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Declassified on June 14, 2001 by the
Air Force Declassification Office
IAW EO 12958

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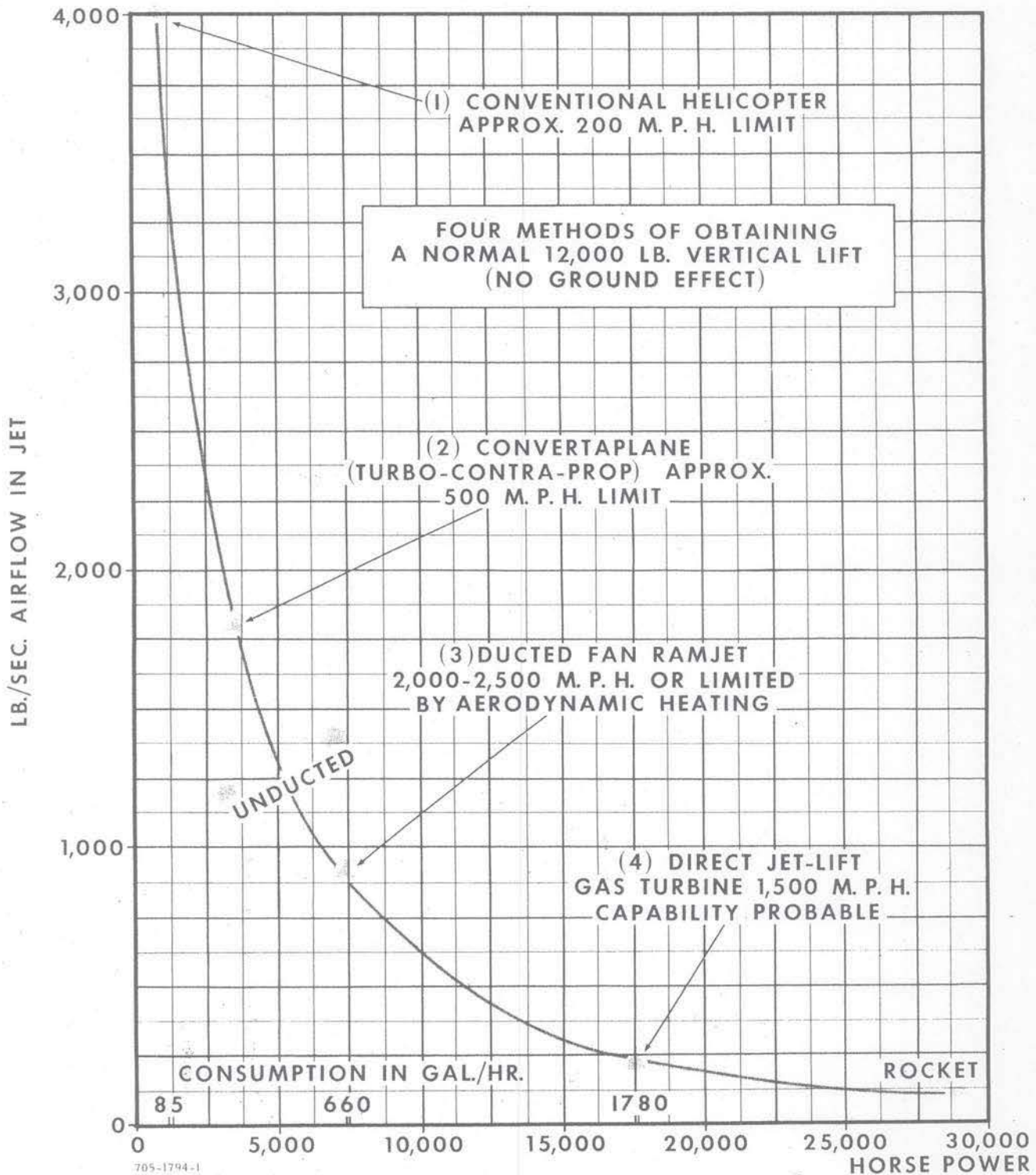
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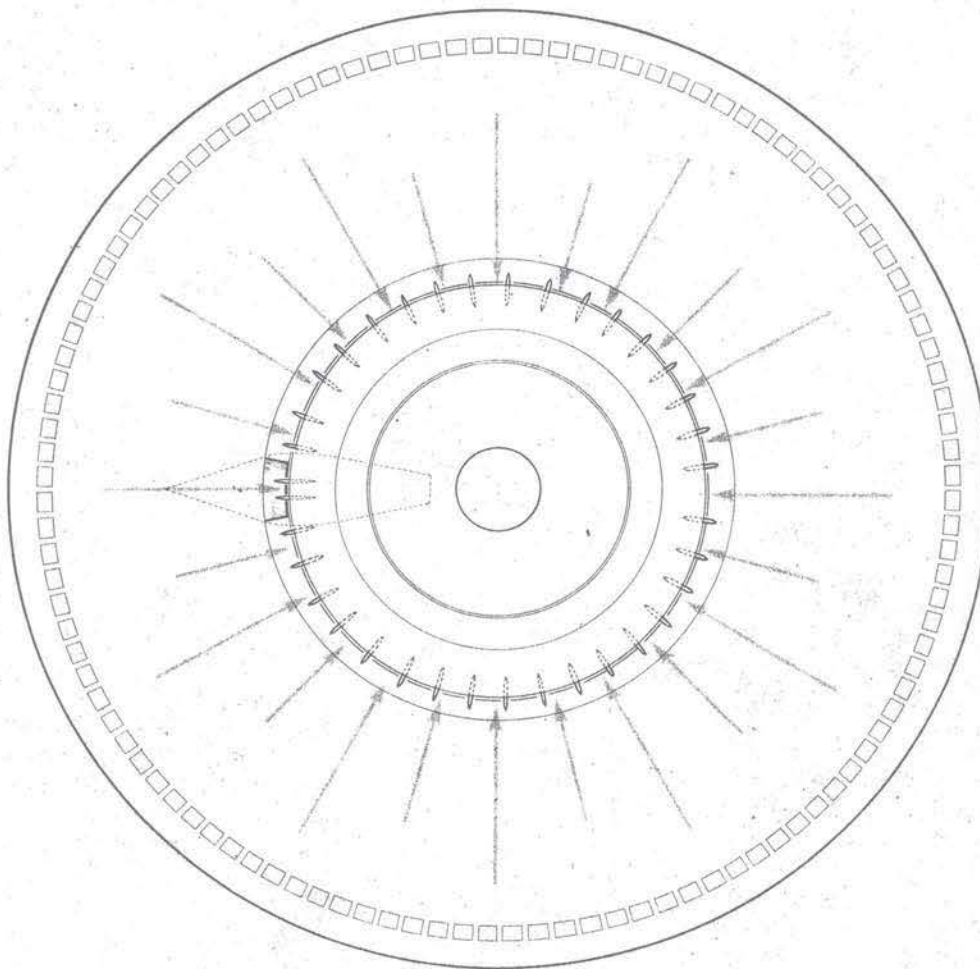
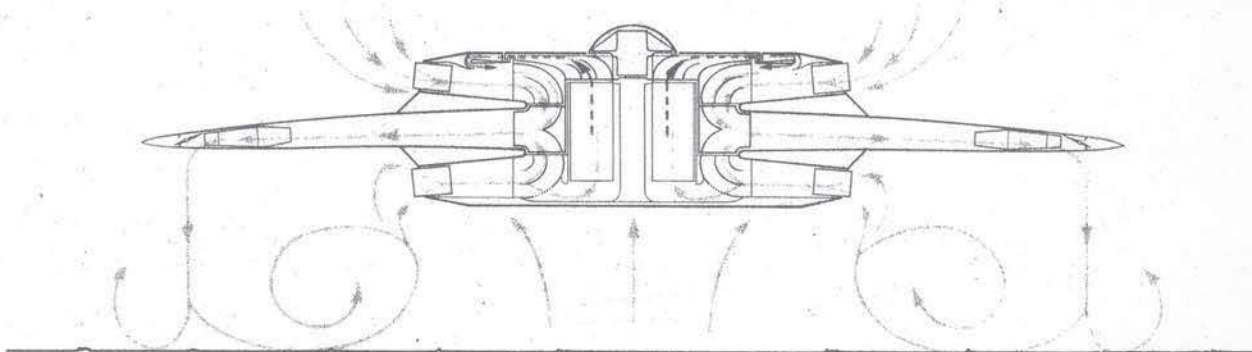


V.T.O. EFFICIENCY CHART

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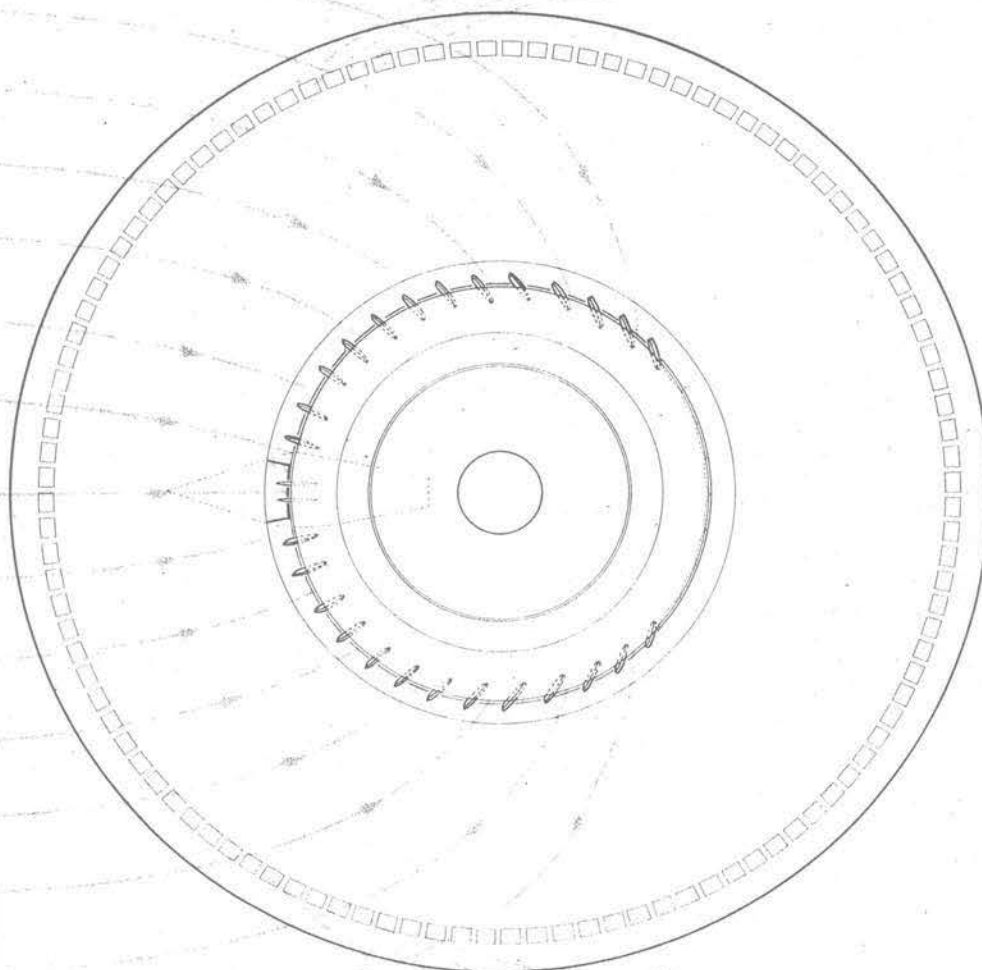
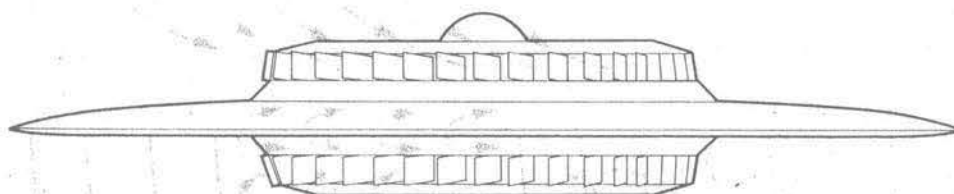
**FLOW DISTRIBUTION-HOVERING
AND GROUND CUSHION**

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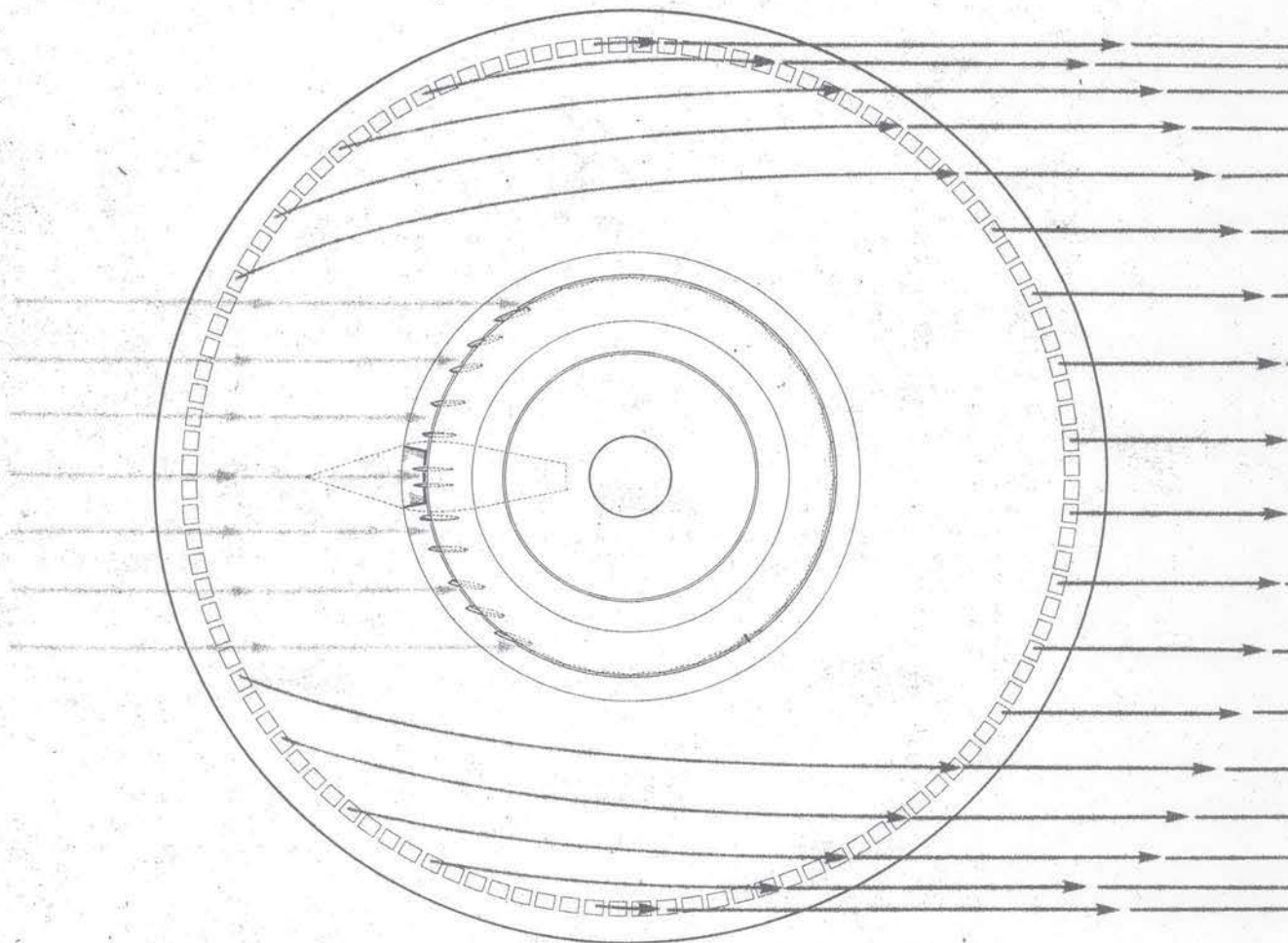
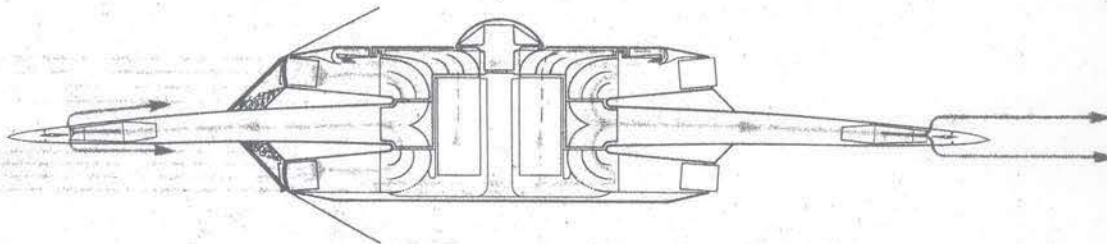
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**TRANSITION TO FORWARD FLIGHT
FROM GROUND CUSHION**

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AIRFLOW IN FORWARD FLIGHT

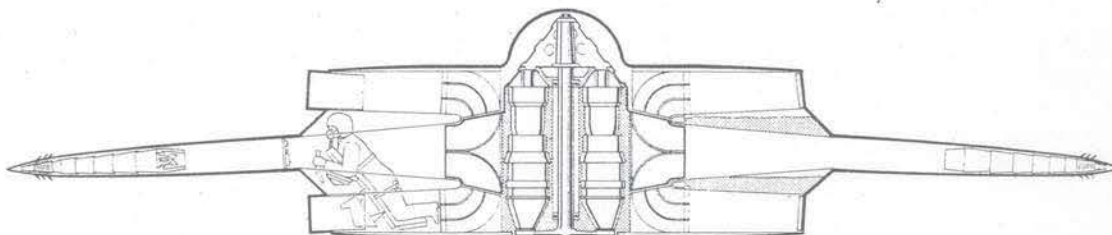
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**2 VIEW GENERAL ARRANGEMENT
-33 FT. AIRCRAFT SCHEMATIC**

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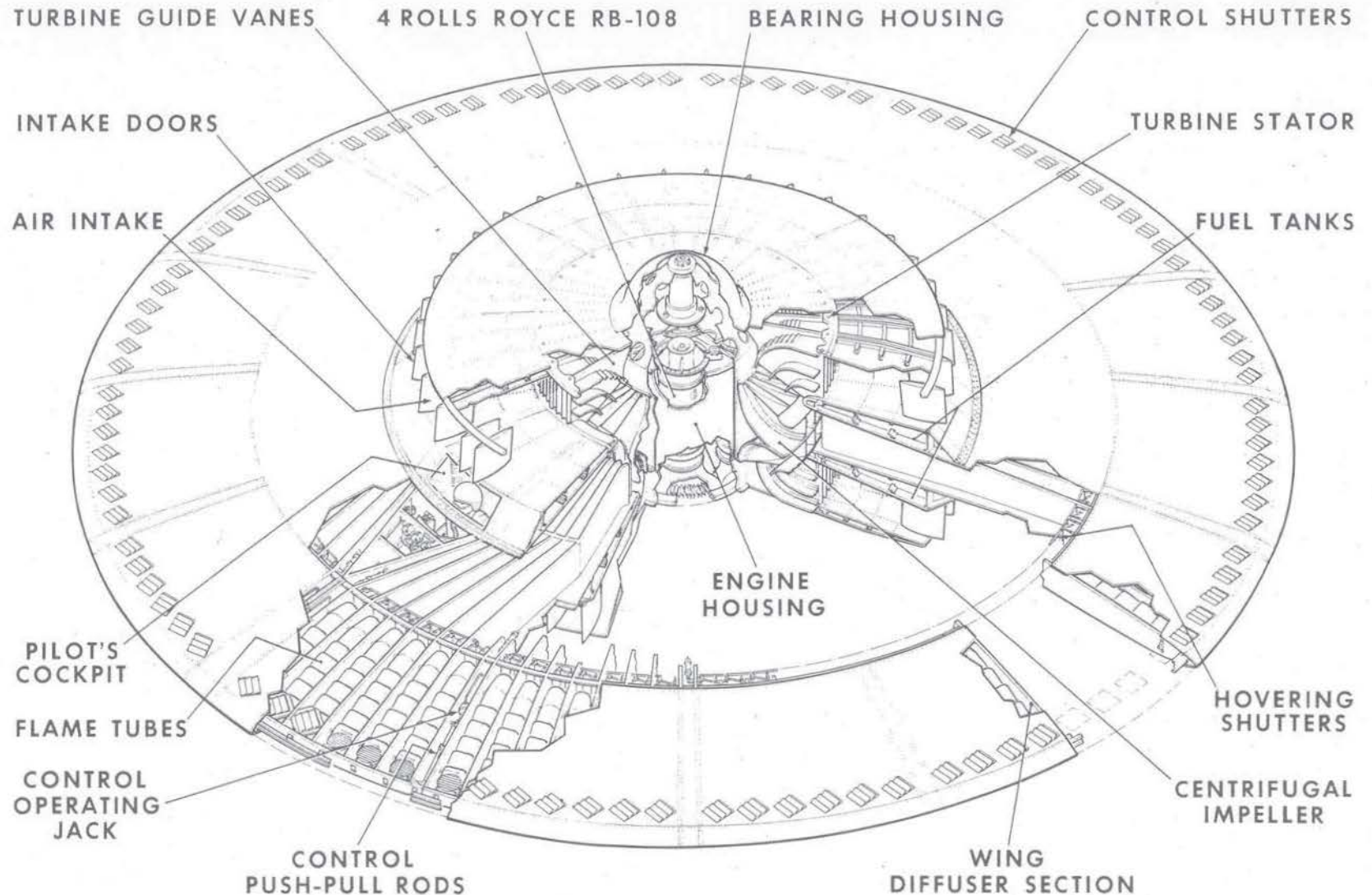
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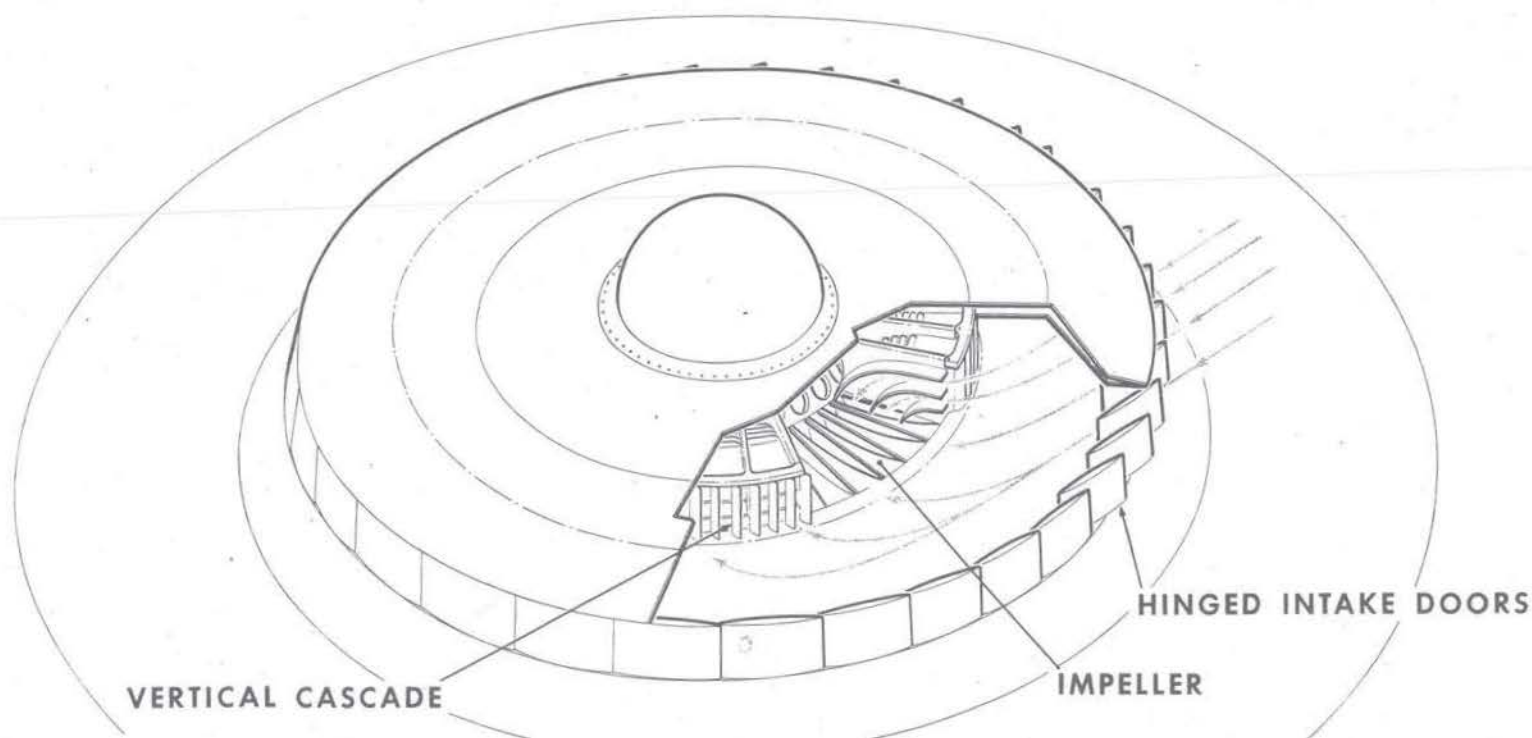
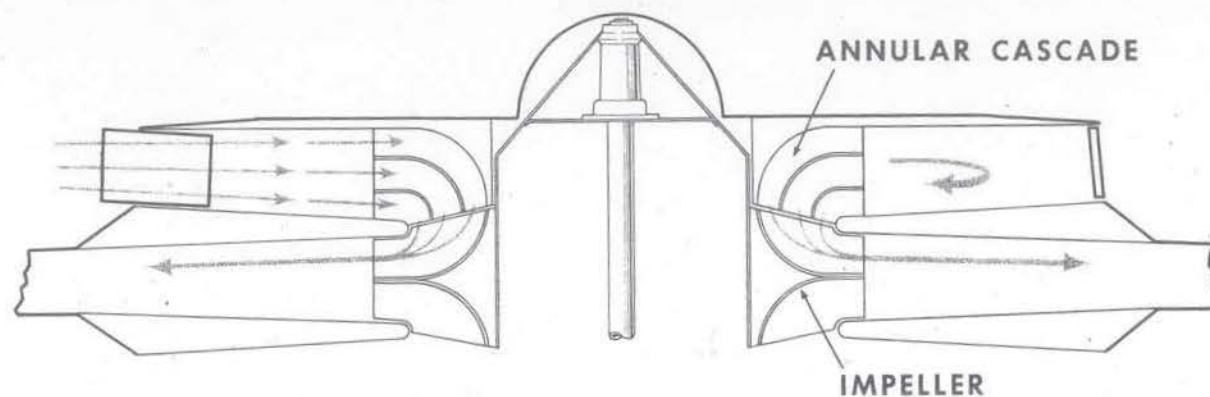
RAMJET AIRCRAFT-DUCTED FAN ASSISTED

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INTAKE ARRANGEMENT

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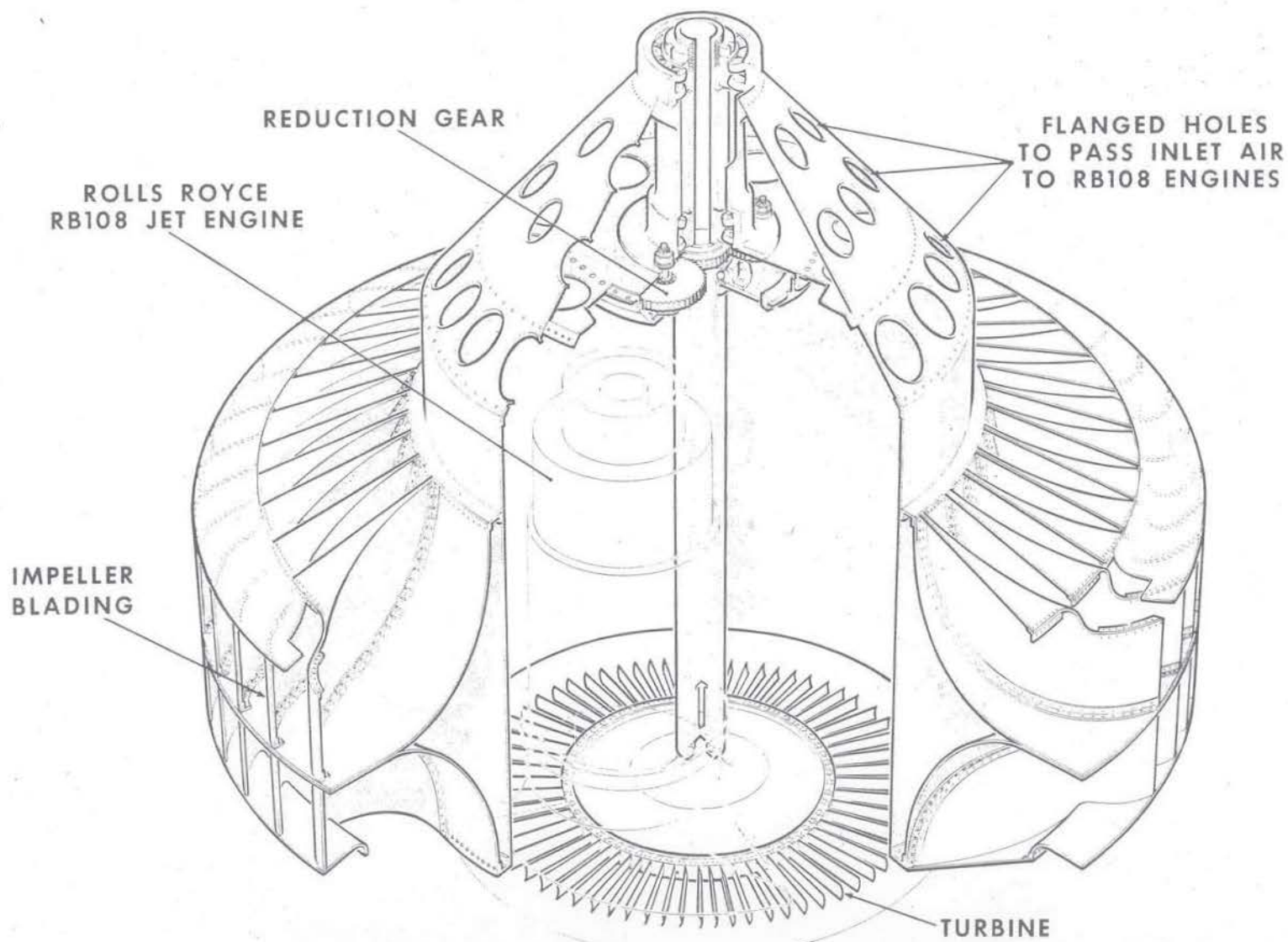
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IMPELLER AND TURBINE ASSEMBLY

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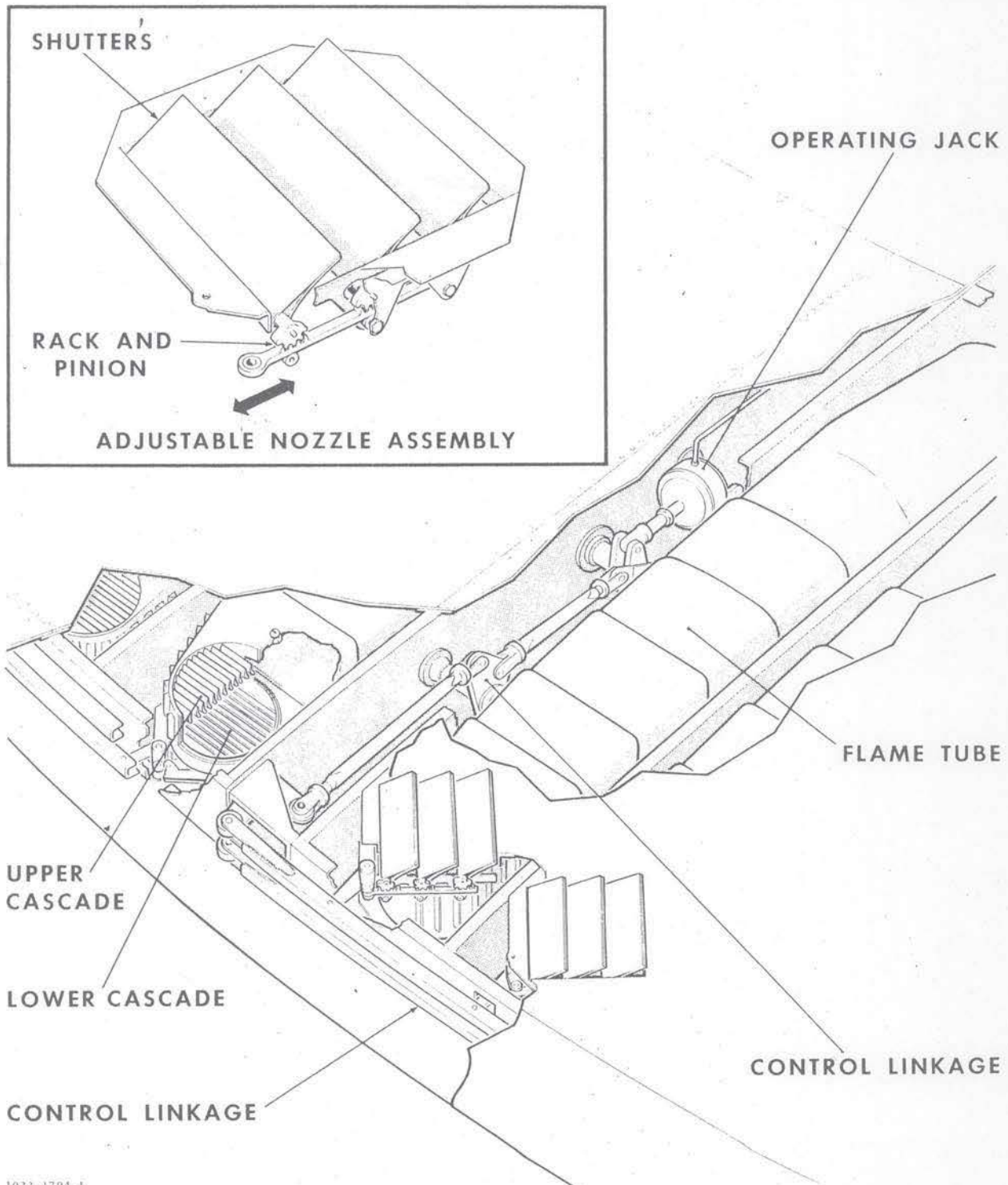
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FLAME TUBE AND FINAL NOZZLE ASSEMBLY

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FORWARD FLIGHT SHUTTERS

CONTROL VALVE ASSEMBLY

IMPELLER

HOVERING SHUTTERS

SELECTOR VALVE

TURBINE

OPERATING JACK
FOR HOVERING SHUTTERS

OPERATING JACK FOR
FORWARD FLIGHT SHUTTERS

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TYPICAL ARRANGEMENT OF CONTROL ASSEMBLY

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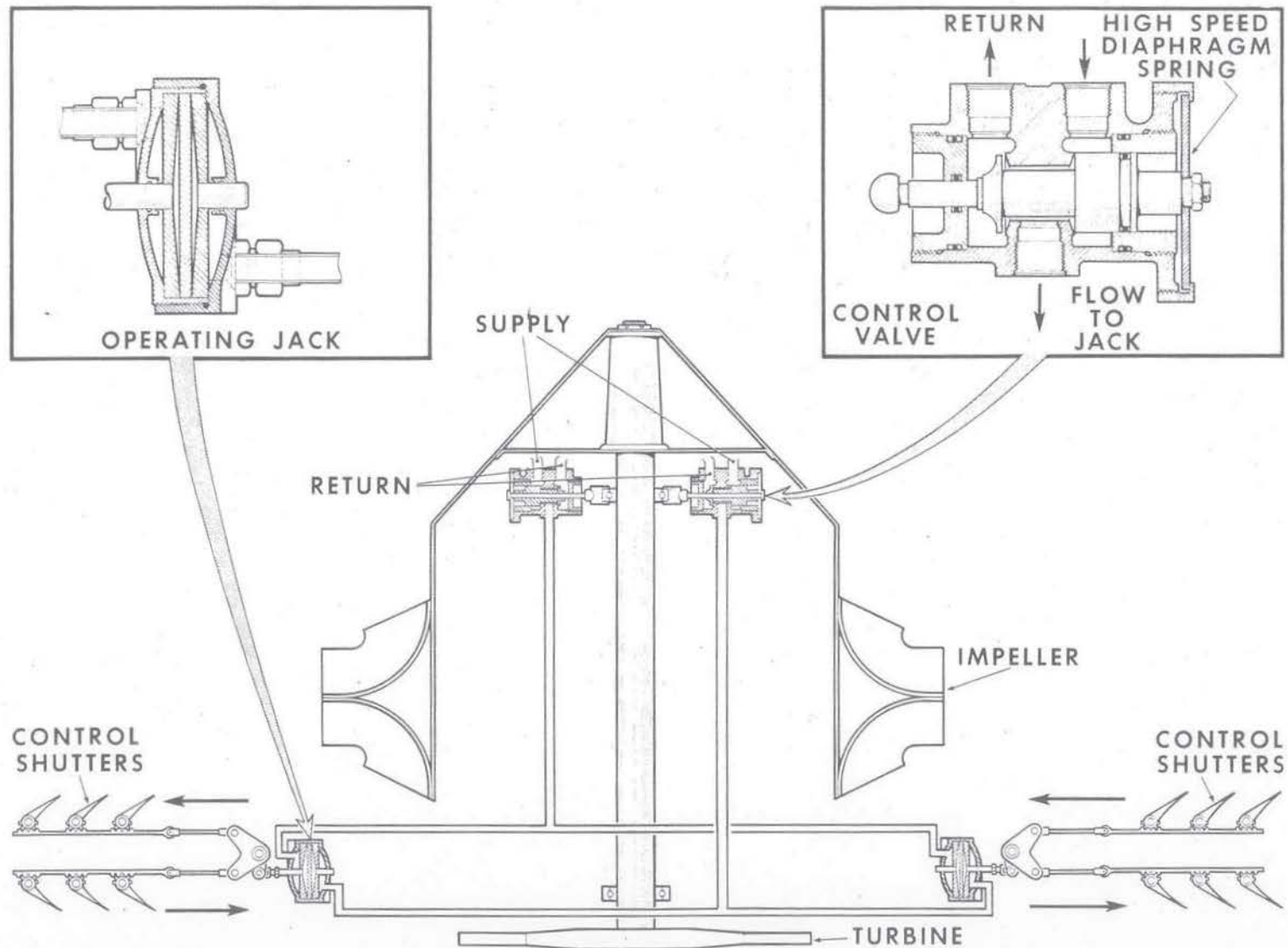
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SCHEMATIC DIAGRAM OF STABILIZER SYSTEM

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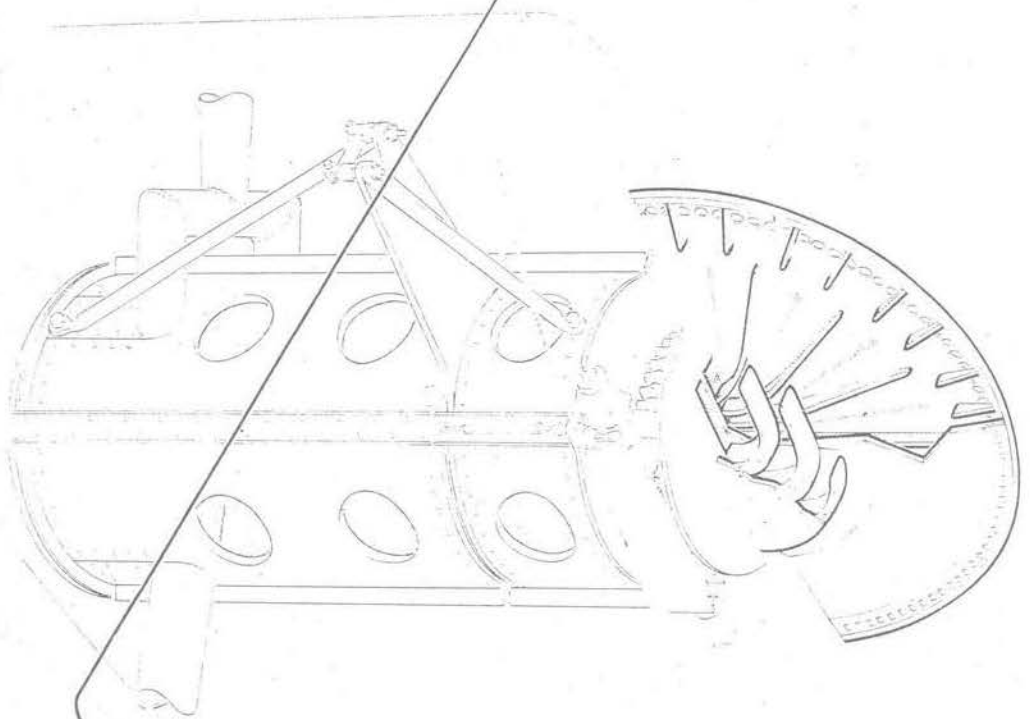
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6TH SCALE SUBSONIC MODEL

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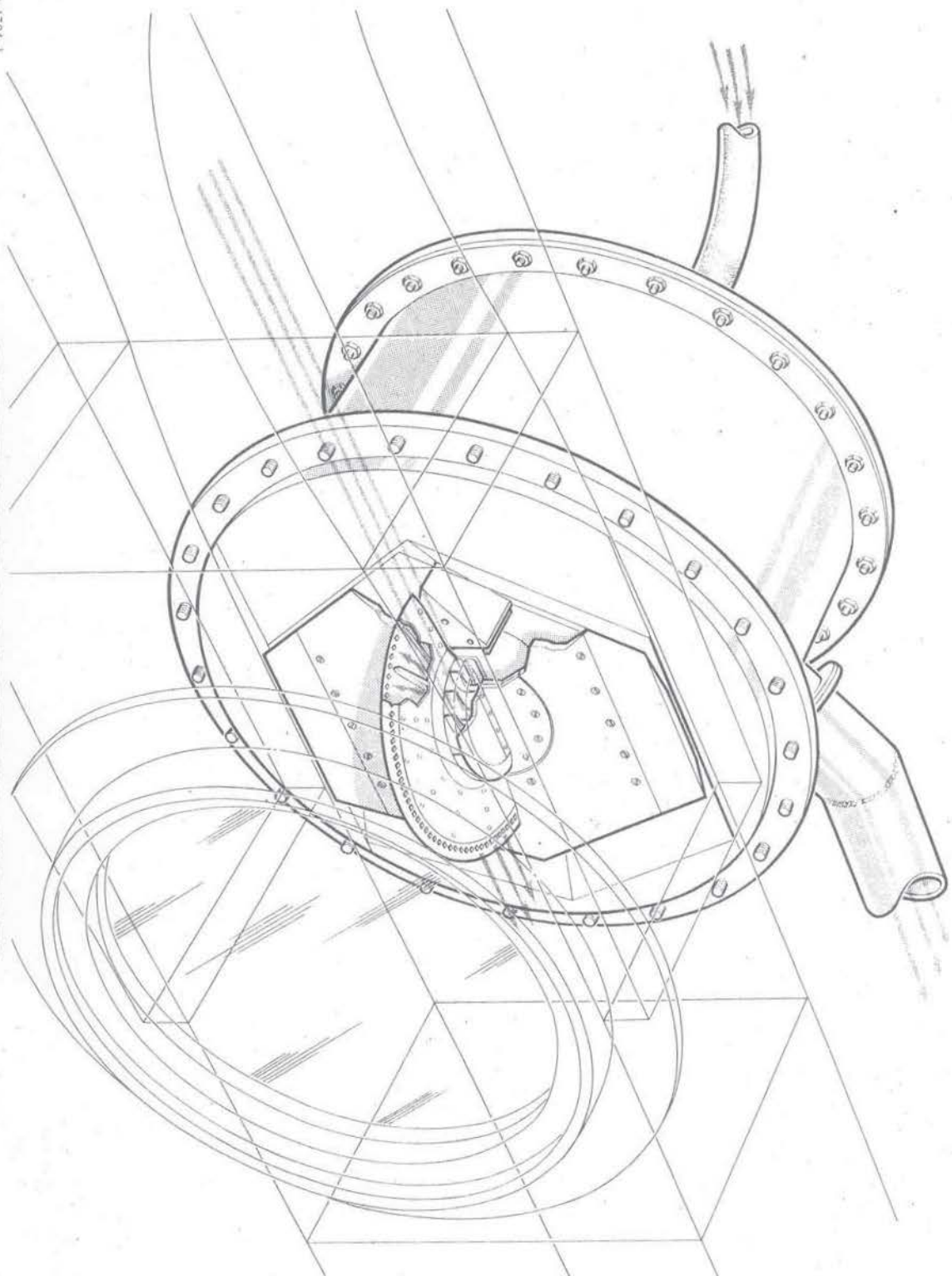
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SUPERSONIC CONTROL MODEL

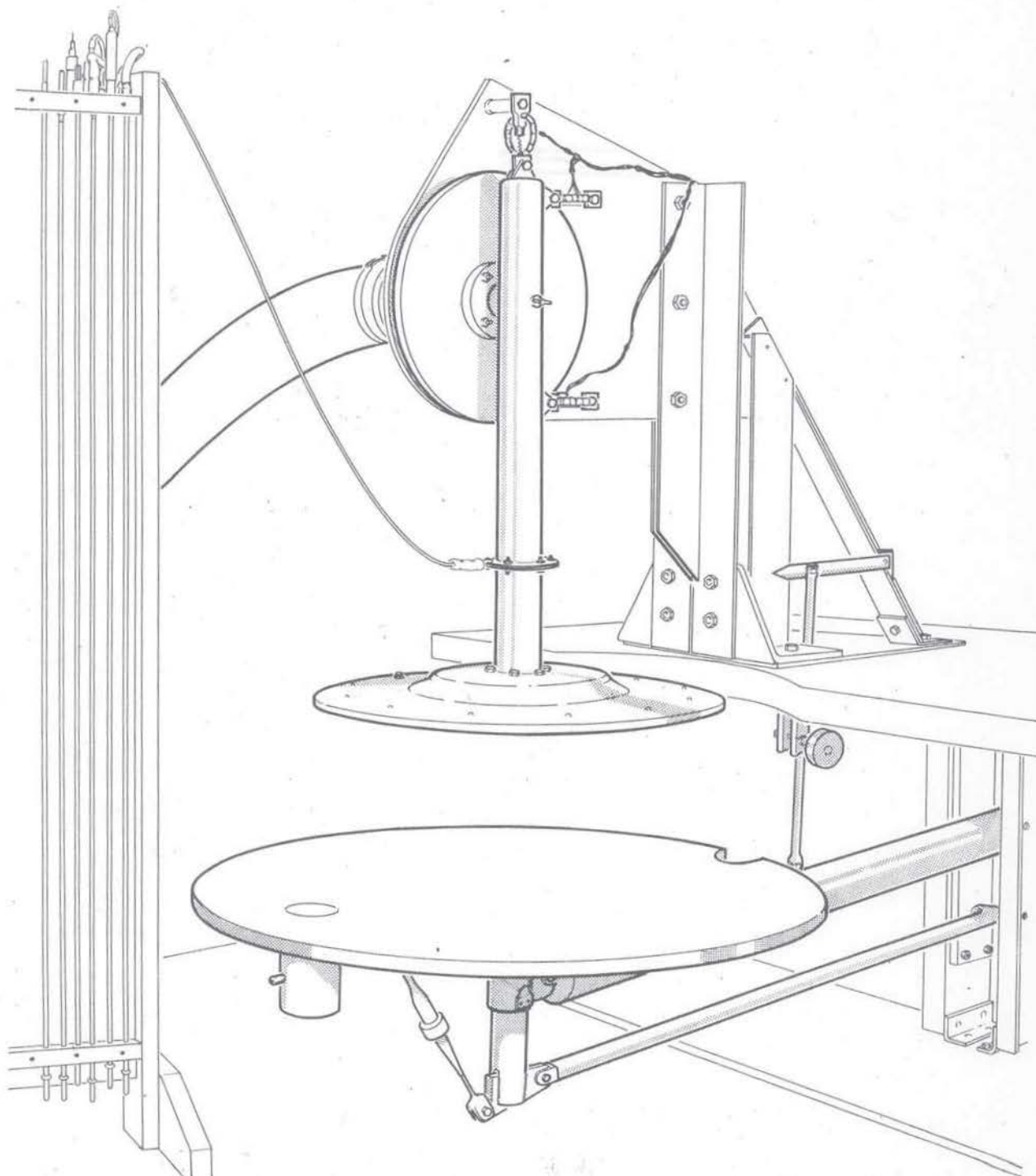
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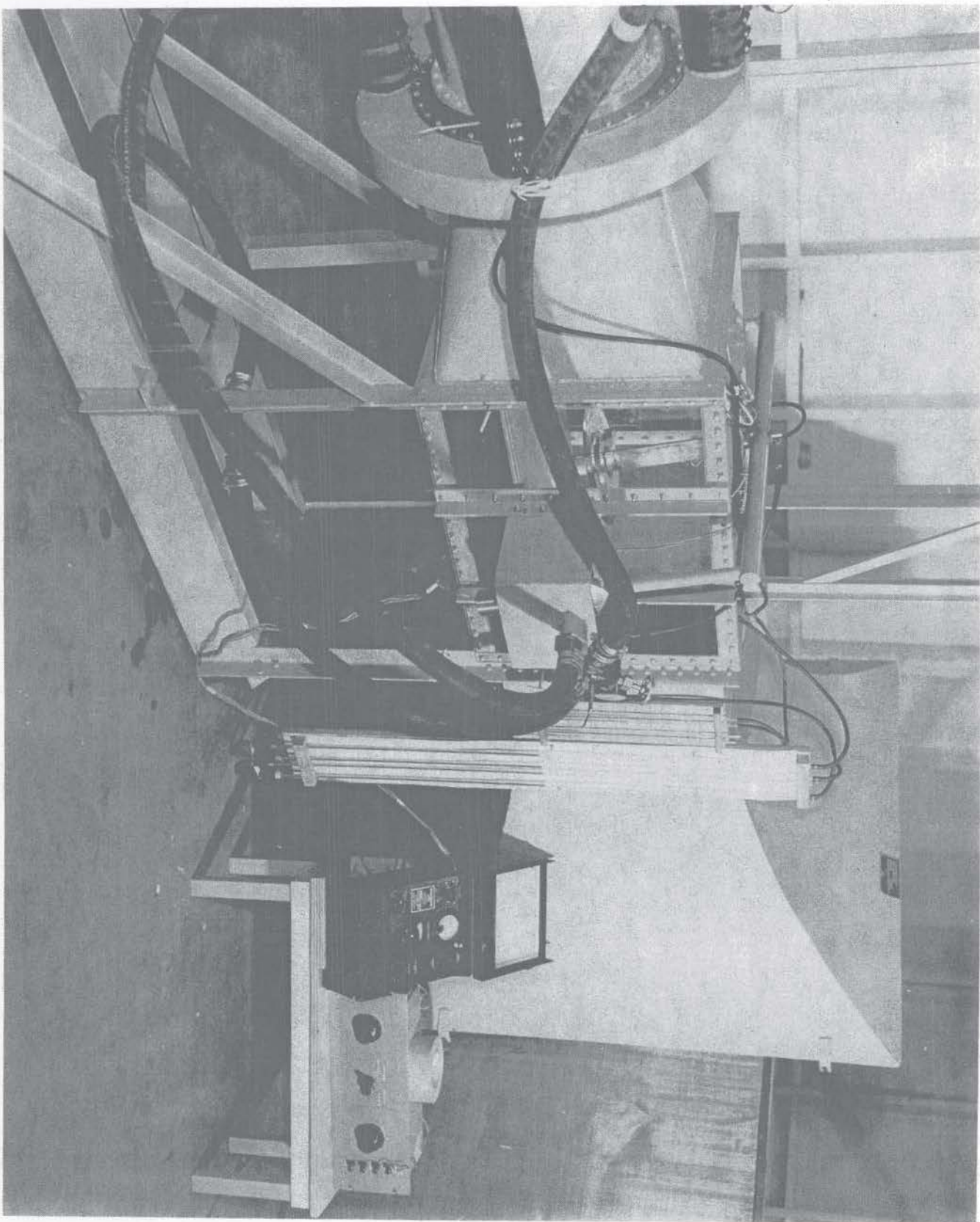
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GROUND EFFECTS MODEL
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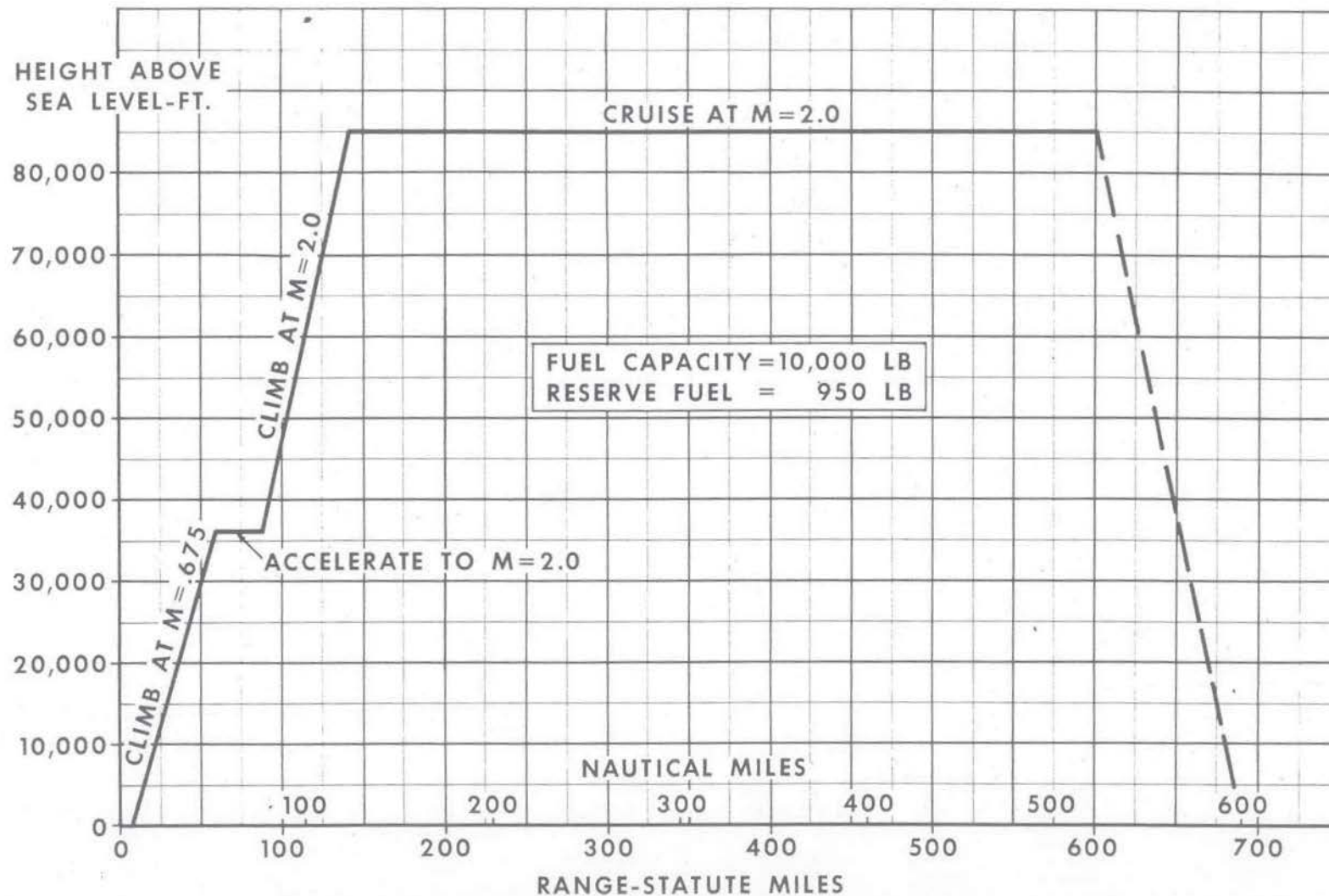


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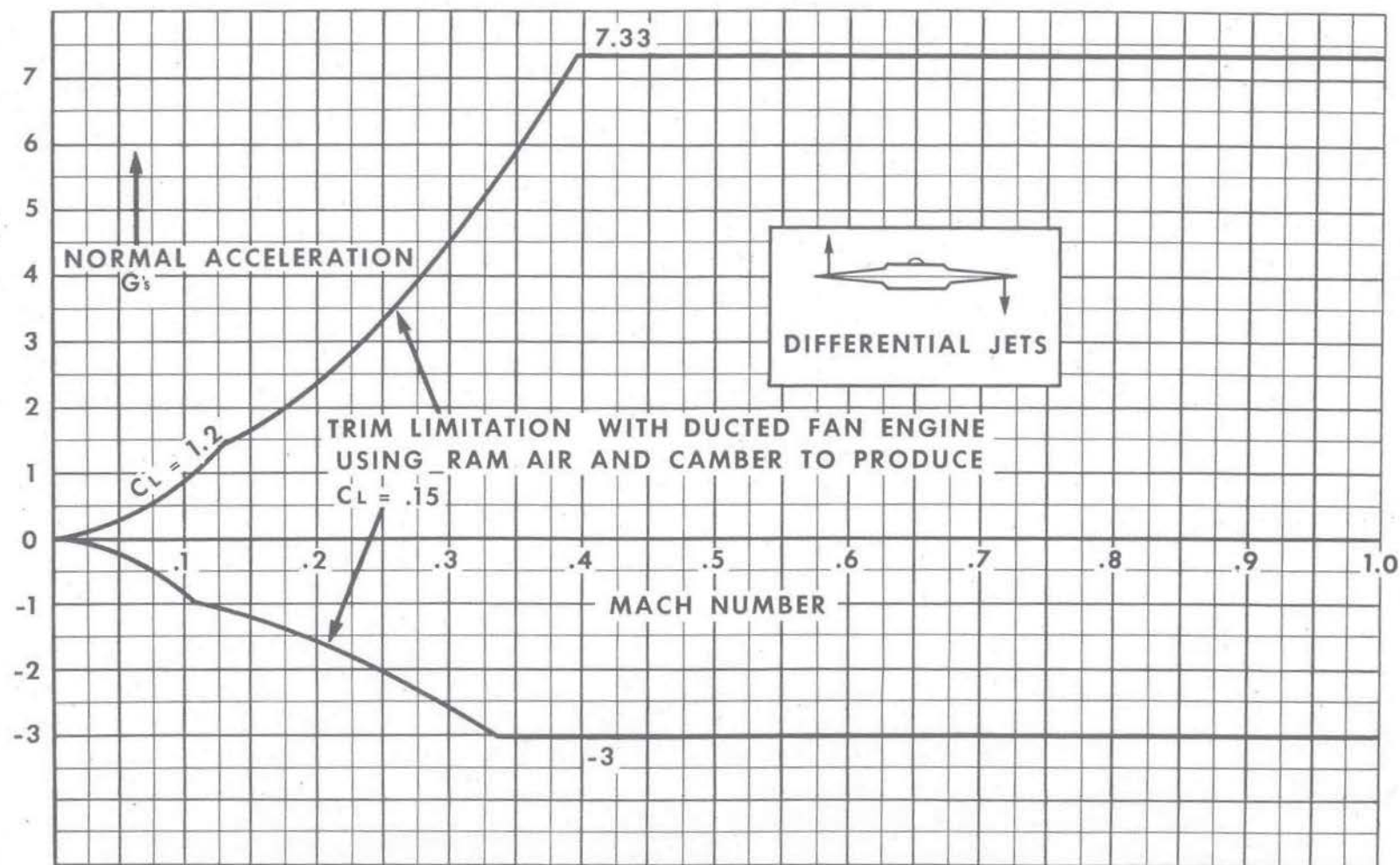
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4 RB108 DUCTED FAN-RAMJET AIRCRAFT STILL AIR RANGE

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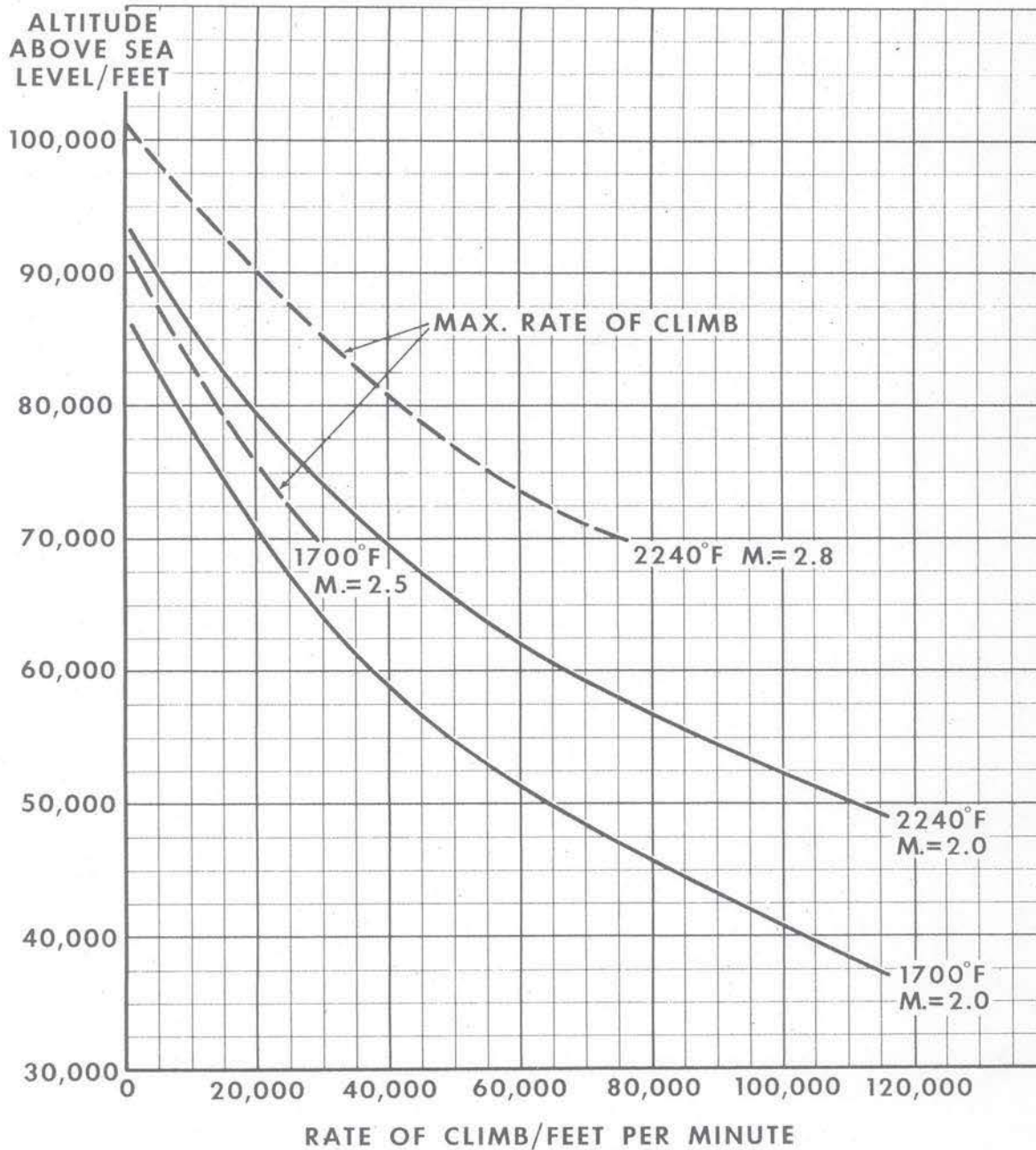
**FLIGHT ENVELOPE OF DUCTED FAN AIRCRAFT
USING RAM AIR AT SEA LEVEL**~~SECRET~~

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**4 RB 108 DUCTED FAN RAMJET AIRCRAFT
RATE OF CLIMB VS ALTITUDE**

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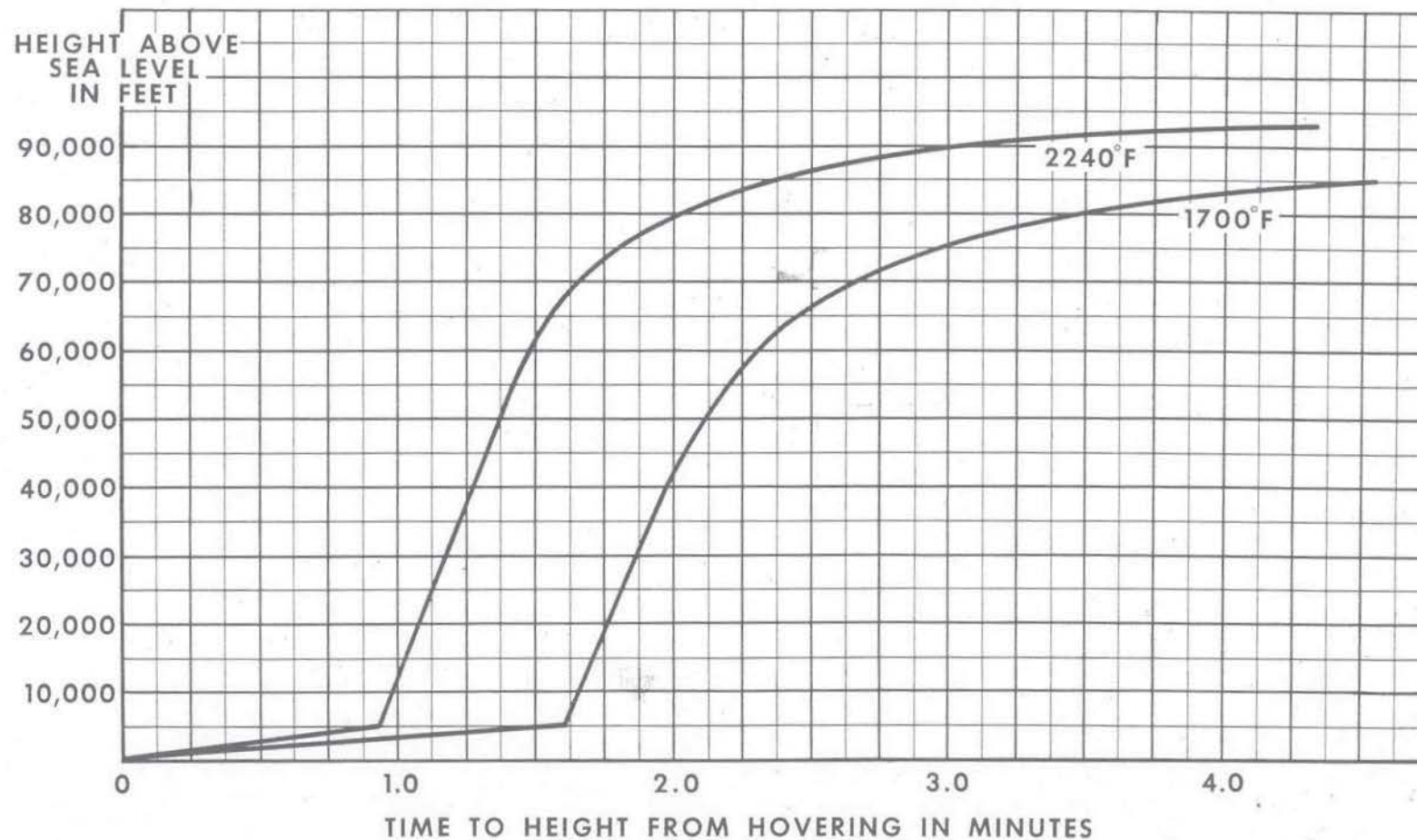
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**4 RB108 DUCTED FAN RAMJET
AIRCRAFT TIME TO HEIGHT AND M=2.0
FROM HOVERING AT SEA LEVEL**

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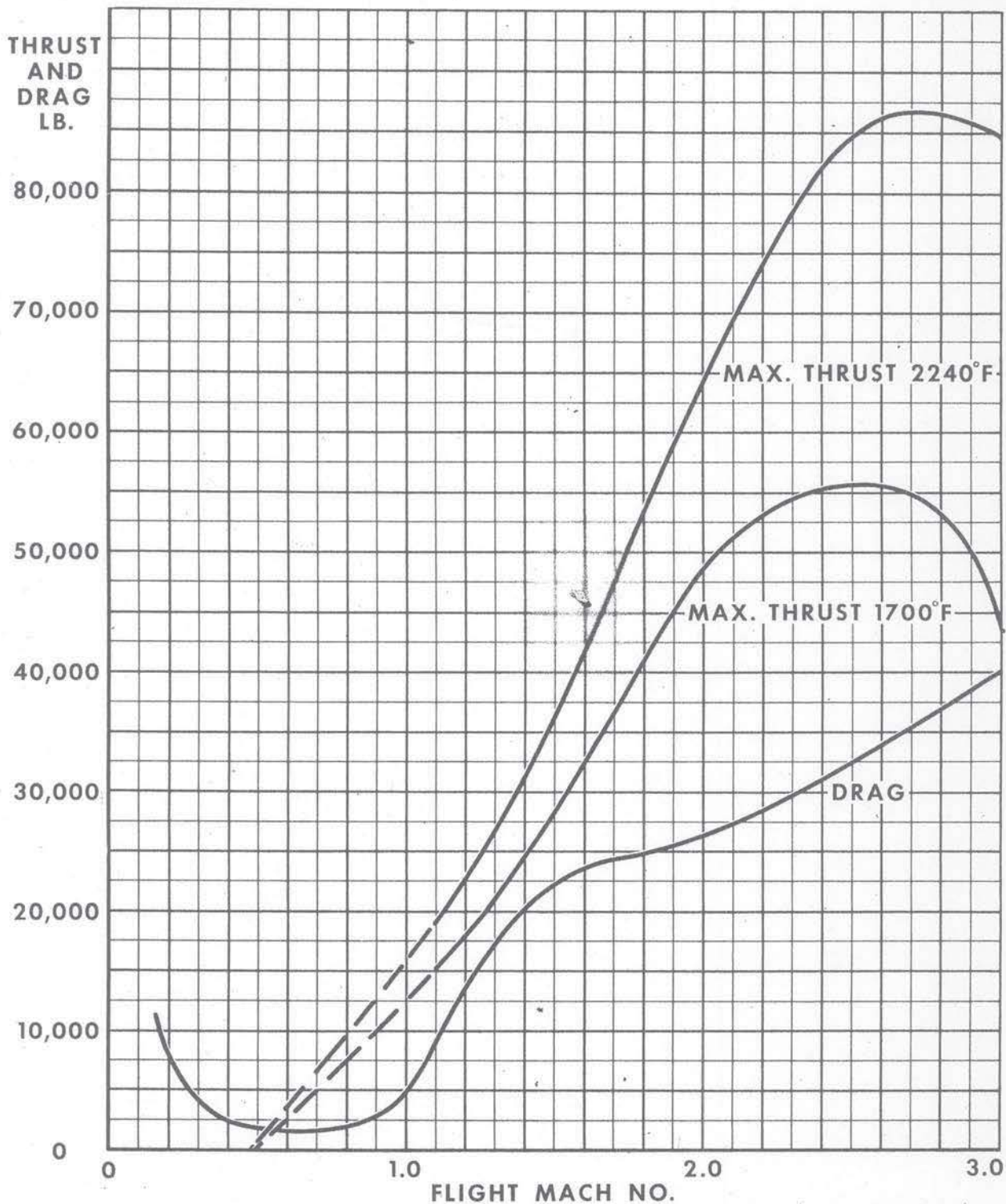
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THRUST AND DRAG VS. M. AT 36,000 FT.

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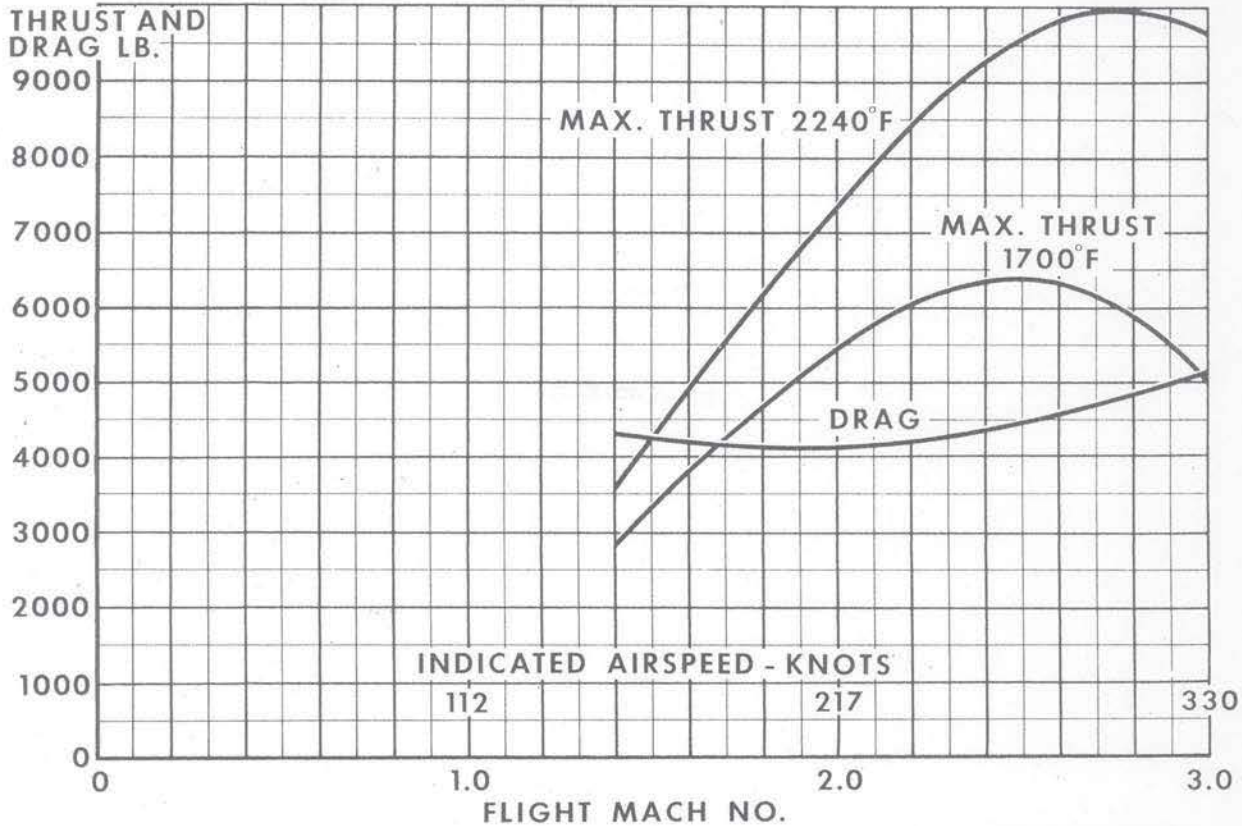
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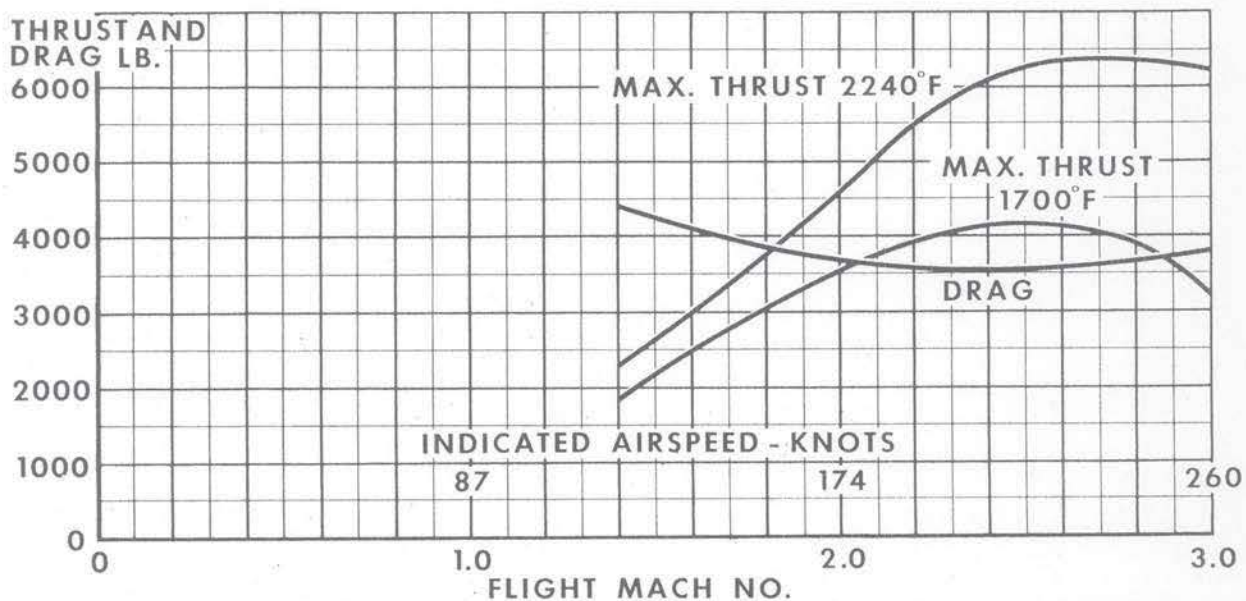
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THRUST AND DRAG VS. M. AT 80,000 FT.



THRUST AND DRAG VS. M. AT 90,000 FT.

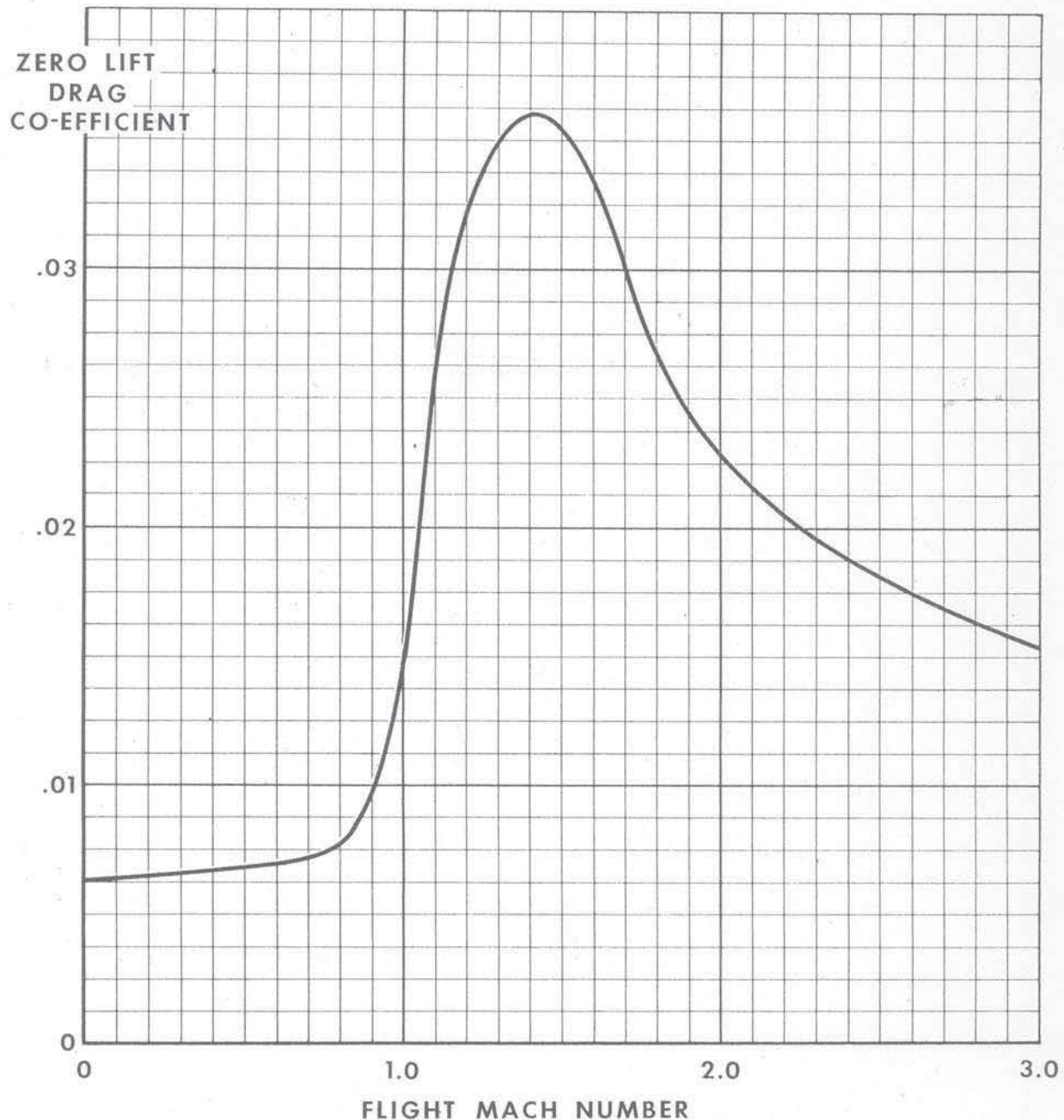
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**DUCTED FAN RAMJET AIRCRAFT
ZERO-LIFT DRAG COEFFICIENT VS.
FLIGHT MACH NUMBER**

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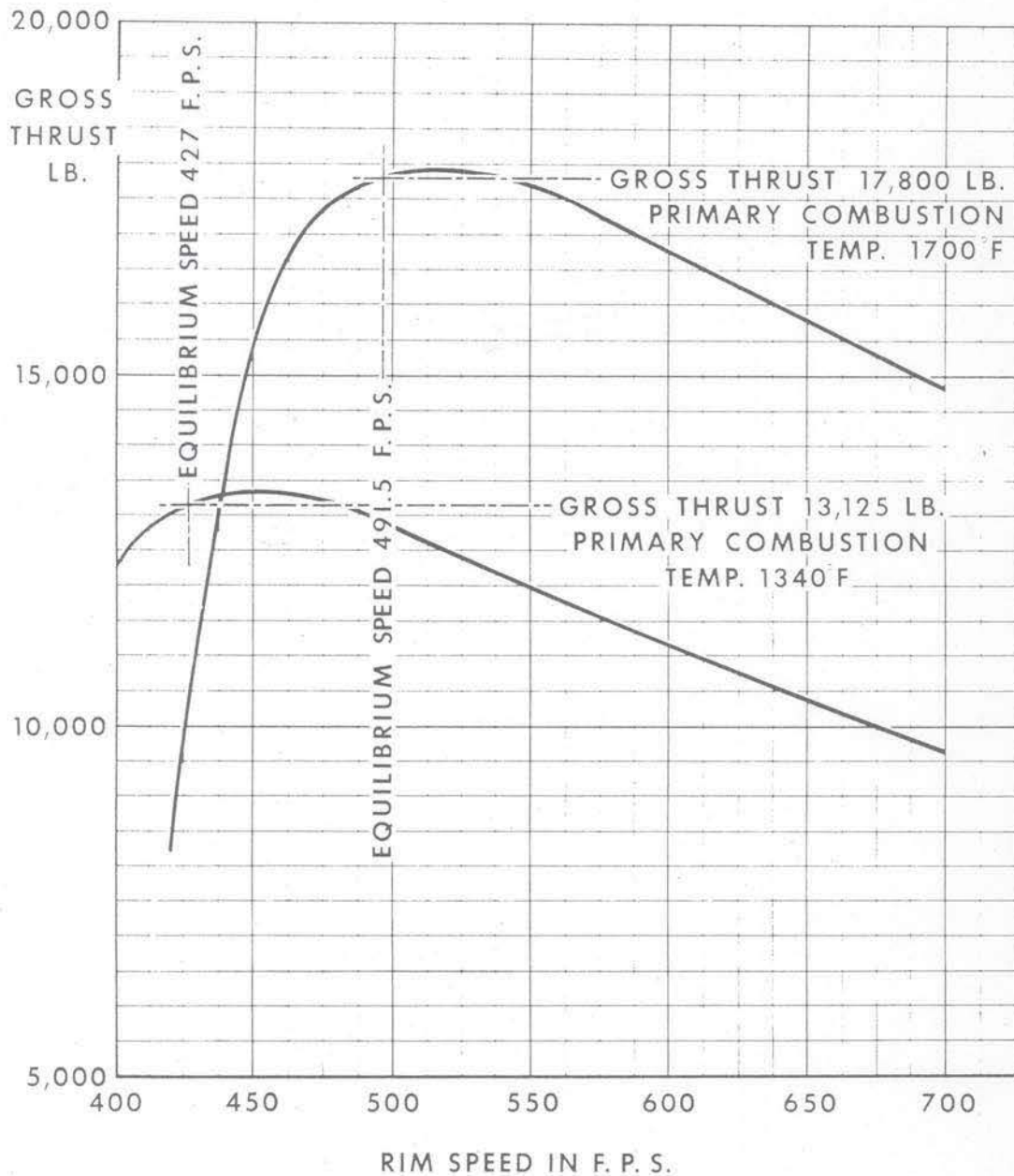
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**STATIC THRUST VS. RIM SPEED
(NO COMBUSTION IN SECONDARY FLOW)**

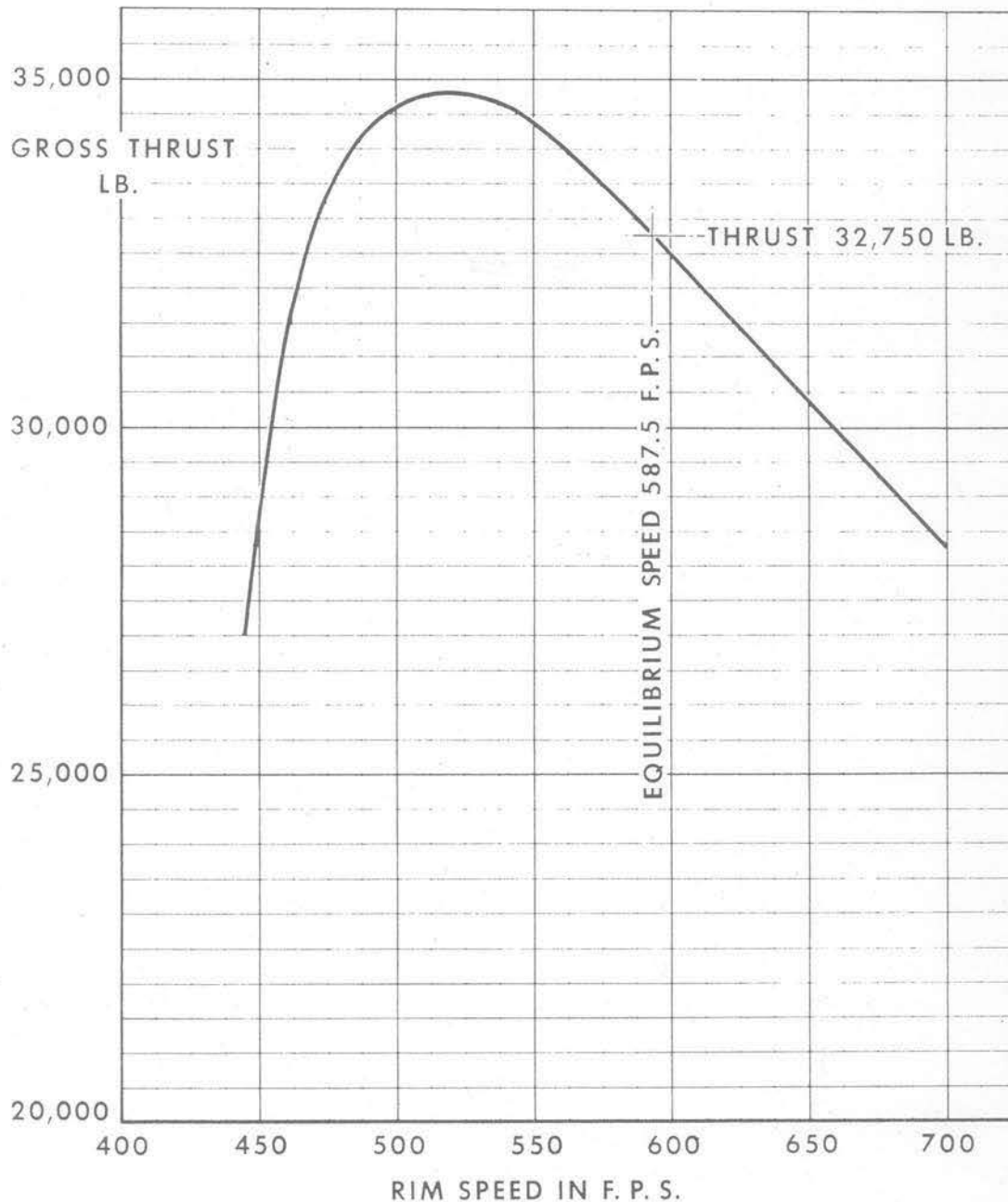
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**STATIC THRUST VS. RIM SPEED
(COMBUSTION TO 1200°K IN SECONDARY FLOW)**

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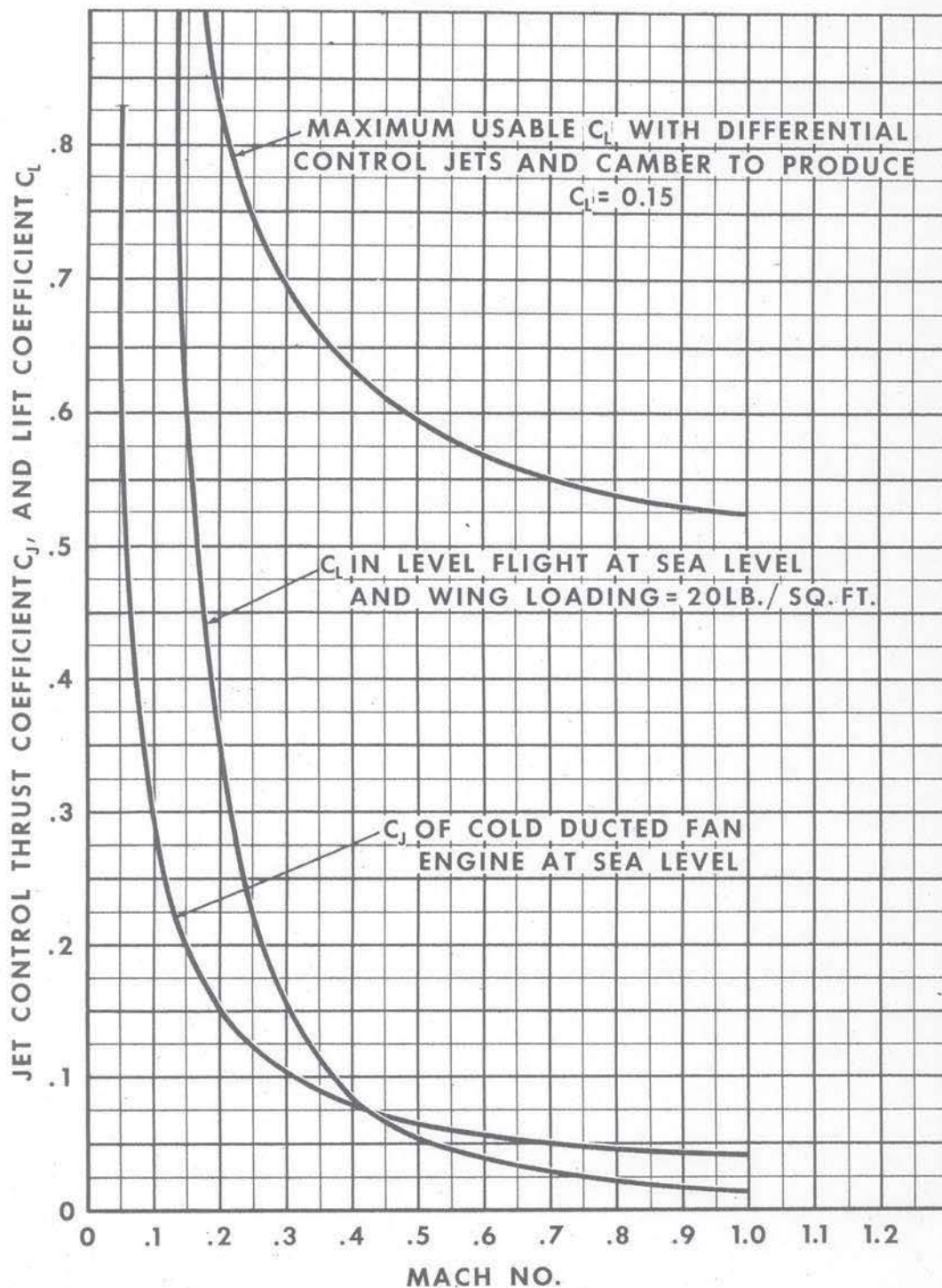
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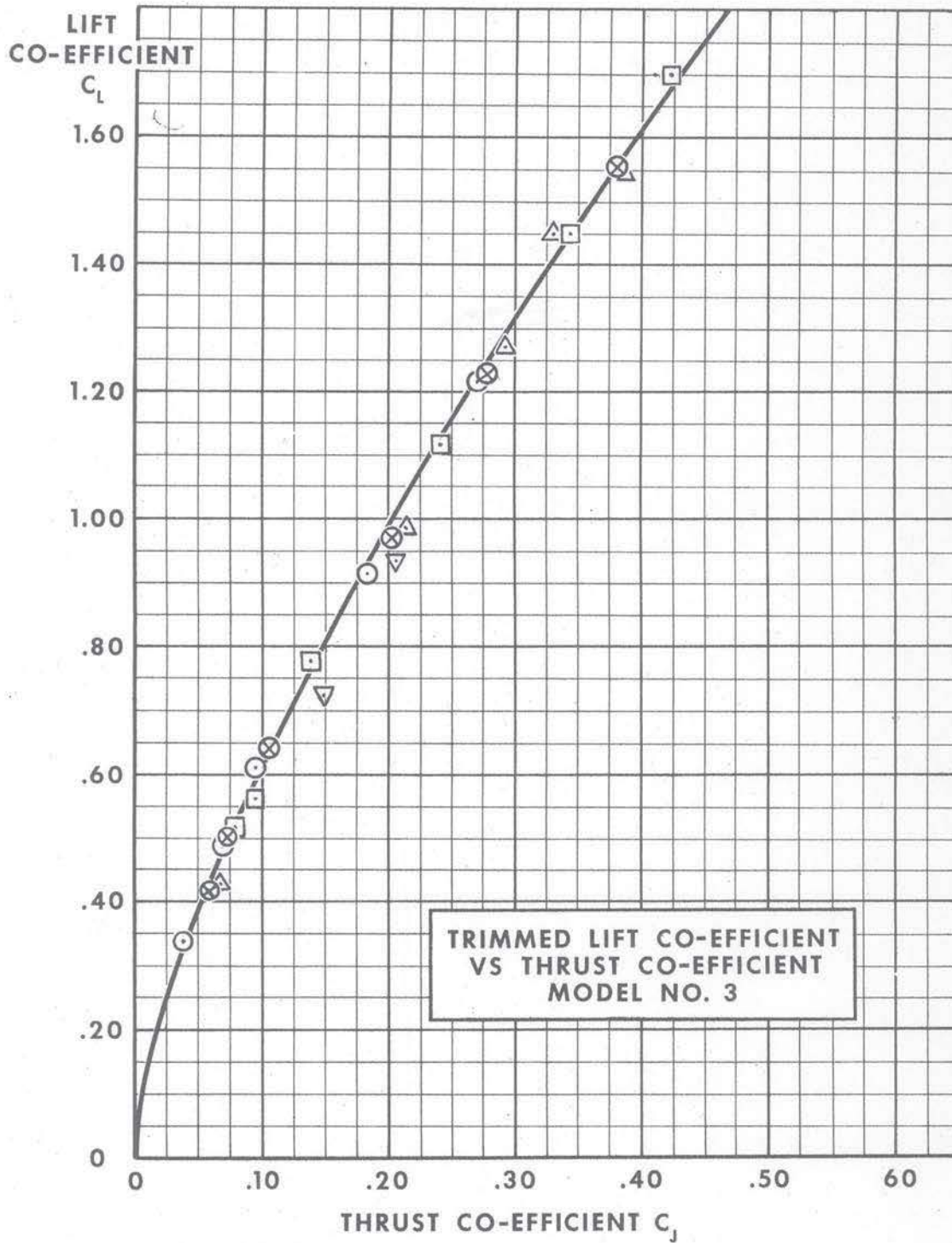
LIFT AND THRUST CHARACTERISTICS OF DUCTED FAN AIRCRAFT AT SEA LEVEL

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CONTROL EFFECTIVENESS

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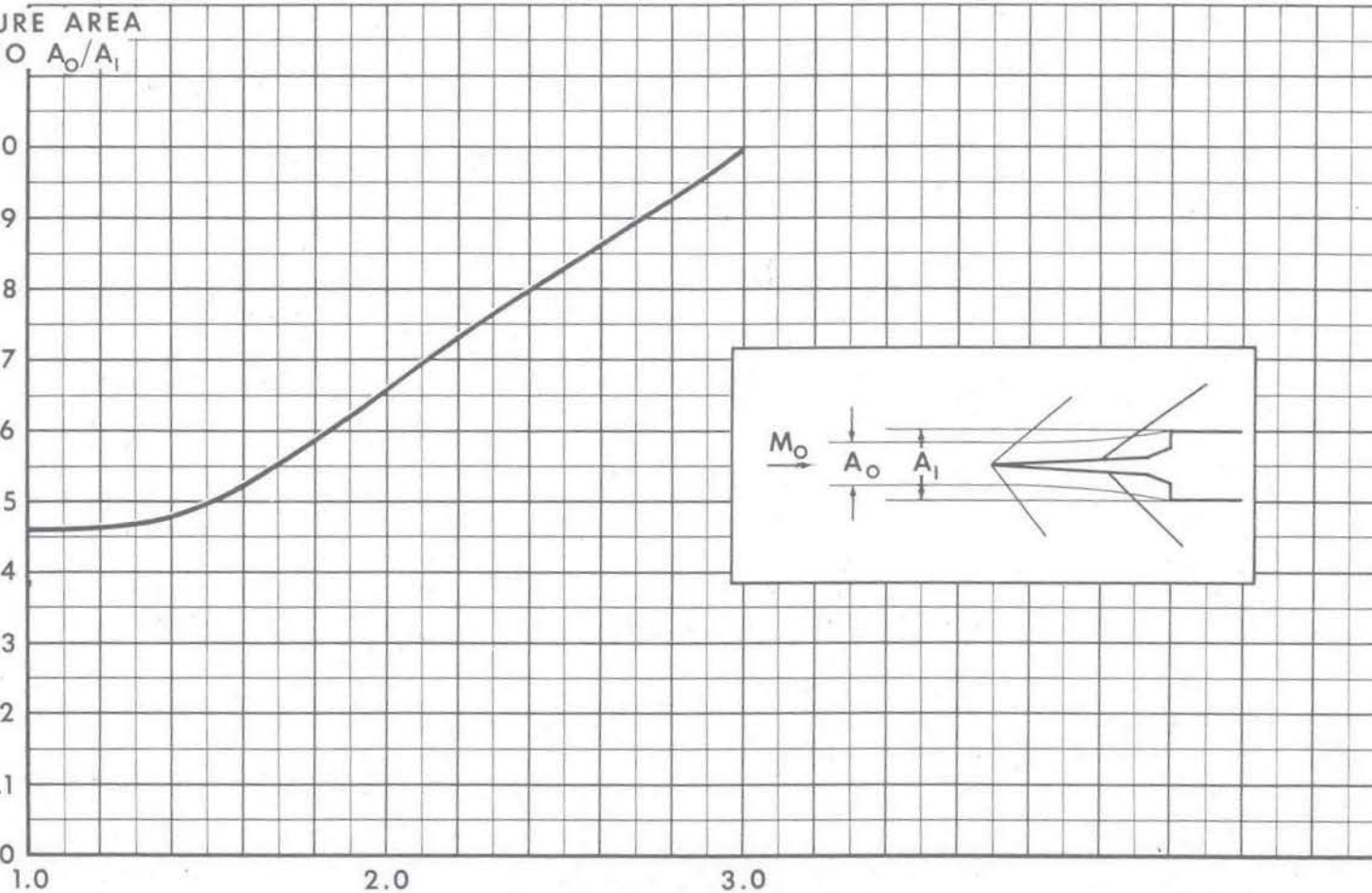
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CAPTURE AREA
RATIO A_0/A_1

1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0



FLIGHT MACH NO.

1002-1794-1

**DUCTED FAN RAMJET AIRCRAFT
CAPTURE AREA RATIO VS M.**

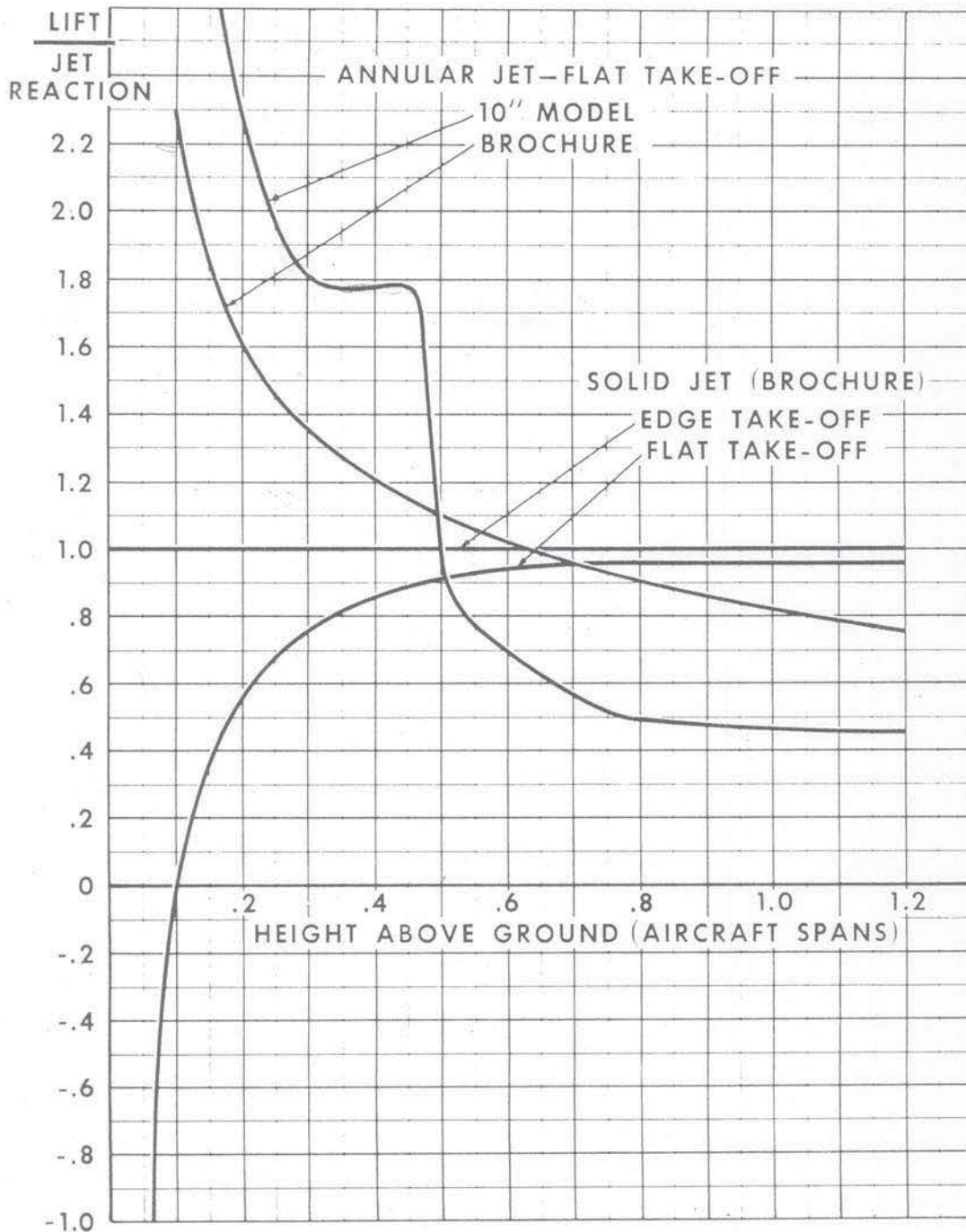
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COMPARISON OF GROUND EFFECT CURVES

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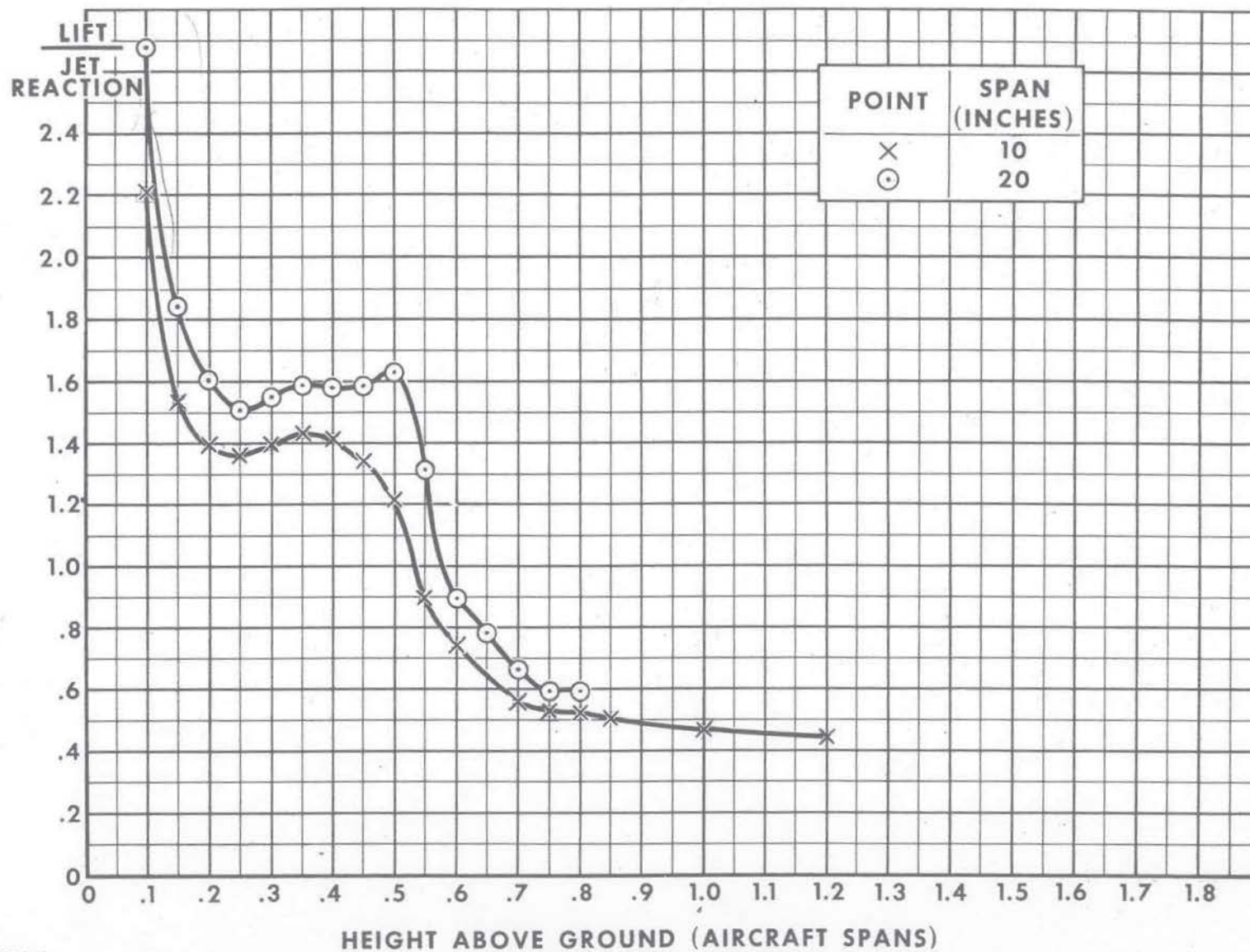
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EFFECT OF SCALE

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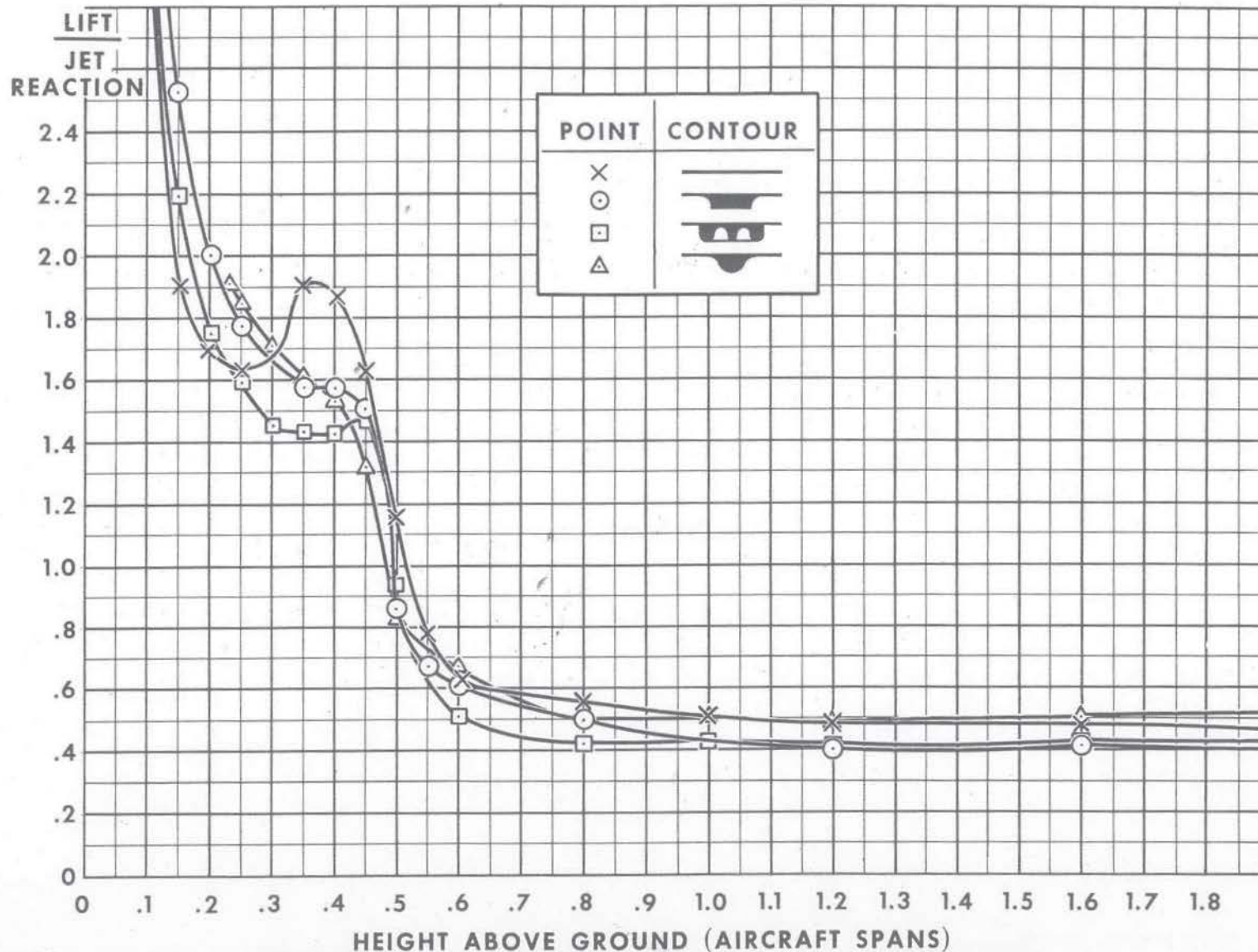
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EFFECT OF LOWER SURFACE CONTOUR

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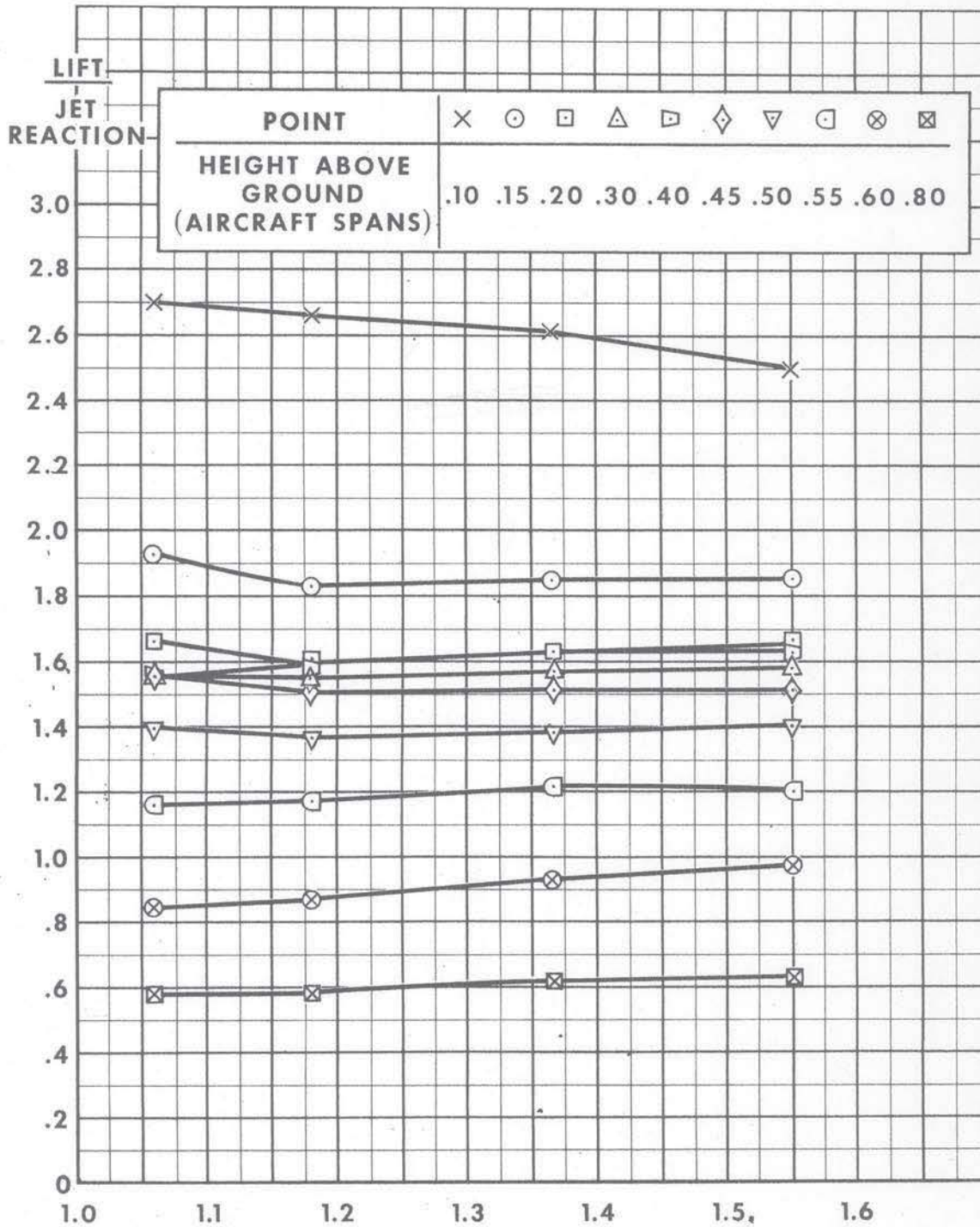
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EFFECT OF NOZZLE PRESSURE RATIO

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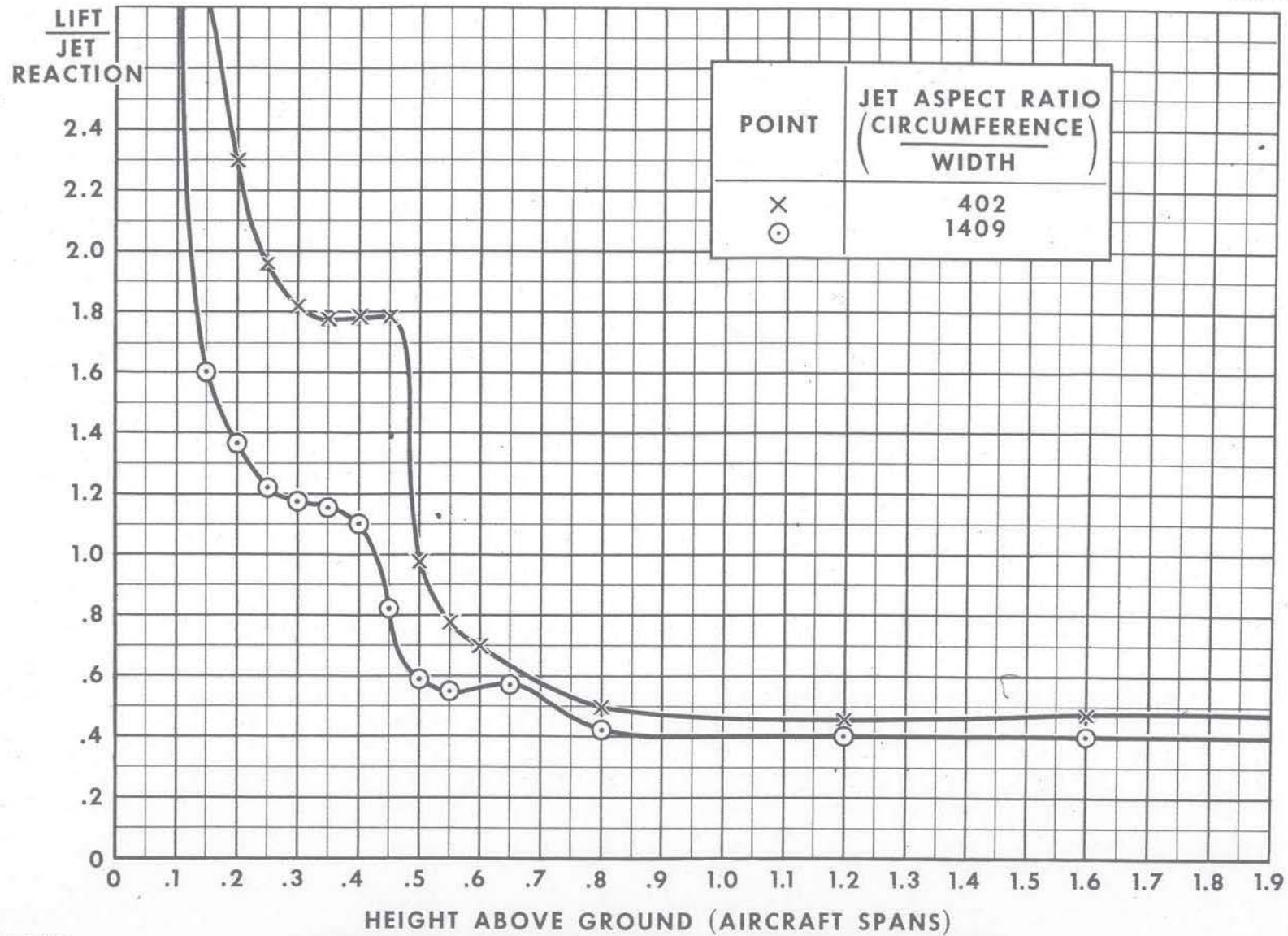
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EFFECT OF NOZZLE ASPECT RATIO

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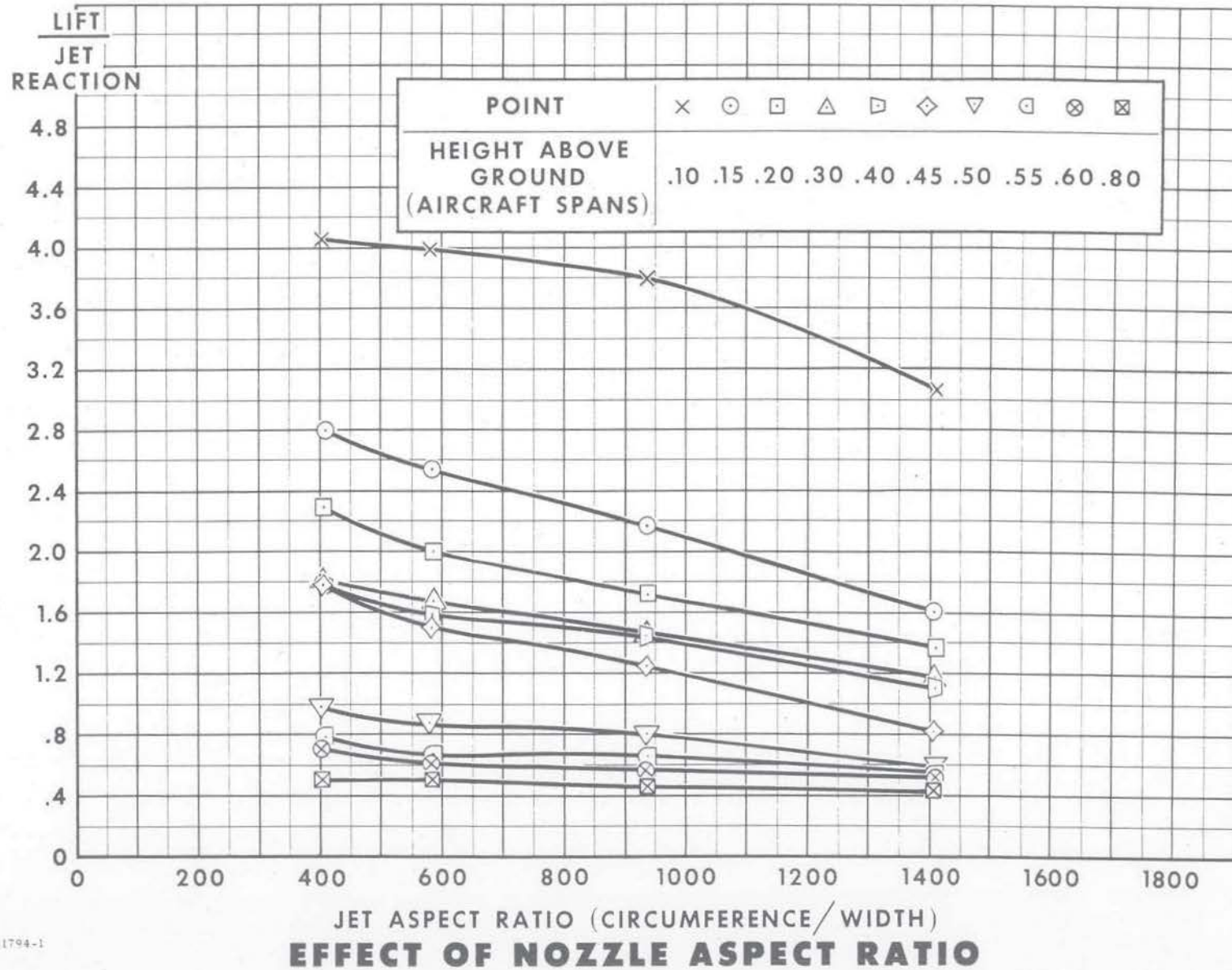
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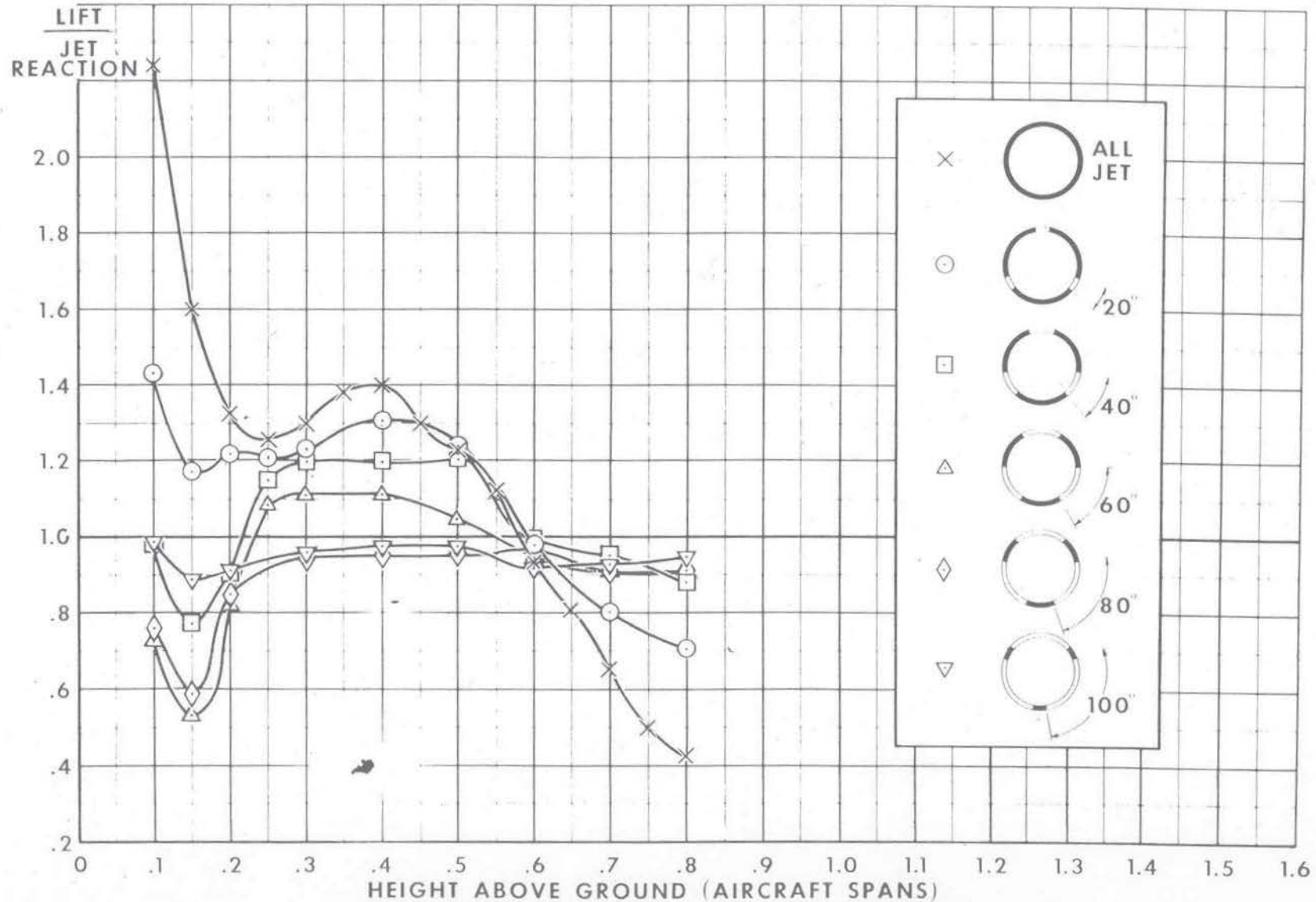
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