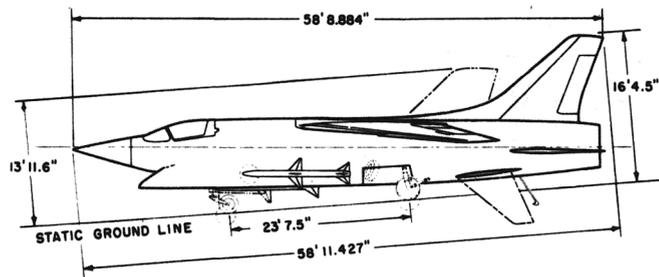
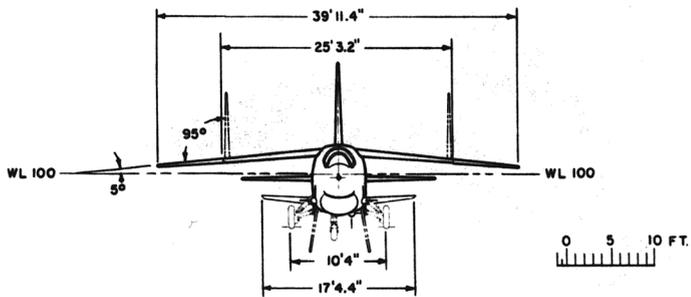
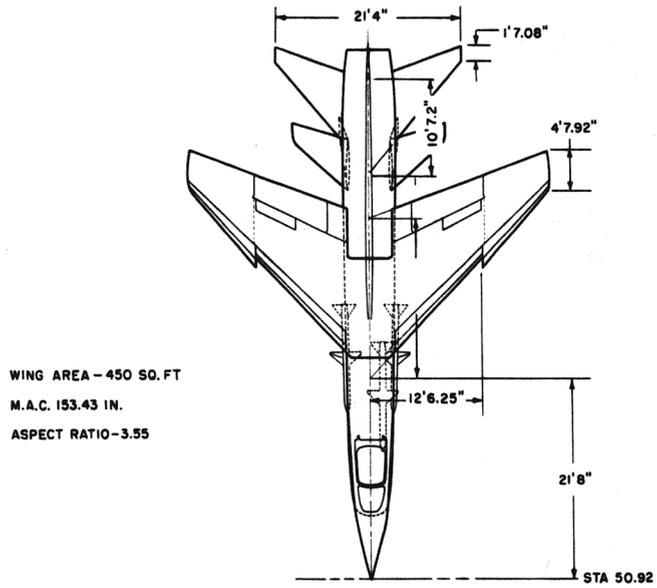


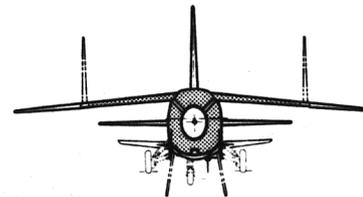
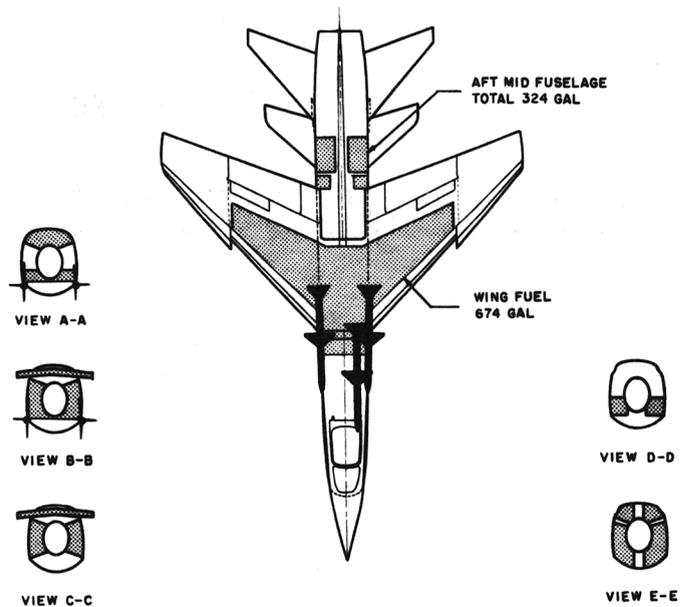
STANDARD AIRCRAFT CHARACTERISTICS F8U-3 "CRUSADER"

CHANCE VOUGHT AIRCRAFT, INCORPORATED

PRE-FLIGHT

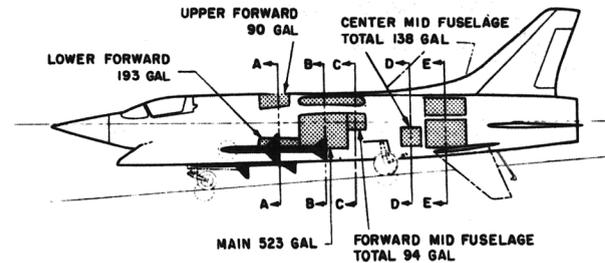


DESCRIPTIVE ARRANGEMENT



FUEL CELLS

ARMAMENT (THREE SPARROW III AIR-TO-AIR MISSILES)



ARMAMENT & TANKAGE

POWER PLANT

NO. & MODEL (1) J75-P-6
 MFR. Pratt & Whitney
 TYPE Axial Flow
 LENGTH 252 inches
 DIAMETER 50.4 inches
 AUGMENTATION Afterburner
 SPECIFICATION NO. P & W N-2622
 26 April, 1957

RATINGS

Static Thrust at S. L. lbs

MIL + A. B. 26,000
 MILITARY 16,500
 NORMAL 14,900

ORDNANCE

<u>NO.</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>
3	SPARROW III MISSILES	SEMI-SUBMERGED IN FUSELAGE
2	SIDEWINDER MISSILES	PYLON MOUNTED ON FUSELAGE

MISSION AND DESCRIPTION

The F8U-3 is a high performance, single place, all-weather fighter designed to perform the combat air patrol mission or the general purpose fighter mission, with or without inflight refueling. The general layout of the airplane is the same as that of the F8U-1. The high two-position wing incorporates a flap-blowing boundary layer control system in conjunction with full span double leading edge-droop. Directional stability is provided by the use of the F8U-1 vertical tail planform in conjunction with two-position ventral fins which fold for takeoff and landing. The F8U-3 can carry Sidewinder air-to-air missiles in addition to its basic armament of the three Sparrow III air-to-air missiles. A cruise and maneuvering autopilot with control stick steering is incorporated to maintain high pilot efficiency. The F8U-3 is powered by a Pratt and Whitney J75-P-6 turbo-jet engine with afterburner.

DIMENSIONS

WING
 AREA 450 sq ft
 SPAN 39 ft 11.4 in.
 M. A. C. 153.43 in.
 SWEEPBACK (1/4 Chord) 42°
 LENGTH 58 ft 8.884 in.
 HEIGHT 16 ft 4.5 in.
 TREAD 10 ft 4 in.

WEIGHTS

<u>LOADINGS</u>	<u>LBS.</u>	<u>L. F.</u>
TAKE-OFF	37,701	
COMBAT	30,578	6.4
LANDING	26,156	
EMPTY	21,869	

FUEL AND OIL

<u>NO. TANKS</u>	<u>GAL.</u>	<u>LOCATION</u>
3	617	Fuselage, Bladder, Main System
7	746	Fuselage, Bladder, Transfer System
1	673	Wing, Internal, Transfer System

FUEL CAPACITY (Total) 2,036 Gal.
 FUEL GRADE JP-5
 FUEL SPEC MIL-F-5624C

OIL

OIL CAPACITY 4.5 Gal.
 OIL SPEC MIL-L-7808B-1

ELECTRONICS

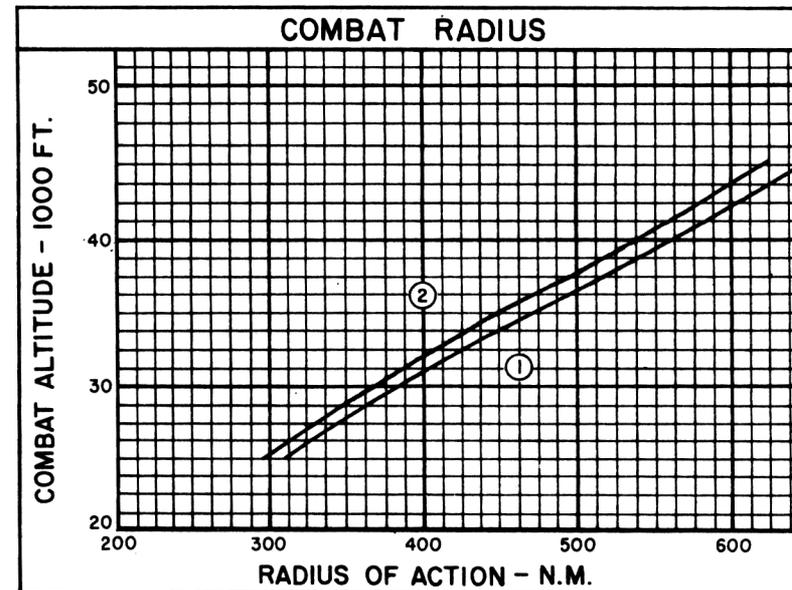
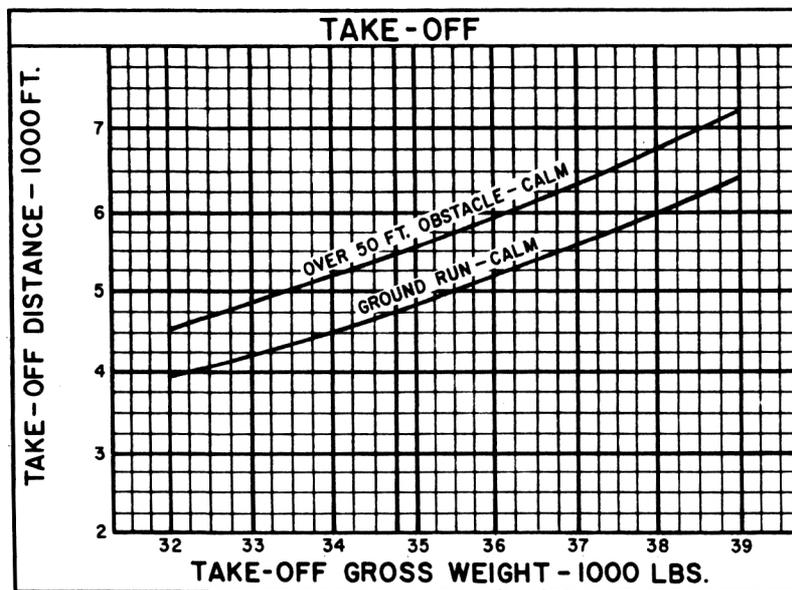
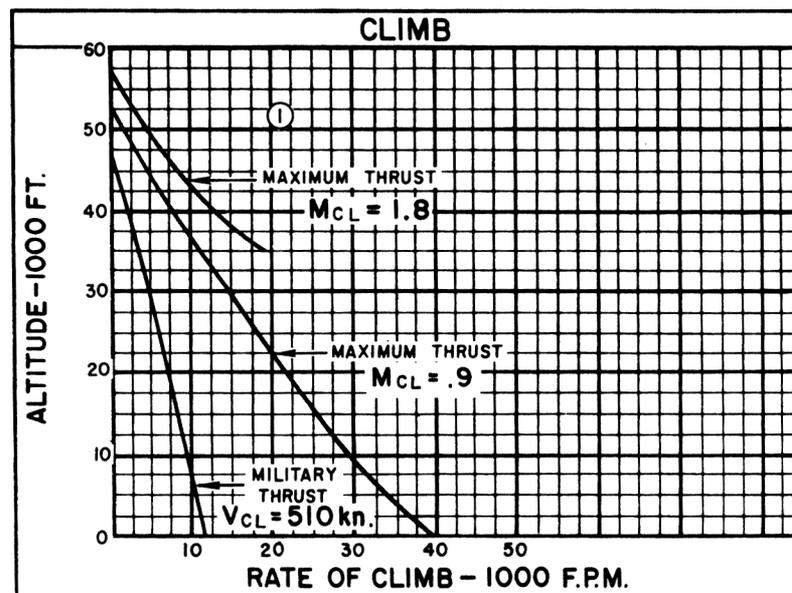
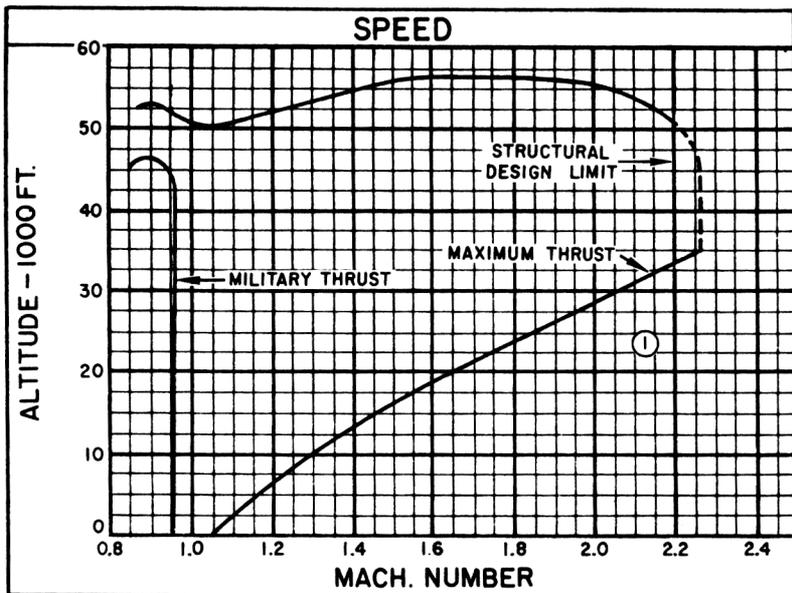
INTEGRATED ELECTRONIC
 CENTRAL AN/ASQ-19
 AERO DATA COMPUTER AXC-530
 ARMAMENT CONTROL
 SYSTEM AERO XIB
 RADAR ALTIMETER AN/APN-22
 COMPASS SYSTEM MA-1
 GYRO HORIZON SYSTEM
 FLIGHT STABILIZATION SYSTEM
 WITH AUTOPILOT

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	UNITS	① BASIC AIRPLANE 3 Sparrow III's	② BASIC plus 2 Sidewinders
TAKE-OFF WEIGHT	lb.	37,701	38,236
Fuel JP-5	lb.	13,844	13,844
Payload	lb.	1,140	1,468
Wing loading	lb./sq. ft.	83.8	
Stall speed-power off - BLC on	kn.	134	
Take-off run at S. L. - calm (2)	ft.	5,880	
Take-off to clear 50 ft. - calm (2)	ft.	6,650	
Wind required for catapulting	kn.	1.5	
Rate of climb at S. L. (2)	fpm.	9,020	
Time: S. L. to 20,000 ft. (3)	min.	2.8	
Time: S. L. to 30,000 ft. (3)	min.	5.1	
Service ceiling (100 fpm.) (2)	ft.	41,800	
Combat range	n. mi.	1,755	1,652
Average cruising speed	kn.	500	500
Cruising altitude(s)	ft.	40,700	40,700
Combat radius/Mission time - G. P. FTR	n. mi./hr.	582/2.57	539/2.48
Average cruising speed	kn.	500	500
C. A. P loiter at 35,000 ft./Mission Time	hr./hr.	1.72/2.65	1.62/2.55
IFR - radius/Mission Time	n. mi./hr.	1,157/5.02	1,107/4.82
COMBAT LOADING CONDITION			
COMBAT WEIGHT	lb.	30,578	
Engine power		Maximum	Military
Fuel	lb.	6,721	
Combat speed/combat altitude	kn./ft.	1,265/40,000	555/40,000
Rate of climb/combat altitude	fpm./ft.	13,200/40,000	2,400/40,000
Combat ceiling (500 fpm.)	ft.	55,800	45,300
Rate of climb at S. L.	fpm.	39,250	11,500
Max. speed at S. L.	kn.	693	629
Max. speed at/altitude	kn./ft.	1,267/35,000	629/S. L.
LANDING WEIGHT	lb.	26,156	
Fuel	lb.	2,299	
Stall speed with approach power	kn.	108.8	
Wind required for arresting	kn.	11	
Landing distance	ft.	3,650	

NOTES

1. WING LOADING BASED ON WING AREA = 450 SQ. FT.
2. MILITARY THRUST.
3. MILITARY THRUST - TIMES TO CLIMB CONSIDER WEIGHT REDUCTION FOR FUEL USED.
4. COMBAT AT 40,000 FT.



○ LOADING CONDITION COLUMN NUMBER

NOTES

GENERAL PURPOSE AND ESCORT FIGHTER

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 40,000 ft. for 5 minutes at maximum thrust at a velocity mid-way between Vmax with maximum thrust and Vmax with military thrust plus 15 minutes at Vmax with military 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.

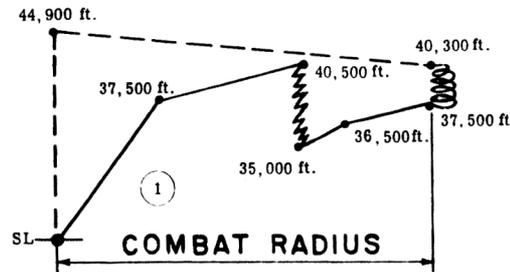
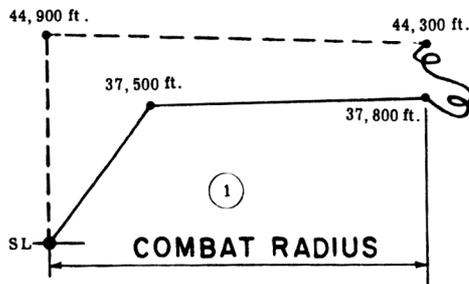
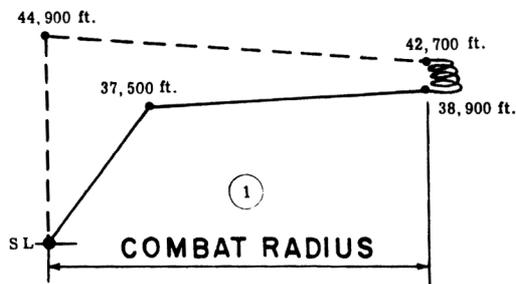
COMBAT AIR PATROL

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 35,000 ft.
COMBAT FUEL ALLOWANCE: At 40,000 ft. for 5 minutes at maximum thrust at a velocity mid-way between Vmax with maximum thrust and Vmax with military thrust plus 15 minutes at Vmax 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.
DESCEND to 35,000 ft. REFUELING ALTITUDE: No fuel used, no distance gained.
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.
CLIMB: On course to cruise altitude with military rated thrust.
CRUISE: Continue cruise-out at altitudes and speeds for maximum range.

The remainder of the problem is the same as the General Purpose Fighter Problem.



- ① ARMAMENT - 3 SPARROW III's
- ② ARMAMENT - 3 SPARROW III's plus 2 SIDEWINDERS

	COMBAT RANGE	RADIUS - G. P. FIGHTER	RADIUS - I. F. R.	MISSION TIME - C. A. P.
①	1,755 n. mi.	562 n. mi.	1,157 n. mi.	2.65 HR.
②	1,652 n. mi.	539 n. mi.	1,107 n. mi.	2.55 HR.

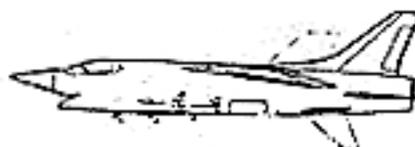
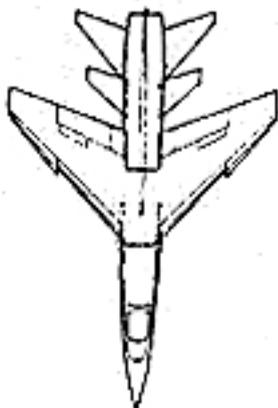
○ LOADING CONDITION COLUMN NUMBER

CHARACTERISTICS SUMMARY

COMBAT AIR PATROL

F8U-3

CHANCE VOUGHT "CRUSADER"



WING AREA 450 sq. ft.

LENGTH 58' - 11"

WING SPAN 39' - 11"

HEIGHT 16' - 5"

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

STATUS

First Flight (Estimated) June 1958

Service Use August 1960

ENGINES

(1) P&W J75-P-6

Sea Level Static
Ratings

	<u>LBS</u>	<u>RPM</u>	<u>RPM</u>
		<u>N₁</u>	<u>N₂</u>
MIL.+AB	26000	7300	9000
MIL.	16500	7050	9000
NORM.	14900	6700	8900

SPEC. No. N-2622

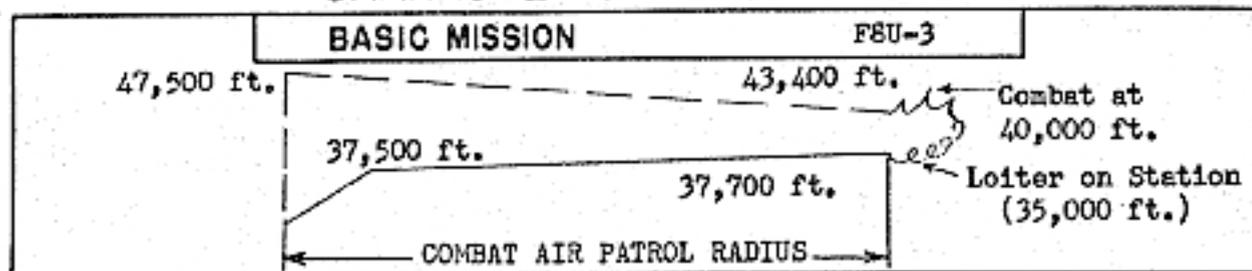
FEATURES

Variable incidence wing
Full span leading edge
droop
Flap blowing Boundary
Layer Control
2 Position ventral fins
Auto pilot
Crew - 1

ARMAMENT

3 SPARROW III
Air-to-Air Missiles
Aero-1-2-A Launcher
plus mixed bag
Capability of (4)
Semi-Submerged
Sidewinders

CHARACTERISTICS SUMMARY



PERFORMANCE		
COMBAT RADIUS	COMBAT RANGE	SPEED
150 naut. mi. 500 knots avg. Mission time 2.7 hr. Loiter time 1.7 hr. Loading: 3 SPARROW III Missiles Combat Air Patrol	1775 naut. mi. 500 knots avg. - - hours	695 knots at Sea Level 1115 knots at 25,000 ft. 1265 knots at 50,000 ft. Combat Weight Military + AB Power
CLIMB	CEILING	TAKE OFF
9020 ft./min. Sea Level, T. O. wt. Military Power	41,800 ft. 100 ft./min., T. O. wt. Military Power	5880 ft. (Calm) No Assist Military Power
34,250 ft./min. Sea Level, Combat Wt. Military + AB Power	51,500 ft. 500 ft./min., Combat wt. Military + AB Power	4430 ft. - 25 knot wind Military Thrust
LOAD	WEIGHTS	STALLING SPEED
Fuel 2036 gal. fixed 2036 drop JP-5 Fuel	Empty 21,862 lbs. *Combat 32,318 lbs. Take-off 37,856 lbs. * Missiles on	134.0 knots Power Off Flaps down, T. O. wt. TIME TO CLIMB 35,000 ft. in 1.6 min. Combat Wt., Max. Power

NOTES

PERFORMANCE is based on calculations.
 Range and Radius is based on engine specification fuel consumption data increased 5%.
 General Purpose Fighter Radius with same loading: 560 n.mi.; Mission time: 2.6 hr.
 General Purpose IFR Mission Radius: 1155 n.mi.; Mission time: 5.0 hr.