0°$, $\psi = -15°$

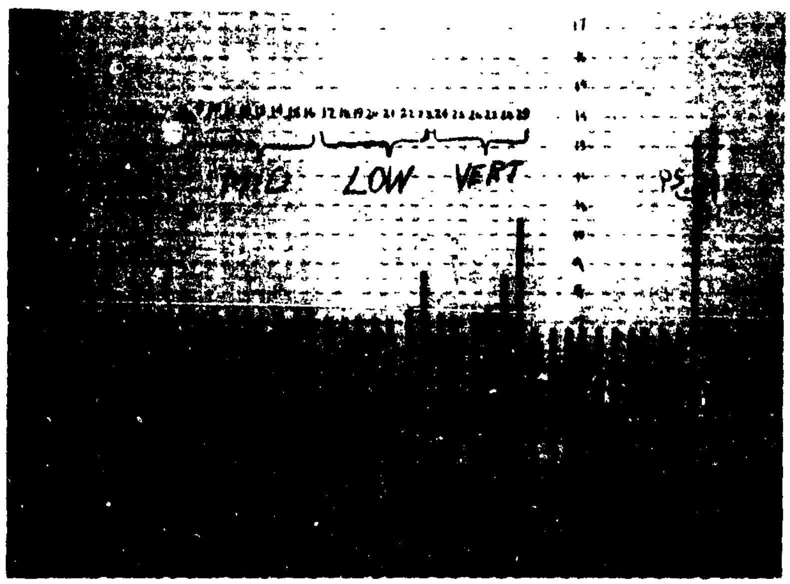


b. $\alpha = 0°$, $\psi = 10°$

Figure 341 Total Pressure Rake Data
Run 316, configuration FPBW5T9
$i_w = 15°$, $\delta_f = 0°$

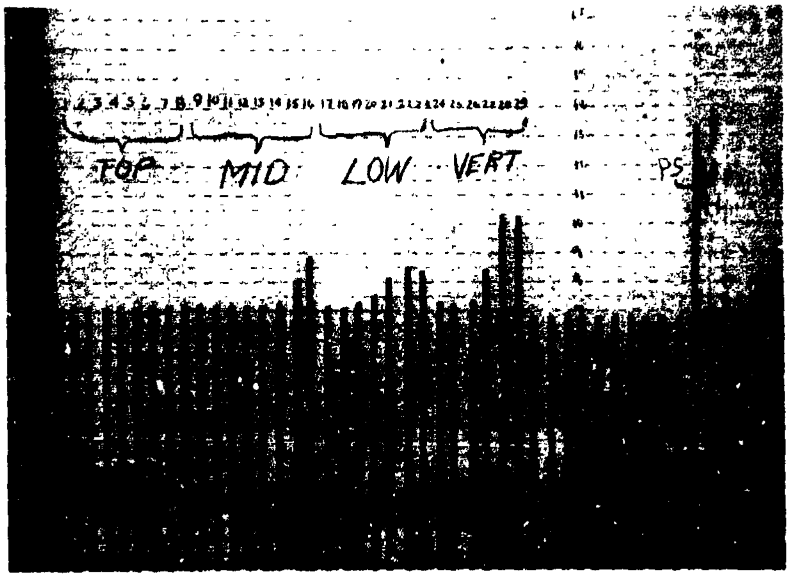


c. $\alpha = 0°$, $\psi = -5°$

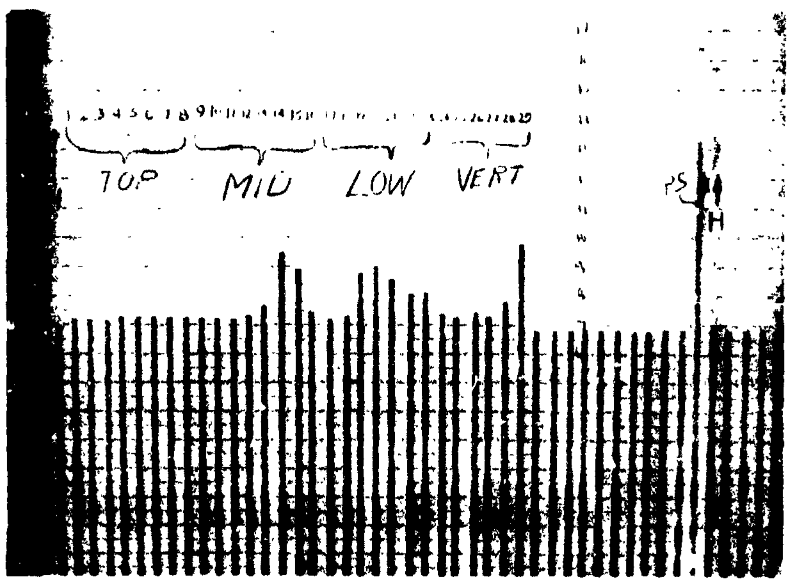


d. $\alpha = 0°$, $\psi = 0°$

Figure 141 (Continued)

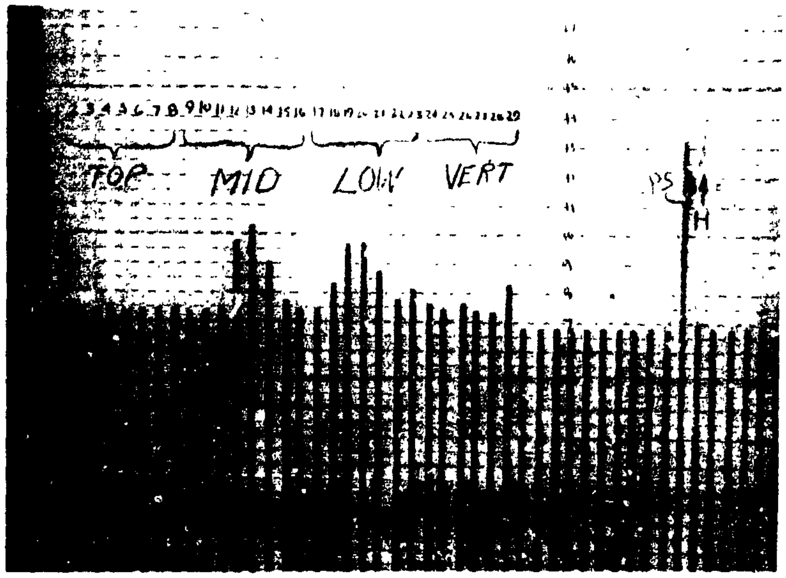


e. α = 0°, ψ = 5°



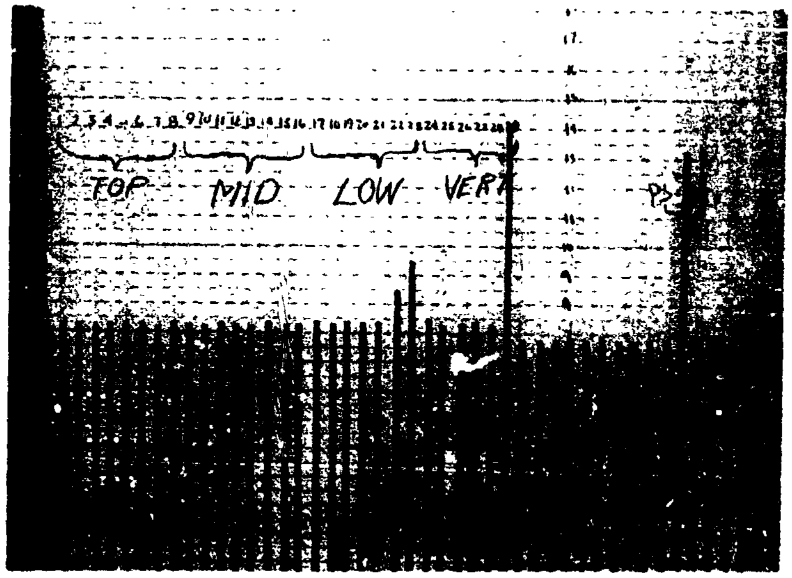
f. $\alpha = 0°$, $\psi = 10°$

Figure 14 (Continued)

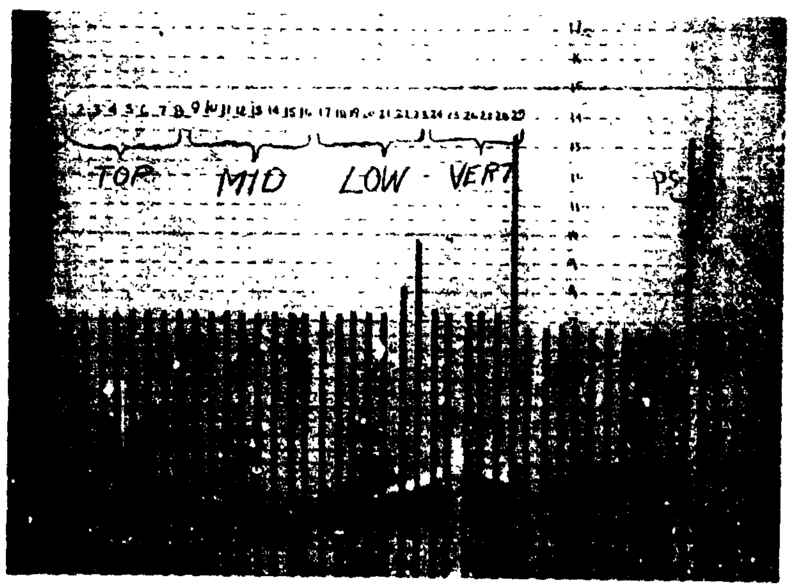


g. $\alpha = 0°$, $\psi = 15°$

Figure 141 (Continued)

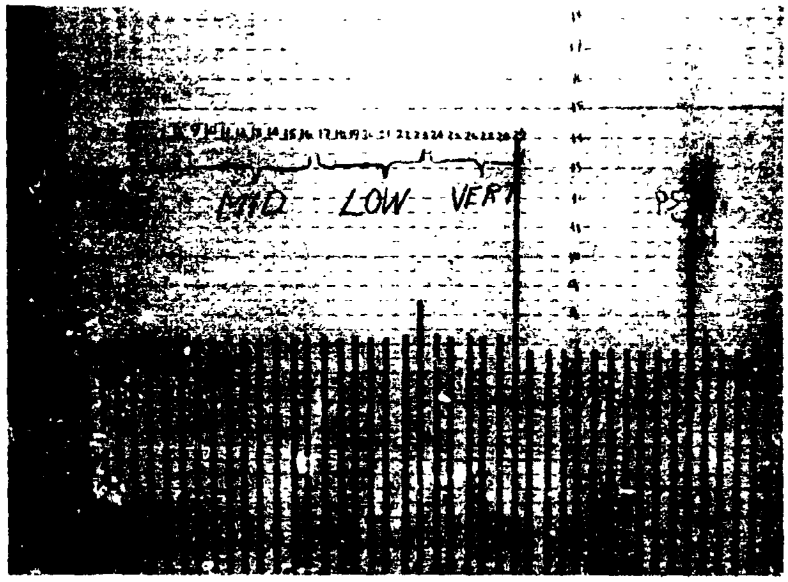


a. $\alpha = -20°$, $\psi = 0°$

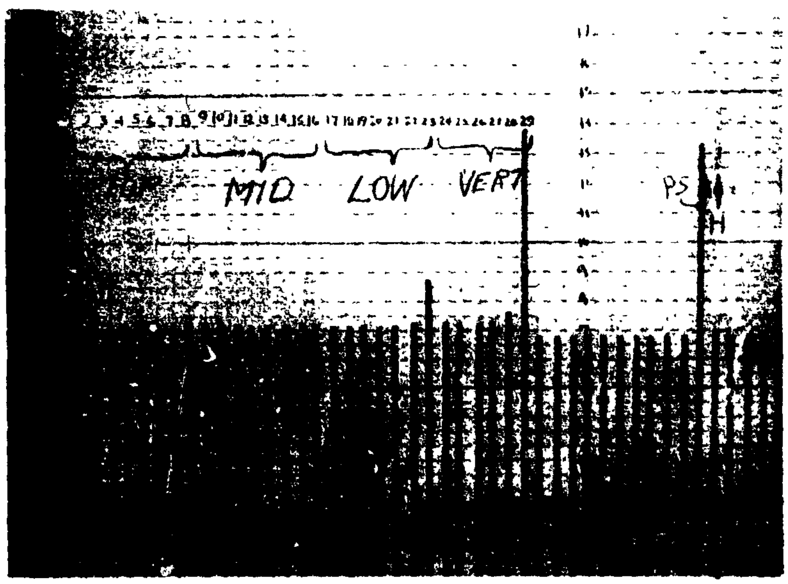


b. $\alpha = -16°$, $\psi = 0°$

Figure 142 Total Pressure Rake Data
Run 377, Configuration $FPBW_5T_9$
$i_w = 15°$, $\delta_f = 0°$

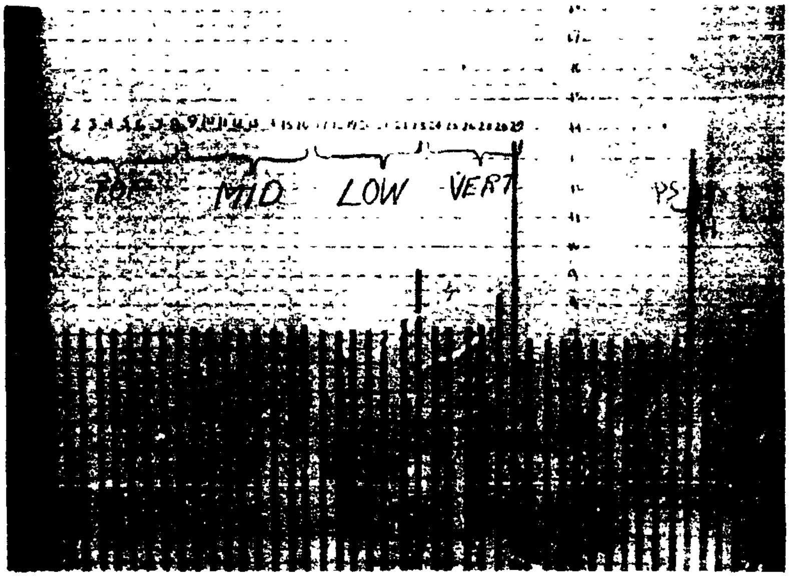


c. $\alpha = -12°$, $\psi = 0°$

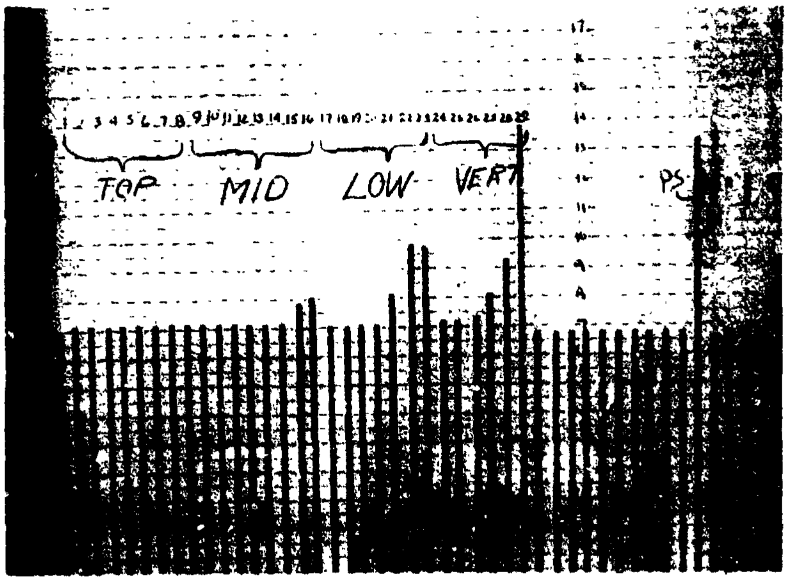


d. $\alpha = -8°$, $\psi = 0°$

Figure 142 (Continued)

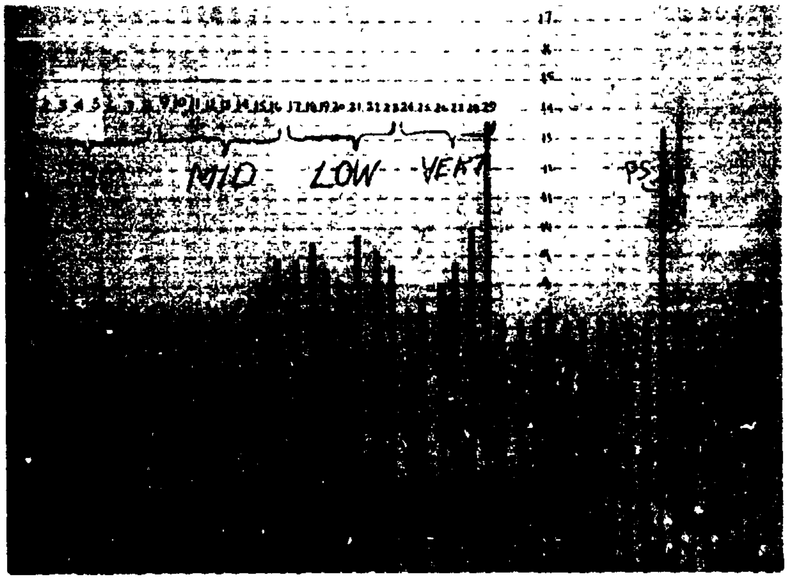


e. $\alpha = -4°$, $\Psi = 0°$



f. $\alpha = 0°$, $\Psi = 0°$

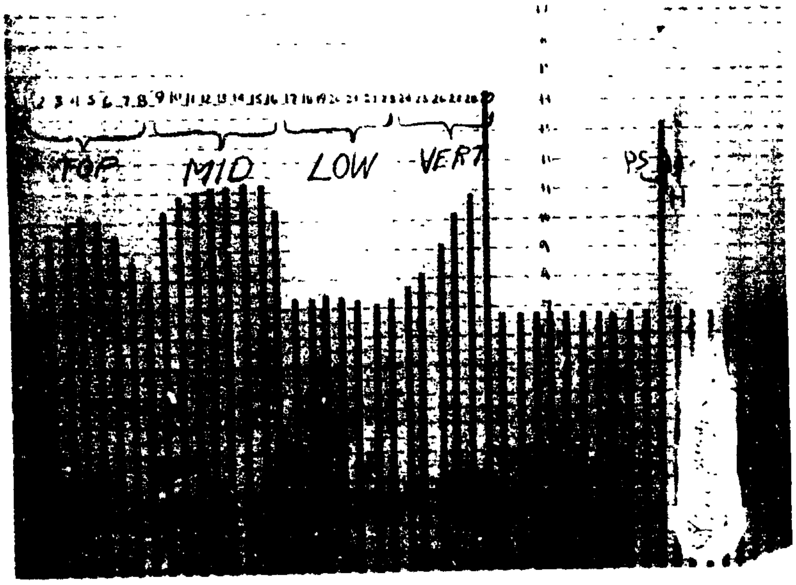
Figure 42 (Continued)



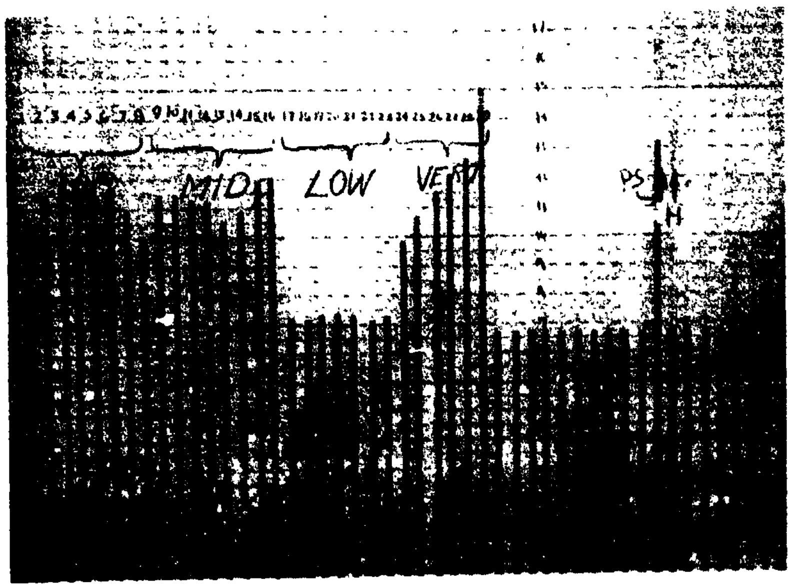
g. $\alpha = 5^\circ$, $\psi = 0^\circ$

h. $\alpha = 10^\circ$, $\psi = 0^\circ$

Figure 142 (Continued)

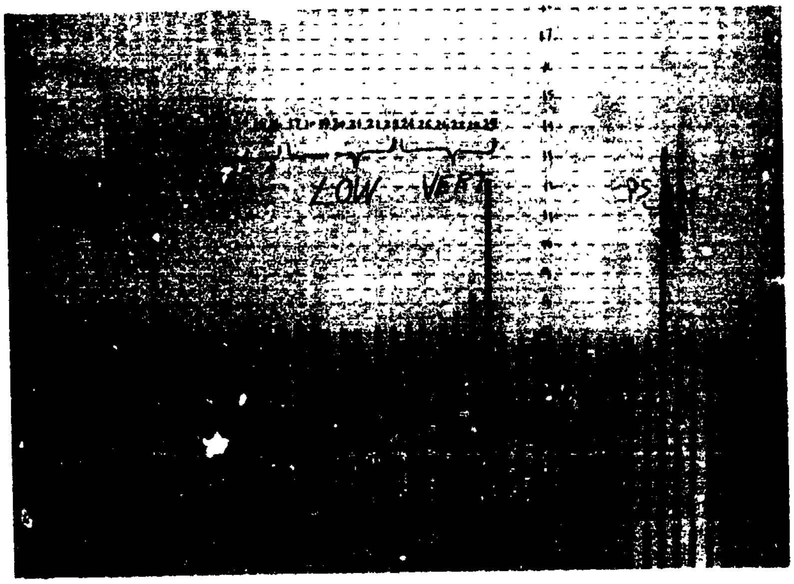


i. $\alpha = 15°$, $\Psi = 0°$

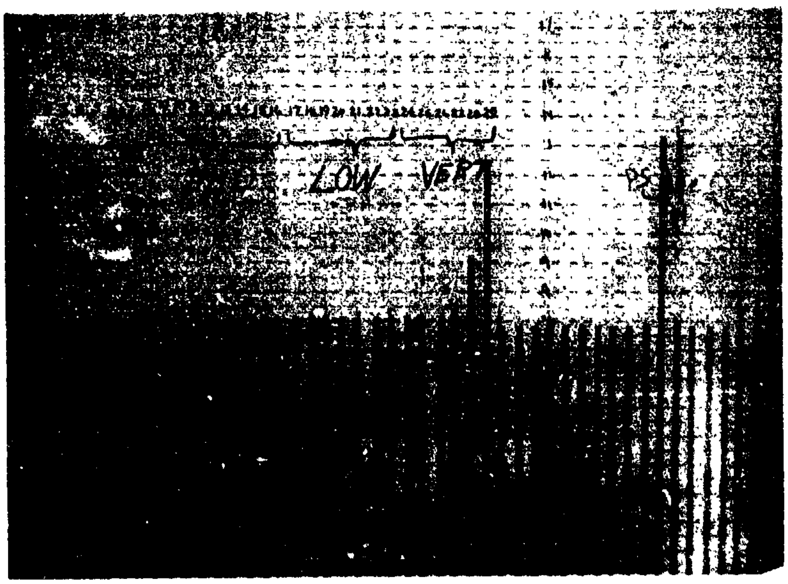


j. $\alpha = 20°$, $\Psi = 0°$

Figure 142 (Concluded)

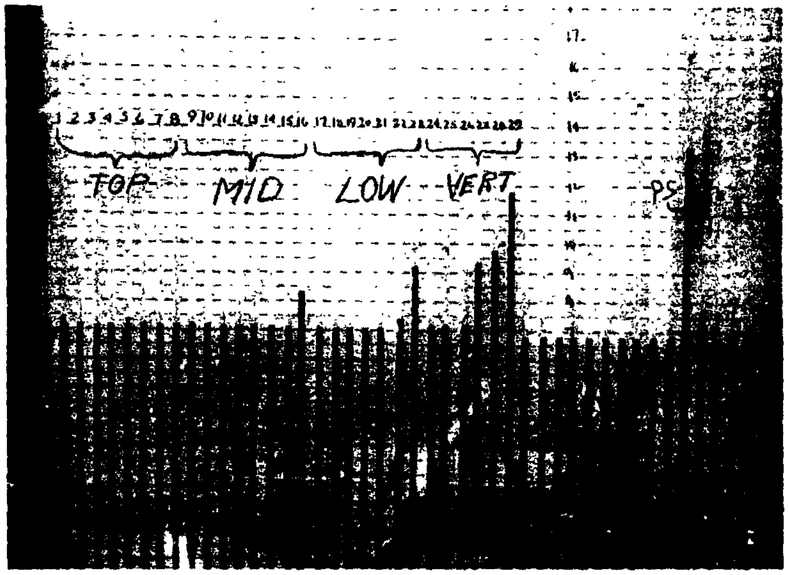


a. $\alpha = 0°$, $\psi = -15°$

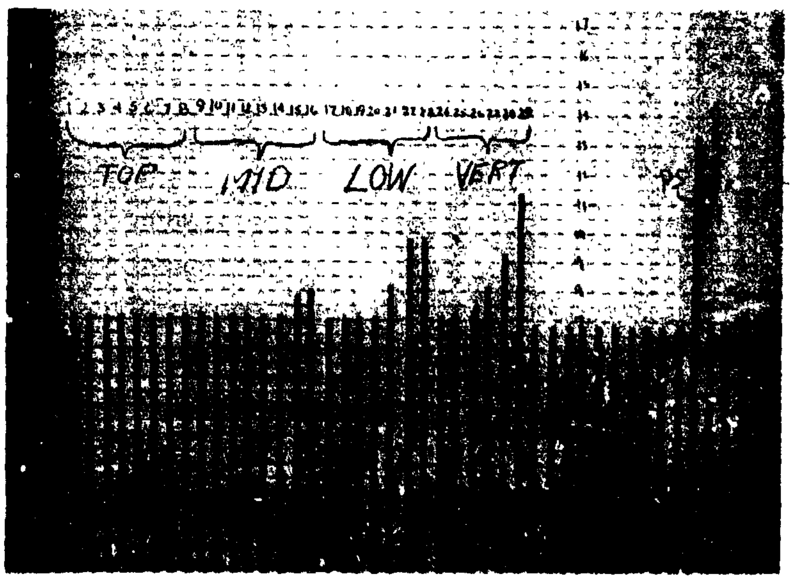


b. $\alpha = 0°$, $\psi = -10°$

Figure 143 Total Pressure Rake Data
Run 378 , Configuration $FPBW_5T_9$
$i_W = 15°$, $\delta_f = 0°$

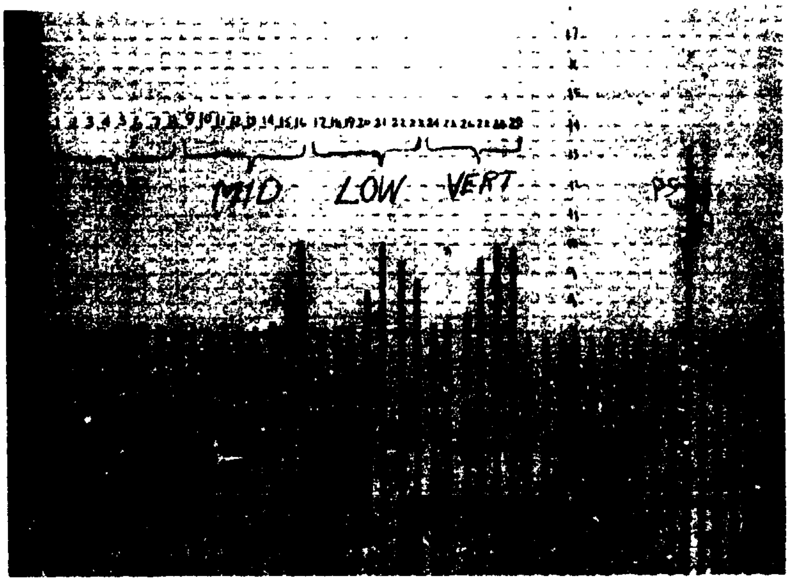


c. $\alpha = 0°$, $\Psi = -5°$

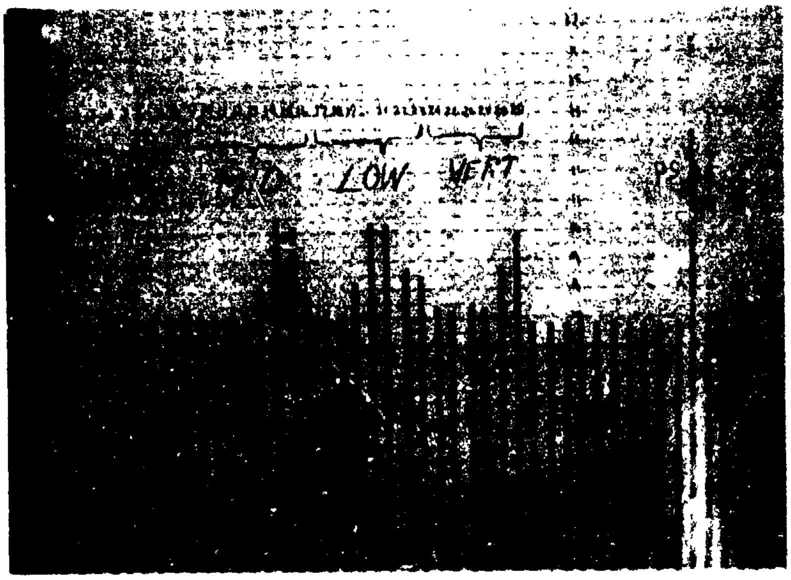


d. $\alpha = 0°$, $\Psi = 0°$

Figure 143 (Continued)

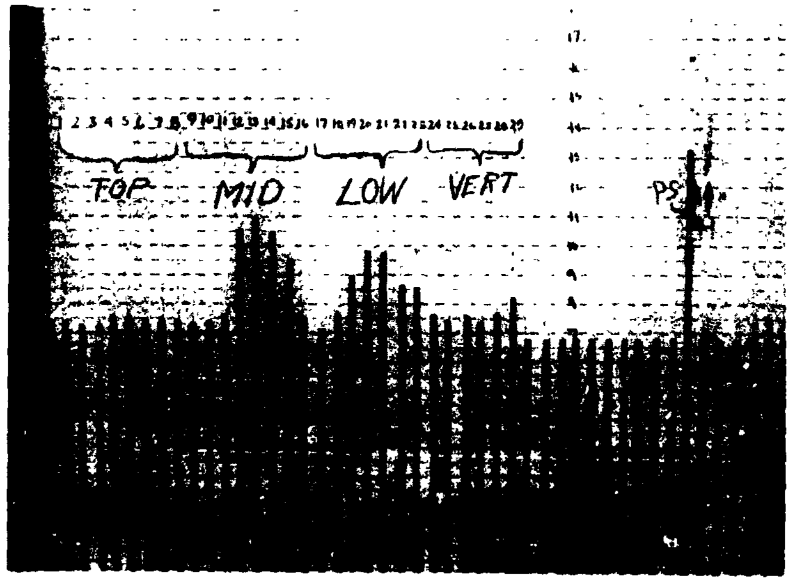


e. $\alpha = 0°$, $\Psi = 5°$



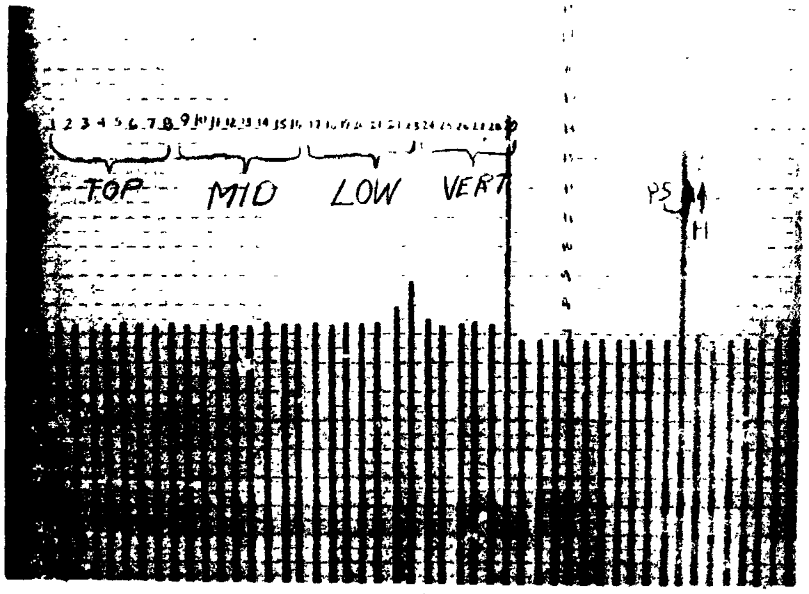
f. $\alpha = 0°$, $\Psi = 10°$

Figure 143 (Continued)

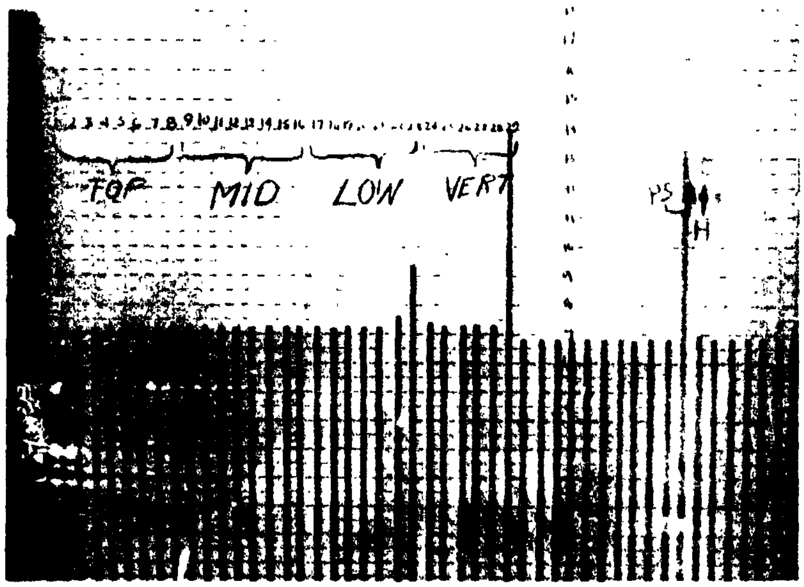


g. $\alpha = 0°$, $\psi = 15°$

Figure 143 (Concluded)

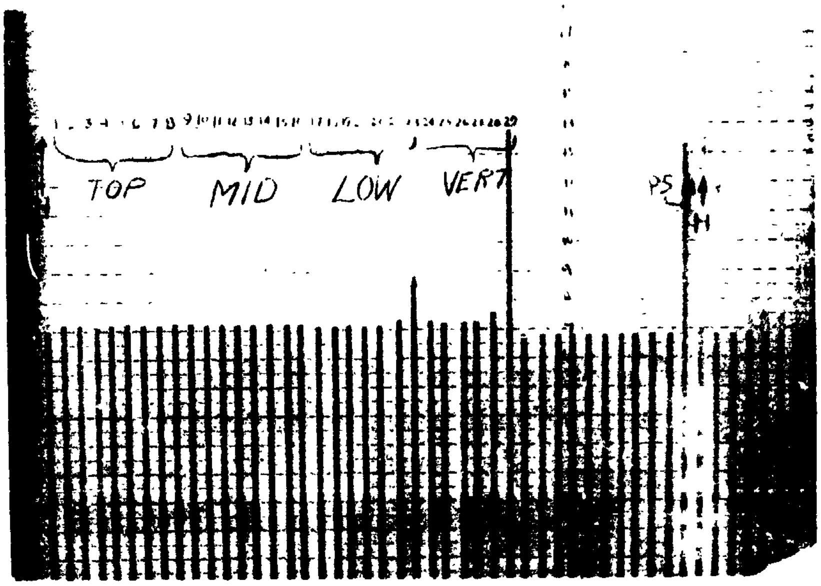


a. $\alpha = -20°$, $\psi = 0°$

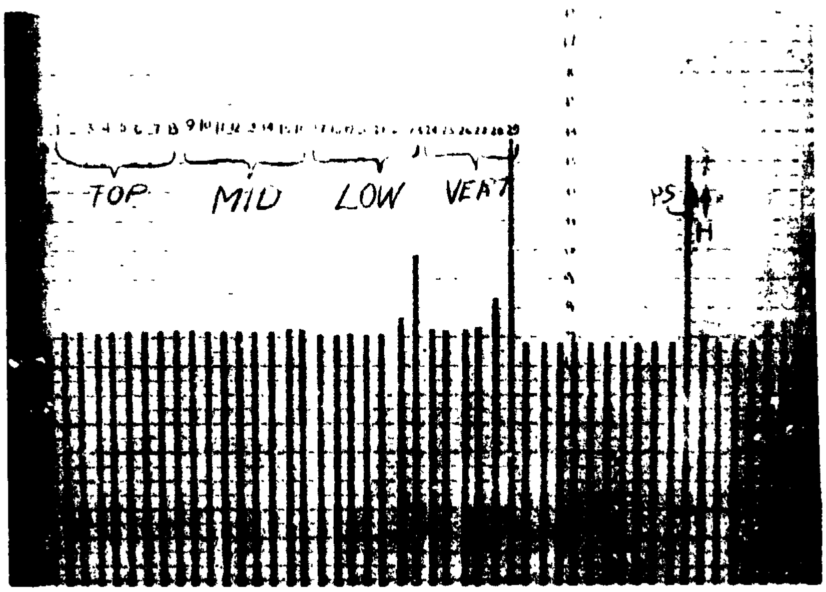


b. $\alpha = -16°$, $\psi = 0°$

Figure 144 Total Pressure Rake Data
Run 379, Configuration FPBWs Tq
$i_W = 0°$, $\delta_f = 0°$

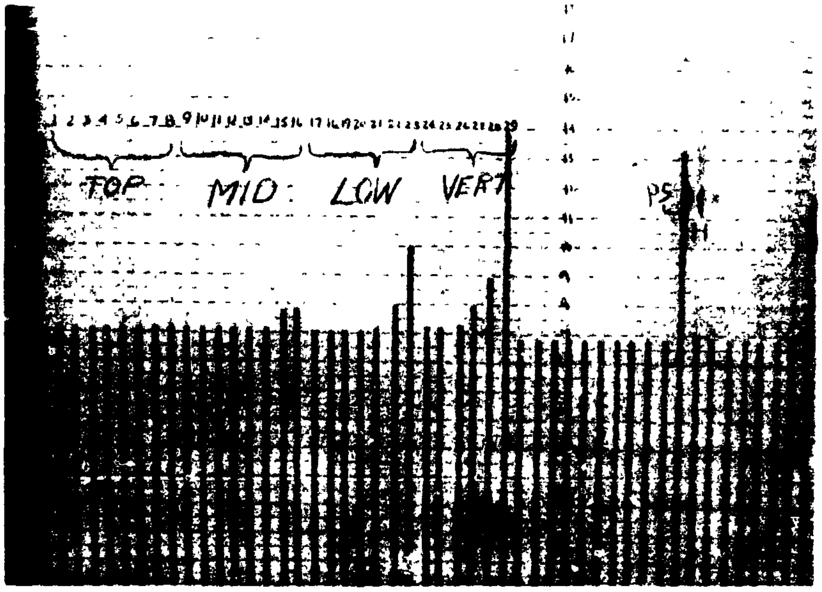


c. $\alpha = -12°$, $\psi = 0°$

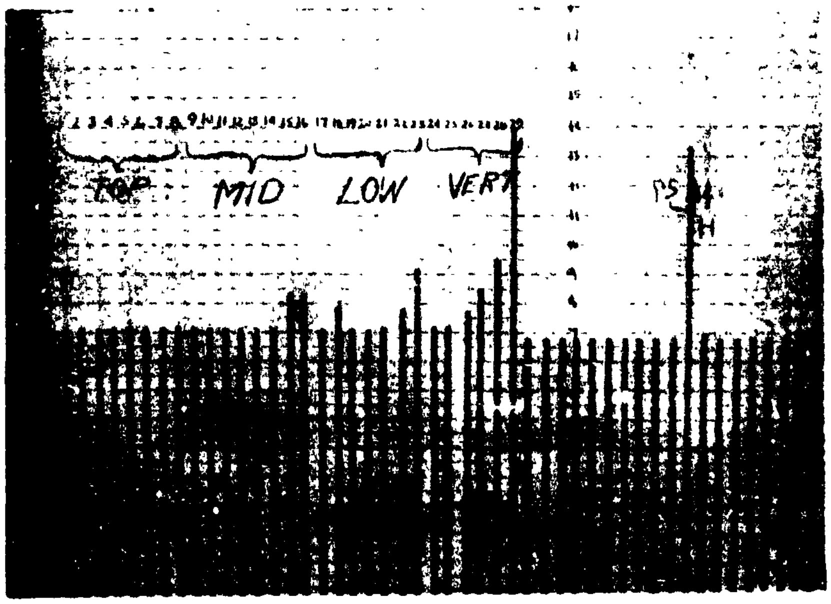


d. $\alpha = -8°$, $\psi = 0°$

Figure 114 (Continued)

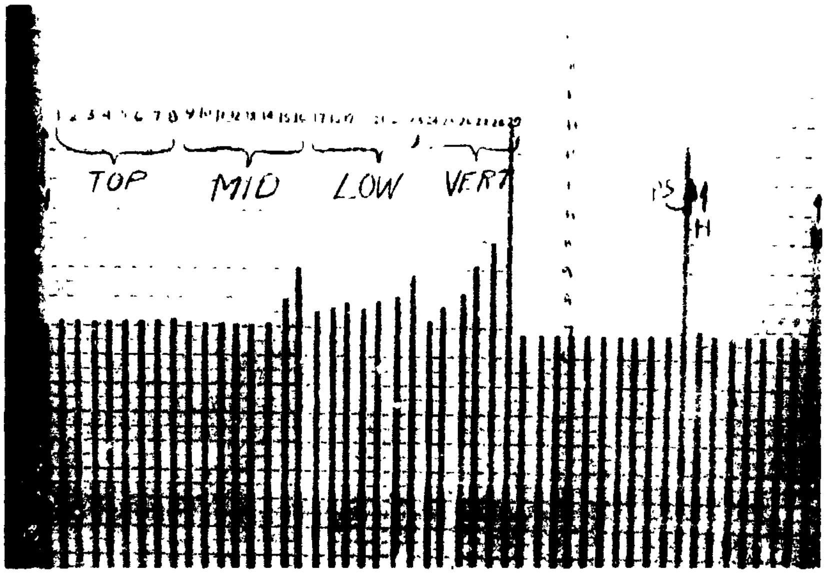


e. $\alpha = -4°$, $\psi = 0°$

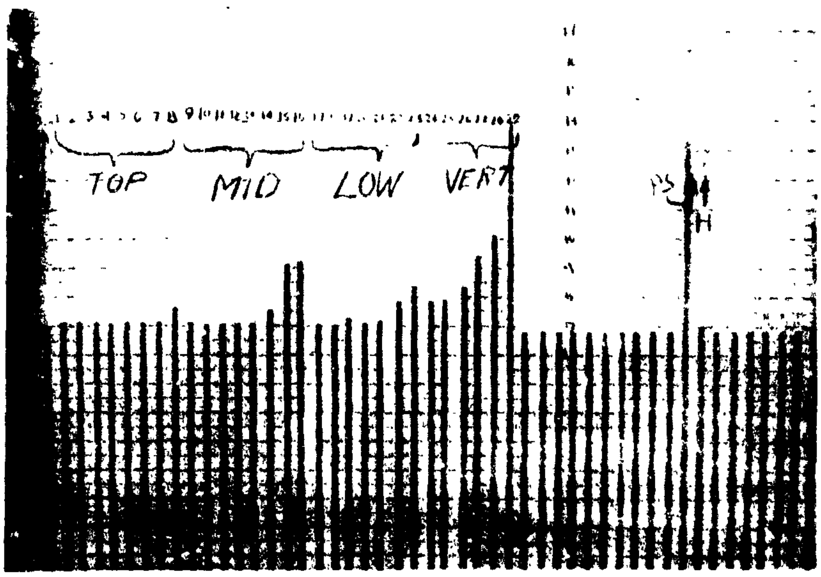


f. $\alpha = 0°$, $\psi = 0°$

Figure 144 (Continued)

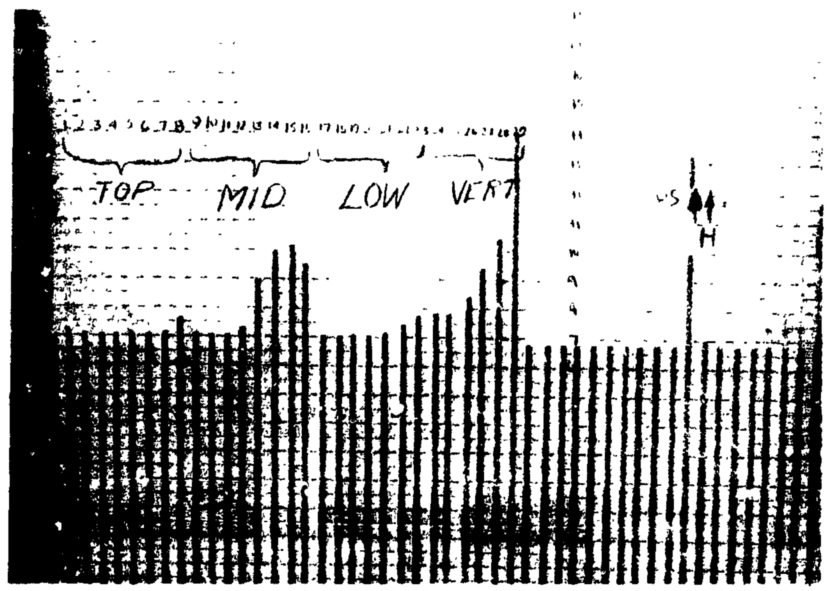


g. $\alpha = 5°$, $\psi = 0°$

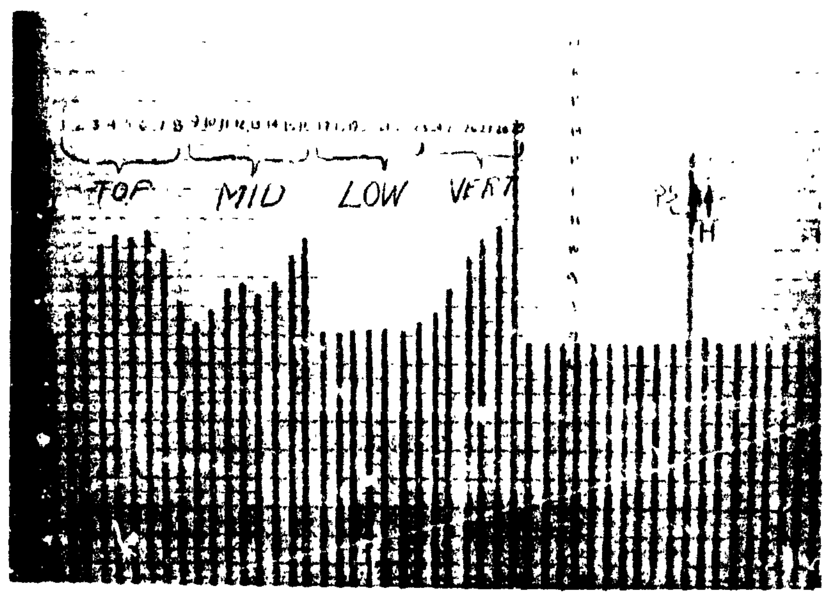


h. $\alpha = 10°$, $\psi = 0°$

Figure 144 (Continued)

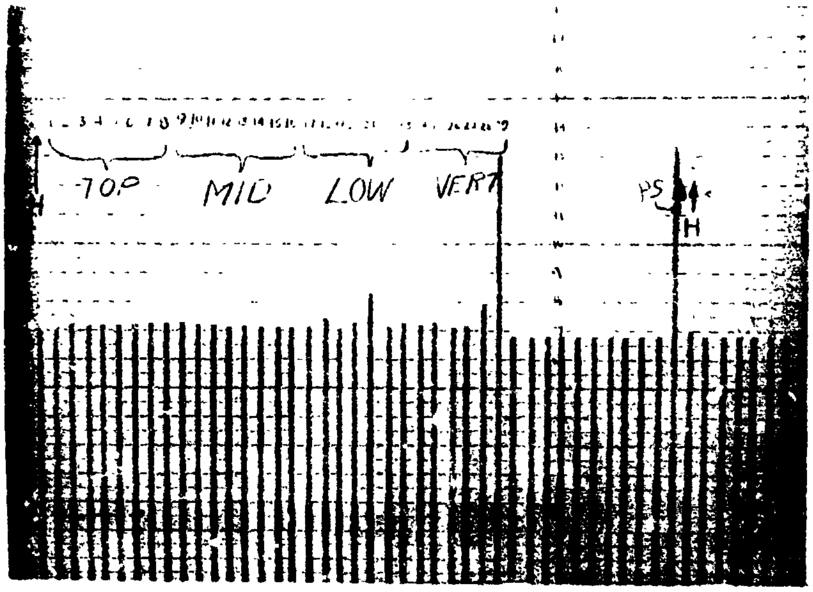


i. $\alpha = 15°$, $\psi = 0°$

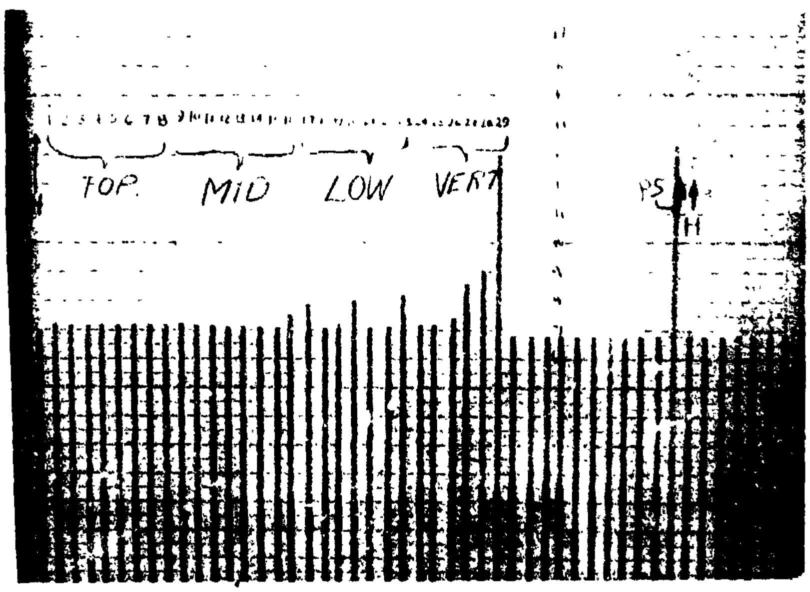


j. $\alpha = 20°$, $\psi = 0°$

Figure 144 (Concluded)

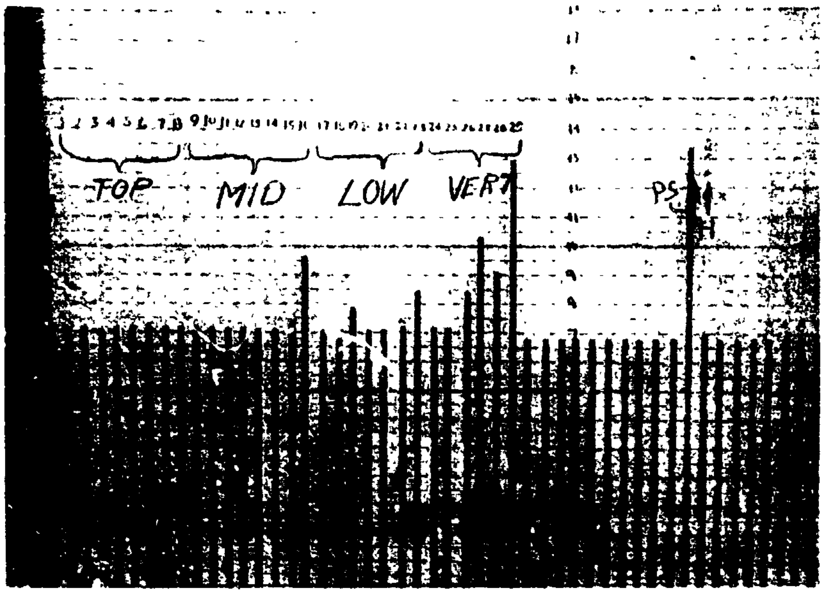


a. $\alpha = 0°$, $\psi = -15°$

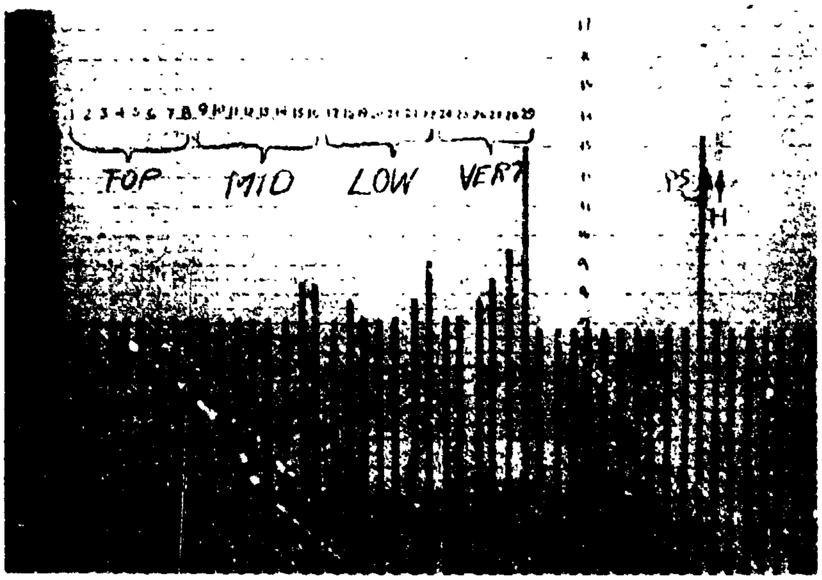


b. $\alpha = 0°$, $\psi = -10°$

Figure 145 Total Pressure Rake Data
Run 380 , Configuration $FPBW_5T_9$
$i_W = 0°$, $\delta_f = 0°$

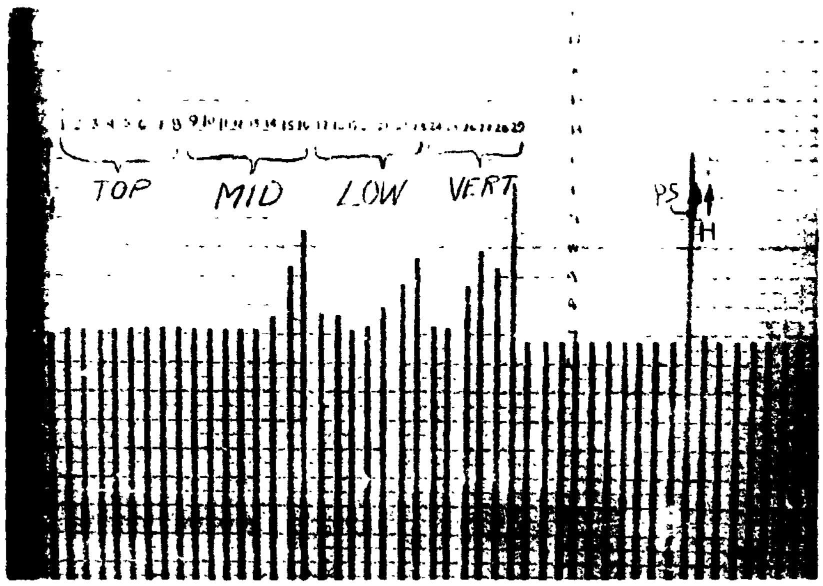


c. $\alpha = 0°$, $\Psi = -5°$

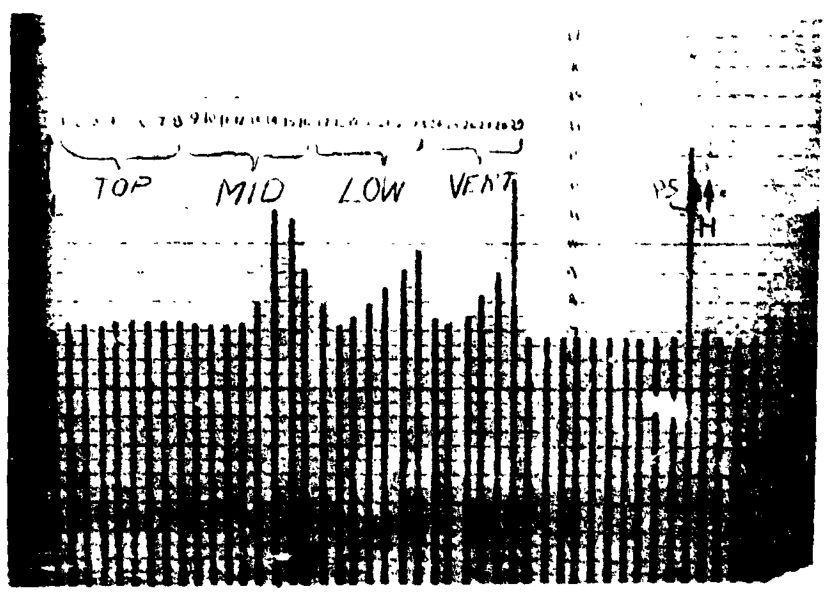


d. $\alpha = 0°$, $\Psi = 0°$

Figure 145 (Continued)

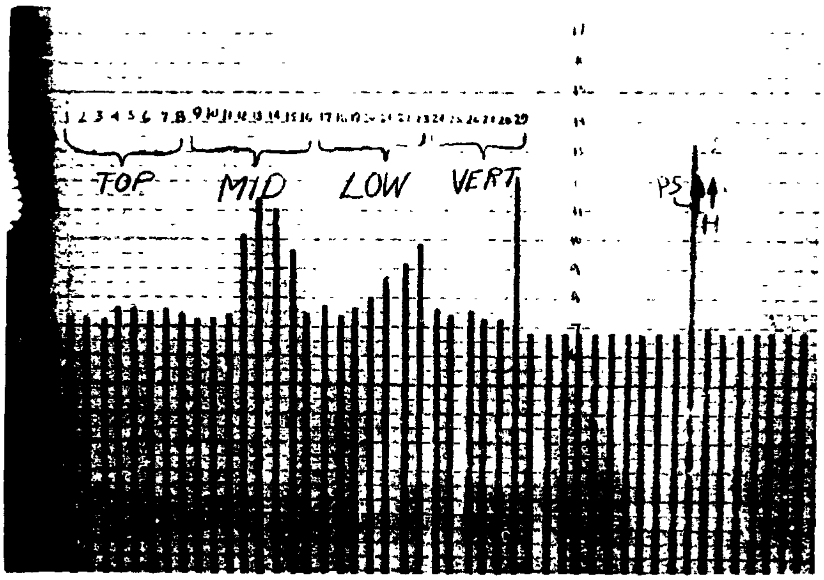


e. $\alpha = 0°$, $\Psi = 5°$



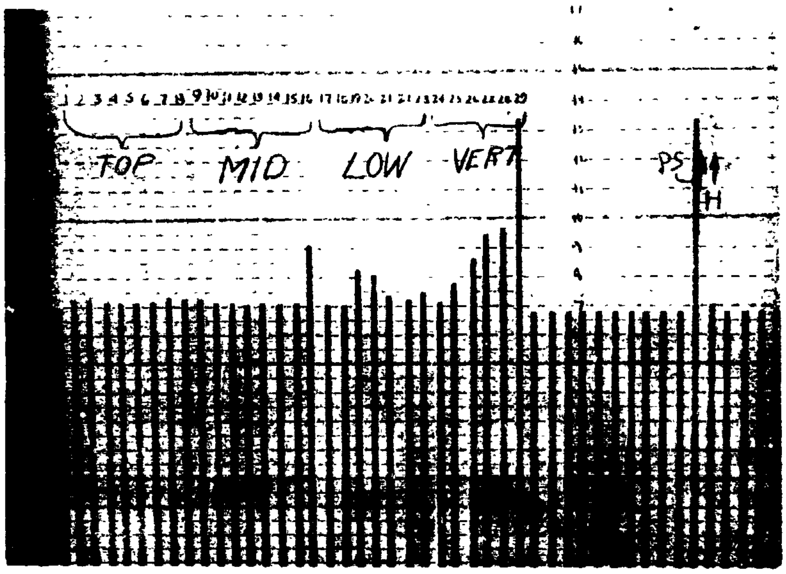
f. $\alpha = 0°$, $\Psi = 10°$

Figure 45 (Continued)

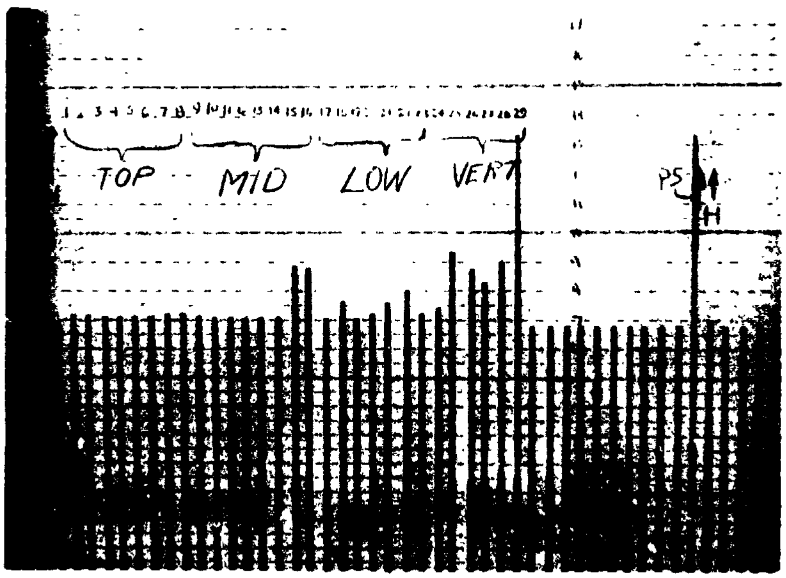


g. $\alpha = 0°$, $\psi = 15°$

Figure 145 (Concluded)

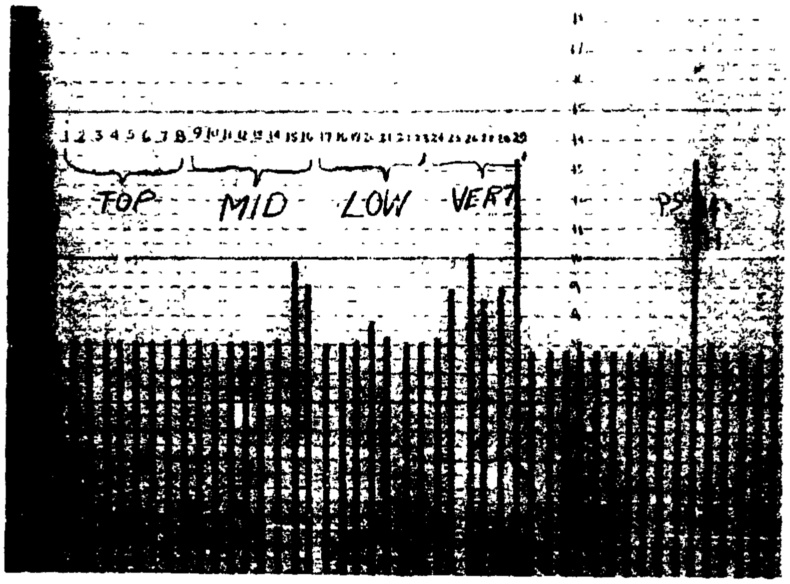


a. $\alpha = 10°$, $\psi = -15°$

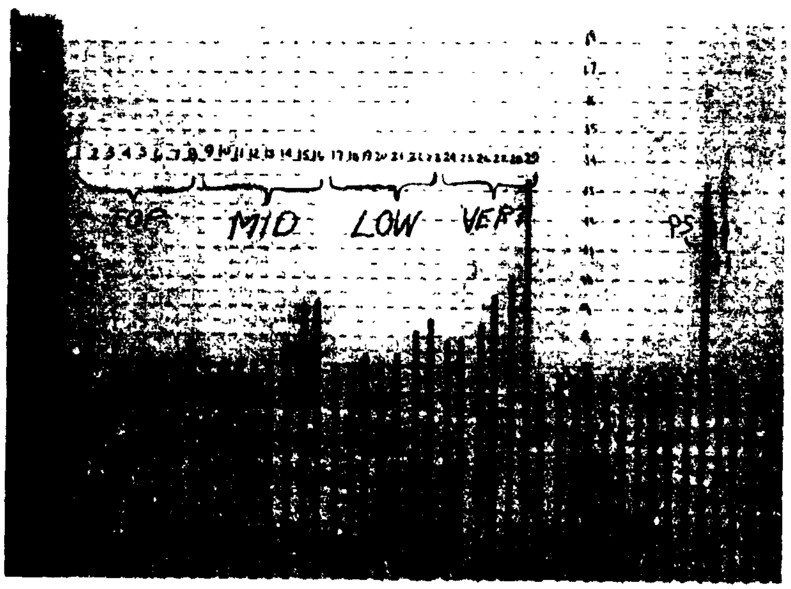


b. $\alpha = 10°$, $\psi = -10°$

Figure 146 Total Pressure Rake Data
Run 381, Configuration $FPBW_5T_9$
$i_W = 0°$, $\delta_f = 0°$

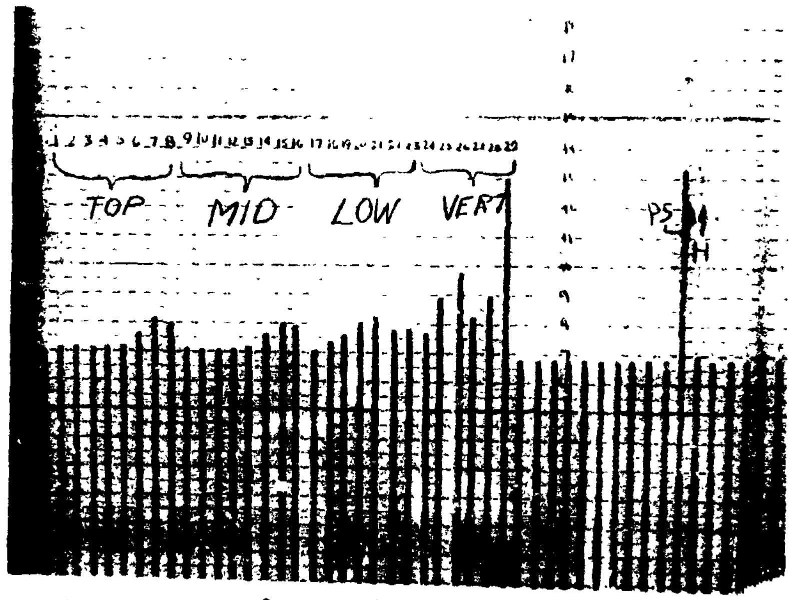


c. $\alpha = 10°$, $\psi = -5°$

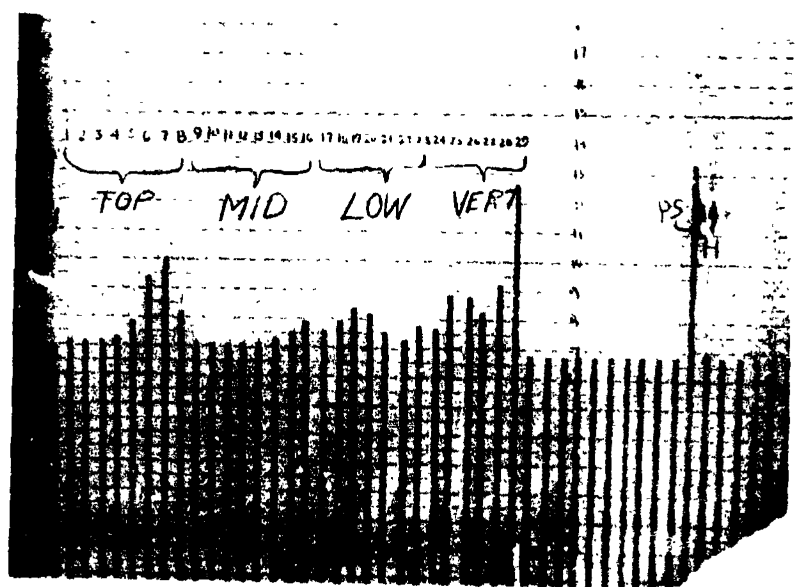


d. $\alpha = 10°$, $\psi = 0°$

Figure 146 (Continued)

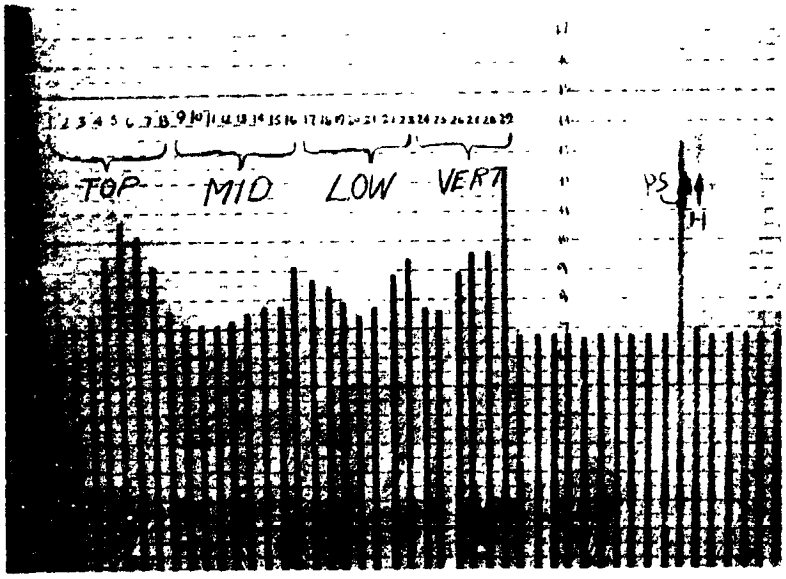


e. $\alpha = 10°$, $\psi = 5°$



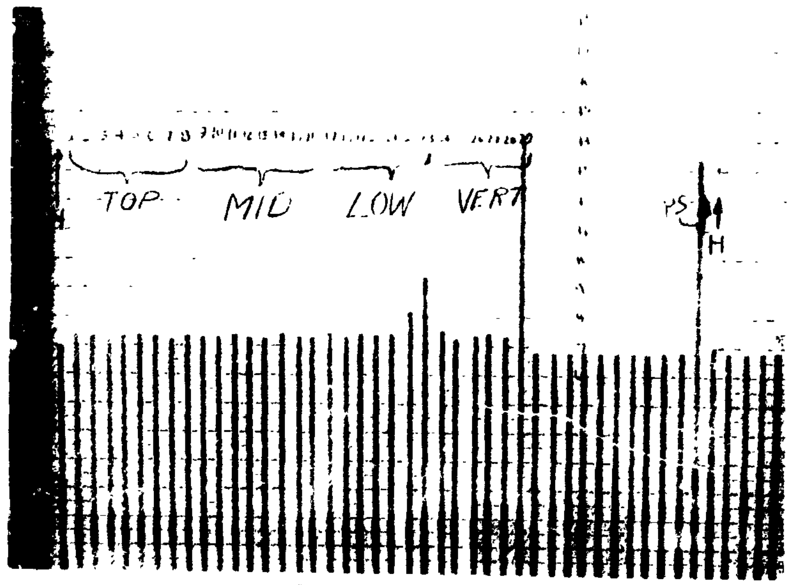
f. $\alpha = 10°$, $\psi = 10°$

Figure 146 (Continued)

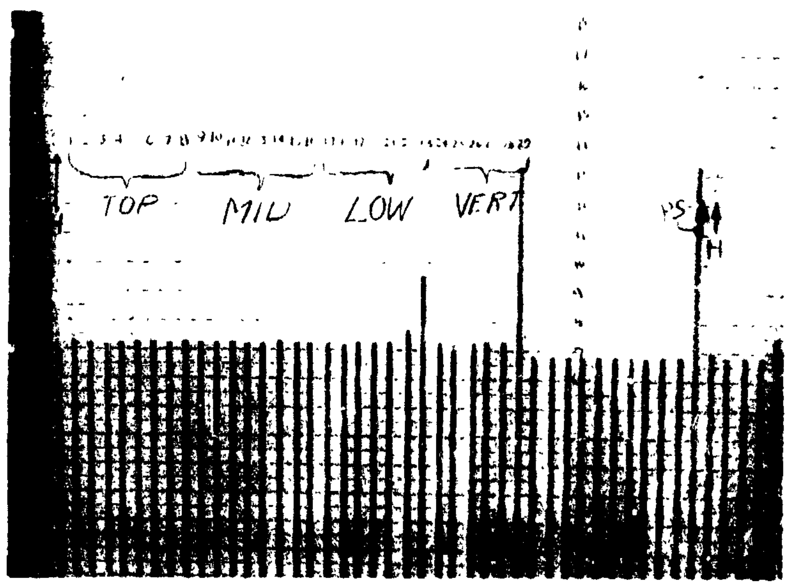


g. $\alpha = 10°$, $\psi = 15°$

Figure 146 (Concluded)

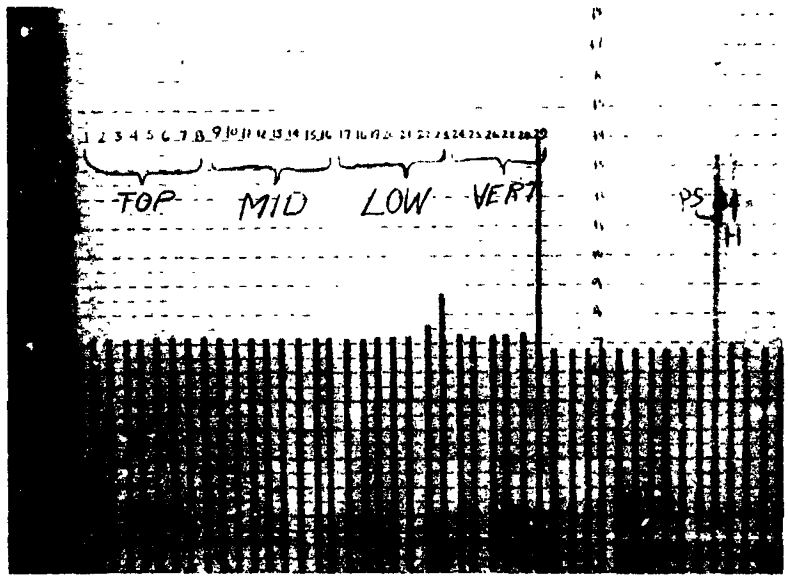


a. $\alpha = -20°$, $\psi = 0°$

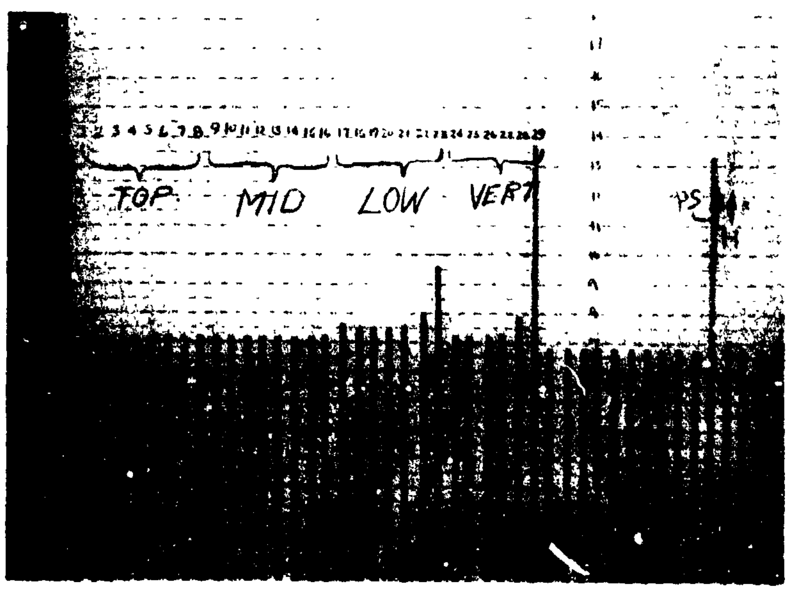


b. $\alpha = -16°$, $\psi = 0°$

Figure 147 Total Pressure Rake Data
Run 382, Configuration FPBWsTq
$i_W = -9°$, $\delta_f = 0°$

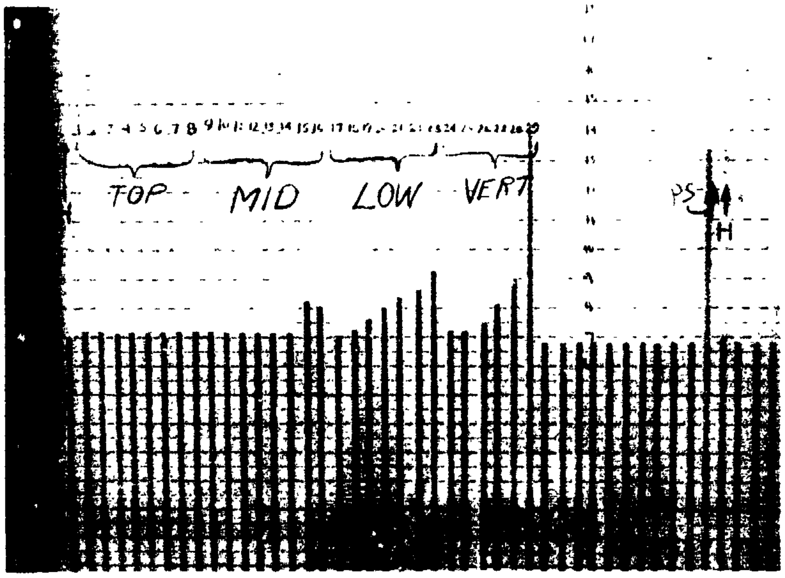


c. $\alpha = -12°$, $\psi = 0°$

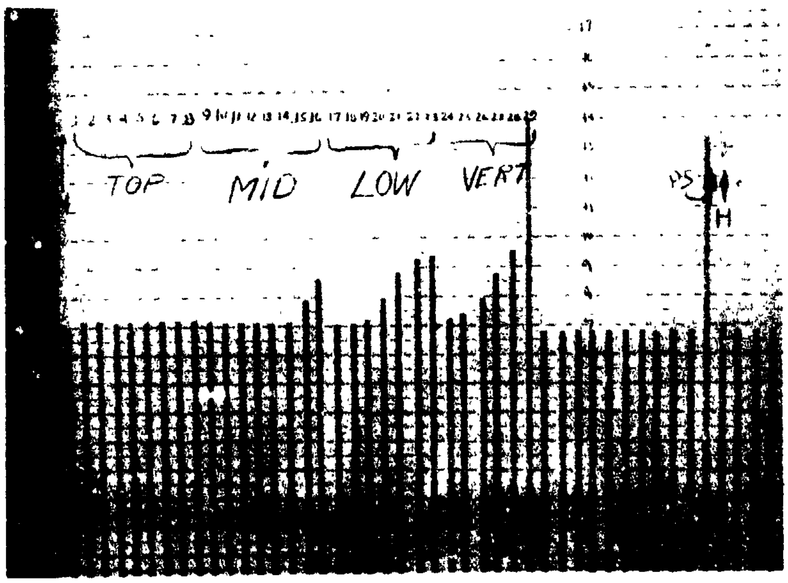


d. $\alpha = -8°$, $\psi = 0°$

Figure 147 (Continued)

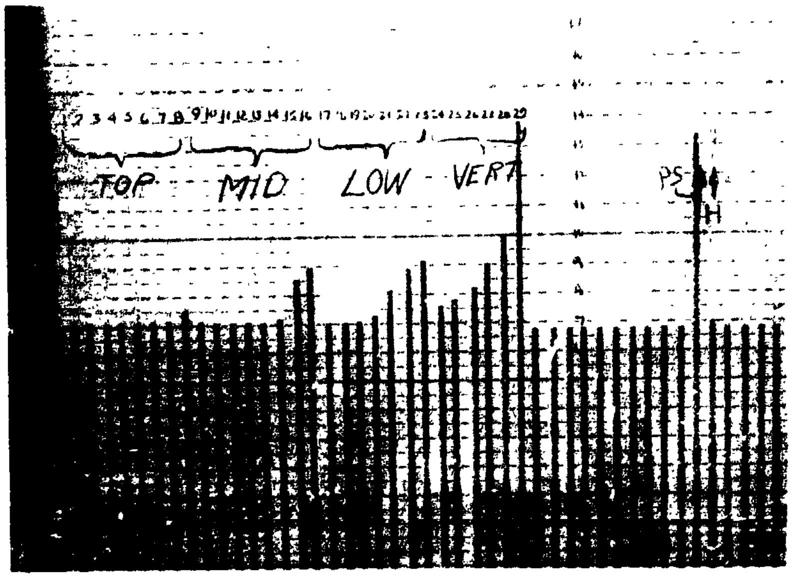


e. $\alpha = -4^\circ$, $\Psi = 0^\circ$

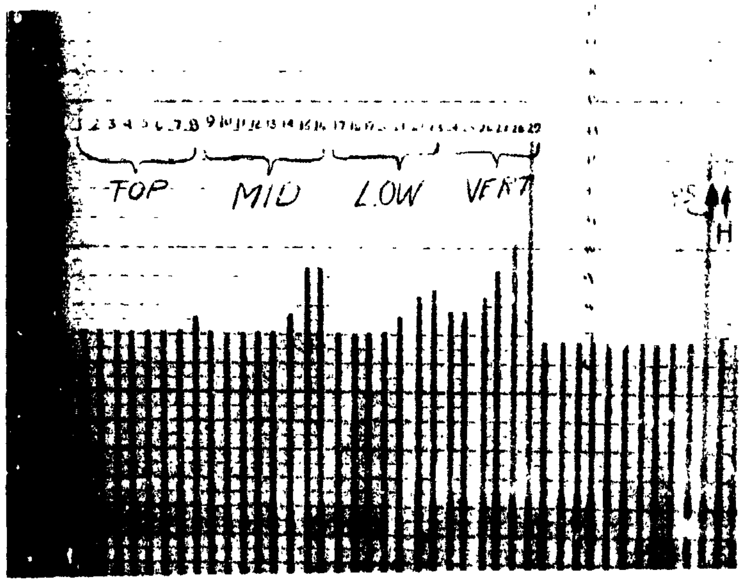


f. $\alpha = 0^\circ$, $\Psi = 0^\circ$

Figure 147 (Continued)

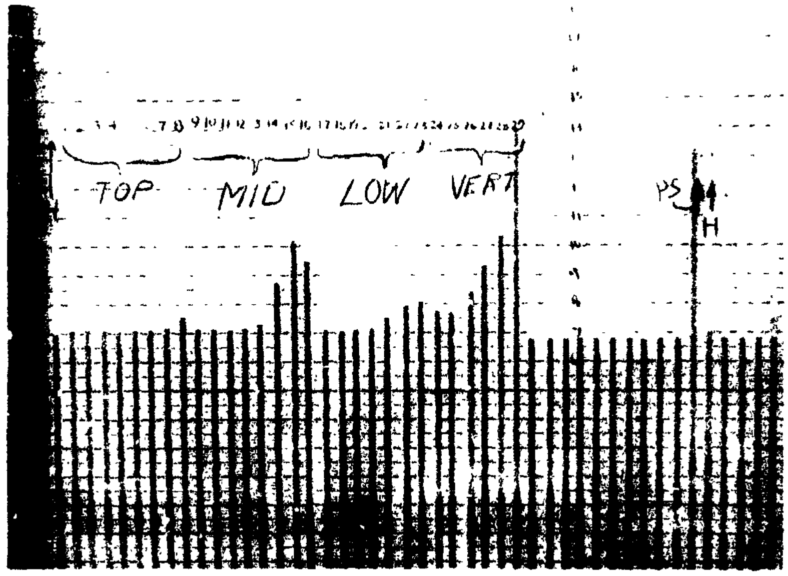


g. $\alpha = 5°$, $\psi = 0°$

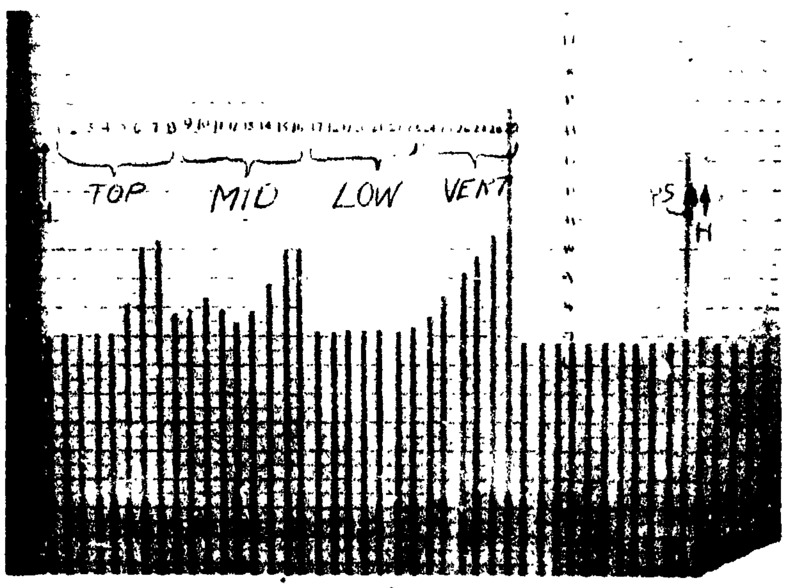


h. $\alpha = 10°$, $\psi = 0°$

Figure 147 (Continued)

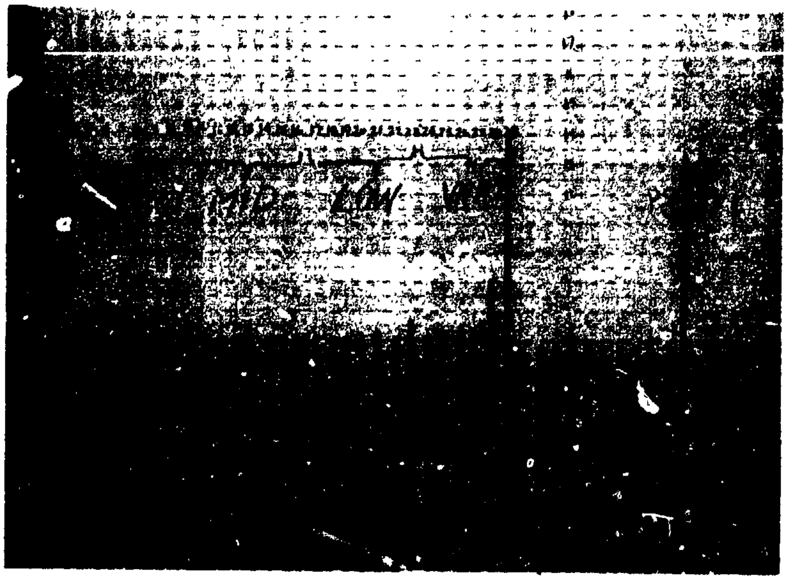


i. $\alpha = 15°$, $\psi = 0°$

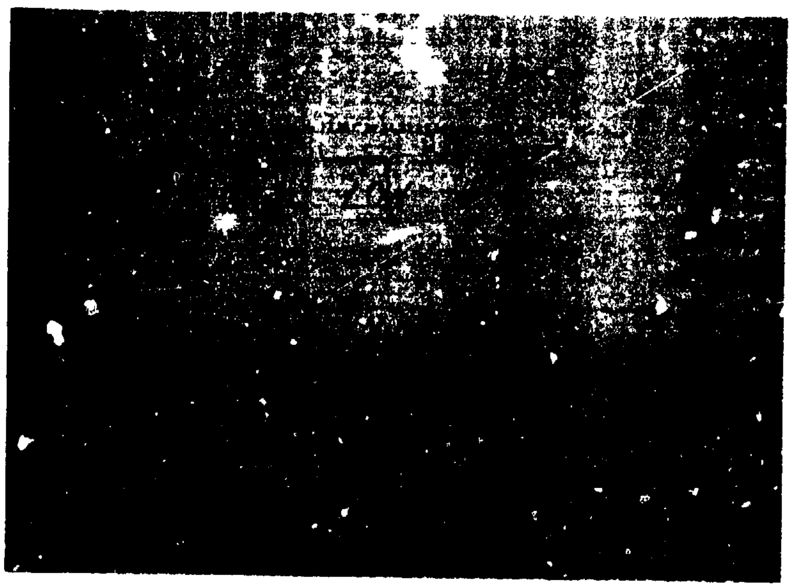


j $\alpha = 20°$, $\psi = 0°$

Figure i-1 (Concluded)

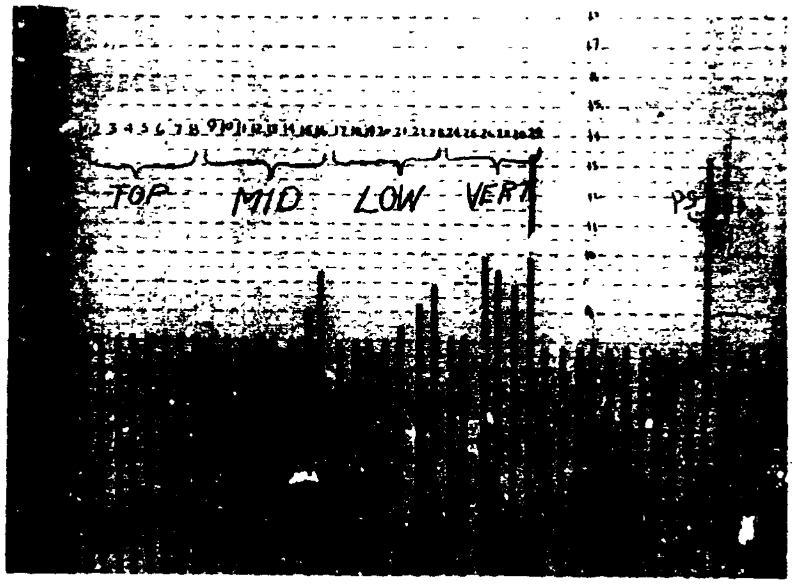


a. $\alpha = 0°$, $\psi = -15°$

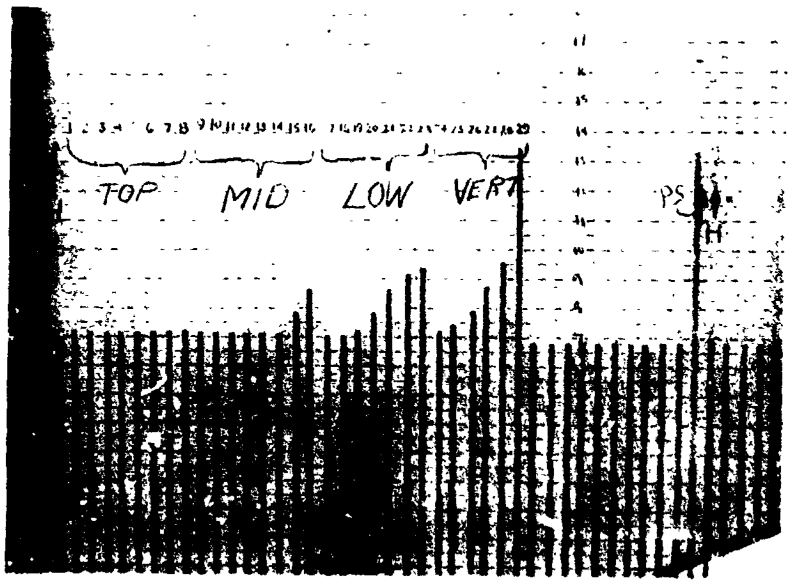


b. α [illegible] $0°$, ψ [illegible] $10°$

Figure 148 Total [illegible] Rake Data
[illegible] , [illegible] FFBW5 Tq
$i_W =$ [illegible]$°$, α_f $0°$

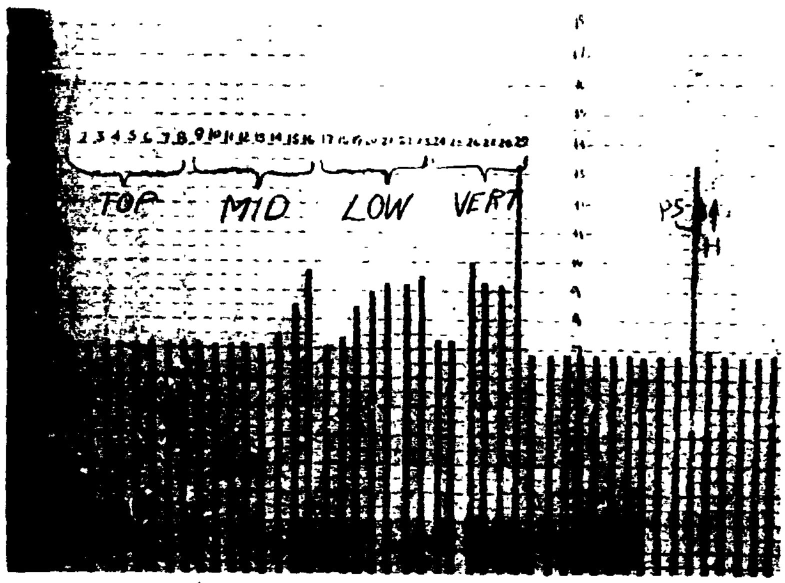


c. $\alpha = 0°$, $\psi = -5°$

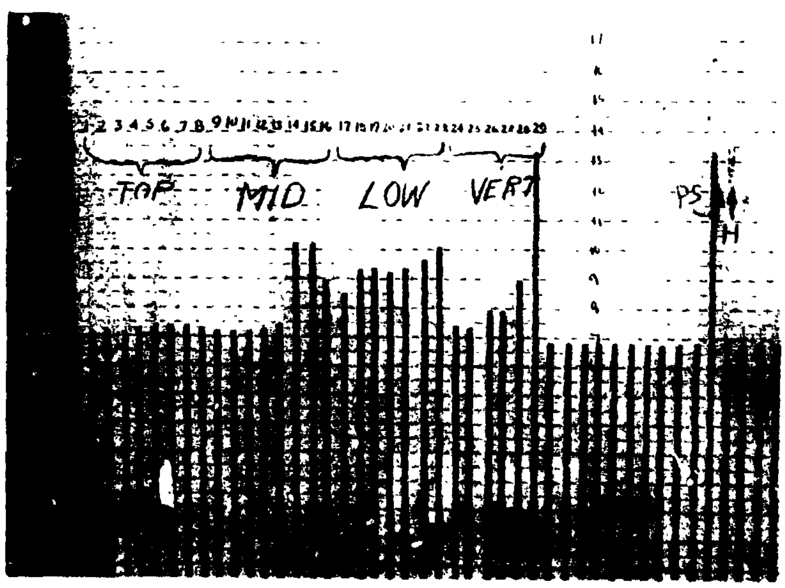


d. $\alpha = 0°$, $\psi = 5°$

Figure 145 (Continued)

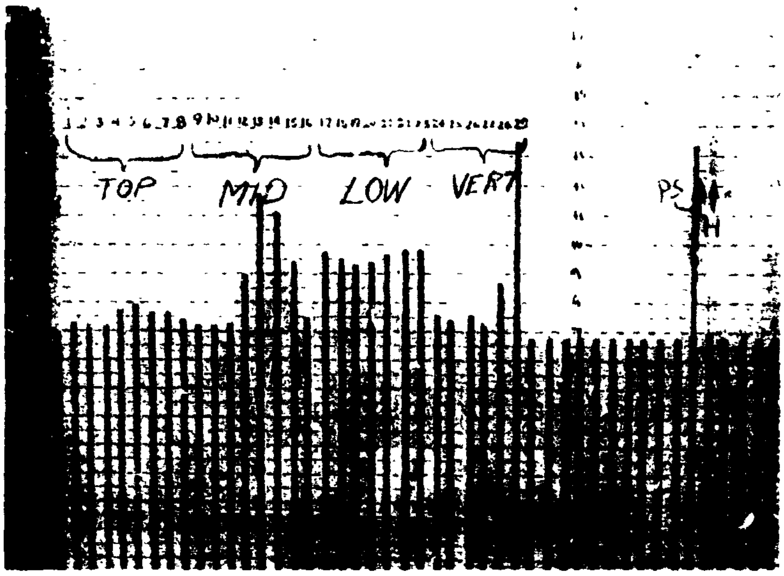


e. $\alpha = 0°$, $\psi = 5°$



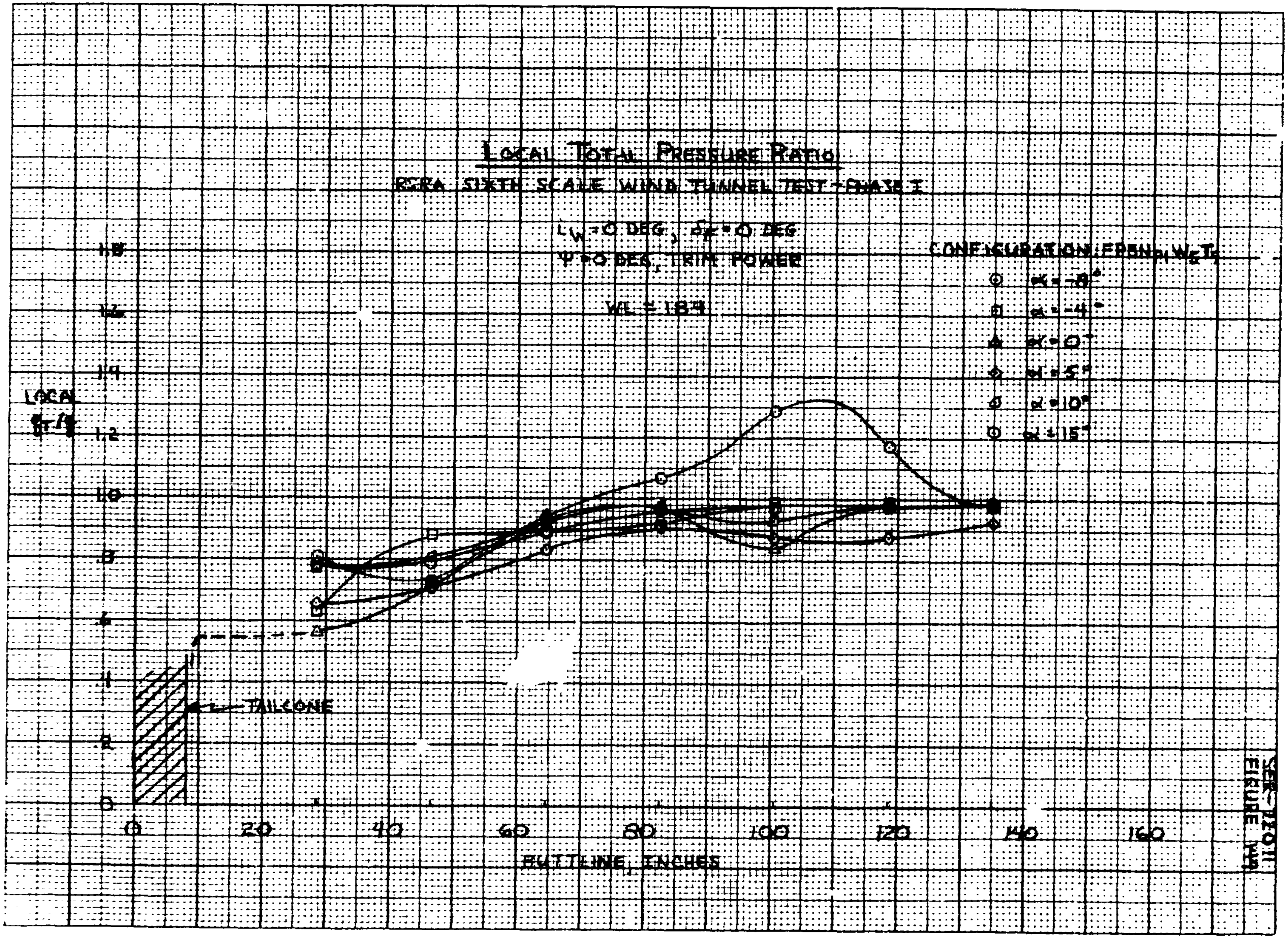
f. $\alpha = 0°$, $\psi = 10°$

Figure 148 (Continued)

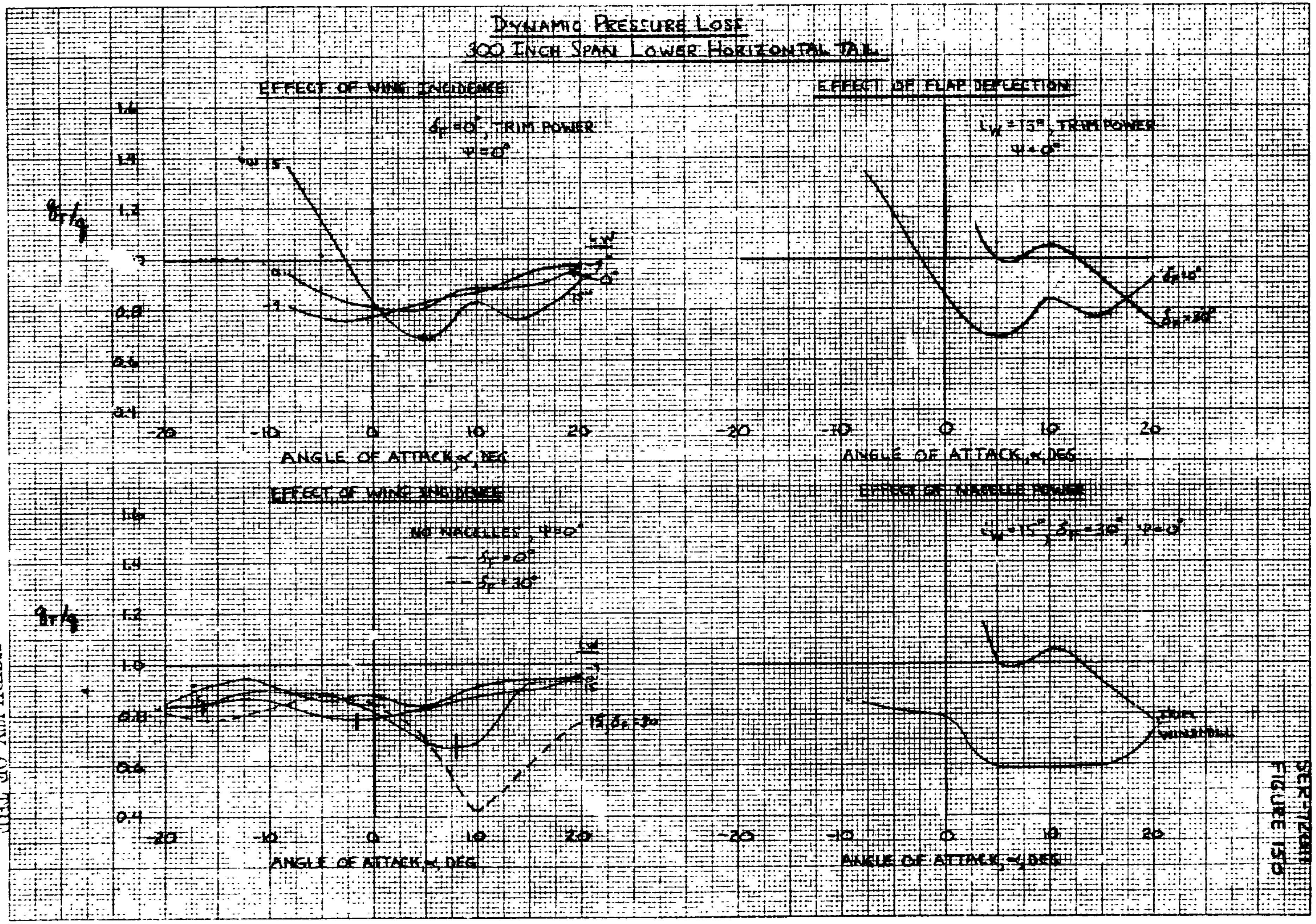


g. $\alpha = 0°$, $\psi = 15°$

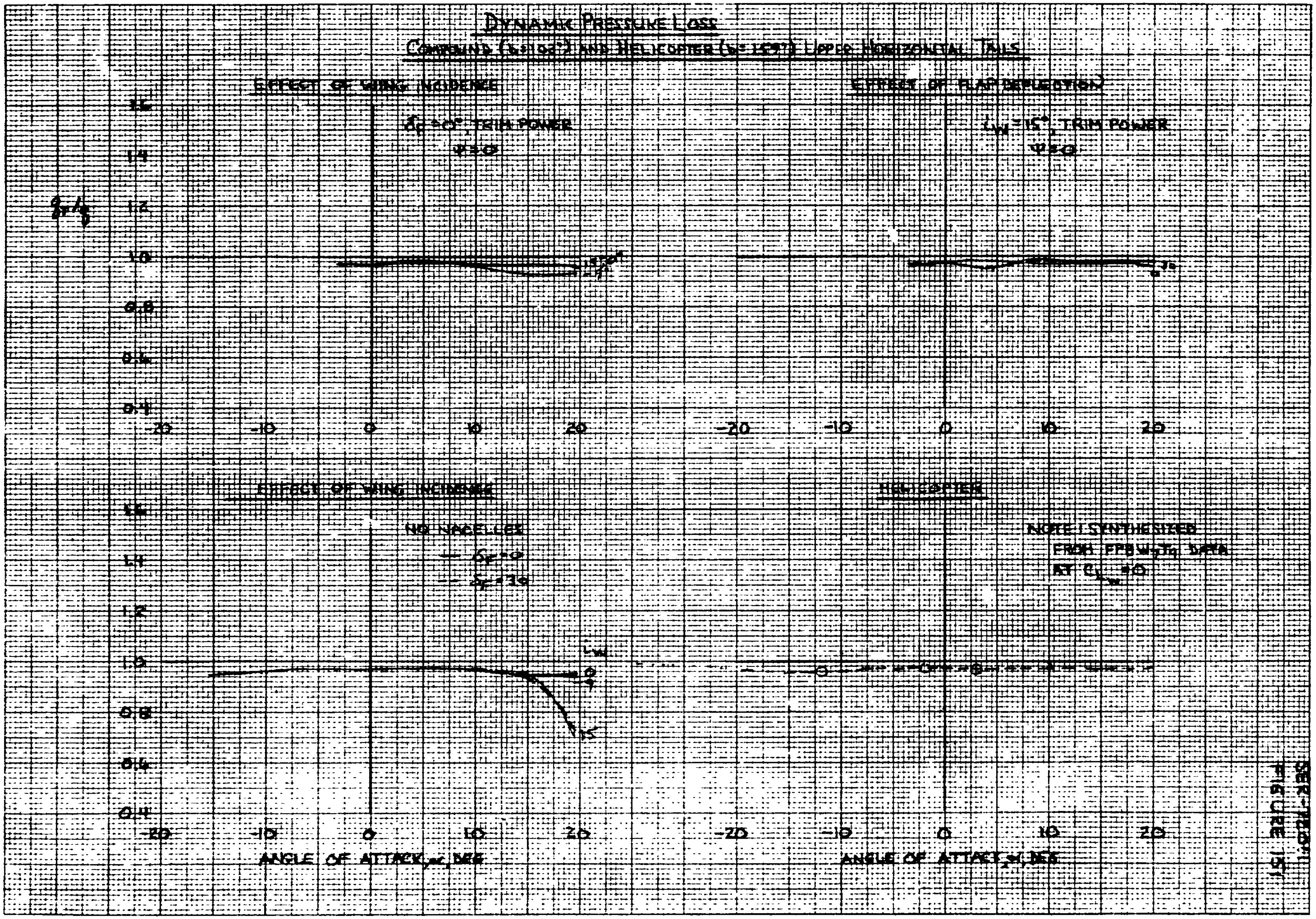
Figure 148 (Concluded)


SER-72011
FIGURE 149
LOCAL TOTAL PRESSURE RATIO
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE I
i_W = 0 DEG, δ_F = 0 DEG
Ψ = 0 DEG, TRIM POWER
WL = 184
CONFIGURATION: FBRN$_2$ W$_5$ T$_5$
α = -8°
α = -4°
α = 0°
α = 5°
α = 10°
α = 15°
LOCAL
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
0
TAILCONE
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES

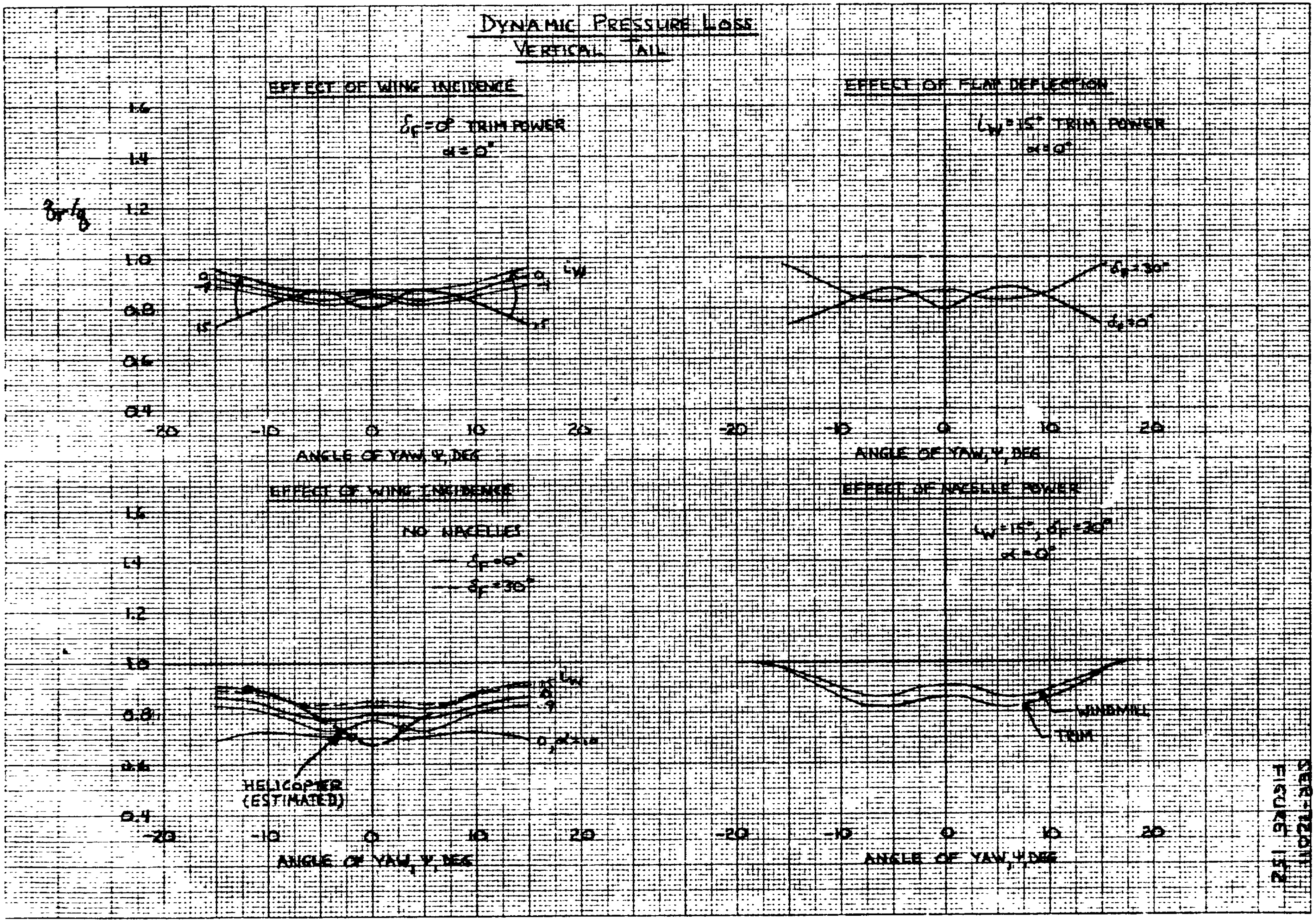
K&E 10 X 10 TO THE CENTIMETER 46 1513
KEUFFEL & ESSER CO.

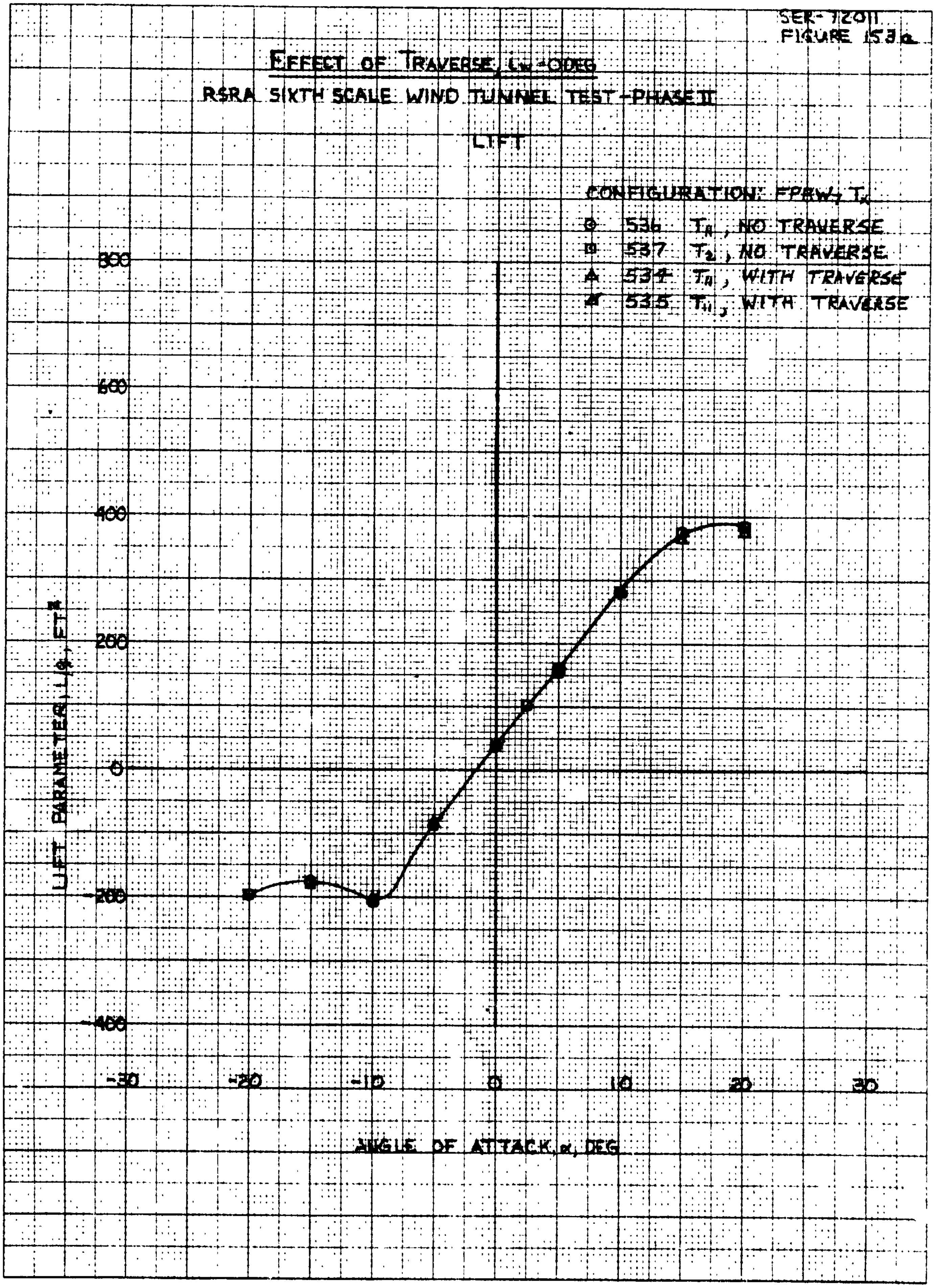


SER-72011
FIGURE 155

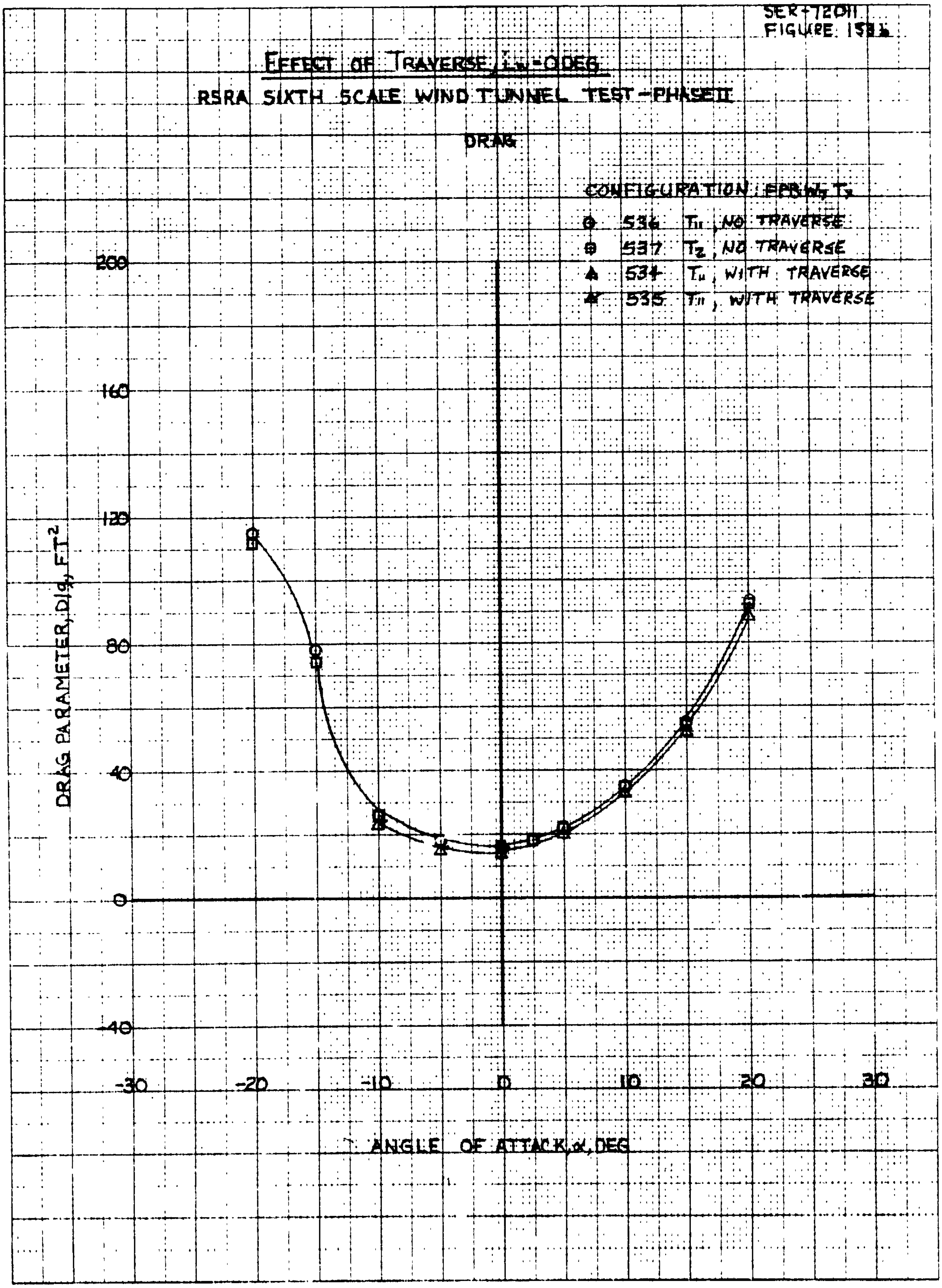


DYNAMIC PRESSURE LOSS
EFFECT OF WING INCIDENCE
TRIM POWER
EFFECT OF FLAP DEFLECTION
TRIM POWER
EFFECT OF WING INCIDENCE
NO NACELLES
HELICOPTER
NOTE: SYNTHESIZED
ANGLE OF ATTACK, α, DEG
ANGLE OF ATTACK, α, DEG
SER-
FIGURE 151

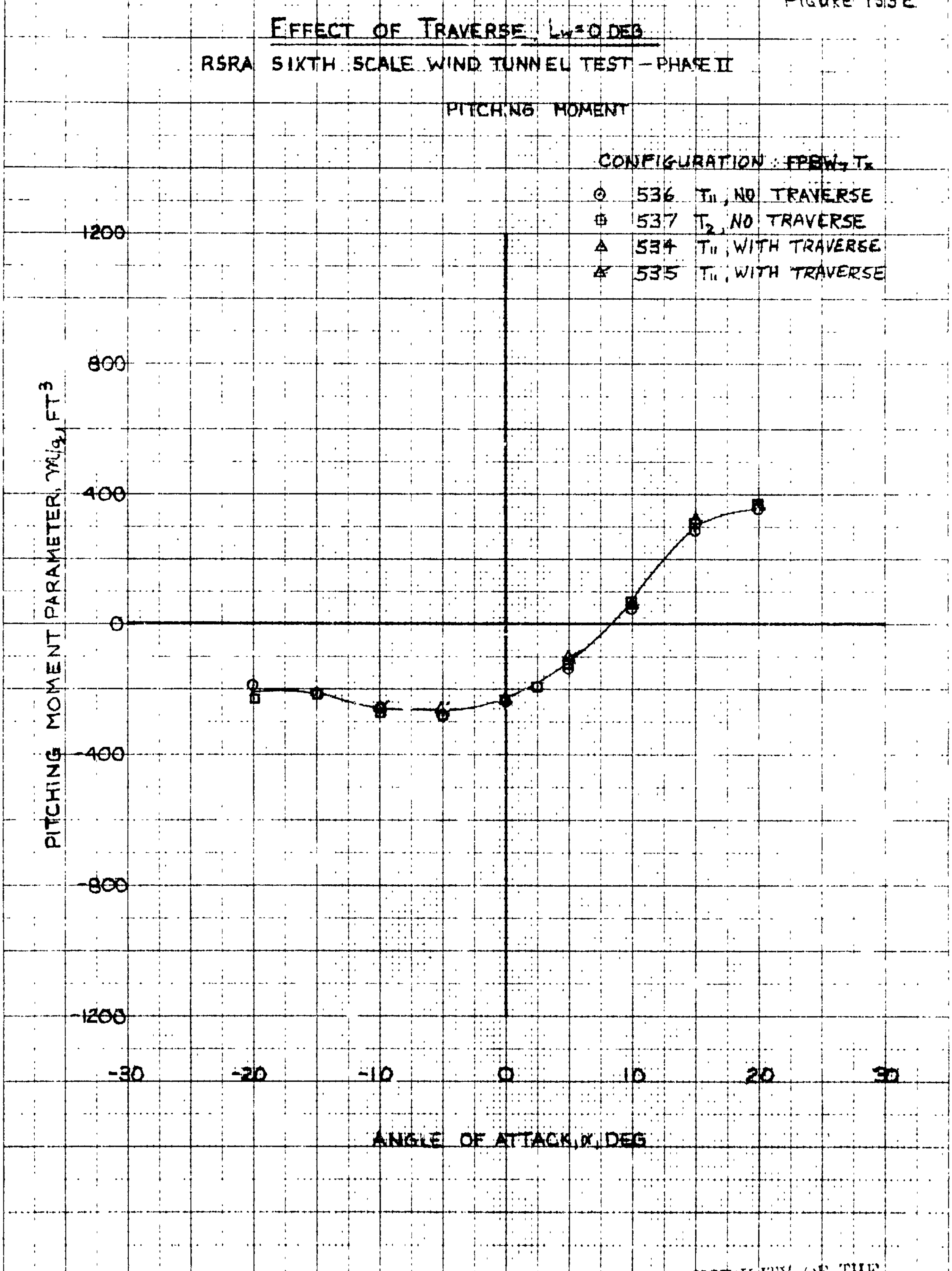

DYNAMIC PRESSURE LOSS
VERTICAL TAIL
EFFECT OF WING INCIDENCE
TRIM POWER
EFFECT OF FLAP DEFLECTION
TRIM POWER
ANGLE OF YAW, Ψ, DEG
EFFECT OF WING INCIDENCE
NO NACELLES
EFFECT OF NACELLE POWER
WINDMILL
TRIM
HELICOPTER
(ESTIMATED)
SER-72011
FIGURE 152

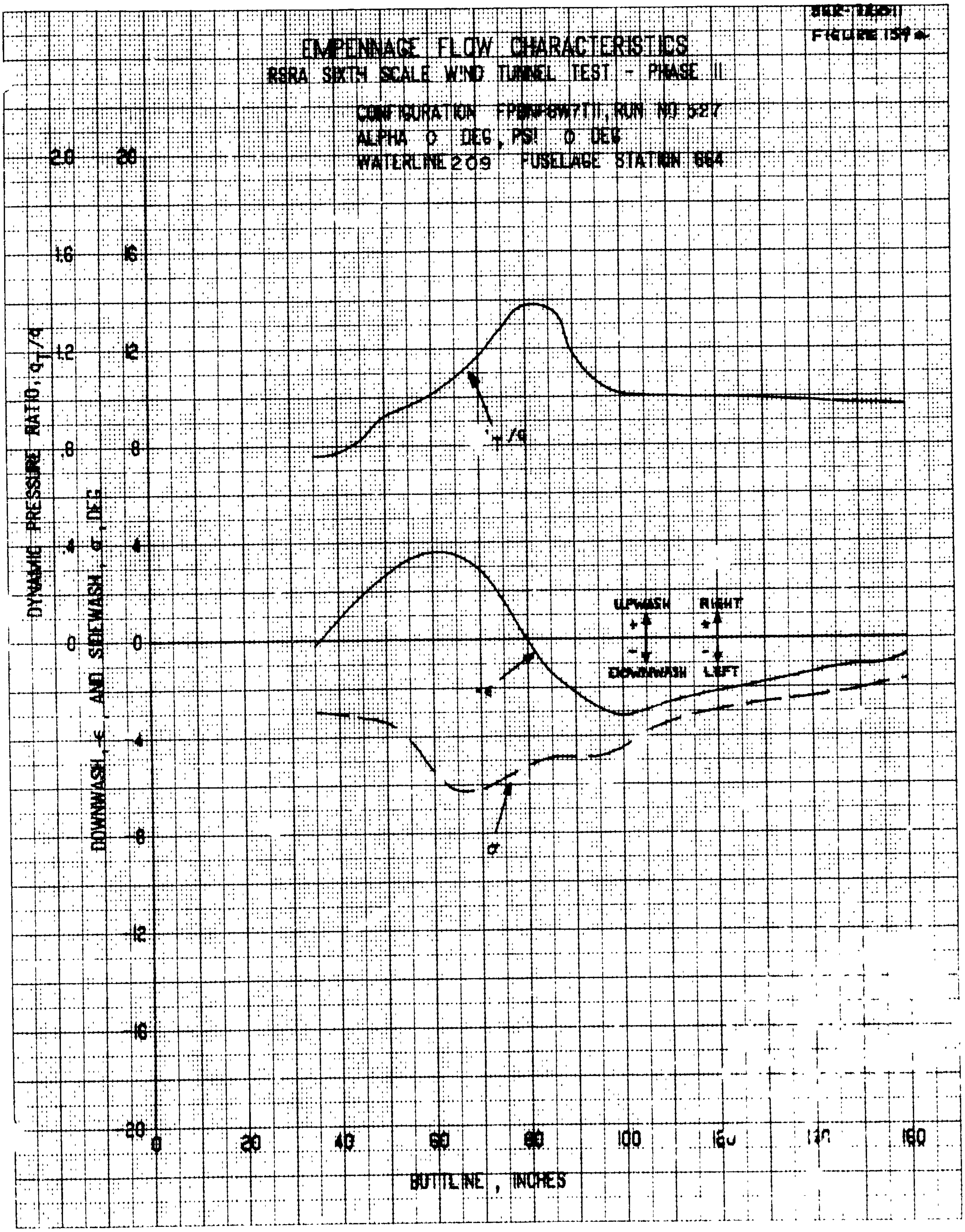


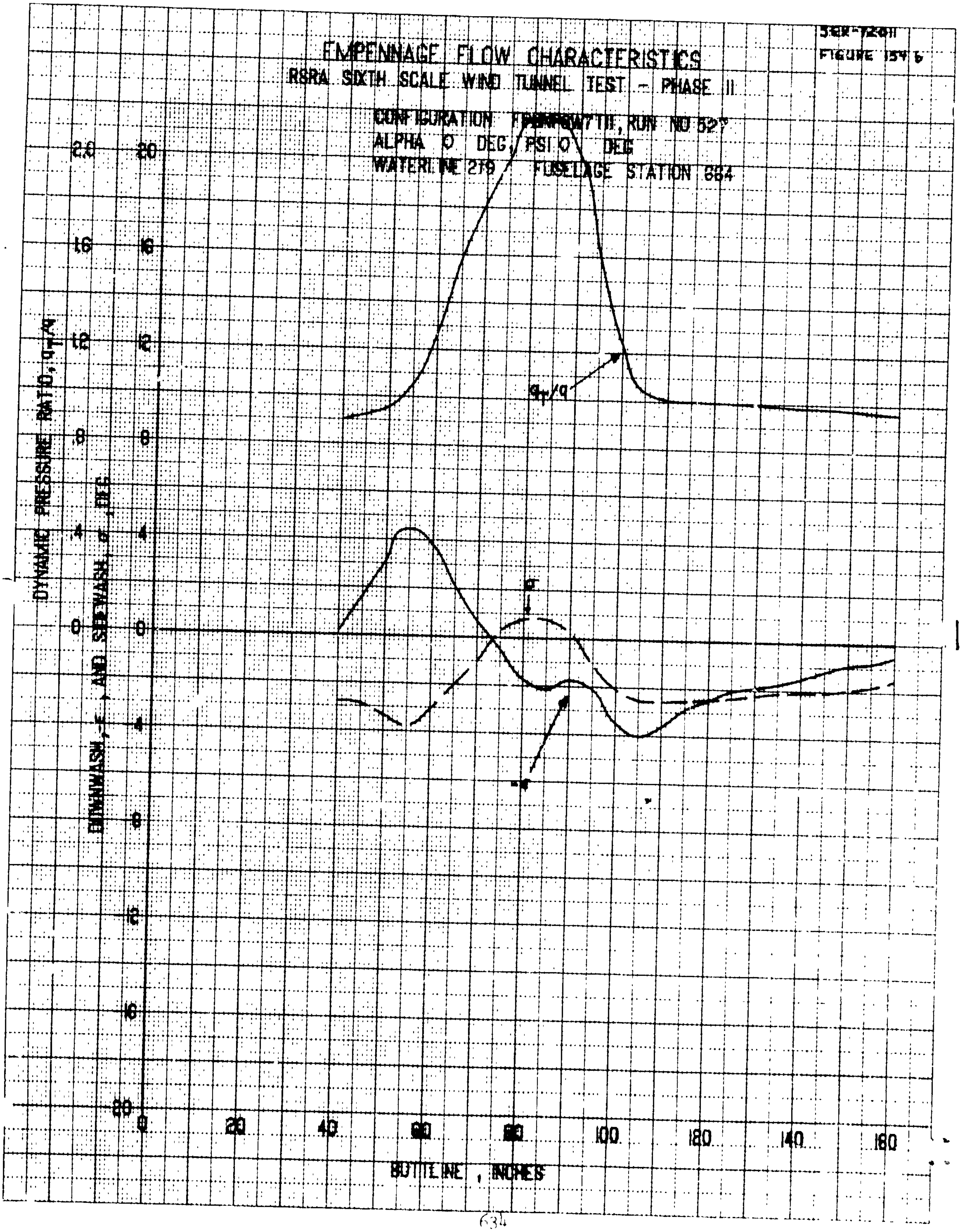
SER-72011
FIGURE 153a
EFFECT OF TRAVERSE, iW = 0 DEG
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
LIFT
CONFIGURATION: FPBW7 TX
536 TH, NO TRAVERSE
537 T2, NO TRAVERSE
534 TH, WITH TRAVERSE
535 TH, WITH TRAVERSE
800
600
400
200
0
-200
-400
-30
-20
-10
0
10
20
30
ANGLE OF ATTACK, α, DEG
LIFT PARAMETER, L/q, FT²

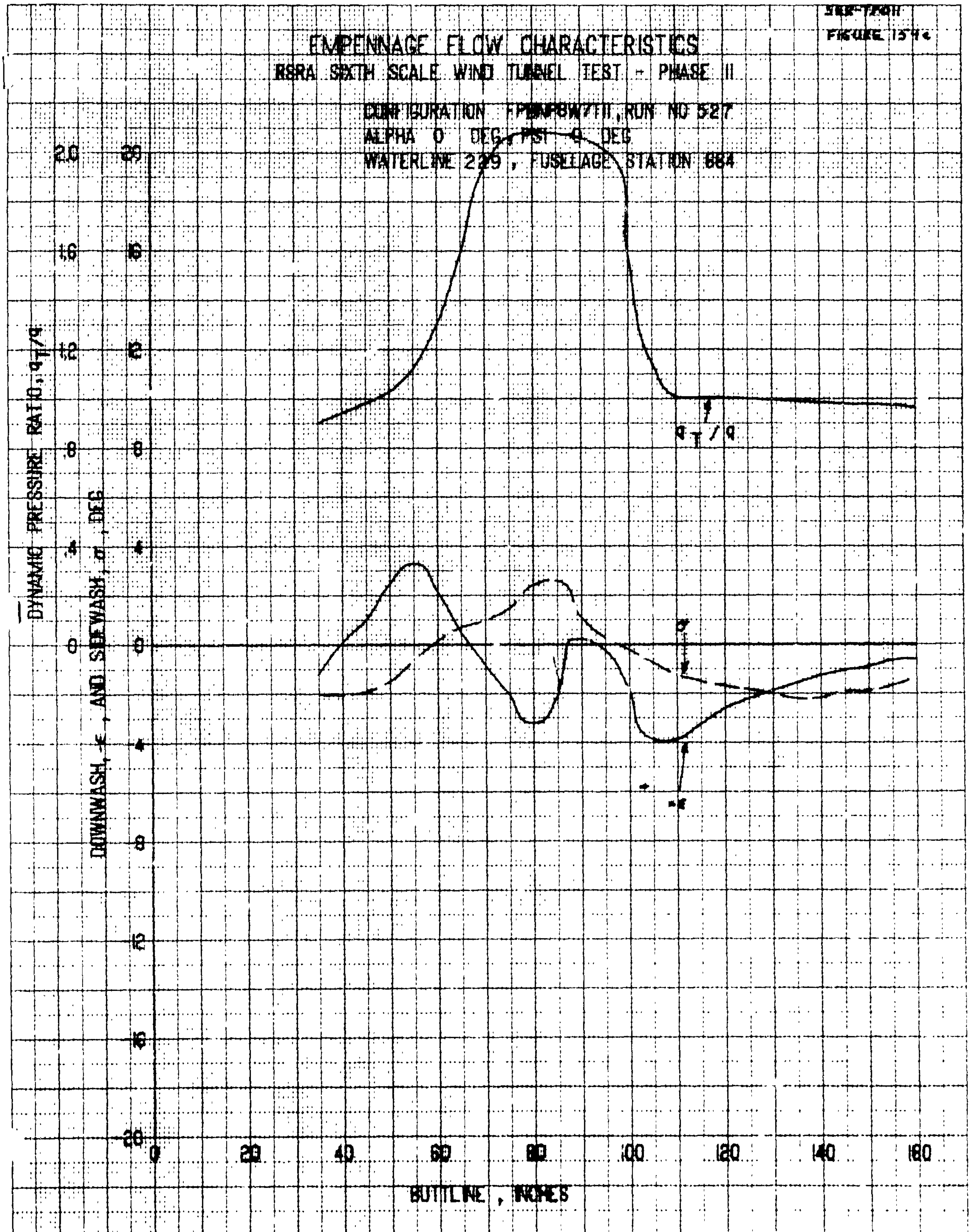

SER-72011
FIGURE 153
EFFECT OF TRAVERSE, i_w=0DEG
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
DRAG
CONFIGURATION: FPBW₅T
536 T₁₁, NO TRAVERSE
537 T₂, NO TRAVERSE
534 T₁₁, WITH TRAVERSE
535 T₁₁, WITH TRAVERSE
200
160
120
80
40
0
-40
-30
-20
-10
0
10
20
30
DRAG PARAMETER, D/q, FT²
ANGLE OF ATTACK, α, DEG

SER-72011
FIGURE 153c

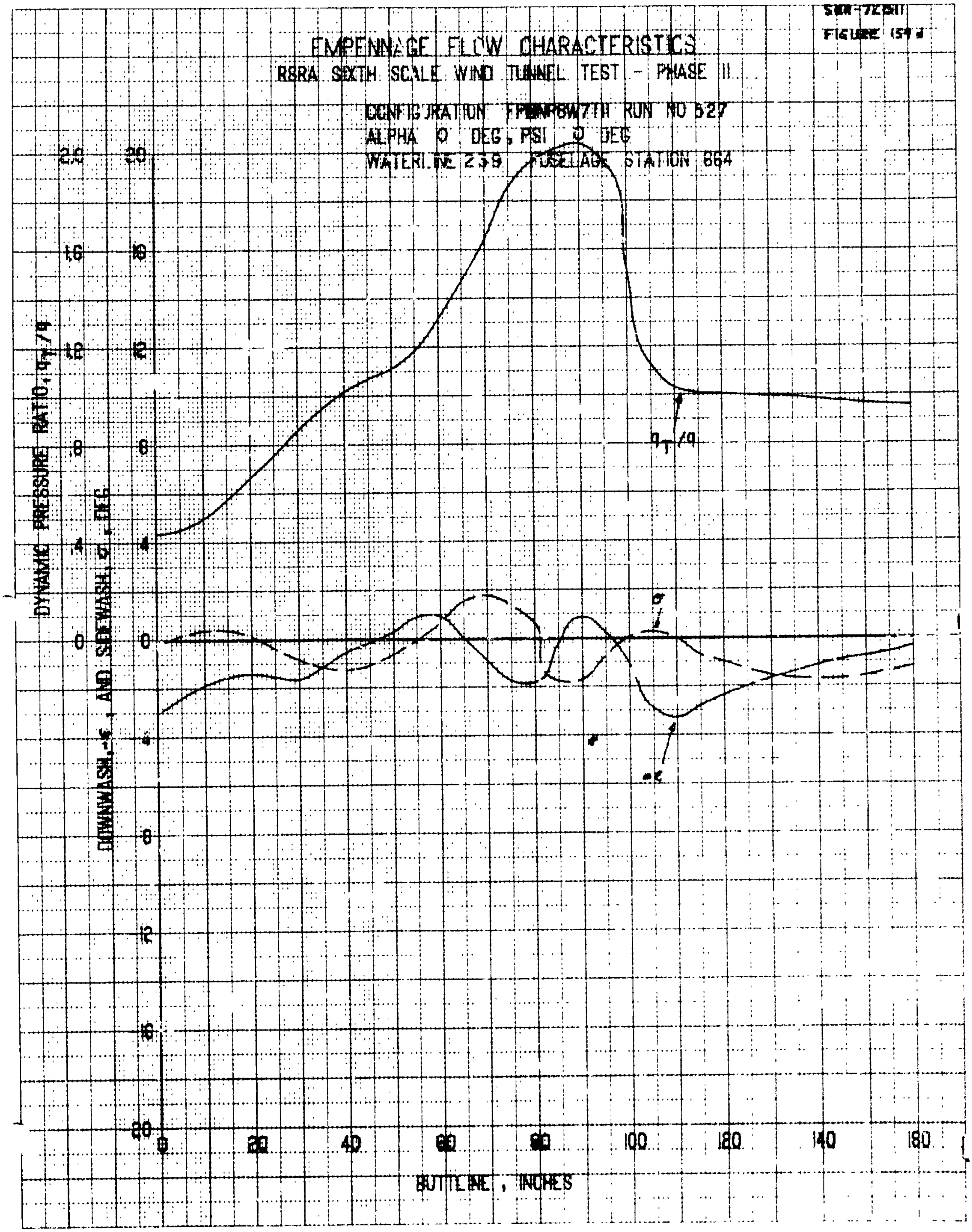


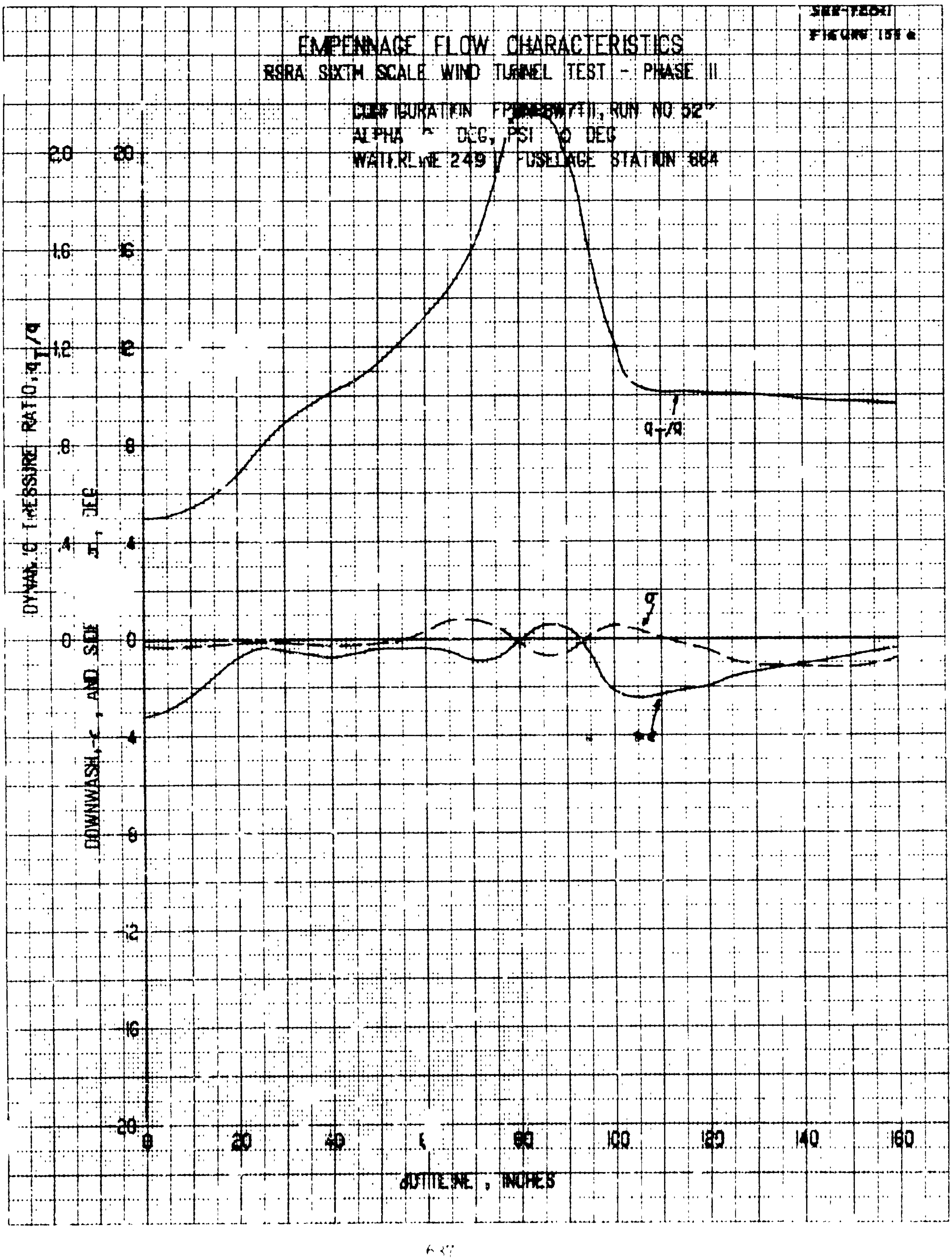

EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPBNP8W7T11, RUN NO 527
ALPHA 0 DEG, PSI 0 DEG
WATERLINE 209 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ε, AND SIDEWASH, σ, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
q_T/q
ε
σ
UPWASH
DOWNWASH
RIGHT
LEFT
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES


SER-72011
FIGURE 154 b
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION
RUN NO 527
ALPHA 0 DEG, PSI 0 DEG
WATERLINE 219 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ε, AND SIDEWASH, σ, DEG
q_T/q
σ
ε
BUTTLINE, INCHES
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
0
20
40
60
80
100
120
140
160

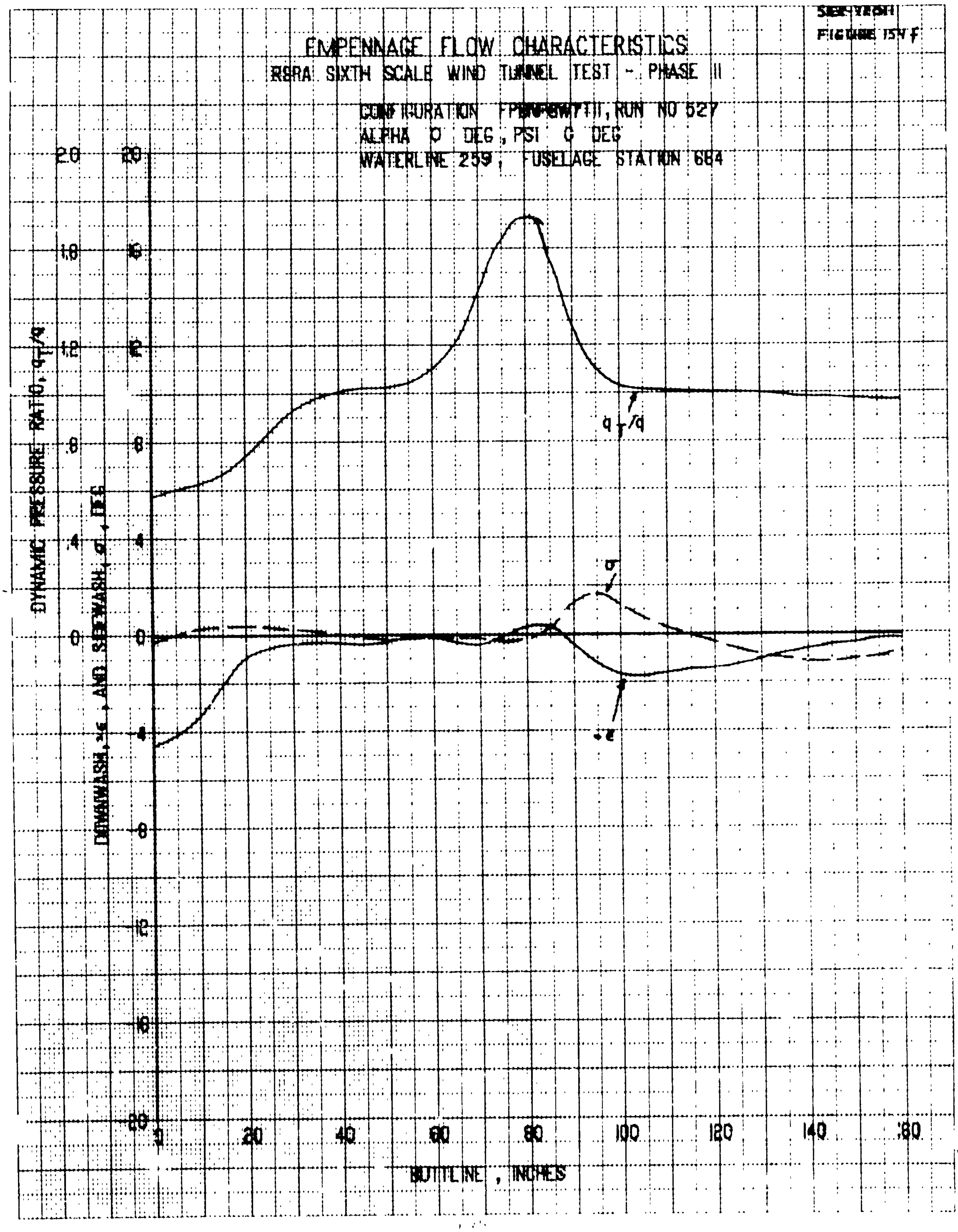


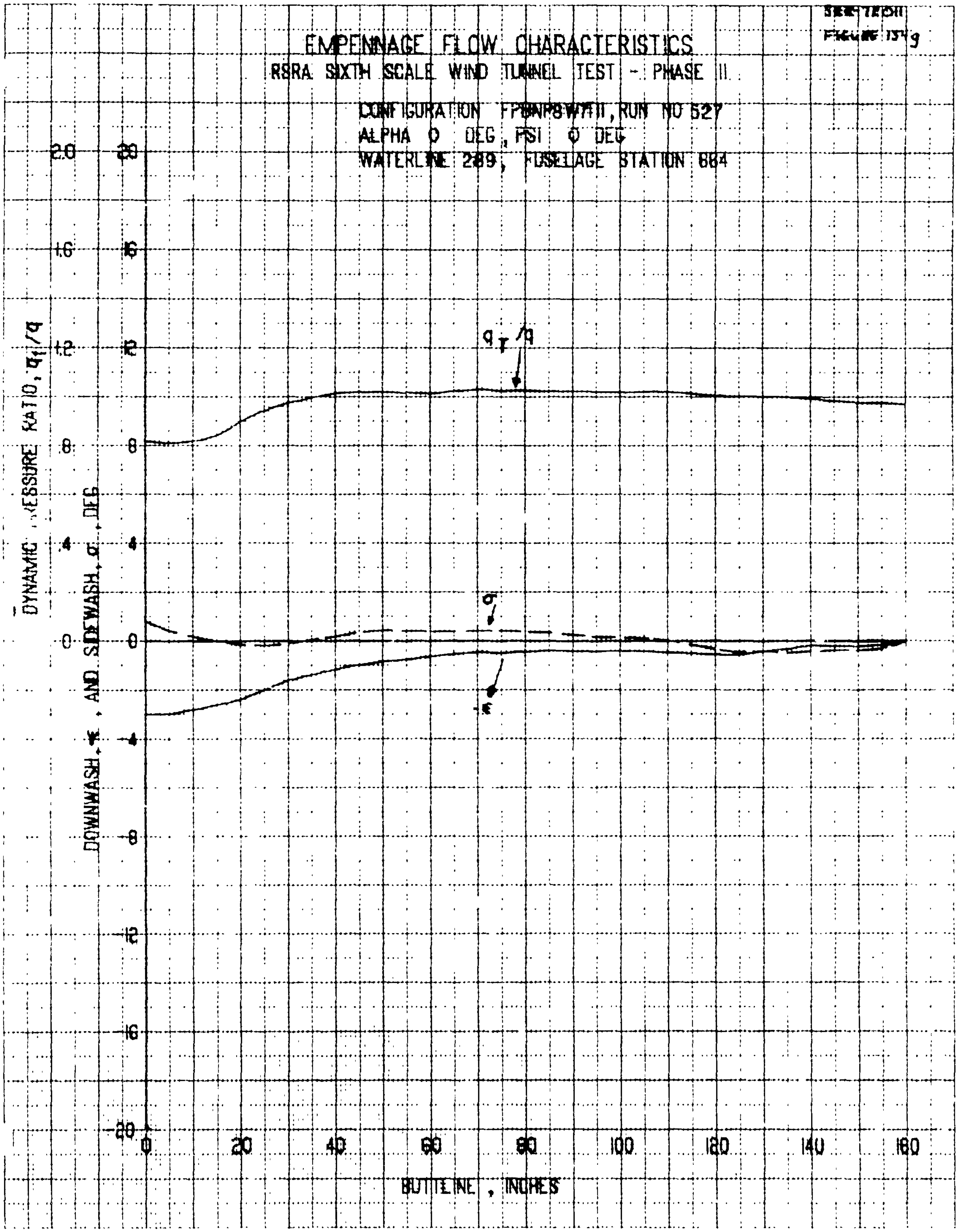
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPBNF8W7TII, RUN NO 527
ALPHA 0 DEG, PSI 0 DEG
WATERLINE 229 , FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ε , AND SIDEWASH, σ , DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
q_T / q
σ
-ε
0
20
40
60
80
100
120
140
160
BUTTLINE , INCHES


EMPENNAGE FLOW CHARACTERISTICS
R8RA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION RUN NO 527
ALPHA 0 DEG, PSI 0 DEG
WATERLINE 239 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
q_T/q
σ
-ε
BUTTLINE, INCHES
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
-4
-8
-12
-16
-20
40
60
80
100
120
140
160

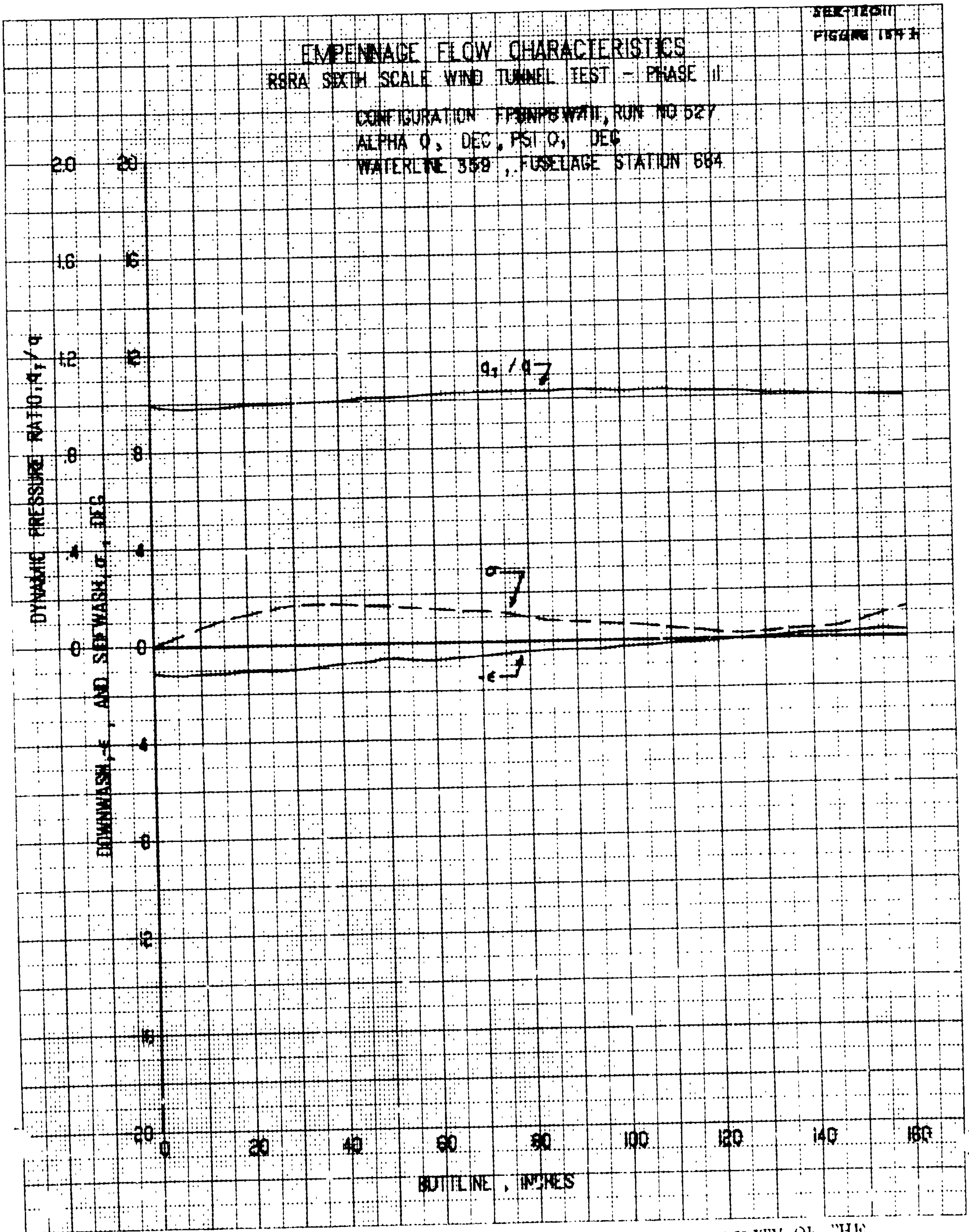


SEE TEXT
FIGURE 155a
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION
ALPHA DEG, PSI 0 DEG
WATERLINE 249 / FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ε, AND SIDEWASH, σ, DEG
q_T/q
σ
ε
BUTTLINE, INCHES
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
-4
-8
-12
-16
-20
0
20
40
80
100
120
140
160

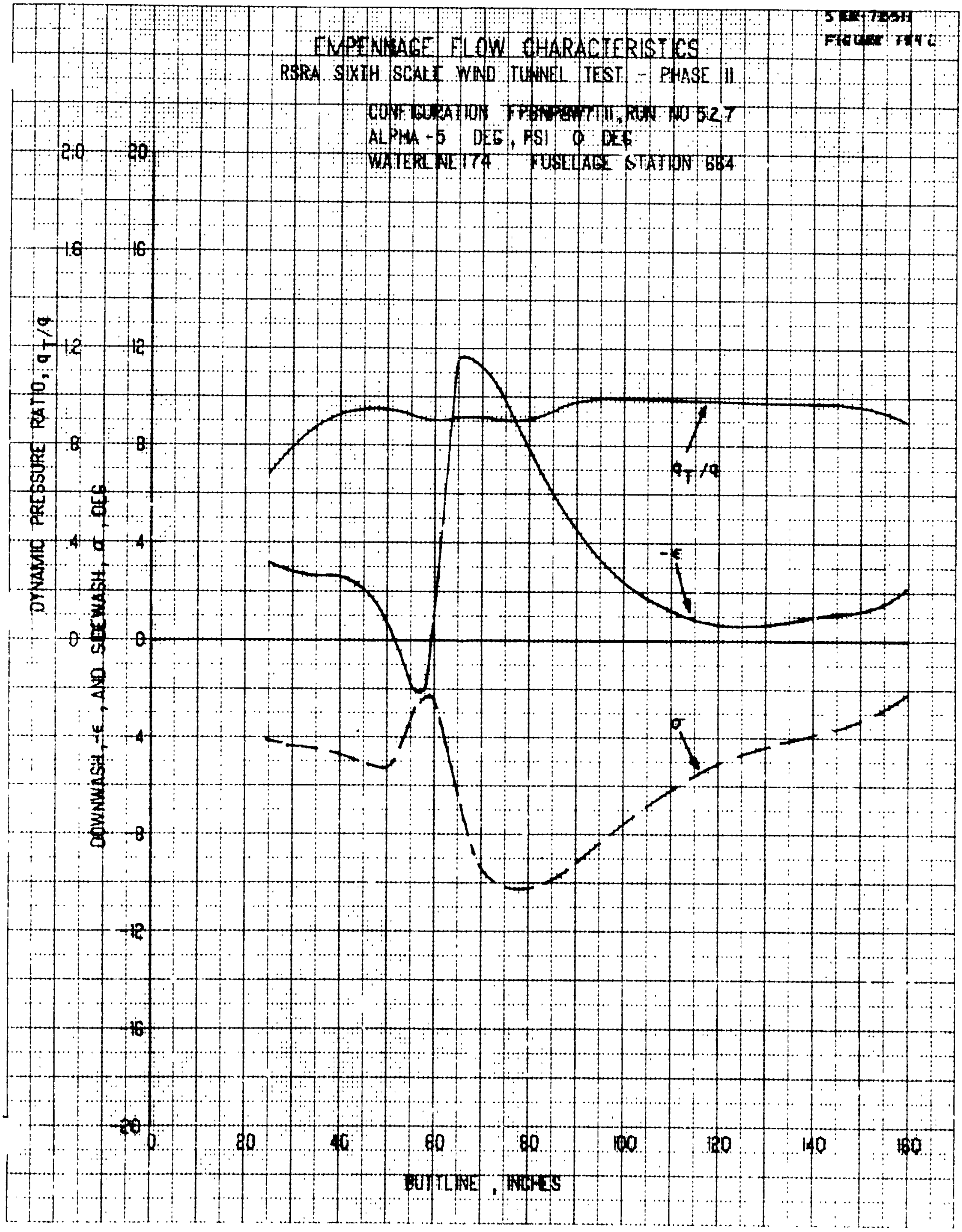

EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FP, RUN NO 527
ALPHA 0 DEG, PSI 0 DEG
WATERLINE 259, FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q/q
DOWNWASH, ε, AND SIDEWASH, σ, DEG
q/q
σ
ε
BUTTLINE, INCHES



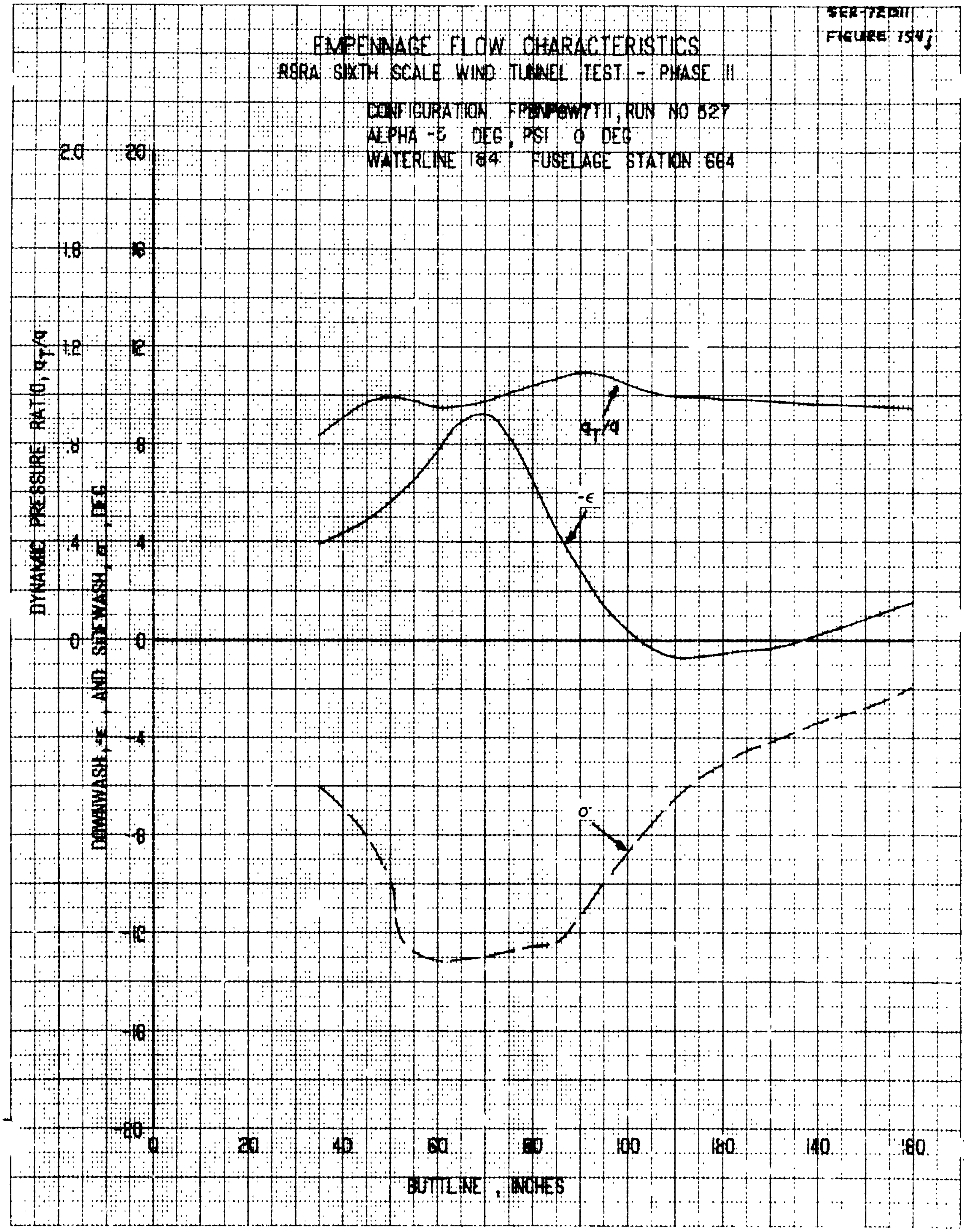
SEE TECH
FIGURE 15-9
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPBNPSW7T11, RUN NO 527
ALPHA 0 DEG, PSI 0 DEG
WATERLINE 289, FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
q_T/q
σ
-ε
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES

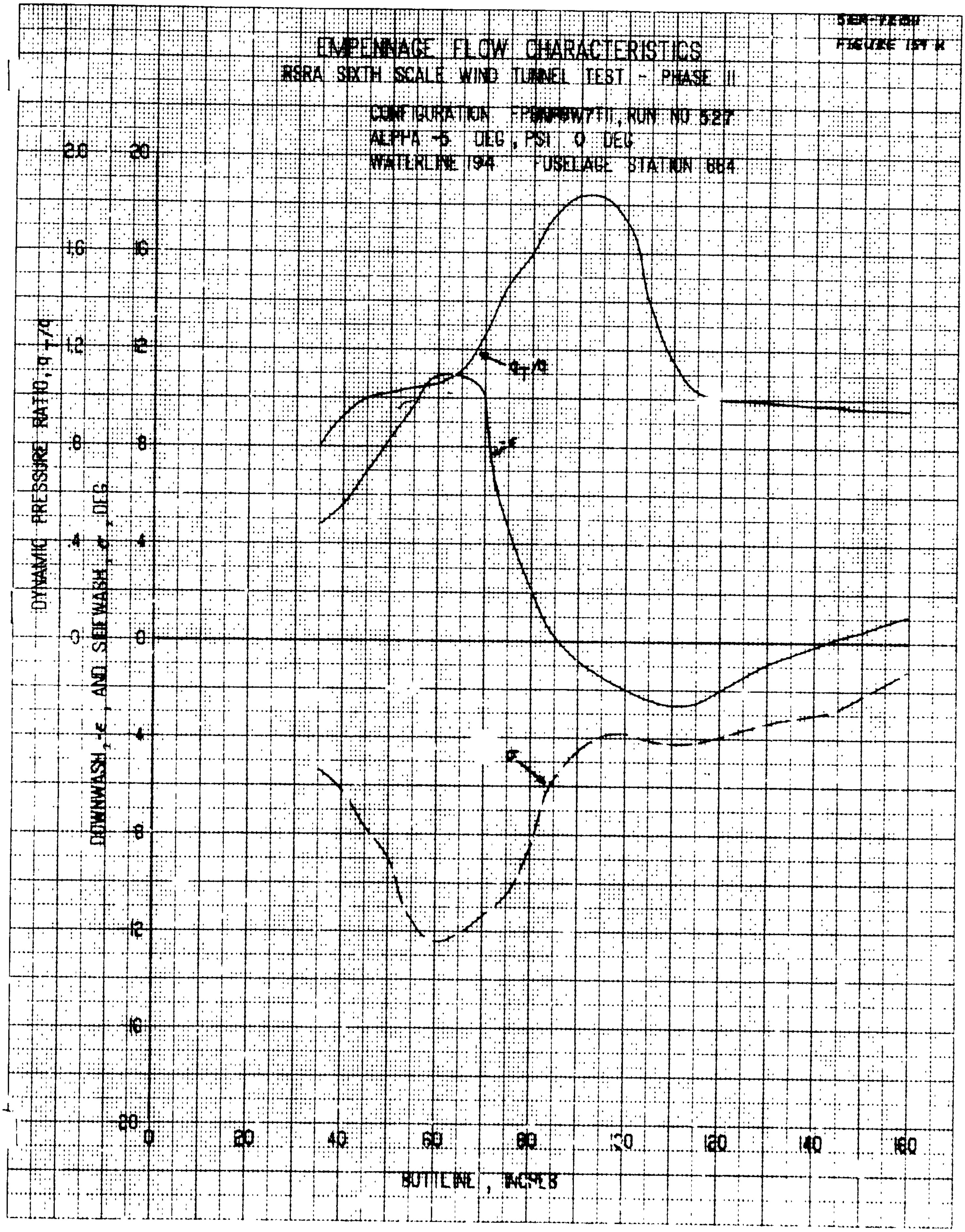


EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPSNPBWATII, RUN NO 527
ALPHA 0, DEG, PSI 0, DEG
WATERLINE 359, FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ε, AND SIDEWASH, σ, DEG
q_T/q
σ
-ε
BUTTLINE, INCHES

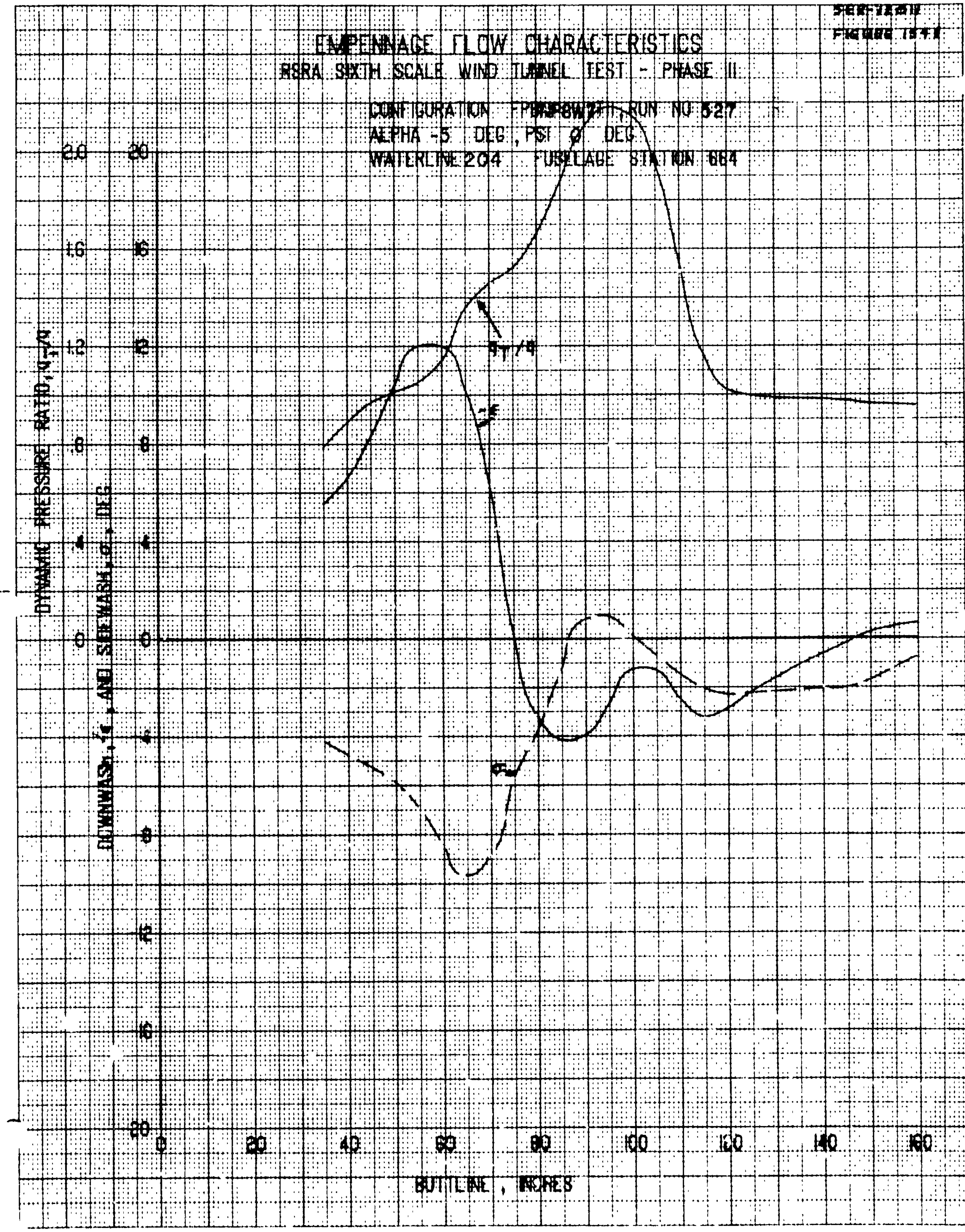


SER-72154
FIGURE
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPBNPQW7TII, RUN NO 52.7
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 174 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, qT/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
qT/q
-ε
σ
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES

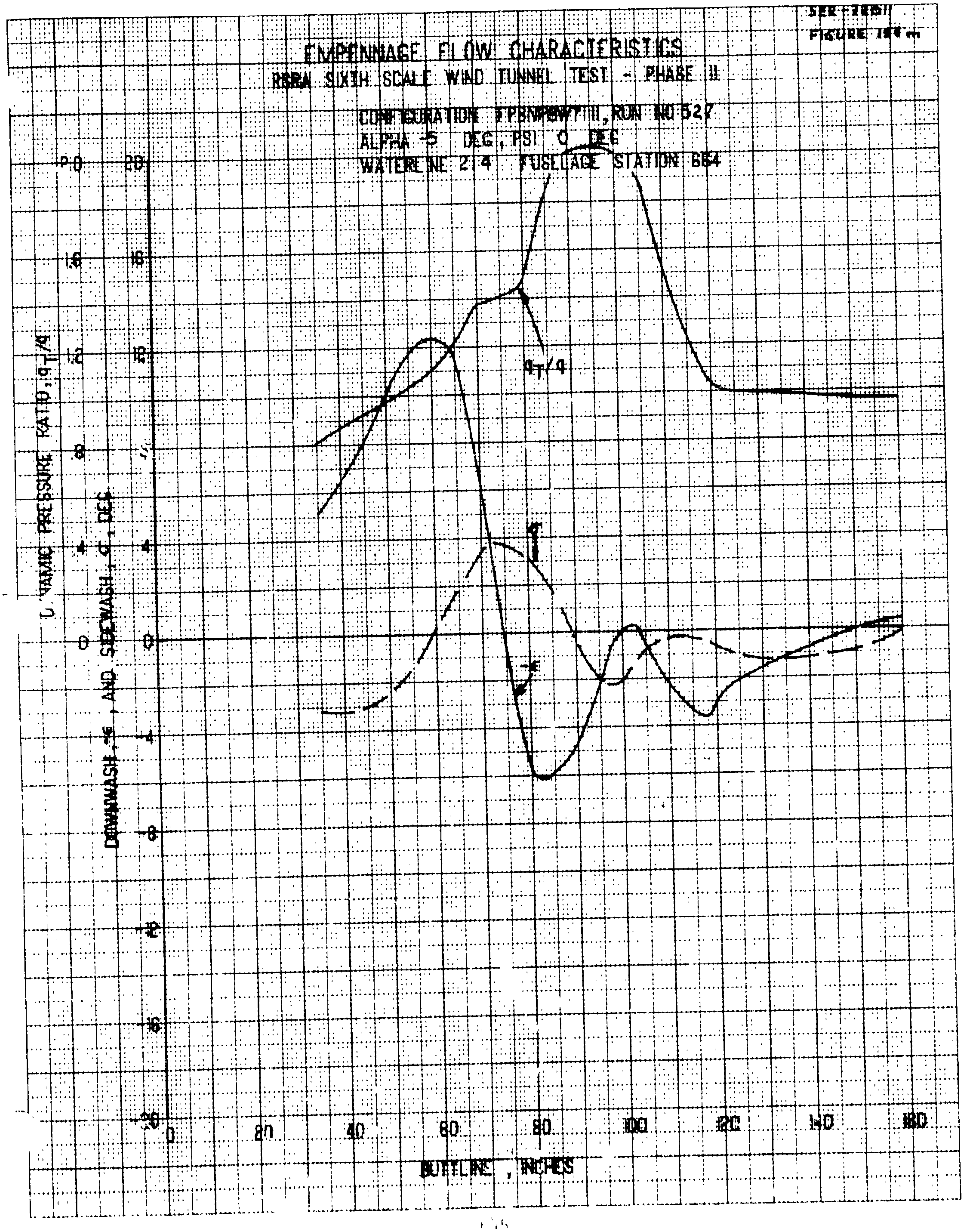

SER-72011
FIGURE 154
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION , RUN NO 527
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 184 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, $-\epsilon$, AND SIDEWASH, σ, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
0
20
40
60
80
100
120
140
160
q_T/q
$-\epsilon$
σ
BUTTLINE, INCHES



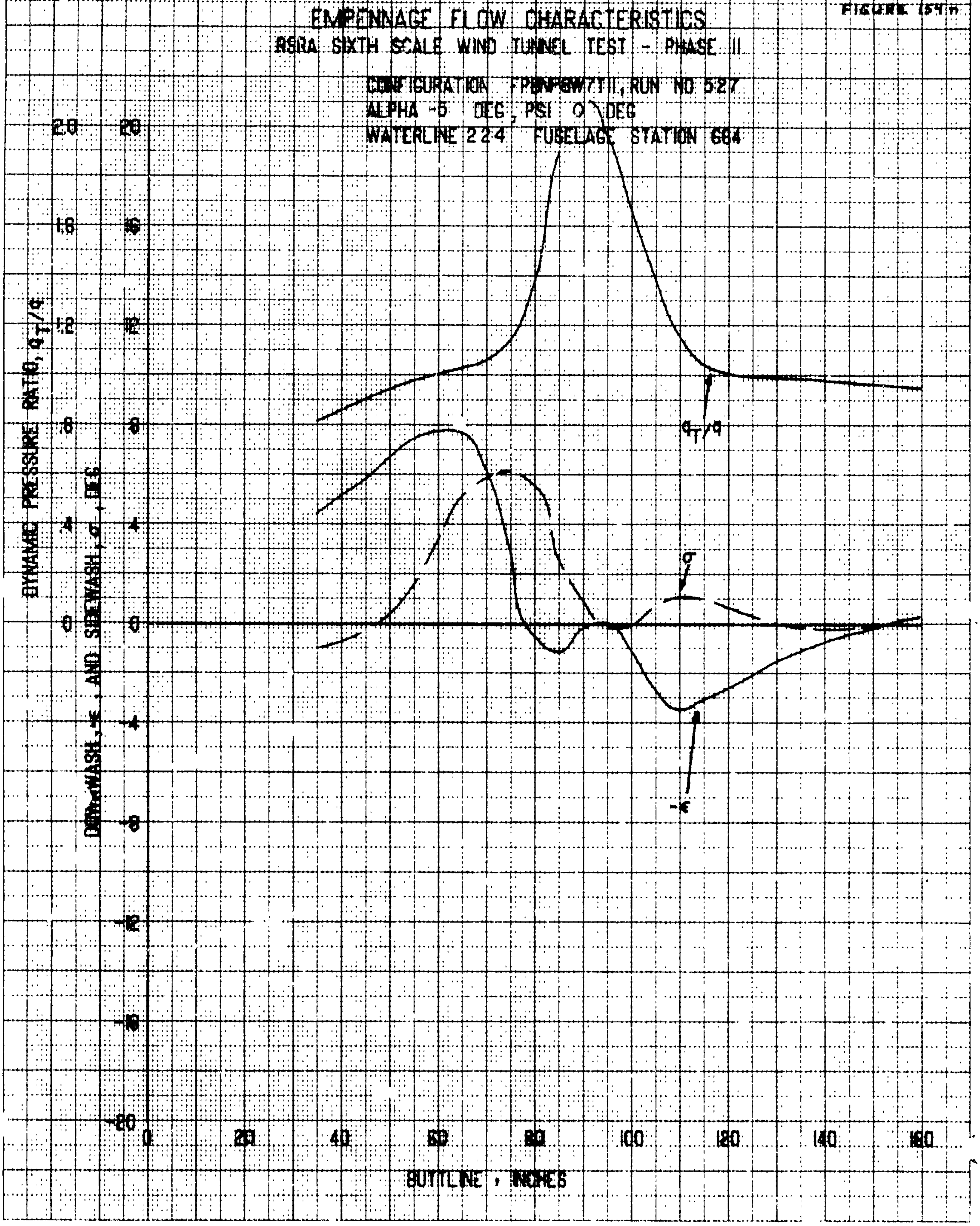
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
RUN NO 527
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 194 FUSELAGE STATION
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, $-\epsilon$, AND SIDEWASH, σ, DEG
q_T/q
$-\epsilon$
σ
BUTTLINE, INCHES

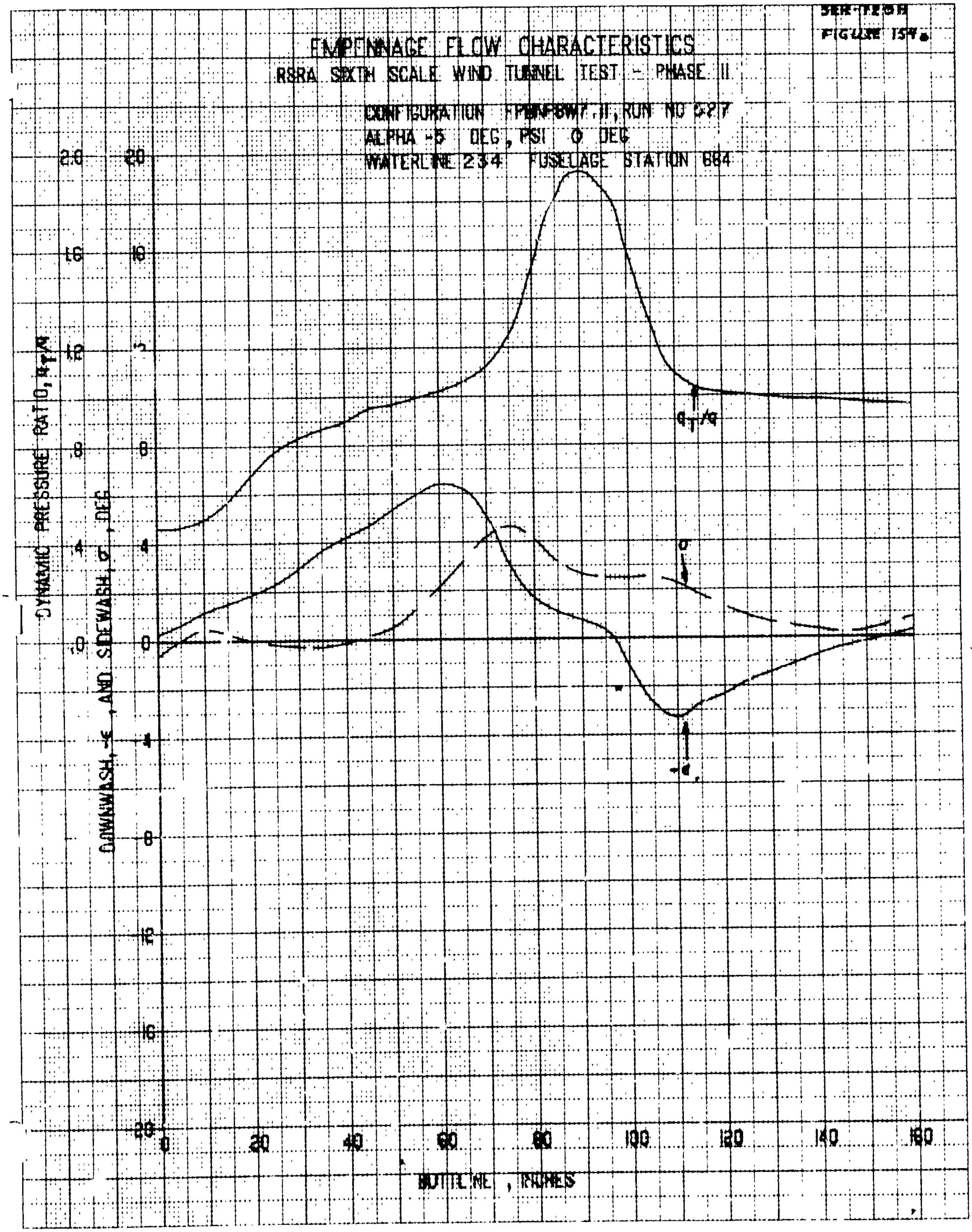


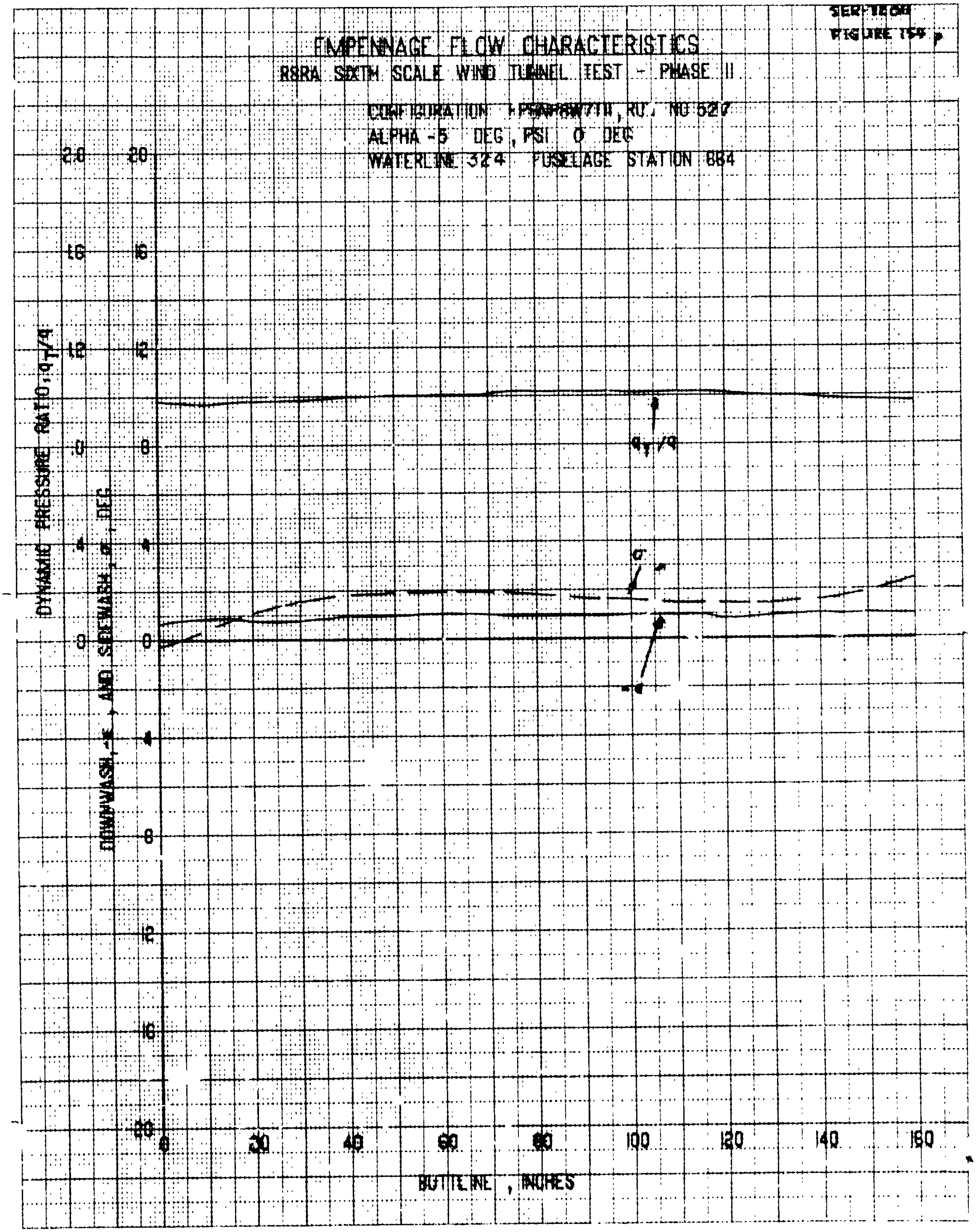
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION , RUN NO 527
ALPHA -5 DEG , PSI Ø DEG
WATERLINE 204 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ϵ, AND SIDEWASH, σ, DEG
q_T/q
ϵ
σ
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
4
8
12
16
20
0
20
40
60
80
100
120
140
160
BUTTLINE , INCHES

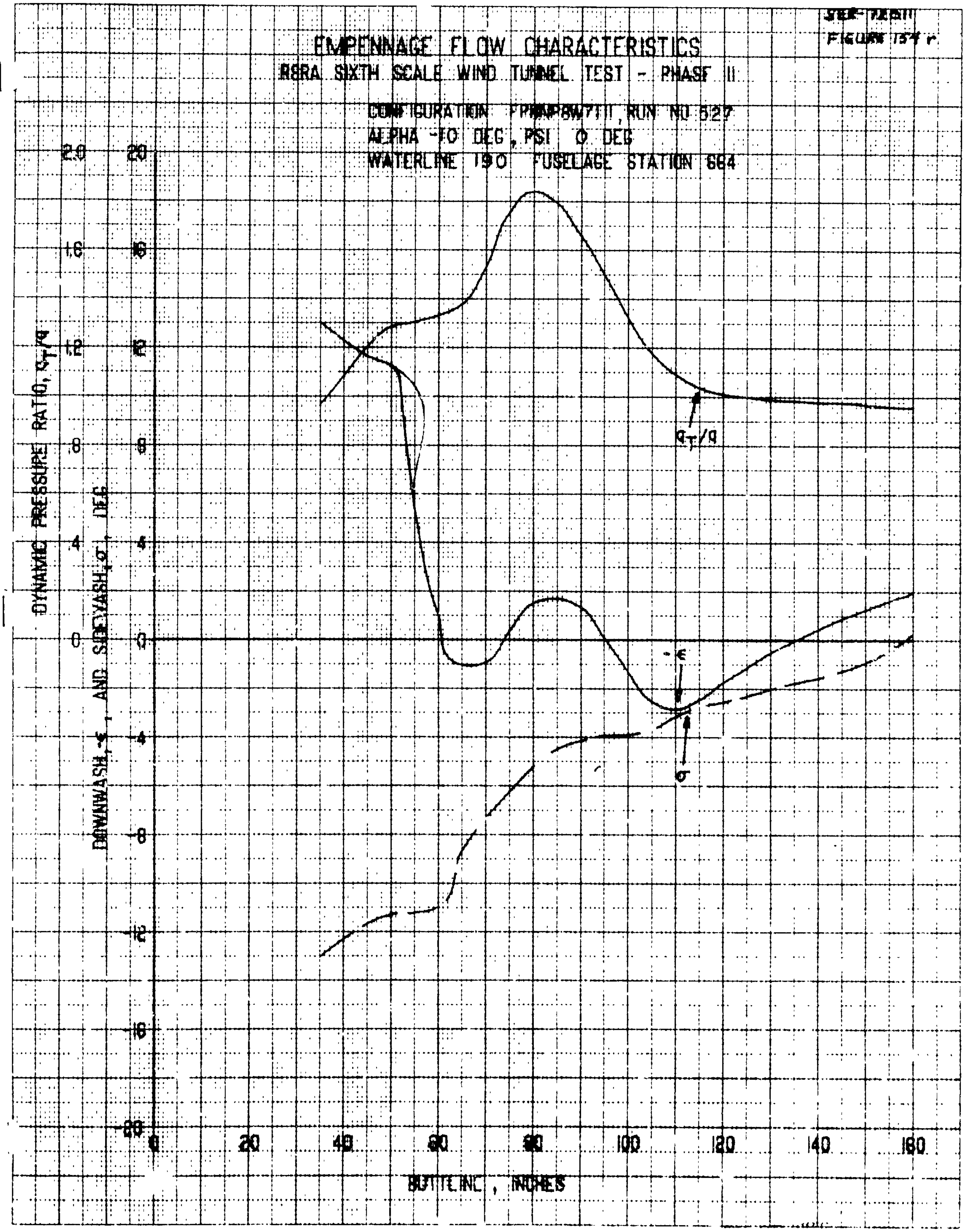

SEE FIGURE
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPBNPBW7II, RUN NO 527
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 274 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ε, AND SIDEWASH, σ, DEG
q_T/q
σ
ε
BUTTLINE, INCHES
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
0
20
40
60
80
100
120
140
160

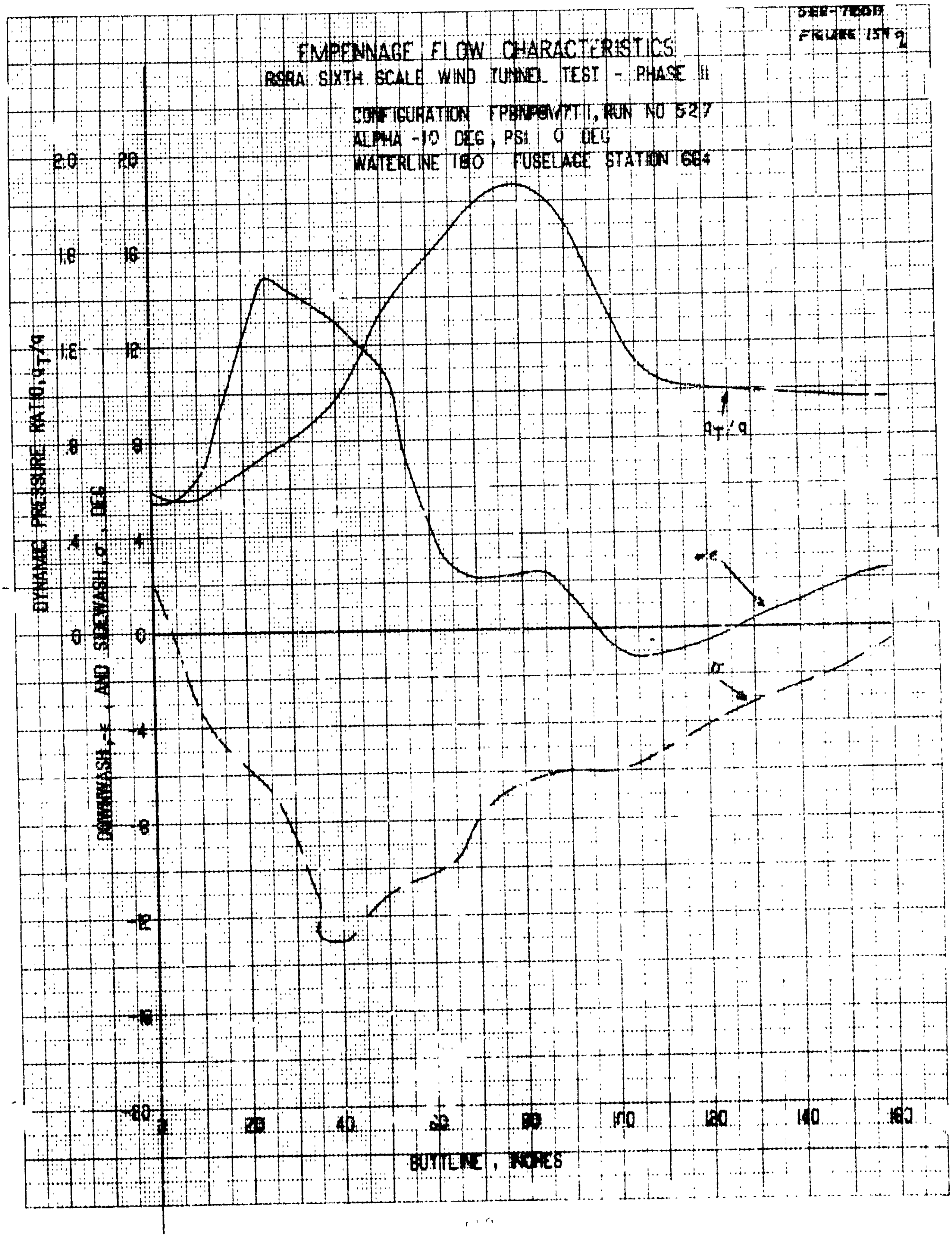
SER-72817
FIGURE 154 h




EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION ... RUN NO 527
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 234 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, qT/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
BUTTLINE, INCHES
qT/q
σ
-ε
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
0
20
40
60
80
100
120
140
160


SER-TE
FIGURE 159
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION ... RUN NO 527
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 324 FUSELAGE STATION 884
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
q_T/q
σ
-ε
BUTTLINE, INCHES
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
4
8
12
16
20
0
20
40
60
80
100
120
140
160


EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPRAP8W711, RUN NO 527
ALPHA -10 DEG, PSI 0 DEG
WATERLINE 190 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, qT/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
qT/q
-ε
σ
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES


EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPBNPGV7TII, RUN NO 527
ALPHA -10 DEG, PSI 0 DEG
WATERLINE 180 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
q_T/q
-ε
σ
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES

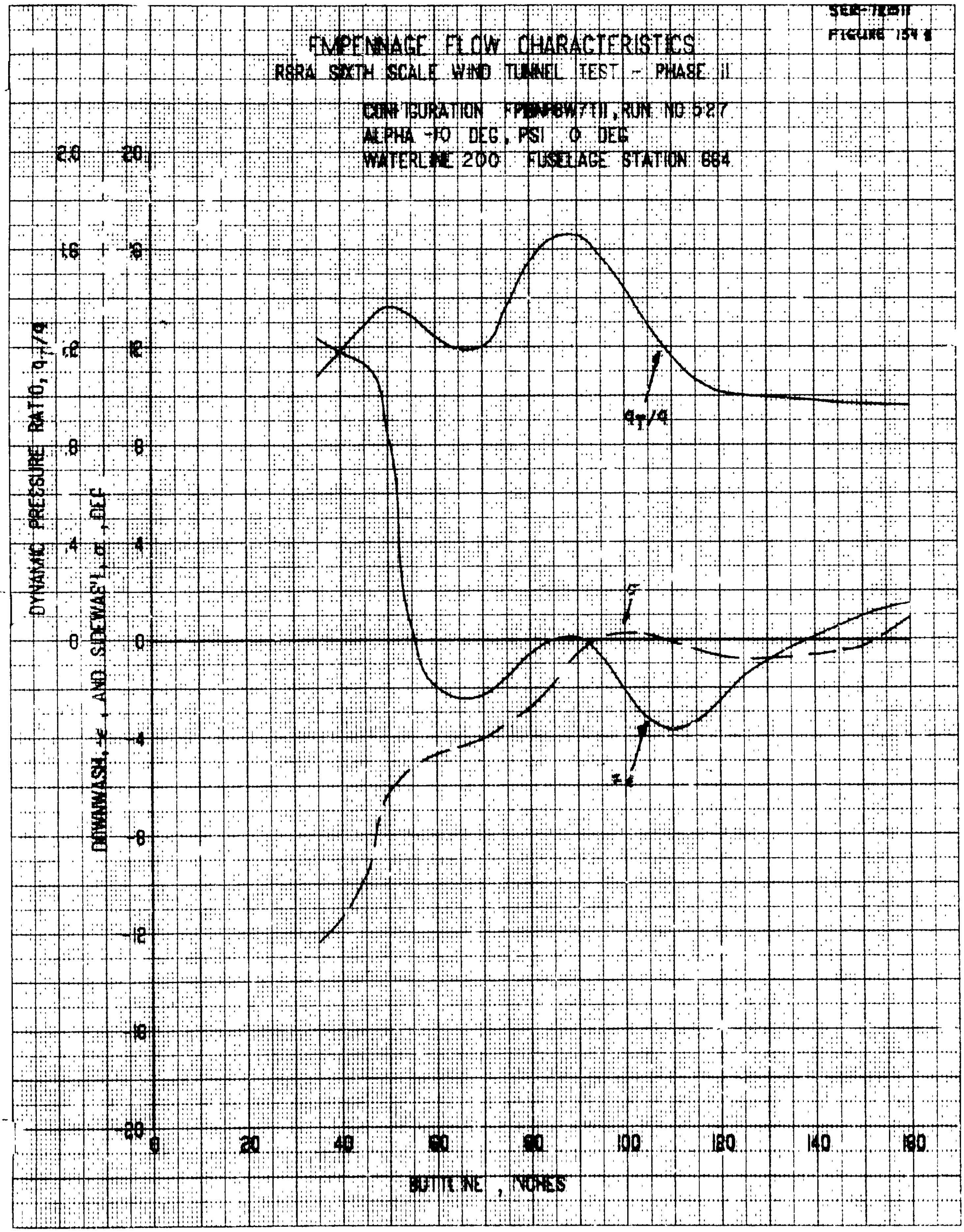
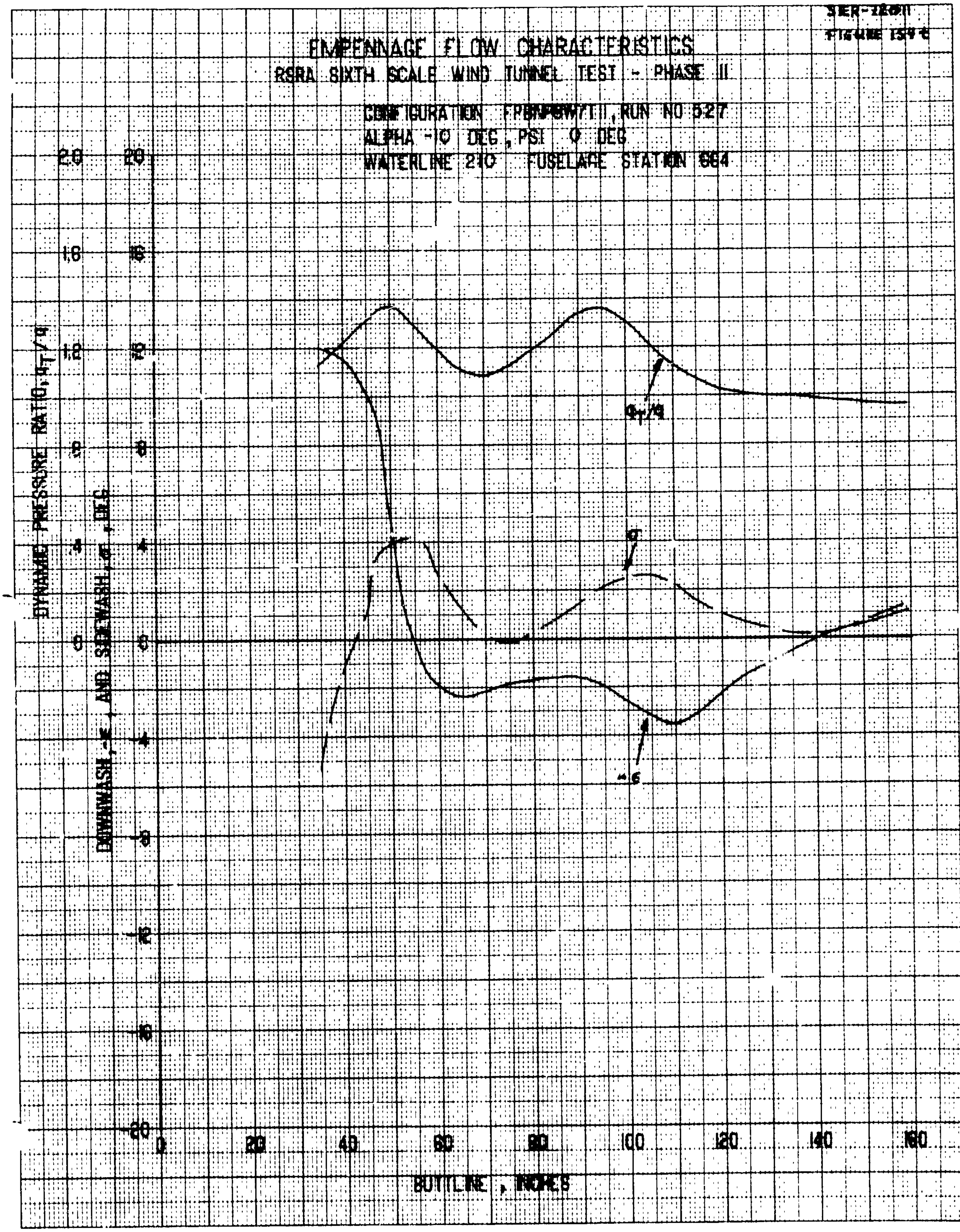
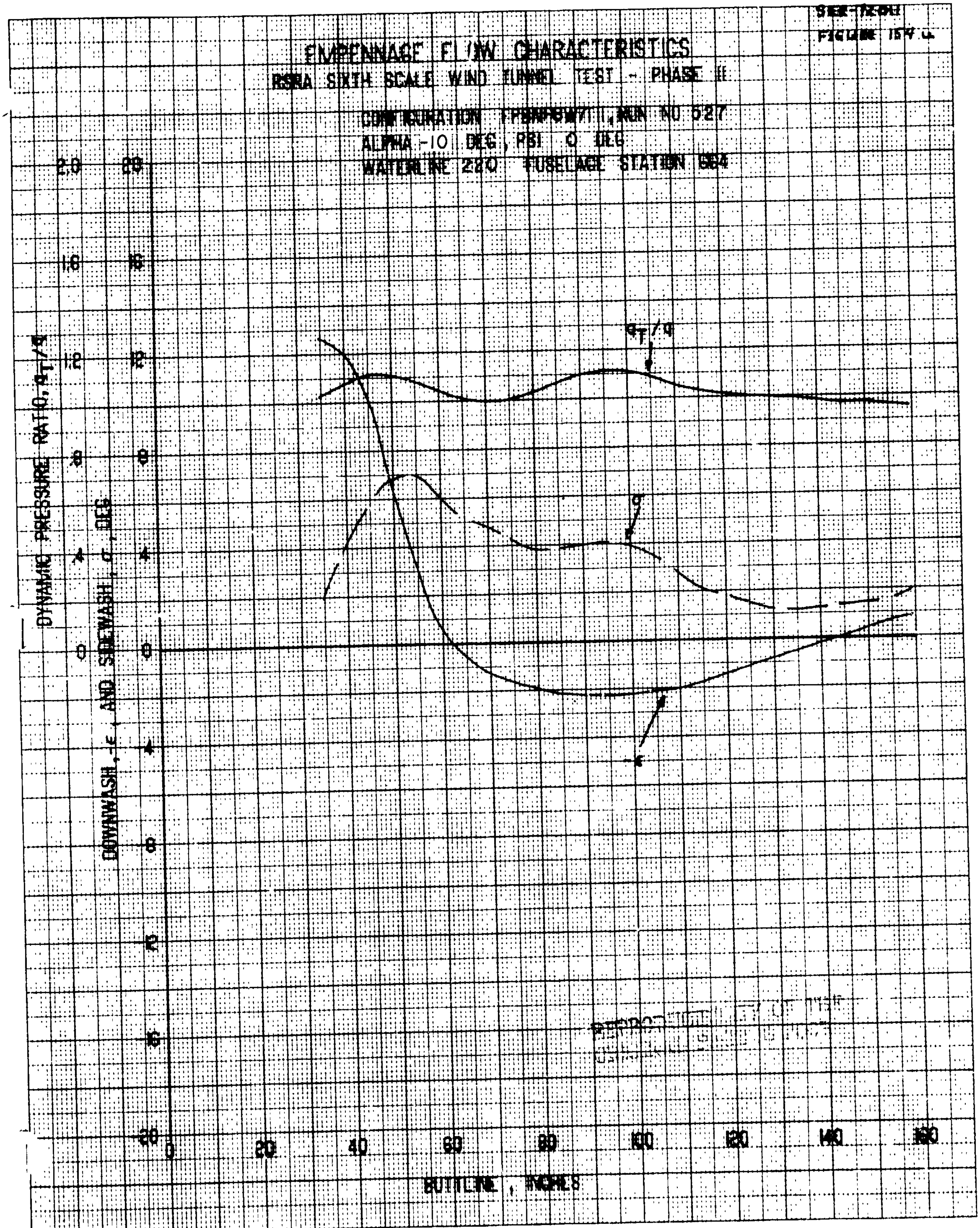


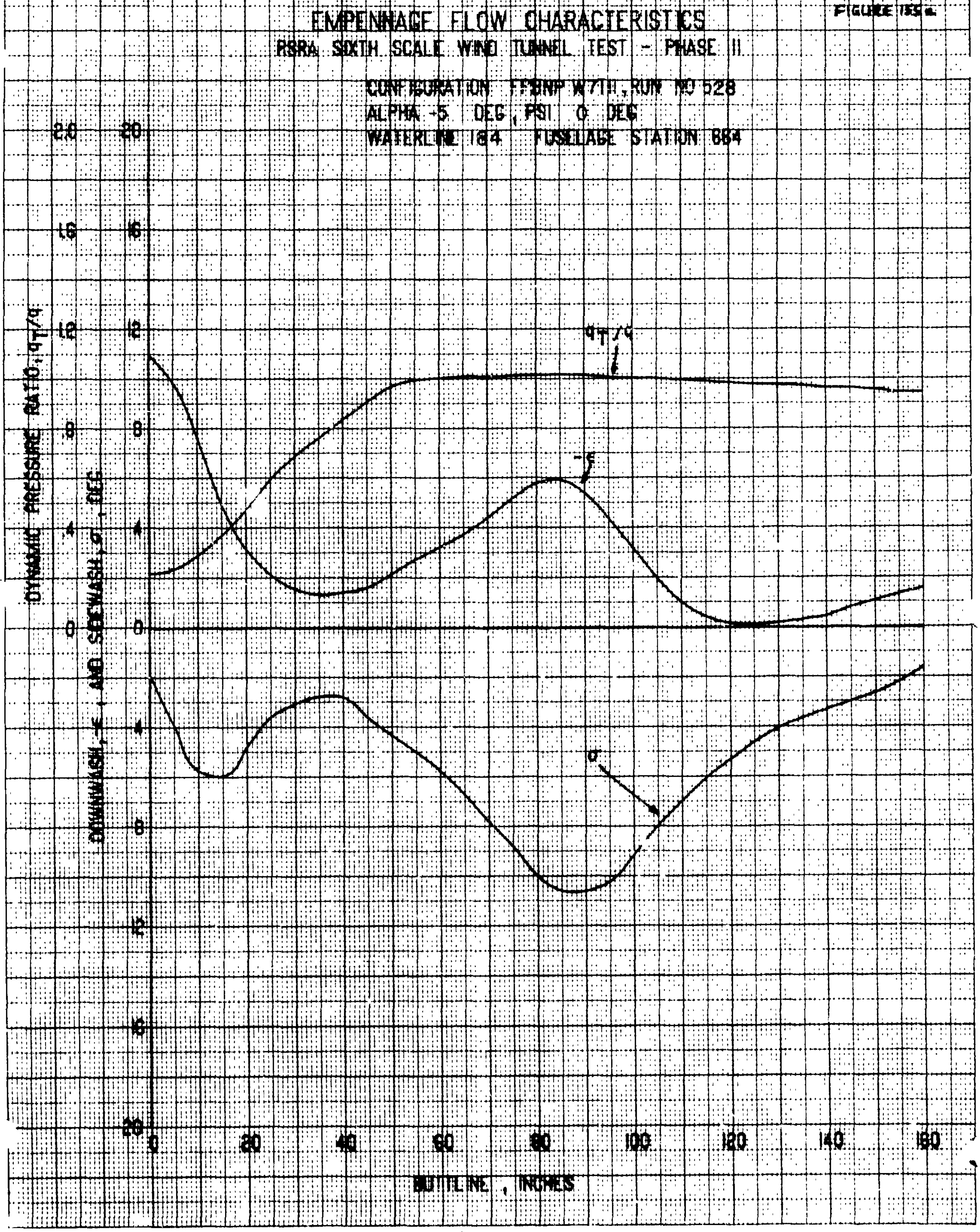
FIGURE 154
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION
ALPHA -10 DEG, PSI 0 DEG
WATERLINE 200 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO
DOWNWASH, AND SIDEWASH, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES

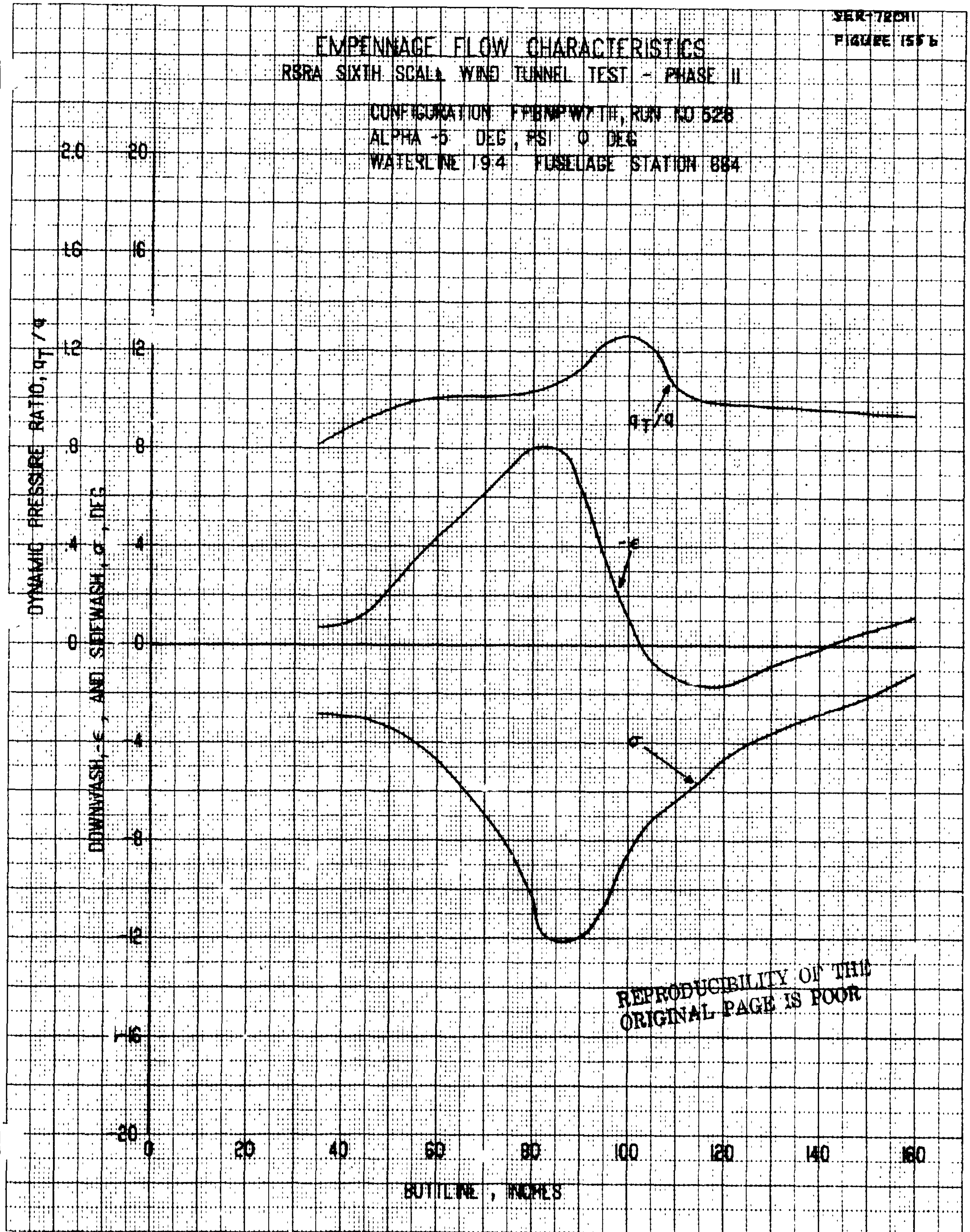

EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPBNPGW7T11, RUN NO 527
ALPHA -10 DEG, PSI 0 DEG
WATERLINE 210 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, qT/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
qT/q
σ
-ε
BUTTLINE, INCHES
2.0
1.6
1.2
20
16
12
8
4
0
-4
-8
-12
-16
-20
0
20
40
60
80
100
120
140
160

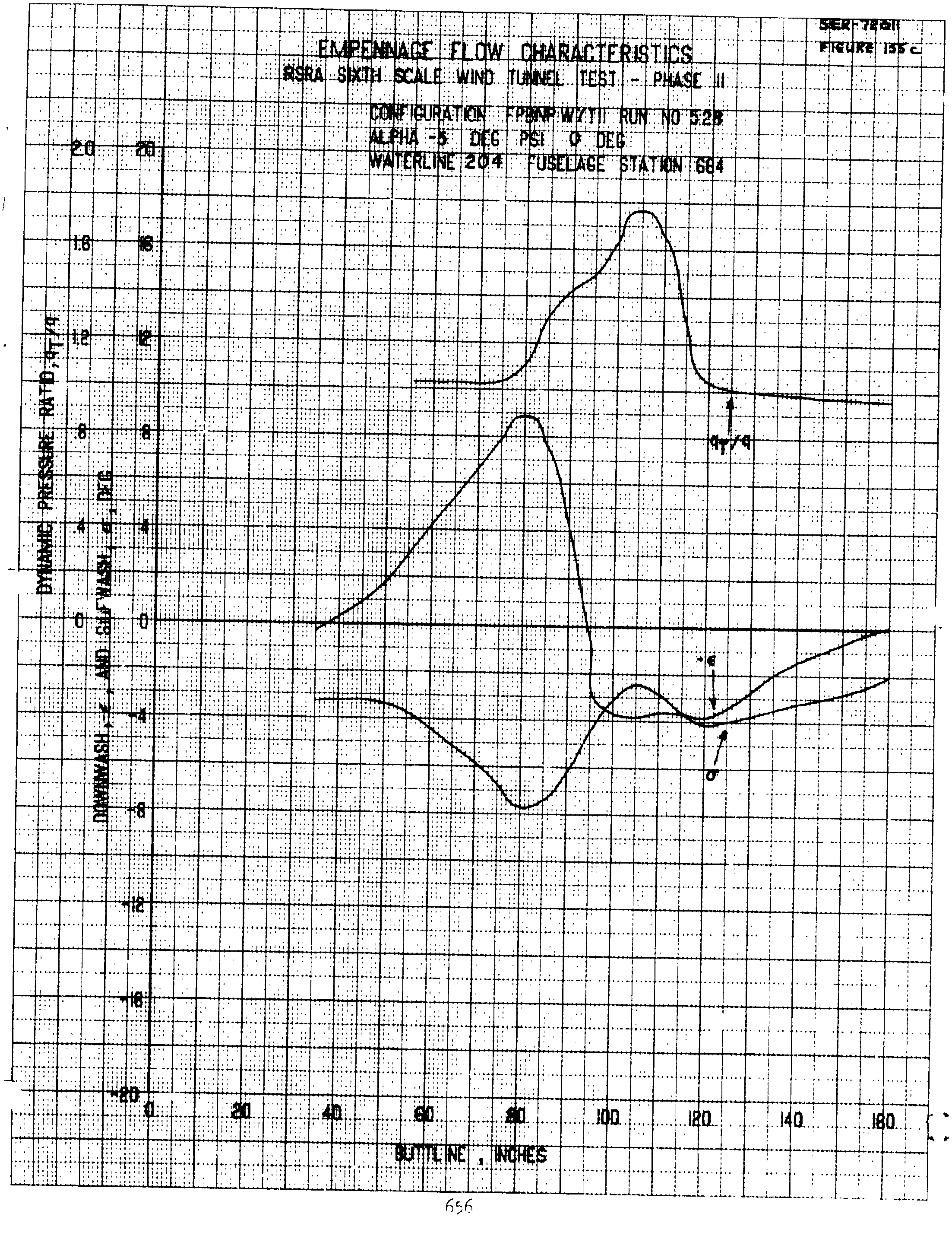

SER-72-617
FIGURE 159 a
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPSNPSW7II, RUN NO 527
ALPHA -10 DEG, PSI 0 DEG
WATERLINE 220 FUSELAGE STATION 984
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
q_T/q
σ
-ε
BUTTLINE, INCHES
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
0
20
40
60
80
100
120
140
160

SER-72011

FIGURE 155a




SER-72011
FIGURE 155b
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPBNPW7TH, RUN NO 528
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 194 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, $-\epsilon$, AND SIDEWASH, σ, DEG
q_T/q
$-\epsilon$
σ
BUTTLINE, INCHES
REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR


EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPBNPW7T11 RUN NO 528
ALPHA -5 DEG PSI 0 DEG
WATERLINE 204 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
q_T/q
-ε
σ
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES

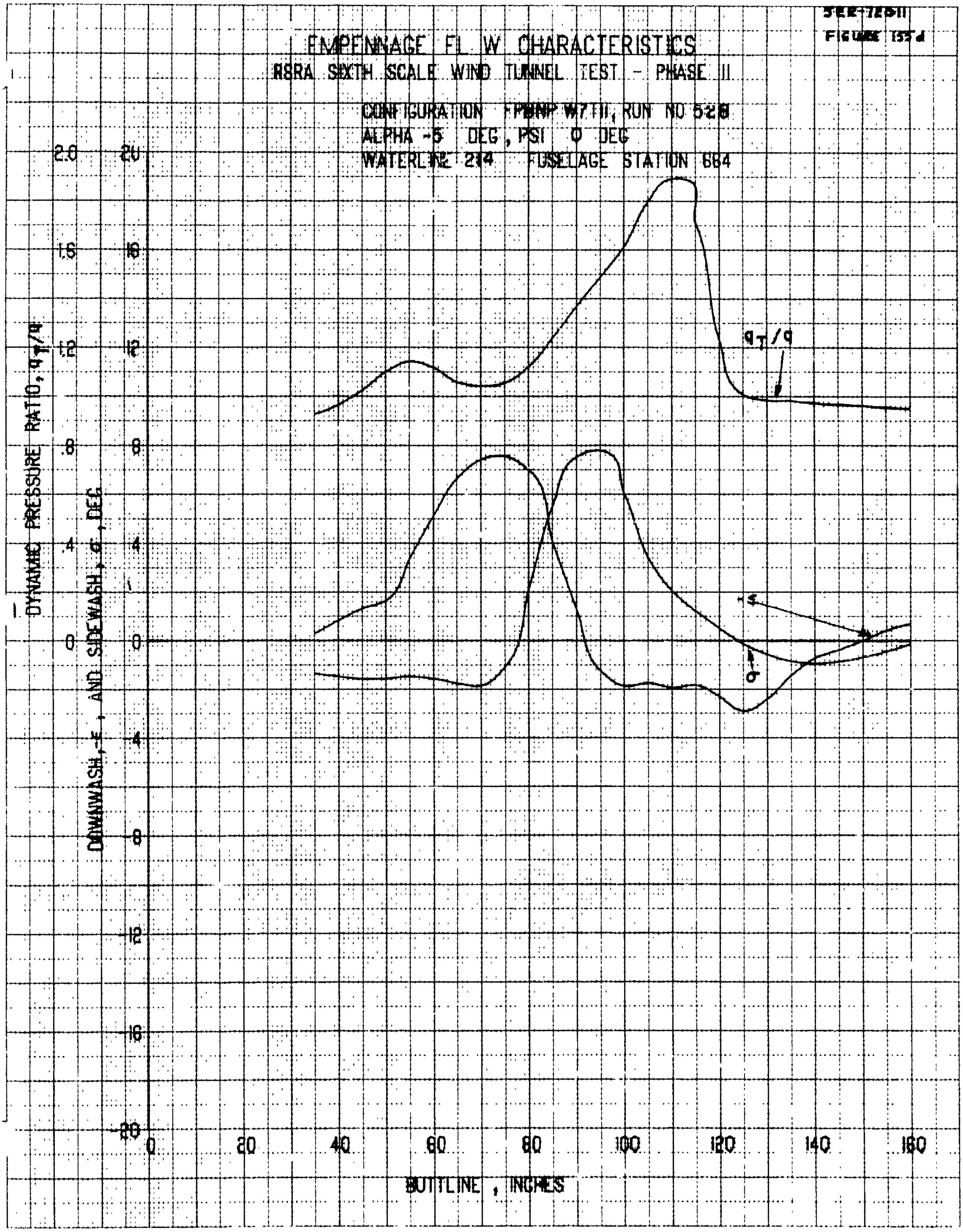


FIGURE 155d
EMPENNAGE FL W CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPWNP W7TII, RUN NO 528
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 214 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
0
20
40
60
80
100
120
140
160
q_T/q
-ε
σ
BUTTLINE, INCHES

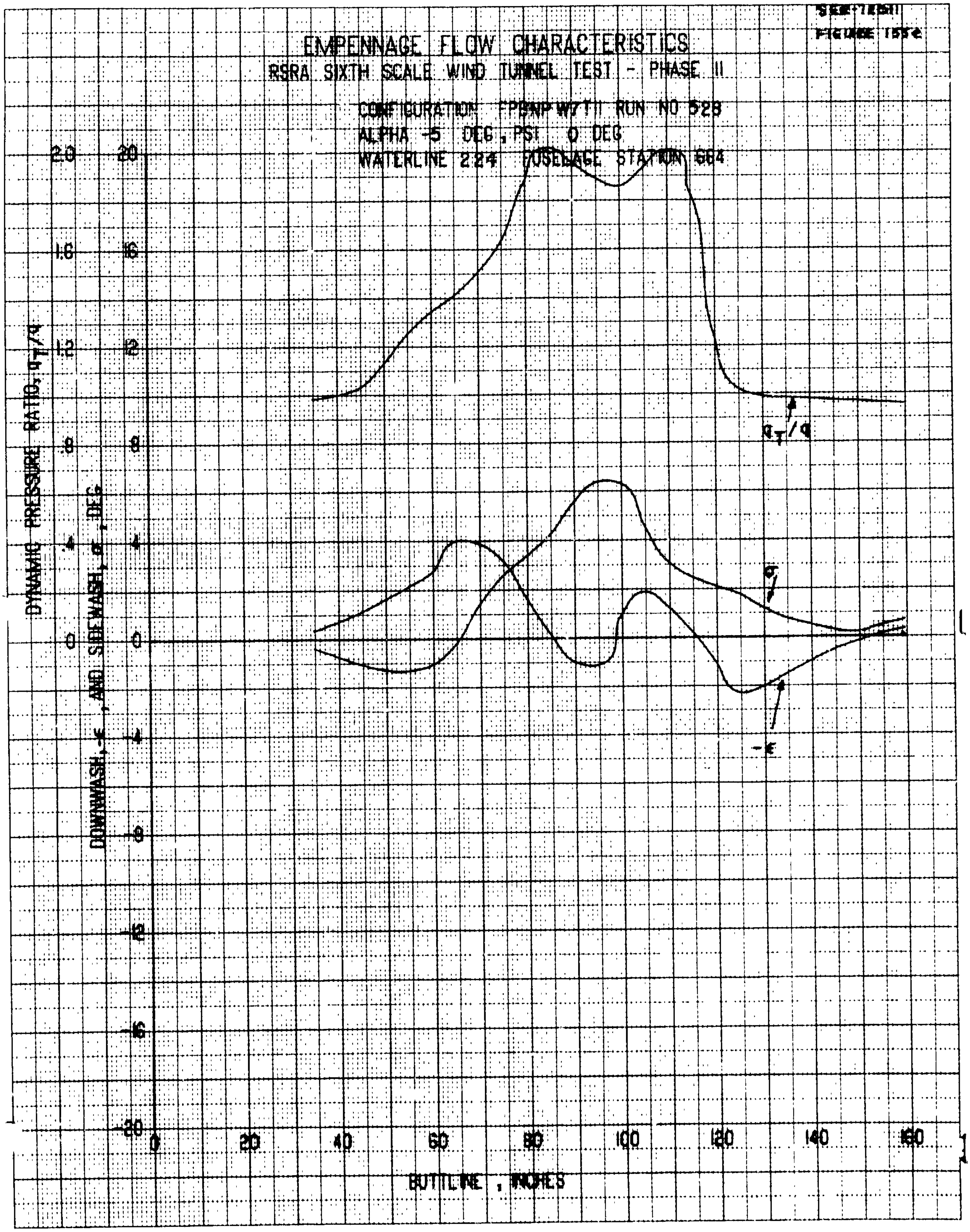
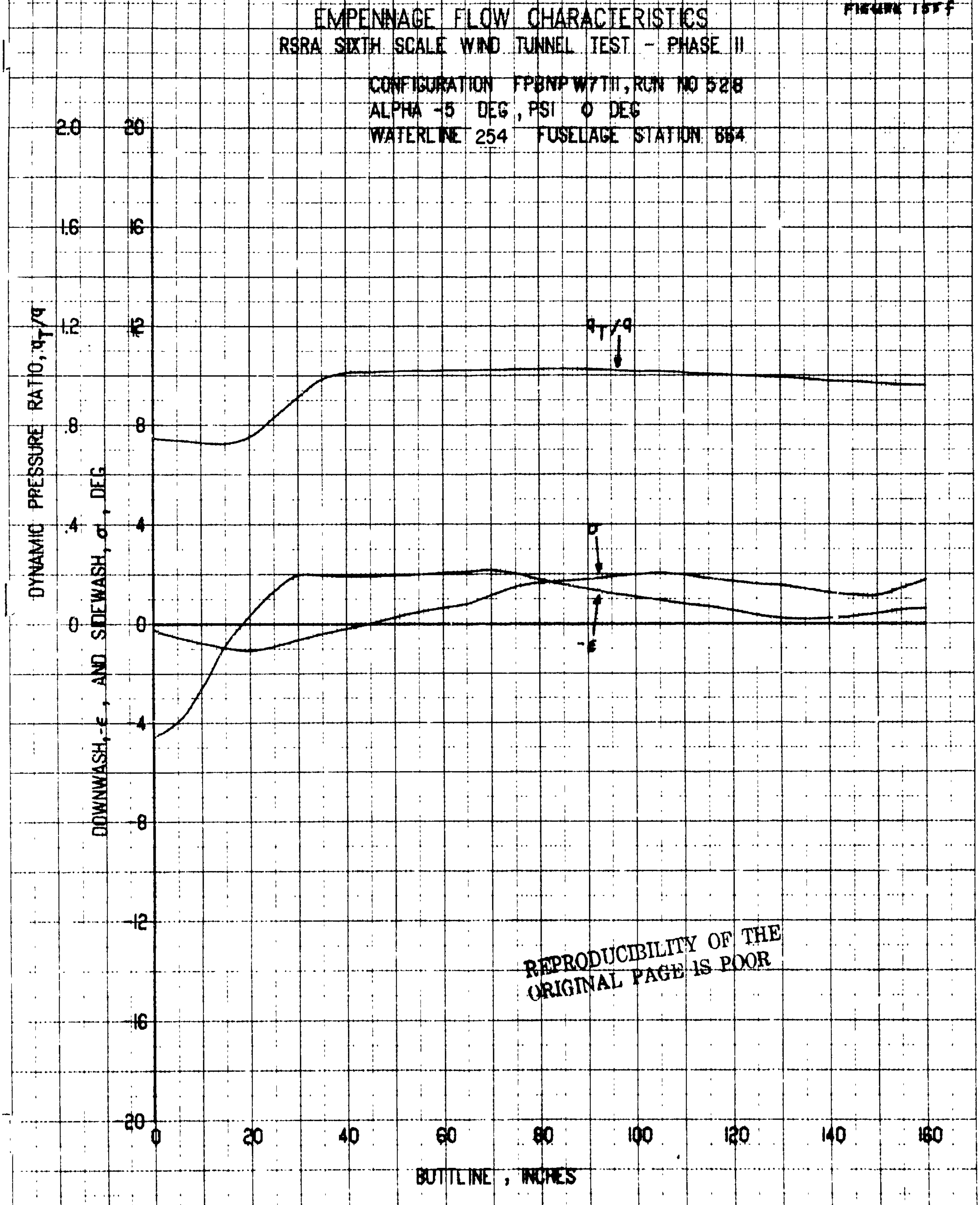
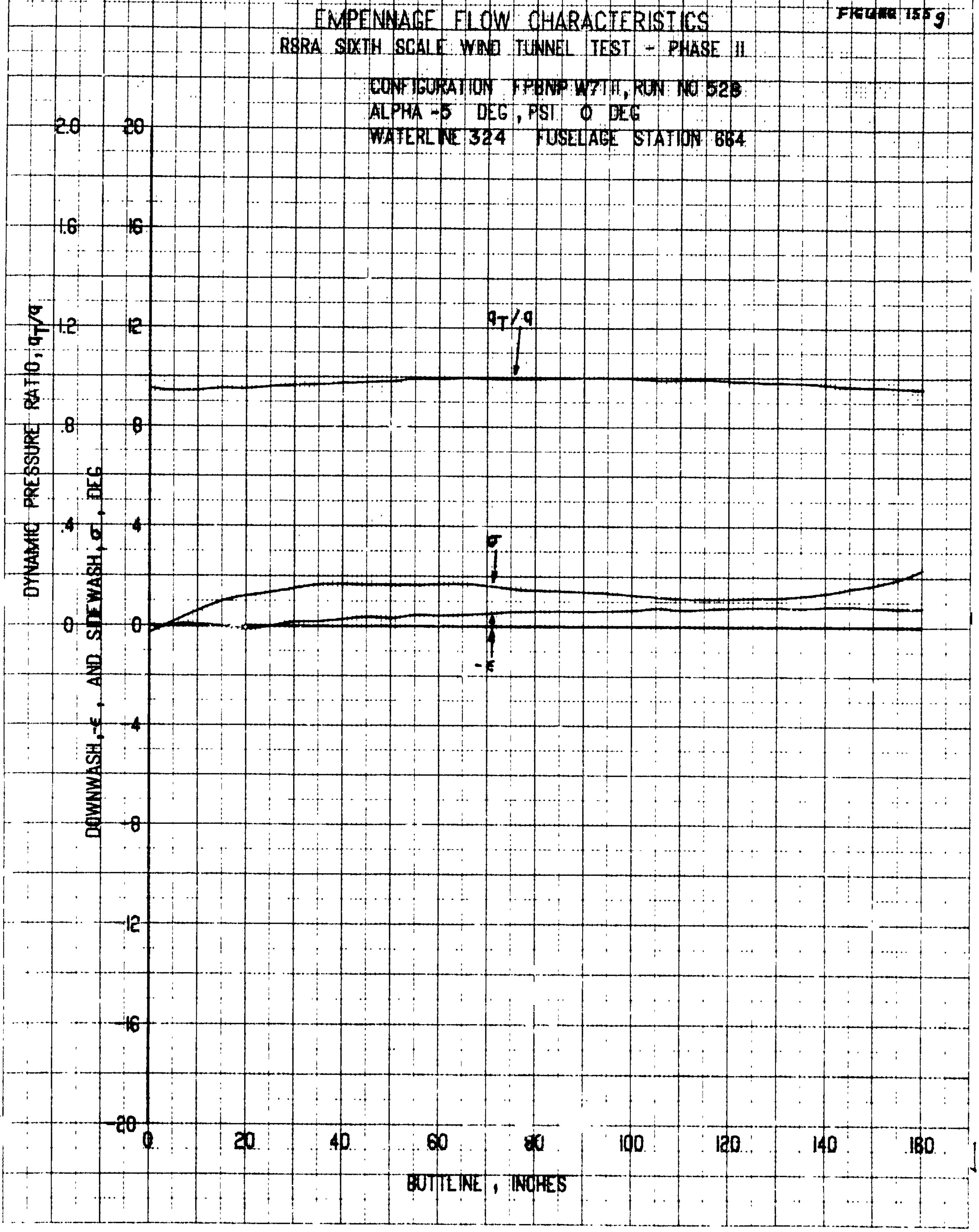
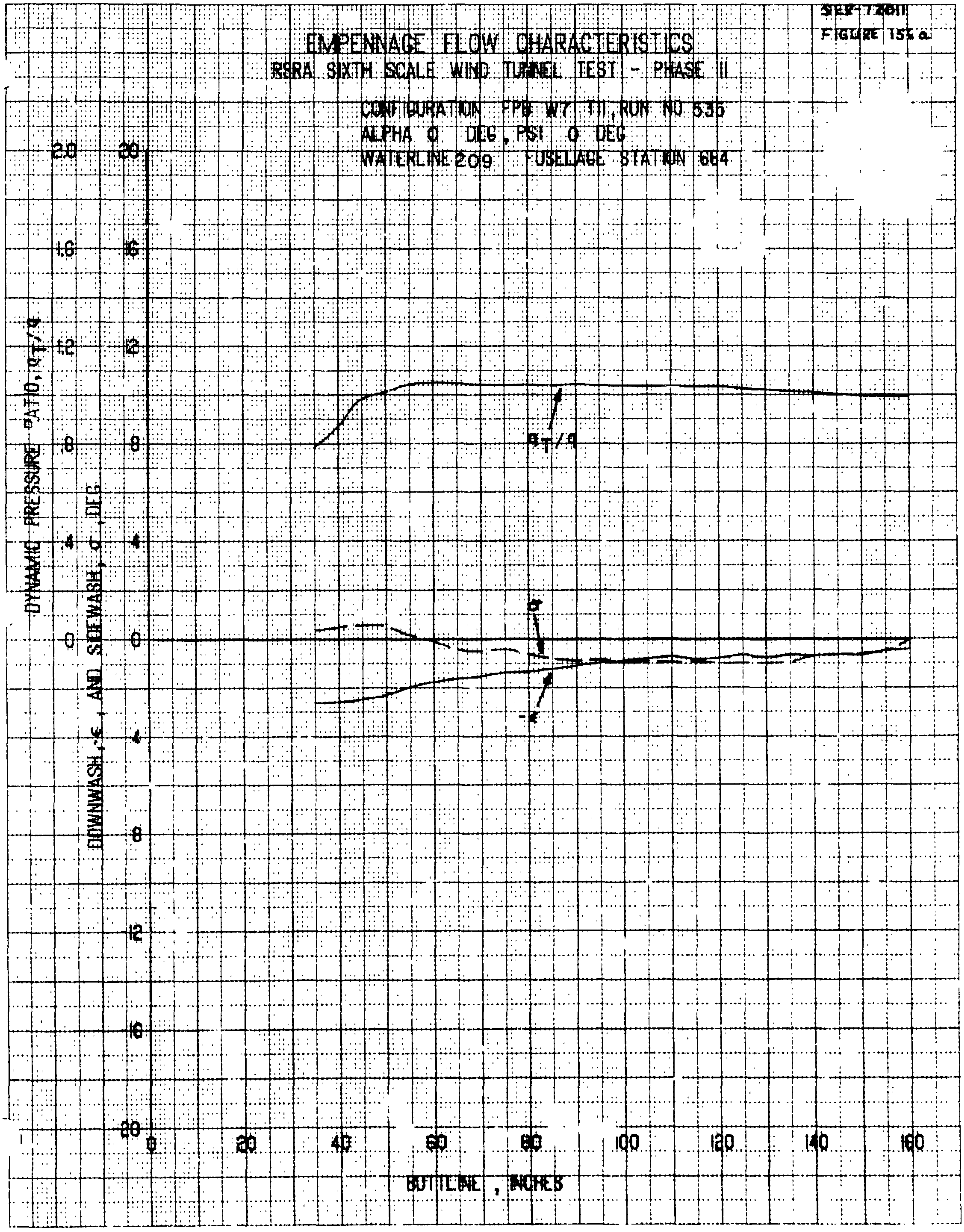


FIGURE 155c
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPBNP W7T11 RUN NO 528
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 224 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES
q_T/q
σ
-ε

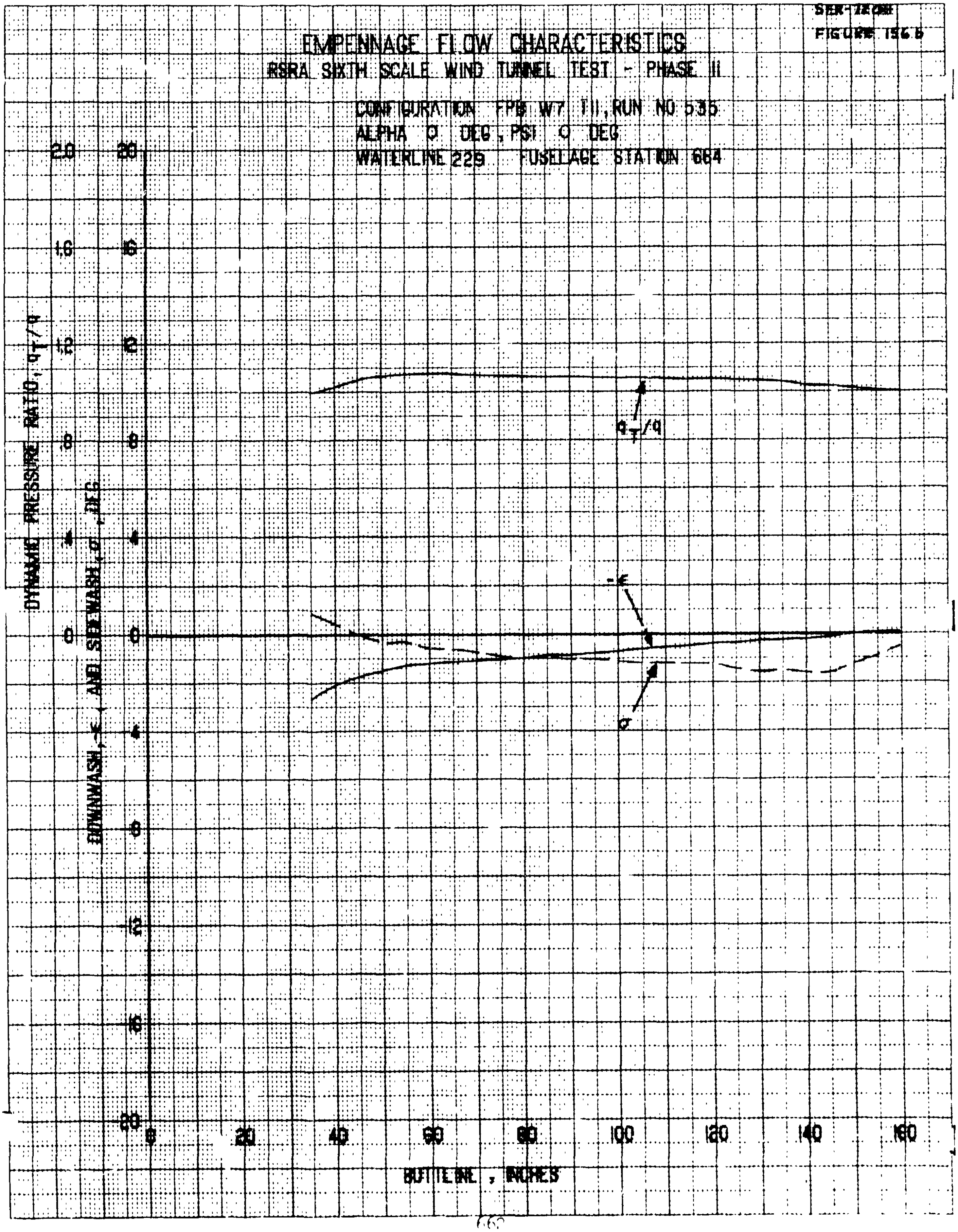

EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPBNPW7TII, RUN NO 528
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 254 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, $-\epsilon$, AND SIDEWASH, σ, DEG
q_T/q
σ
$-\epsilon$
BUTTLINE, INCHES
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
-4
-8
-12
-16
-20
40
60
80
100
120
140
160

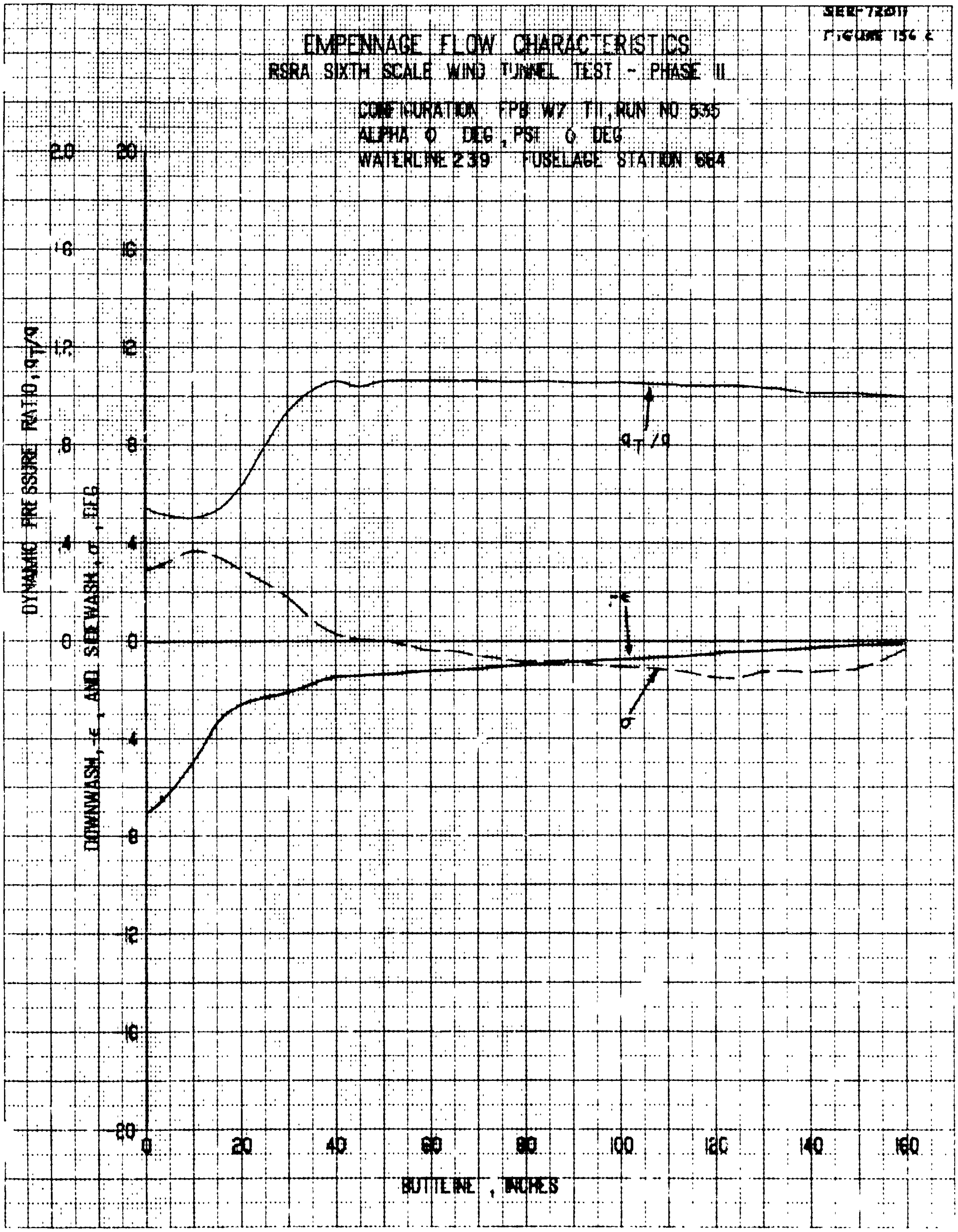

EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPBNP W7TH, RUN NO 528
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 324 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, $-\epsilon$, AND SIDEWASH, σ, DEG
q_T/q
σ
$-\epsilon$
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES

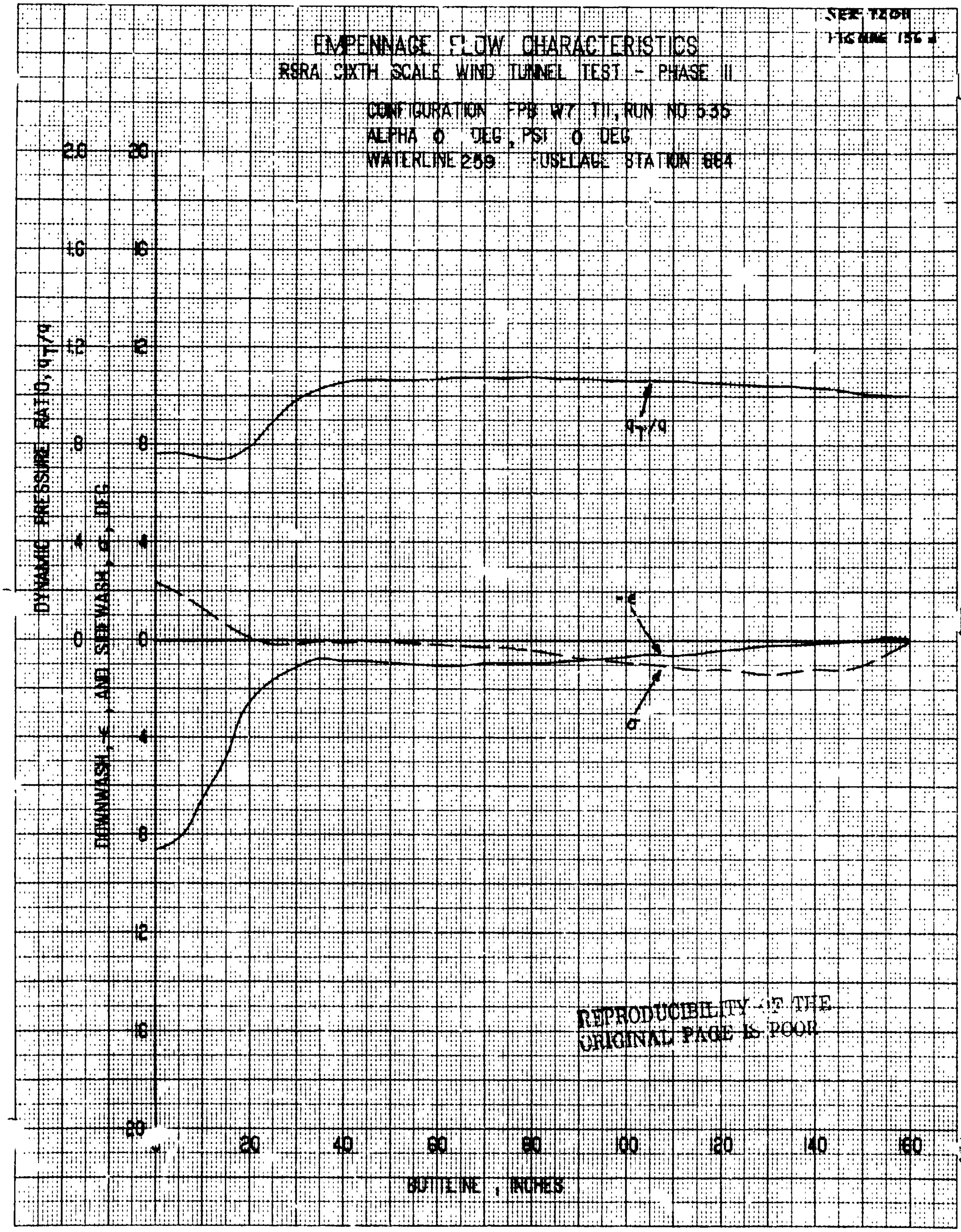


SER-72011
FIGURE 155a
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 T11, RUN NO 535
ALPHA 0 DEG, PSI 0 DEG
WATERLINE 209 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
q_T/q
σ
-ε
BUTTLINE, INCHES

SER-72088
FIGURE 156.6




EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 T11, RUN NO 535
ALPHA 0 DEG, PSI 0 DEG
WATERLINE 239 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, qT/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
qT/q
-ε
σ
BUTTLINE, INCHES
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
4
8
12
16
20
0
20
40
60
80
100
120
140
160


SEE TECH FIGURE 156
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 T11, RUN NO 536
ALPHA 0 DEG, PSI 0 DEG
WATERLINE 259 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ϵ, AND SIDEWASH, σ, DEG
q_T/q
$-\epsilon$
σ
BUTTLINE, INCHES
REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

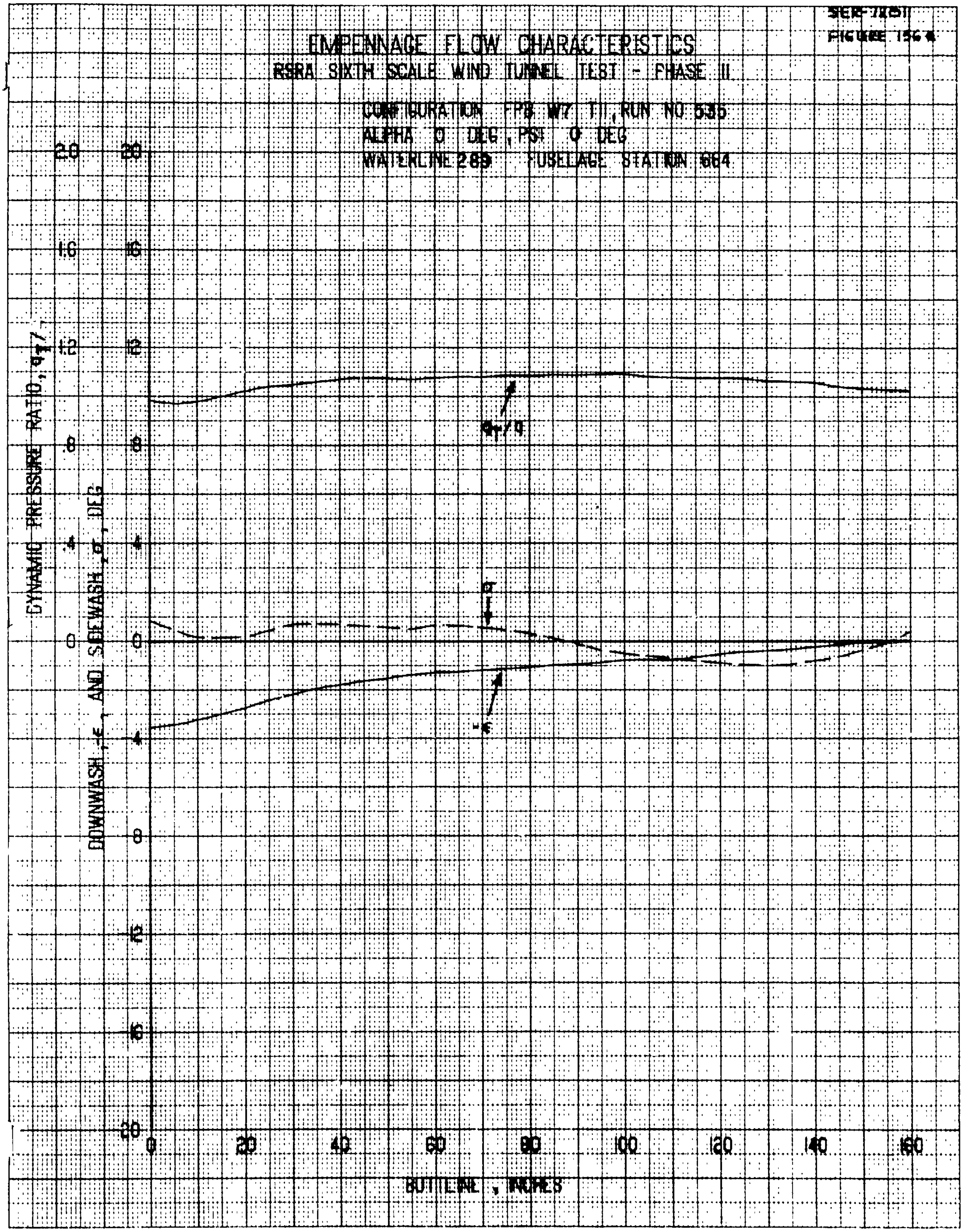
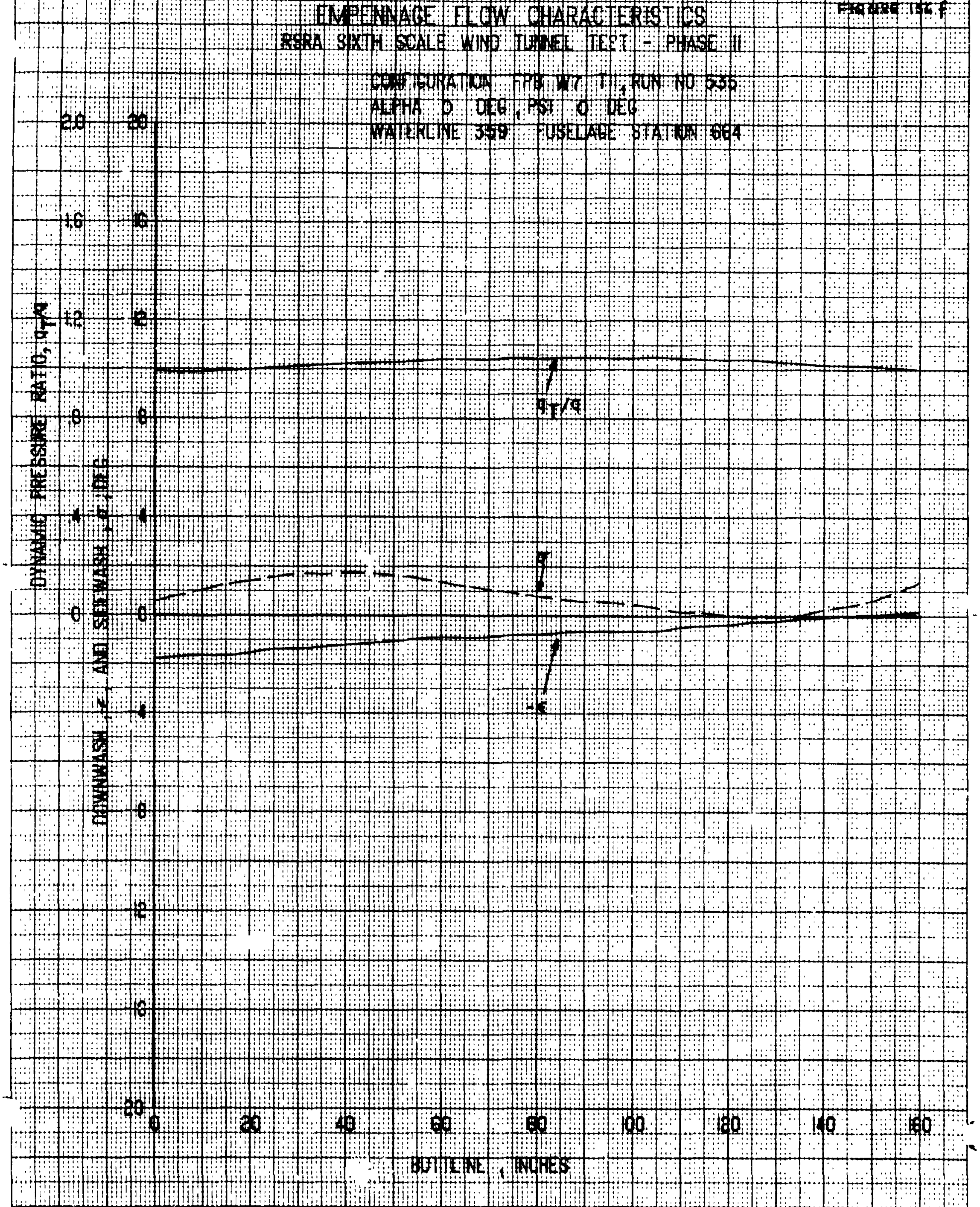
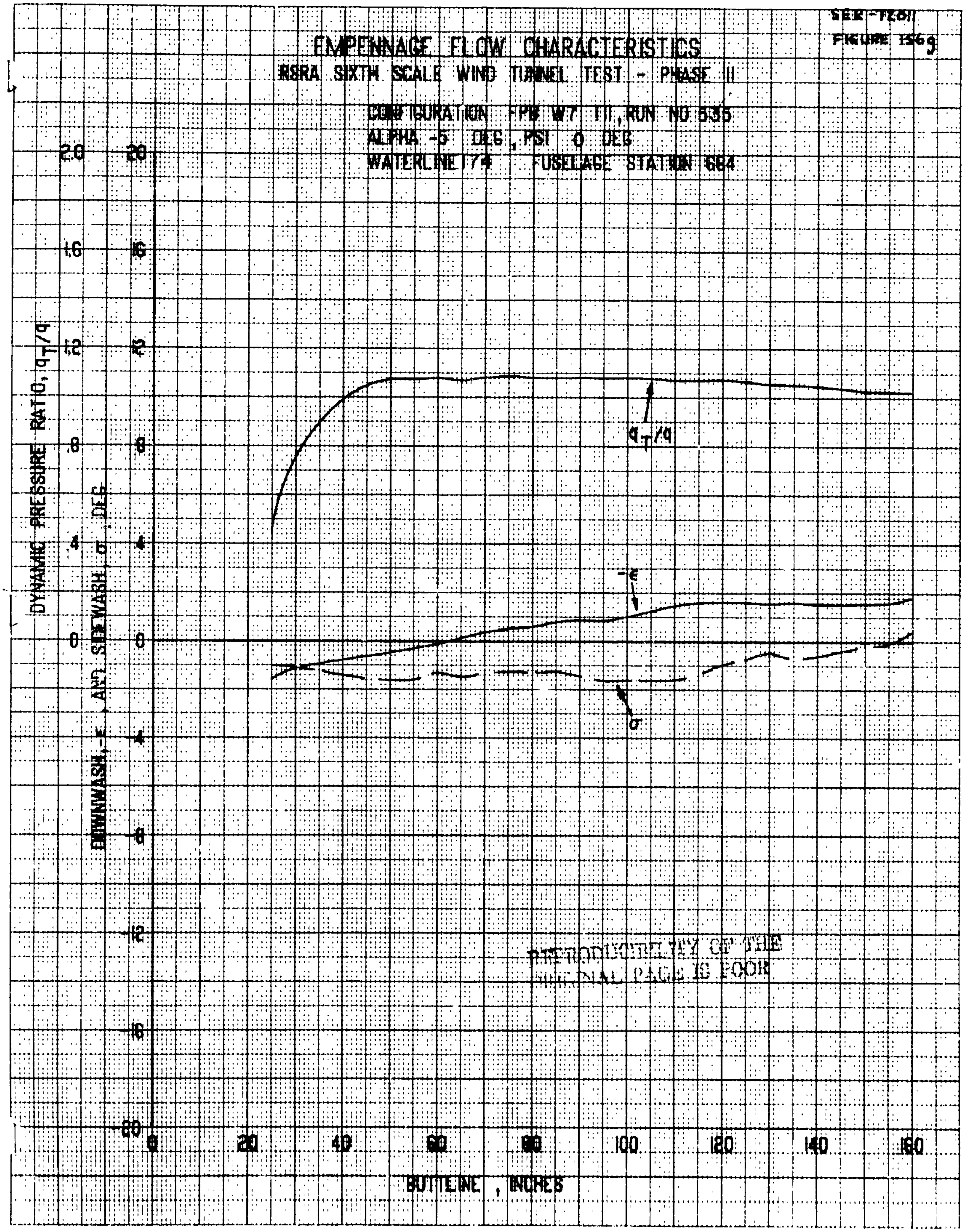


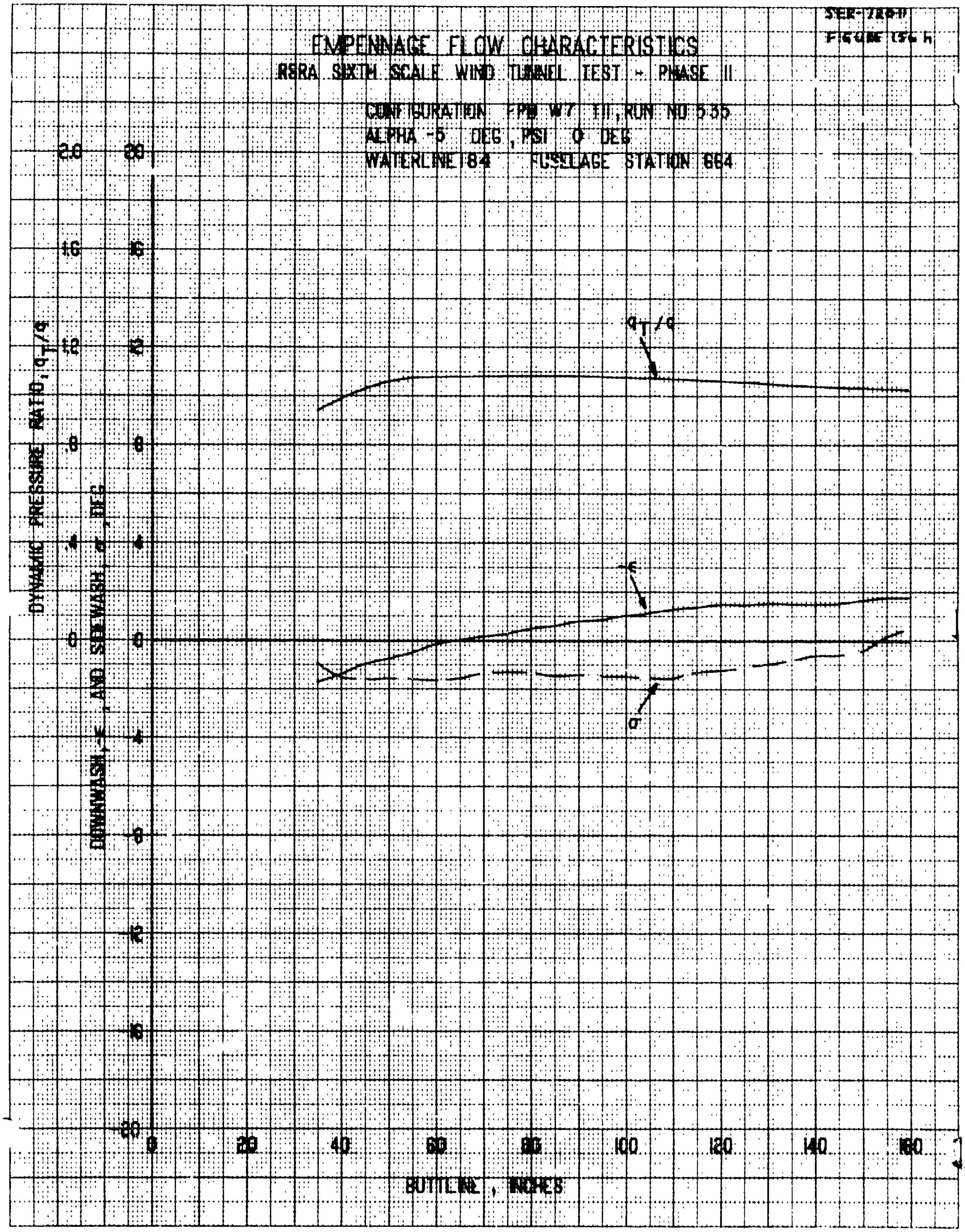
FIGURE 156
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPS W7 TII, RUN NO 535
ALPHA 0 DEG, PSI 0 DEG
WATERLINE 289 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ε, AND SIDEWASH, σ, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
4
8
12
16
20
q_T/q
σ
ε
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES

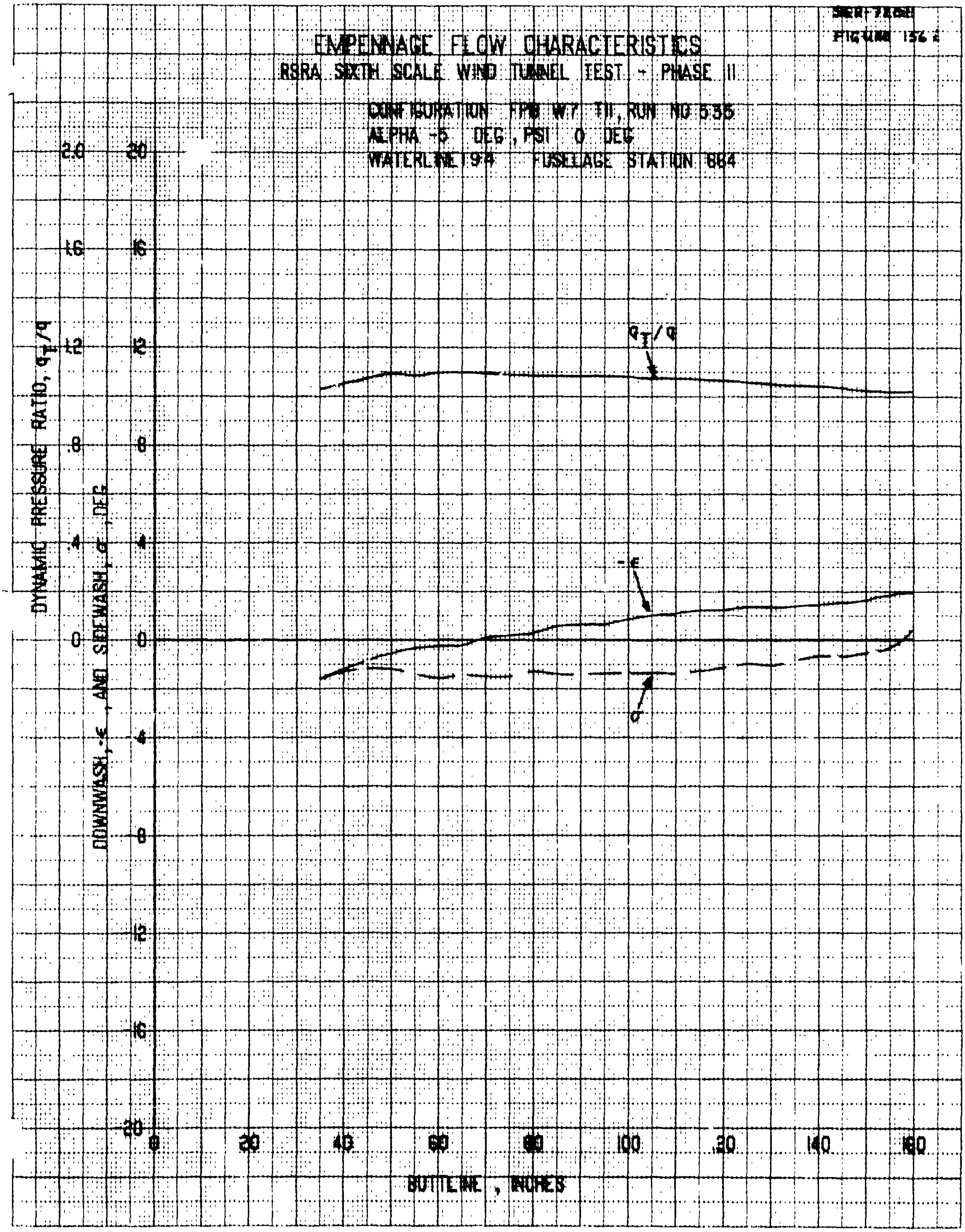
FIGURE 154 F

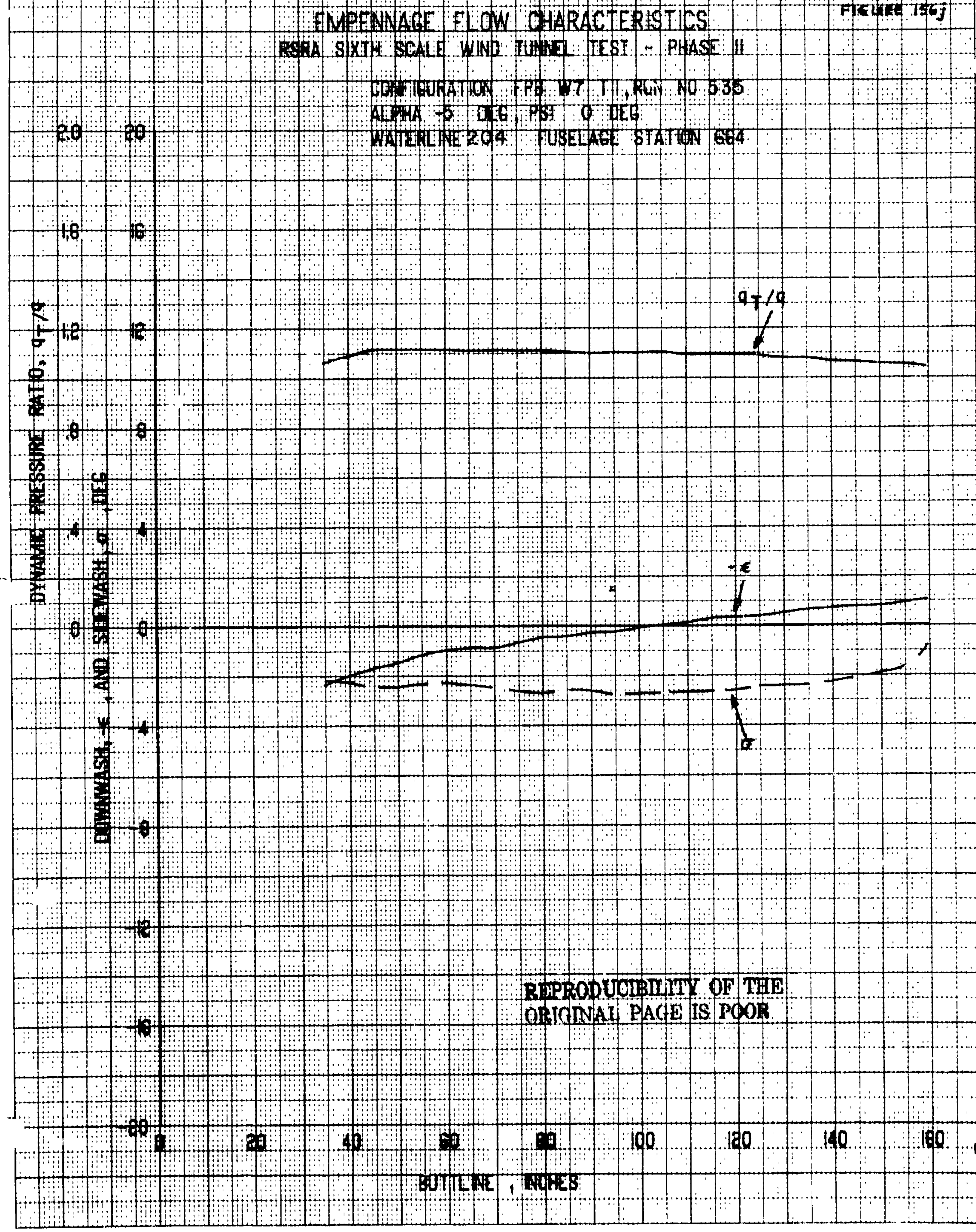


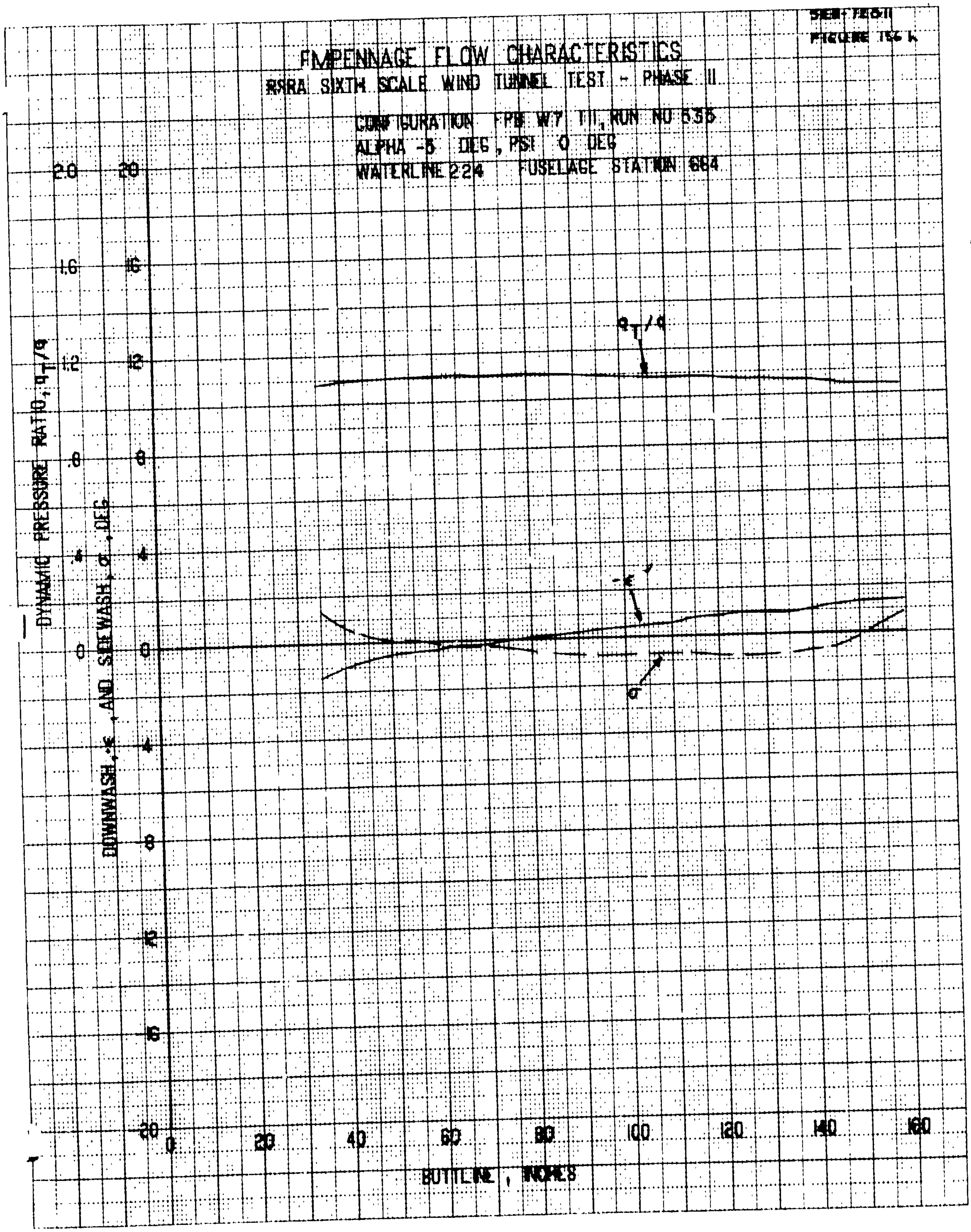
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 T1, RUN NO 535
ALPHA 0 DEG, PSI 0 DEG
WATERLINE 359 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ε, AND SIDEWASH, σ, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
q_T/q
σ
-ε
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES


SER-72011
FIGURE 15.6.9
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 TI, RUN NO 535
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 174 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, $-\epsilon$, AND SIDEWASH, σ, DEG
q_T/q
$-\epsilon$
σ
BUTTLINE, INCHES
REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

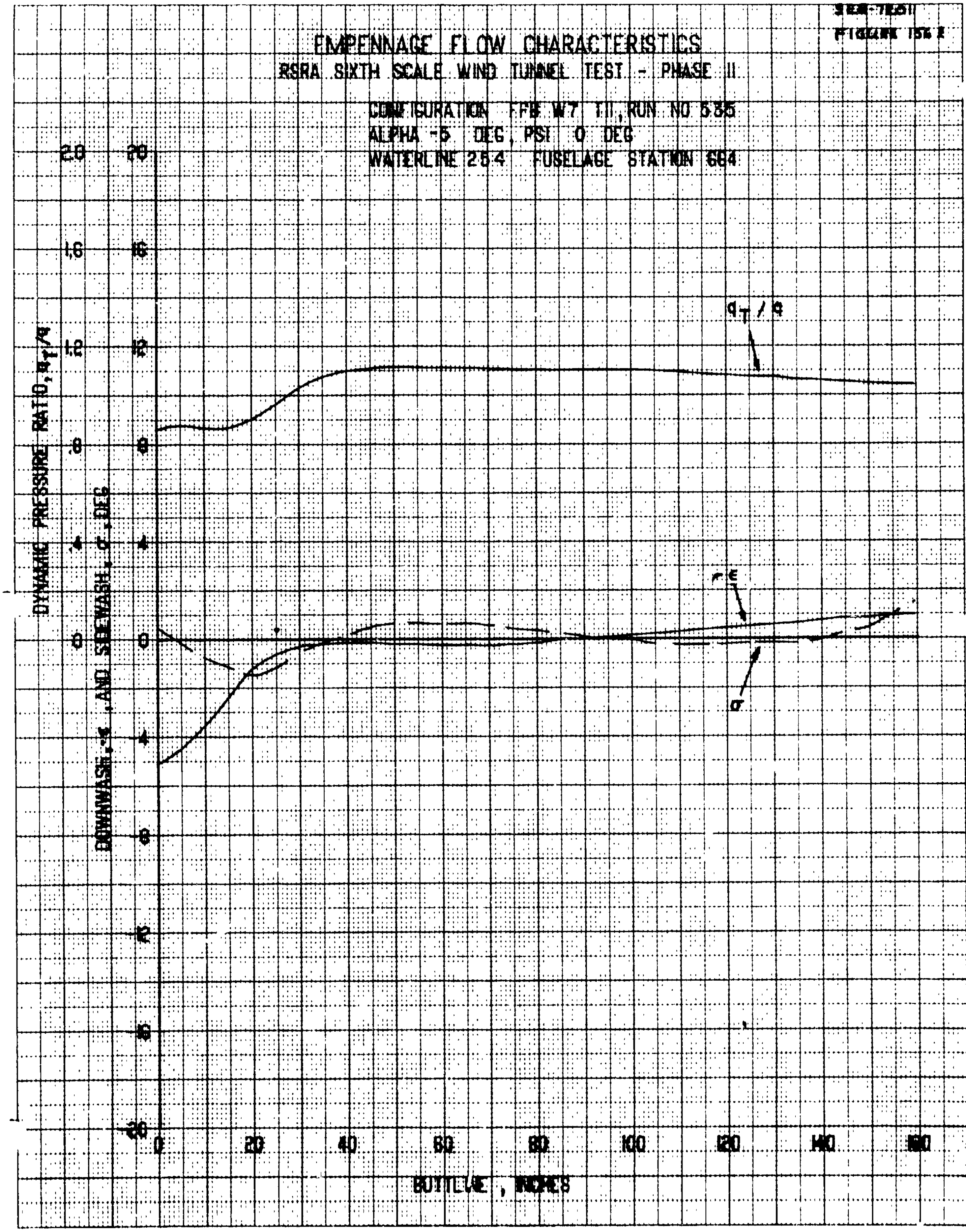

EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPW W7 TII, RUN NO 535
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 184 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ϵ, AND SIDEWASH, σ, DEG
q_T/q
ϵ
σ
BUTTLINE, INCHES


SER-72XXX
FIGURE 156 2
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 TII, RUN NO 535
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 194 FUSELAGE STATION 884
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
q_T/q
-ε
σ
BUTTLINE, INCHES
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
4
8
12
16
20
0
20
40
60
80
100
120
140
160

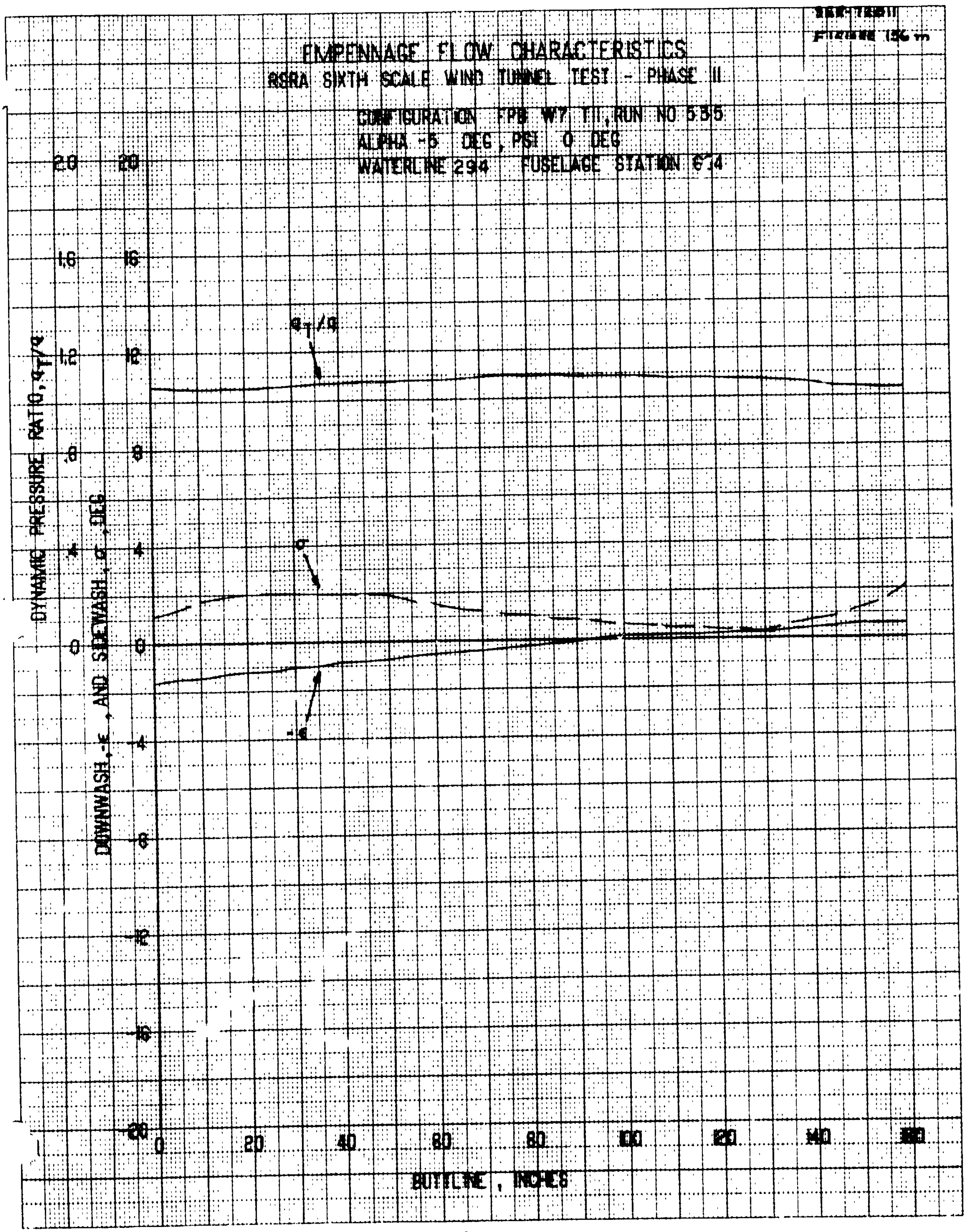

EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 T1, RUN NO 535
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 204 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
q_T/q
-ε
σ
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES

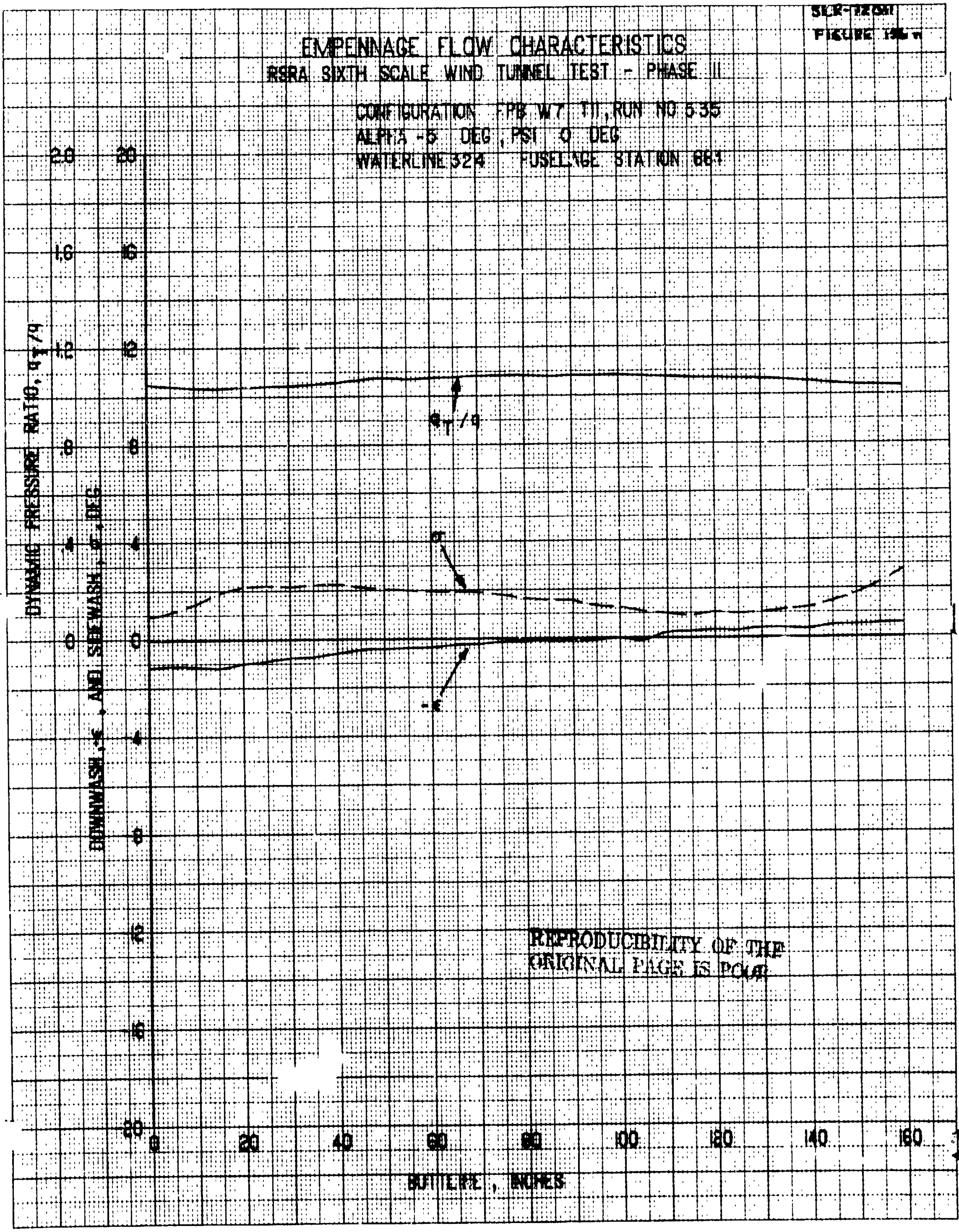


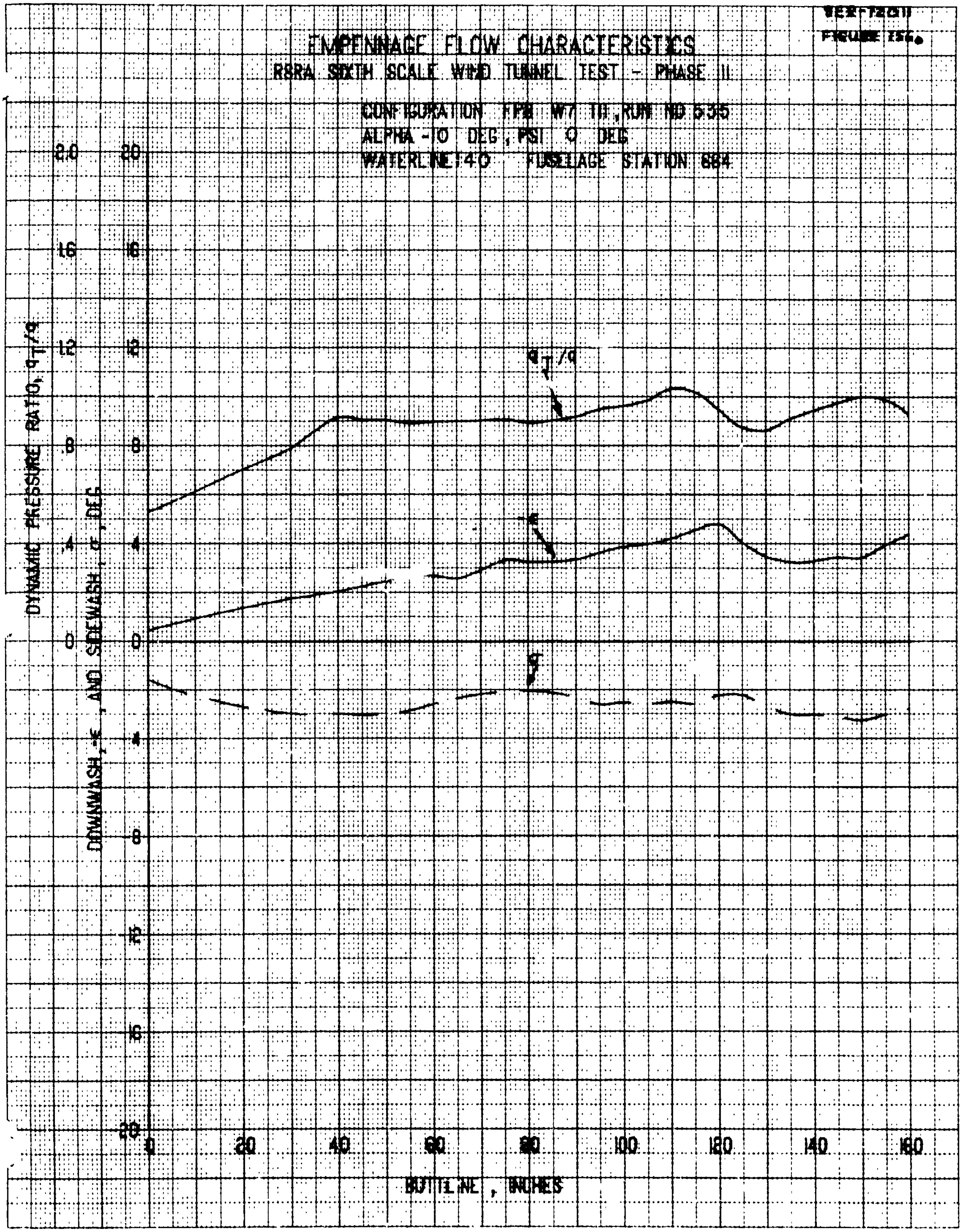
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 T11, RUN NO 535
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 224 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, qT/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
qT/q
-ε
σ
BUTTLINE, INCHES

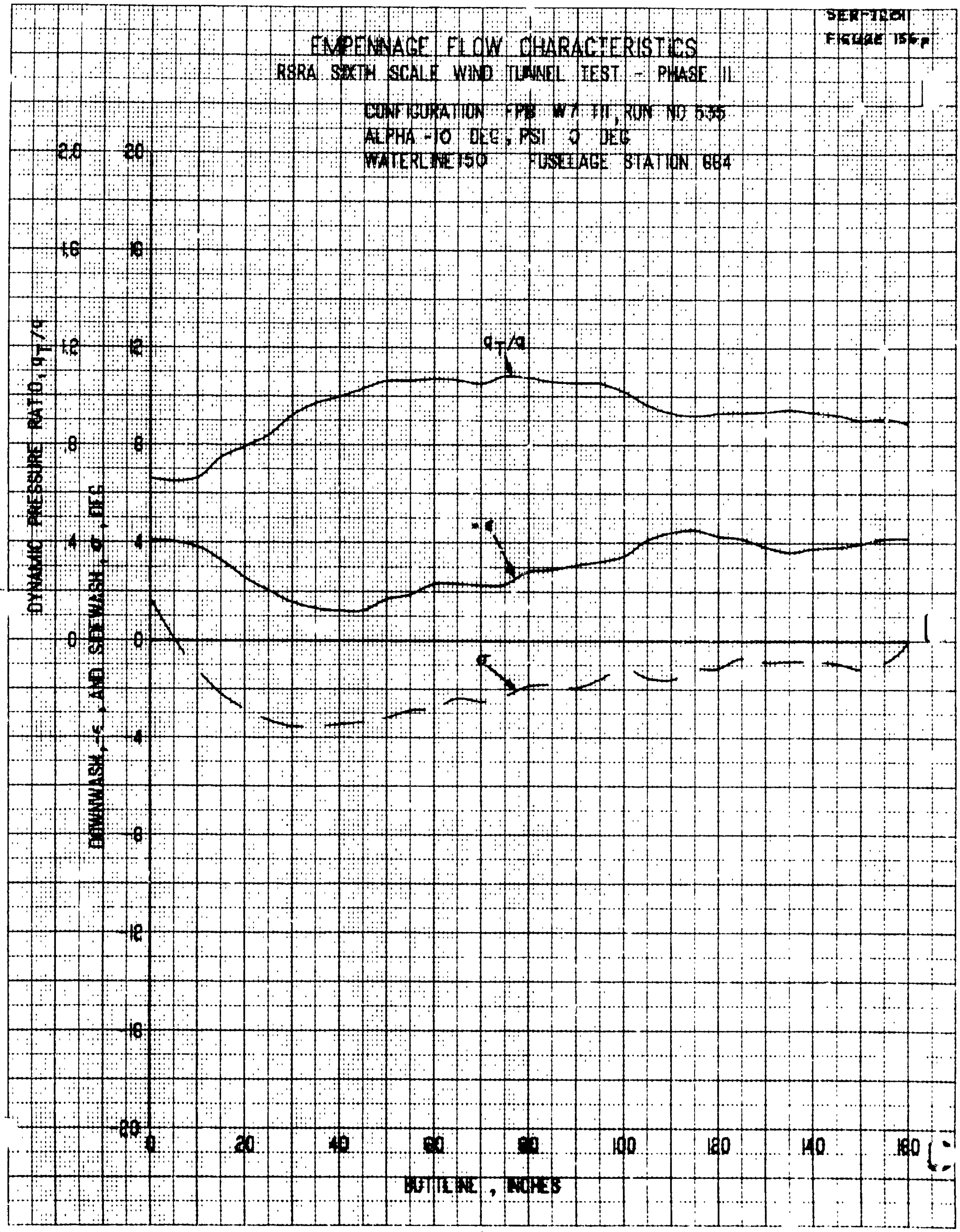


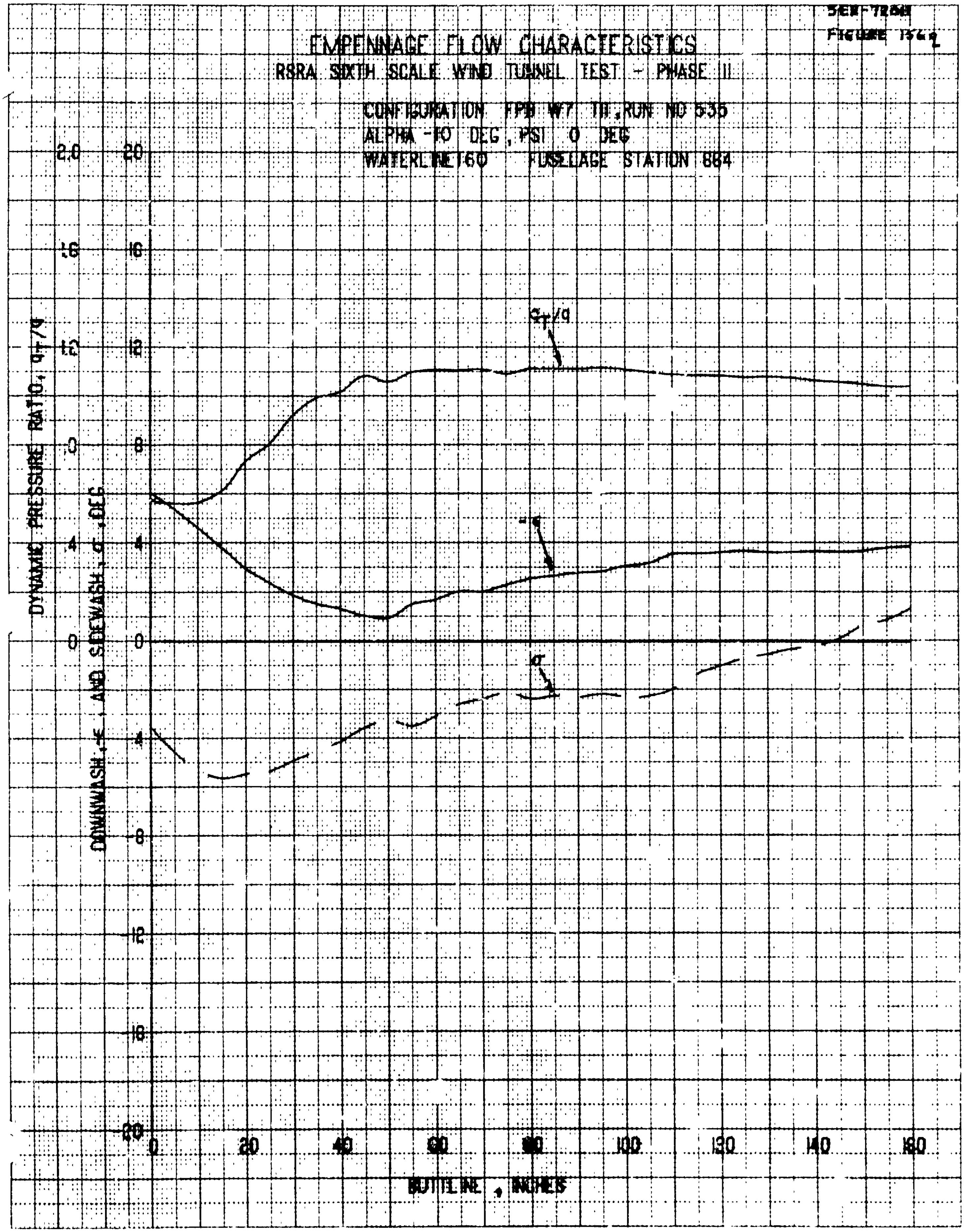
SER-7... FIGURE 156 2
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FFB W7 T1, RUN NO 535
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 25.4 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ε, AND SIDEWASH, σ, DEG
q_T / q
ε
σ
BUTTLINE, INCHES

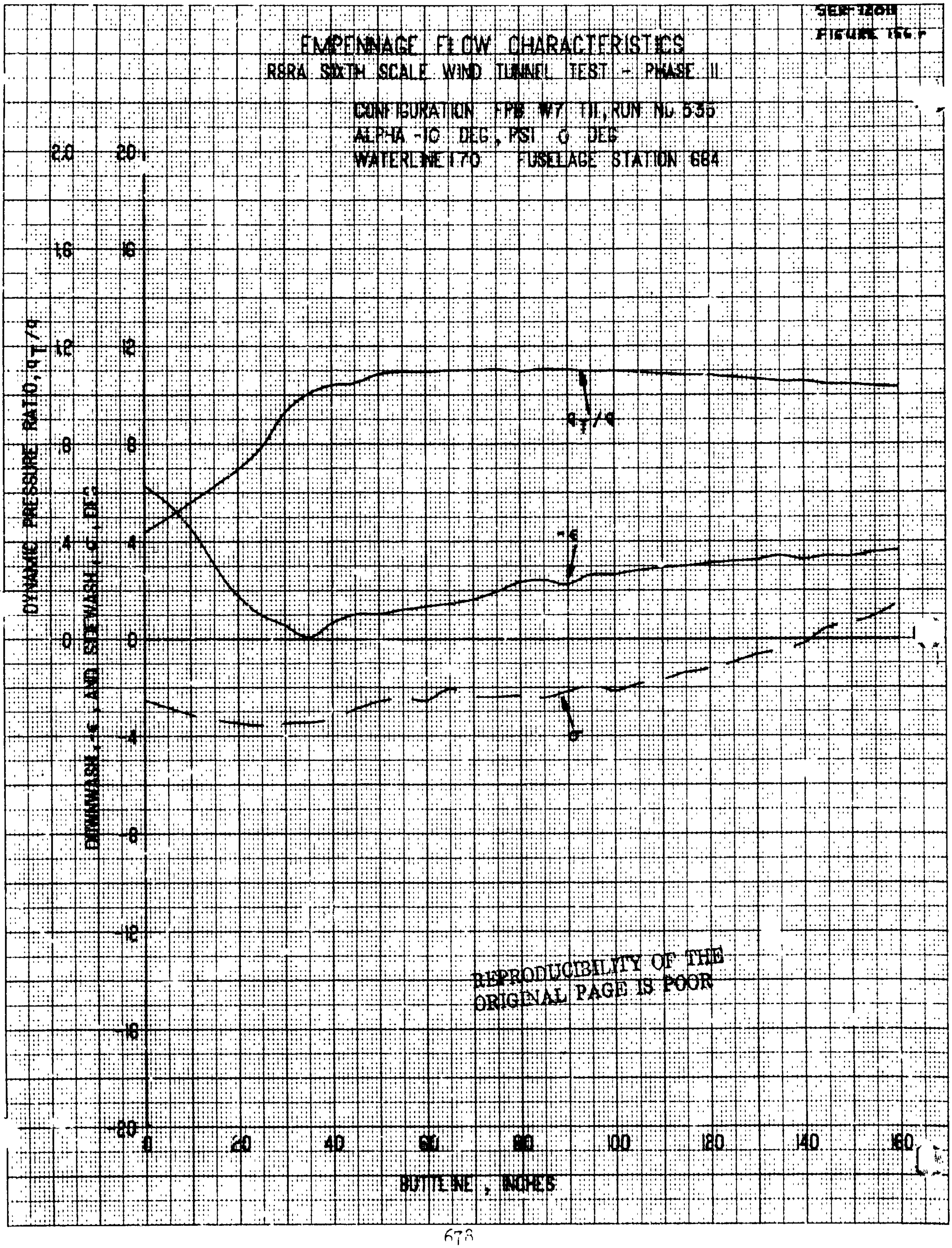

EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 T1, RUN NO 585
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 294 FUSELAGE STATION 6?4
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
BUTTLINE, INCHES
q_T/q
σ
-ε

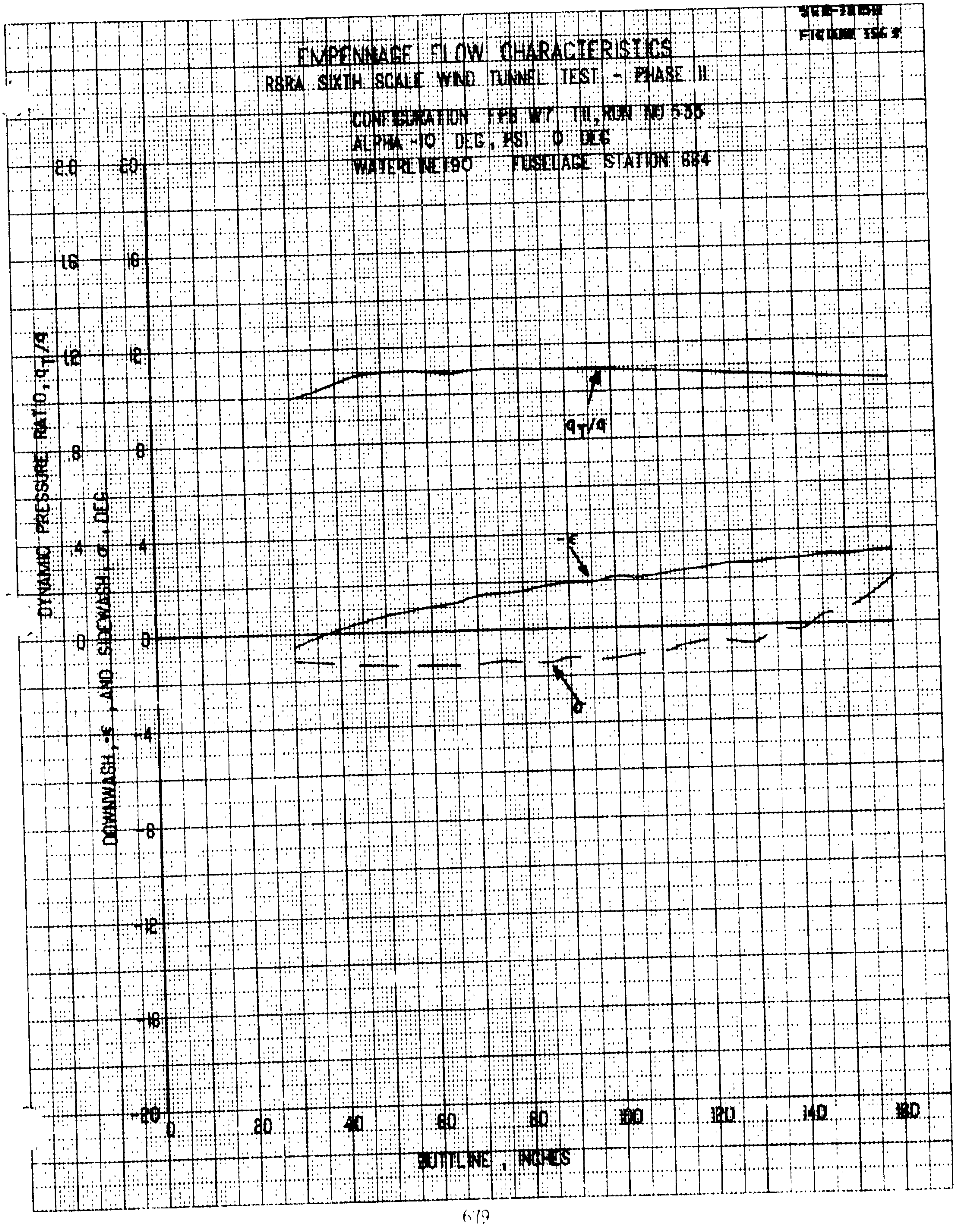

EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 T11, RUN NO 535
ALPHA -5 DEG, PSI 0 DEG
WATERLINE 324 FUSELAGE STATION 681
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, ε, AND SIDEWASH, σ, DEG
q_T/q
σ
-ε
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
4
8
12
16
20
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES

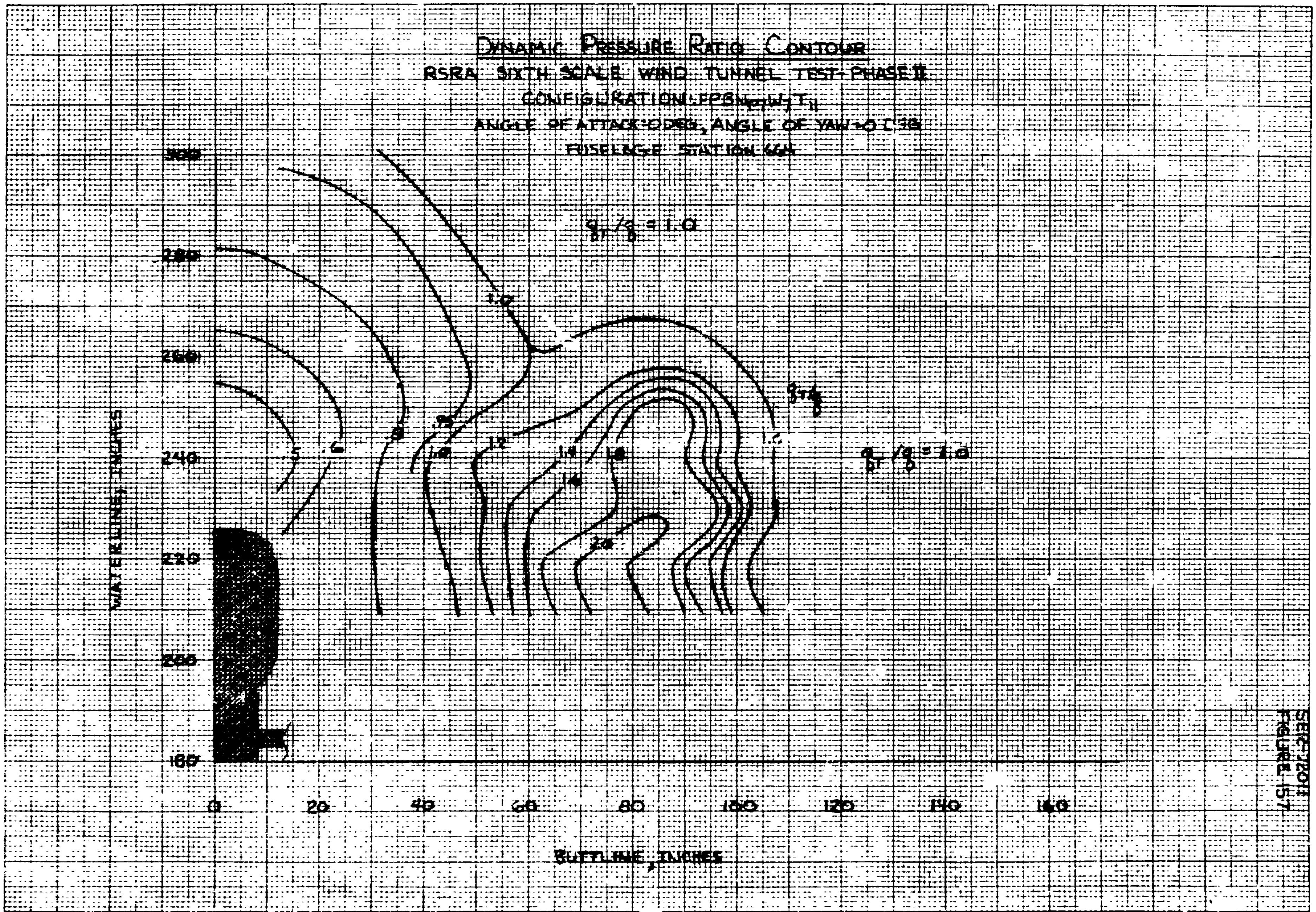

SER-72011
FIGURE 156
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 TH, RUN NO 535
ALPHA -10 DEG, PSI 0 DEG
WATERLINE 140 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
q_T/q
ε
σ
BUTTLINE, INCHES
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
4
8
12
16
20
0
20
40
60
80
100
120
140
160


SER-1120
FIGURE 156
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 TII, RUN NO 535
ALPHA -10 DEG, PSI 0 DEG
WATERLINE 150 FUSELAGE STATION 884
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, $-\epsilon$, AND SIDEWASH, σ, DEG
q_T/q
$-\epsilon$
σ
BUTTLINE, INCHES


EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 TH, RUN NO 535
ALPHA -10 DEG, PSI 0 DEG
WATERLINE 160 FUSELAGE STATION 884
DYNAMIC PRESSURE RATIO, qT/q
DOWNWASH, ε, AND SIDEWASH, σ, DEG
qT/q
-ε
σ
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES


SER-1208
FIGURE 156-F
EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 TII, RUN NO 535
ALPHA -10 DEG, PSI 0 DEG
WATERLINE 170 FUSELAGE STATION 684
DYNAMIC PRESSURE RATIO, qT/q
DOWNWASH, -ε, AND SIDEWASH, σ, DEG
2.0
1.6
1.2
.8
.4
0
20
16
12
8
4
0
-4
-8
-12
-16
-20
qT/q
-ε
σ
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES

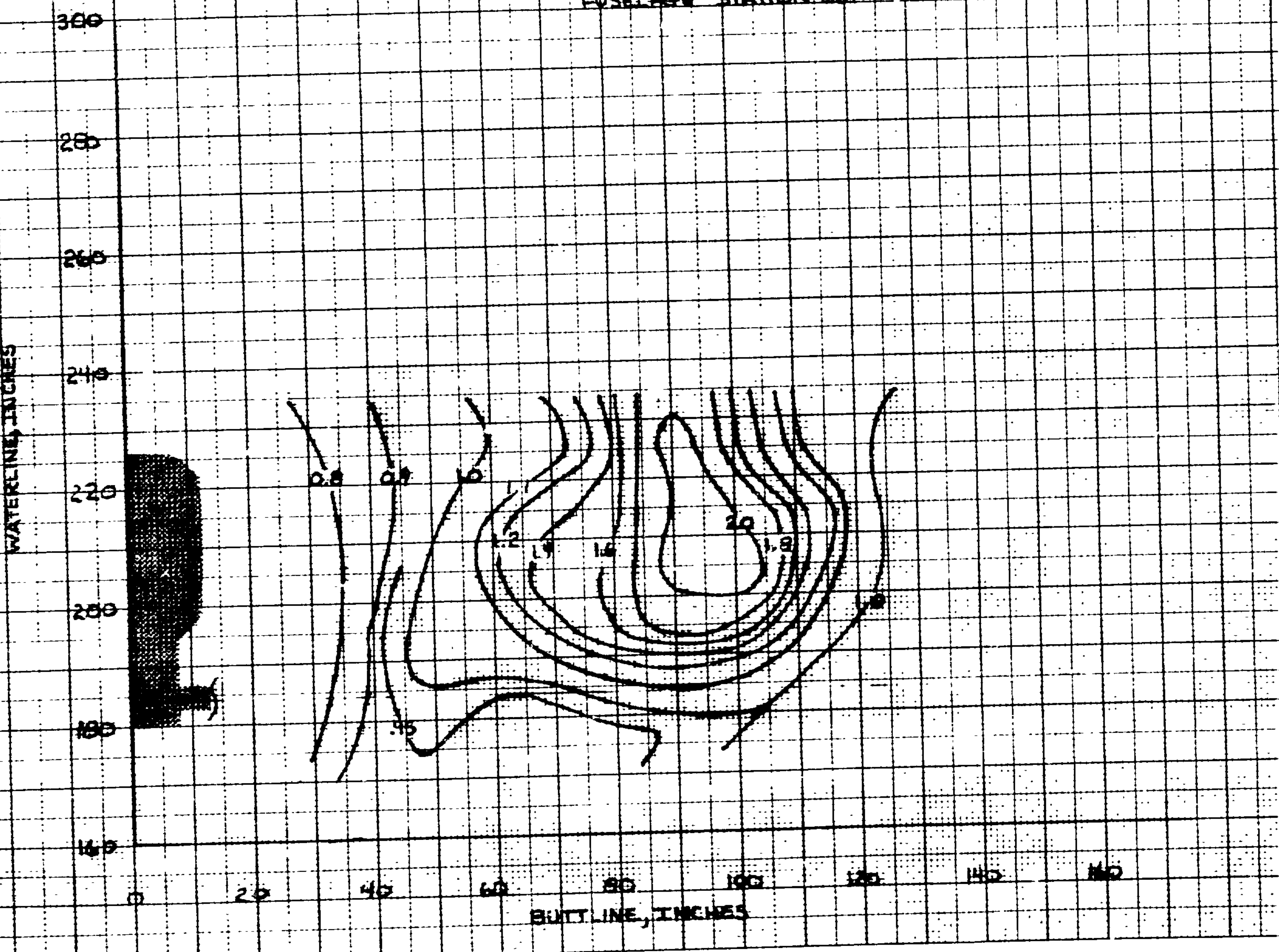

EMPENNAGE FLOW CHARACTERISTICS
RSRA SIXTH SCALE WIND TUNNEL TEST - PHASE II
CONFIGURATION FPB W7 TII, RUN NO 535
ALPHA -10 DEG, PSI 0 DEG
WATERLINE 190 FUSELAGE STATION 664
DYNAMIC PRESSURE RATIO, q_T/q
DOWNWASH, $-\epsilon$, AND SIDEWASH, σ, DEG
q_T/q
$-\epsilon$
σ
BUTTLINE, INCHES

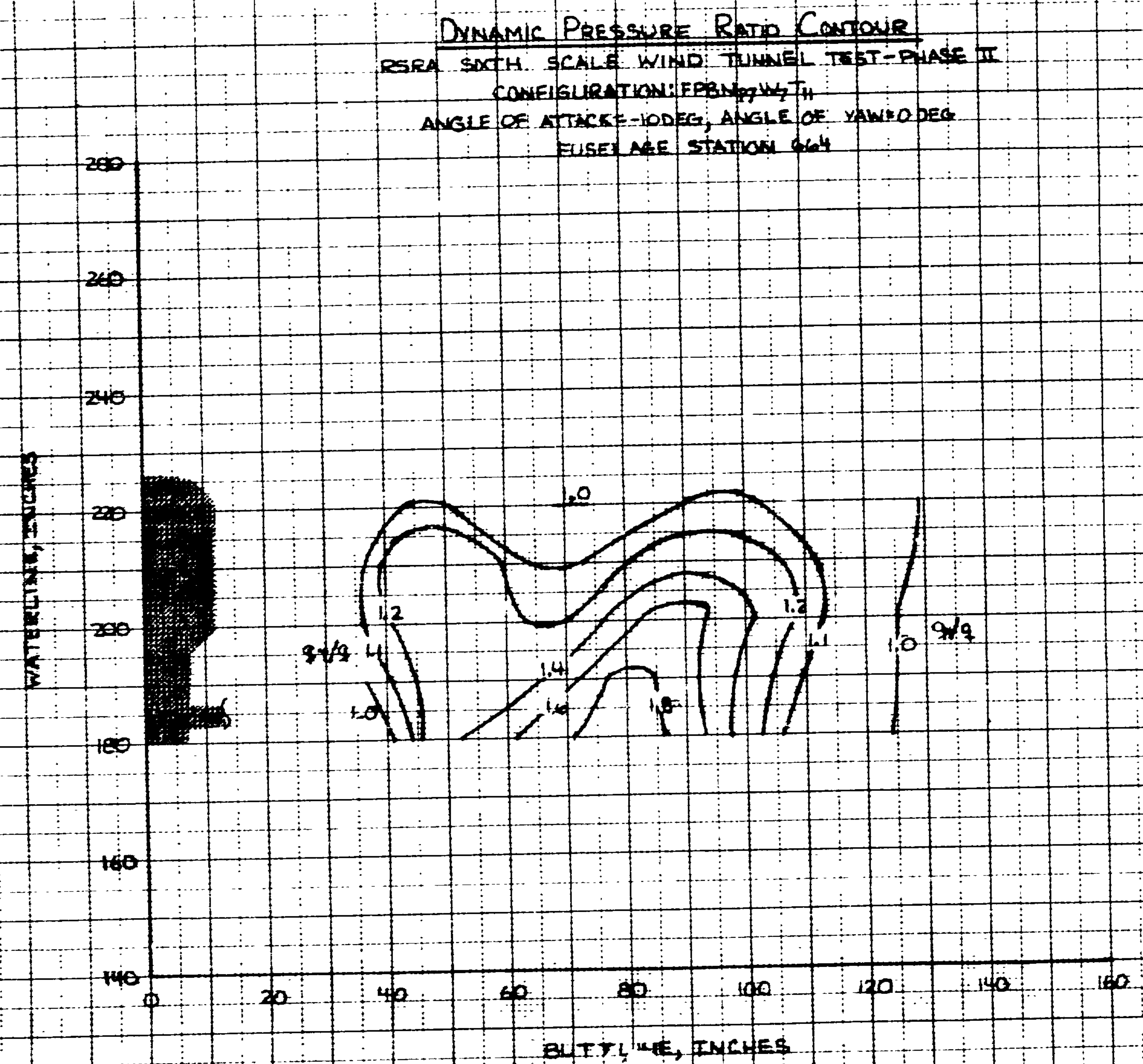

DYNAMIC PRESSURE RATIO CONTOUR
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
FUSELAGE STATION 664
WATERLINE, INCHES
BUTTLINE, INCHES
SER-72011
FIGURE 157

SER-72011
FIGURE 158

DYNAMIC PRESSURE RATIO CONTOUR

RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
CONFIGURATION: FPBN$_9$W$_7$T$_{11}$
ANGLE OF ATTACK=-5 DEG, ANGLE OF YAW=0 DEG
FUSELAGE STATION 644



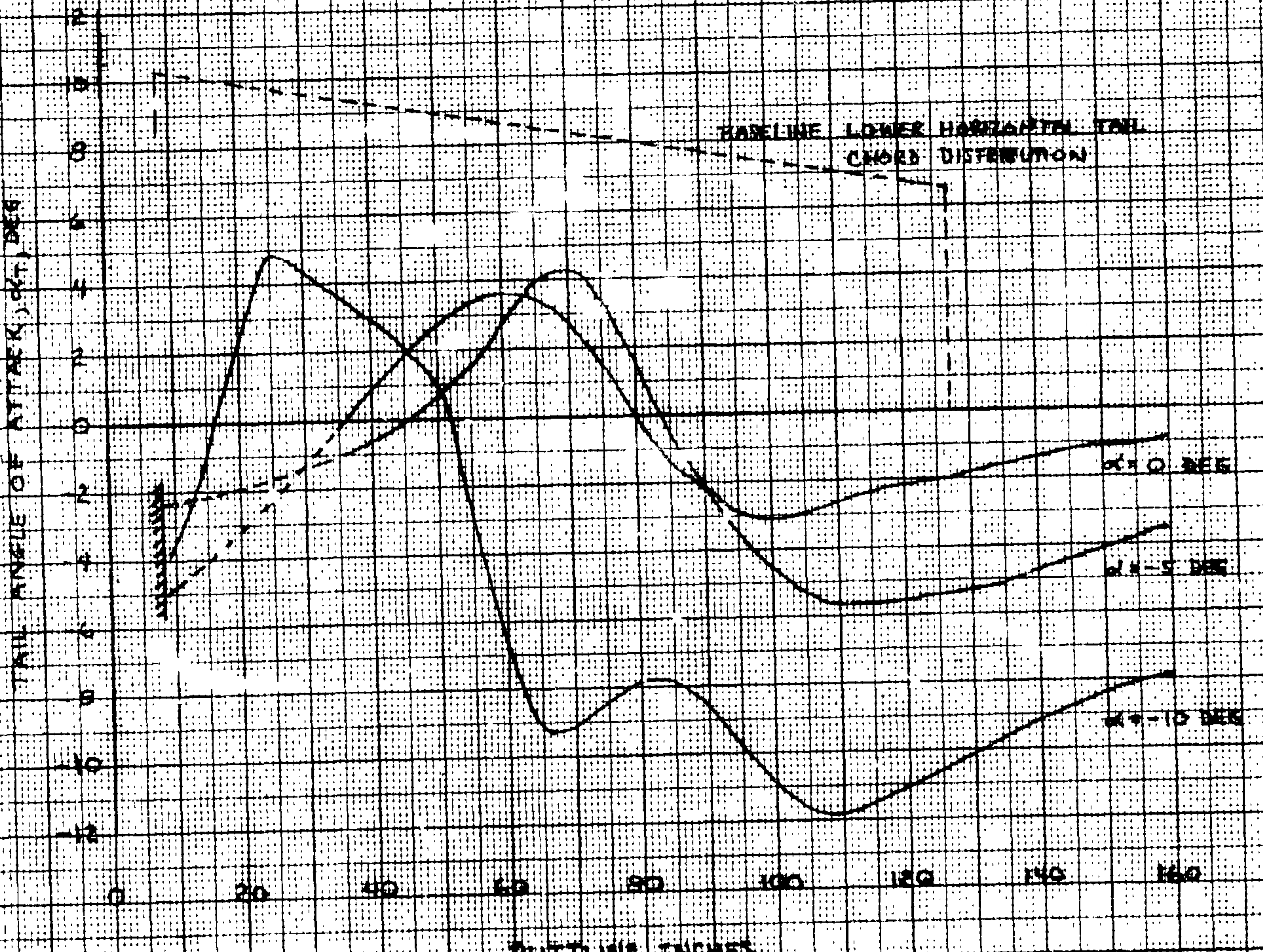

DYNAMIC PRESSURE RATIO CONTOUR
RSRA SIXTH SCALE WIND TUNNEL TEST-PHASE II
CONFIGURATION: FPBN$_{17}$W$_7$T$_{11}$
ANGLE OF ATTACK=-10DEG, ANGLE OF YAW=0DEG
FUSELAGE STATION 664
1.0
1.2
1.2
1.1
1.1
1.0
1.4
1.6
1.8
1.0
q_l/q
q_l/q
WATERLINE, INCHES
280
260
240
220
200
180
160
140
0
20
40
60
80
100
120
140
160
BUTTLINE, INCHES

SER-7208
FIGURE 169

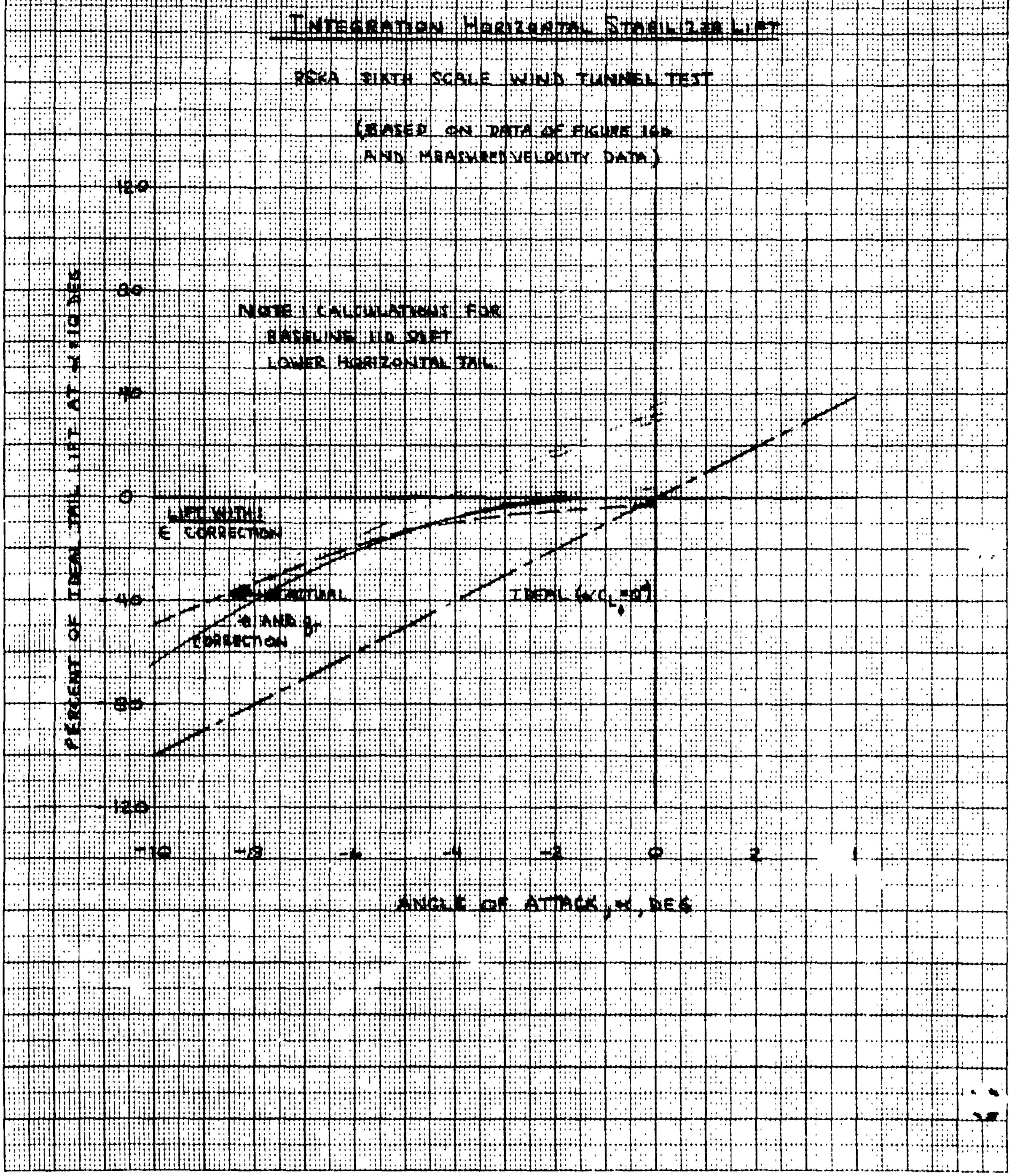
ANGLE OF ATTACK AT THE HORIZONTAL STABILIZER

RSRA SIXTH SCALE WIND TUNNEL TEST

CONFIGURATION: $FEBN_{08}V_7T_{11}$



SER-12011
FIGURE 161



MEAN DOWNWASH ANGLE AT THE HORIZONTAL STABILIZER

RSRA SIXTH SCALE WIND TUNNEL TEST