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# SECRET

# A D

# 159109

## Armed Services Technical Information Agency

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NA-56-27

SECRET

4D 159109

PROPOSAL



MAY 23 1958

U.S.M.C.

*Standard Aircraft Characteristics*

**SYSTEM NO. 118P**

**HIGH-ALTITUDE RECONNAISSANCE**

**North American**

FOUR GE X275A  
135% SIZE

GENERAL ELECTRIC

25 MAY 1955

SECRET

SYSTEM NO. 118P

5841

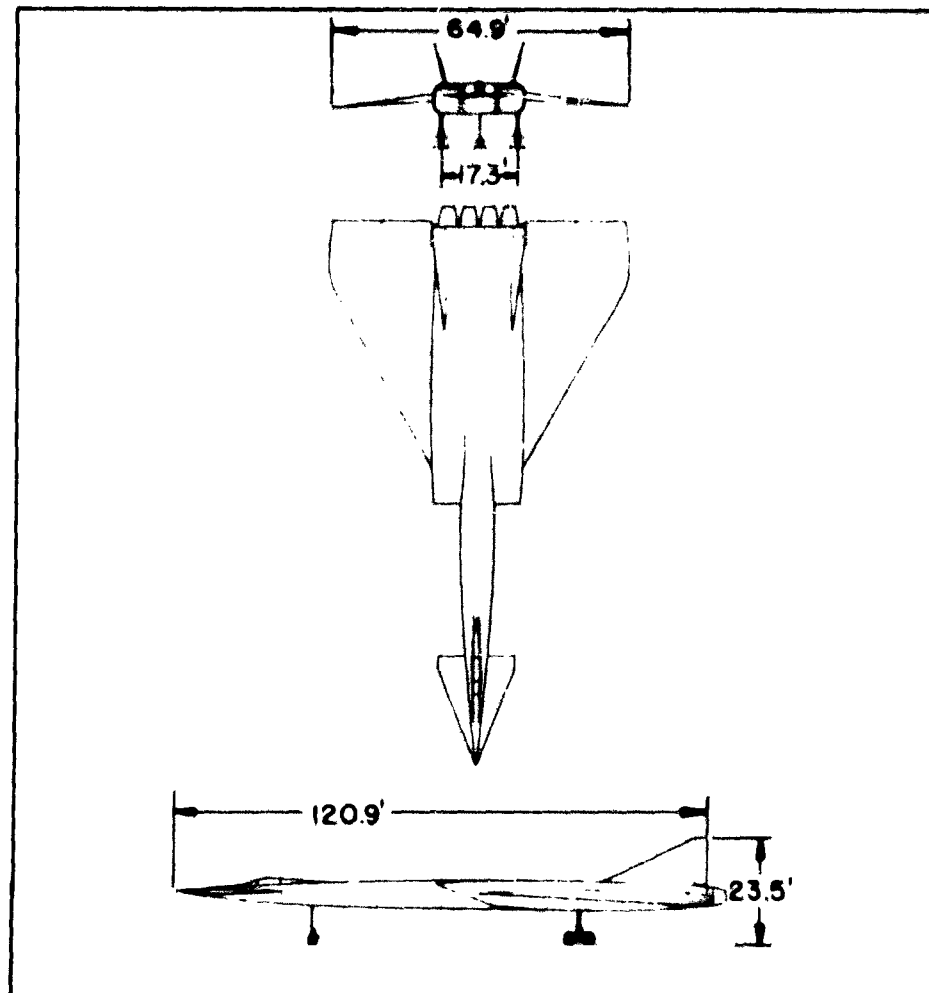
5372

6000Z-6561-2



PROPOSAL

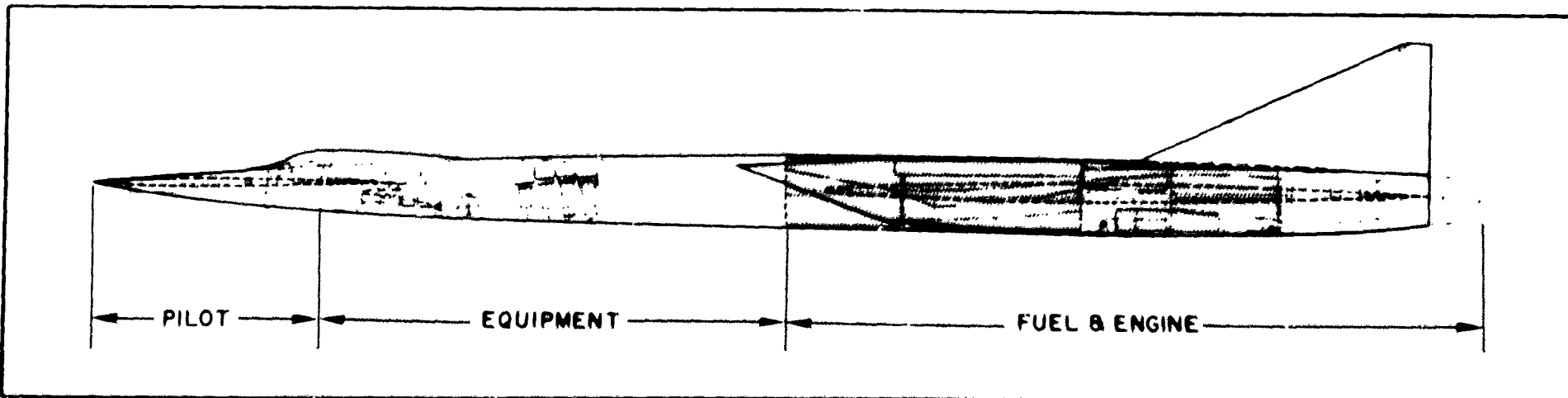
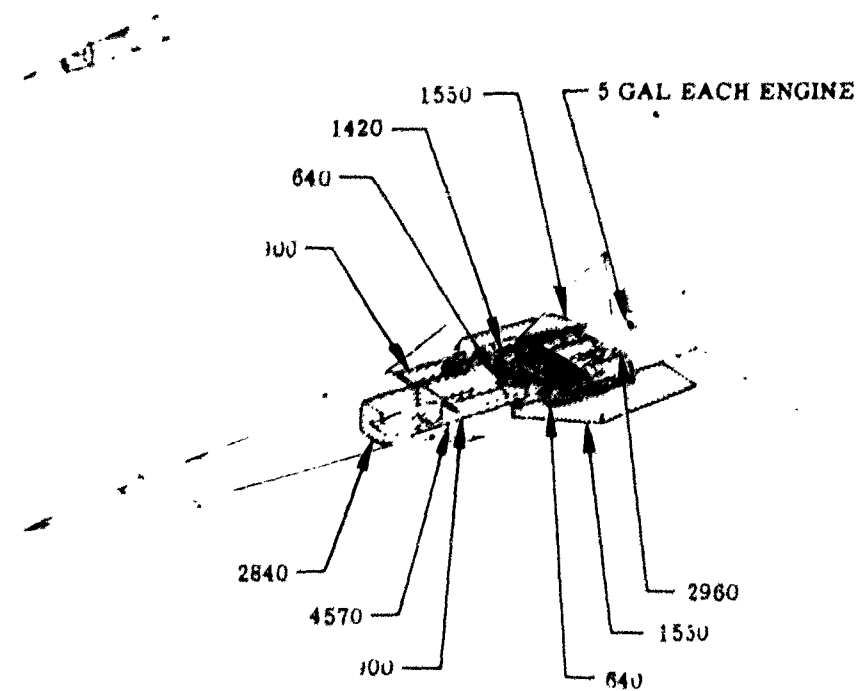
SECRET



Wing Area . . . . . 2757 sq ft  
Aspect Ratio . . . . . 1.53

Wing Section . NACA 66003 (Mod)  
M. A. C. . . . . 583.03 in

PRESSURIZED AREA



567DZ-6561

SYSTEM NO 118P

SECRET

25 MAY 1956

SECRET

PROPOSAL

**POWER PLANT**

No. & Model: ( ) A. 1A 15% Slew  
 Mfr: General Electric  
 Engine Type: No. 10, Reactor 10  
 Thrust: 10,000 lb  
 L. 10.8"  
 D. 18.8"  
 Weight: 180 lb  
 T. 10.8"  
 A. 10.8"  
 A. 10.8"

**ENGINE RATINGS**

S.L. Static: 10 - 1000 RPM  
 Max reheat: 10,000 - 1000  
 Partial reheat: 10,000 - 1000  
 M1: 10,000 - 1000  
 N1: 10,000 - 1000  
 With afterburner operating  
 Maximum non-reheat

**DIMENSIONS**

Wing span: 10.9'  
 Incidence (root): 0°  
 (tip): 0°  
 Dihedral: 0°  
 Sweepback (24° chord): 12.4°  
 Length: 20.9'  
 Height: 12.4'  
 Tread: 12.4'

**Mission and Description**

Navy Designation: None Mfr's Model: None

The primary mission of this aircraft is the high altitude reconnaissance of hostile ground installations.

Special features of this airplane are a mechanically controlled convergent-divergent nozzle, interchangeable reconnaissance equipment packages, a canard configuration, and airframe construction of steel and titanium.

The crew of one consists of the pilot.

The pilot is provided with automatic flight control and navigation systems.

**Development**

Design initiated: Oct 55

**WEIGHTS**

| Loading    | Lb         | L.F. |
|------------|------------|------|
| Empty      | 22,000 (E) |      |
| Basic      | 22,000 (E) |      |
| Design     | 207,000    | 1.6  |
| Combat     | 22,733     | 1.6  |
| Max T.O.   | 207,000    | 1.6  |
| Max in Flt | 207,000    | 1.6  |
| Max Land   | 207,000    | 1.6  |

(E) Estimate:  
 \* For Design Mission  
 + Limited by Mission  
 ++ By Refueling

**FUEL**

| Location | No. Tanks | Gal    |
|----------|-----------|--------|
| Fuselage | 8         | 14,870 |
| Wing     | 2         | 1,100  |
| Total    |           | 15,970 |

Grade: Land based  
 Supersonic fuel  
 Specification: Unclassified

**OIL**

Fuselage: 20  
 Specification: Unclassified

**BOMBS****GUNS****ROCKETS**

NOT APPLICABLE

**PACKAGES**

| No. | Type                           |
|-----|--------------------------------|
| 1   | Search Photo System            |
| 1   | Detail Photo System            |
| 1   | Mapping Radar . . . . . APQ-56 |
| 1   | Ferret System                  |
| 1   | Azimuth Radar                  |

**ELECTRONICS**

|                         |               |
|-------------------------|---------------|
| UHF Command             | ARC-52        |
| UHF D/F                 | ARA-37 (XM-1) |
| Recorder                | ANR-5         |
| A/O IFF (XP)            | APX-19        |
| A/A IFF (XP)            | APX-27        |
| Crash Locator Beacon    | ART-27        |
| Autonavicator           | N5C           |
| Standby Platform        |               |
| Auto Flt Control System |               |

25 MAY 1956

SECRET

SYSTEM NO. 118P

56727-6561

# Loading and Performance—Typical Mission

| C O N D I T I O N S                     |         |   | DESIGN<br>MISSION<br>I | DESIGN FERRY<br>MISSION<br>II |
|-----------------------------------------|---------|---|------------------------|-------------------------------|
| <b>TAKE-OFF WEIGHT</b>                  |         |   | 207,800                | 207,800                       |
| Fuel at 6.7 lb/gal (grade unclassified) | (lb)    |   | 120,399                | 120,399                       |
| Payload (ammunition)                    | (lb)    |   | none                   | none                          |
| Payload (bombs)                         | (lb)    |   | none                   | none                          |
| Wing loading                            | (psf)   |   | 75.4                   | 75.4                          |
| Stall speed (power off)                 | (kn)    | ⑤ | 178.5                  | 178.5                         |
| Take-off ground run at SL               | (ft)    | ⑤ | 3400                   | 3400                          |
| Take-off to clear 50 ft                 | (ft)    | ⑤ | 5150                   | 5150                          |
| Rate of climb at SL                     | (fpm)   | ⑤ | 6850                   | 6850                          |
| Time: SL to 20,000 ft                   | (min)   | ⑤ | 3.4                    | 3.4                           |
| Time: SL to 30,000 ft                   | (min)   | ⑤ | 5.7                    | 5.7                           |
| Service ceiling (100 fpm)               | (ft)    | ⑤ | 40,000                 | 40,000                        |
| <b>COMBAT RANGE</b>                     |         |   | 3032                   | 3032                          |
| <b>COMBAT RADIUS</b>                    |         |   |                        |                               |
| Average speed                           | (kn)    | ⑤ | 1835                   | 1835                          |
| Initial cruising altitude               | (ft)    |   | 75,000                 | 75,000                        |
| Total mission time                      | (hr)    |   | 2.07                   | 2.07                          |
| <b>MISSION WEIGHT</b>                   |         |   | 133,733                | 99,441                        |
| Mission altitude                        | (ft)    | ⑤ | 75,000                 | 79,000                        |
| Mission speed                           | (kn)    | ⑤ | 1835                   | 1835                          |
| Mission climb                           | (fpm)   | ⑤ | 15,000                 | 18,000                        |
| Mission ceiling (500 fpm)               | (ft)    | ⑤ | 83,000                 | 88,150                        |
| Service ceiling (100 fpm)               | (ft)    | ⑤ | 47,900                 | 52,500                        |
| Max rate of climb at SL                 | (fpm)   | ⑤ | 19,700                 | 21,800                        |
| Basic speed at 35,000 ft                | (kn)    | ⑤ | 1200                   | 1200                          |
| Max speed at optimum altitude           | (kn/ft) |   | 1835/83,500            | 1835/83,500                   |
| <b>LANDING WEIGHT</b>                   |         |   | 99,441                 | 99,441                        |
| Ground roll at SL                       | (ft)    |   | 4630                   | 4630                          |
| Total from 50 ft                        | (ft)    |   | 6690                   | 6690                          |

NOTES

- ① Maximum power
- ② Military (maximum) power
- ③ 1000 fpm climb rate during
- ④ 1000 fpm climb rate during
- ⑤ 1000 fpm climb rate during

- ⑥ Mission weight includes combat weight and is arbitrarily the weight at a point 1500 n.mi. from base.
- ⑦ See note "b" page 6

## PERFORMANCE NOTES

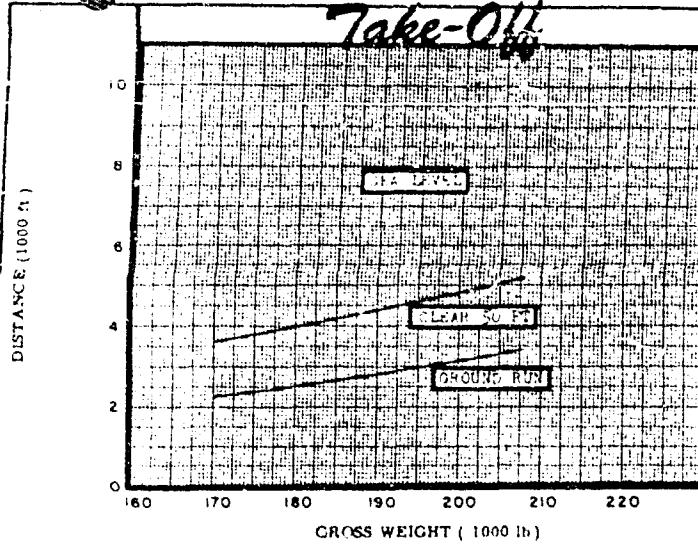
- (a) Data source: Estimate.
- (b) Performance is based on powers shown on page 4.
- (c) The climb data used in computing RANGE and RANGE are increased 10%.

561.DZ.6501

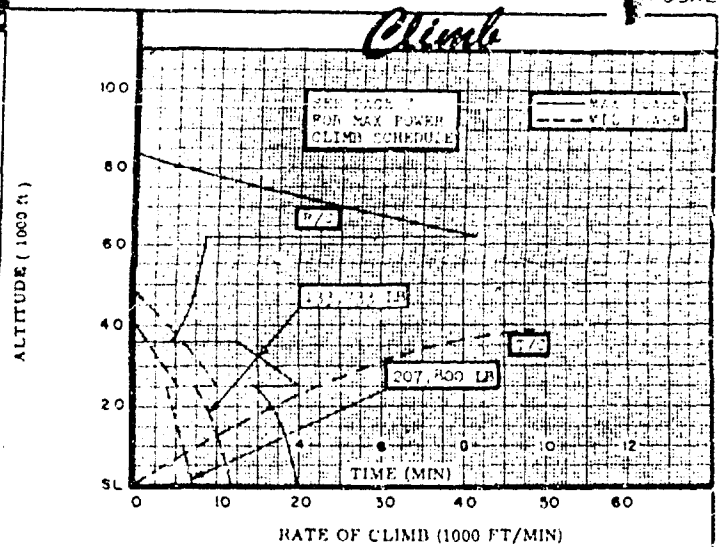
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DISPOSAL

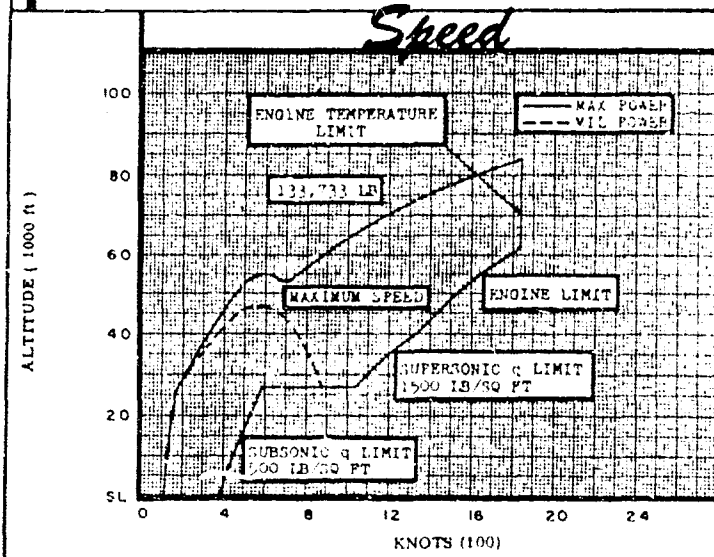
# Take-Off



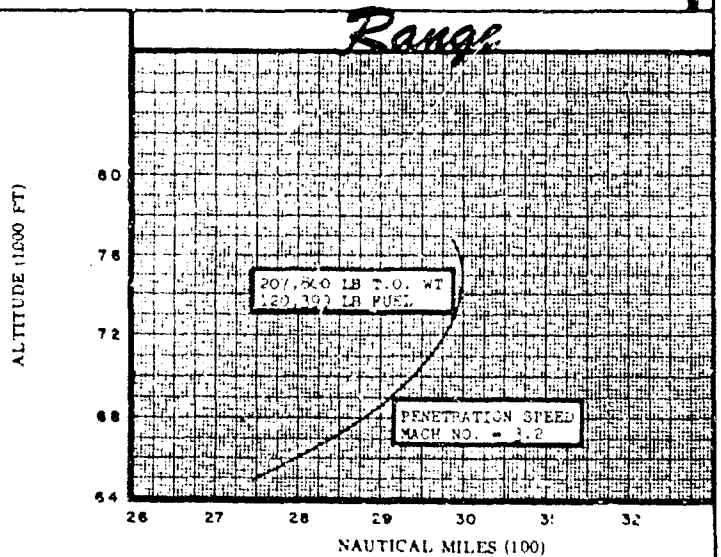
# Climb



# Speed



# Range



25 MAY 1956

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SYSTEM NO. 118P

# NOTES

## FORMULA: RANGE MISSION I

Take-off and accelerate to climb speed with maximum power, climb on course to the isothermal level with military(maximum non-reheat) power, accelerate and climb to cruise altitude with maximum power, cruise out at penetration speed, cruise to maximum penetration complete mission, cruise to base at penetration speed. Range free allowances include 5 minutes of normal power at sea level for starting engines and take-off and a reserve of 10% of initial fuel.

## FORMULA: RANGE MISSION II

Take-off and accelerate to best climb speed with maximum power, climb on course to the isothermal level with military(maximum non-reheat) power, accelerate and climb to best cruise altitude with maximum power, cruise out at long range speed. Range free allowances include 5 minutes of normal power at sea level for starting engines and take-off and a reserve of 10% of initial fuel.

## GENERAL DATA

(a) Engine ratings shown on page 3 are guaranteed values. Installed values used in performance calculations are as follows:

| (4) X275A 135% Size                                   |          |      |
|-------------------------------------------------------|----------|------|
| S.L. STATIC                                           | LB       | RPM  |
| Max:                                                  | *22,500  | 7283 |
| Mil:                                                  | **17,000 | 7283 |
| Nor:                                                  | 15,800   | 7195 |
| * With afterburner operating<br>** Maximum non-reheat |          |      |

(b) Stall speed limited by 13° tail down ground angle in presence of ground.

## PERFORMANCE BASIS:

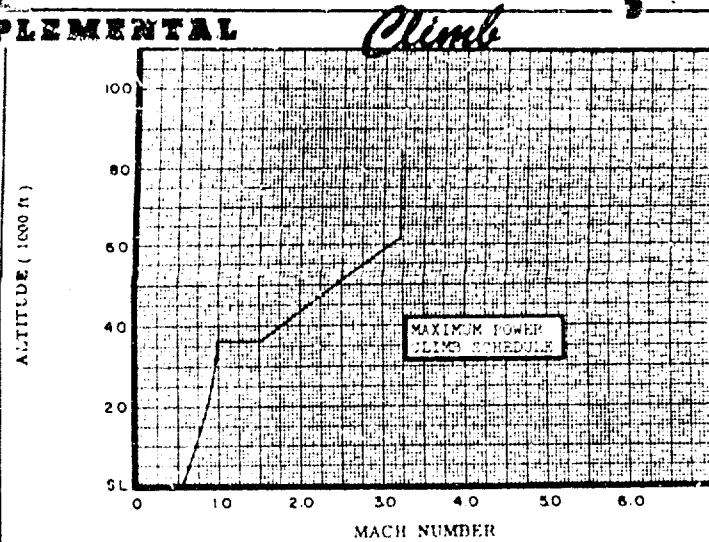
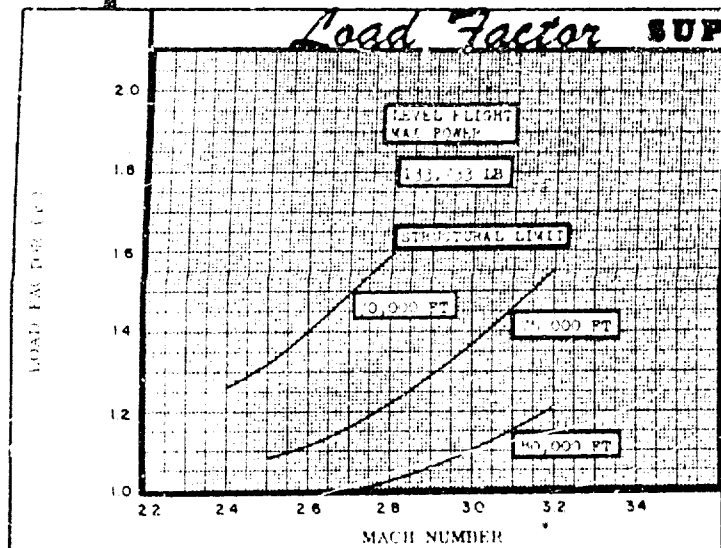
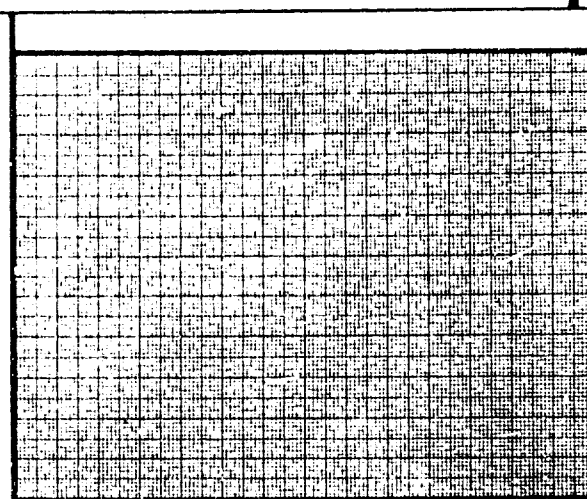
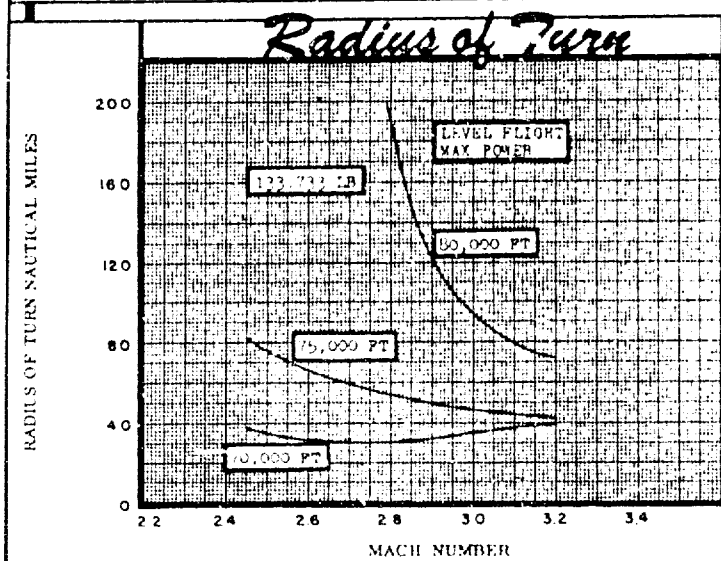
Performance data are based on North American Report No. NA-56-566, dated 31 May 1956, "Aerodynamic Characteristics System 118P - Phase II 1/2".

## REVISION BASIS:

Initial Issue.

*Load Factor*

## SUPPLEMENTAL

*Climb**Radius of Turn*

25 MAY 1956

SECRET

SYSTEM NO. 118P



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 88TH AIR BASE WING (AFMC)  
WRIGHT-PATTERSON AIR FORCE BASE OHIO

5 February 2008

88 CG/SCCMF  
3810 Communications Blvd  
Wright-Patterson AFB OH 45433-7802

Defense Technical Information Center  
Attn: Ms. Kelly Akers (DTIC-R)  
8725 John J. Kingman Rd, Suite 0944  
Ft Belvoir VA 22060-6218

Dear Ms. Akers

This concerns Technical Report AD159109, Standard Aircraft Characteristics, Phase 2 ½, Weapon System 118P. High-Altitude Reconnaissance, 25 May 1956.

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Point of contact is Lynn Kane at (937) 522-3091.

Sincerely

SHEREE COON  
Freedom of Information Act Manager  
Management Services Branch  
Base Information Management Division

Attachments

1. FOIA Request
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6. Contractor Response Email to USAF