Standard Aircraft Characteristics

NAVY MODEL
F-4B
AIRCRAFT

(TITLE UNCLASSIFIED)

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1 MAY 1955 IN PART AND ALL ADDENDA THERETO

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STANDARD AIRCRAFT CHARACTERISTICS

F-4B PHANTOM II

McDONNELL
## POWER PLANT

<table>
<thead>
<tr>
<th>No. and Model</th>
<th>(2) J79-GE-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacurer</td>
<td>General Electric</td>
</tr>
<tr>
<td>Specification</td>
<td>G.E. E-763A</td>
</tr>
</tbody>
</table>

- **Type**: Axial Flow Turbojet
- **Augmentation**: Afterburner
- **Length with A/B**: 206.45 inches (cold)
- **Diameter**: 38.3 inches max. (cold)
- **Dry Weight**: 8008 lb
- **Tail Pipe**: Variable position

### RATINGS *

<table>
<thead>
<tr>
<th>Static Thrust</th>
<th>At Sea Level-Lb</th>
<th>RPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum (A/B)</td>
<td>17000</td>
<td>100% 7695</td>
</tr>
<tr>
<td>Military</td>
<td>10000</td>
<td>100% 7695</td>
</tr>
<tr>
<td>Normal</td>
<td>10000</td>
<td>50% 3795</td>
</tr>
<tr>
<td>90% Normal</td>
<td>9200</td>
<td>95% 7220</td>
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<tr>
<td>75% Normal</td>
<td>7720</td>
<td>91% 7025</td>
</tr>
<tr>
<td>Idle</td>
<td>410</td>
<td>65% 5000</td>
</tr>
</tbody>
</table>

*As defined in G.E. Spec, E-763A Para, 3,6,3 Table 1 and subject to conditions therein. Max. time with A/B and MIL is 30 min. below 35000 ft and two hours above 35000 ft. Time at normal power and below is continuous.

## MISSION AND DESCRIPTION

- **Description**: The F-4B is a two-place, twin-jet, general purpose fighter whose primary mission is the destruction of enemy aircraft. The capability to carry and deliver conventional and special weapons enables the aircraft to perform intermediate and long range attack missions. Basic armament is four air-to-air missiles carried semi-afterburner under the fuselage plus four wing pylons mounted. Air-to-air missiles, a combination of conventional bombs, nuclear bombs, rocket packages and fuel tanks can be carried on five stations beneath the wing and fuselage. Three external tanks plus a retractable probe for inflight refueling provides for extended range missions.

- **Special Features**: Special features of the F-4B are the swept wing and tail, automatically controlled compression-ramp air inlets, leading and trailing edge high-lift flaps with boundary layer control. Lateral control is achieved by means of spoilers in combination with ailerons. A large, movable stabilator provides longitudinal control.

- **Equipment**: Equipment includes a pressurized cabin with ejection seats, liquid oxygen system, anti-g and full pressure suit provisions and autopilot.

## DEVELOPMENT

- **First Flight**: May 1958
- **Service Use**: June 1961

## DIMENSIONS

- **Wing**:
  - Area: 530.50 ft²
  - Span: 36.4 ft
  - M.A.C.: 16.04 ft
  - Sweepback (25° chord): 45°

- **Dihedral**:
  - Inner Panel: 20°
  - Outer Panel: 12°

- **Length**: 58.2 ft
- **Height**: 26.3 ft
- **Wheelbase**: 23.3 ft
- **Tread**: 18.2 ft

## ELECTRONICS

- **CADG**: AN/A246
- **CNI**: AN/ASQ-19
- **AFCS**: AN/ASA-32
- **NAVIGATIONAL COMPUTER**: AN/ASN-39
- **ALTIMETER**: AN/AIM-23
- **FIRE CONTROL SYSTEM**: AN/ASQ-10
- **INCLUDES RADAR**: AN/APS-72
- **RADAR SET GROUP**: AN/APS-157
- **IR DETECTING GROUP**: AN/AAR-4
- **ALL-ATTITUDE BOMBING SYS**: AN/AAR-3

**SPACE PROVISIONS FOR INSTALLATION OF DATA LINK**: AN/ASQ-21

*Data link installed in 12 airplanes.
## PERFORMANCE SUMMARY

<table>
<thead>
<tr>
<th>TAKE-OFF LOADING CONDITION</th>
<th>(1) FIGHTER</th>
<th>(2) SPARR 331</th>
<th>(3) FIGHTER</th>
<th>(4) SPARR III</th>
<th>(5) FIGHTER(4)SPILL &amp; (1) 700 GAL TKS.</th>
<th>(6) FIGHTER</th>
<th>(7) SP III</th>
<th>(8) FIGHTER</th>
<th>(9) AREA INTERCEPT</th>
<th>(10) AREA INTERCEPT</th>
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</thead>
<tbody>
<tr>
<td>TAKE-OFF WEIGHT</td>
<td>LB.</td>
<td>LB.</td>
<td>LB.</td>
<td>LB.</td>
<td>LB.</td>
<td>LB.</td>
<td>LB.</td>
<td>LB.</td>
<td>LB.</td>
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</tr>
<tr>
<td>LB.</td>
<td>43,907</td>
<td>48,287</td>
<td>53,999</td>
<td>49,669</td>
<td>48,297</td>
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<tr>
<td>FUEL INTERNAL/EXTERNAL (k)*</td>
<td>LB./LB.</td>
<td>LB./LB.</td>
<td>LB./LB.</td>
<td>LB./LB.</td>
<td>LB./LB.</td>
<td></td>
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<tr>
<td>LB.</td>
<td>13,505</td>
<td>13,505</td>
<td>13,505</td>
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<td>PAYLOAD</td>
<td>LB.</td>
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<tr>
<td>LB.</td>
<td>1,608</td>
<td>1,608</td>
<td>1,608</td>
<td>1,608</td>
<td>1,608</td>
<td>2,322</td>
<td>1,450</td>
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<tr>
<td>WING LOADING</td>
<td>LB./30LB.</td>
<td>LB./30LB.</td>
<td>LB./30LB.</td>
<td>LB./30LB.</td>
<td>LB./30LB.</td>
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<tr>
<td>LB.</td>
<td>82.8</td>
<td>91.1</td>
<td>101.9</td>
<td>93.7</td>
<td>91.1</td>
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<tr>
<td>STALL SPEED - POWER-OFF/APPY, POWER KN.</td>
<td>152/133</td>
<td>156/139</td>
<td>168/147</td>
<td>162/141</td>
<td>159/135</td>
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<tr>
<td>TAKE-OFF RUN AT S.L. CALM (A) FT.</td>
<td>4,025/2,085</td>
<td>5,110/2,600</td>
<td>6,710/2,400</td>
<td>5,465/2,780</td>
<td>5,110/2,600</td>
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<td>TAKE-OFF RUN AT S.L. 25K, WIND (A) FT.</td>
<td>3,000/1,310</td>
<td>3,800/1,490</td>
<td>4,850/2,470</td>
<td>4,090/2,090</td>
<td>3,800/1,490</td>
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<tr>
<td>TAKE-OFF TO CLEAR 50 FT. - CALM (A) FT.</td>
<td>5,060/2,322</td>
<td>6,410/3,141</td>
<td>8,560/4,110</td>
<td>6,800/3,350</td>
<td>6,410/3,141</td>
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<tr>
<td>MAX. M/ALTITUDE/SPEED(A) N/FT./MN.</td>
<td>992/25,000/597</td>
<td>976/20,000/599</td>
<td>962/20,000/599</td>
<td>962/20,000/599</td>
<td>976/20,000/599</td>
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<tr>
<td>RATE OF CLIMB AT S.L. (A) FT.</td>
<td>12,170</td>
<td>10,200</td>
<td>8,400</td>
<td>8,400</td>
<td>10,200</td>
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<tr>
<td>TIME: S.L. TO 30000 FT. (A) FT. MIN.</td>
<td>3,70/1,15</td>
<td>4,72/1,59</td>
<td>6,15/1,78</td>
<td>6,07/1,59</td>
<td>5,10/2,14</td>
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<tr>
<td>TIME: S.L. TO 40000 FT. (A)FT. MIN.</td>
<td>7,40/2,14</td>
<td>10,41/2,63</td>
<td>11,29/3,31</td>
<td>11,59/2,05</td>
<td>11,42/3,71</td>
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<td>SERVICE CEILING (100 FPM.) (A) FT.</td>
<td>41,000</td>
<td>38,550</td>
<td>35,850</td>
<td>35,850</td>
<td>35,850</td>
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<tr>
<td>COMBAT RANGE</td>
<td>N/MI.</td>
<td>1,126</td>
<td>1,146</td>
<td>1,083</td>
<td>1,301</td>
<td>1,503</td>
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<tr>
<td>AVERAGE CRUISE SPEED</td>
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<td>505</td>
<td>505</td>
<td>505</td>
<td>499</td>
<td>505</td>
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<tr>
<td>CRUISING ALTITUDE(S) FT.</td>
<td>37,065/42,060</td>
<td>34,960/41,910</td>
<td>32,900/41,265</td>
<td>34,850/41,055</td>
<td>34,600/41,000</td>
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<tr>
<td>COMBAT RADIUS/MISSION TIME (E) N/MI./HR.</td>
<td>410/1,71</td>
<td>500/2.47</td>
<td>756/3.09</td>
<td>495/2.10</td>
<td>613/2.51/464.26</td>
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<tr>
<td>AVERAGE CRUISE SPEED</td>
<td></td>
<td>505</td>
<td>505</td>
<td>505</td>
<td>499</td>
<td>505</td>
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<tr>
<td>I/F.R. RADIUS/MISSION TIME (E) N/MI./HR.</td>
<td>771/3.12</td>
<td>1025/4.42</td>
<td>904/2.48</td>
<td>855/3.29</td>
<td>1024/2.29/1044.55</td>
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<tr>
<td>CAP LOITER TIME(F)/MISSION TIME HR/HR.</td>
<td>1,03/1.70</td>
<td>1,78/2.45</td>
<td>2,40/3.07</td>
<td>1,23/2.04</td>
<td></td>
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</tr>
</tbody>
</table>

### COMBAT LOADING CONDITION

<table>
<thead>
<tr>
<th>(2) FIGHTER</th>
<th>(3) SPARR III</th>
<th>(4) SPARR III</th>
<th>(5) SPARR III + (4) SDM</th>
<th>(6) CLEAN</th>
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</thead>
<tbody>
<tr>
<td>COMBAT WEIGHT</td>
<td>LB.</td>
<td>36,505</td>
<td>41,004</td>
<td>43,905</td>
</tr>
<tr>
<td>FUEL</td>
<td>LB.</td>
<td>8,103</td>
<td>10,551</td>
<td>13,505</td>
</tr>
<tr>
<td>COMBAT SPEED/COMBAT ALTITUDE</td>
<td>KN/FT.</td>
<td>(e) 12,290/40,000</td>
<td>(h) 545/40,000</td>
<td>(e) 12,290/40,000</td>
</tr>
<tr>
<td>RATE OF CLIMB/COMBAT ALTITUDE</td>
<td>FPM./FT.</td>
<td>(g) 15,232/40,000</td>
<td>(i) 960/40,000</td>
<td>(g) 13,284/40,000</td>
</tr>
<tr>
<td>COMBAT CLIMB (100 FPM.)</td>
<td>(g) FT.</td>
<td>56,860/49,950</td>
<td>-41,400</td>
<td>54,840/47,200</td>
</tr>
<tr>
<td>RATE OF CLIMB S.L.</td>
<td>FPM.</td>
<td>40,600</td>
<td>13,150</td>
<td>75,700</td>
</tr>
<tr>
<td>MAX. SPEED AT S.L.</td>
<td>KN.</td>
<td>734</td>
<td>648</td>
<td>727</td>
</tr>
<tr>
<td>MAX. SPEED/ALTITUDE</td>
<td>KN/FT.</td>
<td>1,273/45,000</td>
<td>601/25,000</td>
<td>1,273/45,000</td>
</tr>
<tr>
<td>LANDING WEIGHT</td>
<td>LB.</td>
<td>30,955</td>
<td>31,212</td>
<td>31,464</td>
</tr>
<tr>
<td>FUEL</td>
<td>LB.</td>
<td>2,161</td>
<td>2,367</td>
<td>2,619</td>
</tr>
<tr>
<td>DIST.-GRD ROLL/OVER 50 FT. OBS.</td>
<td>FPM./FT.</td>
<td>2,220/2,200</td>
<td>2,220/2,200</td>
<td>2,220/2,200</td>
</tr>
</tbody>
</table>

### NOTES:
- A. MILITARY RATED THRUST
- B. MAXIMUM RATED THRUST
- C. USING SINGLE ENGINE LOITER DURING LANDING
- D. RESERVE PERIOD INCREASES RANGE APPROX 50 CT.
- E. MISSION TIME EXCLUDES WARM-UP, T.O., AND RESERVE TIME
- F. C.A.P. RADIUS = 150 NAUTICAL MILES
- G. SUPERSONIC CLIMB SPEED SCHEDULE
- H. SUBSONIC CLIMB SPEED SCHEDULE
- I. 40,000 FT OR COMBAT CEILING WHICHEVER IS LOWER
- J. WITH DRAG CHUTE

### SERVICE

NAVAR 00-110AF4-1
### PERFORMANCE SUMMARY

| TAKE-OFF LOADING CONDITION | TAKE-OFF WEIGHT | FUEL INTERNAL/EXTERNAL (JP-5) | PAYLOAD | WING LOADING | STALL SPEED - POWER-OFF/APPRI POWER | TAKE-OFF RUN AT S.L. - CALM (A X B) | TAKE-OFF RUN AT S.L. - 25K. WIND (A X B) | TAKE-OFF TO CLEAR 50 FT. - CALM (A X B) | MAX H/ALTITUDE/SPED (A) | RATE OF CLIMB AT S.L. | TIME: S.L. TO 30000 FT. (A X B) | TIME: S.L. TO 40000 FT. (A X B) | SERVICE CEILING (100 FPM.) | COMBAT RANGE | AVERAGE CRUISING SPEED | CRUISING ALTITUDE (E) | COMBAT RADIUS/MISSION TIME (E) | AVERAGE CRUISING SPEED | IFR RADIUS/MISSION TIME (E) | CAP LOITER TIME (H) | MISSION TIME HR/HR |
|----------------------------|-----------------|-------------------------------|---------|--------------|-------------------------------------|------------------------------------|------------------------------------|------------------------------------|-------------------|-----------------|-----------------------------|-----------------------------|-------------------------|-------------------|-------------------|-------------------------|----------------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| (1)                         | 50,102          | 13,505/57,032                 | 2,040   | 94.7         | 1,62.5/142                          | 5,35/2,845                         | 4,11.0/2.400                      | 7,063/3,420                       | 962/120.4/20.000/566 | 922/20.0/20.000/566 | 4.7/142                     | 10.27/2.72                   | 37,950                 | 1,480             | 595               | 32,125/38,200          | 461/223             | 495              | 417/3,83          |
| (2)                         | 47,300          | 13,505/57,032                 | 2,040   | 94.7         | 1,62.5/142                          | 5,35/2,845                         | 4,11.0/2.400                      | 7,063/3,420                       | 962/120.4/20.000/566 | 922/20.0/20.000/566 | 4.7/142                     | 10.27/2.72                   | 37,950                 | 1,480             | 595               | 32,125/38,200          | 461/223             | 495              | 417/3,83          |

### COMBAT LOADING CONDITION

<table>
<thead>
<tr>
<th>COMBAT WEIGHT</th>
<th>ENGINE POWER</th>
<th>FUEL</th>
<th>COMBAT SPEED/COMBAT ALTITUDE</th>
<th>RATE OF CLIMB/COMBAT ALTITUDE</th>
<th>COMBAT OILING (500 FPM.)</th>
<th>RATE OF CLIMB AT S.L.</th>
<th>MAX. SPEED AT S.L.</th>
<th>MAX. SPEED/ALTITUDE</th>
<th>LANDING WEIGHT</th>
<th>FUEL</th>
<th>STALL SPEED - POWER-OFF/APPRI POWER</th>
<th>DIST.-GRO Roll/Over 50 FT. OBS.</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>42,007</td>
<td>MAXIMUM</td>
<td>11,122</td>
<td>958/15,090</td>
<td>24,000/19,000</td>
<td>54,000/48,100</td>
<td>37,950</td>
<td>628</td>
<td>1,265/45,000</td>
<td>31,260/31,001</td>
<td>2,415/1,156</td>
<td>128/112/128/112</td>
<td>224/70324/3205</td>
<td>(A)</td>
</tr>
</tbody>
</table>

**Notes:**
- **(A)** Military rated thrust
- **(B)** Maximum rated thrust
- **(C)** Using single engine loiter during landing
- **(D)** Reserve period increases range approx 30 NA, MI
- **(E)** MIL-O-8607A mission definition design mission definition
- **(F)** Mission time excludes warm-up, T.O., and reserve time
- **(G)** Super/military climb speed schedule
- **(H)** Mission climb speed schedule
- **(I)** 40,000 ft or combat ceiling whichever is lower
- **(J)** With drag chute
# SUPPLEMENTAL

<table>
<thead>
<tr>
<th>Loading</th>
<th>Take-off Gross Weight Lbs.</th>
<th>Ordinance</th>
<th>Sea Level Store Delivery 3,000 Ft. Letter for 25 Min. at Target</th>
<th>Sea Level Store Delivery 100 Ns.Ni. In &amp; 100 Ns.Ni. Out With 5 Min. Key at Target</th>
<th>Set Level Store Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sparrow Lb.</td>
<td>Other Ordinance Lb.</td>
<td>Radius Ns.Ni.</td>
<td>Time Hours</td>
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<tr>
<td>(1)</td>
<td>(1) MX-28 + (2) 370 Gal.Txs.</td>
<td>50,312</td>
<td>2,410</td>
<td>652</td>
<td>2.83</td>
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<tr>
<td>(1)</td>
<td>(12) MX-82 + (2) 370 Gal.Txs.</td>
<td>55,170</td>
<td>6,300</td>
<td>461</td>
<td>2.13</td>
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<tr>
<td>(1)</td>
<td>(6) SP III + (20) MX-82</td>
<td>55,978</td>
<td>1,608</td>
<td>1,050</td>
<td>1.03</td>
</tr>
<tr>
<td>(2)</td>
<td>(4) SP III + (10) MX-82 + (2) 370 Gal.Txs.</td>
<td>55,978</td>
<td>1,608</td>
<td>5,720</td>
<td>1,084</td>
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<tr>
<td>(3)</td>
<td>(6) MX-82 + (6) AERO 70 + (1) 600 Gal.Txs.</td>
<td>53,511</td>
<td>1,608</td>
<td>5,720</td>
<td>1,084</td>
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<td>(4)</td>
<td>(4) SP III + (21) MX-81</td>
<td>51,928</td>
<td>1,608</td>
<td>6,120</td>
<td>1.12</td>
</tr>
<tr>
<td>(5)</td>
<td>(4) SP III + (12) MX-81 + (2) 370 Gal.Txs.</td>
<td>53,718</td>
<td>1,608</td>
<td>3,210</td>
<td>1,62</td>
</tr>
<tr>
<td>(6)</td>
<td>(8) MX-82 + (1) 600 + (2) 370 Gal.Txs.</td>
<td>56,819</td>
<td>1,608</td>
<td>3,210</td>
<td>1,62</td>
</tr>
<tr>
<td>(7)</td>
<td>(7) MX-83 + (2) 370 Gal.Txs.</td>
<td>55,970</td>
<td>1,608</td>
<td>7,000</td>
<td>457</td>
</tr>
<tr>
<td>(8)</td>
<td>(4) SP III + (10) MX-83</td>
<td>55,970</td>
<td>1,608</td>
<td>10,000</td>
<td>1,05</td>
</tr>
</tbody>
</table>

A. Time excludes warm-up, take-off and landing time.
B. Descents were started before optimum cruise altitude was attained.
NOTES

INFLIGHT REFUEL MISSIONS

1) WARM-UP, TAKE-OFF, ACCELERATE: 5 MIN. WITH NORMAL THRUST AT SEA LEVEL. (SEE NOTE)
2) CLIMB: ON COURSE TO OPTIMUM CRUISE ALTITUDE WITH MILITARY THRUST.
3) CRUISE-OUT: AT ALTITUDES AND SPEEDS FOR MAXIMUM RANGE.
4) DESCEND TO 35,000 FT. FOR RENDEZVOUS WITH TANKER.
5) LOITER: 15 MIN. RENDEZVOUS ALLOWANCE AT MAXIMUM ENDURANCE SPEEDS.
6) REFUEL FROM A30-2 TANKER AT THE FOLLOWING DISTANCES FROM BASE:
   1. G.P. FIGHTER 498 NA, MI.
   3. G.P. FIGHTER 646 NA, MI.
   5. G.P. FIGHTER 219 NA, MI.
   7. G.P. FIGHTER 520 NA, MI.
   9. AREA INTERCEPTOR MIL-C-501A MISSION 633 NA, MI.
   DESIGN MISSION 607 NA, MI.
   11. STORE DELIVERY MIL-C-501A MISSION 547 NA, MI.
   DESIGN MISSION 671 NA, MI.
   13. HI-LO-HI ATTACK 416 NA, MI.

7) CLIMB: ON COURSE TO OPTIMUM CRUISE ALTITUDE WITH MILITARY THRUST.

THE REMAINING STEPS ARE DEFINED FROM STEP (3) OF THE PARTICULAR MISSION.

NOTE: ALL TAKE-OFF CROSS HEAVIES OVER 50,000 LBS. HAVE AN ADDITIONAL 1 MINUTE CRT IN THE WARM-UP AND TAKE-OFF FUEL ALLOWANCES.
**NOTES**

**AREA INTERCEPTOR**

MIL-C-5011A MISSION DEFINITION

1. WARHORSE, TAKE-OFF, ACCELERATE: 2 MIN.
   WITH NORMAL THRUST AT SEA LEVEL.
2. CLIMB: ON COURSE TO CRUISE CEILING WITH MILITARY THRUST.
3. CRUISE-OUT: AT ALTITUDE AND SPEEDS FOR LONG RANGE AT CRUISE CEILING.
4. CLIMB: ON COURSE TO COMBAT CEILING WITH MAXIMUM THRUST.
5. COMBAT FUEL ALLOWANCE: 5 MIN. AT M0 OF 1.5 WITH MAXIMUM THRUST AT 50,000 FT.
6. EXPEND MISSILES.
7. CRUISE-BACK: AT ALTITUDES AND SPEEDS FOR MAXIMUM RANGE.
8. RESERVE: 20 MIN. AT SPEED FOR MAXIMUM ENDURANCE AT SEA LEVEL (2 ENGINES OPERATING) PLUS 5% OF INITIAL FUEL LOAD.
9. DESIGN MISSION DEFINITION DEVIATES FROM MIL-C-5011A AS FOLLOWS:
   2. CLIMB: ON COURSE TO OPTIMUM CRUISE ALTITUDE WITH MILITARY THRUST.
   3. CRUISE-OUT: AT ALTITUDES AND SPEEDS FOR MAXIMUM RANGE.
   7. RESERVE: 20 MIN. AT SPEED FOR MAXIMUM ENDURANCE AT SEA LEVEL (SINGLE ENGINE OPERATION) PLUS 5% INITIAL FUEL LOAD.

**GENERAL PURPOSE FIGHTER**

1. WARHORSE, TAKE-OFF, ACCELERATE: 5 MIN.
   WITH NORMAL THRUST AT SEA LEVEL.
2. CLIMB: ON COURSE TO CRUISE ALTITUDE WITH MILITARY THRUST.
3. CRUISE-OUT: AT ALTITUDE AND SPEEDS FOR MAXIMUM RANGE.
4. COMBAT FUEL ALLOWANCE: ACCELERATE WITH MAXIMUM POWER AT 40,000 FT.
   FROM CRUISE SPEED TO M0 OF 1.5 AND REMAIN AT THIS SPEED AND ALTITUDE FOR 2 MIN AT MAXIMUM POWER.
5. CRUISE-BACK: AT ALTITUDES AND SPEEDS FOR MAXIMUM RANGE.
6. RESERVE: 20 MIN. AT SPEED FOR MAXIMUM ENDURANCE AT SEA LEVEL (2 ENGINES OPERATING) PLUS 5% OF INITIAL FUEL LOAD.

**COMBAT AIR PATROL**

1. WARHORSE, TAKE-OFF, ACCELERATE: SAME AS G.P. FIGHTER.
2. CLIMB: SAME AS G.P. FIGHTER.
3. CRUISE-OUT: TO A POINT 150 NA-MI., FROM BASE AT ALTITUDES AND SPEEDS FOR BEST RANGE.
4. CRUISE-BACK: 150 NA-MI., TO BASE FOR BEST RANGE.
5. RESERVE: SAME AS G.P. FIGHTER.

**ARENA INTERCEPTOR**

42,500 FT
36,600 FT
30,750 FT
25,900 FT
21,050 FT
16,200 FT
11,350 FT
6,500 FT
1,650 FT
0 FT

**SL COMBAT RADIUS**

**SL COMBAT RADIUS**

**NOTE:** ALL TAKE-OFF GROSS WEIGHTS OVER 50,000 LBS, HAVE AN ADDITIONAL 1 MIN.
   CRY IN THE WARHORSE AND TAKE-OFF FUEL ALLOWANCE.
**NOTES**

**HI-LO-HI**

1) WARM-UP, TAKE-OFF, ACCELERATE: 5 MIN. NRT PLUS 1 MIN. CRT AT SEA LEVEL.
2) CLIMB: ON COURSE TO CRUISE ALTITUDE WITH MILITARY THRUST.
3) CRUISE-OUT: AT ALTITUDE AND SPEEDS FOR MAXIMUM RANGE.
4) DESCEND TO 3,000 FT.: NO FUEL USED, NO CREDIT FOR DISTANCE GAINED.
5) COMBAT FUEL ALLOWANCE: 15 MIN. LOITER AT SPEED FOR MAXIMUM ENDURANCE.
6) CLIMB: ON COURSE TO CRUISE ALTITUDE USING MILITARY THRUST.
7) CRUISE-BACK: AT ALTITUDE AND SPEEDS FOR MAXIMUM RANGE.
8) RESERVE: 20 MIN. AT SPEED FOR MAXIMUM ENDURANCE AT SEA LEVEL (2 ENGINES OPERATING) PLUS 5% OF INITIAL FUEL LOAD.

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**10-0-1-0**

1) WARM-UP, TAKE-OFF, ACCELERATE: 5 MIN. NRT PLUS 1 MIN. CRT AT SEA LEVEL.
2) CLIMB: ON COURSE TO CRUISE ALTITUDE WITH MILITARY THRUST.
3) CRUISE-OUT: AT ALTITUDE AND SPEEDS FOR MAXIMUM RANGE.
4) DESCEND TO SEA LEVEL: NO FUEL USED, NO CREDIT FOR DISTANCE GAINED.
5) DASH: 100 NA, M1, TO TARGET AT SPEED FOR MAXIMUM RANGE.
6) COMBAT FUEL ALLOWANCE: 5 MIN. AT MAXIMUM SPEED WITH MILITARY THRUST.
7) DASH: 100 NA, M1, AWAY FROM TARGET AT SPEED FOR MAXIMUM RANGE.
8) CLIMB: ON COURSE TO CRUISE ALTITUDE USING MILITARY THRUST.
9) CRUISE-BACK: AT ALTITUDE AND SPEEDS FOR MAXIMUM RANGE.
10) RESERVE: 20 MIN. AT SPEED FOR MAXIMUM ENDURANCE AT SEA LEVEL (2 ENGINES OPERATING) PLUS 5% OF INITIAL FUEL LOAD.