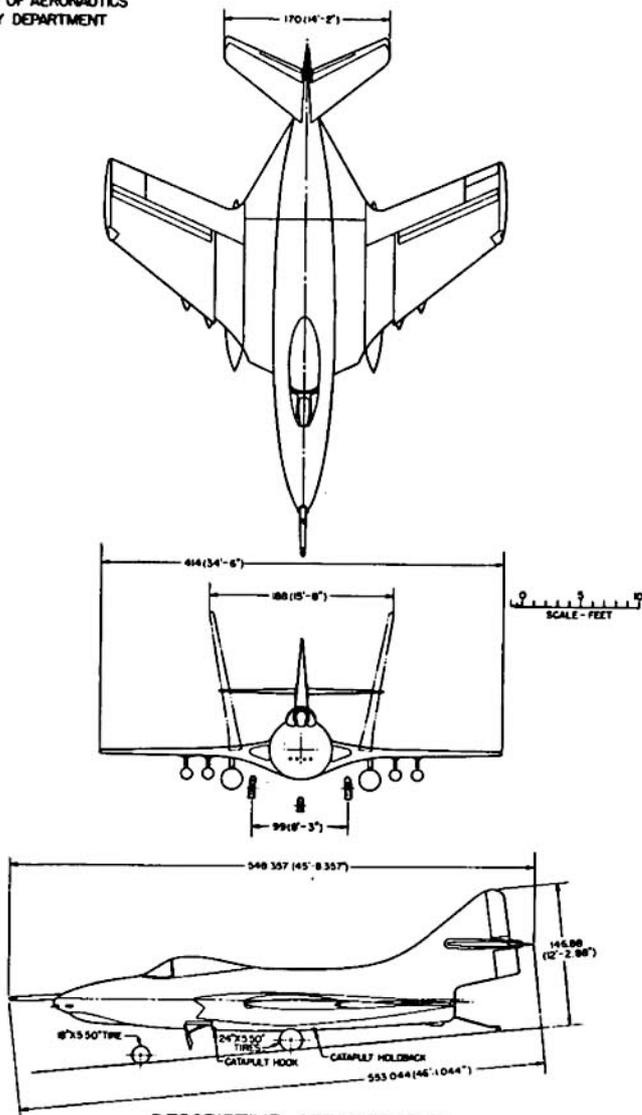


## STANDARD AIRCRAFT CHARACTERISTICS

F-9J COUGAR

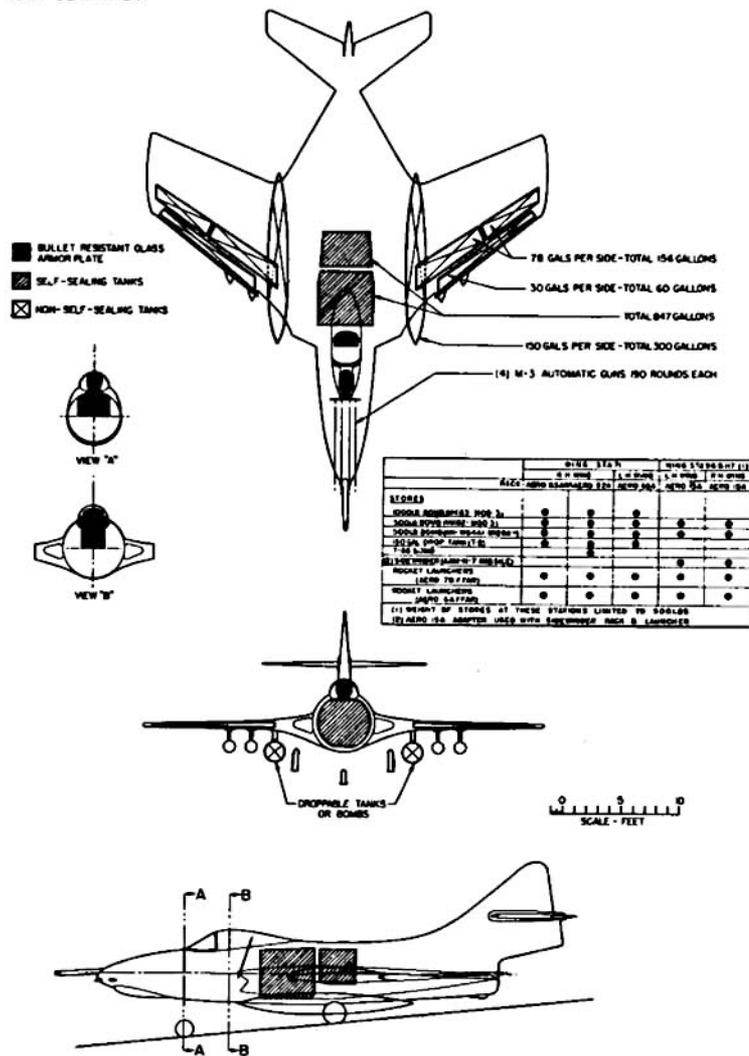
GRUMMAN

BUREAU OF AERONAUTICS  
NAVY DEPARTMENT



DESCRIPTIVE ARRANGEMENT  
F9F-8

BUREAU OF AERONAUTICS  
NAVY DEPARTMENT



ARMAMENT & TANKAGE  
F9F-8

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 tanks
TAKE-OFF WEIGHT	lb.	20,098	23,511		24,761
Fuel internal/external JP-4	lb.	6,930/ —	6,930/1,950		6,930/1,950
Fayload	lb.	471	1,091		2,000
Wing loading	lb./sq.ft.	59.7	69.9		73.2
Stall speed - power-off	kn.	114.7	126.4		131.2
Take-off run at S.L. - calm	ft.	4,030	5,870		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.	4,810	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.	28,000/42,000	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	430/35,000
Rate of climb/ altitude	fpm/ft.	2,200/35,000	650/35,000	1,300/35,000	1,900/32,000
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.	14,299	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

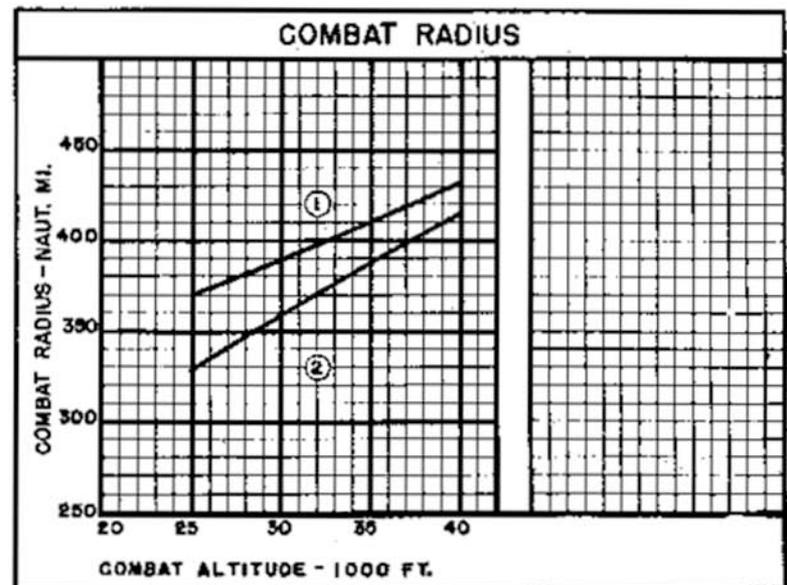
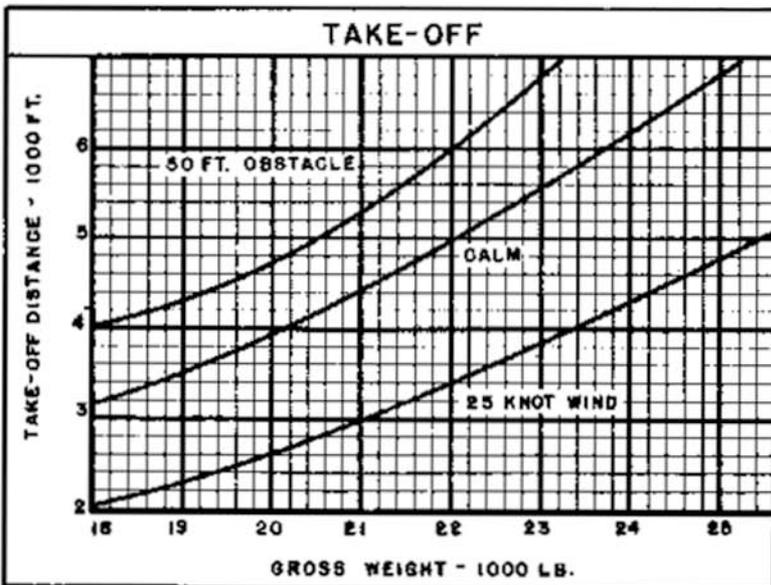
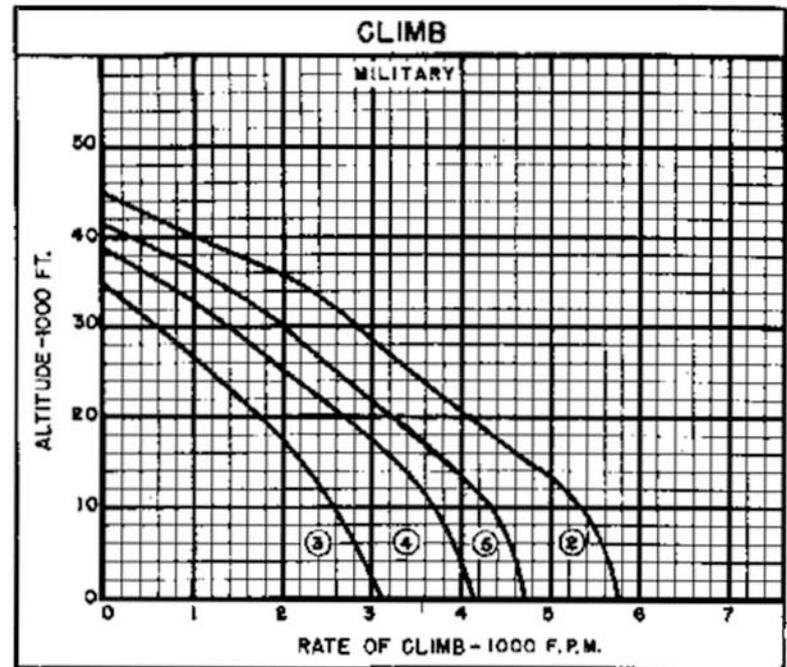
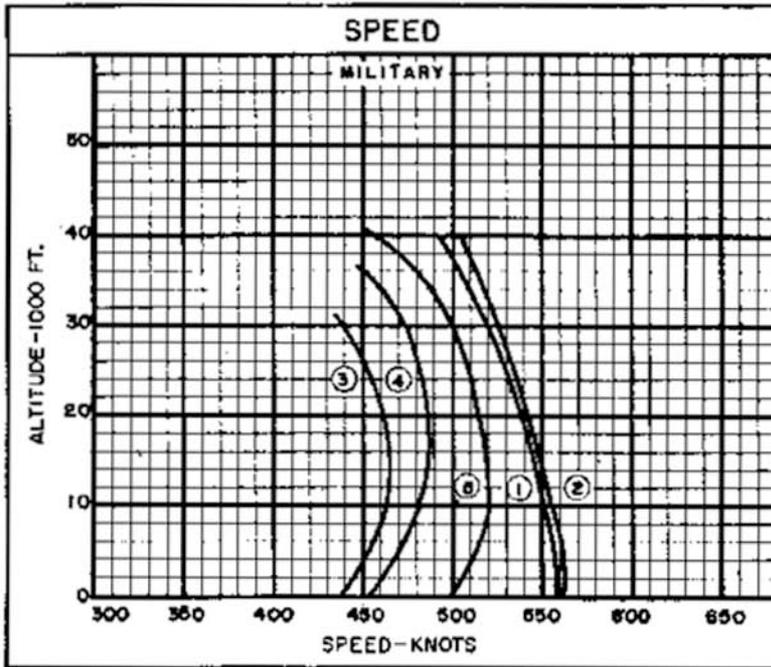
## NOTES

(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 NAFC flight test data; store configurations based on clean plus estimated store data.



○ LOADING CONDITION COLUMN NUMBER

# 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

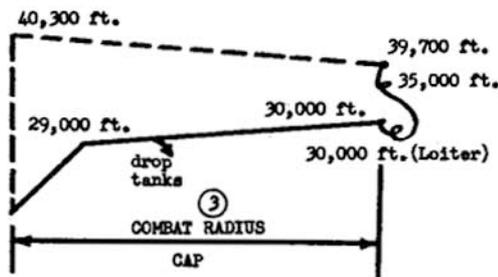
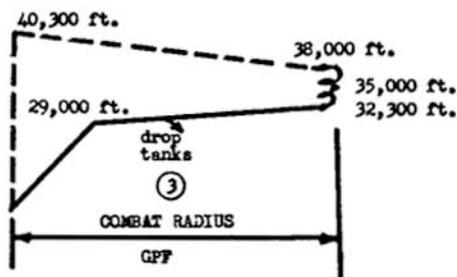
WARM-UP, TAKE-OFF, ACCELERATE: 5 minutes with normal thrust at sea level.  
 CLIMB: On course to cruise altitude with military rated thrust.  
 CRUISE-OUT: At altitudes and speeds for maximum range.  
 COMBAT FUEL ALLOWANCE: At 35,000 ft., 20 minutes at maximum speed with military rated thrust (assume 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.

## COMBAT AIR PATROL

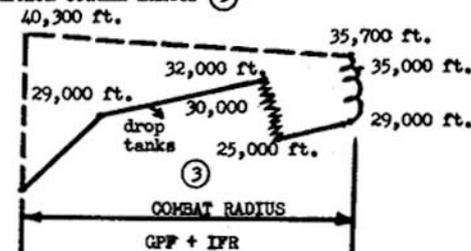
WARM-UP, TAKE-OFF, ACCELERATE: 5 minutes with normal thrust at sea level.  
 CLIMB: On course to cruise altitude with military rated thrust.  
 CRUISE: To a point 150 nautical miles from base at altitudes and speeds for maximum range.  
 LOITER: On station at speed for maximum endurance at approximate 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.



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

	△ WEIGHT	△ RANGE	△ RADIUS	△ MISSION TIME
① General Purpose Fighter; Clean	+ 320 lb.	+ 70 n.mi.	+ 35 n.mi.	+ .156 hr.
③ General Purpose Fighter; 4SW's + 2-150 gal. tanks	+ 410 lb.	+ 66 n.mi.	+ 33 n.mi.	+ .166 hr.
③ Combat Air Patrol; 4 SW's + 2-150 gal. tanks	+ 410 lb.	--	--	+ .123 hr.
③ General Purpose Fighter - IFR; 4 SW's + 2-150 gal. tanks	+ 410 lb.	--	+ 44 n.mi.	+ .151 hr.
⑥ Low Altitude Attack; 4-500 lb. bomb + 2-150 gal. tanks	+ 410 lb.	+ 74 n.mi.	+ 37 n.mi.	+ .169 hr.

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.

○ 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 Reissues: Availability of Performance data and fuel consumption based on NATC Flight Tests.