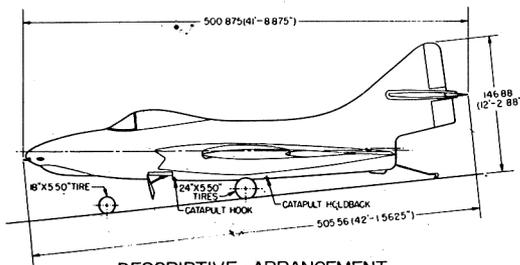
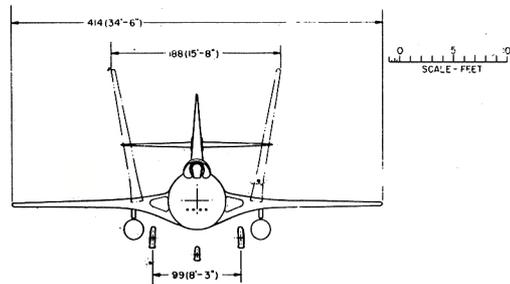
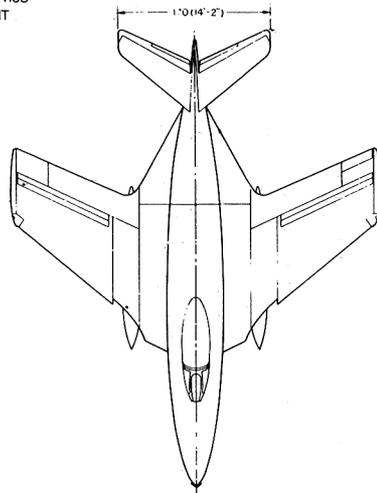


# STANDARD AIRCRAFT CHARACTERISTICS

## AF-9J COUGAR

GRUMMAN

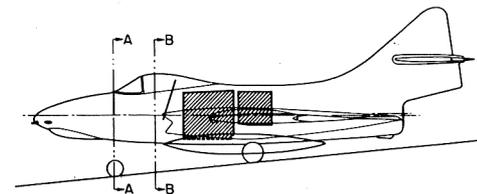
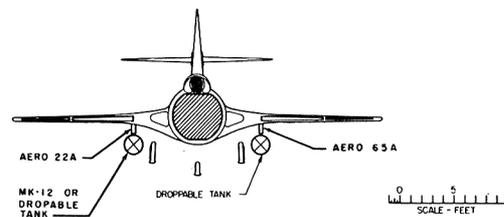
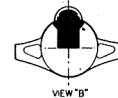
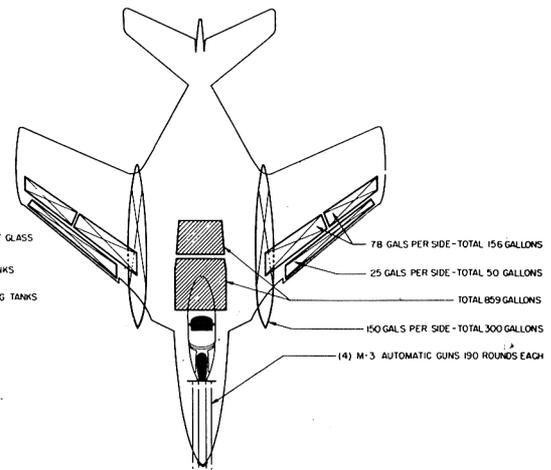
BUREAU OF AERONAUTICS  
NAVY DEPARTMENT



DESCRIPTIVE ARRANGEMENT  
F9F-8B

BUREAU OF AERONAUTICS  
NAVY DEPARTMENT

- BULLET RESISTANT GLASS ARMOR PLATE
- SELF-SEALING TANKS
- NON-SELF-SEALING TANKS



ARMAMENT & TANKAGE  
F9F-8B

**POWER PLANT**

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

**RATINGS**

	<u>LBS.</u>	<u>@</u>	<u>RPM</u>	<u>@</u>	<u>ALT.</u>
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. P&W No. N161-4D Appendix B

**ORDNANCE**GUNS

4 - 20mm M-3 Fuselage, 760 Rds.

FIRE CONTROL

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

EXTERNAL STORES PROVISIONS

<u>WING STA.</u>	<u>RACK</u>	<u>CAPABILITY</u>
71	Aero 65A	150 Fuel Tank
71 (R.H.)	Aero 22A	Mk. 12 Bomb

**MISSION AND DESCRIPTION**

The F9F-8B is a single seat, swept wing, carrier based airplane whose primary purpose is carry special weapon stores. This airplane is the development of the F9F-6. Improvements are increased wing area, flap area, fuel capacity and a cambered leading edge. A pressurized cabin with temperature control and an ejection seat, is installed. The guns and radar are accessible by sliding the nose forward. A nose boom is installed for inflight 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.

**DEVELOPMENT**

First Production..... January 1954  
 Service Use..... October 1954

**WEIGHTS**

<u>LOADINGS</u>	<u>LBS.</u>	<u>L.F.</u>
EMPTY.....	11,866#	.....
BASIC.....	12,474#	.....
DESIGN.....	16,780	.....7.0
COMBAT.....	17,345	.....7.0
MAX.T.O. (Field).....	24,763	.....
(Cat.).....	24,763	.....
MAX. LDG. (Field).....	24,763	.....
(Arrest.).....	17,613	.....

All Weights are Actual.

**FUEL AND OIL**

<u>GALS.</u>	<u>NO. TANKS</u>	<u>LOCATION</u>
847.....	2	Fuselage
216.....	6	Wing
300.....	2	Wing Droppable
FUEL GRADE.....		JP4
FUEL SPEC.....		Applicable MIL-F-5624

**OIL**

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

**DIMENSIONS**

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

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

**ELECTRONICS**

UHF COMM.....AN/ARC-27A  
 UHF ADF.....AN/ARA-25  
 LF ADF.....AN/ARN-6  
 IFF.....AN/APX-6B  
 RANGE RADAR.....AN/APC-30A

PROVISIONS FOR SERVICE INSTALLATION  
 OF:

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

PERFORMANCE SUMMARY					
TAKE-OFF LOADING CONDITION	(1) SPECIAL STORE sea level delivery 1,125 lb store + 1 150 gal. drop tank + guns		(4) SPECIAL STORE 15,000 ft. delivery 1,125 lb. store + 1 - 150 gal. drop tank + guns		(7) SPECIAL STORE sea level delivery inflight refuel 1,125 lb. store + 1 150 gal. drop tank + guns
TAKE-OFF WEIGHT	lb.	22,575		22,575	22,575
Fuel	lb.	6,930/975		6,930/975	6,930/975
Fayload	lb.	1,596		1,596	1,596
Wing loading	lb./sq.ft.	66.9		66.9	66.9
Stall speed - power-off	kn.	123.2		123.2	123.2
Take-off run at S.L. - calm	ft.	5,330		5,330	5,330
Take-off run at S.L. 25 kn. wind	ft.	3,690		3,690	3,690
Take-off to clear 50 ft. - calm	ft.	6,450		6,450	6,450
Max. speed/altitude	(A) kn./ft.	520/10,000		520/10,000	520/10,000
Rate of climb at S.L.	(A) fpm.	3,640		3,640	3,640
Time: S.L. to 20,000 ft.	(A) min.	6.5		6.5	6.5
Time: S.L. to 30,000 ft.	(A) min.	12.0		12.0	12.0
Service ceiling (100 fpm)	(A) ft.	36,600		36,600	36,600
Combat range	n.mi.	915		915	1,433
Average cruising speed	kn.	413		413	413
Cruising altitude(s)	ft.	32,900/41,500		32,900/41,500	32,400/41,500
Combat radius	n.mi.	295		450	(B) 600
Average cruising speed	kn.	419		427	428
Mission time	hrs.	1.4		2.2	3.1
Fuel added in flight at distance out	lbs./n.mi.	—			4,370/373
COMBAT LOADING CONDITION	(2) CLEAN + 2 Racks	(3) CLEAN + Mk-12 Store + 1 Rack	(5) CLEAN + 2 Racks	(6) CLEAN + Mk-12 Store + 1 Rack	
COMBAT WEIGHT	lb.	18,035	19,160	18,035	19,160
Engine power		Military	Military	Military	Military
Fuel	lb.	4,743	4,743	4,743	4,743
Combat speed/combat altitude	kn./ft.	554/S.L.	512/S.L.	548/15,000	528/15,000
Rate of climb/combat altitude	fpm/ft.	5,410/S.L.	4,600/S.L.	4,500/15,000	3,800/15,000
Combat ceiling (500 fpm)	ft.	41,700	38,500	41,700	38,500
Rate of climb at S.L.	fpm.	5,410	4,600	5,410	4,600
Max. speed at S.L.	kn.	554	512	554	512
Max. speed/altitude	kn./ft.	556/5,000	532/10,000	556/5,000	532/10,000
LANDING WEIGHT	lb.	14,790	15,915		
Fuel	lb.	1,362	1,362		
Stall speed - power-off	kn.	95.9	100.0		
Stall speed - with approach power	kn.	95.0	99.1		

## NOTES

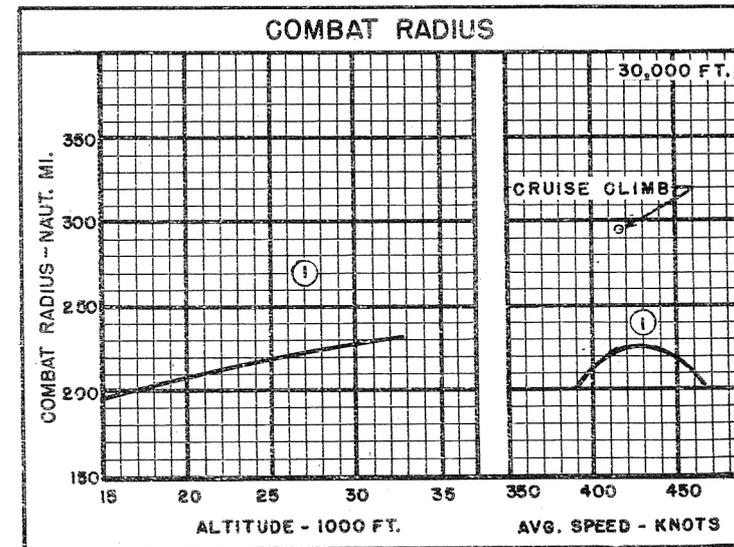
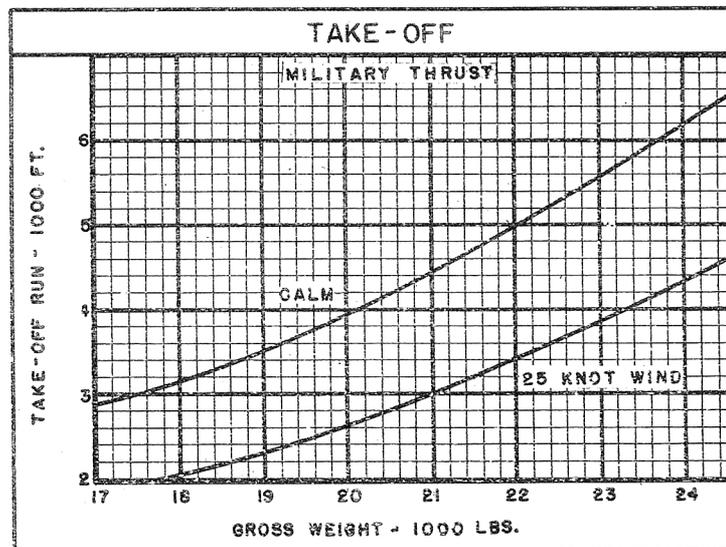
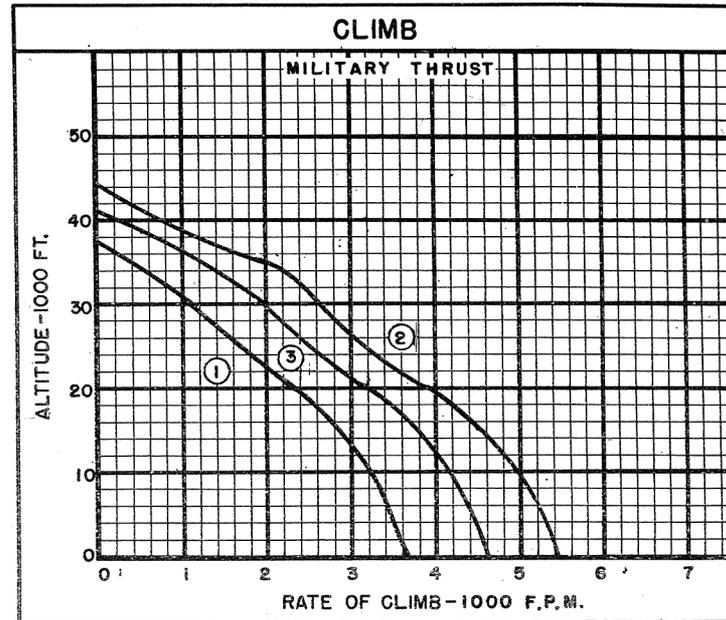
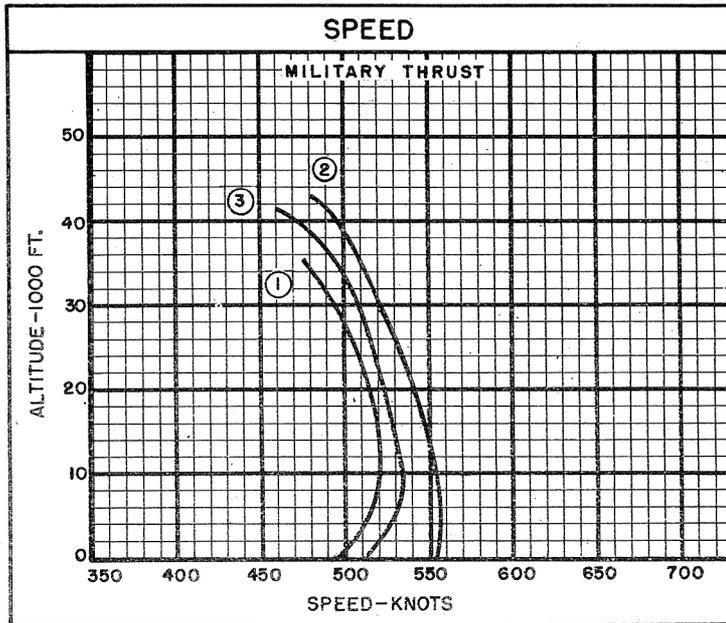
(A) Military Power.

(B) Radius is reduced approximately 17 N. Mi. and refuel allowance is increased 5 minutes for each additional aircraft up to a total of 4 aircraft.

PERFORMANCE BASIS: NATC and contractor's flight tests of the F9F-8 clean airplane. Store data based on contractor's estimates.

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

MISSION TIME: Any time where fuel is used and distance gained including combat and refuel allowance time.



○ 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.

SPECIAL STORE PROBLEM  
SEA LEVEL ALTITUDE STORE DELIVERY

WARM-UP, TAXI, TAKE-OFF: 5 minutes at normal thrust at sea level.  
 CLIMB: On course to optimum cruise altitudes with military thrust.  
 CRUISE-OUT: At maximum range airspeeds at optimum cruise altitudes.  
 DESCEND TO SEA LEVEL: No fuel used, no distance gained.  
 RUN-IN TO TARGET: At sea level, 50 N. Mi. at maximum speed with military thrust.  
 DROP STORE  
 COMBAT FUEL ALLOWANCE: 2 minutes at maximum speed with military thrust at sea level.  
 ESCAPE: At sea level, 50 N. Mi. toward base at maximum speed with military thrust.  
 CLIMB: On course to optimum cruise altitudes with military thrust.  
 CRUISE BACK: At maximum range airspeeds at optimum cruise altitudes.  
 RESERVE: 20 minutes at speeds for maximum endurance at sea level plus 5% of initial fuel load.

COMBAT RADIUS = CLIMB + CRUISE-OUT + RUN-IN = ESCAPE + CLIMB + CRUISE-BACK

SPECIAL STORE PROBLEM  
15,000 FEET ALTITUDE STORE DELIVERY

WARM-UP, TAXI, TAKE-OFF: 5 minutes at normal thrust at sea level.  
 CLIMB: On course to optimum cruise altitudes with military thrust.  
 CRUISE-OUT: At maximum range airspeeds at optimum cruise altitudes.  
 DESCEND TO 15,000 FEET: Release store. No fuel used, no distance gained.  
 COMBAT FUEL ALLOWANCE: 3 minutes at maximum speed with military thrust at 15,000 feet.  
 CRUISE BACK: At maximum range airspeeds at optimum cruise altitudes.  
 RESERVE: 20 minutes at speeds for maximum endurance at sea level plus 5% of initial fuel load.

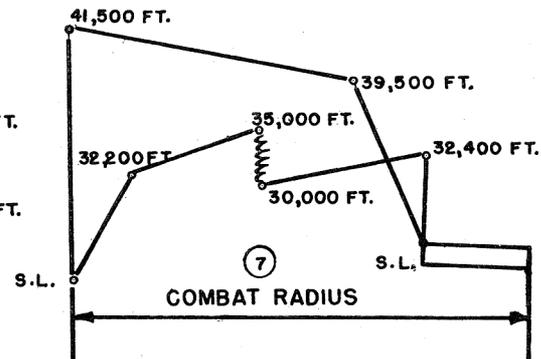
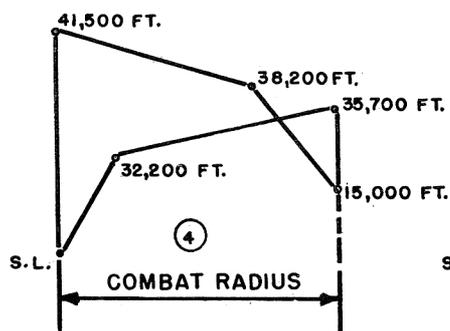
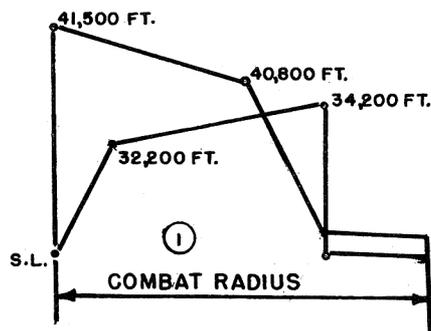
COMBAT RADIUS = CLIMB + CRUISE-OUT = CLIMB + CRUISE-BACK

SPECIAL STORE PROBLEM  
SEA LEVEL ALTITUDE STORE DELIVERY  
WITH INFLIGHT REFUELING

WARM-UP, TAXI, TAKE-OFF: 5 minutes at normal thrust at sea level.  
 CLIMB: On course to optimum cruise altitudes with military thrust.  
 CRUISE-OUT: At maximum range airspeeds at optimum cruise altitudes.  
 DESCEND TO 35,000 FEET REFUELING ALTITUDE: No fuel used, no distance gained.  
 ALLOWANCE FOR RENDEZVOUS, HOOK-UP, AND FLIGHT CONTINGENCIES: 15 minutes at maximum endurance airspeed. (No fuel used or distance gained during fuel transfer).  
 CLIMB: On course to optimum cruise altitude with military thrust.  
 CRUISE OUT: At maximum-range airspeeds at optimum cruise altitudes.  
 DESCEND TO SEA LEVEL: No fuel used, no distance gained.

The remainder of the problem is the same as the Special Store Problem of loading condition column number ①.

COMBAT RADIUS = CLIMB + PRIMARY CRUISE-OUT + SECONDARY CRUISE-OUT + RUN-IN = ESCAPE + CLIMB + CRUISE-BACK



○ LOADING CONDITION COLUMN NUMBER