

Standard Aircraft Characteristics NAVAER 1335A (REV. 1-49)

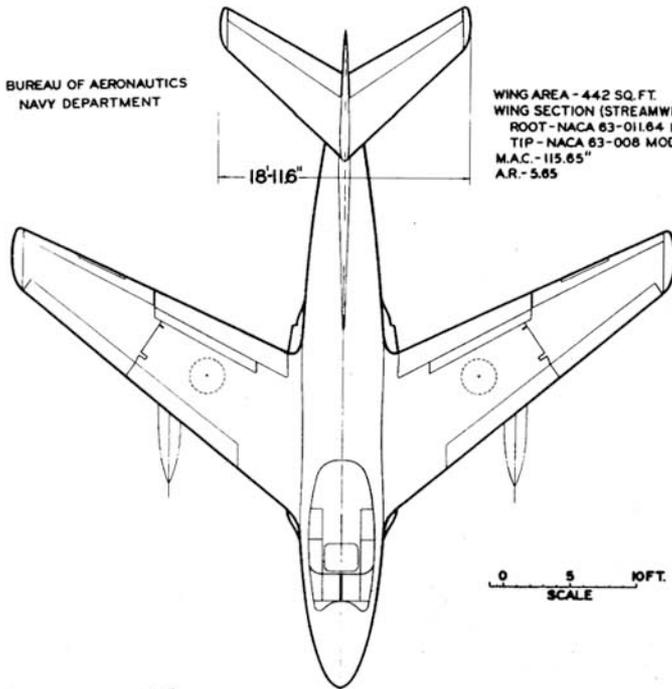
STANDARD AIRCRAFT CHARACTERISTICS

F3D-3 "SKY KNIGHT"

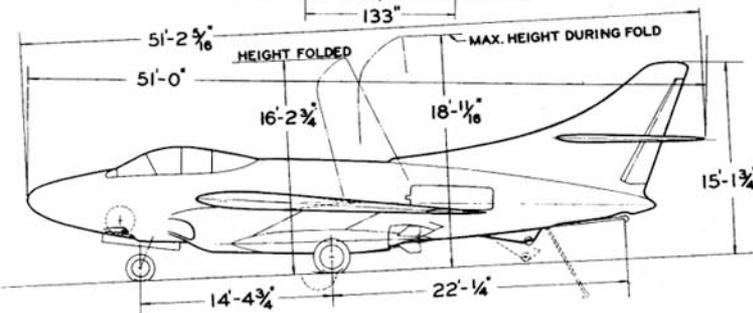
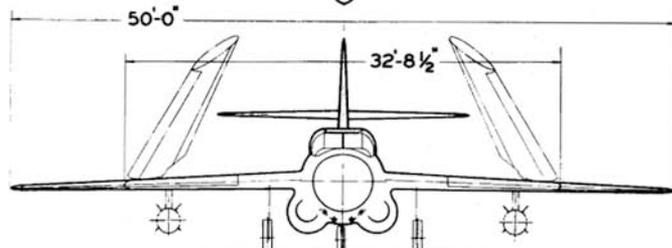
DOUGLAS

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 442 SQ. FT.
WING SECTION (STREAMWISE):
ROOT - NACA 63-011.64 MOD.
TIP - NACA 63-008 MOD.
M.A.C. - 115.65"
A.R. - 5.85



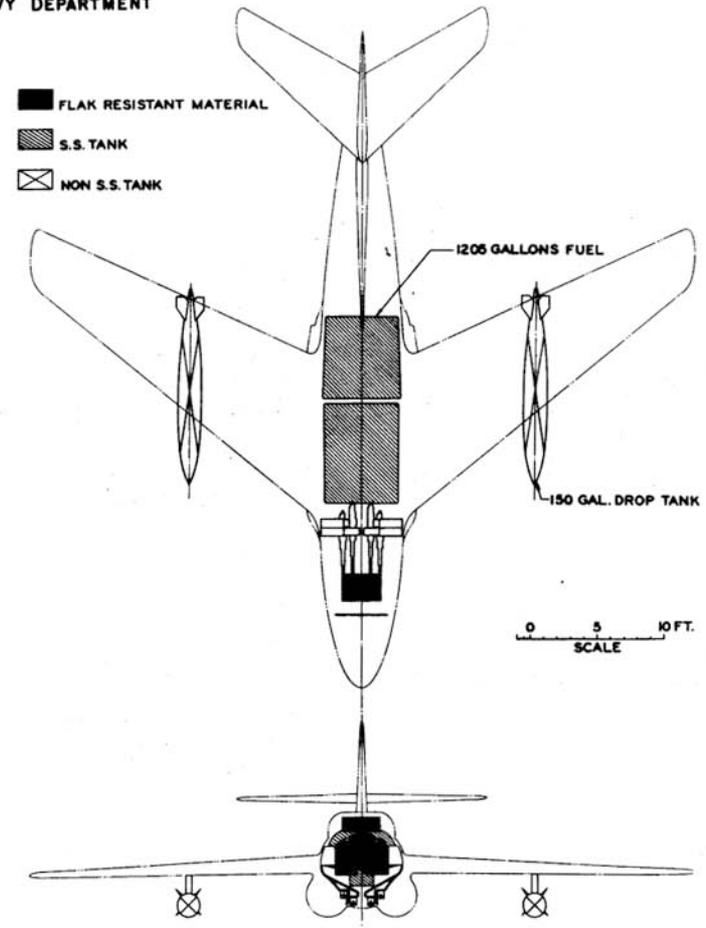
0 5 10 FT.
SCALE



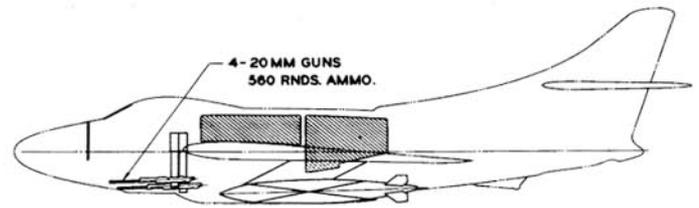
DESCRIPTIVE ARRANGEMENT

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

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



0 5 10 FT.
SCALE



ARMAMENT & TANKS

POWER PLANT

NO. & MODEL.....(2) J46-WE-4
 MFR.....Westinghouse
 TYPE.....12 Stg. Axial Compr.
 2 Stg. Turbine

RATINGS

Lbs. @ Rpm @ Alt.
 T. O. 4,200 10,100 S.S.L.
 MIL. 4,200 10,100 S.S.L.
 NORM. 3,820 10,100 S.S.L.
 SPEC. NO. WAGT X24C10-2E
 APPENDIX A

ORDNANCE**GUNS**

No.	Size	Location	Rds.
4	20 mm	Fuse. Fwd.	560

2 Douglas external tanks are attached to pylons with AERO 61A racks.

Alternate pylons loadings (up to 2,000 lbs. per pylon) can be accomplished by replacing AERO 61A racks with Mk-51 bomb racks.

MISSION AND DESCRIPTION

The mission of the F3D-3 airplane is to search out and destroy enemy aircraft at night. It can also be used as a day fighter.

This twin-jet, swept-wing 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 manually operated escape hatch and through a special high speed bail out chute on the bottom of the fuselage.

First flight estimated -- November 1952
 Service use estimated -- July 1953

DIMENSIONS

WING AREA.....	442 sq. ft.
SPAN.....	50' - 0"
LENGTH.....	51' - 0"
HEIGHT.....	15' - 2"
TREAD.....	11' - 1"
M.A.C.....	9' - 8"

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY.....	18,098.....	
BASIC.....	18,695.....	
DESIGN.....	23,504..6.5	
COMBAT.....	23,843..6.4	
MAX.T.O.(Field)..	30,885*.5.0	
MAX.LAND(Field)..	23,722.....	

All weights are estimated.

*Maximum anticipated loading

FUEL AND OIL

Gal.	No. Tanks	Location
510	1	*Fuse. S.S.
695	1	*Fuse. S.S.
300	2	Wing Drop
FUEL GRADE....115/145		
FUEL SPEC..MIL-F-5572		
*Self-sealing tanks		

OIL

CAPACITY (Gals.).....	4
GRADE.....	1010
SPEC.....	MIL-O-6081

ELECTRONICS

UHF TRANSMITTER.....	AN/ARC-27
HOMING RECEIVER.....	AN/ARR-2A
RADIO ALTM.....	AN/APN-1
INTERPHONE.....	AN/AIC-4A
RADAR.....	AN/APQ-43
IFF TRANSPONDER.....	AN/APX-6
LF ADF.....	AN/ARN-6
UHF ADF.....	AN/ARA-25

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION		(1) FIGHTER Full Internal Fuel	(3) FIGHTER 2 - 150 Gal. Tanks External		
TAKE-OFF WEIGHT	lb.	26,735	28,885		
Fuel	lb.	7,230/-	7,230/1,800		
Payload (Ammunition)	lb.	381	381		
Wing loading	lb./sq.ft.	60.5	65.4		
Stall speed - power-off	kn.	105.9	110.1		
Take-off run at S.L. - calm	ft.	1,930	2,330		
Take-off run at S.L. 25 kn. wind	ft.	1,150	1,430		
Take-off to clear 50 ft. - calm	ft.	--	--		
Max. speed/altitude	(1) kn./ft.	529/14,000	511/17,000		
Rate of climb at S.L.	(1) fpm	4,430	3,850		
Time: S.L. to 20,000 ft.	(1) min.	5.7	6.5		
Time: S.L. to 30,000 ft.	(1) min.	10.3	12.2		
Service ceiling (100 fpm)	(1) ft.	42,400	39,800		
Combat range	n.mi.	1,230	1,475		
Average cruising speed	kn.	440	430		
Cruising altitude(s)	ft.	42,900/47,100	40,900/46,100		
Combat radius	n.mi.	465	595		
Average cruising speed	kn.	450	440		
COMBAT LOADING CONDITION		(2) CLEAN			
COMBAT WEIGHT	lb.	23,843			
Engine power		Military			
Fuel	lb.	4,338			
Combat speed/combat altitude	kn./ft.	510/35,000			
Rate of climb/combat altitude	fpm/ft.	2,000/35,000			
Combat ceiling (500 fpm)	ft.	44,700			
Rate of climb at S.L.	fpm	6,330			
Max. speed at S.L.	kn.	544			
Max. speed/altitude	kn./ft.	546/5,000			
LANDING WEIGHT	lb.	20,228			
Fuel	lb.	723			
Stall speed - power-off	kn.	92.2			
Stall speed - with approach power	kn.	89.4			

NOTES

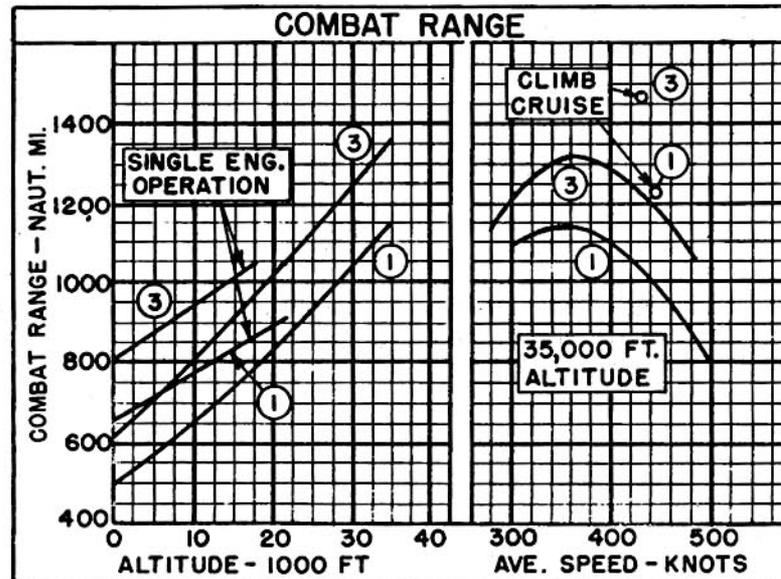
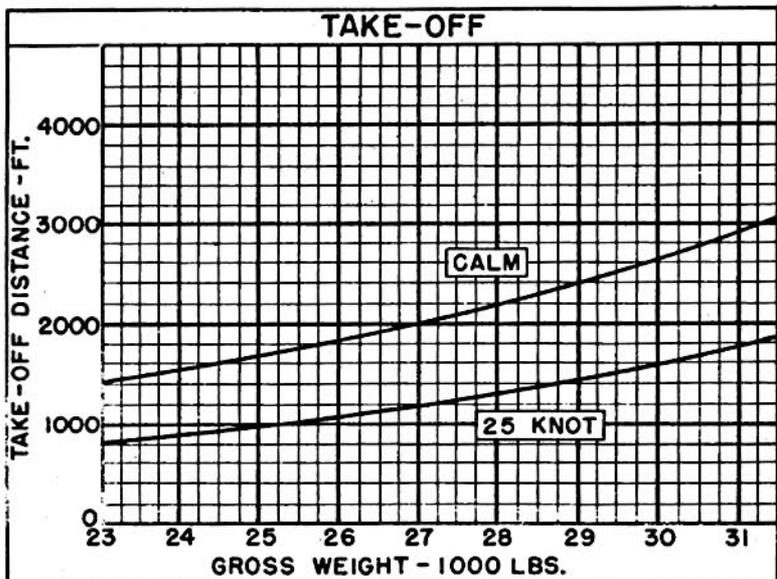
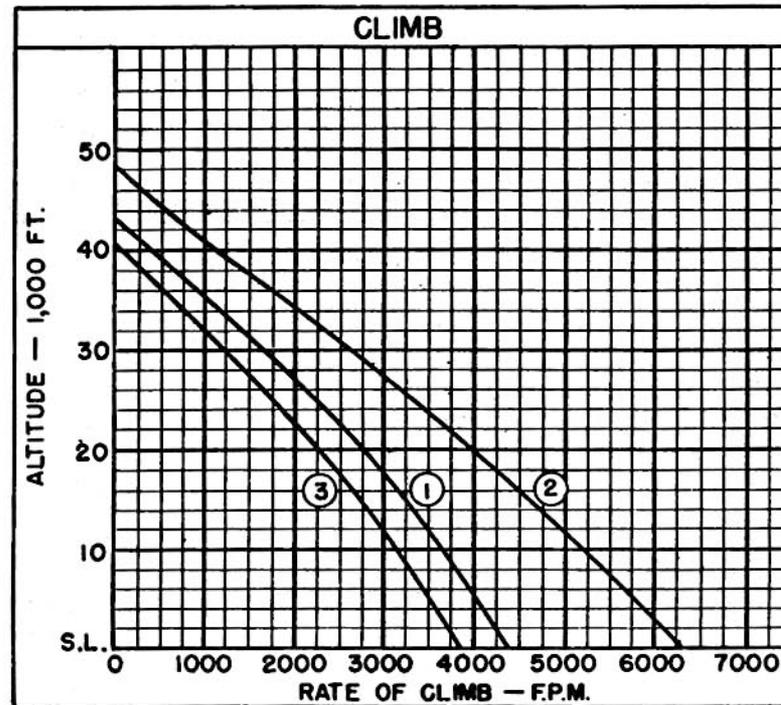
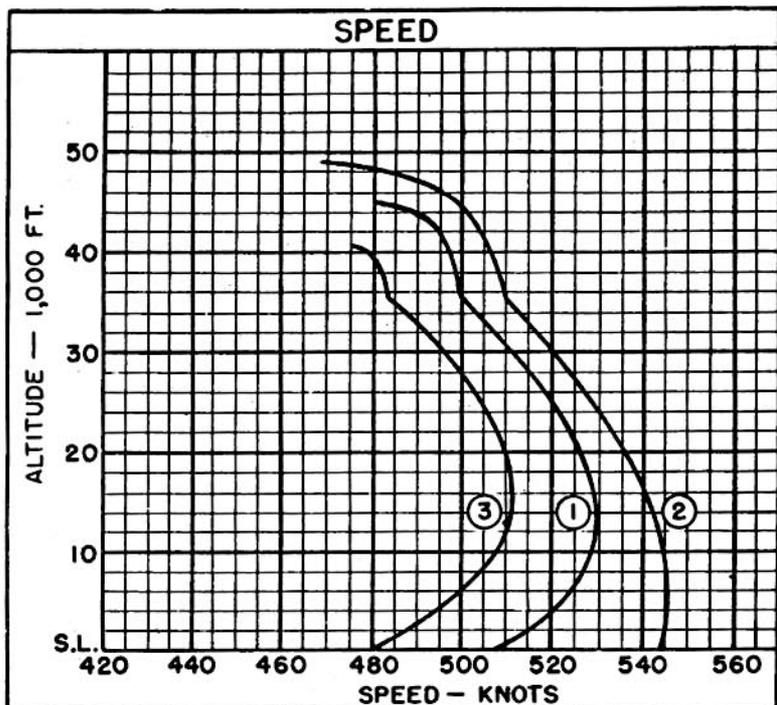
(1) Normal Power

Performance is based on calculations.

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

The external tanks carried are Douglas High Speed stores. The two store pylons were not included in the clean conditions (1) and (2).

Standard Aircraft Characteristics NAVAER 1335E (REV. 2-50)



○ LOADING CONDITION COLUMN NUMBER

NOTES

Spotting: 200 ft. length is required to spot 13 airplanes on the 96 ft. wide deck immediately aft of the forward ramp on CV-9 class carriers.

FIGHTER COMBAT RADIUS PROBLEM NO. F-5 (Gas Turbine Engine)

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 long range at cruising ceiling (300 ft./min.). External tanks dropped when empty.

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

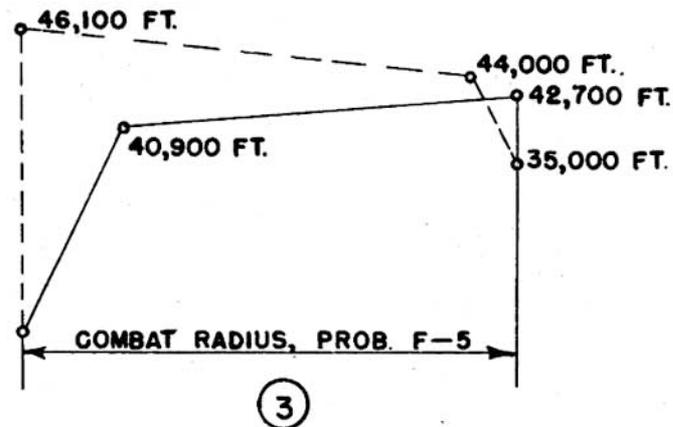
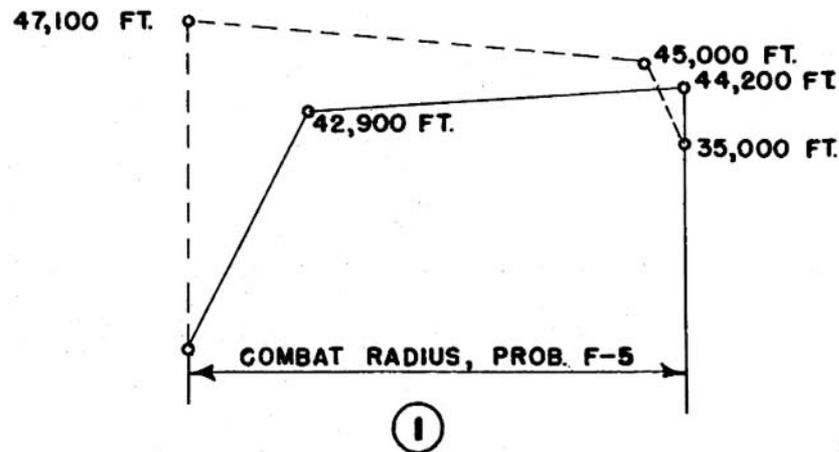
COMBAT: At 35,000 ft. for 15 min. at military power.

CLIMB: To cruising ceiling at military power.

CRUISE-IN: At V long range at cruising ceiling (300 ft./min.).

RESERVE: 10% of initial fuel load.

COMBAT RADIUS = CLIMB + CRUISE-OUT = CLIMB + CRUISE-IN



 This chart supersedes previously issued chart dated 1 November 1950. Reason for reissue: Change in wing configuration and revised engine data.
