STANDARD AIRCRAFT CHARACTERISTICS

F9F-7 "COUGAR"

GRUMMAN

1 OCTOBER 1955
**POWER PLANT**

<table>
<thead>
<tr>
<th>NO. &amp; MODEL</th>
<th>DATE</th>
<th>HP</th>
<th>RPM</th>
<th>ALT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3-23-46</td>
<td>2500</td>
<td>11,800</td>
<td>S.S.L.</td>
</tr>
</tbody>
</table>

**RATINGS**

<table>
<thead>
<tr>
<th>T.O.</th>
<th>6,250</th>
<th>11,800</th>
<th>S.S.L.</th>
</tr>
</thead>
<tbody>
<tr>
<td>K.L.</td>
<td>6,250</td>
<td>11,800</td>
<td>S.S.L.</td>
</tr>
<tr>
<td>NORMAL</td>
<td>5,125</td>
<td>11,800</td>
<td>S.S.L.</td>
</tr>
</tbody>
</table>

**SPEC. NO. 285-5**

**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-46-A-6A engine to the Allison J33-A-16 turbojet engine.

Leading edge slats, under-fuselage split flaps, wing slotted flaps and wing stall fences are fitted. A pressurized cabin with temperature control and oxygen injection seats 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-arms and flap-plates. 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

**ELECTRONICS**

<table>
<thead>
<tr>
<th>VHF</th>
<th>AR/APC-27</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHF</td>
<td>AR/APC-1</td>
</tr>
<tr>
<td>A.D.F.</td>
<td>AR/AH-6</td>
</tr>
<tr>
<td>VHF COMM.</td>
<td>AR/AH-24</td>
</tr>
<tr>
<td>WHP D.F.</td>
<td>AR/AH-25</td>
</tr>
<tr>
<td>RADAR</td>
<td>AR/AH-30</td>
</tr>
<tr>
<td>I.F.</td>
<td>AR/APX-6</td>
</tr>
<tr>
<td>PLANNED SERVICE INSTALLATION</td>
<td>AR/AH-21</td>
</tr>
<tr>
<td>ENGINE</td>
<td>AR/AH-21</td>
</tr>
<tr>
<td>SELECTIVE IDENTIFICATION FEATURE</td>
<td>AR/AH-89</td>
</tr>
</tbody>
</table>

**ORDNANCE**

<table>
<thead>
<tr>
<th>GUN</th>
<th>DESCRIPTION</th>
<th>FIRE CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mk 6, 960L</td>
<td>Radar Ranging Equipment</td>
<td>AN/APQ-30</td>
</tr>
</tbody>
</table>

**DIMENSIONS**

<table>
<thead>
<tr>
<th>WING</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AREA</td>
<td>300 sq. ft.</td>
</tr>
<tr>
<td>SPAN</td>
<td>36' 6&quot;</td>
</tr>
<tr>
<td>MAC</td>
<td>9' 0&quot;</td>
</tr>
<tr>
<td>SWEETBACK (q)</td>
<td>25' 6&quot;</td>
</tr>
<tr>
<td>LENGTH</td>
<td>12' 6&quot;</td>
</tr>
<tr>
<td>THROTTLE</td>
<td>8' 3&quot;</td>
</tr>
</tbody>
</table>

**FUEL AND OIL**

<table>
<thead>
<tr>
<th>GAL.</th>
<th>NO. TANKS</th>
<th>LOCATION</th>
<th>CAPACITY (Gala)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.25</td>
<td>2</td>
<td>Fuselage</td>
<td>AN/A-50</td>
</tr>
<tr>
<td>1.25</td>
<td>2</td>
<td>Wing</td>
<td>AN/A-50</td>
</tr>
</tbody>
</table>

**OIL**

<table>
<thead>
<tr>
<th>OIL</th>
<th>SPEC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVL-9-500A</td>
<td>AN/A-50</td>
</tr>
</tbody>
</table>

**WEIGHTS**

<table>
<thead>
<tr>
<th>LOAD</th>
<th>LBS</th>
<th>L.F.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRITTLE.</td>
<td>11,453</td>
<td></td>
</tr>
<tr>
<td>BASIC</td>
<td>12,090</td>
<td></td>
</tr>
<tr>
<td>DESIGN</td>
<td>13,100</td>
<td>7.5</td>
</tr>
<tr>
<td>COMBAT</td>
<td>16,244</td>
<td></td>
</tr>
<tr>
<td>MAX.T.O. (Field)</td>
<td>20,000</td>
<td>55.5</td>
</tr>
<tr>
<td>(Cat.)</td>
<td>20,000</td>
<td></td>
</tr>
<tr>
<td>MAX.LAND (Field)</td>
<td>16,000</td>
<td></td>
</tr>
<tr>
<td>(Arrest)</td>
<td>14,000</td>
<td></td>
</tr>
</tbody>
</table>

All weights are actual.

Maximum Anticipated Loading.
<table>
<thead>
<tr>
<th>TAKE-OFF LOADING CONDITION</th>
<th>(1) General Purpose Fighter</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAKE-OFF WEIGHT</td>
<td>lb. 18,905</td>
</tr>
<tr>
<td>Fuel</td>
<td>lb. 5,770</td>
</tr>
<tr>
<td>Payload (Ammunition)</td>
<td>lb. 627</td>
</tr>
<tr>
<td>Wing loading</td>
<td>lb./sq.ft. 63.0</td>
</tr>
<tr>
<td>Stall speed - power-off</td>
<td>km. 113.7</td>
</tr>
<tr>
<td>Take-off run at S.L. - calm ft. 3,300</td>
<td></td>
</tr>
<tr>
<td>Take-off run at S.L. 25 km. wind ft. 2,200</td>
<td></td>
</tr>
<tr>
<td>Take-off to clear 50 ft. - calm ft. 2</td>
<td></td>
</tr>
<tr>
<td>Max. speed/altitude (A)  km./ft. 542/5,145</td>
<td></td>
</tr>
<tr>
<td>Rate of climb at S.L. (A) fpm. 4,200</td>
<td></td>
</tr>
<tr>
<td>Time: S.L. to 20,000 ft. (A) min. 6.2</td>
<td></td>
</tr>
<tr>
<td>Time: S.L. to 30,000 ft. (A) min. 11.6</td>
<td></td>
</tr>
<tr>
<td>Service ceiling (100 fpm) ft. 40,200</td>
<td></td>
</tr>
<tr>
<td>Combat range m.n.a.     1,005</td>
<td></td>
</tr>
<tr>
<td>Average cruising speed km. 422</td>
<td></td>
</tr>
<tr>
<td>Cruising altitude(s)     ft. 34,300/39,000</td>
<td></td>
</tr>
<tr>
<td>Combat radius m.n.a.     390</td>
<td></td>
</tr>
<tr>
<td>Average cruising speed km. 422</td>
<td></td>
</tr>
<tr>
<td>Mission Time hrs.       2.12</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMBAT LOADING CONDITION</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMBAT WEIGHT</td>
<td>lb. 16,217</td>
</tr>
<tr>
<td>Engine power</td>
<td>Military</td>
</tr>
<tr>
<td>Fuel</td>
<td>lb. 3,582</td>
</tr>
<tr>
<td>Combat speed/combat altitude km./ft. 486/35,000</td>
<td></td>
</tr>
<tr>
<td>Rate of climb/combat altitude fpm./ft. 1,100/35,000</td>
<td></td>
</tr>
<tr>
<td>Combat ceiling (500 fpm) ft. 36,000</td>
<td></td>
</tr>
<tr>
<td>Rate of climb at S.L. fpm. 5,100</td>
<td></td>
</tr>
<tr>
<td>Max. speed at S.L. km. 545</td>
<td></td>
</tr>
<tr>
<td>Max. speed/altitude km./ft. 542/5,145</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LANDING WEIGHT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel</td>
<td>lb. 1,007</td>
</tr>
<tr>
<td>Stall speed - power-off km. 96.0</td>
<td></td>
</tr>
<tr>
<td>Stall speed - with approach power km. 92.7</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**

(A) Military Rated Thrust

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

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

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

F9F-7

1 October 1955
NOTES

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

COBRA MARK II - 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

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

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