Wing Area: 385 sq ft
Aspect Ratio: 3.18
M.A.C.: 137.76 in

Wing Section:
- Root-sta. 80: NACA 65A-005, 5
- Tip: NACA 65A-003, 7

Pressurized Area:
- 122
- 138
- 352
- 450
- 450
- 450
- 390
- 450
- 151
- 197
- 88
- 92
- 4.5

NOTE: TOTAL INTERNAL FUEL EQUALS 1160 GAL OF WHICH 20 GAL OF USEABLE FUEL IS LOCATED IN THE FUEL LINES.

Fuel (Gal) Oil (Gal)

F-105B-10 17 OCT 58
**POWER PLANT**

Nr & Model: (1) J75-P-5  
Mfr: Pratt & Whitney  
Engine Spec Nr: A-2602C  
Type: Two Spool Axial  
Length: 239.3"  
Diameter: 43.9"  
Weight (dry): 5950 lb  
Tail Pipe: 2-Position Convergent  
& Republic Ram Air Ejector  
Augmentation: Afterburning

---

**MISSION AND DESCRIPTION**

Navy Equivalent: None  
Mfr's Model: AP-63

The principal mission of the F-105B-10 is that of a fighter bomber.

This airplane is a thin mid-wing swept wing aircraft with a low position maneuvering stabilizer, spoiler-aileron combination full span leading edge flaps, and 3/4 span trailing edge flaps. The fuselage incorporates a bomb bay capable of housing either a special store or an auxiliary fuel tank.

Other features include a supersonic, variable area wing root air inlet duct, cockpit pressurization, liquid oxygen system, hydraulic power-operated irreversible flight controls with artificial "feel", large speed brakes located at the aft end of the fuselage, integrated automatic flight control system, "probe-drogue" in-flight refueling provisions, single point refueling, nose wheel steering, and a braking parachute.

The MA-8 Fire Control System, consisting of the E-50 Sighting System in conjunction with the E-34 Radar Ranging System, E-30 Tors Bombs Computer and Time of Flight Computer is provided. The T-249 Release System is provided for use with the special stores.

**DEVELOPMENT**

Similar to the YF-105A except for J75 engine in lieu of J57 engine, engine ram air ejector, area control fuselage, supersonic engine inlets and a larger vertical stabilizer.

Mockup date: Oct 53  
First flight (with YJ75-P-3 eng): May 56  
First flight (with J75-P-5 eng): Jun 57  
Production status: In Production

---

**WINGS**

Span: 34.9'  
Incidence: 0°  
Cathedral: 3° 30'  
Sweepback: 25% Chord  
Length: 63' 1"  
Height: 10' 7"  
Trend: 17.3"

---

**BOMBS**

Nr Internal External Class (lb)
4 — — 4 750  
4 — — 4 1000

Special Stores:  
(MK-28) 1960

Max Bomb Load: 4000 lb

---

**GUNS**

Nr Type Size Rds ea Loc
1 .50-120mm 1030... Fus

---

**ROCKETS**

Nr Size Type Loc
2 Pod .75", FFAR, Outbd Pylons
2 Pod .75", FFAR, Inbd Pylons
1 Pod .75", FFAR, Ctr Pylon
Total: 3 Pods, 95 Rockets

---

**FUEL**

Location:  
Nr Tanks:  
Gal:  
Total:  
Grade: JP-4  
Specification: MIL-F-5624A

---

**OIL**

Engine, Integral:  
(tot) 4.5  
Specification: MIL-L-7808

---

**ELECTRONICS**

UHF Command: AN/ARC-34  
Interphone: AN/AIC-10  
Direction Finder: AN/ARA-25  
IFF: AN/APX-25  
Omni-Directional Range: AN/AHN-14D  
Radar Warning: AN/APS-54  
Chaff Dispenser: AN/ALE-2  
Radar Ranging: E-34

---

**WEIGHTS**

Loading:  
L, F,  
Empty: 25,446(A)  
Basic: 25,913(A)  
Design: 31,392... 8.67 (7.33)  
Design: 33,070... 7.33 (7.33)  
Combat: 34,483  
Max T.O. 48,108... 2.0  
Max Landing 42,167

(A) Actual  
* For Basic Mission  
† No store  
Ⅰ 1960 lb store aboard  
‡ Limited by structure  
Ⅱ Limited by rate of sink  
Note: Load factors in ( ) are for supersonic maneuver.

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**CONFIDENTIAL**
## Loading and Performance—Typical Mission

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Basic Mission</th>
<th>Design Mission</th>
<th>Ground Support</th>
<th>Ferry Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take-off weight</td>
<td>lbs</td>
<td>lbs</td>
<td>lbs</td>
<td>lbs</td>
</tr>
<tr>
<td>Payload (ammo)</td>
<td>lbs</td>
<td>lbs</td>
<td>lbs</td>
<td>lbs</td>
</tr>
<tr>
<td>Payload (bombs)</td>
<td>lbs</td>
<td>lbs</td>
<td>lbs</td>
<td>lbs</td>
</tr>
<tr>
<td>Wing loading</td>
<td>lbs</td>
<td>lbs</td>
<td>lbs</td>
<td>lbs</td>
</tr>
<tr>
<td>Stall speed (power off)</td>
<td>(knots)</td>
<td>(knots)</td>
<td>(knots)</td>
<td>(knots)</td>
</tr>
<tr>
<td>Take-off ground run at SL</td>
<td>(miles)</td>
<td>(miles)</td>
<td>(miles)</td>
<td>(miles)</td>
</tr>
<tr>
<td>Take-off to clear 50 ft</td>
<td>(miles)</td>
<td>(miles)</td>
<td>(miles)</td>
<td>(miles)</td>
</tr>
<tr>
<td>Rate of climb at SL</td>
<td>(knots)</td>
<td>(knots)</td>
<td>(knots)</td>
<td>(knots)</td>
</tr>
<tr>
<td>Time: SL to 20,000 ft</td>
<td>(minutes)</td>
<td>(minutes)</td>
<td>(minutes)</td>
<td>(minutes)</td>
</tr>
<tr>
<td>Time: SL to 30,000 ft</td>
<td>(minutes)</td>
<td>(minutes)</td>
<td>(minutes)</td>
<td>(minutes)</td>
</tr>
<tr>
<td>Service ceiling (100 fpm)</td>
<td>(feet)</td>
<td>(feet)</td>
<td>(feet)</td>
<td>(feet)</td>
</tr>
<tr>
<td>Combat radius</td>
<td>(miles)</td>
<td>(miles)</td>
<td>(miles)</td>
<td>(miles)</td>
</tr>
<tr>
<td>Average cruise speed</td>
<td>(knots)</td>
<td>(knots)</td>
<td>(knots)</td>
<td>(knots)</td>
</tr>
<tr>
<td>Initial cruising altitude</td>
<td>(feet)</td>
<td>(feet)</td>
<td>(feet)</td>
<td>(feet)</td>
</tr>
<tr>
<td>Final cruising altitude</td>
<td>(feet)</td>
<td>(feet)</td>
<td>(feet)</td>
<td>(feet)</td>
</tr>
<tr>
<td>Total mission time</td>
<td>(minutes)</td>
<td>(minutes)</td>
<td>(minutes)</td>
<td>(minutes)</td>
</tr>
</tbody>
</table>

### COMBAT RANGE

- **Average cruise speed**
- **Initial cruising altitude**
- **Final cruising altitude**
- **Total mission time**

### TAKE-OFF WEIGHT

- **Combat altitude** (feet)
- **Combat speed** (knots)
- **Combat ceiling** (knots)
- **Service ceiling** (knots)
- **Max rate of climb** (knots)
- **Max speed at 35,000 ft** (knots)
- **Basic speed at S.L., ft** (knots)

### LANDING WEIGHT

- **Ground roll at SL** (feet)
- **Total from 50 ft** (feet)
- **Total from 50 ft (auxiliary brakes)** (feet)

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**WING TANKS**: With 969 lb of fuel are dropped prior to combat. Radius in parenthesis is calculated carrying wing tanks in combat. F-105 Type II tanks are stressed compatible with external bombs which are carried in combat.

**PERFORMANCE BASIS**:

(a) Data source: Estimated data based on F-105B flight tests
(b) Performance is based on powers shown on page 6

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**G-105B-10 17 OCT 58**
**NOTES**

**FORMULA: RADIUS MISSION I**

Take-off with maximum power, climb on course with military power to initial cruise altitude, cruise at cruise altitude at max range speeds, descend to sea level, expend stores, combat for 5 minutes at military power, climb on course with military power to initial cruise home altitude, cruise to base at cruise altitude at max range speeds. Range-free allowances include 5 minutes at normal power and 1 minute at maximum power at sea level for starting engine and take-off, 5 minutes combat at sea level with military power, and a reserve of 30 minutes loiter at speeds for maximum endurance plus 5% initial fuel load.

**FORMULA: RADIUS MISSIONS II & III**

Take-off with maximum power, climb on course with military power to initial cruise altitude, cruise at cruise altitude at max range speeds. Climb on course with military power to cruise ceiling. At maximum power, fly at cruise ceiling for 3 minutes inbound to target prior to bomb release, drop external tanks (if any) and dive bomb, leave target at military power high speed for 2 minutes at sea level, climb with military power to initial cruise home altitude, cruise to base at cruise altitude at max range speeds. Range-free allowances include 5 minutes at normal power and 1 minute at maximum power at sea level for starting engine and take-off, dive bomb, and a reserve of 15 minutes loiter at cruise altitude at speeds for maximum endurance plus fuel to allow for one instrument approach and visual go-around from airplane flare-out altitude.

**FORMULA: RADIUS MISSIONS IV**

Take-off with maximum power, climb on course with military power to initial cruise altitude, cruise at cruise altitude at max range speeds, descend to sea level and loiter for 10 minutes at speeds for maximum endurance, expend stores or bombs, combat for 10 minutes at military power, climb on course with military power to initial cruise home altitude, cruise to base at cruise altitude at max range speeds. Range free allowances include 5 minutes at normal power and 1 minute at maximum power at sea level for starting engine and take-off, 10 minutes loiter at sea level at speeds for maximum endurance, 10 minutes combat at sea level with military power, and a reserve of 20 minutes loiter at sea level of speeds for maximum endurance plus 5% of usable fuel load.

**FORMULA: RANGE MISSION V**

Take-off with maximum power, climb on course with military power to initial cruise altitude, cruise at cruise altitude at max range speeds to remote base. Range-free allowances include 5 minutes at normal power plus 1 minute at maximum power for starting engine and take-off, and a reserve of 20 minutes loiter at sea level at speeds for maximum endurance plus 5% of initial fuel load.

**GENERAL NOTES**

(a) Tanks and pylons are carried on all missions and dropped when empty unless otherwise specified,

(b) Cruise is performed along optimum cruise climb flight path,

(c) For detailed planning refer to Technical Order 1F-105B-1 and other applicable technical orders,

**REVISION BASIS:**

Initial Issue