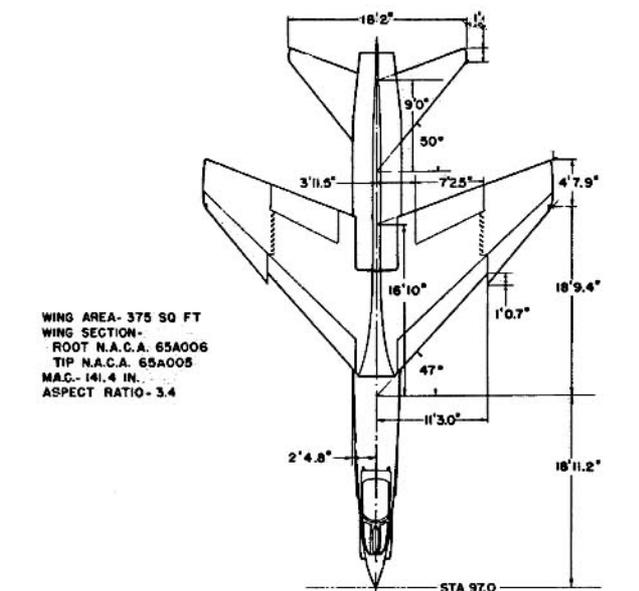


STANDARD AIRCRAFT CHARACTERISTICS

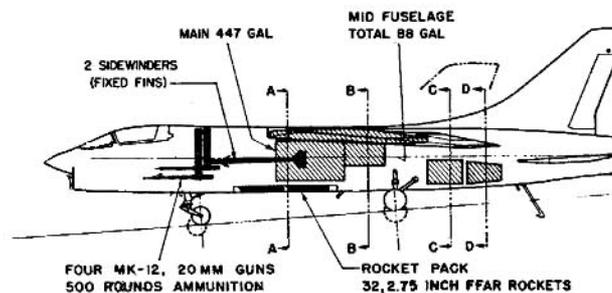
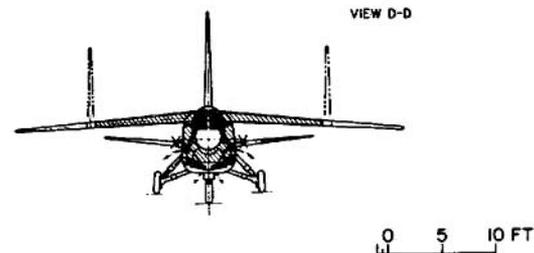
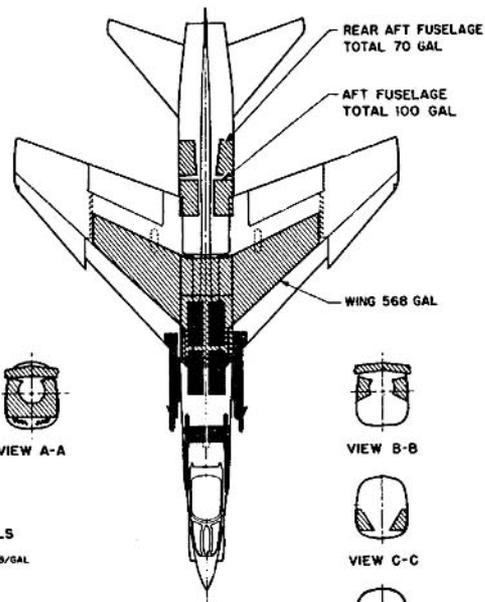
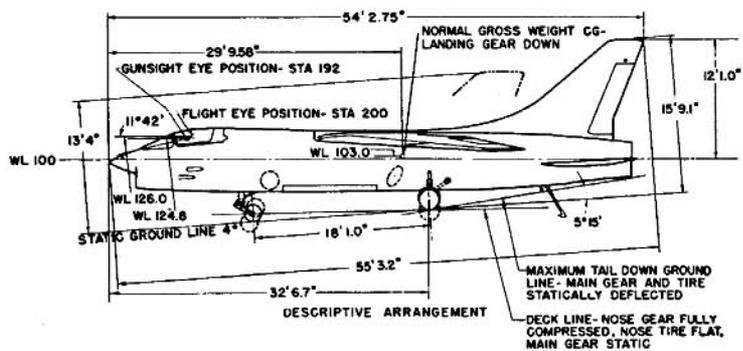
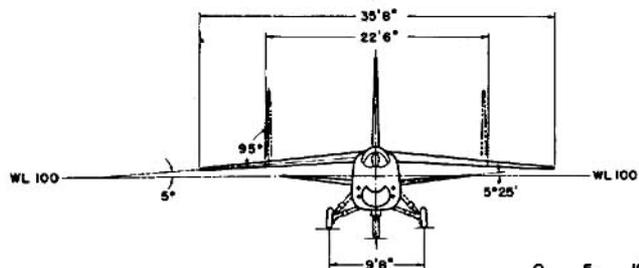
F8U-1 "CRUSADER"

CHANCE VOUGHT

Standard Aircraft Characteristics NAVAER 13354 (REV. 1-55)



WING AREA- 375 SQ FT
 WING SECTION-
 ROOT N.A.C.A. 65A006
 TIP N.A.C.A. 65A005
 M.A.C.- 141.4 IN.
 ASPECT RATIO- 3.4



Standard Aircraft Characteristics NAVJRB 1335B (Rev. 1-55)

POWER PLANT

NO & MODEL(1) J-57-P-4
 MFR.....Pratt & Whitney
 TYPE.....Axial Flow
 LENGTH.....250"
 DIAMETER.....41"
 AUGMENTATION.....Afterburner

RATINGS

THRUST
 LBS. ALT.

MIL + A.E.16,000.....S.S.L.
 MIL.....10,200.....S.S.L.
 NORM..... 8,700.....S.S.L.

SPEC. NO. P&W N-1669-C

ORDNANCE

NO.	DESCRIPTION	LOCATION	RDS.
4	20mm aircraft Guns Mk.12	Fuselage	500
32	2.75 in. FFAR Rockets	Fuselage Cl. (Internal)	
2	Sidewinder Missiles	Wing (External)	

MISSION AND DESCRIPTION

The F8U-1 Dayfighter is designed to maintain air superiority in daylight fair weather. It is a single-place, swept-wing airplane having a high variable incidence wing and a low unit horizontal tail. The wing and tail arrangement permits use of a very short landing gear and results in a relatively level fuselage attitude for take-off and landing. The high wing position makes the wing readily adaptable to carrying missiles and other stores on the wing and for possible future flexible deck operations. The wing incorporates full span leading-edge droop and ailerons that are drooped as flaps when the wing is in the take-off and landing position.

DEVELOPMENT

First Flight March 1955
 Service Use March 1957

DIMENSIONS

WING
 AREA.....375 sq. ft.
 SPAN.....35' -8"
 MAC.....141"
 SWEEPBACK ($\frac{1}{4}$ Chord).....42°
 LENGTH.....54' -3"
 HEIGHT.....15' -9"
 TREAD.....9' -8"

WEIGHTS

LOADINGS	LBS.	L.F.
EMPTY.....	15,513.....	
BASIC.....	16,171.....	
DESIGN.....	21,442.....	6.4
COMBAT.....	20,995.....	
MAX. T.O.(Field).....	27,500 Approx.....	
(Cat.).....	27,500.....	
MAX. LAND(Field).....	23,500.....	
(Arrest).....	20,000.....	

All weights are calculated.

FUEL AND OIL

NO. TANKS	TOTAL GAL.	LOCATION
3.....	514.....	Main Fuselage
2.....	170.....	Aft Fuselage
1.....	589.....	Wing

FUEL GRADEJP-4
 FUEL SPEC. applicable.....MIL-F-5624a

OIL

CAPACITY (gals).....5.5
 SPEC. applicable.....MIL-L-7808

ELECTRONICS

UHF TRANSMITTER REC.....AN/ARC-27A
 UHF DIRECTION FINDER.....AN/ARA-25
 VHF NAVIGATION REC.....AN/ARN-14E
 (AN/ARN-21 ALTERNATE)
 IFF TRANSPONDER.....AN/APX-6B
 RADAR.....AN/APG-30A
 CODER.....AN/APA-89

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION		(1) BASIC FIGHTER 4 - 20mm GUNS 32 - 2.75" FFAR	(4) BASIC FIGHTER 4 - 20mm GUNS 32 - 2.75" FFAR 2 Sidewinders		
TAKE-OFF WEIGHT	lb.	26,969	27,468		
Fuel JP-4	lb.	8,275	8,275		
Payload	lb.	934	1,262		
Wing loading	lb./sq.ft.	71.9	73.3		
Stall speed - power-off	kn.	134.8	136.8		
Take-off run at S.L. - calm (A)	ft.	5,200	5,650		
Take-off run at S.L. 25 kn. wind (A)	ft.	3,920	4,220		
Take-off to clear 50 ft. - calm (A)	ft.	6,120	6,510		
Max. speed/altitude (A)	kn./ft.	590/2,000	570/15,000		
Rate of climb at S.L. (A)	fpm.	5,380	3,950		
Time: S.L. to 20,000 ft. (A)	min.	4.2	5.0		
Time: S.L. to 30,000 ft. (A)	min.	6.8	8.2		
Service ceiling (100 fpm) (A)	ft.	42,300	41,100		
Combat range	n.mi.	1,280	1,150		
Average cruising speed	kn.	494	494		
Cruising altitude(s)	ft.	42,025	42,100		
Combat radius/Mission Time	n.mi./hr.	345/1.73	310/1.6		
Average cruising speed	kn.	494	494		
CAP loiter at 40,000 ft./Mission Time (B)	hr./hr.	.77/1.72	.65/1.59		
IFR - radius/Mission Time	n.mi./hr.	800/3.5	730/3.2(C)		
COMBAT LOADING CONDITION		(2) Rockets, Guns Retained	(3) Rockets, Guns Retained	(5) Rockets, Guns, Sidewinders Retained	(6) Rockets, Guns Retained
COMBAT WEIGHT	lb.	23,659	23,659	24,185	23,929
Engine power		Maximum	Military	Maximum	Maximum
Fuel	lb.	4,960	4,960	4,960	4,960
Combat speed/altitude	kn./ft.	880/35,000	552/35,000	813/35,000	879/35,000
Rate of climb/altitude	fpm/ft.	10,760/35,000	3,020/35,000	9,800/35,000	2,500/35,000
Combat ceiling (500 fpm)	ft.	51,500	43,550	50,750	42,300
Rate of climb at S.L.	fpm.	20,000	6,300	15,750	4,800
Max. speed at S.L.	kn.	637	579	629	560
Max. speed/altitude	kn./ft.	880/35,000	588/2,000	813/35,000	571/10,000
LANDING WEIGHT	lb.	18,976		19,120	
Fuel	lb.	1,189		1,189	
Stall speed - power-off	kn.	111.5		112.0	
Stall speed - with approach power	kn.	108.2		108.9	

NOTES

(A) Military Thrust

(B) Combat Air Patrol - 150 n. mi. Radius

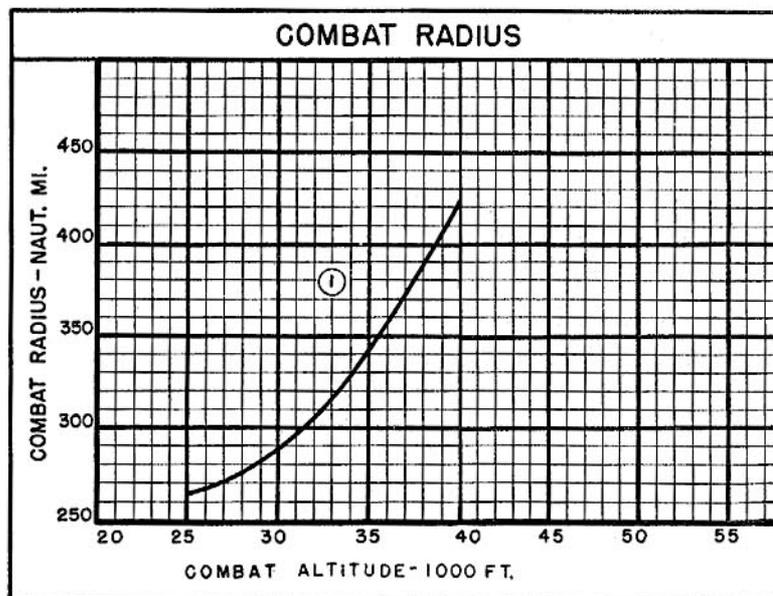
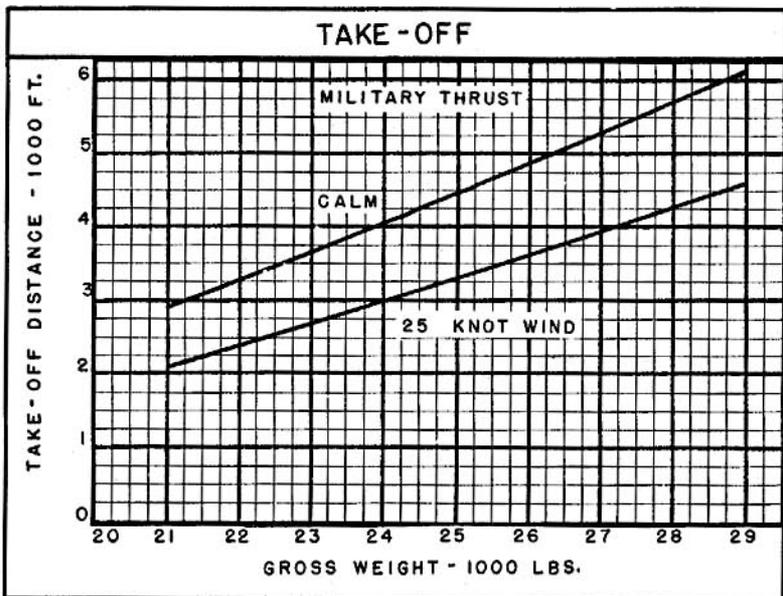
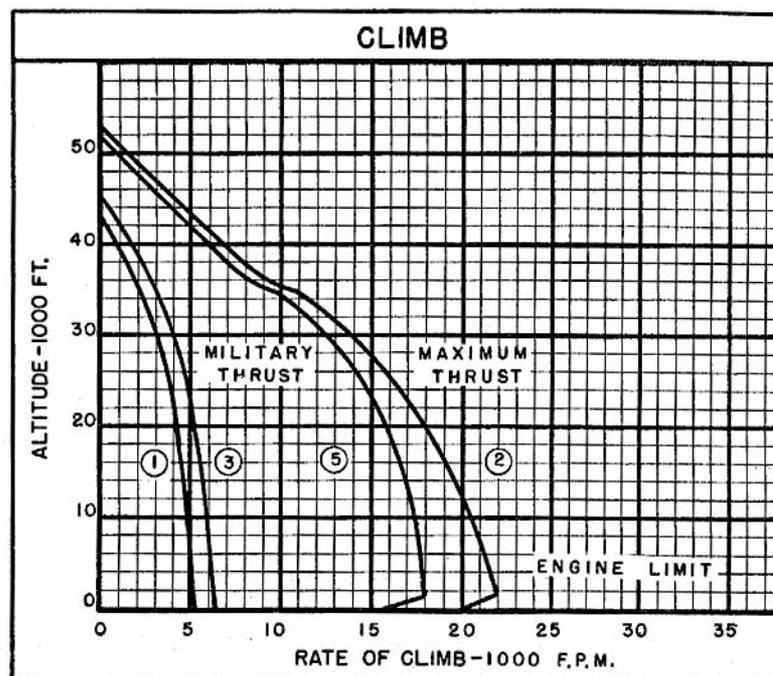
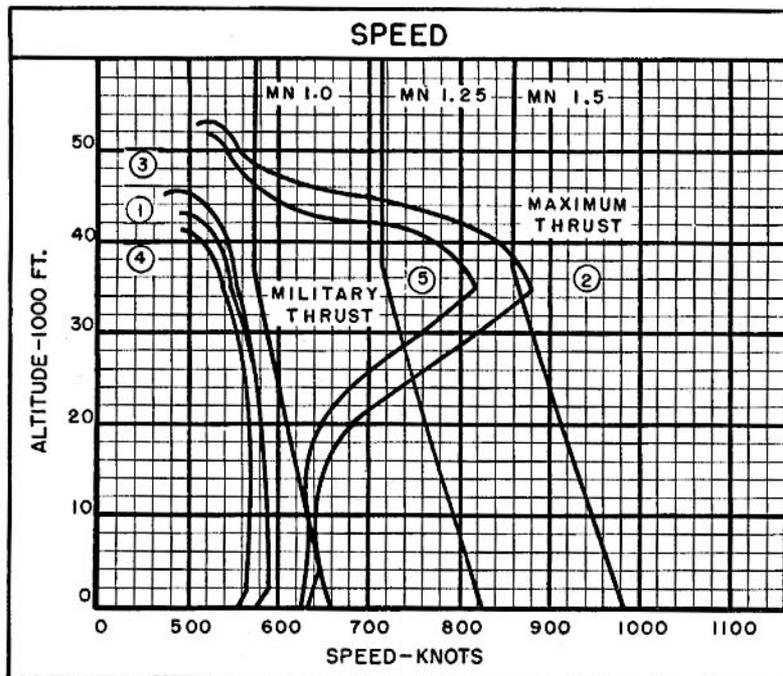
(C) Inflight Refueling - outbound only. Transfer 4,600 lbs. at 540 n. mi. out. Radius is reduced 16 n. mi. and refuel allowance is increased by 5 minutes for each additional aircraft up to a total of 4 aircraft.

PERFORMANCE BASIS: Flight test data plus wind tunnel drag for the 2 external Sidewinders.

RANGE AND RADIUS: Range and radius are based on engine specification fuel consumption increased 5%.

SPOTTING: A total of 81 aircraft can be accommodated in a landing spot on the flight and hangar decks of a CVA-19 class angled deck carrier (flight 43; hangar 38 airplanes)

REASON FOR REISSUE: Current loadings and more complete flight test data.



○ LOADING CONDITION COLUMN NUMBER

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

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 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: 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.

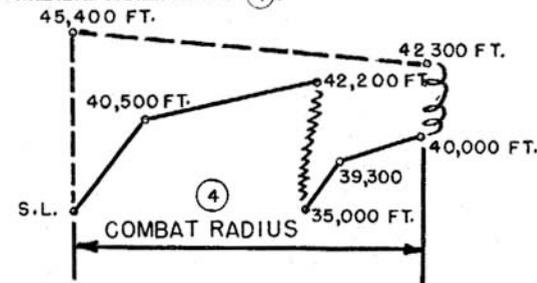
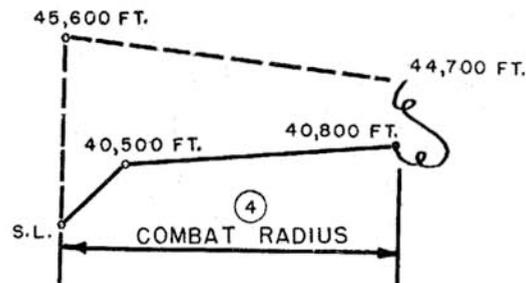
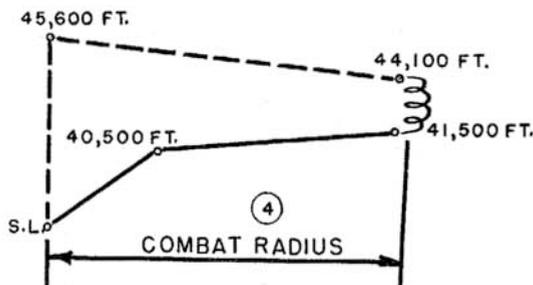
COMBAT AIR PATROL

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.
 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 of loading condition column number ④.



If JP-5 fuel is used, the following are applicable:

- ① General Purpose Fighter; guns and rockets
- ① Inflight Refueling; guns and rockets
- ④ General Purpose Fighter; 2 external sidewinders
- ④ Inflight Refueling; 2 external sidewinders

△ WEIGHT	△ RANGE
382 lb.	84 n.mi.
596 lb.	124 n.mi.
382 lb.	76 n.mi.
596 lb.	112 n.mi.

△ RADIUS	△ MISSION TIME
42 n.mi.	.17 hr.
62 n.mi.	.25 hr.
38 n.mi.	.15 hr.
56 n.mi.	.23 hr.

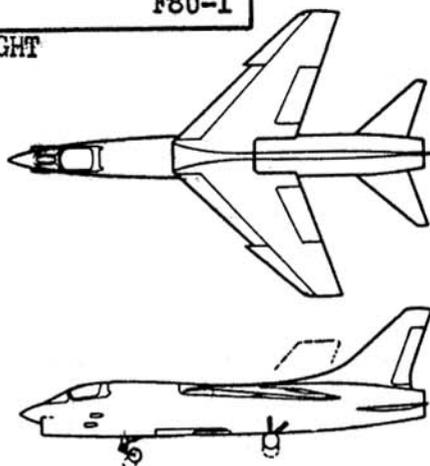
○ LOADING CONDITION COLUMN NUMBER

CHARACTERISTICS SUMMARY

GENERAL PURPOSE FIGHTER

F8U-1

CHANCE VOUGHT



WING AREA 375 Sq. Ft.
WING SPAN 35' - 8"

LENGTH 54' - 3"
HEIGHT 15' - 9"

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

STATUS

First Flight 25 March 1955
Service Use 25 March 1957

ENGINES

(1) Pratt & Whitney
J57-P-4A

	<u>LBS.</u>	<u>ALT.</u>
MIL + AB	16000	SSL
MIL.	10200	SSL
NORM.	8700	SSL

Eng. Spec. N-16690

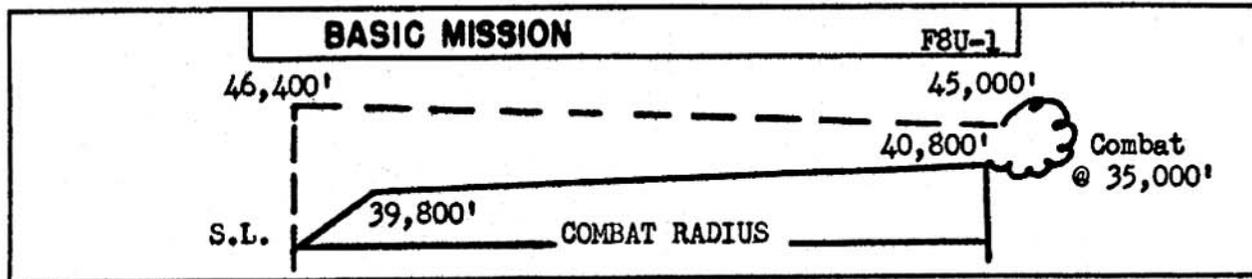
FEATURES

Crew - 1
Variable incidence
Wing
Full Span Wing leading
edge droop
Ailerons drooped as
flaps in take-off
position

ARMAMENT

4 - 20mm MK 12 Guns
500 Rds Amm.
32 - 2.75" FFAR
Rockets
2 - Sidewinders
(external)

CHARACTERISTICS SUMMARY



PERFORMANCE		
COMBAT RADIUS	COMBAT RANGE	SPEED
380 naut. mi. ** 820 naut. mi. 495 knots avg. 1.9 hrs. Mission Time BASIC FIGHTER: 4-200mm Guns 32 - 2.75 FFAR 2 External Sidewinders	1256 naut. mi. 485 knots avg. 2.60 hours Mission Time	637 knots at Sea Level 750 knots at 25000 ft. *815 knots at 3500 ft. 880 knots at 35000 ft. (no sidewinders) *Combat Weight Maximum Power
CLIMB	CEILING	TAKE OFF
4,150 ft./min. Sea Level, T. O. wt. Military Power	41,200 ft. 100 ft./min., T. O. wt. Military Power	4350 ft. Calm No Assist T.O. Wt. Military Power
16000 ft/min Sea Level *Combat Wt. Maximum Power	50,600 ft. 500 ft/min, *Combat Wt. Maximum Power	3100 ft. 25 Knot Wind No Assist T.O. Wt. Military Power
LOAD	WEIGHTS	STALLING SPEED
Fuel 1269 gal. fixed 1269 drop — JP-5 Fuel	Empty 16,667 lbs. Combat 24,382 lbs. Take-off 27,692 lbs.	136 knots Power-Off Flaps down, T. O. wt.
		TIME TO CLIMB
		40,000 ft. in 3.6 min. Combat Wt., Max. Power

NOTES

Performance Basis: Calculations and Flight Test Data
 Range and Radius are based on flight test fuel consumption
 *Combat Weight: Missiles retained
 **IFR RADIUS: Mission Time 3.9 hrs.
 CAP MISSION: 150 n.mi. RADIUS - Loiter time -.9 hrs. Mission Time-1.8 hrs.
 When JP-4 fuel is used Basic Fighter Radius decreases 40 n.mi. mission
 time .20 hrs.