Standard Aircraft Characteristics

NAVY MODEL

F-9H

AIRCRAFT

(TITLE UNCLASSIFIED)

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

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1 JULY 1967
List of Changed Pages Issued

Insert latest changed pages. Destroy superseeded pages.

NOTE: The portion of the text affected by the current change is indicated by a vertical line in the outer margins of the page.

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STANDARD AIRCRAFT CHARACTERISTICS

F-9H COUGAR

GRUMMAN
POWER PLANT

NO. & MAKE. ............... (1) T-33-A-16
PROP. ....................... Allison Turbo-Prop
T.W.H. ....................... Turbine Compressor
ENG. LENGTH .................. 99.5"
ENG. DIAMETER ................ 49.7"

RATINGS

ENG. * RPM * ALT.
T.O. 6,250 11,000 S.S.L.
M.I.L. 6,250 11,000 S.S.L.
NORMAL 5,125 11,200 S.S.L.

SPEC. NO. 295-8

MISSION AND DESCRIPTION

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

The major difference from the FW-6 airplane is a change from the Pratt & Whitney J-65-A-8A 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 German seating are installed. The guns and radio are accessible through a forward sliding nose. The engine is equipped by removal of fairing section. The engine is not equipped with water injection.

Lateral control is provided by hydraulically actuated flap-arms and flap-actuators. 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

LOADING
B.O.M. ....................... 11,643 lbs.
B.O.M. ....................... 13,400 lbs.
MAX. T.O. (Feet) ............ 8,000 lbs.
MAX. T.O. (Feet) ............ 20,000 lbs.

FUEL AND OIL

GAL. 763 156
NO. TANKS 2 2
LOCATION Fuzes, S.S.
Wing

FUEL GRADE ............... JP-4
FUEL SPEC. ............... N.R. 9-524A

OIL

CAPACITY (Gallons) ........... 3.25
GRAVITY ....................... 15.0
SPEC. ....................... MIL-O-23240

DIMENSIONS

WING
WING AREA ..................... 150 sq.ft.
SPAN ......................... 50 ft.
MAC. .......................... 20 ft.
WING CHORD ................. 3 ft.
WING LENGTH ............. 40 ft. 3 in.
WING TAPER ........... 1:4.2

ELECTRONICS

VHF ....................... AN/ARC-25
VHF ....................... AN/ARC-24
UHF ....................... AN/ARC-25
RADAR ....................... AN/AR-36
LHF ....................... AN/AR-26

PLANNED SERVICE INSTALLATION

Homing ....................... AN/AR-33
(Hi / Low) ....................... AN/AR-27
 amat ............... AN/AR-33

SELECTIVE IDENTIFICATION

FEATURE ....................... AN/APA-89

ORDNANCE

GUNS
NO. SIZE LOCATION DIS.
4 20mm Fuselage 760

FIRE CONTROL
A.F.C.S. ....................... Mk. 6, Mod 0
Bore Unit Range Equipment ......... AN/APQ-30
## PERFORMANCE SUMMARY

<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>18,905</td>
</tr>
<tr>
<td>Fuel</td>
<td>5,970</td>
</tr>
<tr>
<td>Payload (Ammunition)</td>
<td>427</td>
</tr>
<tr>
<td>Wing loading</td>
<td>63.0</td>
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<tr>
<td>Stall speed - power-off</td>
<td>113.6</td>
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<tr>
<td>Take-off run at S.L. - cake ft.</td>
<td>3,350</td>
</tr>
<tr>
<td>Take-off run at S.L. 25 km. wind ft.</td>
<td>2,200</td>
</tr>
<tr>
<td>Take-off to clear 50 ft. - cake ft.</td>
<td>542</td>
</tr>
<tr>
<td>Max. speed/altitude</td>
<td>km/ft. 542/84.2</td>
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<tr>
<td>Rate of climb at S.L.</td>
<td>fpm 4,300</td>
</tr>
<tr>
<td>Time: S.L. to 20,000 ft.</td>
<td>min 6.2</td>
</tr>
<tr>
<td>Time: S.L. to 30,000 ft.</td>
<td>min 11.6</td>
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<tr>
<td>Service ceiling (100 fps)</td>
<td>ft. 40,200</td>
</tr>
<tr>
<td>Combat range</td>
<td>n.mi. 1,005</td>
</tr>
<tr>
<td>Average cruising speed</td>
<td>km 442</td>
</tr>
<tr>
<td>Cruising altitude(a)</td>
<td>ft. 34,300/39,000</td>
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<tr>
<td>Combat radius</td>
<td>n.mi. 259</td>
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<tr>
<td>Average cruising speed</td>
<td>km 442</td>
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<tr>
<td>Mission Time</td>
<td>hrs 2.12</td>
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<tr>
<th>COMBAT LOADING CONDITION</th>
<th>(2)</th>
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<tr>
<td>COMBAT WEIGHT</td>
<td>16,517</td>
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<tr>
<td>Engine power</td>
<td>Military</td>
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<tr>
<td>Fuel</td>
<td>3,482</td>
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<tr>
<td>Combat speed/combat altitude</td>
<td>km/ft. 408/35,000</td>
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<tr>
<td>Rate of climb/combat altitude</td>
<td>fpm 1,900/35,000</td>
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<tr>
<td>Combat ceiling (100 fps)</td>
<td>ft. 39,000</td>
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<tr>
<td>Rate of climb at S.L.</td>
<td>fpm 3,100</td>
</tr>
<tr>
<td>Max. speed at S.L.</td>
<td>km 545</td>
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<tr>
<td>Max. speed/altitude</td>
<td>km/ft. 545/90.4</td>
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</table>

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

### NOTES

(1) Military Rated Thrust

Performance basis: USAF flight test of the F-4J airplane.

Range and radius are based on USAF flight test fuel consumption data increased by 35%.

Reason for reissues: Change from gasoline to JP-4 and final USAF flight test performance data on the F-4J airplane.
NOTES

SPOTTING: 30 airplanes (wings folded) can be spotted in a rectangular area 200 ft. by 56 ft.

COMBAT RADIUS PROBLEM - GENERAL PURPOSE FIGHTER (GAS TURBINE)

WARM-UP, TAXI, TAKE-OFF: 3 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 ft. (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 + COMBAT + CRUISE-BACK

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