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BY T.G. Nitt ON 12/19/96

NAVAIR 00-110AF9-5

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Standard Aircraft Characteristics

NAVY MODEL AF-9J AIRCRAFT

(TITLE UNCLASSIFIED)

(F9F-8)

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1 MAY 1955 IN PART AND ALL ADDENDA THERETO

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PUBLISHED BY DIRECTION OF THE
COMMANDER OF THE NAVAL AIR SYSTEMS COMMAND

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1 JULY 1967

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SERVICE



STANDARD AIRCRAFT CHARACTERISTICS AF-9J COUGAR

GRUMMAN

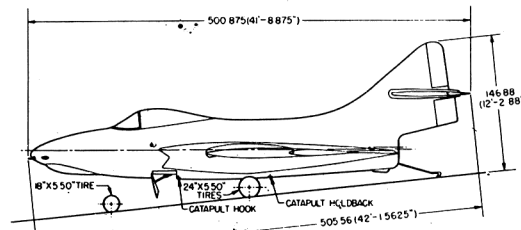
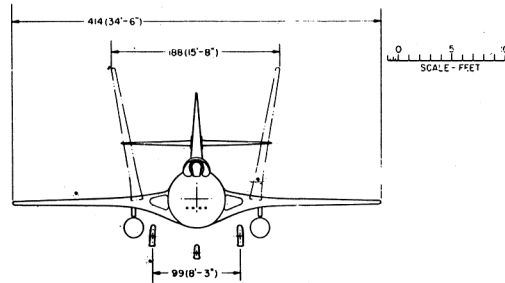
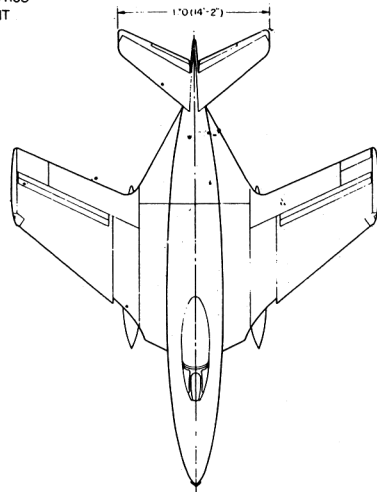
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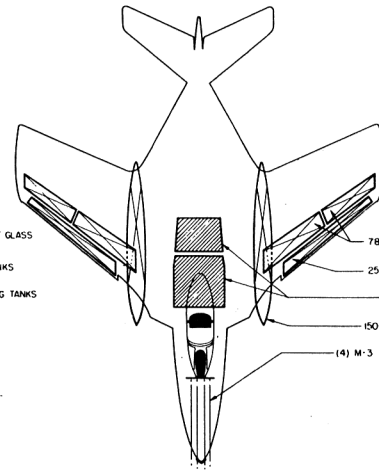
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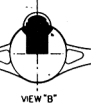


DESCRIPTIVE - ARRANGEMENT
F9F-8B

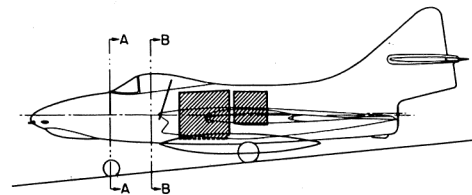
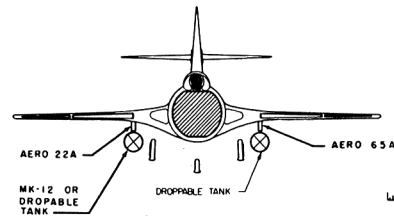
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- BULLET RESISTANT GLASS ARMOR PLATE
- ▨ SELF-SEALING TANKS
- ⊠ NON-SELF-SEALING TANKS



78 GALS PER SIDE - TOTAL 156 GALLONS
25 GALS PER SIDE - TOTAL 50 GALLONS
TOTAL 206 GALLONS
150 GALS PER SIDE - TOTAL 300 GALLONS
(4) M-3 AUTOMATIC GUNS 190 ROUNDS EACH



ARMAMENT & TANKAGE
F9F-8B

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POWER PLANT

NO. & MODEL(1) J48-P-8A
 MFR. Pratt & Whitney
 TYPE.....Centrifugal Compressor
 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. 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/APG-30A
 Labs Aero 18C

EXTERNAL STORES PROVISIONS

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

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

LOADINGS	LBS.	L.F.
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

GALS.	NO. TANKS	LOCATION
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/APG-30A

PROVISIONS FOR SERVICE INSTALLATION
 OF:

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

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PERFORMANCE SUMMARY

PERFORMANCE SUMMARY						(7) SPECIAL STORE sea level delivery inflight refuel 1,125 lb. store + 1 150 gal. drop tank + guns
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		
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/altitude	kn./ft.	554/S.L.	512/S.L.	548/15,000	528/15,000	
Rate of climb/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.

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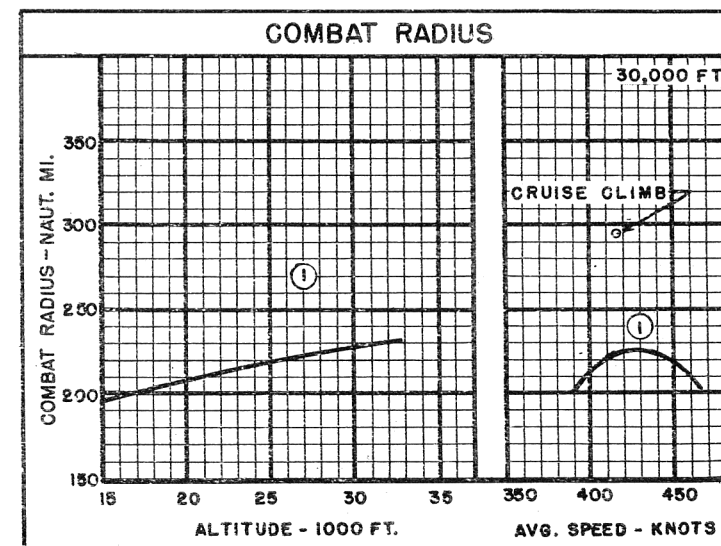
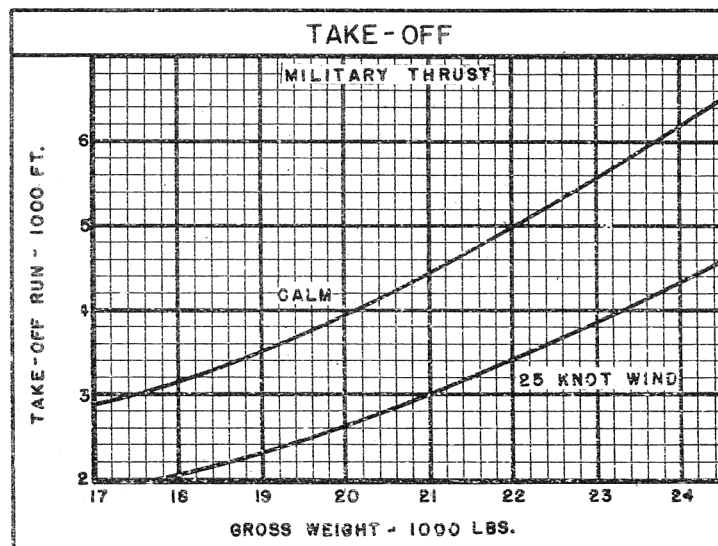
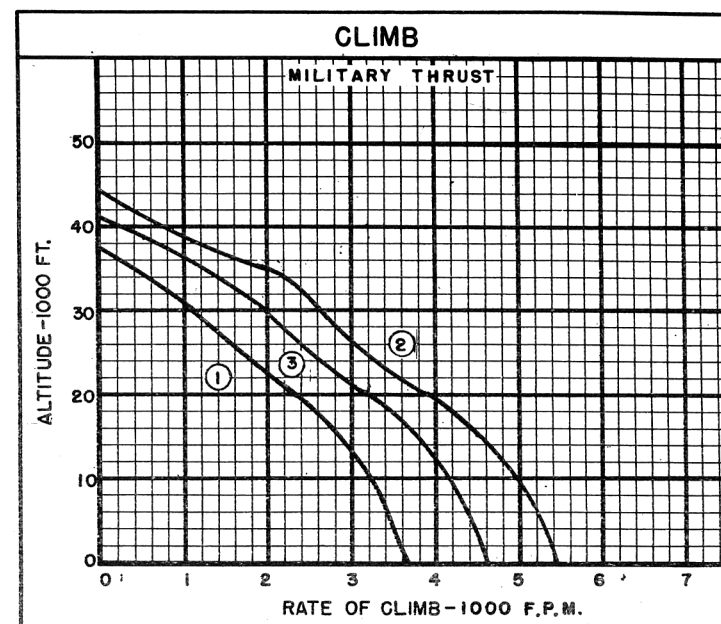
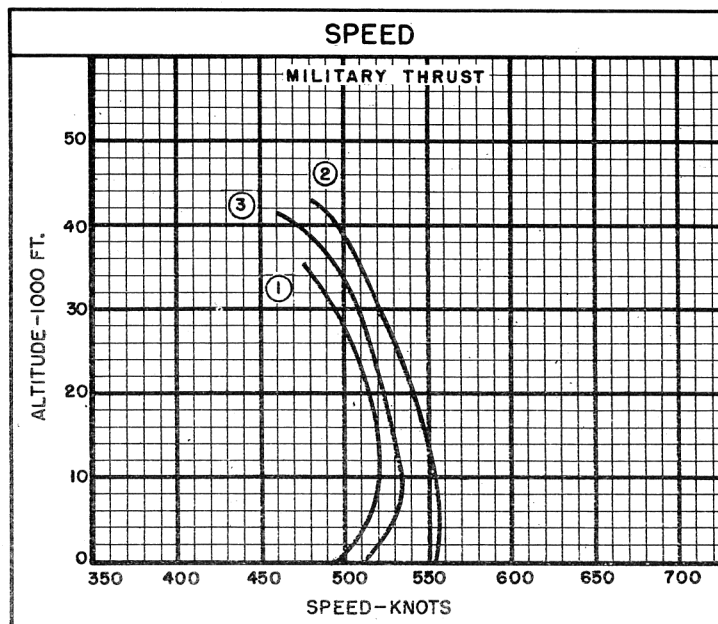
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○ LOADING CONDITION COLUMN NUMBER

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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.

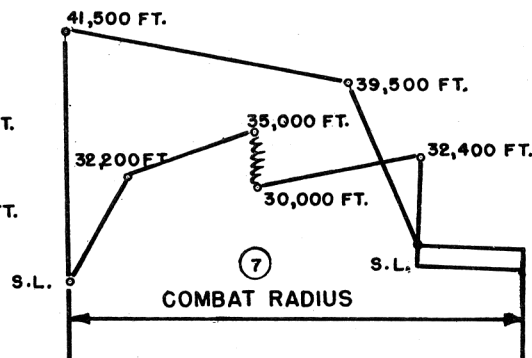
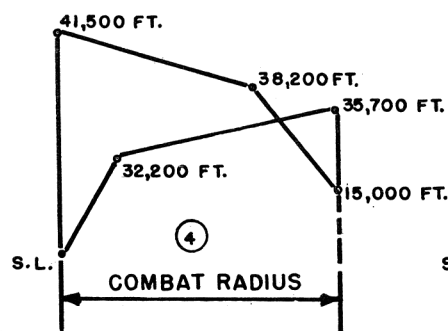
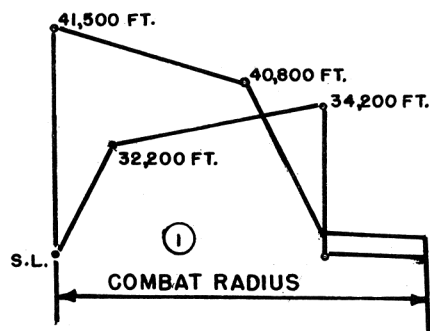
COMBAT RADIUS = CLIMB + CRUISE-OUT = CLIMB +
CRUISE-BACK

SPECIAL STORE PROBLEM SEA LEVEL ALTITUDE STORE DELIVERY WITH INFIGHT 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

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