STANDARD AIRCRAFT CHARACTERISTICS

F3H-IN "DEMON"

MC DONNELL

15 MAY 1955
**POWER PLANT**

- **NO. & MODEL:** (1) J40-AF-22
- **MFR:** Westinghouse
- **TYPE:** axial-flow
- **LENGTH (INCL. A/B):** 26.4"
- **DIAMETER:** 41"
- **AUGMENTATION:** Afterburner

**RATINGS**

- **LSI + A/B:** 10,900 7,260 S.S.I.
- **MILITARY:** 7,250 7,260 S.S.I.
- **NORMAL:** 6,500 7,260 S.S.I.

Spec. No. W474-40E2-4P

**MISSION AND DESCRIPTION**

The primary mission of the F3H-1S is the destruction of enemy aircraft. The airplane is a single place, swept-wing, jet propelled fighter designed for land or carrier operations.

Equipment includes automatic pilot, ejection seat and pressurized cockpit. An auxiliary power unit may be carried externally to provide for engine startup when operating from advanced bases.

Additional lift for landing and take-off is provided by power actuated leading edge slats and trailing edge slotted flaps. The airplane features fuselage speed brakes and power actuated primary controls with artificial feel.

**WEIGHTS**

- **LOADING:**
  - EMPTY: 18,691
  - BASIC: 12,360
  - DESIGN: 26,000
  - COMBAT: 26,085
    - Field: 34,000
    - Cat.: 30,000
  - MAX. T.O. (Field): 27,000
    - Arrest: 23,500

All weights are calculated.

**FUEL AND OIL**

- **No. Tanks:**
  - 3: 1,202 Fuselage
  - 4: 304 Wing

FUEL GRADE: J-4

FUEL SPEC: MIL-F-5624

**OIL**

CAPACITY (Gals.): 15

GRADE: MIL-O-1010

SPEC: MIL-O-6091

**DEVELOPMENT**

- Mock-up: July 1953
- First Flight: December 1953
- Service use: April 1955

**ORDNANCE**

- **GUNS:**
  - No. 4
  - Size: 20mm
  - Location: Nose
  - A.D.: 600

- **FIRE CONTROL:**
  - AGC: 102 or 103

- **ROSES AND ROCKETS:**
  - Mark.
  - Location: 50
  - Max. Range: 2,000

- **LAUNCHER:**
  - Mark.
  - Location: 115
  - Wing
  - Max. Range: 500

Max. Load Capacity: 4,000 LBS.

**DIMENSIONS**

<table>
<thead>
<tr>
<th>WING</th>
<th>AREA</th>
<th>442 sq. ft.</th>
<th>W.S.</th>
<th>39° - 44°</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W.E.</td>
<td>155°</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S. (°/4)</td>
<td>125°</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LENGTH</td>
<td>69”</td>
<td>69”</td>
<td>T. (°/4)</td>
</tr>
<tr>
<td></td>
<td>HEIGHT</td>
<td>11”</td>
<td>21”</td>
<td>15° - 11”</td>
</tr>
</tbody>
</table>

**ELECTRONICS**

- **UHF COMM.**
  - (with alternate prov. for AN/ARC-2)
  - AN/ARC-27A
- **Radar Altimeter.**
  - AN/APS-42
- **Radar Compass.**
  - AN/ARC-25
- **Radar (A/F).**
  - AN/APS-60
- **(First 30 aircraft only).**
- **IFF.**
  - AN/AE-6
- **Radar.**
  - AN/APS-30
- **Control Group.**
  - AN/AE-69
# PERFORMANCE SUMMARY

## TAKE-OFF LOADING CONDITION

<table>
<thead>
<tr>
<th></th>
<th>(1) FIGHTER FULL INTERNAL FUEL</th>
<th>(2) 2-1000# 4-500# ROCKETS</th>
<th>(3) 4-500# ROCKETS</th>
<th>(4) 6-5# MISSILES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TAKE-OFF WEIGHT</strong></td>
<td>lb.</td>
<td>29,998</td>
<td>34,976</td>
<td>32,082</td>
</tr>
<tr>
<td>Fuel</td>
<td>lb.</td>
<td>9,789</td>
<td>9,789</td>
<td>9,789</td>
</tr>
<tr>
<td>Jayload</td>
<td>lb.</td>
<td>-</td>
<td>4,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Wing loading</td>
<td>lb. per sq. ft.</td>
<td>67.9</td>
<td>77.6</td>
<td>72.6</td>
</tr>
<tr>
<td>Stall speed – power-off</td>
<td>km / hr.</td>
<td>116.6</td>
<td>116.6</td>
<td>116.6</td>
</tr>
<tr>
<td>Take-off run at S.L.</td>
<td>ft.</td>
<td>5,500/2,800</td>
<td>7,800/4,000</td>
<td>6,500/3,300</td>
</tr>
<tr>
<td>Take-off run at S.L.</td>
<td>ft.</td>
<td>3,800/1,900</td>
<td>5,600/2,800</td>
<td>4,600/2,400</td>
</tr>
<tr>
<td>Take-off to clear 50 ft.</td>
<td>ft.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Max. speed/altitude</td>
<td>km / ft.</td>
<td>506/14,000</td>
<td>43/5/10,000</td>
<td>44/10,000</td>
</tr>
<tr>
<td>Rate of climb at S.L.</td>
<td>ft. per min.</td>
<td>3,250</td>
<td>2,260</td>
<td>2,700</td>
</tr>
<tr>
<td>Time S.L. to 20,000 ft.</td>
<td>min.</td>
<td>8.7</td>
<td>12.5</td>
<td>11.5</td>
</tr>
<tr>
<td>Time S.L. to 25,000 ft.</td>
<td>min.</td>
<td>12.8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Service ceiling (100 fps)</td>
<td>ft.</td>
<td>32,000</td>
<td>22,000</td>
<td>22,750</td>
</tr>
<tr>
<td>Combat range</td>
<td>n.m.</td>
<td>980</td>
<td>985</td>
<td>730</td>
</tr>
<tr>
<td>Average cruising speed</td>
<td>n.m.</td>
<td>420</td>
<td>418</td>
<td>411</td>
</tr>
<tr>
<td>Cruising altitude(s)</td>
<td>ft.</td>
<td>27,500/33,800</td>
<td>16,500/21,400</td>
<td>21,700/29,500</td>
</tr>
<tr>
<td>Combat radius</td>
<td>n.m.</td>
<td>345</td>
<td>285</td>
<td>330</td>
</tr>
<tr>
<td>Average cruising speed</td>
<td>n.m.</td>
<td>452</td>
<td>452</td>
<td>452</td>
</tr>
<tr>
<td>Mission time</td>
<td>hrs.</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

## COMBAT LOADING CONDITION

<table>
<thead>
<tr>
<th></th>
<th>(2) CLEAN</th>
<th>(3) CLEAN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMBAT WEIGHT</strong></td>
<td>lb.</td>
<td>26,085</td>
</tr>
<tr>
<td>Engine power</td>
<td>Military</td>
<td>Military + 40</td>
</tr>
<tr>
<td>Fuel</td>
<td>lb.</td>
<td>5,570</td>
</tr>
<tr>
<td>Combat speed/combat altitude</td>
<td>km / ft.</td>
<td>523/29,500</td>
</tr>
<tr>
<td>Rate of climb/combat altitude</td>
<td>fps / ft.</td>
<td>800/29,500</td>
</tr>
<tr>
<td>Combat ceiling (500 fps)</td>
<td>ft.</td>
<td>84,500</td>
</tr>
<tr>
<td>Rate of climb at S.L.</td>
<td>fps.</td>
<td>3,090</td>
</tr>
<tr>
<td>Max. speed at S.L.</td>
<td>km / hr.</td>
<td>535</td>
</tr>
<tr>
<td>Max. speed/altitude</td>
<td>km / ft.</td>
<td>525/12,000</td>
</tr>
<tr>
<td><strong>LANDING WEIGHT</strong></td>
<td>lb.</td>
<td>21,901</td>
</tr>
<tr>
<td>Fuel</td>
<td>lb.</td>
<td>1,592</td>
</tr>
<tr>
<td>Stall speed – power-off</td>
<td>km / hr.</td>
<td>95.8</td>
</tr>
<tr>
<td>Stall speed – with approach power</td>
<td>km / hr.</td>
<td>92.2</td>
</tr>
</tbody>
</table>

**NOTES**

(A) Normal Rated Thrust
(B) Military Rated Thrust
(C) Military plus Afterburner Rated Thrust
(D) Performance basis: Calculations
(E) Range and radius are based on engine specification fuel consumption data increased by 5%.
(F) Mission time includes time to climb, cruise-out, combat, cruise-back.
NOTES

SPOTTING: A total of 64 airplanes (wings folded) can be accommodated in a landing spot on the flight and hangar decks of a CVA-41 class angled deck carrier.

GENERAL PURPOSE FIGHTER

WARM-UP, TAKE-OFF, ACCELERATION: 5 minutes at normal rated thrust at sea level.
CLIMB: To altitude for best cruise at military rated thrust.
CRUISE-OUT: At speed for long range at altitude for best cruise.
COMBAT: Fuel allowance at 25,500 ft., for 15 minutes operation at military thrust and 5 minutes at maximum rated thrust (assum combat concluded at end of initial cruise-back altitude).
CRUISE-BACK: At speed for long range at altitude for best cruise.
RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5% of initial fuel load.

COMBAT RADIUS = CLIMB + CRUISE-OUT + CRUISE-BACK
MISSION TIME = CLIMB + CRUISE-OUT + COMBAT + CRUISE-BACK

33,800 FT.  32,300 FT.
27,500 FT.  29,800 FT.
8,000 FT.

COMBAT RADIUS

O LOADING CONDITION COLUMN NUMBER

CONFIDENTIAL 15 MAY 1955