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NAVAIR 00-110AF9-3

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Standard Aircraft Characteristics

NAVY MODEL F-9H AIRCRAFT

(TITLE UNCLASSIFIED)

(F9F-7)

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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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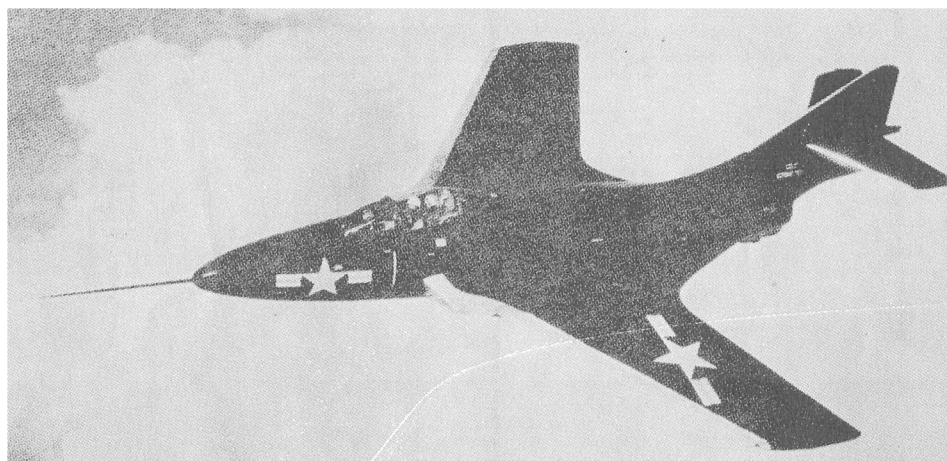
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SERVICE



STANDARD AIRCRAFT CHARACTERISTICS

F-9H COUGAR

GRUMMAN

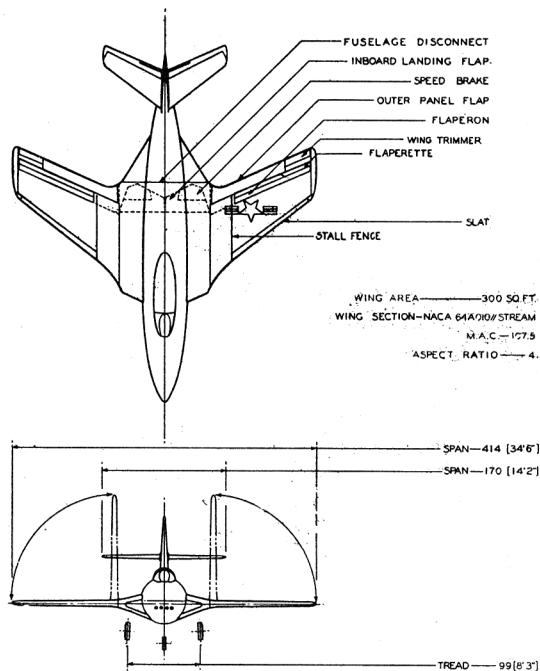
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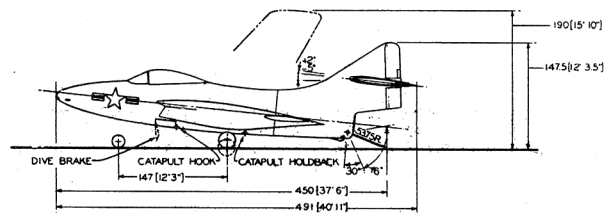
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BUREAU OF AERONAUTICS
NAVY DEPARTMENT



0 5 10 15 20 FT.
SCALE



DESCRIPTIVE ARRANGEMENT

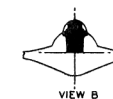
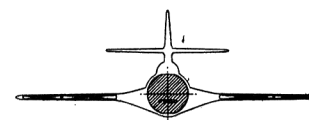
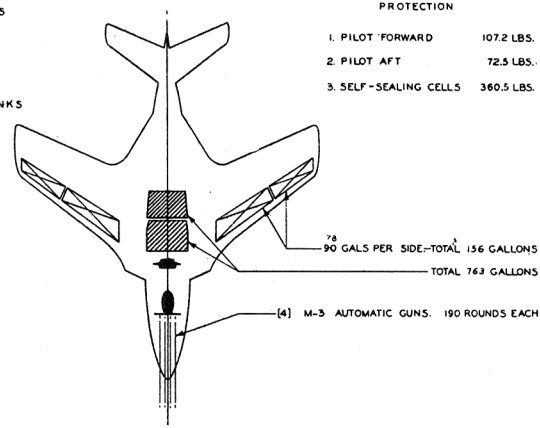
BUREAU OF AERONAUTICS
NAVY DEPARTMENT

MODEL F9F-6

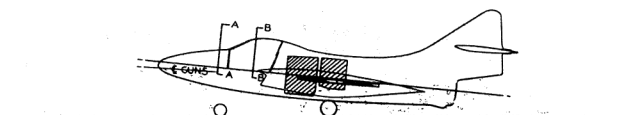
- ☒ BULLET RESISTANT GLASS ARMOR PLATE
☒ SELF-SEALING TANKS
☒ NON SELF-SEALING TANKS

PROTECTION

1. PILOT FORWARD 107.2 LBS.
 2. PILOT AFT 72.5 LBS.
 3. SELF-SEALING CELLS 360.5 LBS.



0 10 20 FT.
SCALE



ARMAMENT & TANKAGE

819619

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POWER PLANT

NO. & MODEL.....(1)J-33-A-16
 MFG.....Allison
 TYPE.....Centrifugal Compressor
 ENG. LENGTH.....99.5"
 ENG. DIAMETER.....49.7"

RATINGS

	LBS.	RPM	ALT.
T.O.	6,250	11,800	S.S.L.
MIL.	6,250	11,800	S.S.L.
NORMAL	5,125	11,200	S.S.L.

SPEC. NO. 285-E

MISSION AND DESCRIPTION

The F9F-7 is a swept wing, single place, carrier based airplane whose primary mission is the destruction of enemy aircraft.

The major difference from the F9F-6 airplane is a change from the Pratt & Whitney J-48-P-6A engine to the Allison J33-A-16 turbo-jet engine.

Leading edge slats, under-fuselage split flaps, wing slotted flaps and wing stall fences are fitted. A pressurized cabin with temperature control and Grumman ejection seat are installed. The guns and radio are accessible through a forward sliding nose. The engine is serviced by removal of tail fuselage section. The engine is not equipped with water injection.

Lateral control is provided by hydraulically actuated flap-erons and flapperettes. Longitudinal trimming is accomplished by means of an electrically actuated stabilizer. Dive brakes are located under the fuselage.

DEVELOPMENT

First flight.....March 1953
 Service use.....July 1953

WEIGHTS

LOADINGS	LBS	L.F.
EMPTY.....	11,483	
BASIC.....	12,090	
DESIGN.....	15,800	7.5
COMBAT.....	16,244	
MAX.T.O. (Field).....	21,000	5.5
(Cat.).....	20,000	
MAX.LAND (Field).....	16,000	
(Arrest).....	14,000	

All weights are actual.
 *Maximum Anticipated Loading.

FUEL AND OIL

GAL.	NO. TANKS	LOCATION
763	2	Fuse., SS.
156	2	Wing

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

OIL

CAPACITY (Gals).....3.25
 GRADE.....1010
 SPEC.....MIL-O-6081A

ORDNANCE

GUNS

NO.	SIZE	LOCATION	RDS.
4	20mm	Fuselage	760

FIRE CONTROL

A.F.C.S.....Mk. 6, Mod 0
 Radar Ranging Equipment.....AN/APG-30

DIMENSIONS

WING AREA.....	300 sq.ft.
SPAN.....	34' -6"
MAC.....	9' -0"
SWEEPBACK (c/4).....	35°
LENGTH.....	40' 11"
HEIGHT.....	12' -4"
TREAD.....	8' -3"

ELECTRONICS

VHF.....AN/ARC-27
 VHF.....AN/ARC-1, 1A
 (Alternate Prov. for ARC-27)
 ALTIMETER, RADIO.....AN/APN-1
 (First 90 A/C)
 A.D.F.....AN/ARN-6
 VHF HOMING.....AN/ARR-2A
 UHF D.F.....AN/ARA-25
 RADAR.....AN/APG-30
 IFF.....AN/APX-6
 PLANNED SERVICE INSTALLATION:
 HOMING.....AN/ARN-21
 (Will replace AN/ARN-6 and AN/ARR-2A)
 SELECTIVE IDENTIFICATION
 FEATURE.....AN/APA-89

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PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION		(1) General Purpose Fighter			
TAKE-OFF WEIGHT	lb.	18,905			
Fuel	lb.	5,970			
Payload (Assumption)	lb.	427			
Wing loading	lb./sq.ft.	63.0			
Stall speed - power-off	kn.	113.2			
Take-off run at S.L. - calm	ft.	3,350			
Take-off run at S.L. 25 kn. wind	ft.	2,200			
Take-off to clear 50 ft. - calm	ft.	-			
Max. speed/altitude (A)	kn./ft.	543/S.L.			
Rate of climb at S.L. (A)	fpm.	4,300			
Time: S.L. to 20,000 ft. (A)	min.	6.2			
Time: S.L. to 30,000 ft. (A)	min.	11.6			
Service ceiling (100 fpm)	ft.	40,200			
Combat range	n.mi.	1,005			
Average cruising speed	kn.	442			
Cruising altitude(s)	ft.	34,300/39,000			
Combat radius	n.mi.	390			
Average cruising speed	kn.	442			
Mission Time	hrs.	2.12			
COMBAT LOADING CONDITION		(2)			
COMBAT WEIGHT	lb.	16,517			
Engine power		Military			
Fuel	lb.	3,582			
Combat speed/altitude	kn./ft.	486/35,000			
Rate of climb/altitude	fpm/ft.	1,100/35,000			
Combat ceiling (500 fpm)	ft.	39,000			
Rate of climb at S.L.	fpm.	5,100			
Max. speed at S.L.	kn.	545			
Max. speed/altitude	kn./ft.	545/S.L.			
LANDING WEIGHT	lb.	13,942			
Fuel	lb.	1,007			
Stall speed - power-off	kn.	96.0			
Stall speed - with approach power	kn.	92.7			

NOTES

(A) Military Rated Thrust

Performance basis: NATC flight test of the F9F-7 airplane.

Range and radius are based on NATC flight test fuel consumption data increased by 5%.

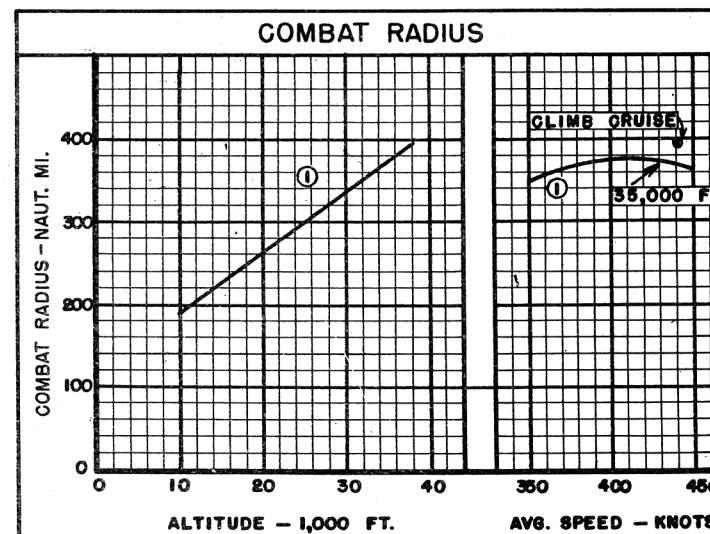
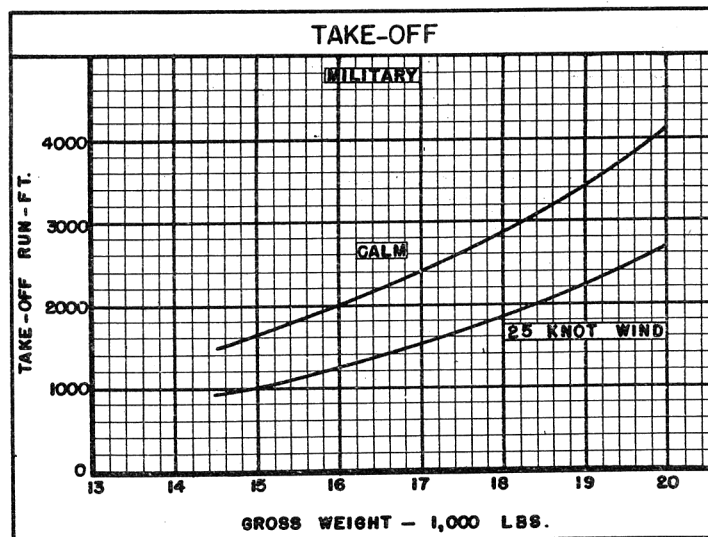
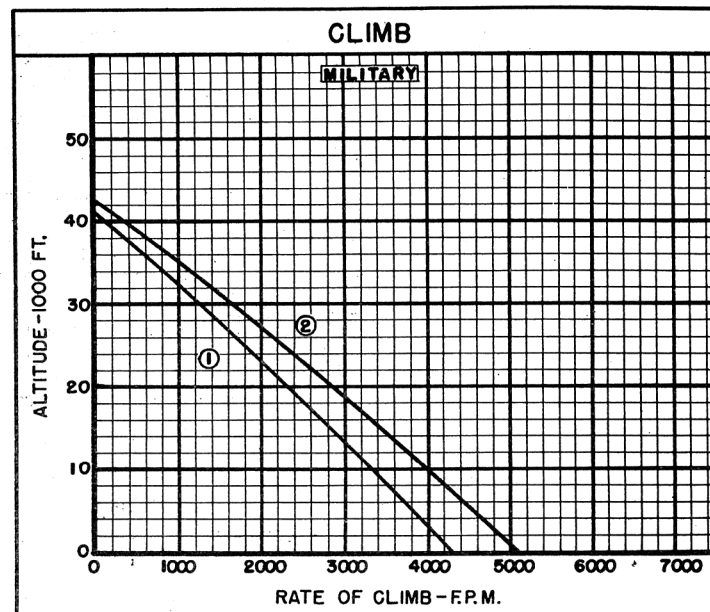
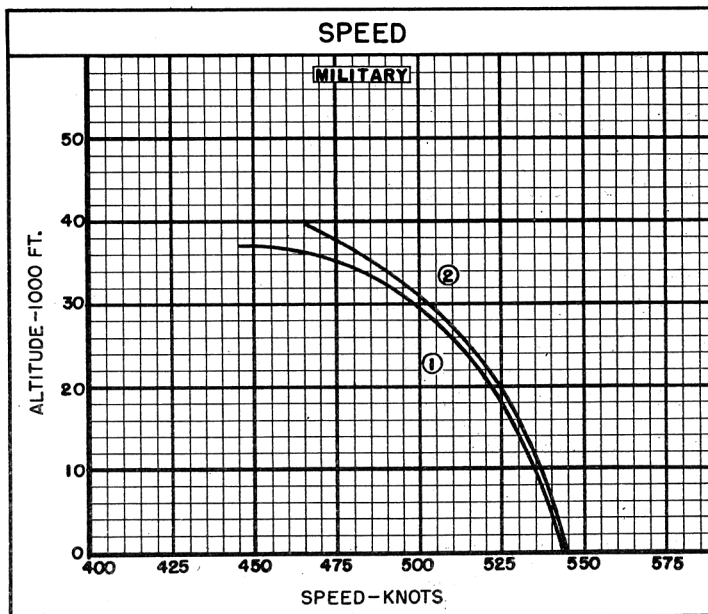
Reason for reissue: Change from gasoline to JP-4 and final NATC flight test performance data on the F9F-7 airplane.

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○ LOADING CONDITION COLUMN NUMBER

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NOTES

SPOTTING: 30 airplanes (wings folded) can be spotted in a rectangular area 200 ft. by 96 ft.

COMBAT RADIUS PROBLEM - GENERAL PURPOSE FIGHTER (GAS TURBINE)

WARM-UP, TAXI, TAKE-OFF: 5 minutes at normal thrust.

CLIMB: To cruising ceiling at military thrust.

CRUISE-OUT: At velocity for long range at cruising ceiling.

DESCEND: To 35,000 feet. (No fuel used, no distance gained).

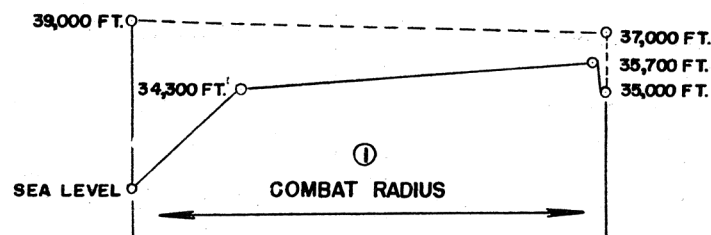
COMBAT: At 35,000 feet for 20 minutes at military thrust. (Assume combat concluded at initial cruise-back altitude.)

CRUISE-BACK: At velocity for long range at cruising ceiling.

RESERVE: 20 minutes at velocity for maximum endurance at sea level plus 5% of initial fuel load.

MISSION TIME INCLUDES CLIMB + CRUISE-OUT + COMBAT + CRUISE BACK

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



Radius is reduced approximately 6.0 nautical miles for each additional minute of combat.

○ LOADING CONDITION COLUMN NUMBER

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