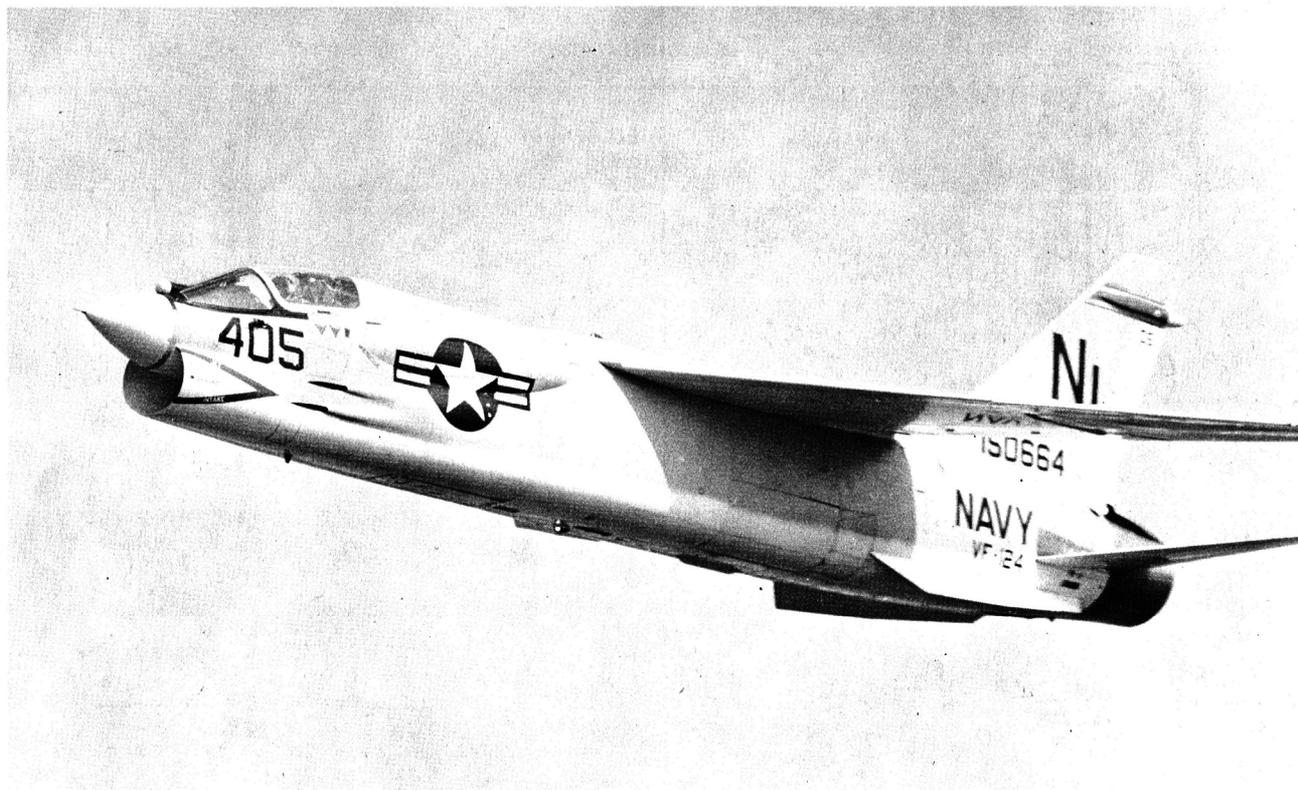


STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4D (Rev. 7-65)



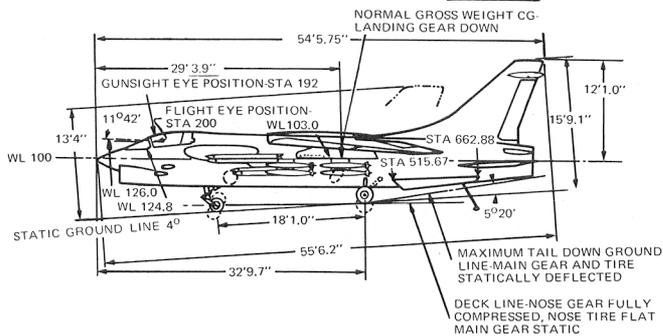
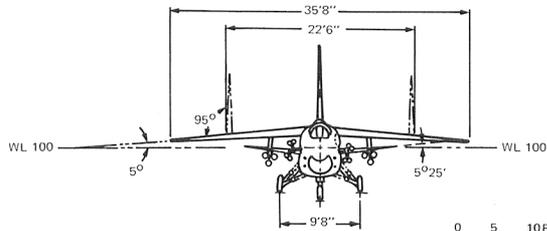
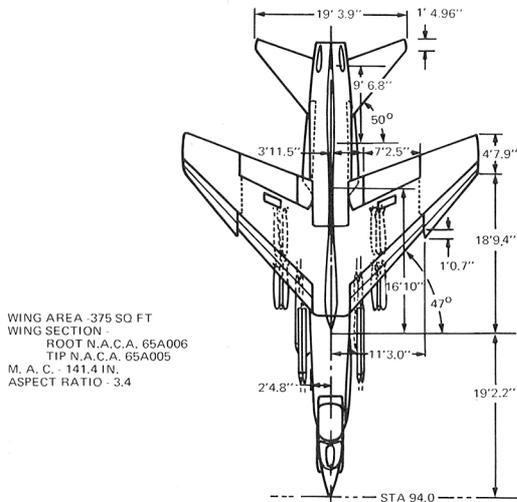
# STANDARD AIRCRAFT CHARACTERISTICS F-8J "CRUSADER"



**VOUGHT  
AERONAUTICS**

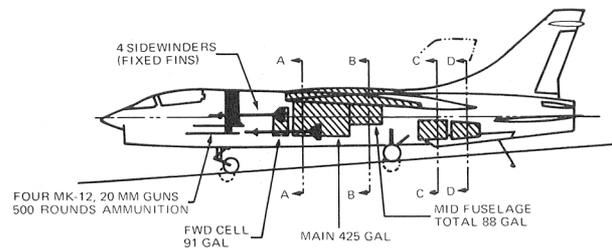
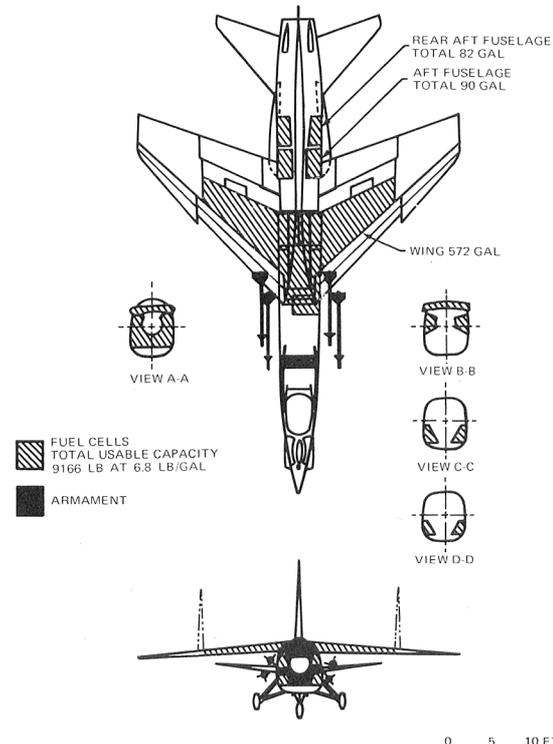
DALLAS, TEXAS

NAVAL AIR SYSTEMS COMMAND  
NAVY DEPARTMENT



DESCRIPTIVE ARRANGEMENT

NAVAL AIR SYSTEMS COMMAND  
NAVY DEPARTMENT



ARMAMENT AND TANKAGE

STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4B (Rev. 7-65)

STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4A (Rev. 7-65)

| POWER PLANT  | MISSION AND DESCRIPTION  | WEIGHTS   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
|--|--|---|---------|-------------|----------|-------|-------------------------------|-----------------------------------|-------------------|-------------------------|---------------------------------------|----------|--------|--------------------------------------|---------------------------------|---|--------------------------|--------------------|--------------------------------------|-------------|------------------|--------|------|---------------------------------|----------------------------|-------------------|--------------------|--------|--|
| <p>Engine ..... J57-P-420<br/>                     Augmentation ..... Afterburning<br/>                     Manufacturer ..... Pratt and Whitney<br/>                     Length ..... 269.52 inches<br/>                     Diameter ..... 40.44 inches<br/>                     Specification ..... N-6141 (14 July 1969)<br/>                     Compressor ..... Axial Flow</p> <p style="text-align: center;"><b>RATINGS</b></p> <p>Specification Thrust Ratings (sea level static)<br/>                     maximum* ..... 19,600 lbs.<br/>                     (15 minute limit in-flight, and 5 minute<br/>                     limit in takeoff and ground operation)**<br/>                     military ..... 12,400 lbs.<br/>                     (30 minute limit)<br/>                     normal ..... 9,150 lbs.</p> <p>*With afterburning<br/>                     **Additional limitations noted in NATOPS<br/>                     Flight Manual</p>  | <p>The F-8J airplane is a single-seat, carrier or land-based jet fighter designed to maintain air superiority during task force strikes and to deliver, as an attack airplane, a large number of stores of various types and sizes. The airplane is a re-manufactured F-8E airplane with these primary improvements: (1) J57-P-420 engine, (2) increased service life wing, (3) improved landing and arresting gear, (4) external fuel provisions, (5) larger horizontal tail, (6) double hinge line wing leading edge droop in combination with a blowing type of boundary layer control (BLC) system in the upper leading edge surface of the ailerons and inboard flaps for increased high lift capability in the low speed flight regime, (7) AN/APQ-124 radar for improved detection and attack capability, and (8) AN/ASA-63 Missile Acquisition Programmer to allow launching of AIM-9D missiles with lead on the target. The basic F-8J airplane is the same externally as the F-8E airplane except for the changes resulting from the incorporation of BLC: double wing leading edge droop, the larger horizontal tail, decreased wing incidence with the wing up, and increased aileron and flap deflections in the landing condition.</p> | <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">LOADING</th> <th style="text-align: center;">LB</th> <th style="text-align: center;">LF</th> </tr> </thead> <tbody> <tr> <td>Empty</td> <td style="text-align: center;">19,815</td> <td></td> </tr> <tr> <td>Basic (Guns only)</td> <td style="text-align: center;">20,691</td> <td></td> </tr> <tr> <td>Design</td> <td style="text-align: center;">26,000</td> <td style="text-align: center;">6.4</td> </tr> <tr> <td>Combat ②</td> <td style="text-align: center;">26,793</td> <td></td> </tr> <tr> <td>MAX T.O., Field</td> <td style="text-align: center;">34,000</td> <td></td> </tr> <tr> <td>MAX Land., Field</td> <td style="text-align: center;">26,000</td> <td></td> </tr> <tr> <td>MAX Catapult</td> <td style="text-align: center;">35,000</td> <td></td> </tr> <tr> <td>MAX Land., Carrier</td> <td style="text-align: center;">25,000</td> <td></td> </tr> </tbody> </table> <p style="text-align: center;">○ Loading Condition Column Number</p>   | LOADING | LB          | LF       | Empty | 19,815                        |                                   | Basic (Guns only) | 20,691                  |                                       | Design   | 26,000 | 6.4                                  | Combat ②                        | 26,793  |                          | MAX T.O., Field    | 34,000                               |             | MAX Land., Field | 26,000 |      | MAX Catapult                    | 35,000                     |                   | MAX Land., Carrier | 25,000 |  |
| LOADING  | LB   | LF  |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| Empty  | 19,815   |   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| Basic (Guns only)  | 20,691   |   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| Design   | 26,000   | 6.4   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| Combat ②   | 26,793   |   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| MAX T.O., Field  | 34,000   |   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| MAX Land., Field   | 26,000   |   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| MAX Catapult   | 35,000   |   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| MAX Land., Carrier   | 25,000   |   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| <b>ELECTRONICS</b>   |  | <b>FUEL AND OIL</b>   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| <p>UHF Command Radio ..... AN/ARC-51A<br/>                     Speech Security Equipment ..... KY-28/TSEC<br/>                     ADF ..... AN/ARA-50<br/>                     TACAN ..... AN/ARN-52(V)<br/>                     IFF ..... AN/APX-72<br/>                     IFF Mode 4 Computer ..... KIT-1A/TSEC<br/>                     Radio Altimeter ..... AN/APN-22<br/>                     Altitude Encoding Computer ..... CPU-46A/A-22<br/>                     Gyro Stabilized Magnetically<br/>                     Slaved Compass ..... MA-1<br/>                     Autopilot ..... CV/AES-6<br/>                     Armament Control System ..... AN/AWG-4<br/>                     (Includes AN/APQ-124A Radar Set,<br/>                     EX-16 Computer Group,<br/>                     CP-742A/APQ Deviated Pursuit<br/>                     Computer and AN/ASA-63<br/>                     Missile Acquisition Programmer)<br/>                     ECM ..... SHOE HORN<br/>                     (Includes AN/ALQ-51A/100, AN/APR-27,<br/>                     AN/ALE-29A and AN/APR-30)<br/>                     Fuse Control ..... AN/AWW-2A<br/>                     Approach Power Compensating System<br/>                     Inflight Monitor Tester ..... TS 1843</p> |  | <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">GALS</th> <th style="text-align: center;">NO. TANKS</th> <th style="text-align: left;">LOCATION</th> </tr> </thead> <tbody> <tr> <td>513</td> <td style="text-align: center;">3</td> <td>Fuselage, bladder,<br/>main system</td> </tr> <tr> <td>263</td> <td style="text-align: center;">5</td> <td>Fuselage, bladder,<br/>transfer system</td> </tr> <tr> <td>572</td> <td style="text-align: center;">1</td> <td>Wing, integral, trans-<br/>fer system</td> </tr> <tr> <td colspan="2">Fuel capacity (total<br/>usable)</td> <td>1348 Gallons</td> </tr> <tr> <td colspan="2">Fuel specification</td> <td>MIL-F-5624C</td> </tr> <tr> <td colspan="2">Fuel Grade</td> <td>JP-5</td> </tr> </tbody> </table> <p style="text-align: center;"><b>OIL</b></p> <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>Oil capacity (total<br/>(usable)</td> <td style="text-align: right;">6.1 Gallons<br/>3.0 Gallons</td> </tr> <tr> <td>Oil specification</td> <td style="text-align: right;">MIL-L-23699</td> </tr> </tbody> </table> | GALS    | NO. TANKS   | LOCATION | 513   | 3                             | Fuselage, bladder,<br>main system | 263               | 5                       | Fuselage, bladder,<br>transfer system | 572      | 1      | Wing, integral, trans-<br>fer system | Fuel capacity (total<br>usable) |   | 1348 Gallons             | Fuel specification |                                      | MIL-F-5624C | Fuel Grade       |        | JP-5 | Oil capacity (total<br>(usable) | 6.1 Gallons<br>3.0 Gallons | Oil specification | MIL-L-23699        |        |  |
| GALS   | NO. TANKS  | LOCATION  |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| 513  | 3  | Fuselage, bladder,<br>main system   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| 263  | 5  | Fuselage, bladder,<br>transfer system   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| 572  | 1  | Wing, integral, trans-<br>fer system  |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| Fuel capacity (total<br>usable)  |  | 1348 Gallons  |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| Fuel specification   |  | MIL-F-5624C   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| Fuel Grade   |  | JP-5  |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| Oil capacity (total<br>(usable)  | 6.1 Gallons<br>3.0 Gallons   |   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| Oil specification  | MIL-L-23699  |   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
|  | <b>DIMENSIONS</b>  | <b>ORDNANCE</b>   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
|  | <p>Wing<br/>                     Area ..... 375 sq. ft.<br/>                     Span ..... 35' 8"<br/>                     M.A.C. .... 141.4"<br/>                     Sweepback 1/4 chord ..... 42.0°<br/>                     Length ..... 54' 5.75"<br/>                     Height ..... 15' 9.1"<br/>                     Tread ..... 9'8"</p>   | <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">NO.</th> <th style="text-align: left;">DESCRIPTION</th> <th style="text-align: left;">LOCATION</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>20-MM Aircraft Guns,<br/>MK-12</td> <td>Fuselage<br/>Front Section</td> </tr> <tr> <td>500</td> <td>20-MM Ammunition Rounds</td> <td></td> </tr> <tr> <td colspan="3" style="text-align: center;">EXTERNAL</td> </tr> <tr> <td>2 or 4</td> <td>Fuselage Pylons for<br/>Sidewinders or<br/>LAU-33/A, LAU-35/A<br/>2 Round Zuni Launchers</td> <td>Each Side of<br/>Fuselage</td> </tr> <tr> <td>2</td> <td>Wing Mounted Pylons*<br/>(Wet or Dry)</td> <td>Wing</td> </tr> </tbody> </table> <p>*See STORE LOADING for stores carried</p>   | NO.     | DESCRIPTION | LOCATION | 4     | 20-MM Aircraft Guns,<br>MK-12 | Fuselage<br>Front Section         | 500               | 20-MM Ammunition Rounds |                                       | EXTERNAL |        |                                      | 2 or 4                          | Fuselage Pylons for<br>Sidewinders or<br>LAU-33/A, LAU-35/A<br>2 Round Zuni Launchers | Each Side of<br>Fuselage | 2                  | Wing Mounted Pylons*<br>(Wet or Dry) | Wing        |                  |        |      |                                 |                            |                   |                    |        |  |
| NO.  | DESCRIPTION  | LOCATION  |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| 4  | 20-MM Aircraft Guns,<br>MK-12  | Fuselage<br>Front Section   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| 500  | 20-MM Ammunition Rounds  |   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| EXTERNAL   |  |   |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| 2 or 4   | Fuselage Pylons for<br>Sidewinders or<br>LAU-33/A, LAU-35/A<br>2 Round Zuni Launchers  | Each Side of<br>Fuselage  |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |
| 2  | Wing Mounted Pylons*<br>(Wet or Dry)   | Wing  |         |             |          |       |                               |                                   |                   |                         |                                       |          |        |                                      |                                 |   |                          |                    |                                      |             |                  |        |      |                                 |                            |                   |                    |        |  |

SERVICE

**PERFORMANCE SUMMARY**

| TAKE-OFF LOADING CONDITION   |             | HI-HI-HI MISSION ①<br>CLEAN AIRPLANE | GENERAL PURPOSE FIGHTER MISSION ③<br>2 SIDEWINDERS | GENERAL PURPOSE FIGHTER MISSION ⑤<br>4 SIDEWINDERS | GENERAL PURPOSE FIGHTER MISSION ⑦<br>2 SIDEWINDERS + 2 AERO 1D TANKS | CLOSE AIR SUPPORT MISSION ⑨<br>8 MK-81 SNAKEYES | CLOSE AIR SUPPORT MISSION ⑪<br>8 MK-82 SNAKEYES |
|--|-------------|--------------------------------------|--|--|--|---|---|
| TAKEOFF WEIGHT   | LB          | 30,459                               | 31,075   | 31,782   | 35,000 <sup>18</sup>   | 33,767  | 35,000 <sup>18</sup>                            |
| FUEL - INTERNAL/EXTERNAL   | LB/LB       | 9,166/0                              | 9,166/0  | 9,166/0  | 9,166/2,989  | 9,166/0   | 2,239/0   |
| PAYLOAD <sup>1</sup>   | LB          | 165                                  | 575  | 985  | 575  | 2,573   | 4,733   |
| WING LOADING   | LB/SQ. FT.  | 81.22                                | 82.87  | 84.75  | 93.33  | 90.05   | 93.33   |
| STALL SPEED <sup>2</sup> - POWER OFF                                 | KNOTS       | 140.6                                | 143.4  | 142.7  | 154.5  | 149.8   | 153.2   |
| TAKEOFF GRD. RUN/OVER 50 FT<br>OBS - CALM, 59°F, SL,CRT <sup>2</sup> | FT/FT       | 2,350/3,360                          | 2,450/3,490  | 2,580/3,630  | 3,210/4,370  | 2,980/4,070                                     | 3,210/4,370                                     |
| TAKEOFF GRD. RUN/OVER 50 FT<br>OBS - CALM, 89°F,SL,CRT <sup>2</sup>  | FT/FT       | 2,910/4,000                          | 3,050/4,150  | 3,200/4,340  | 4,020/5,220  | 3,700/4,870                                     | 4,020/5,220                                     |
| MRT MAX SPEED/ALTITUDE   | KNOTS/FT    | 616/SL                               | 610/SL   | 600/SL   | 566/SL   | 566/15,000                                      | 552/15,000                                      |
| MRT RATE OF CLIMB AT SL  | FPM         | 7,850                                | 7,100  | 6,470  | 5,250  | 5,160   | 4,720   |
| MRT TIME: SL TO 20,000 FT <sup>3</sup>                               | MIN         | 2.9                                  | 3.2  | 3.6  | 4.4  | 4.8   | 5.5   |
| MRT TIME: SL TO 30,000 FT <sup>3</sup>                               | MIN         | 4.9                                  | 5.5  | 6.4  | 8.3  | 9.9   | 12.4  |
| MRT SERVICE CEILING (100 FPM)  | FT          | 41,700                               | 40,600   | 39,600   | 35,500   | 36,000  | 33,500  |
| COMBAT RANGE   | N MI        | 1,196                                | 1,154  | 999  | 1,396 <sup>19</sup>  | 766   | 564 <sup>20</sup>                               |
| AVERAGE CRUISING SPEED   | KNOTS       | 484                                  | 485  | 480  | 476  | 407   | 447   |
| CRUISING ALTITUDE (S)  | FT          | 36,196/39,940                        | 35,845/39,620                                      | 34,874/39,725                                      | 30,647/39,036  | 28,686/35,091                                   | 26,061/30,708                                   |
| COMBAT RADIUS <sup>4</sup> WITH IFR <sup>5</sup>                     | N MI/ N MI  | 532/975                              | 340/780  | 327/738  | 553 <sup>21</sup>  | 125/420   | 61 <sup>22</sup> /345                           |
| AVERAGE CRUISING SPEED/WITH IFR                                      | KNOTS/KNOTS | 483/482                              | 483/479  | 481/477  | 477  | 458/450   | 351/438   |
| MISSION TIME <sup>6</sup> WITH IFR                                   | HR/HR       | 2.28/4.12                            | 1.33/3.18  | 1.28/3.01  | 2.22/  | 1.56/2.88                                       | 1.35/2.58                                       |
| IFR FUEL TRANSFERRED/DISTANCE FROM BASE                              | LB/N MI     | 4,882/586 <sup>7</sup>               | 4,868/538 <sup>8</sup>                             | 4,853/486 <sup>9</sup>                             |  | 4,572/336 <sup>10</sup>                         | 4,221/260 <sup>11</sup>                         |
| COMBAT AIR PATROL WITH IFR   | N MI/ N MI  | 150/150                              | 150/150  | 150/150  | 150/   |   |   |
| LOITER TIME <sup>12</sup> WITH IFR                                   | HRS/HRS     | 0.39/3.21                            | .73/3.31   | .67/3.02   | 1.53 <sup>23</sup> /   |   |   |
| MISSION TIME <sup>6</sup> WITH IFR                                   | HRS/HRS     | 1.34/4.16                            | 1.45/4.04  | 1.40/3.85  | 2.27/  |   |   |
| IFR FUEL TRANSFERRED/DISTANCE FROM BASE                              | LB/N MI     | 6,970/150 <sup>13</sup>              | 6,869/150 <sup>13</sup>                            | 6,742/150 <sup>13</sup>                            |  |   |   |
| ACCELERATION AT .9 CLMAX AT 89 ° F DAY CRT BLC OPERATIVE             | FT/SEC/SEC  | 6.99                                 | 6.44   | 6.20   | 4.64   | 5.19  | 4.59  |

| COMBAT LOADING CONDITION                                       |          | ARMAMENT RETAINED ② | ARMAMENT RETAINED ④ | ARMAMENT RETAINED ⑥ | ARMAMENT RETAINED TANKS AND WING PYLONS DROPPED ⑧ | ARMAMENT RETAINED ⑩       | ARMAMENT RETAINED ⑫       |
|--|----------|---------------------|---------------------|---------------------|---|---------------------------|---------------------------|
| COMBAT WEIGHT  | LB       | 26,792              | 27,408              | 28,115              | 29,202  | 30,100                    | 31,704                    |
| ENGINE POWER   |          | MAXIMUM             | MAXIMUM             | MAXIMUM             | MAXIMUM   | MAXIMUM                   | MAXIMUM                   |
| FUEL   | LB       | 5,500               | 5,500               | 5,500               | 7,293   | 5,500                     | 4,943                     |
| COMBAT SPEED/COMBAT ALTITUDE                                   | KNOTS/FT | 989/35,000          | 965/35,000          | 927/35,000          | 958/35,000  | 572 <sup>14</sup> /5,000  | 524 <sup>14</sup> /5,000  |
| RATE OF CLIMB/COMBAT ALTITUDE                                  | FPM/FT   | 12,700/35,000       | 12,000/35,000       | 11,100/35,000       | 11,300/35,000                                     | 15,550/5,000              | 13,900/5,000              |
| COMBAT CEILING (500 FPM)                                       | FT       | 51,000              | 51,000              | 49,100              | 48,900  | 47,200                    | 45,800                    |
| RATE OF CLIMB AT SL  | FPM      | 22,300              | 21,200              | 19,800              | 19,800  | 16,800                    | 15,300                    |
| MAX SPEED AT SL  | KNOTS    | 662                 | 656                 | 650                 | 656   | 544 <sup>14</sup>         | 498 <sup>14</sup>         |
| MAX SPEED/ALTITUDE   | KNOTS/FT | 1,000/36,089        | 975/36,089          | 941/36,089          | 968/36,089  | 632 <sup>14</sup> /13,000 | 580 <sup>14</sup> /13,000 |
| LANDING WEIGHT <sup>15</sup>                                   | LB       | 22,544              | 22,761              | 23,085              | 22,815  | 23,568                    | 23,520                    |
| FUEL   | LB       | 1,416               | 1,427               | 1,454               | 1,581   | 1,540                     | 1,492                     |
| STALL SPEED <sup>16</sup> APPROACH POWER                       | KNOTS    | 109.4               | 110.6               | 112.1               | 112.8   | 112.8                     | 112.8                     |
| DIST GRD ROLL/OVER 50 FT<br>OBS - CALM 59 ° F SL <sup>17</sup> | FT/FT    | 4,370/5,330         | 4,470/5,430         | 4,600/5,560         | 4,480/5,440                                       | 4,850/5,810               | 4,830/5,790               |

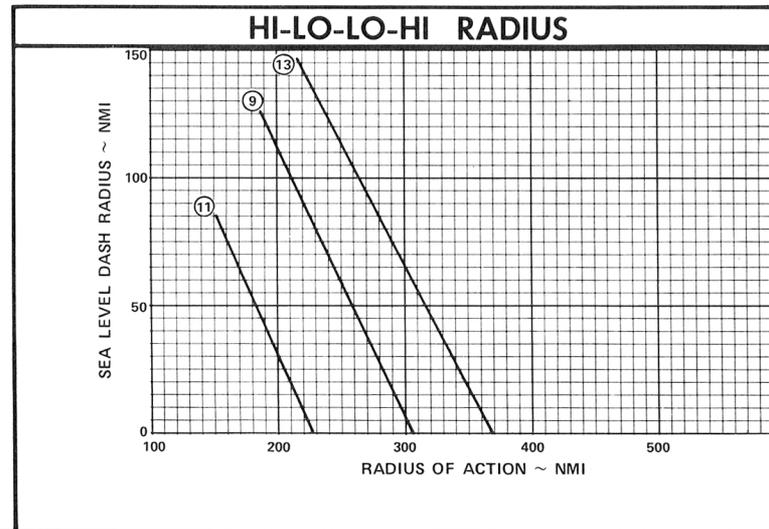
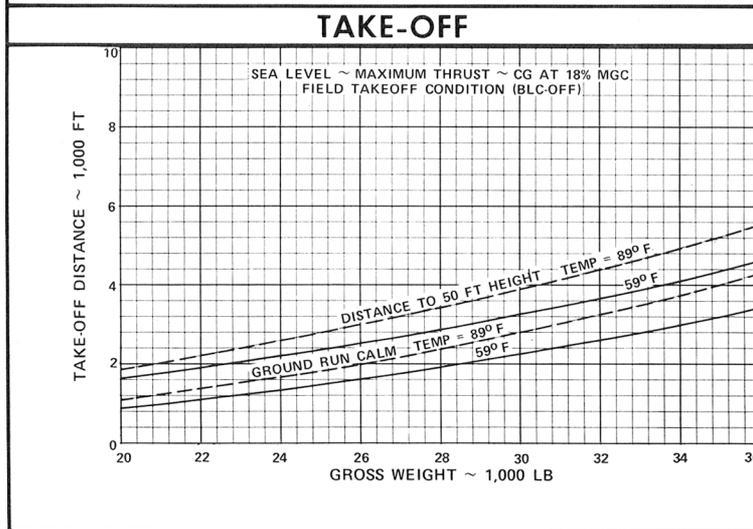
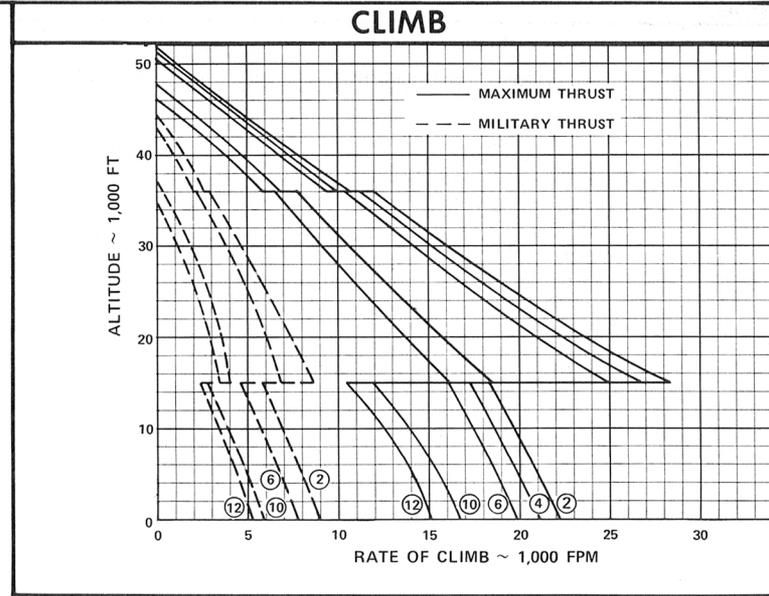
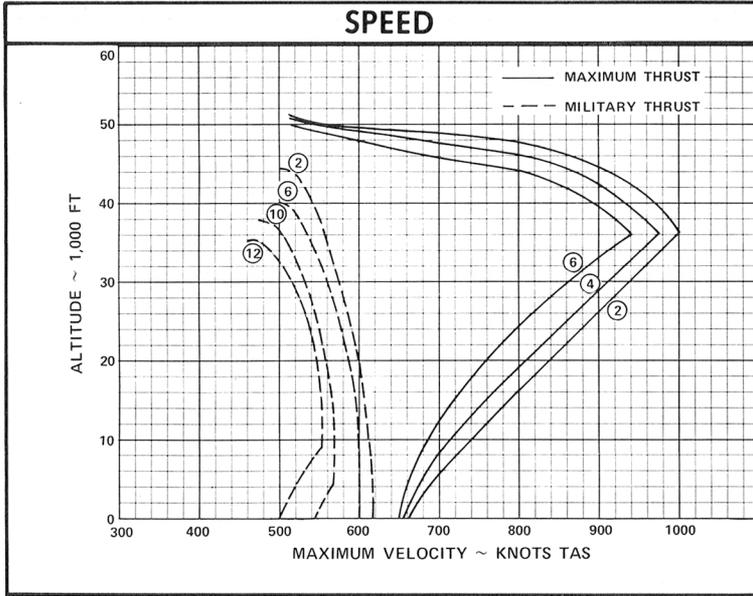
PERFORMANCE BASIS: CALCULATED DATA BASED ON F-8E FLIGHT TEST DATA OF NATESTCEN REPORTS FT2122-016R-64 DTD. 4 MAY 1964, FT2122-019R-64 DTD 25 MAY 1964 AND CONTRACTOR F-8D AND F-8E(FN) FLIGHT TEST DATA, WIND TUNNEL DATA, AND ESTIMATES.

**NOTES**

- PAYLOAD INCLUDES 500 ROUNDS OF AMMUNITION. DOES NOT INCLUDE EXTERNAL FUEL TANKS.
- FIELD TAKEOFF CONFIGURATION.
- TIME-TO-CLIMB CONSIDERS WEIGHT REDUCTION DUE TO GROUND OPERATION AND FUEL USED TO CLIMB.
- CLOSE AIR SUPPORT RADIUS IS FOR 1 HOUR LOITER TIME ON STATION.
- REFUEL RADIUS IS DETERMINED WITH REFUELING TO FULL INTERNAL FUEL CAPACITY. REFUELING ALTITUDE IS 35,000 FT OR BEST CRUISE ALTITUDE WITH FULL INTERNAL FUEL, WHICHEVER IS LESS.
- MISSION TIME EXCLUDES TIME FOR WARMUP AND TAKEOFF AND 20-MINUTE LOITER AT SEA LEVEL.
- REFUEL ALTITUDE IS 34,200 FT.
- REFUEL ALTITUDE IS 34,000 FT.
- REFUEL ALTITUDE IS 33,500 FT.
- REFUEL ALTITUDE IS 26,452 FT.
- REFUEL ALTITUDE IS 23,279 FT.
- LOITER TIME IS TIME-ON-STATION (150 NAUTICAL MILES FROM BASE).
- REFUEL ALTITUDE IS 30,000 FT.
- SPEED LIMITATION.
- AMMUNITION AND STORES EXPENDED.
- LANDING CONFIGURATION - BLC OPERATIVE.
- LANDING CONFIGURATION - BLC OPERATIVE FOR APPROACH; IDLE THRUST FOR GROUND RUN.
- CATAPULT LIMIT.
- RANGE AT MAX. TOGW (36,091 LBS.) = 1,539 NMI
- RANGE AT MAX. TOGW (35,927 LBS.) = 654 NMI
- RADIUS AT MAX. TOGW (36,091 LBS.) = 624 NMI
- RADIUS AT MAX. TOGW (35,927 LBS.) = 92 NMI
- LOITER TIME AT MAX. TOGW (36,091 LBS.) = 1.82 HR.

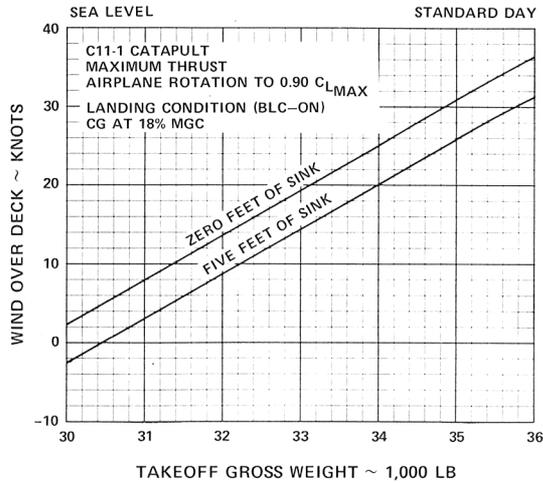
STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4J (Rev. 7-65)

STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4F (Rev. 7-65)

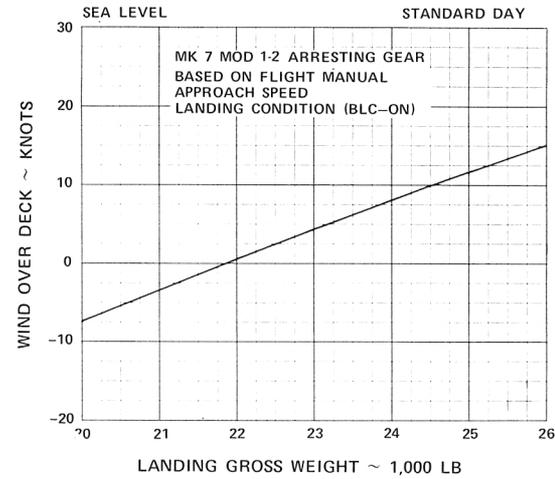


○ LOADING CONDITION COLUMN NUMBER

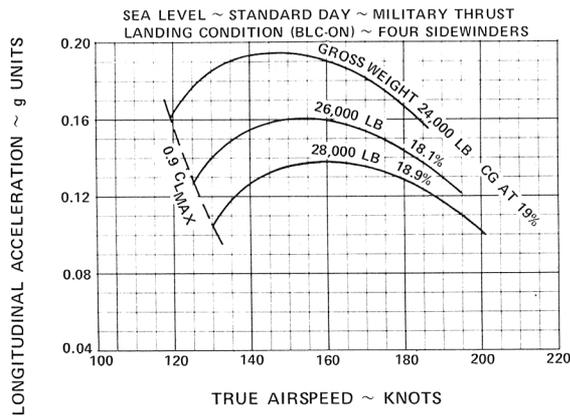
**MINIMUM WIND OVER DECK REQUIRED FOR CATAPULTING**



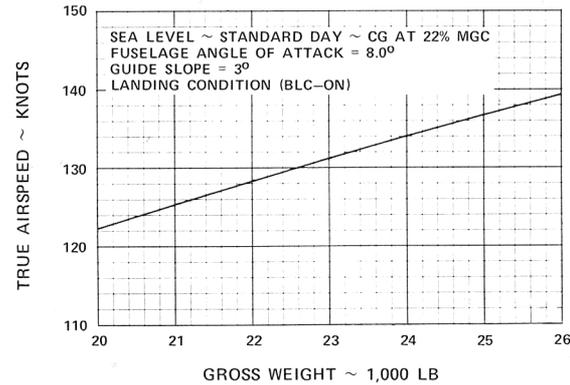
**MINIMUM WIND OVER DECK REQUIRED FOR ARRESTING**



**WAVE-OFF ACCELERATION**

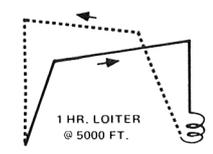
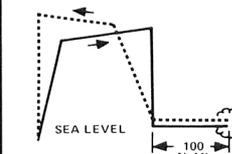
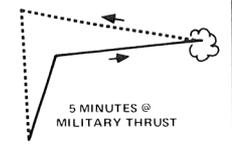
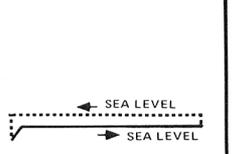
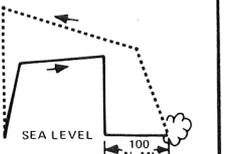


**OPTIMUM CARRIER APPROACH SPEEDS**



STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4H (Rev. 7-65)

**MISSION SUMMARY—ALTERNATE LOADINGS**

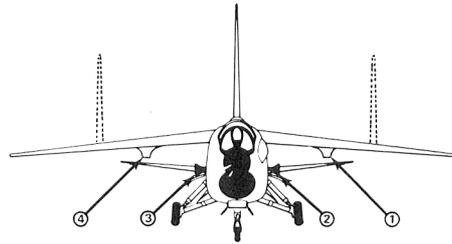
|   |             | CLOSE SUPPORT   |                  | HI-LO-LO-HI  |                  | HI-HI-HI  |                  | LO-LO-LO  |                  | HI-LO-HI  |                  |
|---|-------------|---|------------------|--|------------------|---|------------------|---|------------------|---|------------------|
|   |             |  |                  |  |                  |  |                  |  |                  |  |                  |
| EXTERNAL STORE LOADING  | T.O.G.W. lb | COMBAT RADIUS<br>n. mi.   | MISSION TIME hr. | COMBAT RADIUS<br>n. mi.  | MISSION TIME hr. | COMBAT RADIUS<br>n. mi.   | MISSION TIME hr. | COMBAT RADIUS<br>n. mi.   | MISSION TIME hr. | COMBAT RADIUS<br>n. mi.   | MISSION TIME hr. |
| 13 2 MK-84 G.P.<br>a = 4.84 FT/SEC/SEC <sup>2</sup>                 | 34,853      | 174   | 1.73             | 265  | 1.34             | 429   | 1.87             | 224   | 1.35             | 319   | 1.48             |
| 9 8 MK-81 SNAKEYES<br>a = 5.19 FT/SEC/SEC <sup>2</sup>              | 33,767      | 125   | 1.56             | 212  | 1.20             | 361   | 1.66             | 197   | 1.29             | 260   | 1.32             |
| 11 8 MK-82 SNAKEYES<br>a = 4.59 FT/SEC/SEC <sup>2</sup>             | 35,000      | 61  | 1.35             | 147  | 0.93             | 281   | 1.33             | 159   | 1.06             | 186   | 1.00             |
| 14 8 MK-82 SNAKEYES<br>a = 4.04 FT/SEC/SEC <sup>2</sup>             | 35,927      | 92  | 1.42             | 195  | 1.14             | 332   | 1.56             | 189   | 1.24             | 240   | 1.24             |
| 15 2 MK-83<br>a = 5.70 FT/SEC/SEC <sup>2</sup>                      | 32,883      | 200   | 1.83             | 276  | 1.39             | 450   | 1.96             | 228   | 1.37             | 332   | 1.54             |
| 16 8 FUSELAGE ZUNI <sup>3</sup><br>a = 5.76 FT/SEC/SEC <sup>2</sup> | 32,010      | 181   | 1.77             | 257  | 1.34             | 440   | 1.88             | 218   | 1.37             | 313   | 1.49             |
|   |             |   |                  |  |                  |   |                  |   |                  |   |                  |
|   |             |   |                  |  |                  |   |                  |   |                  |   |                  |

**NOTES**

- MISSION TIME EXCLUDES TIME FOR WARMUP AND 20-MINUTE LOITER TIME AT SEA LEVEL.
- ACCELERATION, a, IS AT 0.90 C<sub>L</sub>MAX WITH COMBAT THRUST AT 89° F.
- MK 32 WARHEAD ON ZUNI ROCKETS

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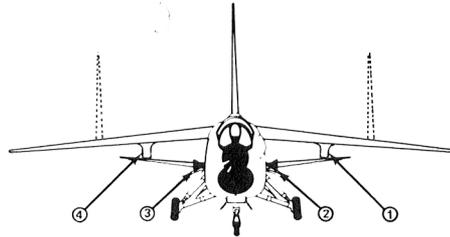
### STORE LOADING



| TYPE OF LOADING  | STATIONS 1 & 4   | UNIT WT. (WT./STORE) LB. | UNIT DRAG INDEX   | STATIONS 2 & 3                                 | UNIT WT. (WT./STORE) LB.                               | UNIT DRAG INDEX  |  |
|--|--|--------------------------|-------------------|--|--|------------------|--|
| <b>RACKS</b><br>(3) ~ NO. CARRIED PER STATION  | (1) AERO 7A-1 EBR + FUEL PYLON   | 260 <sup>1</sup>         | 10 <sup>1</sup>   |  |  |                  |  |
|  | (1) AERO 7A-1 EBR + PYLON  | 227 <sup>1</sup>         | 10 <sup>1</sup>   | (1) LAU-7/A LAUNCHER + SINGLE FUSELAGE PYLON   | 103 <sup>1</sup>                                       | 2.5 <sup>1</sup> |  |
|  | (1) A/A 37B-6 MER <sup>2</sup>   | 223 <sup>3</sup>         | 20.5 <sup>3</sup> | (2) LAU-7/A LAUNCHERS + DUAL FUSELAGE PYLON    | STA. 2 / STA. 3<br>250 <sup>1</sup> / 253 <sup>1</sup> | 7.5 <sup>1</sup> |  |
|  | (1) A/A 37B-5 TER <sup>2</sup>   | 105 <sup>3</sup>         | 9 <sup>3</sup>    | (1) AERO 3A LAUNCHER + SINGLE FUSELAGE PYLON   | 62 <sup>1</sup>  | 2.5 <sup>1</sup> |  |
|  | (1) A/A 37B-1 MBR <sup>2</sup>   | 155 <sup>3</sup>         | 12 <sup>3</sup>   | (2) AERO 3A LAUNCHERS + DUAL FUSELAGE PYLON    | STA. 2 / STA. 3<br>168 <sup>1</sup> / 171 <sup>1</sup> | 7.5 <sup>1</sup> |  |
|  | (1) A/A 37B-3 PMBR <sup>2</sup>  | 87 <sup>3</sup>          | 10 <sup>3</sup>   |  |  |                  |  |
| <b>AIR-TO-GROUND ROCKET LAUNCHERS, AIR-TO-AIR MISSILES</b><br>(3) ~ MAXIMUM NO. CARRIED PER STATION. | (2) AERO-6A <sup>4</sup> , 6A-1 <sup>4</sup> , 6A-2 <sup>4</sup> (NOSE AND TAIL CONE ON) | 148                      | 1.0               | (2) LAU-33/A <sup>5</sup> (MK 32 MOD O HEAD)   | 262  | 7.5              |  |
|  | (2) AERO-7D <sup>6</sup> (NOSE AND TAIL CONE ON)   | 431                      | 2.0               | (2) LAU-33/A <sup>5</sup> (MK 24 MOD O HEAD)   | 262  | 13.0             |  |
|  | (2) LAU-3A/A <sup>6</sup> (NOSE AND TAIL CONE ON)  | 417                      | 2.0               | (1) LAU-35/A <sup>5,8</sup> (MK 32 MOD O HEAD) | 262  | 7.5              |  |
|  | (2) LAU-10/A <sup>7</sup> (NOSE CONE ON, TAIL CONE OFF)                                  | 533                      | 5.0               | (1) LAU-35/A <sup>5,8</sup> (MK 24 MOD O HEAD) | 262  | 13.0             |  |
|  | (2) LAU-10/A <sup>7</sup> (NOSE AND TAIL CONE OFF, MK 32 MOD O HEAD)                     | 533                      | 16.0              | (2) AIM-9B SIDEWINDER MISSILE                  | 164  | 5.0              |  |
|  | (2) LAU-10/A <sup>7</sup> (NOSE AND TAIL CONE OFF, MK 24 MOD O HEAD)                     | 533                      | 16.0              | (2) AIM-9C SIDEWINDER MISSILE                  | 205  | 5.0              |  |
|  | (2) LAU-32 A/A <sup>4</sup> (NOSE AND TAIL CONE ON)                                      | 168                      | 1.0               | (2) AIM-9D SIDEWINDER MISSILE                  | 195  | 5.0              |  |
|  | (2) LAU-32 B/A <sup>4</sup> (NOSE AND TAIL CONE ON)                                      | 168                      | 1.0               |  |  |                  |  |
|  | (2) LAU-56/A <sup>4</sup> (NOSE AND TAIL CONE ON)  | 168                      | 1.0               |  |  |                  |  |
|  | (2) LAU-60/A <sup>6</sup> (NOSE AND TAIL CONE ON)  | 473                      | 2.0               |  |  |                  |  |
|  | (2) LAU-61/A <sup>6</sup> (NOSE AND TAIL CONE ON)  | 542                      | 6.5               |  |  |                  |  |
|  | (2) LAU-68/A <sup>4</sup> (NOSE AND TAIL CONE ON)  | 217                      | 2.5               |  |  |                  |  |
|  | (2) LAU-69/A <sup>6</sup> (NOSE AND TAIL CONE ON)  | 506                      | 6.5               |  |  |                  |  |
| <b>GENERAL PURPOSE BOMBS</b><br>(3) ~ MAXIMUM NO. CARRIED PER STATION.                               | (4) MK 81 CONICAL/SNAKEYE I  | 260/301                  | 3.5/5.3           |  |  |                  |  |
|  | (4) MK 82 CONICAL/SNAKEYE I  | 527/571                  | 4.8/7.5           |  |  |                  |  |
|  | (2) MK 83  | 985                      | 5.8               |  |  |                  |  |
|  | (1) MK 84  | 1970                     | 5.5               |  |  |                  |  |
|  | (2) M117A1   | 823                      | 10.5              |  |  |                  |  |
| <b>FIRE BOMBS</b><br>(3) ~ MAX. NO. CARRIED PER STA.   | (2) MK 77 MOD 2  | 520                      | 4.5               |  |  |                  |  |
|  | (2) MK 77 MOD 4  | 520                      | 14.5              |  |  |                  |  |
|  | (1) MK 79 MOD 1  | 912                      | 6.5               |  |  |                  |  |

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### STORE LOADING



STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100 4J (Rev. 7-65)

| TYPE OF LOADING   | STATIONS 1 & 4       | UNIT WT. (WT./STORE) LB. | UNIT DRAG INDEX | STATIONS 2 & 3 | UNIT WT. (WT./STORE) LB. | UNIT DRAG INDEX |
|---|----------------------|--------------------------|-----------------|----------------|--------------------------|-----------------|
| CLUSTER BOMBS<br>⊙ ~ MAX. NO. CARRIED PER STA.  | ⊙ MK 20 ROCKEYE II   | 475                      | 10.5            |                |                          |                 |
|   | ⊙ CBU-24             | 830                      | 23.0            |                |                          |                 |
| PRACTICE BOMBS<br>⊙ MAX. NO. CARRIED PER STA.   | ⊙ CBU-29             | 830                      | 23.0            |                |                          |                 |
|   | ⊙ CBU-49             | 830                      | 23.0            |                |                          |                 |
| FLARES<br>⊙ ~ MAX. NO. CARRIED PER STA.   | ⊙ MK 76              | 24                       | 2.8             |                |                          |                 |
|   | ⊙ MK 86              | 217                      | 3.1             |                |                          |                 |
|   | ⊙ MK 87              | 333                      | 4.0             |                |                          |                 |
|   | ⊙ MK 88              | 750                      | 5.8             |                |                          |                 |
|   | ⊙ MK 89 MOD 0        | 57                       | 1.2             |                |                          |                 |
| EXTERNAL FUEL TANKS<br>⊙ AERO - 1D  | ⊙ MK 89 MOD 1        | 57                       | 1.2             |                |                          |                 |
|   | ⊙ MK 24 MOD 2, 3 & 4 | 27                       | 3.3             |                |                          |                 |
|   | ⊙ MK 45 MOD 0        | 27                       | 3.3             |                |                          |                 |
| <p>NOTES: (1) INCLUDES PYLON<br/>                 (2) ON AERO 7A-1 EBR<br/>                 (3) DOES NOT INCLUDE PYLON AND AERO 7A-1 EBR<br/>                 (4) CONTAINS 7 2.75 IN. FFAR</p> <p>(5) CONTAINS TWO 5.0 IN. FFAR ZUNI ROCKETS.<br/>                 (6) CONTAINS NINETEEN 2.75 IN. FFAR<br/>                 (7) CONTAINS FOUR 5.0 IN. FFAR ZUNI ROCKETS.<br/>                 (8) THE LAU 35/A WAS DESIGNED FOR ONLY THE LOWER STATION OF THE DUAL FUSELAGE PYLON ON STATION 2; THE LAU 33/A CAN BE USED ON ANY OTHER DUAL OR SINGLE PYLON STATION.</p> <p>UNIT DRAG INDEX REFLECTS MAXIMUM INTERFERENCE DRAG AND MECHANICAL FUZE DRAG ON BOMBS. REFER TO NATOPS FLIGHT MANUAL (NAVY MODEL F-8J AIRCRAFT, NAVAIR 01-45HHE-1) FOR LOADINGS WITH SMALLER INTERFERENCE DRAG.</p> |                      |                          |                 |                |                          |                 |

## NOTES

### GENERAL PURPOSE AND ESCORT FIGHTER

**WARM-UP, TAKE-OFF, ACCELERATE:** 5 minutes with normal thrust and 1 minute with maximum thrust at sea level.

**CLIMB:** On course to cruise altitude with military rated thrust.

**CRUISE-OUT:** At altitudes and speeds for maximum range.

**ACCELERATE:** With maximum thrust at 36089 feet from cruise speed to 1.5 MN.

**COMBAT FUEL ALLOWANCE:** At 36089 feet for 2 minutes at 1.5 MN (No distance credited)

**CRUISE-BACK:** At altitudes and speeds for maximum range.

**RESERVE:** 20 minutes at speed for maximum endurance at sea level plus 5 per cent of initial fuel load.

### GENERAL PURPOSE FIGHTER WITH IN-FLIGHT REFUELING (A-3B TANKER)

**WARM-UP, TAKE-OFF, ACCELERATE:** 5 minutes with normal thrust and 1 minute with maximum thrust at sea level.

**CLIMB:** On course to cruise altitude with military rated thrust.

**CRUISE-OUT:** At altitudes and speeds for maximum range.

**DESCEND** to refueling altitude: 35,000 ft or best cruise altitude with full internal fuel, whichever is less (no fuel used, no distance gained).

**RENDEZVOUS:** 15 minutes at maximum endurance airspeeds.

**FUEL TRANSFER:** No fuel used, no distance gained.

**REFUEL POINT:** Limited to return of aircraft to base with normal reserve if contact for refueling is not made or refuel point not to exceed 80% of total radius.

**CRUISE:** Continue cruise-out at altitudes and speeds for maximum range.

The remainder of the problem is the same as the General Purpose Fighter Problem.

### COMBAT AIR PATROL

**WARM-UP, TAKE-OFF, ACCELERATE:** 5 minutes with normal thrust and 1 minute with maximum thrust at sea level.

**CLIMB:** On course to cruise altitude with military rated thrust.

**CRUISE:** To a point 150 nautical miles from base at altitudes and speed for maximum range.

**DESCEND:** To 35000 ft, no fuel used, no distance gained.

**LOITER:** On station at speed for maximum endurance at 35000 ft altitude.

**COMBAT FUEL ALLOWANCE:** Accelerate with maximum thrust at 35000 feet from loiter speed to 1.5 MN, 2 minutes at maximum thrust at 1.5 MN at 35000 feet. (No distance credited)

**CRUISE-BACK:** 150 nautical miles to base at altitudes and speeds for maximum range.

**RESERVE:** 20 minutes at speed for maximum endurance at sea level plus 5 per cent of initial fuel load.

### CLOSE AIR SUPPORT

**WARM-UP, TAKE-OFF, ACCELERATE:** 5 minutes with normal thrust and 1 minute with maximum thrust at sea level.

**CLIMB:** On course to cruise altitude with military-rated thrust.

**CRUISE-OUT:** At altitudes and speeds for maximum range.

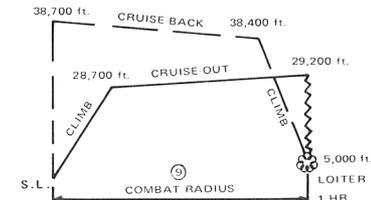
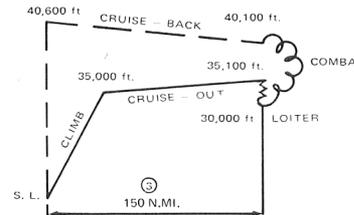
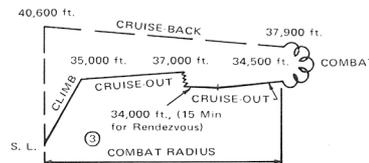
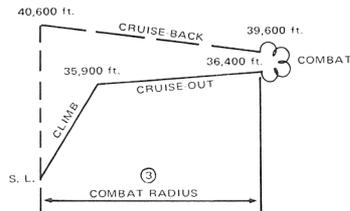
**DESCEND:** To 5,000 ft., no fuel used, no distance gained.

**LOITER:** One hour on station at speed for maximum endurance at 5,000-FT altitude. Drop stores at end of loiter.

**CLIMB:** On course to cruise altitude with military-rated thrust.

**CRUISE BACK:** At altitudes and speeds for maximum range.

**RESERVE:** 20 minutes at speed for maximum endurance at sea level plus 5 per cent initial fuel load.



○ LOADING CONDITION COLUMN NUMBER

STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4G (Rev. 7-65)

NOTES

HI-LO-LO-HI

WARM-UP, TAKE-OFF, ACCELERATE: 5 minutes with normal thrust and 1 minute with maximum thrust at sea level.

CLIMB: On course to cruise altitude with military rated thrust.

CRUISE-OUT: At altitudes and speeds for maximum range.

DESCEND: To sea level (no fuel used, no distance gained).

RUN IN: 100 n.mi. at sea level at speed for maximum range.

COMBAT: 5 minutes at military rated thrust (stores on, no distance gained). Drop stores.

RUN OUT: 100 n.mi. at sea level at speed for maximum range.

CLIMB: On course to cruise altitude with military rated thrust.

CRUISE-BACK: At altitudes and speeds for maximum range.

RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5 per cent initial fuel load.

HI-HI-HI

WARM-UP, TAKE-OFF, ACCELERATE: 5 minutes with normal thrust and 1 minute with maximum thrust at sea level.

CLIMB: On course to cruise altitude with military rated thrust.

CRUISE-OUT: At altitudes and speeds for maximum range.

DESCEND: To altitude for maximum military thrust Mach number (no fuel used, no distance gained).

COMBAT: 5 minutes at military rated thrust at altitude for maximum Mach number (stores on, no distance gained). Drop stores. Guns are not fired.

CLIMB: On course to cruise altitude with military rated thrust.

CRUISE-BACK: At altitudes and speeds for maximum range.

RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5 per cent initial fuel load.

LO-LO-LO

WARM-UP, TAKE-OFF, ACCELERATE: 5 minutes with normal thrust and 1 minute with maximum thrust at sea level.

CRUISE OUT: At sea level at speed for maximum range.

COMBAT: 5 minutes at military rated thrust (stores on, no distance gained) Drop stores.

CRUISE BACK: At sea level at speed for maximum range.

RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5 per cent initial fuel load.

HI-LO-HI

WARM-UP, TAKE-OFF, ACCELERATE: 5 minutes with normal thrust and 1 minute with maximum thrust at sea level.

CLIMB: On course to cruise altitude with military rated thrust.

CRUISE-OUT: At altitudes and speeds for maximum range.

DESCEND: To sea level (no fuel used, no distance gained).

RUN IN: 100 n.mi. at sea level at speed for maximum range.

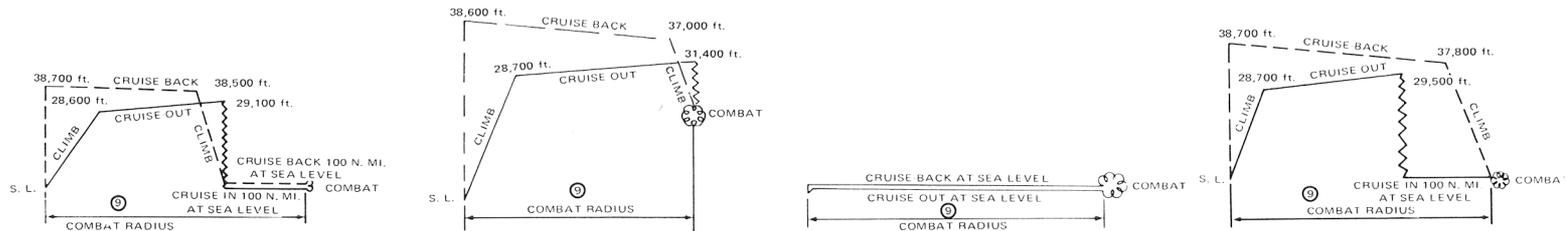
COMBAT: 5 minutes at military rated thrust (stores on, no distance gained). Drop stores.

CLIMB: On course to cruise altitude with military rated thrust.

CRUISE-BACK: At altitudes and speeds for maximum range.

RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5 per cent initial fuel load.

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○ LOADING CONDITION COLUMN NUMBER