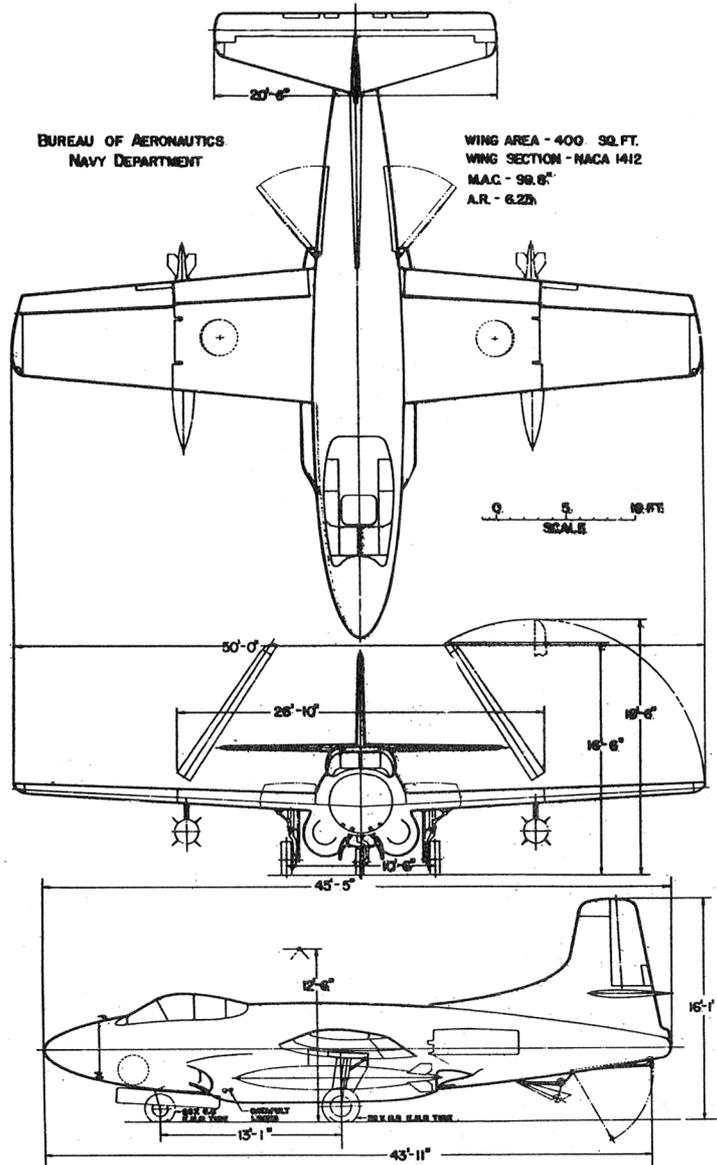


STANDARD AIRCRAFT CHARACTERISTICS
F-10A SKYKNIGHT

SERVICE

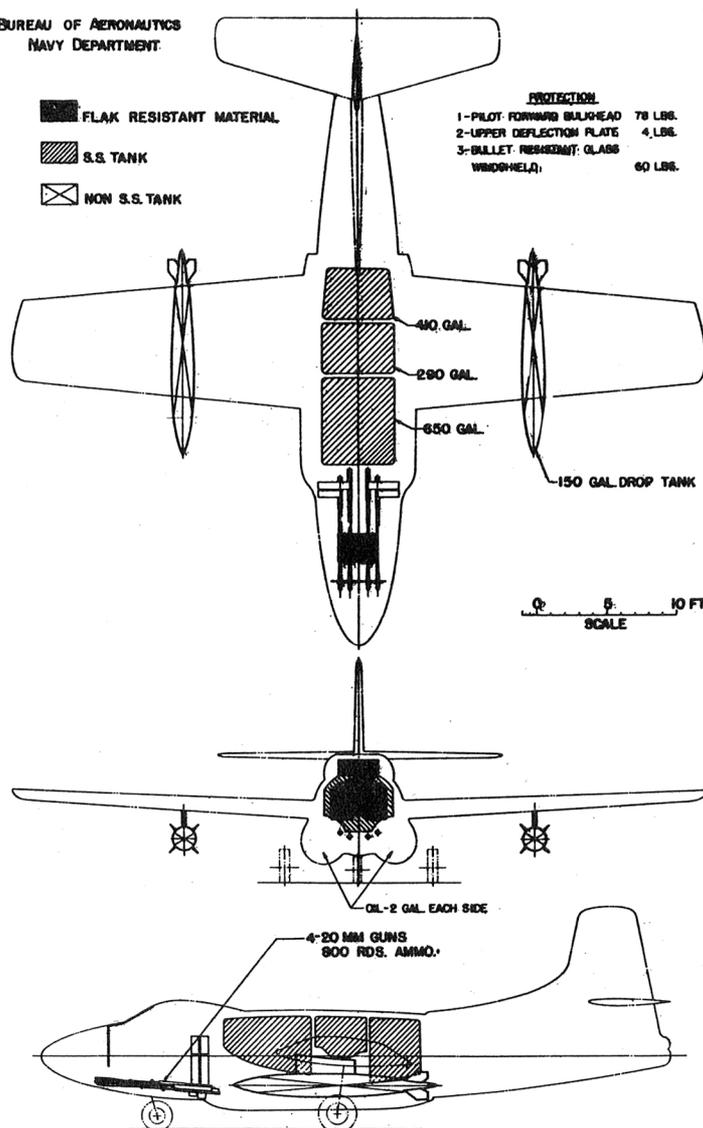


DESCRIPTIVE ARRANGEMENT

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

-  FLAK RESISTANT MATERIAL
-  S.S. TANK
-  NON S.S. TANK

- PROTECTION
- 1-PILOT FORWARD BULKHEAD 78 LBS.
 - 2-UPPER DEFLECTION PLATE 4 LBS.
 - 3-BULLET RESISTANT GLASS WINDSHIELD 60 LBS.



ARMAMENT & TANKS

POWER PLANT

NO. & MODEL.....(2) J34-WE-34
 MFR.....Westinghouse
 TYPE.....11 Stg. Axial Compr.
 2 Stg. Turbine

RATINGS

	Lbs.	⊙ Rpm	⊙ Alt.
T. O.	3,400	12,500	S.S.L.
MIL.	3,400	12,500	S.S.L.
NORM.	3,000	11,930	S.S.L.

SPEC. NO. WAGT-244E-2B

ORDNANCE**GUNS**

No.	Size	Location	Rds.
4	20 mm	Nose	800

Mr. 20 Mod. 0 Gunsight

BOMBS AND ROCKETS

Type	Size	Location	No.
Bomb	2,000#	Inner Wing	2
Bomb	1,000#	Inner Wing	2
Bomb	500#	Inner Wing	2
A.R.	11.75"	Inner Wing	2

MAX. BOMB CAP.....4,000 lbs.

MISSION AND DESCRIPTION

The mission of the F3D-1 airplane is to search out and destroy enemy aircraft at night.

This twin-jet fighter is designed to operate from aircraft carriers with the aid of a catapult, or from land bases.

Side by side accommodations are provided for the pilot and a radar operator.

The airplane is conventional in structure with all-metal two-spar wing and semi-monocoque fuselage. Tricycle landing gear, slotted flaps and wing folding are hydraulically operated.

Hydraulically operated fuselage speed-retarding brakes with hand controls are provided. These may be used for maneuvering or to increase the angle of descent.

Pilot escape provisions are furnished both through the power operated escape hatch and through a special high speed bail-out chute on the bottom of the fuselage.

DIMENSIONS

WING AREA.....	400 sq. ft.
SPAN.....	50' - 0"
FOLDED SPAN.....	26' - 10"
LENGTH.....	45' - 5"
HEIGHT.....	16' - 1"
HEIGHT*.....	16' - 6"
TREAD.....	10' - 6"
M.A.C.....	8' - 4"

* Wings Folded

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY.....	14,989.....	
BASIC.....	15,500.....	
DESIGN.....	19,700..5.5	
COMBAT.....	21,374..5.1	
MAX.T.O..(Field).	26,731*.4.0	
MAX.LAND (Field).	24,500.....	

All weights are actual.

*Maximum anticipated loading.

FUEL AND OIL

Gals.	No. Tanks	Location
650	1 (Seal.)	Fuse., Fwd.
290	1 (Seal.)	Fuse., Ctr.
410	1 (Seal.)	Fuse., Aft
300	2	Wing, Drop
FUEL GRADE....		115/145
FUEL SPEC. MIL-F-5572		

OIL

CAPACITY (Gals.).....	4.0
GRADE.....	1010
SPEC.....	MIL-O-6081

ELECTRONICS

VHF COMMAND.....(2) AN/ARC-1
 UHF COMMAND.....AN/ARC-27
 (With provisions for alternate installation of (1)
 AN/ARC-1 VHF) P.S.I.
 (Replaces (2) AN/ARC-1)
 INTERPHONE.....AN/AIC-4, -4A
 D.F. EQUIPMENT.....AN/ARN-6
 HOMING.....AN/ARN-21
 (P.S.I., Repl. for AN/ARR-2A
 and AN/ARN-6)
 HOMING REC.....AN/ARR-2A
 (Continued on NOTES sheet)

PERFORMANCE SUMMARY						
TAKE-OFF LOADING CONDITION		(1) FIGHTER Full Internal Fuel	(3) FIGHTER 2-150 Gallon External Tanks			
TAKE-OFF WEIGHT	lb.	24,614	26,731			
Fuel	lb.	8,100	8,100/1,800			
Payload (Ammunition)	lb.	450	450			
Wing loading	lb./sq.ft.	61.5	66.8			
Stall speed - power-off	kn.	97.1	101.2			
Take-off run at S.L. - calm	ft.	2,080	2,500			
Take-off run at S.L. 25 kn. wind	ft.	1,270	1,530			
Take-off to clear 50 ft. - calm	ft.	--	--			
Max. speed/altitude	(1) kn./ft.	426/15,000	387/10,000			
Rate of climb at S.L.	(2) fpm	2,970	2,375			
Time: S.L. to 20,000 ft.	(2) min.	9.9	13.7			
Time: S.L. to 30,000 ft.	(2) min.	20.9	31.6			
Service ceiling (100 fpm)	(2) ft.	36,700	32,400			
Combat range	n.mi.	995	1,195			
Average cruising speed	kn.	395	395			
Cruising altitude(s)	ft.	34,100/39,800	31,250/39,200			
Combat radius	n.mi.	415	520			
Average cruising speed	kn.	395	395			
COMBAT LOADING CONDITION		(2) CLEAN				
COMBAT WEIGHT	lb.	21,374				
Engine, power		Military				
Fuel	lb.	4,860				
Combat speed/combat altitude	kn./ft.	428/35,000				
Rate of climb/combat altitude	fpm/ft.	550/35,000				
Combat ceiling (500 fpm)	ft.	35,500				
Rate of climb at S.L.	fpm	3,570				
Max. speed at S.L.	kn.	458				
Max. speed/altitude	kn./ft.	460/10,000				
LANDING WEIGHT	lb.	17,799				
Fuel	lb.	1,285				
Stall speed - power-off	kn.	82.6				
Stall speed - with approach power	kn.	80.6				

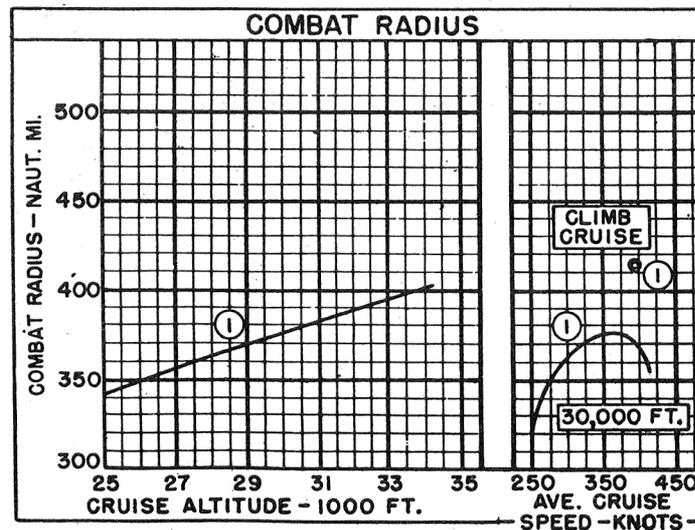
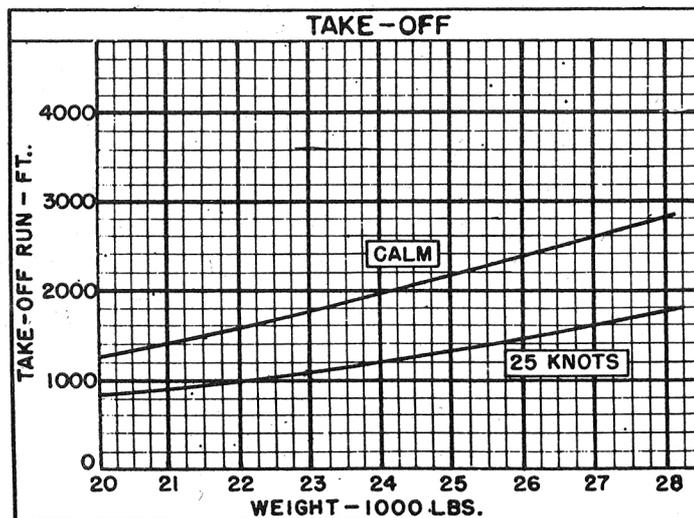
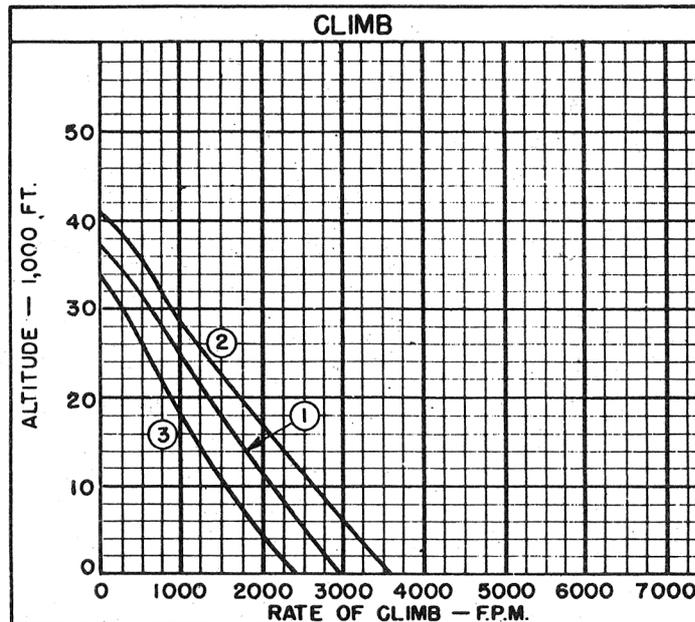
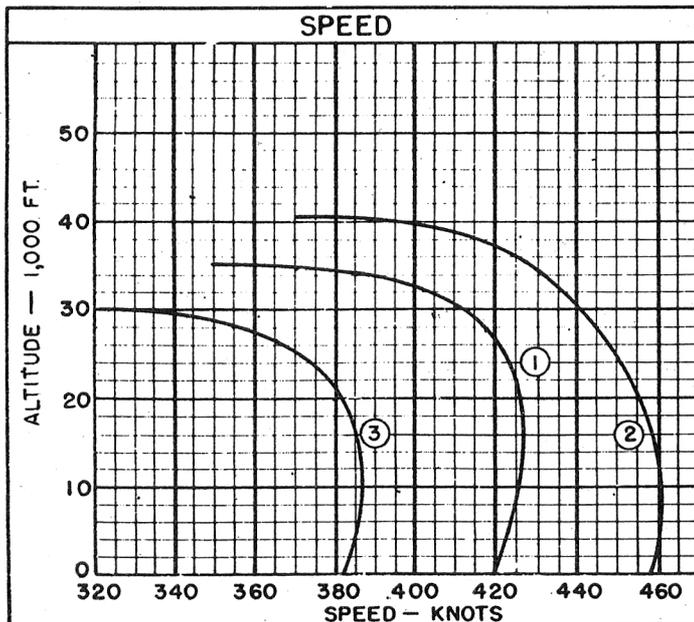
NOTES

- (1) Normal Power
(2) Military Power

Performance is based on calculations and preliminary NATC flight test of F3D-2 airplanes.

Range and radius are based on engine specification fuel consumption data increased by 5%.

External store pylons are not included in conditions (1) and (2).



○ LOADING CONDITION COLUMN NUMBER

NOTES

Spotting: 200 ft. length is required to spot 17 airplanes on the 96 ft. wide deck immediately aft of the forward ramp on CV-9 class carriers.

GENERAL PURPOSE AND ESCORT FIGHTER COMBAT RADIUS PROBLEM (GAS TURBINE)

WARM-UP, TAXI, TAKE-OFF: 5 minutes at normal power.

CLIMB: To cruising ceiling at military power. (Cruising ceiling = altitude for 300 ft./min. at normal power.)

CRUISE-OUT: At V for long range at cruising ceiling.

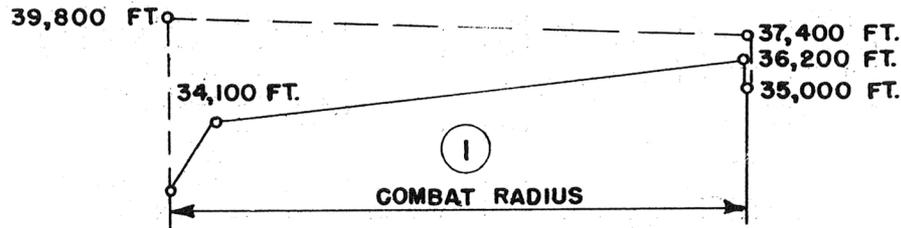
DESCEND: To 35,000 ft. (No fuel used, no distance gained.)

COMBAT: At 35,000 ft. for 20 minutes at military power. (Assume combat concluded at initial cruise-back altitude).

CRUISE-BACK: At V for long range at cruising ceiling.

RESERVE: 20 minutes at V for maximum endurance at Sea Level plus 5% of initial fuel load.

$$\text{COMBAT RADIUS} = \text{CLIMB} + \text{CRUISE-OUT} = \text{CRUISE-BACK}$$



Based on F-5 problem, combat radius would increase to 485 n.mi. for Condition (1) and 585 n.mi. for Condition (3).

 ELECTRONICS (Continued):

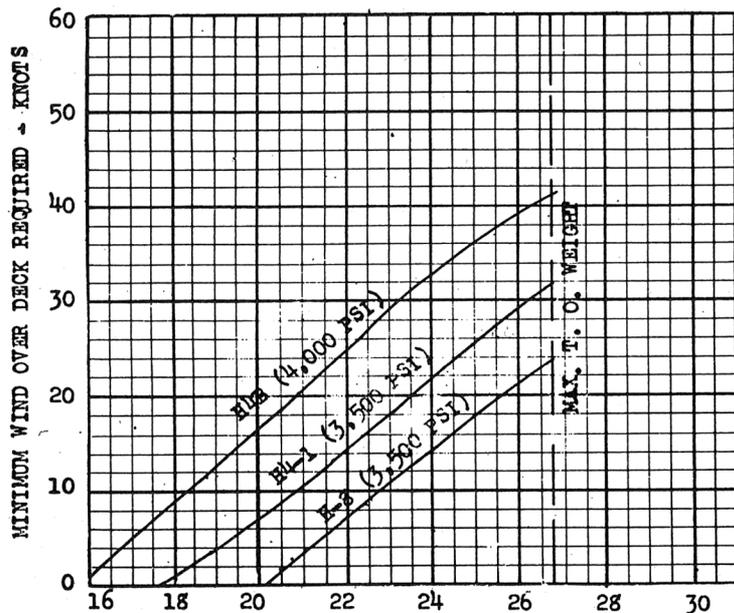
UHF D.F.....AN/ARA-25 (P.S.I.)
 RADIO ALTIMETER.....AN/APN-1
 RADAR SYSTEM.....AN/APQ-35A, -35B

IFF EQUIPMENT.....AN/APX-6
 IFF (I-R UNIT).....AN/APX-17
 (Planned Service Installation)

CARRIER SUITABILITY

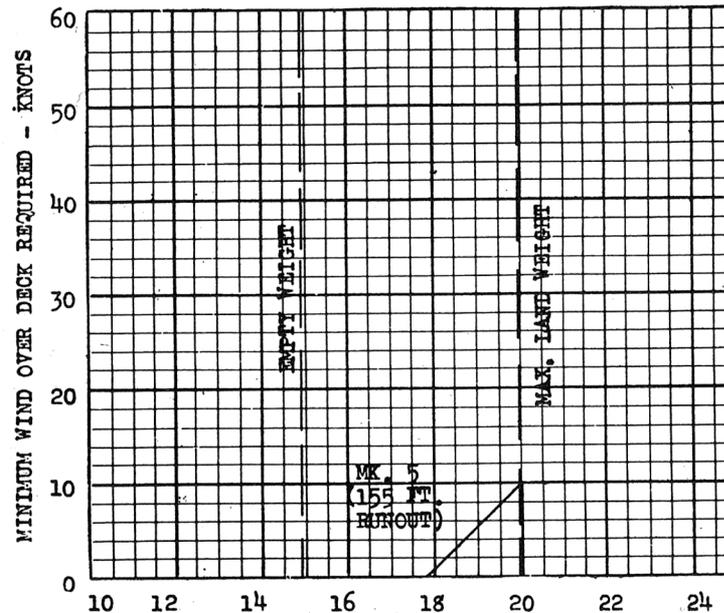
WIND OVER DECK REQUIRED FOR CATAPULTING VS. GROSS WEIGHT

Based on Minimum Safe Take-Off Speed



WIND OVER DECK REQUIRED FOR LANDING VS. GROSS WEIGHT

Based on Approach Speed of 1.2 Power-Off Stall Speed



NOTE: No wind required for Mk. 7 arresting gear