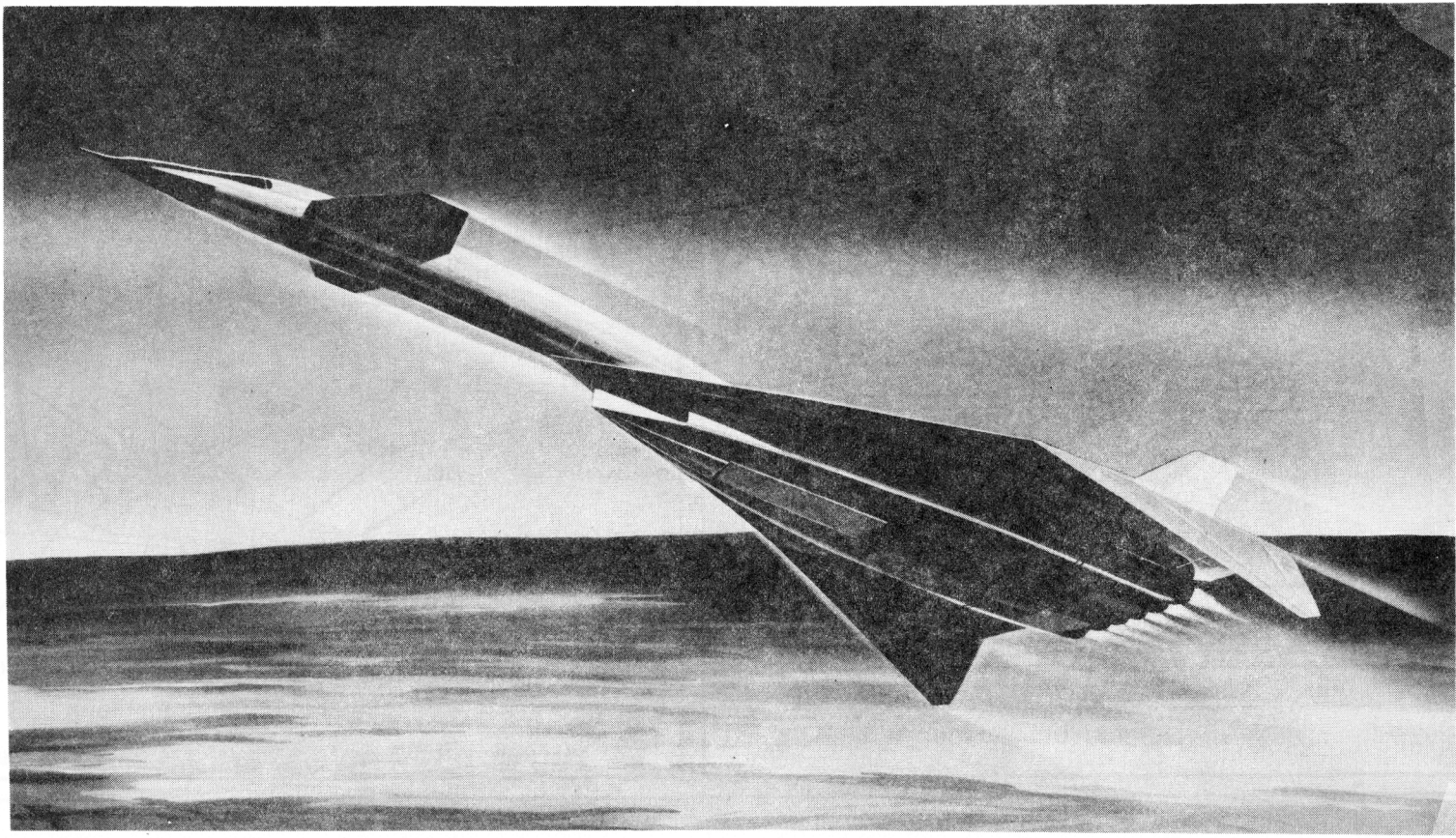


Classification cancelled
or changed to:

Unclassified
Date: *1980/10/25* By: *SAAC Charts*
By: *William M. White, GS-9, 3/19/77*
Signature and Grade

Unclassified
~~CONFIDENTIAL~~

A1
(X)B-70A/char
EXPERIMENTAL



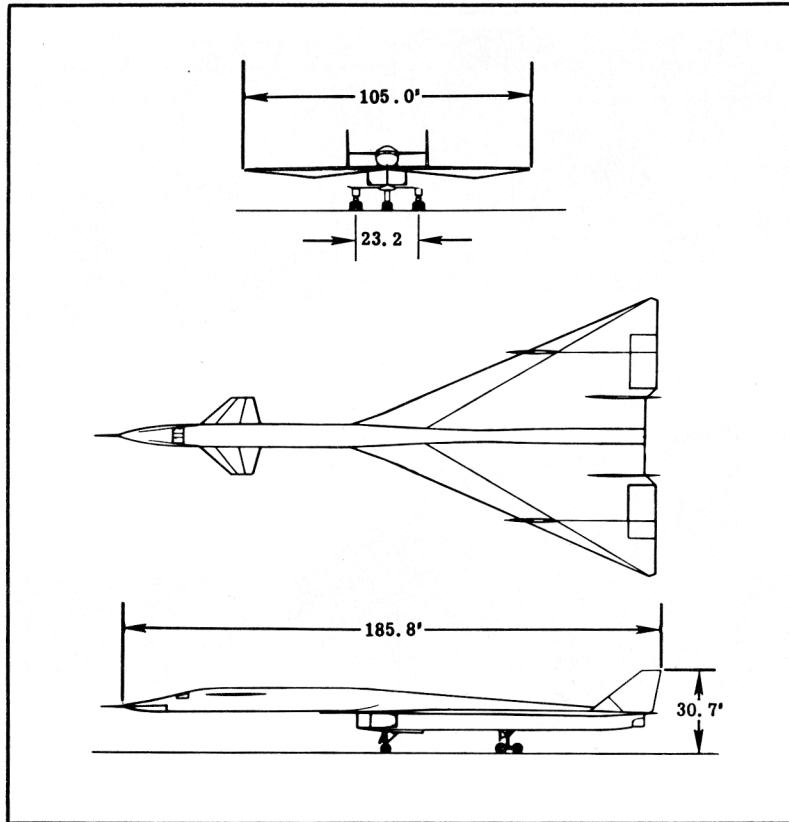
DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS
DOD DIR 5200.10

Standard Aircraft Characteristics

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

XB-70A
VALKYRIE
North American

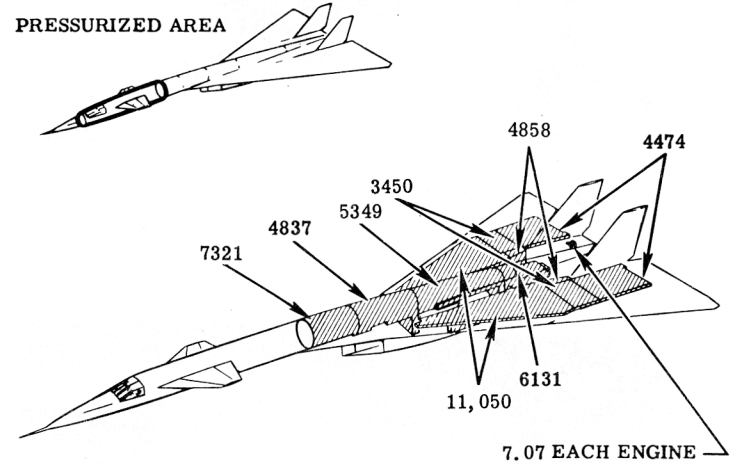
SIX YJ93-GE-3
GENERAL ELECTRIC



WING AREA..... 6297 SQ FT
 ASPECT RATIO..... 1.75
 M. A. C. 942.4 IN.

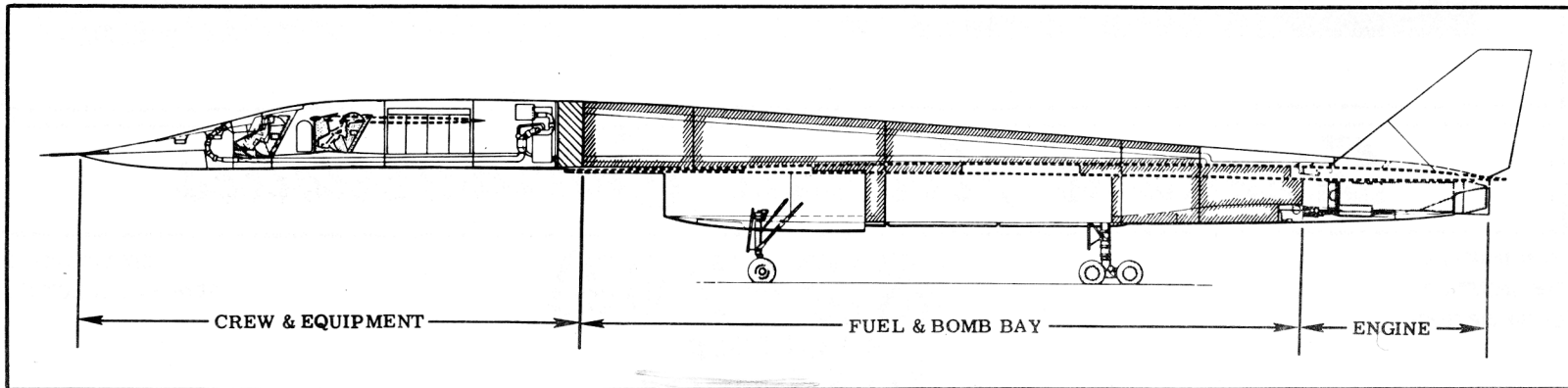
WING SECTION
 SEE NOTE "b" PAGE 6

PRESSURIZED AREA



Fuel (Gal)

Oil (Gal)



POWER PLANT

Nr and Model (6)YJ93-GE-3
 Mfr General Electric
 Engine Spec Nr *E757F
 Type Axial Turbo Jet
 Length 236,3"
 Diameter 54,15"
 Weight (dry) 5220 Lb
 Tail Pipe Mech, Variable C/D
 Augmentation Afterburner

* Dated 5-25-61
 Amendment Nr 1 dated
 1-15-63

Mission and Description

Navy Equivalent: None

Mfr's Model: NA-278

The primary purpose of this Air Vehicle is to demonstrate airworthiness in a sustained Mach 3 high altitude environment.

Special features include selective placement of wing, body and inlet duct for obtaining high lift-to-drag ratios, a canard configuration, variable area inlet with mechanically controlled convergent-divergent nozzle, and airframe construction of steel and titanium.

The crew consists of a pilot and co-pilot.

WEIGHTS

Loading	Lb	L. F.
Empty	230,876(A)	
Basic	243,541(A)	
Design	534,792	2.0
Combat	*346,400	2.0
Max T. O.	542,029	
Max landing	+296,292	

(A) Actual
 * For standard mission
 + Limited by structure

ENGINE RATINGS

SLS	LB	-	RPM	-	MIN
Max	28,000	-	6825	-	Cont
Mil	19,900	-	6825	-	Cont
Nor	17,700	-	6825	-	Cont

FUEL

Location	Nr Tanks	Gal
Fuselage	5	28,496
Wing and duct	6	18,974
	Total	47,470
Grade		JP-6
Specification		MIL-F-25656A

Development

Design initiated	Nov 55
Date of contract	Dec 57
Mock-up	Mar 59
First flight	Jul 65

OIL

Fuselage	6	42.4
Specification		MIL-L-9236B

DIMENSIONS

Wing
 Span 105,0'
 Incidence (root) 0°
 (tip) -2,6°
 Dihedral 5,0°
 Sweepback (25% chord) 58,8°
 Length 185,8'
 Height 30,7'
 Tread 23,2'

BOMBS

Nr	Special Weapons*	Weight
1	Class A	25,000
2	Class B	20,000

*Space provisions only

ELECTRONICS

Glide path-localizer marker beacon receivers, AN/ARN-58
 IFF transponder, AN/APX-46
 UHF command radio set, AN/ARC-50
 Intercommunications set, AN/AIC-18
 Tactical aid to navigation (TACAN), AN/ARN-65
 Flight control system
 Bomb nav subsystem, AN/ASQ-28

Loading and Performance - Typical Mission

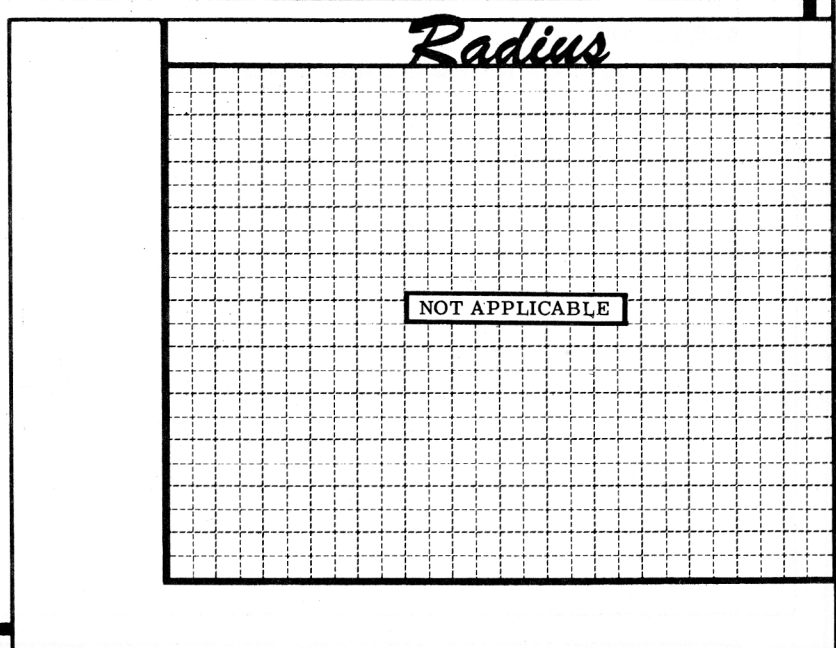
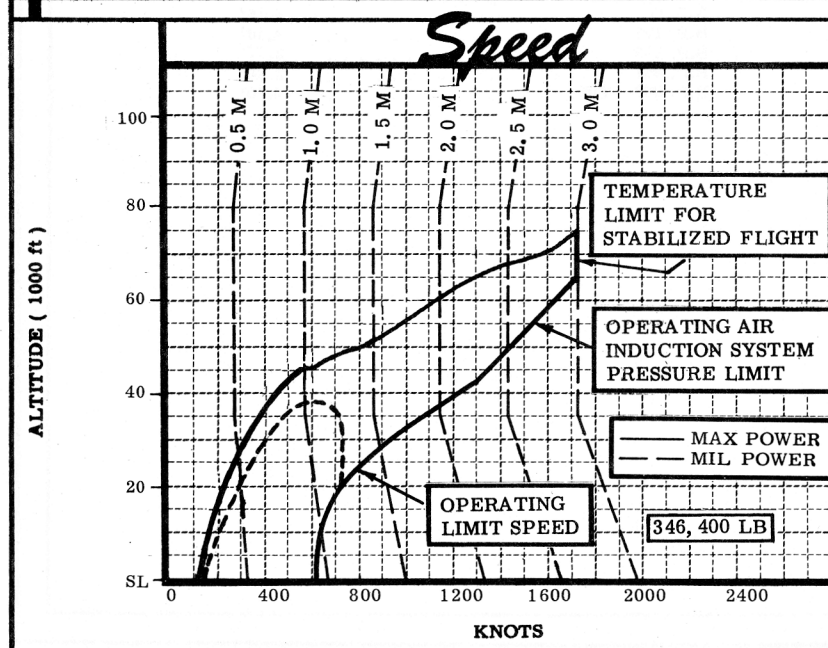
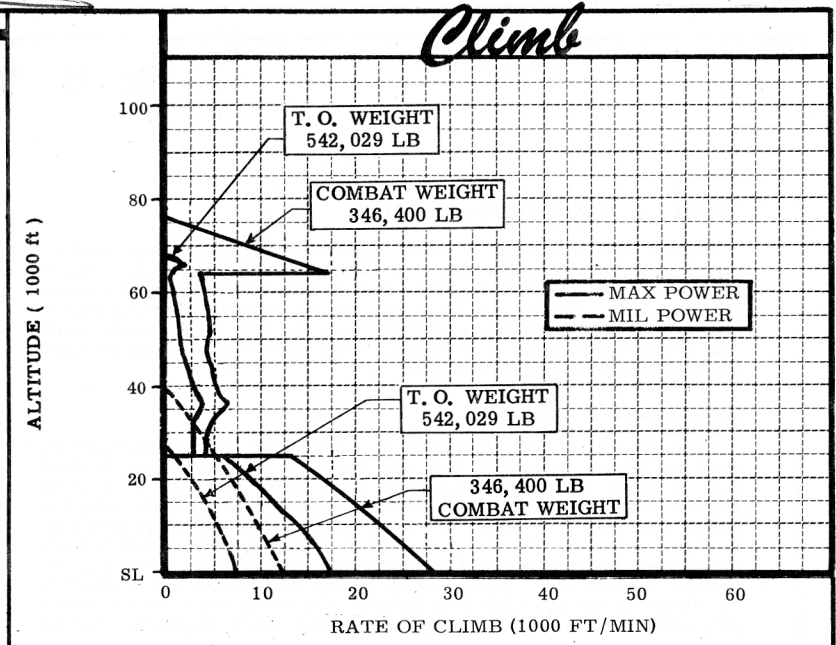
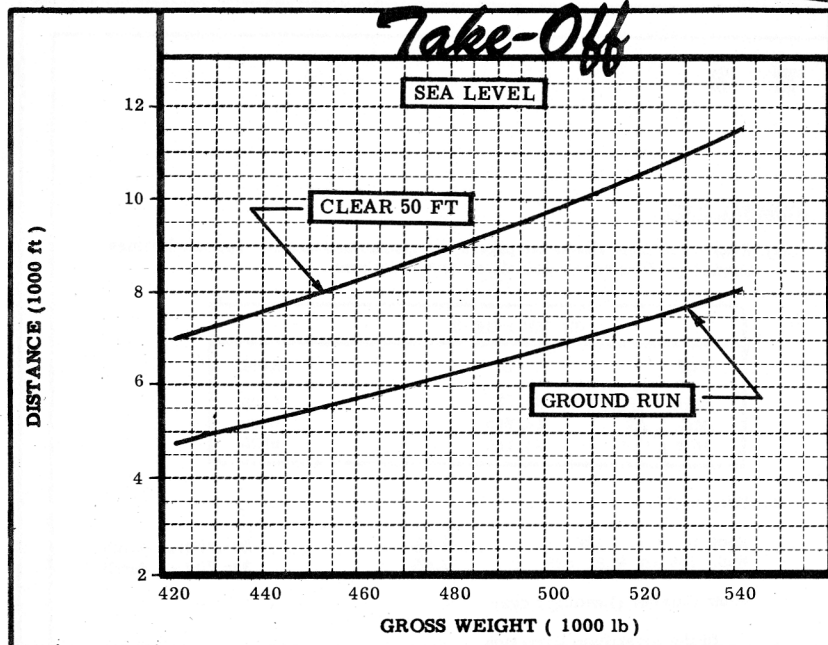
C O N D I T I O N S	BASIC MISSION I	DESIGN MISSION II	FERRY MISSION III
TAKEOFF WEIGHT (lb)	542,029	542,029	542,029
Fuel at 6.55 lb/gal (grade JP-6) (lb)	291,074	291,074	291,074
Payload (lb)	*	*	none
Wing loading (psf)	86.1	86.1	86.1
Minimum usable flying speed (kn)	163.4	163.4	163.4
Takeoff speed (kn)	207.5	207.5	207.5
Takeoff ground run at SL ① (ft)	8100	8100	8100
Takeoff to clear 50 ft ① (ft)	11,500	11,500	11,500
Rate of climb at SL (fpm)	6830 ②	6830 ②	6830 ②
Time: SL to 20,000 ft ③ (min)	3.90 ②	3.83 ②	3.90 ②
Time: SL to acceleration altitude ③ (min)	6.30 ②	6.10 ②	6.30 ②
Service ceiling (100 fpm) (ft)	26,500 ②	26,500 ②	26,500 ②
COMBAT RANGE ④ (n mi)	3167	3964	3167
Recovery distance (n mi)	1200	1200	----
Average cruise speed (subsonic/supersonic) (kn/kn)	----/1721	----/1721	----/1721
Initial supersonic cruise altitude (ft)	65,000	65,000	65,000
Final supersonic cruise altitude (ft)	70,950	71,750	70,950
Total mission time (hr)	2.00	3.15	2.00
COMBAT WEIGHT (lb)	346,400	313,086	288,759
Combat altitude (ft)	67,200	69,300	71,000
Combat speed ① (kn)	1721	1721	1721
Combat climb ① (fpm)	12,800	12,650	12,450
Combat ceiling (500 fpm) ① (ft)	74,900	76,750	78,250
Service ceiling (100 fpm) ① (ft)	75,200	76,950	78,450
Max rate of climb at SL ① (fpm)	27,650	30,350	33,000
Max speed at optimum altitude ① (kn/ft)	1721/75,250	1721/77,000	1721/78,750
Basic speed at 35,000 ft (kn)	1089	1089	1089
LANDING WEIGHT (lb)	288,759	259,155	288,759
Ground roll at SL (ft)	6490	5900	6490
Ground roll (auxiliary brake) ⑤ (ft)	4480	4090	4480
Total from 50 ft (ft)	8230	7580	8230
Total from 50 ft (auxiliary brake) ⑤ (ft)	6230	5710	6230
Minimum usable flying speed (kn)	119.1	113.0	119.1
Touchdown speed (kn)	161.0	152.6	161.0

NOTES

- * Space provisions only
- ① Maximum power
- ② Military power
- ③ Allows for weight reduction during ground operation and climb
- ④ Detailed description of RANGE missions given on page 6
- ⑤ With drag chute

PERFORMANCE BASIS:

- (a) Data source: Estimated
- (b) Performance is based on powers shown on page 6
- (c) Fuel flow data used in computing BASIC and FERRY missions are increased 5%.



N O T E S

FORMULA: RANGE MISSION I AND III

Take-off and accelerate to climb speed with maximum power, climb on course to 25,000 feet with military power, accelerate to Mach 1.37 at 25,000 feet, accelerated climb from 25,000 feet to Mach 3.0 cruise altitude, cruise at Mach 3.0. Range free allowances include 5 minutes normal power for starting engines, 1 minute maximum power for take-off and acceleration, and a fuel reserve equal to 30 minutes loiter at sea level at speeds for maximum endurance plus 5% of initial fuel.

FORMULA: RANGE MISSION II

Alert concept take-off, accelerate to climb speed with maximum power, climb on course to 25,000 feet with military power, accelerate to Mach 1.37 at 25,000 feet, accelerated climb from 25,000 feet to Mach 3.0 cruise altitude, cruise out at Mach 3.0. Decelerate with military power, descend to 20,000 feet with idle power, loiter 16 minutes at 20,000 feet at speeds for maximum endurance, descend to sea level with idle power. Credit is taken for distance covered during deceleration and descent from Mach 3.0 cruise altitude to 20,000 feet. Range free allowances include alert concept take-off, 16 minutes loiter at 20,000 feet, descent from 20,000 feet to sea level and a fuel reserve equal to 1 minute military power plus 9 minutes loiter at sea level.

REVISION BASIS:

To reflect the effect on performance of actual air vehicle weight.

GENERAL DATA:

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

(6) YJ93-GE-3		
SLS	LB	RPM
Max	23,385	6825
Mil	16,215	6825
Nor	15,160	6825

(b) Wing Section:

Root to W.S. 186 2.0% 30-.70 Hex (Mod)
 W.S. 460 to W.S. 630 2.5% 30-.70 Hex (Mod)

Mean Camber (Leading Edge)

In the Airstream Direction

B.P. O 0.15°
 B.P. 107 4.40°
 B.P. 153 2.75°
 B.P. 257 2.60°
 B.P. 367 - Tip 0.00°