POWER PLANT

No. & Model .......... (1) J75-GE-3E
Mfr .......... General Electric
Engine Spec No. .......... E-615f
Type .......... Axial
Length .......... 14.7, 2, 3, 4
Diameter .......... 36, 8
Weight (dry) .......... 3650 lb
Tail Pipe .......... Fixed Area

MISSION AND DESCRIPTION

Navy Equivalent: None
Mfr’s Model: NA-167, NA-203

The principal missions of the F-86H are the destruction of hostile aircraft in flight and hostile ground installations.

Special features of this airplane are hydraulically-operated speed brakes, electrically-operated flaps, and hydraulic power-operated irreversible controls with artificial feel for the all-movable horizontal tail and ailerons.

The cockpit is provided with 2, 75 or 5 psi differential pressurization, heating and cooling, a jettisonable canopy, an ejection type seat, gaseous oxygen system and anti-G suit provisions.

A type A-4 Gun-Bomb-Rocket sight is provided and is used in conjunction with the radar ranging equipment. Provisions are made for carrying other bombs or rockets externally. For special store missions, the MA-3 Low Altitude Bombing System (LABS) M-1 Toss Bomb Computer and the T-145 release system are provided.

DEVELOPMENT

The F-86H is a continuation of the F-86 series of airplanes to incorporate the increased thrust of the J75-GE-3E engine, a combination slatted-extended leading edge configuration, and wing tip extensions.

Contract Approved .......... May 51
First Flight .......... May 53
First Delivery .......... Jan 53
Production Completed .......... Aug 55

ENGINE RATINGS

S.L.S. LB - RPM - MIN
Max: 8920 - 7950 - 5
Mil: 8920 - 7950 - 30
Nor: 7820 - 7650 - Cont

DIMENSIONS

Wing .... 39.1
Span .......... 39.1
Incidence (root) .......... 1
(Dip) .......... -10,12
Dihedral .......... 30
Sweepback (25% chord) .......... 35,04
Length .......... 36, 8
Height .......... 15, 0
Trend .......... 8, 4

BOMBS

No. WW II (Box Fin)
2 ........ 1000
2 ........ 500
2 ........ 250

New Series
2 ........ 1000
2 ........ 500
2 ........ 250

Napalm
2 ........ 750

GUNS

No. Type Size Rd ea Location

ROCKETS

No. Size Type Location

ELECTRONICS

UHF Command .......... AN/ARC-27
IFF .......... AN/APX-6
Radio Compass .......... AN/ARN-6
Radar Ranging Equip. .......... AN/APG-30
Space provisions for:

Interphone .......... AN/AIC-10

F - 86H
## Loading and Performance—Typical Mission

### Conditions

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Basic Mission</th>
<th>Design Mission</th>
<th>Fighter Interception Mission</th>
<th>Bomber</th>
<th>Rocket</th>
<th>Bomber</th>
<th>Ferry Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Take-off Weight</strong> (lb)</td>
<td>21,852</td>
<td>21,852</td>
<td>23,504</td>
<td>22,962</td>
<td>24,296</td>
<td>23,716</td>
<td></td>
</tr>
<tr>
<td>Fuel at 6.5 lb/gal (grade JP-4) (lb)</td>
<td>6260</td>
<td>6260</td>
<td>6260</td>
<td>6260</td>
<td>6260</td>
<td>7620</td>
<td></td>
</tr>
<tr>
<td>Payload (ammunition) (lb)</td>
<td>420</td>
<td>420</td>
<td>420</td>
<td>420</td>
<td>420</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Payload (external ordnance) (lb)</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>1500</td>
<td>1056</td>
<td>2310</td>
<td></td>
</tr>
<tr>
<td>Wing loading (lb/sq ft)</td>
<td>69.8</td>
<td>69.8</td>
<td>75.0</td>
<td>73.2</td>
<td>77.5</td>
<td>124.5</td>
<td></td>
</tr>
<tr>
<td>Stall speed (power-off) (kn)</td>
<td>119.5</td>
<td>119.5</td>
<td>124</td>
<td>122.5</td>
<td>131.5</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Take-off ground run at SL (ft)</td>
<td>2310</td>
<td>2310</td>
<td>2700</td>
<td>2570</td>
<td>3130</td>
<td>2750</td>
<td></td>
</tr>
<tr>
<td>Take-off to clear 50 ft (ft)</td>
<td>3510</td>
<td>3510</td>
<td>4020</td>
<td>3850</td>
<td>4550</td>
<td>4000</td>
<td></td>
</tr>
<tr>
<td>Rate of climb at SL (fpm)</td>
<td>8580</td>
<td>8580</td>
<td>7150</td>
<td>7000</td>
<td>6310</td>
<td>6650</td>
<td></td>
</tr>
<tr>
<td>Time: SL to 20,000 ft (min)</td>
<td>3.1</td>
<td>3.1</td>
<td>4.9</td>
<td>4.1</td>
<td>4.5</td>
<td>4.1</td>
<td></td>
</tr>
<tr>
<td>Time: SL to 30,000 ft (min)</td>
<td>5.7</td>
<td>5.9</td>
<td>7.5</td>
<td>7.7</td>
<td>8.7</td>
<td>8.2</td>
<td></td>
</tr>
<tr>
<td>Service ceiling (100 fpm) (ft)</td>
<td>45,500</td>
<td>45,600</td>
<td>42,000</td>
<td>41,400</td>
<td>40,200</td>
<td>41,000</td>
<td></td>
</tr>
</tbody>
</table>

### Combat Range

- **COMBAT RANGE (n mi)**: 1973
- **COMBAT RADIUS (n mi)**: 451
- **Average speed (kn)**: 180
- **Initial cruising altitude (ft)**: 42,000
- **Final cruising altitude (ft)**: 46,800
- **Total mission time (hr)**: 2.22

### Combat Weight

- **Combat altitude (ft)**: 43,300
- **Combat climb (fpm)**: 1650
- **Max rate of climb at SL (fpm)**: 12,300
- **Max speed at SL (fpm)**: 601
- **Basic speed at 35,000 ft (kn)**: 536

### Landing Weight

- **Ground roll at SL (ft)**: 2950
- **Total from 50 ft (ft)**: 3900

### Notes

- Maximum power
- Detailed description of RADIUS and RANGE
- Missions given on page 6.
- 8-5' HYAR rockets
- 2-750 lb napalm bombs
- 2-1000 GP bombs (T-142 fin)
- 20° flaps, limited by store
- Includes 420 lb of ballast

**PERFORMANCE BASIS:**

(a) Data source: Flight test
(b) Performance is based on powers shown on page 6.
NOTES

FORMULA: RADIUS MISSION I

Take-off, climb on course to best cruise altitude with military power, cruise out at long range speeds at best cruise altitude dropping external tanks when empty, continue to cruise at best cruise altitude for clean airplane configuration, combat for 20 minutes, cruise back to base at long range speeds at cruise altitude. Range free allowances include 5 minutes at normal power at sea level for starting engine, taxi, and take-off, fuel for 20 minutes combat at maximum power with fuel flow based on 35,000 ft., plus a reserve of 20 minutes loiter at sea level at speeds for maximum endurance and 5% initial fuel load.

FORMULA: RADIUS MISSION II

Take-off, climb on course to best cruise altitude with military power, cruise out at long range speeds at best cruise altitude dropping external tanks when empty, continue to cruise at best cruise altitude, climb to normal power cruise ceiling with military power, combat for 20 minutes, cruise back to base at long range speeds at cruise altitude. Range free allowances include 5 minutes at normal power at sea level for starting engine, taxi, and take-off, fuel for 20 minutes combat at maximum power plus a reserve of 10% initial fuel load.

FORMULA: RADIUS MISSION III, IV, V

Take-off, climb on course to cruise ceiling with military power, cruise out at long range speeds at cruise ceiling to target dropping external fuel tanks when empty (cruise without tanks is continued at best cruise altitude for the store configuration), descend to sea level and expend external ordnance, combat for 5 minutes, climb on course to best cruise altitude with military power, cruise back to base at long range speeds at best cruise altitude. Range free allowances include 5 minutes at normal power at sea level for starting engine, taxi, and take-off, fuel for 5 minutes combat at maximum power, plus a reserve of 20 minutes loiter at sea level at speeds for maximum endurance and 5% initial fuel load.

FORMULA: RANGE MISSION VI

Take-off, climb on course to cruise ceiling with military power, cruise out at long range speeds at cruise ceiling dropping tanks when empty, Range free allowances include 5 minutes at normal power at sea level for starting engine, taxi, and take-off, plus a reserve of 20 minutes loiter at sea level at speeds for maximum endurance and 5% initial fuel load.

GENERAL DATA:

(a) Engine ratings shown on page 3 are manufacturer's guaranteed ratings. The installed thrust values used in performance calculations are as follows:

<table>
<thead>
<tr>
<th>Engine</th>
<th>S, L, STATIC</th>
<th>RPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>J73-GE-3E</td>
<td>9070</td>
<td>7950</td>
</tr>
<tr>
<td></td>
<td>8200</td>
<td>7650</td>
</tr>
</tbody>
</table>

(b) For detailed planning refer to Technical Order 1F-86H-1 and other applicable technical orders.

(c) Performance shown are based on the weights for Serial No. AF-53-1526.

(d) Airplanes prior to No. 116 contain six .50 caliber (M-3) guns in lieu of four 20mm (M-39) guns and weighs 286 lbs. less than four M-39 guns.

PERFORMANCE REPORT:

Performance data are based on North American Report No. NA-56-187, dated 1 March 1956, "Performance Calculations Based on Flight Test Results of Service Model F-86H Airplane".

REVISION BASIS:

Addition of slatted-extended leading edge, wing tip extensions, gun changes and flight test results.

(1 MAR 56)