Standard Aircraft Characteristics

NAVY MODEL
F-3B
AIRCRAFT (F-3H-2)

(TITLE UNCLASSIFIED)

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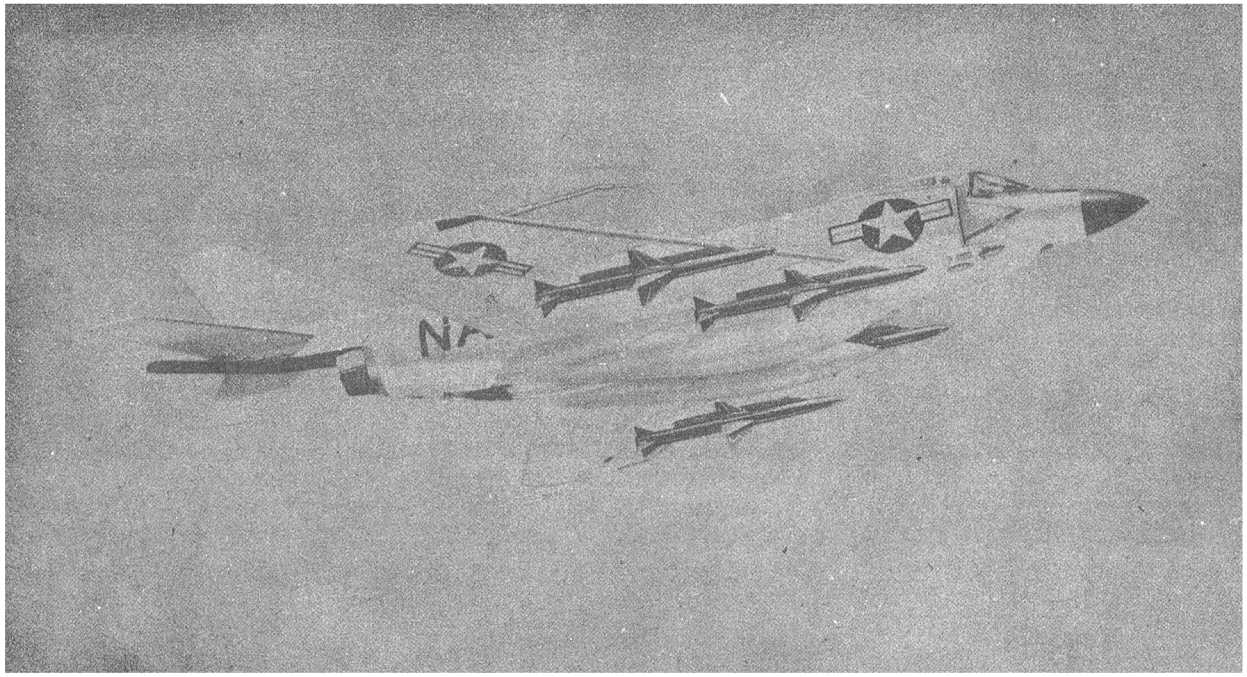
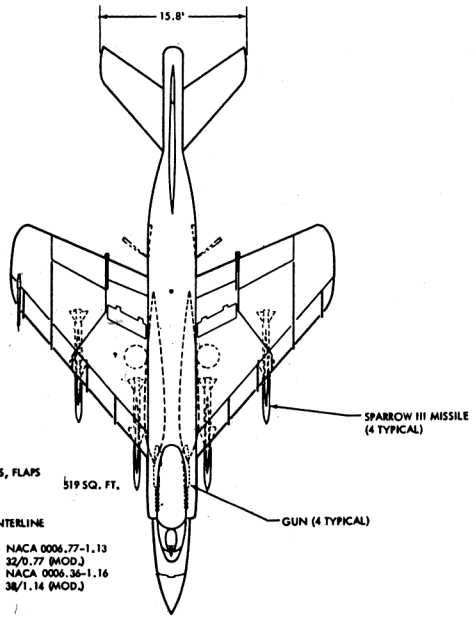


STANDARD AIRCRAFT CHARACTERISTICS

F-3B (F3H-2) "DEMON"

McDONNELL

SERVICE

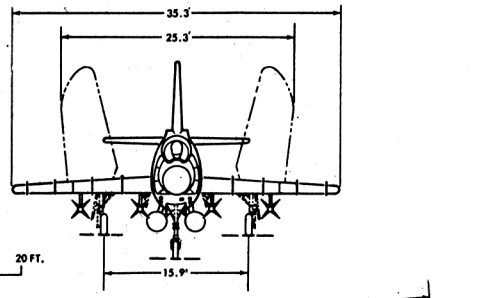


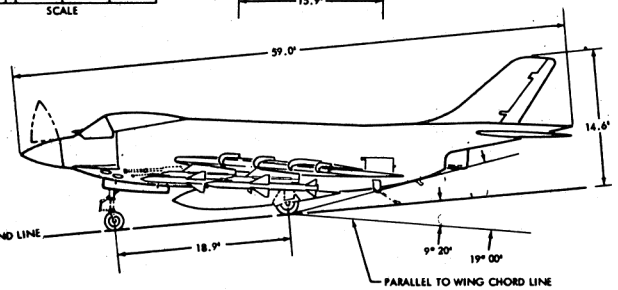
TOTAL WING AREA INCLUDING AILERONS, FLAPS AND 103.0 SQ. FT. OF FUSELAGE — 519 SQ. FT.

AIR FOIL DESIGNATION PARALLEL TO CENTERLINE

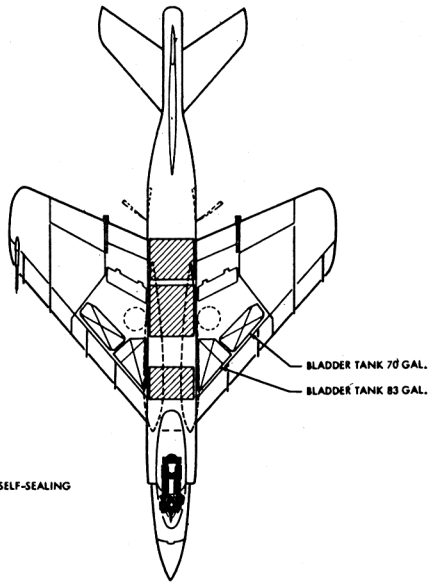
WING ROOT	NACA 0006.77-1.13 32/0.77 (MOD.)
WING TIP (CONSTRUCTION TIP)	NACA 0006.36-1.16 38/1.14 (MOD.)

GEOMETRIC ASPECT RATIO
WING — 2.41



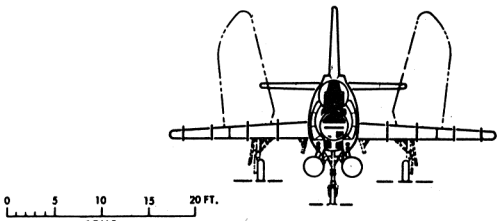


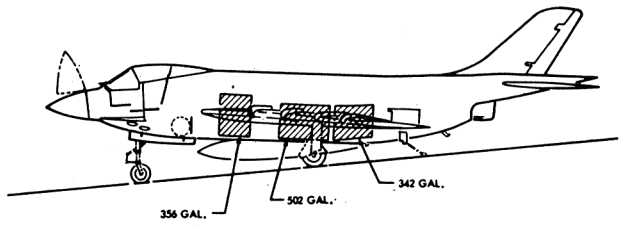
DESCRIPTIVE ARRANGEMENT



PROTECTION

PILOT FWD	-79 LBS.
BACK ARMOR PLATE	-50 LBS.
FLOOR FLAK PLATE	-22 LBS.
SELF-SEALING FUEL CELLS	495 LBS.





ARMAMENT AND TANKAGE

POWER PLANT

No. & Model..... (1) J71-A-2B
Mfg..... Allison
Spec..... Allison No. 361 - F
Type.....Axial Flow-Turbo Jet
Augmentation ..... Afterburner
Length (Incl.A.B).....287.1"
Height..... 42.1"
Width ..... 42.6"

RATINGS

Static Thurst at Sea Level

	Lbs.	RPM
Maximum (A/B)	14400	6175
Military	10000	6175
Normal	8700	6000(Est)
90% Normal	7920	5920
75% Normal	6600	5820
Idle	714(Max)	3950(Min)

ORDNANCE

4 - 20 mm. MK 12 aircraft guns
600 Rds. MK 12 20 mm. Ammo. (Normal Load)
760 Rds. MK 12 20 mm. Ammo. (for special loadings)
1 - AFCS MK 21 Mod 0
1 - AN-N-6A Gun Camera

External

4 - Sparrow III Missiles
2 - Douglas Ejector Racks (Fus.) (Aero 7A)
4 - Sidewinder Missiles (Alternate Load)

MISSION AND DESCRIPTION

The McDonnell F-3B (F3H-2) airplane is a single place, swept-wing, jet-propelled fighter and is designed for either land or carrier based operations.

The F-3B is equipped with the Sparrow III weapon system which consists of privisions for carrying four supersonic air-to-air guided missiles and special electronic guidance equipment. Further armament consists of four forward firing 20 mm guns. Provisions are included for two heavy duty pylons on the underside of the fuselage for carrying various external stores.

The F-3B is privided with tricycle landing gear, catapult and arresting gear, and folding wing panels. Equipment includes an automatic pilot, ejection seat, and pressurized cockpit. An auxiliary power unit may be carried externally to provide for engine starting when operating from advance bases.

Power actuated leading edge slats and trailing edge plain flaps increase lift for landing and take-off, and fuselage mounted speed brakes provide drag control in flight. The primary control system incorporates power actuation with artificial feel forces. Provisions are included for obtaining moderate control forces during emergency operations.

DEVELOPMENT

First Flight.....July 1957
Service Use .....September 1957

DIMENSIONS

Wing
Area.....519 sq. ft.
Span ..... 35' 4"
MAC ..... 15' 6"
Sweepback ($\frac{1}{4}$chord)..... 43°-12'
Length (overall)..... 58' 11.5"
Height.....14' 6.6"
Tread .....15' 10.4"

WEIGHTS

Loading	Lbs.	L.F.
Empty....	21287	--
Basic	22293	--
Design	26000	7.5
Combat	31145	5.8
Max.T.O.	39000	--
Max.-CarrierLand..	26700	--

FUEL AND OIL

No. Tanks	Gal.	Location
1	356	Fuselage, Fwd.
1	502	Fuselage, Cen.
1	342	Fuselage, Aft.
2	166	Wing, Inboard
2	140	Wing, Outboard
2	282	External Tanks

Fuel Grade..... MIL-F-5624D or .....Cheapest MIL-F-5572
Fuel Spec MIL-F-5624D or MIL-F-5572
Fuselage Tanks Self - Sealing
Wing Tanks Bladder Type

OIL

Integral with Engine
Spec..... MIL-L-7808

ELECTRONICS

UHF AN/ARC-27A
UHF DF.... AN/ARR-40 & AN/ARA-25
Short Range Nav..... AN/ARN-21
Radio Altimeter..... AN/APN-22
IFF Identifier..... AN/APX-6B
Radar AN/APG-51B
Missile Guidance Set. AN/APA-127
Missile Launching Set. AN/ASA-23
Video Coder..... AN/APA-89

NAVAIR ~~00 110AF3-1~~ SERVICE

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION		**(1) (4) SPARROW III	(3)(4) SPARROWS III *(2) 282 GAL. TKS.	(5) (2) SPARROW III	(7)(2) SPARROW III (2) 282 GAL. TKS.	(9) (2) SIDEWINDERS
TAKE-OFF WEIGHT	LB.	35239	38997	34203	38600	33424
FUEL INTERNAL/EXTERNAL (JP-5)	LB./LB.	10241/	10241/3196	10241/	10241/3835	10241/
PAYLOAD AMMO./MISSILES	LB./ LB.	432/1520	432/1520	432/760	432/760	432/310
WING LOADING	LB./SQ.LB.	67.9	75.1	65.9	74.4	64.4
STALL SPEED - POWER-OFF	KN.	118	124	116	123	114
TAKE-OFF RUN AT S.L. - CALM (A)/(B)	FT.	5550/2425	9860/3030	4830/2265	9280/2970	4390/2150
TAKE-OFF RUN AT S.L. 25KN. WIND (A)/(B)	FT.	3890/1615	7320/2070	3340/1500	6860/2030	3000/1415
TAKE-OFF TO CLEAR 50 FT. - CALM (A)/(B)	FT.	7400/3820	11800/4645	6640/3600	11200/4550	6160/3445
MAX. SPEED/ALTITUDE (A)	M/FT.	.85/25000	.77/20000	.88/25000	.80/25000	.89/25000
RATE OF CLIMB AT S.L. (A)	FPM.	4330	3380	4840	3730	5140
TIME: S.L. TO 20000 FT. (A)	MIN.	7.19	10.82	6.28	7.33	5.89
TIME: S.L. TO 30000 FT. (A)	MIN.	16.50	36.00	13.22	25.40	11.87
SERVICE CEILING (100 FPM.)	FT.	32000	27150	34000	28950	35050
COMBAT RANGE	N.MI.	844	1076	958	1277	1026
AVERAGE CRUISING SPEED	M.	.73	.71	.76	.74	.78
CRUISING ALTITUDE(S)	FT/FT.	29400/35000	23200/34000	32000/37500	25400/36400	33400/38200
COMBAT RADIUS/MISSION TIME	N.MI./HR.	294/2.06	420/2.69	336/2.21	501/3.01	363/2.24
AVERAGE CRUISING SPEED	Mn.	.75	.73	.77	.75	.82
CAP LOITER TIME/DECK CYCLE TI.(C)	HR/HR	.69/2.09	1.34/2.76	.89/2.26	1.74/3.14	.97/2.33
IFR RADIUS/DECK CYCLE TIME	N.MI/HR	562/3.36	654/3.90	613/3.52	730/4.15	647/3.64
COMBAT LOADING CONDITION		(2) SPARROWS RETAINED	(4) TANKS OFF SPARROWS OFF	(6) SPARROWS RETAINED	(8) TANKS OFF SPARROWS OFF	(10) SIDEWINDERS RETAINED
COMBAT WEIGHT	LB.	31145	31839	29349	31944	29020
ENGINE POWER		Maximum	Maximum	Military	Military	Maximum
FUEL	LB.	6147	8065	6147	8446	6147
COMBAT SPEED/COMBAT ALTITUDE	M/FT.	.94/31000	.94/28500	.88/33700	.86/31000	.96/35000
RATE OF CLIMB/COMBAT ALTITUDE	FPM./FT.	4720/31000	5310/28500	890/33700	1010/31000	4740/35000
COMBAT CEILING (500 FPM.)	FT.	43150	42880	35800	33950	45700
RATE OF CLIMB AT S.L.	FPM.	11770	12410	5860	5480	14350
MAX. SPEED AT S.L.	Mn.	.91	.91	.83	.82	.94
MAX. SPEED/ALTITUDE	M/FT.	.94/35000	.94/35000	.89/30000	.87/30000	.97/35000
LANDING WEIGHT	LB.	25425	25884	25144	25637	24811
FUEL	LB.	1947	2110	1942	2139	1938
STALL SPEED - POWER-OFF/APPR. POWER	KN./KN.	98/94	99/94	97/93	98/94	97/93
DIST.-GRD ROLL/OVER 50 FT. OBS.	FT./FT.	4740/6815	4775/6885	4710/6780	4755/6845	4685/6735

NOTES: PERFORMANCE BASIS: Contractor and NATC Flight Test
RANGE AND/OR RADIUS are based on flight test fuel consumption data.
*Nos. 1, 3, 5, 7, & 9 are General Purpose Fighters

(A) MILITARY RATED THRUST
(B) MAXIMUM RATED THRUST
(C) Combat Air Patrol-150 naut.mi. radius
All loadings include guns.

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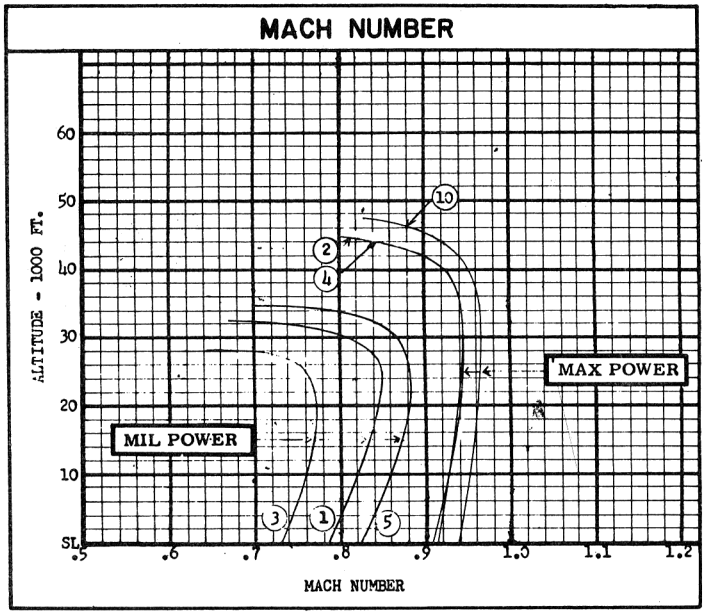
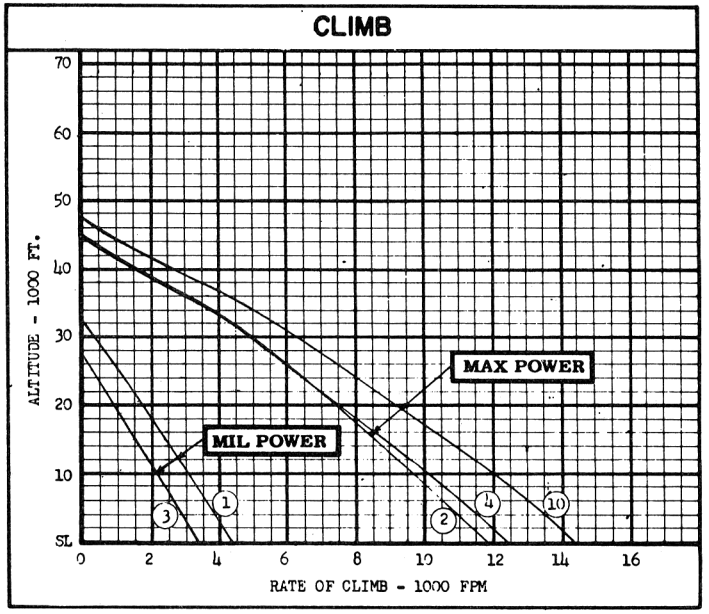
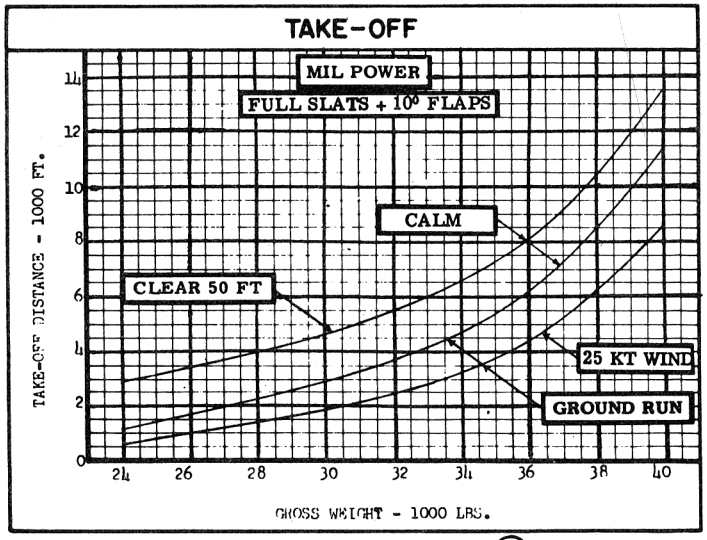
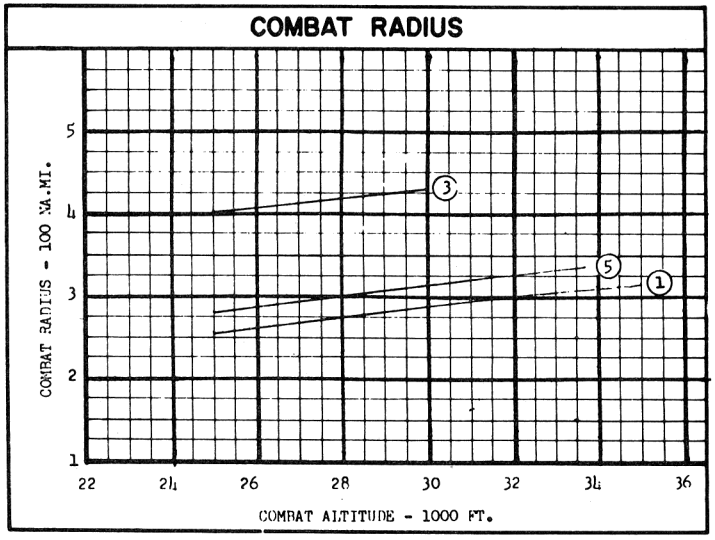






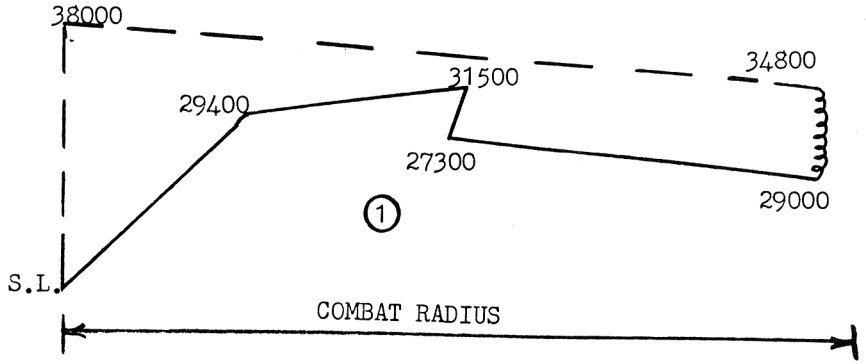


◯ LOADING CONDITION COLUMN NUMBER

NOTES

GENERAL PURPOSE FIGHTER WITH IN-FLIGHT REFUELING

1. Warm-up: Fuel for 5 min. with normal thrust.
2. Climb: With mil. thrust to opt. cruise alt.
3. Cruise-out: At alt. and speed for max. range.
4. Refueling allowance for hook-up and flight contingencies: Fuel for 5 min. at speed and altitude for max. endurance. No fuel used or distance gained during transfer.
5. Cruise-out: At alt. and speed for max. range. The remainder of the problem is the same as General Purpose fighter of condition 1.
6. Combat.
7. Cruise back.
8. Reserve.



If JP-4 Fuel is used, the following are applicable:	Δ WEIGHT	Δ RANGE	Δ RADIUS	Δ DECK CYCLE TIME
G.P. Fighter-guns/4 Sparrows	-452	-48	-26	-.12
G.P. Fighter-guns/4 Sparrows-IFR	-452	-67	-36	-.16
G.P. Fighter-guns/4 Sparrows plus 2-282 gal. tanks*	0	-3	-2	-.02
G.P. Fighter-guns/4 Sparrows plus 2-282 tks.-IFR*	0	-52	-28	-.18

*Airplane defueled to max. T. O. gross weight of 39,000 lbs.

○ LOADING CONDITION COLUMN NUMBER