



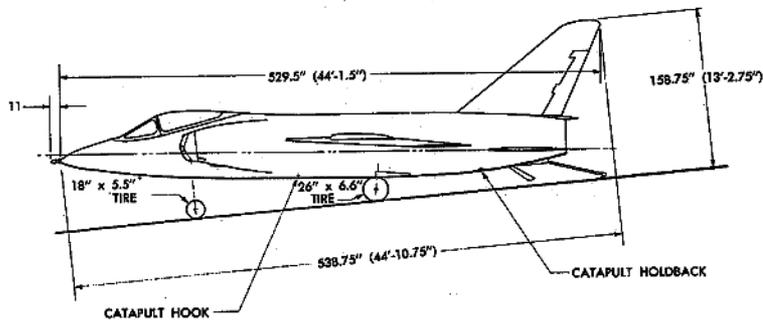
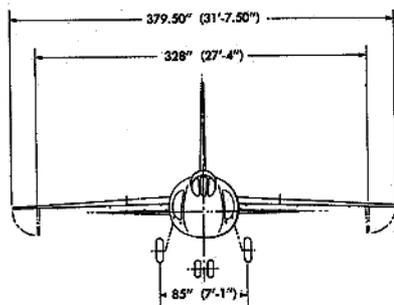
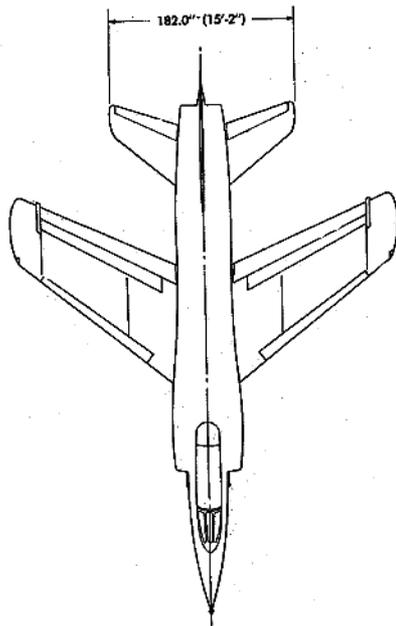
STANDARD AIRCRAFT CHARACTERISTICS

F11F-1 "TIGER"

GRUMMAN

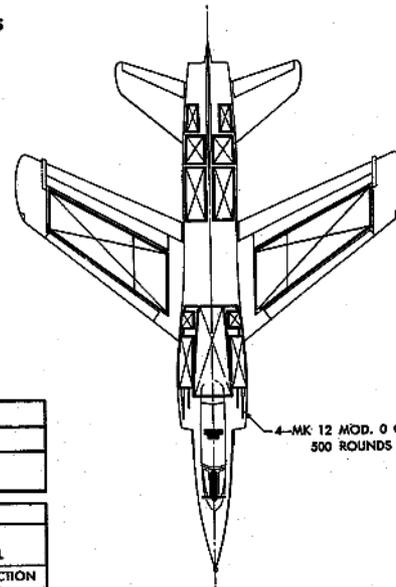
Standard Aircraft Characteristics NAVAER 1335A (REV. 1-55)

BUREAU OF AERONAUTICS
NAVY DEPARTMENT



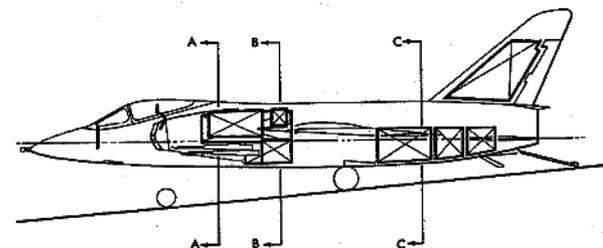
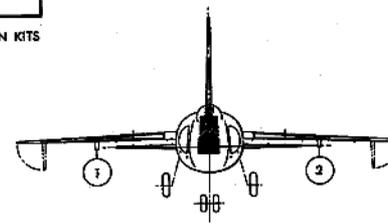
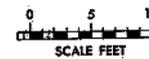
DESCRIPTIVE ARRANGEMENT
F11F-1

BUREAU OF AERONAUTICS
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WING STA 109.7
PYLON 1 & 2
150 GAL. C.F.E. TANK XAAM-N-7 SIDEWINDER
FUEL
AFT FUSELAGE SECTION 270 GALLONS TOTAL
FORWARD FUSELAGE SECTION 511 GALLONS TOTAL
WING 96 GALLONS PER SIDE TOTAL 192 GALLONS
RIN 50 GALLONS

*ARMOR PLATE SUPPLIED IN KITS



ARMAMENT & TANKAGE
F11F-1

■ BULLET RESISTANT GLASS AND ARMOR PLATE *



NON-SELF-SEALING TANKS



VIEW "A-A"



VIEW "B-B"



VIEW "C-C"

Standard Aircraft Characteristics NAVAER 1395B (Rev. 1-55)

POWER PLANT

NO. & MODEL.....(1) J65-W-18
 MFR.....Wright Aero
 TYPE.....Axial Flow
 LENGTH.....184"
 DIAMETER.....41"
 AUGMENTATION.....Afterburner

RATINGS

	LBS.	RPM	ALT.
MAX. T.O. & MIL.	10,500	8,300	S.S.L.
NORMAL	7,450	8,300	S.S.L.
	6,470	8,030 max.	S.S.L.

SPEC. NO. N-927-B

ORDNANCE

UHF COMMUN.....AN/ARC-27A
 UHF.....AN/ARA-25
 UHF.....AN/ARR-40
 VHF NAV*.....AN/ARN-14E
 IFF.....AN/APX-6B
 VIDEO CODER.....AN/APA-89
 RANGING RADAR**.....AN/APG-30A

*Provision for AN/ARN-21 as alternate.

**Provision for AN/APS-67 as alternate
 A/C #45 and subsequent.

MISSION AND DESCRIPTION

The FI1F-1 is a single-seat jet propelled day fighter designed for land and carrier operations. The primary mission is the destruction of enemy aircraft.

The cockpit is pressurized for high altitude flight and a pilot ejection seat is provided. High lift devices are slotted flaps and leading edge slats. Speed brakes are located on the bottom of fuselage.

Control about all three axes is achieved by irreversible hydraulically actuated surfaces. Two continuously operating independent systems of equal power supply pressure to tandem cylinders. Longitudinal control is effected by an all-movable stabilizer in flaps-up configuration and augmented by a geared elevator when flaps are down. Lateral control is provided by flaperons, while a conventional rudder is used for directional control.

Wing folding is manual. The engine may be serviced or removed by removal of tail section of fuselage.

A short nose boom is provided for in-flight refueling.

DEVELOPMENT

First Flight.....30 July 1954
 Service Use.....March 1957

DIMENSIONS

WING AREA.....250 sq.ft.
 SPAN.....31'8"
 MAC.....8'2"
 SWEEPBACK (1/4 chord).....35°
 ASPECT RATIO.....4
 LENGTH.....44'10.75"
 HEIGHT.....13'2.75"
 TREAD.....7'1"

WEIGHTS

LOADINGS	LBS.	L.F.
EMPTY.....	13,307
BASIC.....	13,810
DESIGN.....	18,375	6.5
COMBAT.....	18,375	6.5
MAX. T.O. (Field).....	23,459
(Cat.).....	23,459
MAX. LAND. (Field).....	20,600
(Arrest).....	15,715

All Weights are Actual.

FUEL AND OIL

No. Tanks	Total Gal.	Location
2	722	Fuselage
4	59	Fus. (Cheek)
1	50	Vert. Tail.
2	192	Wings
Fuel Grade		JP-4
Fuel Spec.....		applicable.MIL-F-5624

OIL

CAPACITY (Gals.).....4.36
 SPEC.....applicable.MIL-L-7808

ELECTRONICS

GUNS			
No.	Size	Location	Rds.
4	20mm	Fuselage	500
FIRE CONTROL			
RANGING RADAR.....		AN/APG-30	
AFCS.....		MK-16, MOD. 2	
EXTERNAL STORES			
Provisions:			
(1) Sidewinder			
(2) 150 gal. drop tank (CFE)			
(3) Aero 7A Rocket Package			
(4) Aero 6A Rocket Package			

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	(1) GENERAL PURPOSE FIGHTER GUNS + FULL INTERNAL FUEL	(3) GENERAL PURPOSE 2-SIDEWINDERS + GUNS 2-150 GAL. DROP TANKS	(5) GENERAL PURPOSE FIGHTER + 4 SIDEWINDERS + GUNS		
TAKE-OFF WEIGHT	lb. 21,035	23,899	21,915		
Fuel	lb. 6,650	6,650/1,950	6,650		
Fayload	lb. 300	610	920		
Wing loading	lb./sq.ft. 84.14	95.6	87.66		
Stall speed - power-off	kn. 124.5	132.8	127.1		
Take-off run at S.L. - calm	ft. 4,260	5,750	4,700		
Take-off run at S.L. 25 kn. wind	ft. 3,100	3,980	3,300		
Take-off to clear 50 ft. - calm	ft. 5,600	7,200	6,180		
Max. speed/altitude (A)	kn./ft. 588/18,000	542/26,000	551/25,000		
Rate of climb at S.L. (A)	fpm. 5,130	3,700	4,050		
Time: S.L. to 20,000 ft. (A)	min. 4.7	7.2	6.0		
Time: S.L. to 30,000 ft. (A)	min. 8.1	13.7	11.0		
Service ceiling (100 fpm) (A) (E)	ft. 41,900	35,000	37,700		
Combat range	n.mi. 1,108	1,146	784		
Average cruising speed	kn. 502	466	454		
Cruising altitude(s)	ft. 38,000/41,800	25,500/31,100	30,000/32,000		
Combat radius/Mission Time	n.mi./hr. 310/1.57	420/2.11	250/1.41		
Average cruising speed	kn. 504	476	473		
CAP - Loiter Altitude/Loiter Time/Mission Time (B)	Ft./hr./hr. 30,500/.622/1.56	28,500/1.08/1.85	28,000/.40/1.39		
IFR - Radius/Mission Time (C)	n.mi./hr.	690/3.76			
COMBAT LOADING CONDITION	(2) CLEAN	(4) CLEAN + 2-SIDEWINDERS + 2-PYLONS	(6) CLEAN + 4-SIDEWINDERS	(7) CLEAN + 4-SIDEWINDER PYLONS	
COMBAT WEIGHT	lb. 18,375	20,195	19,255	18,635	
Engine power	Maximum	Maximum	Maximum	Maximum	
Fuel	lb. 3,990	5,160	3,990	3,990	
Combat speed/combat altitude	kn./ft. 632/35,000	591/35,000	585/35,000	612/35,000	
Rate of climb/combat altitude	fpm/ft. 6,200/35,000	6,200/35,000	6,000/35,000	7,400/35,000	
Combat ceiling (500 fpm) (E)	ft. 49,000	47,300	47,500	49,000	
Rate of climb at S.L.	fpm. 16,300	11,200	10,800	13,600	
Max. speed at S.L.	kn. 654	641	630	650	
Max. speed/altitude	kn./ft. 654/S.L.	641/S.L.	630/S.L.	650/S.L.	
LANDING WEIGHT	lb. 15,275	15,732	15,550		
Fuel	lb. 1,190	1,307	1,205		
Stall speed - power-off (D)	kn. 106	107.5	106.9		
Stall speed - with approach power (D)	kn. 103.3	104.9	104.3		

NOTES

(A) MILITARY RATED THRUST

(B) COMBAT AIR PATROL (CAP) - 150 n. mi. radius

(C) INFLIGHT REFUELING (IFR) - Outbound only. Transfer 4,800 lb at 455 nautical miles out. Radius is reduced 26 nautical miles and refuel allowance is increased 5 minutes for each additional aircraft up to a total of 3 aircraft.

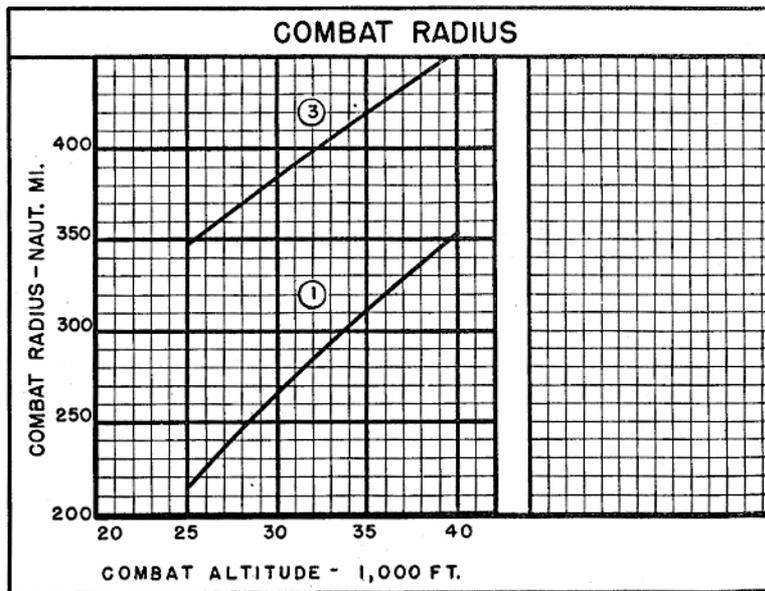
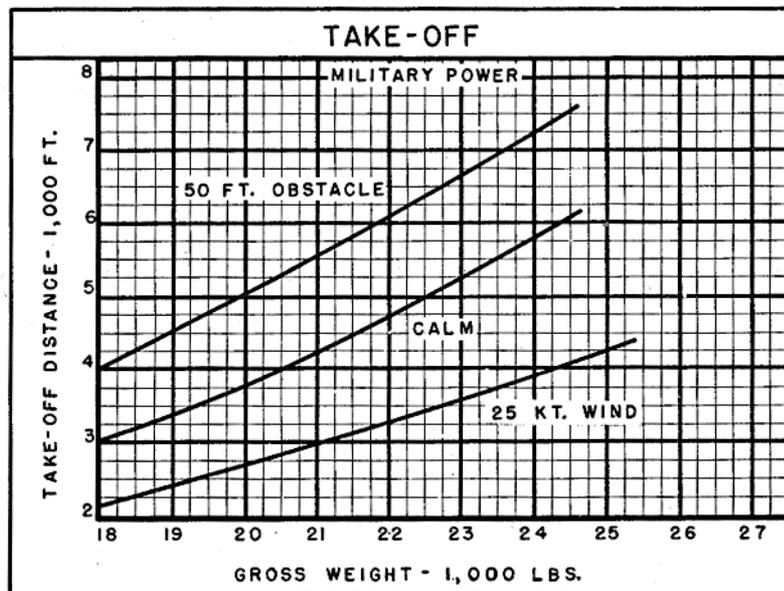
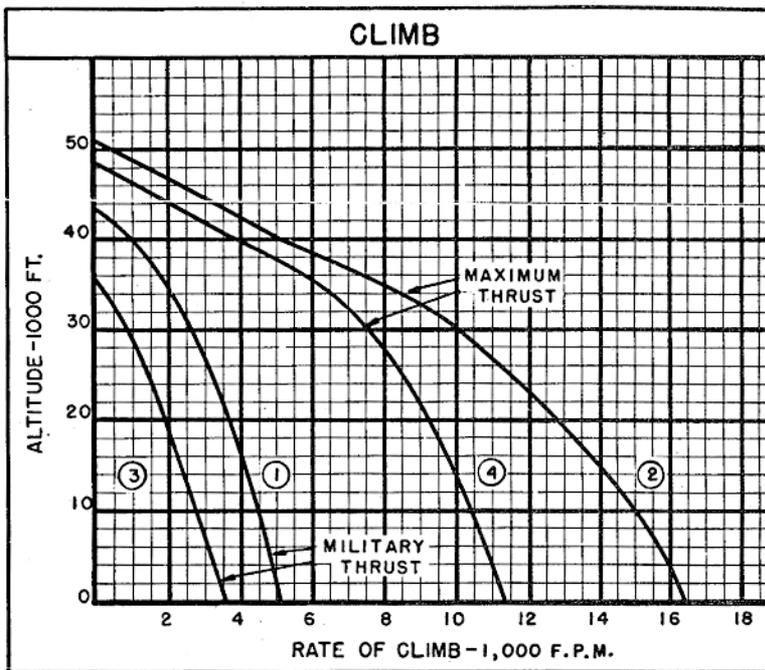
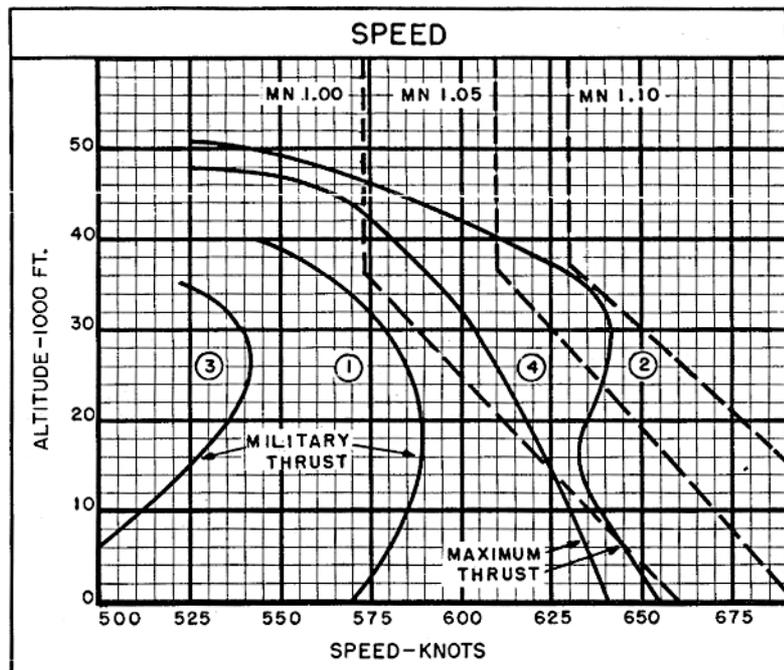
(D) MINIMUM CONTROL SPEED.

(E) No. Provisions for Pilot Pressure Suit.

PERFORMANCE BASIS: Calculations.

RANGE AND RADIUS are based on engine specification fuel consumption increased by 5%.

Aircraft weights for the above data are for Contract No. 53-1013. Aircraft for Contract 55-187 have increased 244 lb. in the clean configuration.



○ LOADING CONDITION COLUMN NUMBER

Standard Aircraft Characteristics NAVAER 1335E (Rev. 1-55)

NOTES

SPOTTING: A total of 80 airplanes can be accommodated in a landing spot on the flight and hangar decks of a CVA-19 class angled deck carrier.
(flight deck 45; hangar deck 35 airplanes)

GENERAL PURPOSE AND FIGHTER ESCORT

WARM-UP, TAKE-OFF, ACCELERATE: 5 minutes with normal thrust at sea level.
CLIMB: On course to cruise altitude with military rated thrust.
CRUISE-OUT: At altitudes and speeds for maximum range.
COMBAT FUEL ALLOWANCE: At 35,000 ft., 15 minutes at military rated thrust plus 5 minutes at maximum thrust.
CRUISE BACK: At altitudes and speeds for maximum range.
RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5 per cent of initial fuel load.

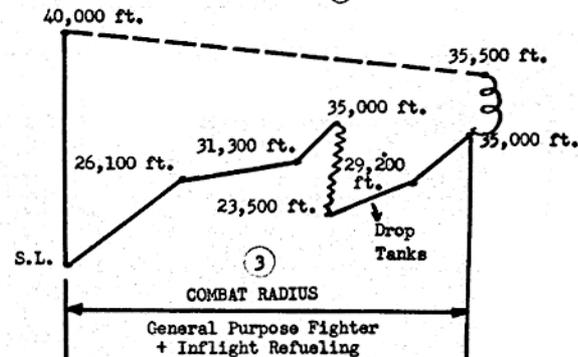
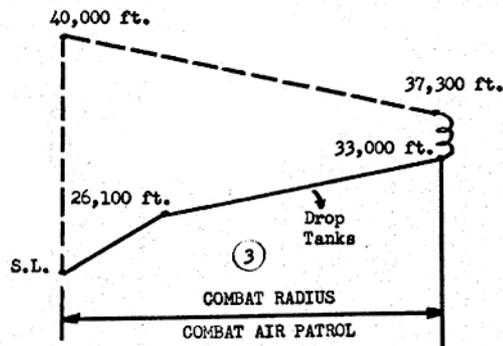
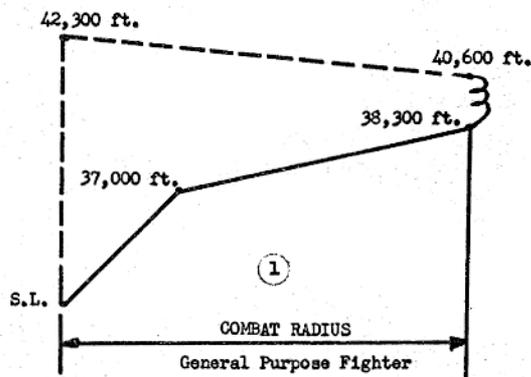
COMBAT AIR PATROL

WARM-UP, TAKE-OFF, ACCELERATE: 5 minutes with normal thrust at sea level.
CLIMB: On course to cruise altitude with military rated thrust.
CRUISE: To a point 150 nautical miles from base at altitudes and speeds for maximum range.
LOITER: On station at speed for maximum endurance at approximate final cruise out altitude.
COMBAT FUEL ALLOWANCE: At 35,000 ft. for 5 minutes at maximum thrust at a velocity mid-way between V_{max} with maximum thrust and V_{max} with military thrust plus 15 minutes at V_{max} with military thrust.
CRUISE-BACK: 150 nautical miles to base at altitudes and speeds for maximum range.
RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5 per cent of initial fuel load.

GENERAL PURPOSE FIGHTER WITH INFLIGHT REFUELING (A3D-2 Tanker)

WARM-UP, TAKE-OFF, ACCELERATE: 5 minutes with normal thrust at sea level.
CLIMB: On course to cruise altitude with military rated thrust.
CRUISE-OUT: At altitudes and speeds for maximum range.
CLIMB: To 35,000 ft. refueling altitude with military rated thrust.
ALLOWANCE FOR RENDESVOUS, HOOK-UP, AND FLIGHT CONTINGENCIES: 15 minutes at maximum endurance airspeeds. (Assume no fuel used, no distance gained during transfer of fuel.)
REFUEL POINT: Limited to return of aircraft to base with normal reserve if contact for refueling is not made.
CRUISE: Continue cruise-out at altitudes and speeds for maximum range.
CLIMB: To combat altitude 35,000 ft.

The remainder of problem is the same as the general purpose fighter problem of loading condition column number ③.



If JP-5 Fuel is Used, the Following are Applicable:

- ① General purpose fighter; clean.
- ③ General purpose fighter; 2 sidewinders + 2 150 gal. tanks.
- ③ Combat air patrol; 2 sidewinders + 2 150 gal. tanks.
- ③ General purpose fighter - inflight refueling; 2 sidewinders + 2 150 gal. tanks.

Δ WEIGHT

+ 306 lb.

+ 396 lb.

+ 396 lb.

+ 396 lb.

Δ RANGE

+ 78 n. mi.

+ 81 n. mi.

Δ RADIUS

+ 39 n. mi.

+ 40 n. mi.

+ 56 n. mi.

Δ MISSION TIME

+ .154 hrs.

+ .170 hrs.

+ .158 hrs.

+ .152 hrs.

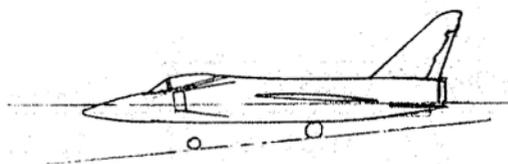
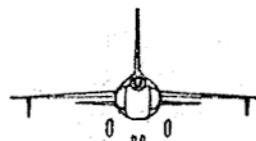
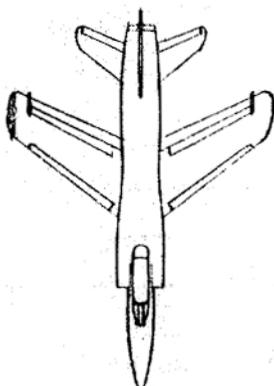
○ LOADING CONDITION COLUMN NUMBER

CHARACTERISTICS SUMMARY

GENERAL PURPOSE FIGHTER

F11F-1

GRUMMAN



WING AREA 250 Sq. Ft.
WING SPAN 31' - 8"

LENGTH 41' - 8"
HEIGHT 12' - 9"

AVAILABILITY			PROCUREMENT			
NUMBER AVAILABLE			NUMBER DELIVERED IN FISCAL YEARS			
ACTIVE	RESERVE	TOTAL				

STATUS

Mockup 30 June 1954
First Flight March 1957

ENGINES

(1) Wright J65-W-18

LBS. RPM ALT.

MAX. 10500 8300 S.S.L.

MIL. 7450 8300 S.S.L.

NORM. 6470 8000 S.S.L.

Spec. No. N-927A

FEATURES

Crew - 1
Pressurized cockpit
Pilot ejection seat
Slotted flaps & leading
edge slats
Two speed brakes
Two independent hydrau-
lid control systems

Max. fuel cap. 1023 gal

ARMAMENT

GUNS

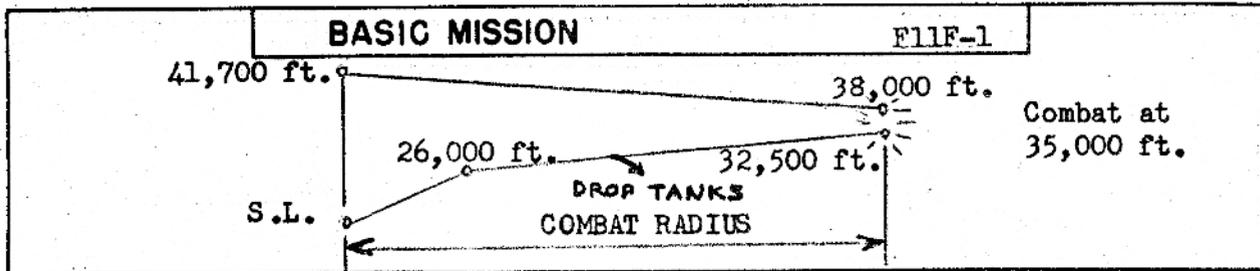
NO. SIZE LOCATION RDS
4 20mm Fuselage 500

2 or 4 Sidewinders

FIRE CONTROL

Ranging Radar AN/APG-30
AFCS.....MK 16 Mod. 2

CHARACTERISTICS SUMMARY



PERFORMANCE		
COMBAT RADIUS	COMBAT RANGE	SPEED
420 naut. mi. **(775) naut. mi. 476 knots avg.	1,145 naut. mi. 466 knots avg.	640 knots at S.L. ft. 592 knots at 35,000 ft. 563 knots at 45,000 ft.
Mission Time 2.17 hr. 2 - 150 gal. external fuel tanks 2 - ext. Sidewinders		Combat Weight Maximum Power
CLIMB	CEILING	TAKE OFF
3,500 ft./min. Sea Level, T. O. wt. Military Power	35,100 ft. 100 ft./min., T. O. wt. Military Power	5,448 ft. calm No Assist Military Power
11,350 ft./min. Sea Level, Combat wt. Maximum Power	47,300 500 ft./min. Combat wt. Maximum Power	4,000 ft. calm 25 km. wind Military Power
LOAD	WEIGHTS	STALLING SPEED
Fuel 1,323 gal. fixed 1,023 drop 300 JP-4	Empty 13,307 lbs. *Combat 20,195 lbs. Take-off 23,899 lbs. * 2 Sidewinders plus 2 Tank Pylons	133.0 knots Power Off Flaps down, T. O. wt.
		TIME TO CLIMB
		35,000 ft. in 3.0 min. Combat Wt., Max. Power

NOTES

Performance Basis: Calculations and Contractor's flight tests of the F11F-1 airplane.
Range and radius are based on engine spec. fuel consumption increased by 5%.

**with one outbound IFR