Standard Aircraft Characteristics

NAVY MODEL
F-9E
AIRCRAFT

THIS PUBLICATION SUPERSEDES NAVAIR 00-110A-1 DATED 1 MAY 1955 IN PART AND ALL ADDENDA THERETO

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STANDARD AIRCRAFT CHARACTERISTICS
F-9E PANTHER
POWER PLANT

NO. & MODEL: 1) J44-P-6

NPR: Pratt and Whitney

TYPE: Centrifugal Compressor

ENG. LENGTH: 107"

ENG. DIA: 50"

RATINGS

Lbs. @ Rpm @ Alt.

T.O. (Wet) 7,000 11,000 S.S.L.

T.O. (Dry) 6,250 11,000 S.S.L.

MIL. 6,250 11,000 S.S.L.

NORM. 5,000 10,150 S.S.L.

SPEC. NO. N-16124-B

MISSION AND DESCRIPTION

The F9F-5 is a carrier based single seat fighter whose mission is the destruction of opposing aircraft. Twenty-five gallons of water injection is available to aid in take-off.

Drop nose flap, under-fuselage split flaps, and wing slotted flaps are fitted. The guns and radio are accessible by sliding forward the movable nose. The engine is serviced or changed by removal of the tail section of the fuselage.

Two removable tip tanks feed into the main fuel tank. These tanks are not droppable in flight.

A pressurized cabin with temperature control and a Grumman ejection seat is installed.

For normal aileron control a hydraulic boost system is provided. In case of hydraulic failure a mechanical boost is available to reduce stick forces. The canopy also is hydraulically operated.

Dive brakes are located under the fuselage. All control surfaces are metal covered and spot welded. The elevator is electrically trimmed.

WEIGHTS

Loadings Lbs. L.F.

EMPTY... 10,147

BASIC... 11,053

INCREASE... 1,100 7-5

COMBAT... 15,359 7-25

MAX.T.O. (Field) 21,285 5-25

(Cat.) 20,600

MAX.LAND. (Field) 16,000

(Arrest.) 14,000

* Maximum Anticipated Loading

FUEL AND OIL

Gals. No. Tanks Location

763 2 Fuse., S.S.

240 2 Wing, Tip

FUEL GRADE... 100/130

FUEL SPEC... MIL-F-5572

OIL

CAPACITY (Gals.)...

GRADB... 1040

SPEC...

ELECTRONICS

RADAR VHF... AN/ARC-1 or -1A

VHF TRANS.-REC... AN/ARC-27

(P.S.I.-Repl. for AN/ARC-3)

UHF D.F... AN/ARC-2

(Planned Service Installation)

RADIO COMPASS... AN/ARC-6

HOMING... AN/ARC-24

RADIO HOMING... AN/ARC-27

(P.S.I.-Repl. for AN/ARC-24

and AN/ARC-6)

RADIO AlTIMETER... AN/ARC-2

RPP... AN/ARC-5

RADAR SET... AN/AG-30

DIMENSIONS

WING AREA... 250 sq. ft.

SPAN... 30' - 0"

LENGTH... 38' - 10"

HEIGHT... 13' - 0"

TREAD... 8' - 3"

M.A.C... 7' - 9"
# PERFORMANCE SUMMARY

## TAKE-OFF LOADING CONDITION

<table>
<thead>
<tr>
<th>Description</th>
<th>(1) Fighter</th>
<th>(2) 120 Gal. Tip Tanks</th>
<th>(3) V-24B, 300 + 120 + 120 Gal. Tip Tanks</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAKE-OFF WEIGHT</td>
<td>lb.</td>
<td>17,765</td>
<td>18,721</td>
</tr>
<tr>
<td>Fuel (Internal/Fixed Tip)</td>
<td>lb.</td>
<td>4,576/1,440</td>
<td>4,576/1,440</td>
</tr>
<tr>
<td>Payload (Ammunition/Rockets)</td>
<td>lb.</td>
<td>471</td>
<td>471</td>
</tr>
<tr>
<td>Wing loading</td>
<td>lb./sq.ft.</td>
<td>114.2</td>
<td>116.5</td>
</tr>
<tr>
<td>Stall speed - power-off</td>
<td>(2) kts.</td>
<td>114.2</td>
<td>116.5</td>
</tr>
<tr>
<td>Take-off run at S.L. - calms</td>
<td>(0) ft. (Dry)</td>
<td>2,397</td>
<td>2,490</td>
</tr>
<tr>
<td>Take-off run at S.L. 25 kt. wind (C)</td>
<td>ft. (Dry)</td>
<td>1,415</td>
<td>1,562</td>
</tr>
<tr>
<td>Max. speed/altitude</td>
<td>(A) km./ft.</td>
<td>593/5,000</td>
<td>498/10,000</td>
</tr>
<tr>
<td>Rate of climb at S.L.</td>
<td>(2) ft.</td>
<td>5,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Time S.L. to 20,000 ft.</td>
<td>(3) min.</td>
<td>4.6</td>
<td>6.9</td>
</tr>
<tr>
<td>Time S.L. to 30,000 ft.</td>
<td>(3) min.</td>
<td>8.7</td>
<td>15.0</td>
</tr>
<tr>
<td>Service ceiling (100 fps)</td>
<td>(3) ft.</td>
<td>48,800</td>
<td>32,500</td>
</tr>
<tr>
<td>Combat range</td>
<td>n.m.</td>
<td>1,120</td>
<td>275</td>
</tr>
<tr>
<td>Average cruising speed</td>
<td>km.</td>
<td>416</td>
<td>333</td>
</tr>
<tr>
<td>Cruising altitude(s)</td>
<td>ft.</td>
<td>41,000/46,000</td>
<td>30,600/34,800</td>
</tr>
<tr>
<td>Combat radius</td>
<td>n.m.</td>
<td>430</td>
<td>130</td>
</tr>
<tr>
<td>Average cruising speed</td>
<td>km.</td>
<td>416</td>
<td>342</td>
</tr>
</tbody>
</table>

## COMBAT LOADING CONDITION

<table>
<thead>
<tr>
<th>Description</th>
<th>(2) TIP TANKS</th>
<th>(4) TIP TANKS 5-124L. Launchers</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMBAT WEIGHT</td>
<td>lb.</td>
<td>15,359</td>
</tr>
<tr>
<td>Engine power</td>
<td>Military</td>
<td>Military</td>
</tr>
<tr>
<td>Fuel</td>
<td>lb.</td>
<td>3,611</td>
</tr>
<tr>
<td>Combat speed/combat altitude</td>
<td>km./ft.</td>
<td>472/35,000</td>
</tr>
<tr>
<td>Rate of climb/combat altitude</td>
<td>fps/ft.</td>
<td>2,950/35,000</td>
</tr>
<tr>
<td>Combat ceiling (100 fps)</td>
<td>ft.</td>
<td>32,500</td>
</tr>
<tr>
<td>Rate of climb at S.L.</td>
<td>fps</td>
<td>5,000</td>
</tr>
<tr>
<td>Max. speed at S.L.</td>
<td>km.</td>
<td>525</td>
</tr>
<tr>
<td>Max. speed/altitude</td>
<td>km./ft.</td>
<td>525/35,000</td>
</tr>
</tbody>
</table>

## LANDING WEIGHT

<table>
<thead>
<tr>
<th>Description</th>
<th>lb.</th>
<th>12,819</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel</td>
<td>lb.</td>
<td>1,071</td>
</tr>
<tr>
<td>Stall speed - power-off</td>
<td>km.</td>
<td>98.9</td>
</tr>
<tr>
<td>Stall speed - with approach power</td>
<td>km.</td>
<td>92</td>
</tr>
</tbody>
</table>

### NOTES

(A) Normal Power  
(B) Military Power  
(C) Without Stall Pencos  

Performance is based on NACO flight test of the F-4G aircraft.  
Range and radius are based on flight test fuel consumption increased by 5%.  
Spotting: 200 ft. length is required to spot 28 airplanes (wings folded) on the 96 ft. wide deck immediately aft of the forward ramp on 01-3 class carriers.
NOTES

GENERAL PURPOSE AND ESCORT FIGHTER COMBAT RADIUS PROBLEM (GAS TURBINE)

WARM-UP, TAXI, TAKE-OFF: 5 minutes at normal power.
CLIMB: To cruising ceiling at military power. (Cruising ceiling = altitude for 300 ft./min. rate of climb at normal power.)
CRUISE-OUT: At V 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 power. (Assume combat concluded at initial cruise-back altitude.)
CRUISE-BACK: At V for long range at cruising ceiling.
RESERVE: 20 minutes at V for maximum endurance at sea level plus 5% of initial fuel load.

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

46,000 FT.
43,700 FT.
41,000 FT.
42,700 FT.
35,000 FT.

Based on F-5 problem, combat radius would increase to 500 nautical miles. [1]
Based on reserve fuel allowance of F-5 problem (1% of initial fuel load), range would increase to 1,290 nautical miles.
Radius is reduced approximately 6.5 nautical miles for each additional minute of combat.

GROUND SUPPORT FIGHTER COMBAT RADIUS PROBLEM (GAS TURBINE)

WARM-UP, TAXI, TAKE-OFF: 5 minutes at normal power.
CLIMB: To altitude for maximum radius (25,000 feet) at military power.
CRUISE-OUT: At V for long range at 25,000 feet.
DESCEND: To sea level. (No fuel used, no distance gained.)
LOITER: 10 minutes at airspeeds for maximum endurance at sea level.
DROP BOMBS AND FIRE EXTERNAL ROCKETS
COMBAT: At sea level for 10 minutes at military power.
CLIMB: To altitude for maximum radius (20,000 feet) at military power.
CRUISE-BACK: At velocity for long range at 20,000 feet.
RESERVE: 20 minutes at velocity for maximum endurance at sea level plus 5% of initial fuel load.

25,000 FT.
20,000 FT.

The photographic version of this airplane is the F9F-5P. It differs from the F9F-5 in that the guns have been replaced by camera equipment and 118 pounds of ballast, resulting in a 103 pound decrease in weight. Performance of the F9F-5P will be very slightly improved over that of the F9F-5 due to weight differences.

This chart supersedes previously issued chart dated 1 February 1950. Reason for issuance: Flight test data available.
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 stall 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 NACO Flight Test.