# Aviation Activity Forecast
# Dayton International Airport

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# Aviation Activity Forecast

The purpose of this document is to update the Dayton International Airport (DAY) aviation activity forecast. This forecast was prepared for use in the Master Plan Update and Environmental Impact Statement (EIS). This updated forecast represents projected unconstrained demand. Any potential future limitations in airspace, airfield, or terminal capacities are not taken into account.

The strength of passenger traffic in 2002, and so far in 2003, has caused Airport management to believe the March 10, 2003 Ricondo Associates Forecast underestimates future passenger traffic. Current aircraft operations statistics suggest the trend to replace "mainline" scheduled passenger jets with regional jets (RJs) continues unabated. And while mainline jets are not expected to disappear from service to the Airport, the proportion of such jets remains the same or decreases. The number of cargo and general aviation (GA) operations remains strong and similar to previously expected trends.

Passenger air traffic has rebounded at DAY since September 11, 2001 much faster than the typical U.S. airport. **Table 1** presents the updated enplaned passenger forecast. This forecast is based upon an analysis of the underlying demographic and economic factors for the Dayton-Springfield MSA. The forecasted split between air carrier and regional airline enplanements reflects the greater dependence on regional jet aircraft than in past years. Enplanements increased 6.1 percent in 2002 and are estimated to grow approximately 14.8 percent in 2003. Delta mainline, United and its regional partners, and AirTran are up over 30 percent year-to-date as of August 2003. This growth is offset by discontinuation of mainline service by US Airways and Northwest.

PSA Airlines recently announced that it will begin flying passengers on regional jets in December 2003, transitioning to an all jet fleet by the spring of 2005. PSA will replace its Dornier 328 turboprop aircraft with 50-seat Bombardier CRJ-200 regional jets. PSA will double its fleet and increase its system-wide passenger capacity threefold. US Airways Express also plans to replace the balance of its turboprop aircraft at DAY with regional jets in the next several years, as ordered aircraft are delivered.

**Table 2** presents the assumptions on the average size of aircraft (seats per departure) that will be used by the passenger airlines and the average percentage of seats that will be filled (load factor). The increase in average size for the regional airline fleet between 2003 and 2005 is largely the result of PSA becoming an all-jet fleet and increasing its scheduled operations.

**Table 3** presents the updated aircraft operations forecast. The passenger aircraft operations are calculated based upon the forecast enplaned passengers and the assumed average seats per departure and load factor. The cargo aircraft operations reflect the changed method of operation of the cargo hub carrier Menlo Logistics. Menlo is starting to utilize its other regional mini-hub airports (Chicago and Nashville) to a greater extent, and shipping less time sensitive materials by truck, where possible. Military operations are expected to be flat after 2003. General aviation operations are projected to grow at approximately 0.4 percent per year beginning in 2004.

In **Table 4** the forecasts for enplanements and aircraft operations are compared to the 2003 TAF. For the period 2003 to 2020, the growth rates for enplanements are the same for the 2003 TAF and Landrum & Brown forecast at 1.3 percent per annum. The variance between the forecasts is principally due to a timing difference: The TAF is prepared on a federal fiscal year basis (October to September), while the Landrum & Brown forecast is prepared on a calendar year basis (January to December). Total operations are projected to grow at an average annual compound rate of 1.4 percent per the Landrum &Brown forecast, compared to 1.0 percent annually in the 2003 TAF.

**Table 5** presents the forecast fleet mix for passenger aircraft. The air carrier fleet is projected to remain a narrow-body fleet. Older aircraft such as DC-9s and MD80s will be phased out and replaced by newer generation Boeing 737 and Airbus 320 equipment. The Boeing 717 will become the dominant aircraft for air carrier airlines.

Today, the regional carrier fleet is dominated by 50-seat regional jets and small turboprop aircraft. Over the forecast horizon, the regional carriers are expected to phase out virtually all of the turboprop aircraft in favor of regional jets ranging in size from 32 to 70 seats. Air Wisconsin (United Express) operates BA 146 narrow-body jets today and is expected to retain these planes in their fleet.

# 1 ENPLANED PASSENGER FORECAST

**Table 1**
**Enplaned Passenger Forecast**
**Dayton International Airport**

| | Year | Air Carrier | Regional | Total | Annual Change |
|---|---|---|---|---|---|
| Actual | 1998 | 797,710 | 298,903 | 1,096,613 | |
| | 1999 | 811,985 | 314,178 | 1,126,163 | 2.7% |
| | 2000 | 840,273 | 343,289 | 1,183,562 | 5.1% |
| | 2001 | 712,192 | 371,769 | 1,083,961 | -8.4% |
| | 2002 | 625,922 | 524,495 | 1,150,417 | 6.1% |
| Estimate | 2003 | 577,965 | 742,284 | 1,320,248 | 14.8% |
| Forecast | 2004 | 619,900 | 746,100 | 1,366,000 | 3.5% |
| | 2005 | 624,900 | 767,100 | 1,392,000 | 1.9% |
| | 2006 | 629,900 | 779,100 | 1,409,000 | 1.2% |
| | 2007 | 634,900 | 791,100 | 1,426,000 | 1.2% |
| | 2008 | 640,000 | 803,000 | 1,443,000 | 1.2% |
| | 2009 | 645,100 | 814,900 | 1,460,000 | 1.2% |
| | 2010 | 650,300 | 825,700 | 1,476,000 | 1.1% |
| | 2011 | 655,500 | 836,500 | 1,492,000 | 1.1% |
| | 2012 | 660,700 | 847,300 | 1,508,000 | 1.1% |
| | 2013 | 666,000 | 859,000 | 1,525,000 | 1.1% |
| | 2014 | 671,300 | 870,700 | 1,542,000 | 1.1% |
| | 2015 | 676,700 | 882,300 | 1,559,000 | 1.1% |
| | 2016 | 682,100 | 893,900 | 1,576,000 | 1.1% |
| | 2017 | 687,600 | 905,400 | 1,593,000 | 1.1% |
| | 2018 | 693,100 | 917,900 | 1,611,000 | 1.1% |
| | 2019 | 698,600 | 930,400 | 1,629,000 | 1.1% |
| | 2020 | 704,200 | 942,800 | 1,647,000 | 1.1% |
| Average Annual Growth Rates | | | | | |
| | 1998-2003 | -6.2% | 20.0% | 3.8% | |
| | 2003-2010 | 1.7% | 1.5% | 1.6% | |
| | 2010-2020 | 0.8% | 1.3% | 1.1% | |
| | 2003-2020 | 1.2% | 1.4% | 1.3% | |

# 2 PASSENGER AIRCRAFT AND LOAD FACTOR ASSUMPTIONS

**Table 2**
**Passenger Aircraft Gauge and Load Factor Assumptions**
**Dayton International Airport**

| | | Air Carrier | | Regional | |
|---|---|---|---|---|---|
| | Year | Gauge | Load Factor | Gauge | Load Factor |
| Estimate | 2003 | 131.4 | 79.9% | 40.2 | 71.7% |
| Forecast | 2005 | 131.9 | 75.5% | 46.7 | 55.7% |
| | 2010 | 132.0 | 75.0% | 47.3 | 55.0% |
| | 2015 | 132.1 | 75.0% | 49.1 | 55.0% |
| | 2020 | 132.2 | 75.0% | 50.3 | 55.0% |

Note: Gauge equals average seats per departure
Load factor equals average percentage of seats filled

# 3 AIRCRAFT OPERATIONS FORECAST

**Table 3**
**Aircraft Operations Forecast**
**Dayton International Airport**

| | Year | Passenger: Air Carrier | Passenger: Regional | Cargo | Other | Total | Annual Change |
|---|---|---|---|---|---|---|---|
| Actual | 1998 | 24,148 | 31,398 | 42,540 | 53,393 | 151,479 \1 | |
| | 1999 | 24,239 | 30,330 | 38,987 | 58,448 | 152,004 \1 | 0.3% |
| | 2000 | 25,540 | 33,466 | 35,118 | 51,277 | 145,401 \2 | -4.3% |
| | 2001 | 21,795 | 40,114 | 22,706 | 47,994 | 132,609 \2 | -8.8% |
| | 2002 | 15,079 | 44,940 | 16,066 | 49,132 | 125,217 \2 | -5.6% |
| Estimate | 2003 | 11,000 | 51,500 | 14,700 | 47,100 | 124,300 | -0.7% |
| Forecast | 2004 | 12,200 | 54,400 | 14,800 | 47,300 | 128,700 | 3.5% |
| | 2005 | 12,400 | 58,400 | 15,300 | 47,500 | 133,600 | 3.8% |
| | 2006 | 12,600 | 59,600 | 15,800 | 47,700 | 135,700 | 1.6% |
| | 2007 | 12,700 | 60,800 | 16,400 | 47,900 | 137,800 | 1.5% |
| | 2008 | 12,900 | 62,000 | 17,000 | 48,100 | 140,000 | 1.6% |
| | 2009 | 13,000 | 62,900 | 17,600 | 48,300 | 141,800 | 1.3% |
| | 2010 | 13,100 | 63,500 | 18,200 | 48,500 | 143,300 | 1.1% |
| | 2011 | 13,200 | 63,800 | 18,800 | 48,700 | 144,500 | 0.8% |
| | 2012 | 13,400 | 64,200 | 19,500 | 48,900 | 146,000 | 1.0% |
| | 2013 | 13,500 | 64,600 | 20,200 | 49,100 | 147,400 | 1.0% |
| | 2014 | 13,600 | 65,000 | 20,900 | 49,300 | 148,800 | 0.9% |
| | 2015 | 13,700 | 65,400 | 21,600 | 49,500 | 150,200 | 0.9% |
| | 2016 | 13,800 | 65,900 | 22,400 | 49,700 | 151,800 | 1.1% |
| | 2017 | 13,900 | 66,400 | 23,200 | 49,900 | 153,400 | 1.1% |
| | 2018 | 14,000 | 67,000 | 24,000 | 50,100 | 155,100 | 1.1% |
| | 2019 | 14,100 | 67,600 | 24,800 | 50,300 | 156,800 | 1.1% |
| | 2020 | 14,200 | 68,200 | 25,700 | 50,500 | 158,600 | 1.1% |
| Average Annual Growth Rates | | | | | | | |
| | 1998-2003 | -14.6% | 10.4% | -19.1% | -2.5% | -3.9% | |
| | 2003-2010 | 2.5% | 3.0% | 3.1% | 0.4% | 2.1% | |
| | 2010-2020 | 0.8% | 0.7% | 3.5% | 0.4% | 1.0% | |
| | 2003-2020 | 1.5% | 1.7% | 3.3% | 0.4% | 1.4% | |

Notes
Other Operations includes military, non-commercial air taxi, and general aviation.
\1 Total from FAA TAF
\2 Total from Airport records

# 4 COMPARISON TO 2003 TERMINAL AREA FORECAST

**Table 4**
**Comparison of TAF and L&B Forecasts**
**Dayton International Airport**

| | Enplaned Passengers | | | Aircraft Operations | | |
|---|---|---|---|---|---|---|
| Year | 2003 TAF | New L&B Oct. 2003 | L&B vs. TAF | 2003 TAF | New L&B Oct. 2003 | L&B vs. TAF |
| 1998 | 1,043,390 | - | - | 151,479 | - | - |
| 1999 | 1,108,365 | - | - | 152,004 | - | - |
| 2000 | 1,144,918 | - | - | 148,085 | - | - |
| 2001 | 1,128,865 | - | - | 135,992 | - | - |
| 2002 | 1,076,444 | 1,150,417 | 6.9% | 124,637 | 125,217 | 0.5% |
| 2003 | 1,274,811 | 1,320,248 | 3.6% | 125,563 | 124,300 | -1.0% |
| 2004 | 1,327,108 | 1,366,000 | 2.9% | 127,505 | 128,700 | 0.9% |
| 2005 | 1,343,370 | 1,392,000 | 3.6% | 128,863 | 133,600 | 3.7% |
| 2006 | 1,359,632 | 1,409,000 | 3.6% | 130,220 | 135,700 | 4.2% |
| 2007 | 1,375,894 | 1,426,000 | 3.6% | 131,576 | 137,800 | 4.7% |
| 2008 | 1,392,156 | 1,443,000 | 3.7% | 132,934 | 140,000 | 5.3% |
| 2009 | 1,408,418 | 1,460,000 | 3.7% | 134,291 | 141,800 | 5.6% |
| 2010 | 1,424,680 | 1,476,000 | 3.6% | 135,649 | 143,300 | 5.6% |
| 2011 | 1,440,942 | 1,492,000 | 3.5% | 137,006 | 144,500 | 5.5% |
| 2012 | 1,457,205 | 1,508,000 | 3.5% | 138,364 | 146,000 | 5.5% |
| 2013 | 1,473,467 | 1,525,000 | 3.5% | 139,722 | 147,400 | 5.5% |
| 2014 | 1,489,729 | 1,542,000 | 3.5% | 141,080 | 148,800 | 5.5% |
| 2015 | 1,505,991 | 1,559,000 | 3.5% | 142,437 | 150,200 | 5.5% |
| 2016 | 1,522,253 | 1,576,000 | 3.5% | 143,795 | 151,800 | 5.6% |
| 2017 | 1,538,515 | 1,593,000 | 3.5% | 145,152 | 153,400 | 5.7% |
| 2018 | 1,554,777 | 1,611,000 | 3.6% | 146,510 | 155,100 | 5.9% |
| 2019 | 1,571,039 | 1,629,000 | 3.7% | 147,867 | 156,800 | 6.0% |
| 2020 | 1,587,302 | 1,647,000 | 3.8% | 149,226 | 158,600 | 6.3% |
| Average Annual Growth Rates | | | | | | |
| 2003-2020 | 1.3% | 1.3% | | 1.0% | 1.4% | |

# 5 PASSENGER AIRCRAFT FLEET MIX

**Table 5**
**Passenger Aircraft Fleet Mix**
**Dayton International Airport**

| Air Carrier Aircraft | Seats | 2003 | 2005 | 2010 | 2015 | 2020 |
|---|---|---|---|---|---|---|
| 757 | 180 | 17.1% | 5.9% | 5.6% | 0.0% | 0.0% |
| 739 | 177 | 0.0% | 0.0% | 0.0% | 5.3% | 5.1% |
| 738 | 162 | 0.0% | 0.0% | 0.0% | 10.7% | 10.3% |
| 320 | 144 | 0.5% | 0.0% | 0.0% | 26.6% | 27.8% |
| M80 | 142 | 23.3% | 35.6% | 39.8% | 0.0% | 0.0% |
| 733 | 134 | 10.4% | 5.9% | 5.6% | 0.0% | 0.0% |
| M80 | 129 | 3.3% | 11.9% | 5.6% | 0.0% | 0.0% |
| 319 | 126 | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% |
| 717 | 117 | 15.8% | 28.9% | 32.4% | 46.7% | 56.8% |
| 735 | 116 | 6.3% | 11.9% | 11.1% | 10.7% | 0.0% |
| D9S | 106 | 13.3% | 0.0% | 0.0% | 0.0% | 0.0% |
| 100 | 87 | 9.4% | 0.0% | 0.0% | 0.0% | 0.0% |
| DC9 | 78 | 0.5% | 0.0% | 0.0% | 0.0% | 0.0% |
| Total | | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| Total Operations | | 11,152 | 12,400 | 13,100 | 13,700 | 14,200 |

| Regional Aircraft | Seats | 2003 | 2005 | 2010 | 2015 | 2020 |
|---|---|---|---|---|---|---|
| 142/146 (NB) | 85 | 1.0% | 1.2% | 2.3% | 2.2% | 2.1% |
| ARJ | 82 | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% |
| CR7 | 70 | 1.9% | 2.3% | 3.4% | 4.5% | 5.4% |
| CRJ/ERJ/ER4 | 50 | 40.6% | 69.5% | 69.4% | 75.8% | 80.9% |
| DH3 (TP) | 50 | 0.6% | 0.0% | 0.0% | 0.0% | 0.0% |
| ATR (TP) | 46 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| ERD (RJ) | 44 | 2.2% | 1.1% | 2.3% | 3.0% | 3.2% |
| DH8 (TP) | 37 | 1.5% | 2.5% | 0.0% | 0.0% | 0.0% |
| ER3 (RJ) | 37 | 4.0% | 4.5% | 4.6% | 4.5% | 4.1% |
| SF3 (TP) | 34 | 12.3% | 8.5% | 8.0% | 2.2% | 0.0% |
| FRJ (RJ) | 32 | 5.2% | 4.7% | 4.6% | 4.5% | 2.1% |
| EM2/SF3 | 30 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| D38/J41 | 29 | 25.8% | 3.8% | 3.5% | 3.3% | 2.1% |
| BEH/BE1/J31 | 19 | 4.6% | 2.0% | 1.8% | 0.0% | 0.0% |
| Total | | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| Total Operations | | 52,234 | 58,500 | 63,500 | 65,400 | 68,200 |