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Subject:

Tech Report # AD159109

Title:

Standard Aircraft Characteristics, Phase 2-1/2 Weapon System 118P. High Altitude Reconnaissance

FOIA Control Number: 06-650 LK

Date Reproduced: 5 Feb 08

06-650LK
RSW

STANDARD AIRCRAFT CHARACTERISTICS, PHASE 2 1/2, WEAPON SYSTEM 118P, HIGH-ALTITUDE REONNAISSANCE

NORTH AMERICAN AVIATION INC LOS ANGELES CA

25 MAY 1956

AD NUMBER
AD159109
CLASSIFICATION CHANGES
TO unclassified
FROM confidential
AUTHORITY
30 May 1968 per DoDD 5200.9

UNCLASSIFIED

AD NUMBER
AD159109
CLASSIFICATION CHANGES
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AUTHORITY
30 May 1959 per DoDD 5200.9

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AD 159109

Armed Services Technical Information Agency

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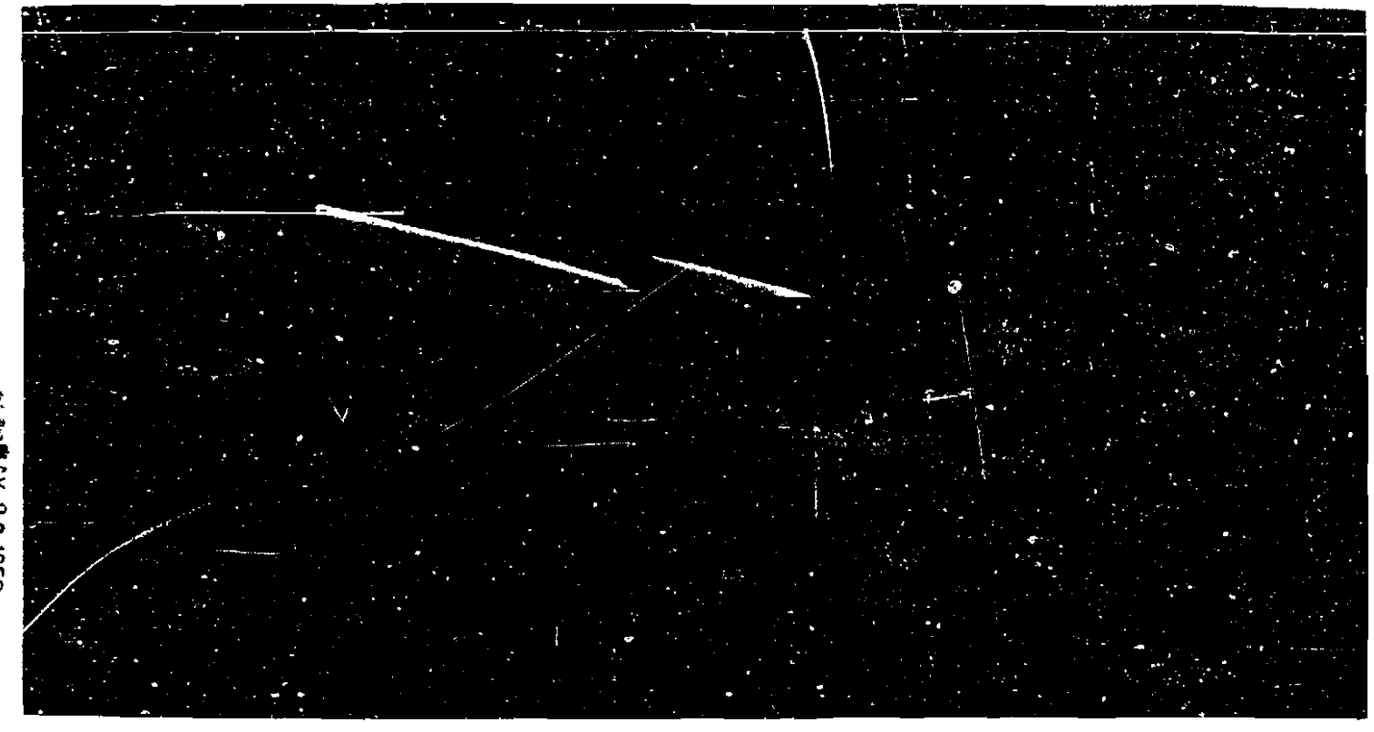


Standard Aircraft Characteristics

SYSTEM NO. 118P

HIGH-ALTITUDE RECONNAISSANCE

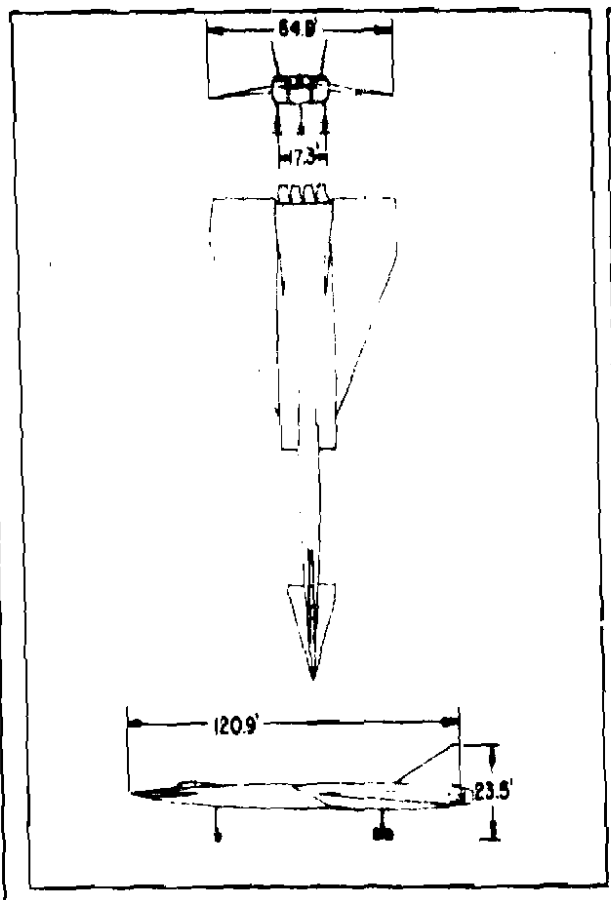
North American

FOUR GE X275A
135% SIZE

GENERAL ELECTRIC

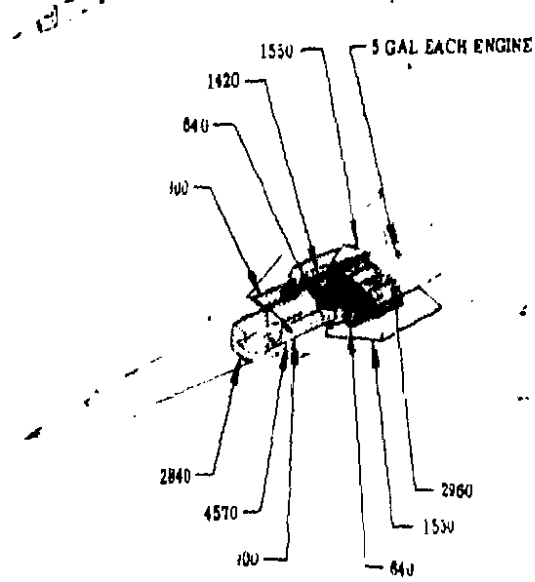
UNCLASSIFIED

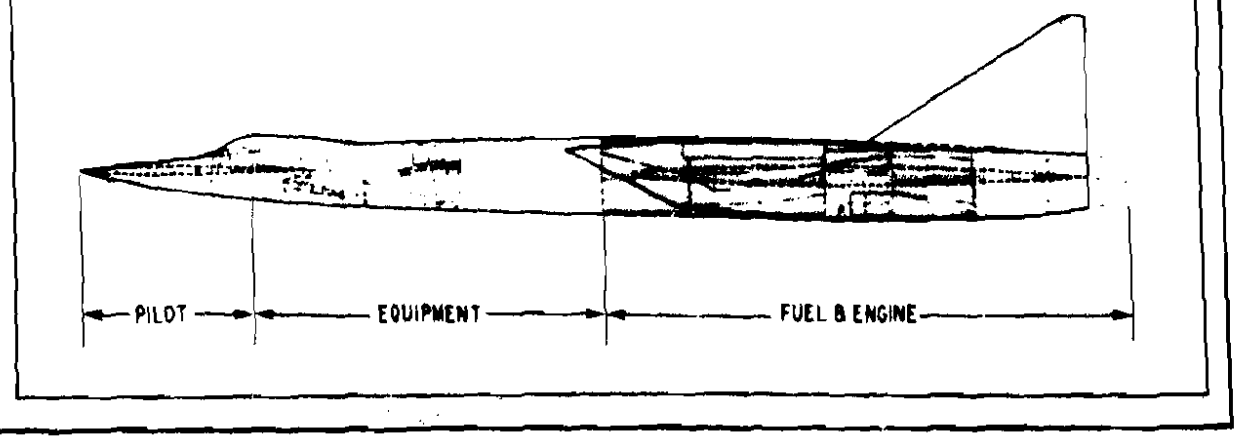
PROPOS[redacted]



Wing Area . . . . . 2757 sq ft
Aspect Ratio 1.53
Wing Section . NACA 66003 (12.5d)
M. A. C. . . . . 583.03 in

PRESSURIZED AREA





SYSTEM NO 118P

[redacted]

25 MAY 1956

56-CZ-6561

UNCLASSIFIED

[redacted]

PROPOSAL

POWER PLANT

No. & M[illegible] ( ) [illegible]
MC[illegible] . . . . . Gener[illegible]
Engine C[illegible] No[illegible] . . . .
[illegible] GT [illegible], R[illegible]GT [illegible]
T[illegible] . . . . . Act[illegible]
[illegible] . . . . . [illegible]
D[illegible] . . . . . [illegible]
Weight [illegible] . . . . . [illegible] lb
T[illegible] . . . . . [illegible]
A[illegible] . . . . . [illegible]

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

WEIGHTS

Loading	lb	L.F.
Empty	[illegible] (b)	
B[illegible]	[illegible] (b)	
Design	[illegible]	[illegible]
Combat	* [illegible]	[illegible]
Max Take . . .	+ [illegible]	[illegible]
Max in Flt .	++ [illegible]	[illegible]
Max [illegible]	[illegible]	[illegible]

(b) Estimate:
* Max Design Mi[illegible]
\+ Limited by M[illegible]
++ By Refueling

ENGINE RATINGS

	Lb	RPM
[illegible] Static	[illegible]	[illegible]
Max reheat:	*[illegible]	[illegible]
Partial reheat:	* [illegible]	[illegible]
Mil:	**[illegible]	[illegible]
Nor:	[illegible]	[illegible]

*With afterburner operating
** Maximum non-reheat

Development

Design initiated. . . . . Oct 55

FUEL

Location. .	No. Tanks	Gal
Fuselage . . .	8 . . .	14,870
Wing	2	[illegible]
	Total	[illegible]

Grade . . . . . Land based
. . . Supersonic fuel
Specification . . . Unclassified

OIL

Fuselage 20
Specification . . Unclassified

DIMENSIONS

Wing
Span . . . . . [illegible]'
Incidence (root) . . . . . *
(tip) . . . . . [illegible]*
Dihedral . . . . . [illegible]*
Sweepback (25% chord). . [illegible]*
Length . . . . . [illegible]'
Height . . . . . [illegible]
Tread . . . . . [illegible]

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 (XN-1)
Recorder	AWN-5
A/G IFF (XP)	APX-19
A/A IFF (XP)	APX-27
Crash Locator Beacon . .	ART-27
Autonavigator.	N5C
Standby Platform	
Auto Flt Control System. .	

[redacted]

PROPOS[redacted]

Loading and Performance—Typical Mission

CONDITIONS			DESIGN MISSION I	DESIGN FERRY MISSION II
TAKE-OFF WEIGHT		(lb)	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)	(5)	(kn)	178.5	178.5
Take-off ground run at SL	(1)	(ft)	3400	3400
Take-off to clear 50 ft	(1)	(ft)	5150	5150
Rate of climb at SL	(2)	(fpm)	6850	6850
Time: SL to 20,000 ft	(2) (3)	(min)	3.4	3.4
Time: SL to 30,000 ft	(2) (4)	(min)	5.7	5.7
Service ceiling (100 fpm)	(2)	(ft)	40,000	40,000
COMBAT RANGE	(·)	(n mi)	3032	3032
COMBAT RADIUS	(·)	(n mi)	——	——
Average speed		(kn)	1835	1835
Initial cruising altitude		(ft)	75,000	75,000
Total mission time		(hr)	2.07	2.07
MISSION WEIGHT	(1)	(lb)	133,733	99,441
Mission altitude	(1)	(ft)	75,000	79,000
Mission speed	(1)	(kn)	1835	1835
Mission climb	(1)	(fpm)	15,000	18,000
Mission ceiling (500 fpm)	(1)	(ft)	63,000	68,150
Service ceiling (100 fpm)	(1)	(ft)	47,900	52,500
Max rate of climb at SL	(1)	(fpm)	19,700	21,800
Basic speed at 35,000 ft	(1)	(kn)	1200	1290
Max speed at optimum altitude		(kn/ft)	1835/83,500	1835/83,500
LANDING WEIGHT		(lb)	99,441	99,441
Ground roll at SL		(ft)	4630	4630
Total from 50 ft		(ft)	6690	6690

NOTES

(1) [illegible]

(2) [illegible]

(3) [illegible]

(4) [illegible] of RANGE [illegible] page 6

(5) Mission weight [illegible] empty weight and is arbitrarily the weight at a point 1500 n.mi. from base.

(6) See note "h" page 6

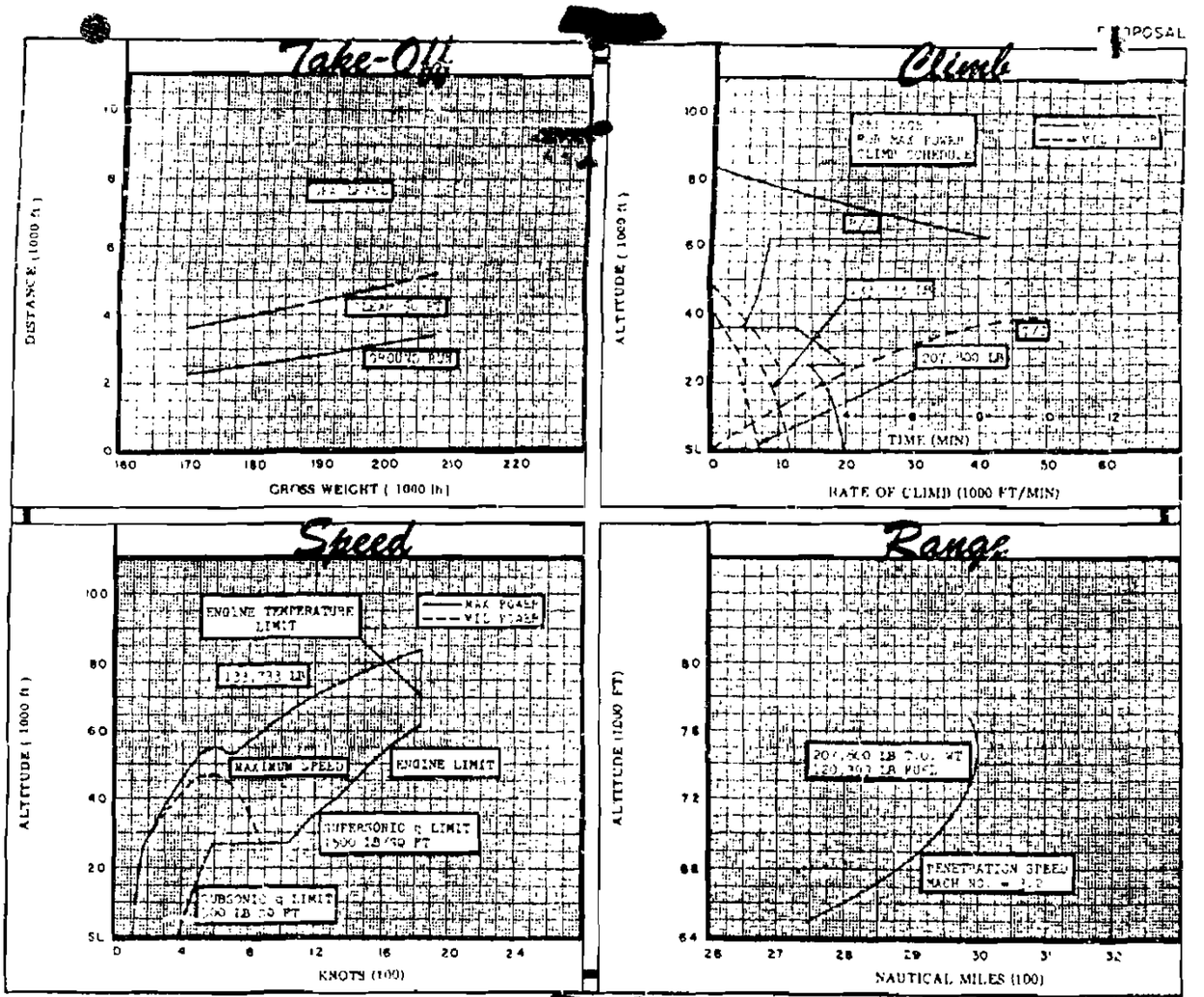
PERFORMANCE MODE:

(·) Data [illegible]: Estimated.

(·) Performance [illegible] on powers shown on page [illegible].

(·) [illegible] used in computing [illegible] and RANGE are [illegible].

1959-7-3.195



25 MAY 1956

SYSTEM NO. 118P

N O T E S

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
** Maximum non-reheat

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

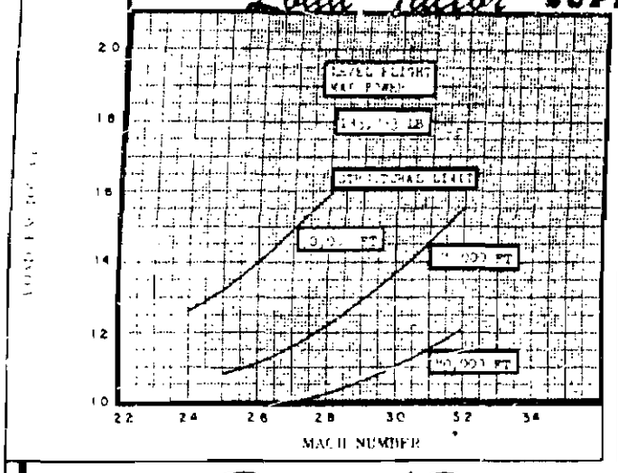
PERFORMANCE BASIS:

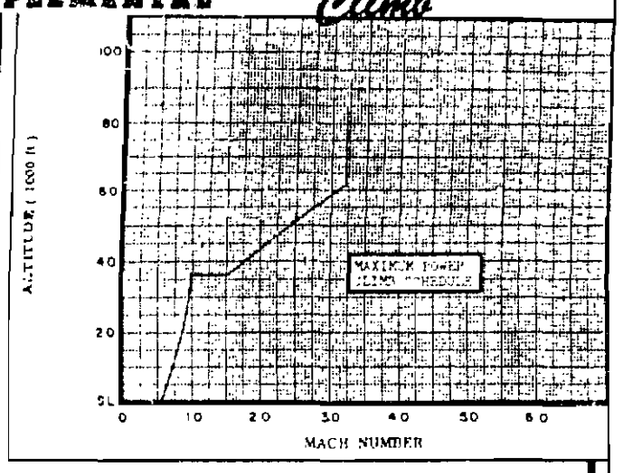
Performance data are based on North American Report No. NA-56-466, dated 31 May 1956. "Aerodynamic Characteristics System 118P - Phase II 1/2".

REVISION BASIS:

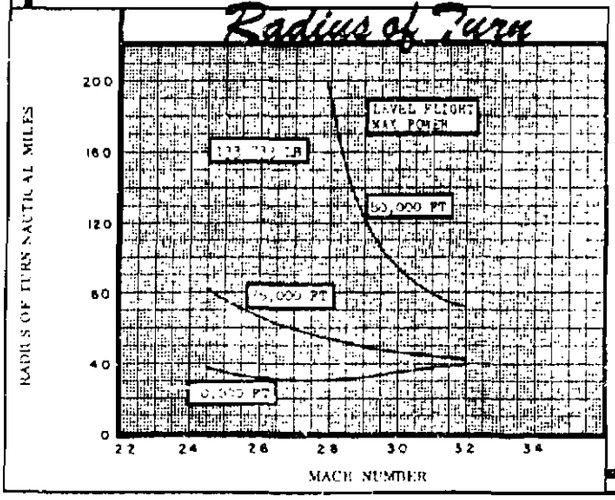
Initial issue.

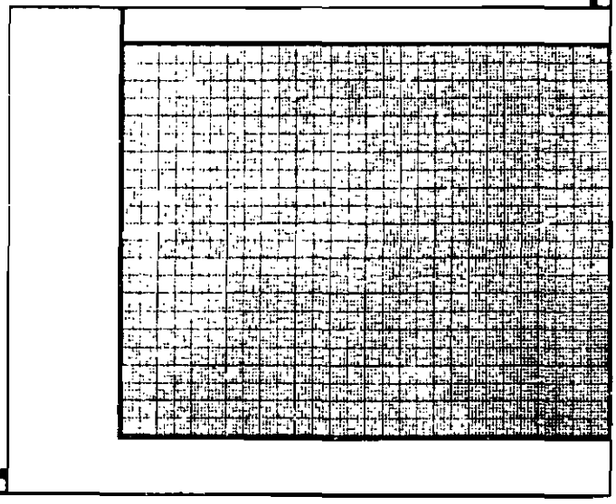
Load Factor SUPPLEMENTAL Climb





Radius of Turn





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SYSTEM NO. 118P

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