Standard Aircraft Characteristics

NAVY MODEL

F-9F

 AIRCRAFT

(TITLE UNCLASSIFIED)

F 9 F - 6

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UNCLASSIFIED
STANDARD AIRCRAFT CHARACTERISTICS

F-9F COUGAR

GRUMMAN

DECLASSIFIED
POWER PLANT
NO. & MODEL ...... (1) J44-P-5
MFG. ............ Pratt & Whitney
TYPE .......... Centrifugal Compressor
ENG. LENGTH ..... 110.5"  
ENG. DIAMETER ... 50.6"

RATINGS
LBS @ RPM @ ALT.
T.O.  7,750  11,000  S.S.L.  
MIL.  7,750  11,000  S.S.L.  
NORMAL 5,600  10,450  S.S.L.  
Spec. No. N.1614-D

MISSON AND DESCRIPTION
The FB-54 is a swept wing, single place, carrier based airplane whose primary mission is the destruction of enemy aircraft.

This version of the FB-54 has the Pratt and Whitney J44-P-5 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 flaperons and flaperettes. Longitudinal trimming is accomplished by means of an electrically actuated stabilizer. Dive brakes are located under the fuselage.

DEVELOPMENT
First flight .......... April 1952  
Service use .......... December 1952

WEIGHTS
LOADINGS  LBS.  L.F.
EMPTY ........... 11,483  
BASIC .......... 13,090  
DESIGN .......... 15,800  
COMBAT .......... 15,280  
MAX.T.O.(Field) 31,000  
(Cat.), .20,000  
MAX.LAND.(Field) 16,000  
(Arrest), 1,400  

All weights are actual.  
*Maximum Anticipated Loading

FUEL AND OIL
GAL. NO. TANKS LOCATION
763  2  Fuselage, S.S.  
156  2  Wing

FUEL GRADE, 80 or higher
FUEL SPEC., MIL-F-5572

OIL
CAPACITY (gals) ....... 3,25  
GRADE ............ 1020  
SPEC., MIL-D-5621A

ORDNANCE
GUNS
No. SIZZ LOCATION EDG.
4  20mm Fuselage 700

FIRE CONTROL
APDS ..... No. 6, Mod. 0
RADAR RANGING  
EQUIPMENT ...... AN/APG-30

DIMENSIONS
WING
AREA .......... 300 Sq. ft.  
SPAN .......... 31'-6"  
MAC. .......... 9'-6"  
SHOULDER (c/s) ... 35"  
LENGTH .......... 11'-11"  
HEIGHT .......... 12'-3"  
TRAIL .......... 8'-3"

ELECTRONICS
VHF ............ AN/ARC-27
VHF ............ AN/ARC-11A  
(Alternate for ARC-29)  
ALTIMETER, RADIO .. AN/AP-1  
(First 90 A/F)  
A.D.F. .......... AN/ARU-7  
VHF MONORE AN/ABR-25  
UPD.D.F. ....... AN/ABA-25  
RADAR .......... AN/APG-30  
IFF ............ AN/ARP-6

(Continued on reverse page)
## PERFORMANCE SUMMARY

<table>
<thead>
<tr>
<th>TAKE-OFF LOADING CONDITION</th>
<th>(1) Fighter Full Internal Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TAKEN-OFF WEIGHT</strong></td>
<td></td>
</tr>
<tr>
<td>Fuel (gasoline) lb.</td>
<td>18,150</td>
</tr>
<tr>
<td>Payload (Ammunition) lb.</td>
<td>5,315</td>
</tr>
<tr>
<td>Wing loading lb./sq.ft.</td>
<td>61.5</td>
</tr>
<tr>
<td>Stall speed - power-off km.</td>
<td>111.0</td>
</tr>
<tr>
<td>Take-off run at S.L. - calm ft.</td>
<td>1,710</td>
</tr>
<tr>
<td>Take-off run at S.L. 25 Kts. wind ft.</td>
<td>1,150</td>
</tr>
<tr>
<td>Max. speed/altitude (A) km./ft.</td>
<td>539/8,570</td>
</tr>
<tr>
<td>Rate of climb at S.L. (B) fpm</td>
<td>6,500</td>
</tr>
<tr>
<td>Time: S.L. to 20,000 ft. (B) mins</td>
<td>60.0</td>
</tr>
<tr>
<td>Time: S.L. to 30,000 ft. (B) mins</td>
<td>8.2</td>
</tr>
<tr>
<td>Service ceiling (100 fpm) (B) ft.</td>
<td>41,500</td>
</tr>
<tr>
<td>Combat range n.mils.</td>
<td>810</td>
</tr>
<tr>
<td>Average cruising speed km.</td>
<td>500</td>
</tr>
<tr>
<td>Cruising altitude (C) ft.</td>
<td>14,200/45,000</td>
</tr>
<tr>
<td>Combat radius n.mils.</td>
<td>255</td>
</tr>
<tr>
<td>Average cruising speed km.</td>
<td>1,700</td>
</tr>
<tr>
<td>Mission time hrs.</td>
<td>1.4</td>
</tr>
</tbody>
</table>

### COMBAT LOADING CONDITION

<table>
<thead>
<tr>
<th><strong>COMBAT WEIGHT</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel lb.</td>
<td>3,305</td>
</tr>
<tr>
<td>Combat speed/combat altitude km./ft.</td>
<td>513/35,000</td>
</tr>
<tr>
<td>Rate of climb/combat altitude fpm/ft.</td>
<td>2,200/35,000</td>
</tr>
<tr>
<td>Combat ceiling (500 fpm) ft.</td>
<td>42,000</td>
</tr>
<tr>
<td>Rate of climb at S.L. fpm</td>
<td>6,750</td>
</tr>
<tr>
<td>Max. speed at S.L. km.</td>
<td>565</td>
</tr>
<tr>
<td>Max. speed/altitude km./ft.</td>
<td>953/8,570</td>
</tr>
</tbody>
</table>

### LANDING WEIGHT

| Fuel lb. | 14,045 |
| Stall speed - power-off km. | 111.1 |
| Stall speed - with approach power km. | 107.0 |

### NOTES

- **Normal Rated Thrust**:
- **Military Rated Thrust**

Performance basis: NAPSTORM flight test of the F-5F-6 airplane with the J85-P-6A engine.

Range and radius are based on engine specification fuel consumption data increased by 5%.

*Radius with JP-1 with sea-level approximately 320 nautical miles. (Fuel = 5,874 lbs.)
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 power.
CRUISE-OUT: At velocity for long range at cruising ceiling.
DESCEND: To 35,000 ft. (No fuel used, no distance gained).
COMBAT: At 35,000 ft. for 20 minutes at military power (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.

COMBAT RADIUS = CLIMB + CRUISE-OUT + CRUISE BACK

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

45,000 FT.
41,200 FT.
42,000 FT.
35,000 FT.

Radius is reduced approximately 7.5 nautical miles for each additional minute of combat.

F9F-6P

The photograph version of this airplane is the F9F-6F. It differs from the F9F-6 in that the guns have been replaced by camera equipment and ballast, resulting in a 250 pound decrease in weight. Performance of the F9F-6F will be slightly improved over that of the F9F-6 due to weight difference.

ELECTRONICS (Cont'd)

PLANNED SERVICE INSTALLATION:

SELECTION IDENTIFICATION FEATURE

AN/ARL-30 (all)

— O LOADING CONDITION COLUMN NUMBER
CARRIER SUITABILITY

MINIMUM WIND OVER DECK REQUIRED FOR CATAPULTING
VS. GROSS WEIGHT

MINIMUM WIND OVER DECK REQUIRED FOR LANDING
VS. GROSS WEIGHT

BASED ON APPROACH SPEED OF 1.2 POWER-OFF STELL SPEED

NOTES

(A) These curves should be used for planning purposes only. Actual catapult and arresting gear operation should be in accordance with applicable Aircraft Technical Orders, and Catapult and Arresting Gear Bulletins.

(B) Based on HAVO flight test.