



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

STANDARD AIRCRAFT CHARACTERISTICS

F9F-8 "COUGAR"

GRUMMAN

15 APRIL 1957

F9F-8

POWER PLANT

NO. & MODEL..... (1) J48-P-8A
 MFR..... Pratt & Whitney
 TYPE..... Centrifugal Comp.
 ENGINE LENGTH..... 110"
 ENGINE DIA..... 51"

RATINGS

	LBS	@ RPM	@ ALT
T.O.	7,250	11,000	S.S.L.
MIL.	7,250	11,000	S.S.L.
NORM.	5,600	10,400	S.S.L.

Spec. No. N-1614D Appendix B

ORDNANCE

GUNS

NO.	SIZE	LOCATION	RDS.
4	20mm M-3	Fuselage	760

FIRE CONTROL

ACS Aero 5D-1
 AFCS Mk. 6 Mod. 3
 Radar AN/APG-30A
 Labs Aero 18C

WING STA.	RACK	CAPABILITY
71	Aero 65A	Bombs - 1000# Max. Rocket Pkgs. 150 gal. Fuel Tank
96 & 117	Aero 15A	Bombs - 500# Max. Rocket Pkgs.

UNIVERSAL SIDEWINDERS
 Pylon & Launcher
 Mod. D

MISSION AND DESCRIPTION

The F9F-8 is a single seat, swept wing, carrier-based general purpose fighter. Its primary mission is the destruction of enemy aircraft. It is capable of carrying 4 Sidewinders or a maximum external store bomb load of 4,000 lbs.

This airplane is a development of the F9F-6. Improvements are increased wing and flap area, increased fuel capacity and a cambered wing leading edge. A pressurized cabin, with temperature control and an ejection seat, is installed. The guns and range radar are accessible by sliding the nose forward. A nose boom is installed for in-flight refueling.

The airplane is controlled longitudinally and laterally by hydraulically operated surfaces and directionally by a mechanically operated surface. Lateral control is provided by means of flaperons and lateral trim by a wing tip trimmer flap. Longitudinal control is provided by an all movable stabilizer and the conventional manual elevator which is used for flaps down and emergency flight conditions. Longitudinal trim is accomplished by moving the entire stabilizer. Emergency manual controls are electric or automatic in the event of hydraulic system failure.

DEVELOPMENT

First Flight January 1954
 Service Use October 1954

DIMENSIONS

WING
 AREA..... 337 Sq. Ft.
 SPAN..... 34' - 6"
 MAC..... 10' - 0"
 SWEEPBACK 3/4 35°

LENGTH..... 41' - 9"
 HEIGHT..... 12' - 3"
 TREAD..... 8' - 3"

WEIGHTS

LOADINGS	LBS	L.F.
EMPTY.....	11,866.....	
BASIC.....	12,474.....	
DESIGN.....	16,780.....	7.0
COMBAT.....	17,328.....	
MAX. T.O. (Field).....	24,763.....	
(Cat.).....	24,763.....	
MAX. LDC (Field).....	24,763.....	
(Arrest).....	17,613.....	

ALL WEIGHTS ARE ACTUAL

FUEL AND OIL

GALS.	NO. TANKS	LOCATION
847.....	2	Fuse. C.S.
216.....	6	Wing Internal
300.....	2	Wing Droppable.

FUEL GRADE JP-4
 FUEL SPEC..... applicable MIL-F-5624

OIL

CAPACITY (GALS)..... 3.25
 GRADE 1010
 SPEC applicable MIL-O-6081

ELECTRONICS

UHF Comm..... AN/ARC-27A
 UHF ADF..... AN/ARA-25
 LF ADF..... AN/ARN-6
 IFF..... AN/APX-6B
 Range Radar..... AN/APG-30A

Provisions for Service Installation
 of:

TACAN (Alternate to ARN-6) AN/ARN-21
 SIF Coder..... AN/APA-89

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	(1) General Purpose Fighter Guns - int. fuel	(3) General Purpose Fighter 4 Sidewinders + Guns 2 150 gal drop tanks		(6) Low Alt. Attack 4 500 lb Bombs 2 150 gal drop tank	
TAKE-OFF WEIGHT	lb. 20,098	23,511		24,763	
Fuel internal/external JP-4	lb. 6,930/ —	6,930/1,950		6,930/1,950	
Payload	lb. 471	1,091		2,000	
Wing loading	lb./sq.ft. 59.7	69.9		73.5	
Stall speed - power-off	kn. 114.7	126.4		131.2	
Take-off run at S.L. - calm	ft. 4,030	2,870		6,680	
Take-off run at S.L. 25 kn. wind	ft. 2,710	4,210		4,700	
Take-off to clear 50 ft. - calm	ft. 4,840	7,300		8,700	
Max. speed/altitude (A)	kn./ft. 558/S.L.	465/15,000		507/11,000	
Rate of climb at S.L. (A)	fpm. 4,800	3,100		3,300	
Time: S.L. to 20,000 ft. (A)	min. 4.8	7.7		7.4	
Time: S.L. to 30,000 ft. (A)	min. 8.3	15.5		13.4	
Service ceiling (100 fpm) (A)	ft. 42,000	34,000		35,500	
Combat range	n.mi. 1,050	830		1,140	
Average cruising speed	kn. 448	420		433	
Cruising altitude(s)	ft. 38,000/42,000	29,000/40,300		30,000/38,200	
Combat radius /Mission time	n.mi./hr. 385/2.06	410/2.42		435/2.14	
Average cruising speed	kn. 448	400		437	
CAP loiter at 30,000 ft./Mission time (B)	hr./hr. —	1.00/2.13		—	
IFR - radius /Mission time (C)	n.mi./hr. —	745/3.79		—	
COMBAT LOADING CONDITION	(2) CLEAN (With Guns)	(4) Drop tanks off 4 - Sidewinders 2 - Aero 65A racks	(5) Drop tanks off 4 - Sidewinder racks 2 - Aero 65A racks	(7) Drop tanks off 4 - 500 lb Bomb 2 - Aero 65A racks	
COMBAT WEIGHT	lb. 17,328	19,738	19,118	20,990	
Engine power	Military	Military	Military	Military	
Fuel	lb. 4,158	5,280	5,280	5,280	
Speed/altitude	kn./ft. 515/35,000	455/35,000	485/35,000	490/35,000	
Rate of climb/ altitude	fpm/ft. 2,200/35,000	650/35,000	1,300/35,000	1,900/35,000	
Combat ceiling (500 fpm)	ft. 42,500	35,800	39,000	38,800	
Rate of climb at S.L.	fpm. 5,750	4,100	4,700	4,600	
Max. speed at S.L.	kn. 561	453	499	513	
Max. speed/altitude	kn./ft. 562/2,000	486/20,000	519/10,000	522/10,000	
LANDING WEIGHT	lb. 14,399	15,117	15,117	14,958	
Fuel	lb. 1,231	1,359	1,359	1,348	
Stall speed - power-off	kn. 94.8	97.5	97.5	96.9	
Stall speed - with approach power	kn. 93.8	96.4	96.4	95.9	

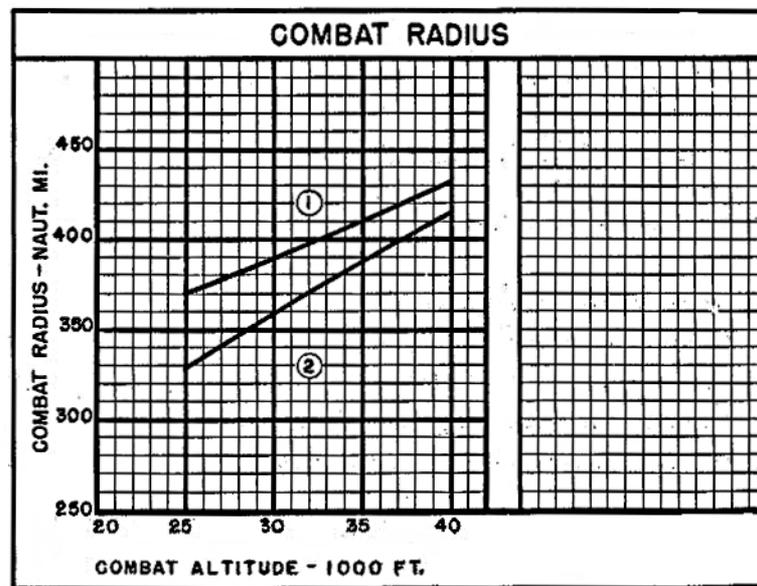
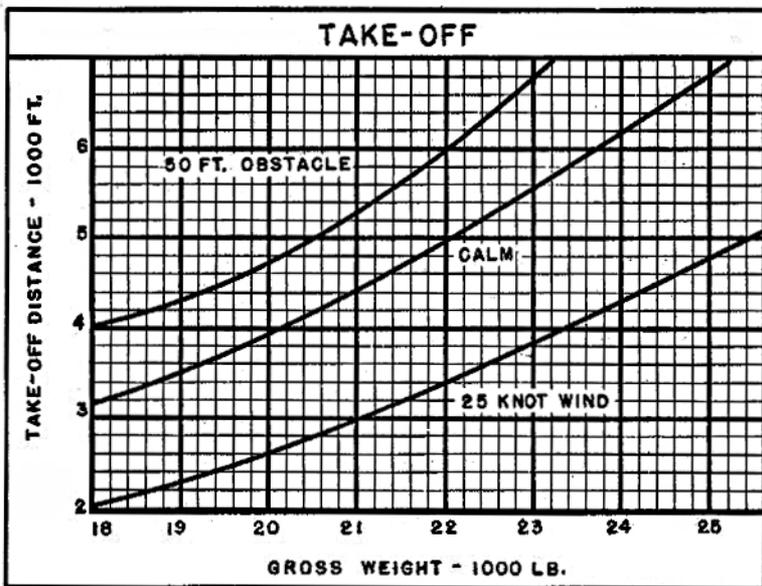
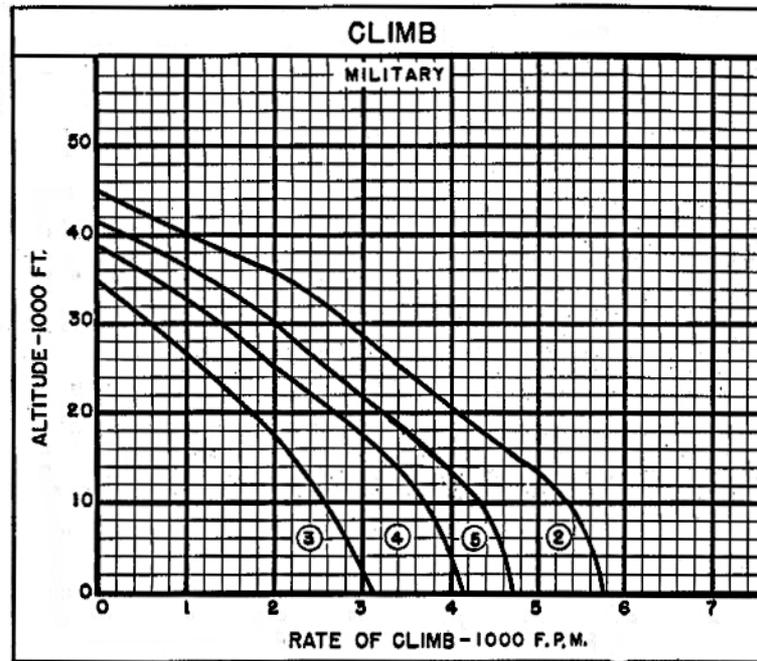
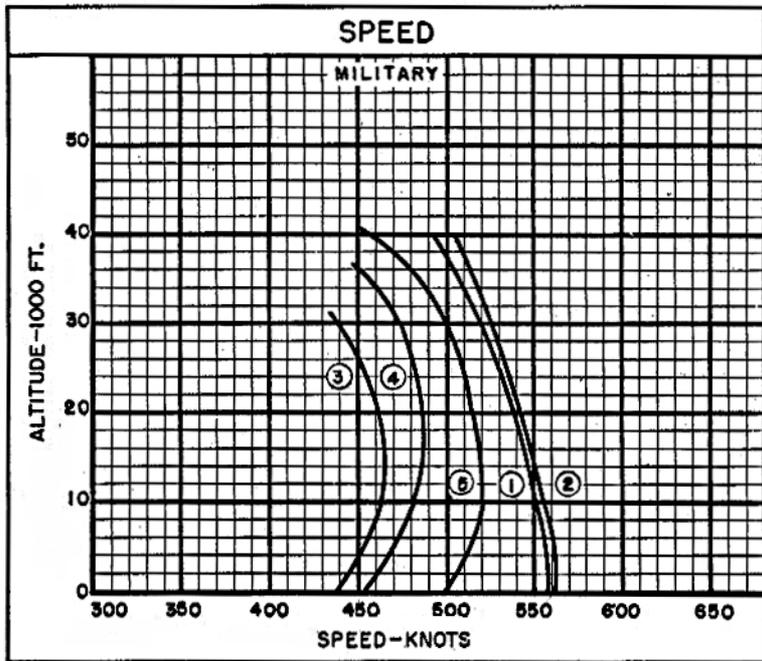
NOTES

(A) Military Rated Thrust

(B) Combat Air Patrol - 150 n. mile radius

(C) Inflight Refueling - outbound only. Transfer 4,564 lbs. at 432 n.mi. out. Radius is reduced 14.0 n.mi. and refuel allowance is increased 5 minutes for each additional aircraft up to a total of 3 aircraft.

PERFORMANCE BASIS: Clean configuration based on contractors and NATC flight test data; store configurations based on clean plus estimated store data.



○ LOADING CONDITION COLUMN NUMBER

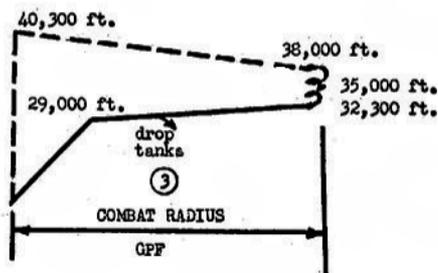
Standard Aircraft Characteristics NAVAER 1335E (Rev. 1-55)

NOTES

SPOTTING : A total of 103 airplanes can be accommodated in a landing spot on the flight and hangar decks of a CVA-19 class angled deck carrier.

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., 20 minutes at maximum speed with military rated thrust (assume combat concluded at initial cruise back altitude)
 CRUISE-BACK: At altitudes and speeds for maximum range.
 RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5 percent of initial fuel load.



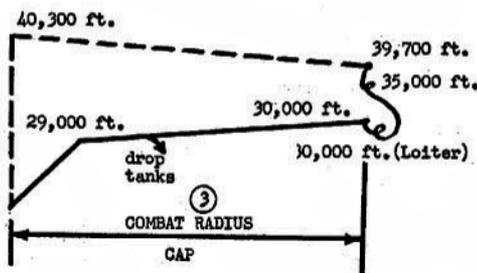
If JP-5 fuel is used, the following are applicable:

- | | |
|---|--|
| ① | General Purpose Fighter; Clean |
| ③ | General Purpose Fighter; 4 SW's + 2-150 gal. tanks |
| ③ | Combat Air Patrol; 4 SW's + 2-150 gal. tanks |
| ③ | General Purpose Fighter - IFR; 4 SW's + 2-150 gal. tanks |
| ⑥ | Low Altitude Attack; 4-500 lb. bomb + 2-150 gal. tanks |

With JP-5, an increase of 195 lbs. of fuel is added to fuel taken on during refueling at point increased by 28 n. miles for IFR problem. Total fuel transferred 4,759 lbs. at 460 n. miles out.

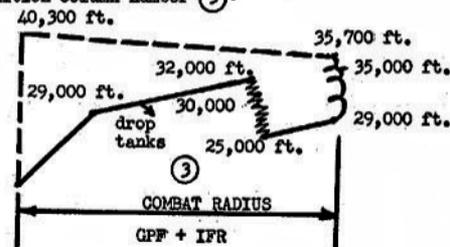
COMBAT AIR PATROL

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 20 minutes at maximum speed with military rated thrust.
 CRUISE: Back to base 150 nautical miles at altitudes and speeds for maximum range.
 RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5 percent 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 altitude and speeds for maximum range-external tanks retained.
 DESCEND TO 30,000 FT. REFUELING ALTITUDE: No fuel used, no distance gained.
 ALLOWANCE FOR RENDEZVOUS, 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-external tanks dropped when empty.

The remainder of the problem is the same as the General Purpose Fighter Problem of loading condition column number ③.



	△ WEIGHT	△ RANGE	△ RADIUS	△ MISSION TIME
①	+ 320 lb.	+ 70 n.mi.	+ 35 n.mi.	+ .156 hr.
③	+ 410 lb.	+ 66 n.mi.	+ 33 n.mi.	+ .166 hr.
③	+ 410 lb.	--	--	+ .123 hr.
③	+ 410 lb.	--	+ 44 n.mi.	+ .151 hr.
⑥	+ 410 lb.	+ 74 n.mi.	+ 37 n.mi.	+ .169 hr.

○ LOADING CONDITION COLUMN NUMBER

NOTES

(Continued from PERFORMANCE SUMMARY Page)

RANGE AND RADIUS are based on contractor's and NATC flight test fuel consumption data increased by 5%.

External fuel tanks are dropped when empty.

Mission Time: Any time where fuel is used and distance gained including CAP loiter, combat and refueling allowance time.

Reason for Reissue: Availability of Performance data and fuel consumption based on NATC Flight Tests.