

## Wing Loading

| Take-off                 |             | Landing                  |           |
|--------------------------|-------------|--------------------------|-----------|
| H (f)                    | 692         | H (f)                    | 692       |
| CL(max)                  | 1.6         | CL(max)                  | 1.6       |
| T(max) (lb)              | 3.5         | T(max) (lb)              | 2.9258    |
| W_TO (lb)                | 5.463445905 | W_L (lb)                 | 5.1853784 |
| S (f <sup>2</sup> )      | 6.384303599 | W/S (lb/f <sup>2</sup> ) | 0.8122074 |
| W/S (lb/f <sup>2</sup> ) | 0.855762233 | S (f <sup>2</sup> )      | 6.3843036 |
| SIGMA                    | 0.9819042   | SIGMA                    | 0.9819042 |
| T/W                      | 0.640621333 | T/W                      | 0.5642404 |
| TOP                      | 0.850281282 | LP                       | 0.5169849 |
| S_TO (f)                 | 81.98067041 | S_TO (f)                 | 461.00421 |

| Cruise Start              |             | Cruise End                |           |
|---------------------------|-------------|---------------------------|-----------|
| CD_0                      | 0.015       | CD_0                      | 0.015     |
| A                         | 7           | A                         | 7         |
| H (f)                     | 300         | H (f)                     | 300       |
| Cruise Mach               | 0.04        | Cruise Mach               | 0.04      |
| W (lb)                    | 5.32        | W (lb)                    | 5         |
| k                         | 0.056841051 | k                         | 0.0568411 |
| V (f/s)                   | 44.1192     | V (f/s)                   | 44.1192   |
| rho (lbm/f <sup>3</sup> ) | 0.075874061 | rho (lbm/f <sup>3</sup> ) | 0.0758741 |
| q (lb/f <sup>2</sup> )    | 2.293309777 | q (lb/f <sup>2</sup> )    | 2.2933098 |
| W/S (lb/f <sup>2</sup> )  | 0.833033188 | W/S_optimum               | 0.8330332 |
| S (f <sup>2</sup> )       | 6.384303599 | W/S_actual                | 0.8330332 |

| Climb                      |             | Acceleration              |           |
|----------------------------|-------------|---------------------------|-----------|
| H (f)                      | 1,000       | H (f)                     | 50        |
| Climb Mach                 | 0.04        | Cruise Mach               | 0.04      |
| dH/dt (f/min)              | 1100        | n                         | 5         |
| V (f/s)                    | 44.024      | V (f/s)                   | 44.1532   |
| G (rad)                    | 0.416439518 | rho (lbm/f <sup>3</sup> ) | 0.076374  |
| Gamma (deg)                | 24.61000254 | q (lb/f <sup>2</sup> )    | 2.3119801 |
| rho (lbm/f <sup>3</sup> )  | 0.074474205 | W/S (lb/f <sup>2</sup> )  | 0.2375356 |
| q (lb/f <sup>2</sup> )     | 2.241294924 |                           |           |
| T/W min                    | 0.475       |                           |           |
| T/W min - G                | 0.05839917  |                           |           |
| W/S_+ (lb/f <sup>2</sup> ) | 1.151366529 |                           |           |
| W/S_- (lb/f <sup>2</sup> ) | 1.15136646  |                           |           |

| Turn - Inst.              |             | Turn- Sustained           |           |
|---------------------------|-------------|---------------------------|-----------|
| H (f)                     | 300         | H (f)                     | 300       |
| Cruise Mach               | 0.04        | Cruise Mach               | 0.04      |
| CL_max                    | 1.6         | n                         | 5         |
| W/S (lb/f <sup>2</sup> )  | 0.833033188 | W/S (lb/f <sup>2</sup> )  | 0.8330332 |
| V (f/s)                   | 44.1192     | T/W_max                   | 0.2919959 |
| rho (lbm/f <sup>3</sup> ) | 0.075874061 | V (f/s)                   | 44.1192   |
| q (lb/f <sup>2</sup> )    | 2.293309777 | rho (lbm/f <sup>3</sup> ) | 0.0758741 |
| psi_dot (rad/s)           | 3.130817496 | q (lb/f <sup>2</sup> )    | 2.2933098 |
| psi_dot (deg/s)           | 179.3827805 | psi_dot (rad/s)           | 2.4361973 |
| n                         | 4.404741246 | psi_dot (deg/s)           | 139.58394 |

| Ceiling                   |             | Descent                   |           |
|---------------------------|-------------|---------------------------|-----------|
| W (lb)                    | 5.32        | W (lb)                    | 5         |
| S (f <sup>2</sup> )       | 6.384303599 | S (f <sup>2</sup> )       | 6.3843036 |
| H (f)                     | 900         | H (f)                     | 1,400     |
| Cruise Mach               | 0.04        | Cruise Mach               | 0.04      |
| W/S (lb/f <sup>2</sup> )  | 0.833033188 | W/S (lb/f <sup>2</sup> )  | 0.8330332 |
| V (f/s)                   | 44.0376     | V (f/s)                   | 43.9696   |
| rho (lbm/f <sup>3</sup> ) | 0.074674184 | rho (lbm/f <sup>3</sup> ) | 0.0736743 |
| q (lb/f <sup>2</sup> )    | 2.248701996 | q (lb/f <sup>2</sup> )    | 2.2117452 |
| CL_required               | 0.370450682 | dH/dt-min (f/min)         | 152.33024 |
|                           |             | Gamma (deg)               | 3.3101418 |