

SECTION 5.0

FORECASTS OF AVIATION DEMAND

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5.1 GENERAL

This section provides an update of aviation activity forecasts for Double Eagle II Airport through the year 2021. The aviation activity forecasts provide input for the assessment of airport facility requirements, evaluation of airport development alternatives, and the formulation of information needed to assess the type and timing of new airport facilities. Utilizing short-, intermediate-, and long-range forecasting horizons, these projections also aid in the evaluation of potential environmental impacts to the environs on and surrounding the airport resulting from the proposed airport improvements.

Forecasting is realistically not an exact science. The contributing factors evaluated and used in this section provide clues to the future. These factors are examined for reasonable and satisfactory relationships to the aviation parameters to be forecast. The forecasts are, then, guidelines used to identify capacity shortfalls and develop facility requirements. However, it must be remembered that forecasts are educated guesses based on documented history and years of experience.

5.1.1 Forecast Elements

The forecasts of aviation demand required to develop an airport Master Plan for a general aviation airport primarily concern based aircraft, aircraft operations, and aircraft mix. To address peak operational or facility based demand, derivative forecasts are also developed. The primary forecast elements for Double Eagle II Airport are as follows:

- Based Aircraft (By Type),
- General Aviation Operations (Local and Itinerant),
- Instrument Operations, and
- Military Operations (Local and Itinerant).

5.1.2 Forecast Horizons

Forecasts of applicable elements are presented for 5- (2006), 10- (2011), and 20-year (2021) forecast horizons as required for airport Master Planning purposes in the Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6A, *Airport Master Plans*. In some cases, for additional clarity, forecast data are also presented for a 15-year horizon (2016). The base year for this study is 2001.

5.1.3 Factors Affecting Aviation Forecasts

Certain factors were found to be of particular significance and were considered in forecasting aviation demands for the Double Eagle II Airport Master Plan. Discussions concerning the following are presented in this section:

- FAA National Plan of Integrated Airport Systems (NPIAS),
- FAA Terminal Area Forecasts (TAF),

- New Mexico State Highway and Transportation Department (NMSHTD) Aviation Division Planning,
- Previously developed forecasts,
- Closure of Coronado Airport, and
- Historical aviation activity.

The events of September 11, 2001 are expected to have a short-term effect on the U.S. economy and the general aviation industry. However, as a result of security alerts around nuclear laboratories, general aviation flights were grounded for one week in October 2001 at Albuquerque International Sunport due to its proximity to Sandia National Laboratories. Another central New Mexico airport forced to ground general aviation flights was Los Alamos Airport due to its proximity to Los Alamos National Laboratories. Double Eagle II Airport is located outside the 10-nautical mile radius around both these sites and, therefore, was able to maintain full operation. Since the Federal Government has stated the war on terrorism and the threat of more terrorist acts in the United States could exist in the foreseeable future, more restrictions on general aviation activity around Albuquerque International Sunport and Los Alamos Airport may occur.

5.1.4 FAA National Plan of Integrated Airport Systems Summary

Pursuant to Section 47103 of Title 49, United States Code, the Secretary of Transportation submitted to Congress the most recent *NPIAS; 1998-2002*. The NPIAS is a published national plan for the development of public-use airports and is derived from a selective compilation of local, regional, and state planning studies. The national system is structured to provide communities with access to safe and adequate airports. Upon completion of the most recent NPIAS, 98 percent of the nation's population was within 20 miles of a NPIAS airport. The NPIAS contains 3,344 airports, 48 of which are in New Mexico.

The plan is limited to airport development that is eligible for Federal funding under the Airport Improvement Program (AIP) administered by the FAA. Therefore, only airports included in the NPIAS are eligible for federal funding. However, an airport's inclusion in the NPIAS does not represent federal approval, nor does it commit the Federal Government to participate in the cost of any project.

The FAA classifies airports into categories based on service levels and/or roles. Service levels are based on scheduled passengers and service roles are based on the type of aircraft an airport can accommodate. The four classifications are primary commercial service, non-primary commercial service, reliever, and general aviation. Double Eagle II Airport is classified as a general aviation reliever airport. The function of a reliever is to draw general aviation traffic away from airports where the primary function is to serve commercial airlines.

General aviation pilots often find it difficult and expensive to gain access to congested airports, particularly large and medium hub airports. In recognition of this, the FAA has encouraged the development of high capacity general aviation airports in major metropolitan areas. These specialized airports, called relievers, provide pilots with attractive alternatives to using congested hub airports. They also provide general aviation access to the surrounding area. The 334 reliever airports identified in the NPIAS have, on average, 181 based aircraft and together, account for 32 percent of the nation's general aviation fleet.

5.1.5 FAA Terminal Area Forecasts

The FAA’s Aviation Policy and Plans Division at Washington D.C. Headquarters develops policies, goals and priorities, forecasts future aviation demand, and analyzes economic impacts of all hub airports and selected reliever/general aviation airports around the country. The forecast is called a TAF. These FAA forecasts are 15-year projections and are constantly being updated and revised as needed. Historical and forecast based aircraft and airport operations documented in the 2001 FAA TAF are listed in Tables 5.1 and 5.2.

5.1.6 NMSHTD Aviation Division Planning

The NMSHTD Aviation Division produces the New Mexico Airport System Plan (NMAASP) every 3 years. The NMAASP serves several purposes. First, the plan is a guide for the State to formulate policies concerning investment of Aviation Fund resources. Second, it serves as the State’s input to the FAA’s NPIAS. Third, it is the point of departure for development of a multi-year programming process to guide the allocation of federal and state airport development assistance. Finally, it provides an outline for a capital improvement plan for each system airport that may be used to plan for future airport maintenance and development.

Double Eagle II Airport is classified as a general aviation reliever airport in the most recent NMAASP (2000). In addition to Double Eagle II Airport, Dona Ana County Airport at Santa Teresa is the only other airport classified as a general aviation reliever airport in New Mexico.

**TABLE 5.1
FAA TERMINAL AREA FORECAST BASED AIRCRAFT
Double Eagle II Airport
Master Plan Study**

Historical/ Forecast	Year	Single- Engine	Multi-Engine	Turbojet	Helicopter	Other	Total
Historical	1996	107	4	0	4	0	115
	1997	107	4	0	4	0	115
	1998	107	4	0	4	0	115
	1999	246	6	1	4	4	261
	2000	246	6	1	4	4	261
Forecast	2001	246	6	1	4	4	261
	2002	246	6	1	4	4	261
	2003	246	6	1	4	4	261
	2004	246	6	1	4	4	261
	2005	246	6	1	4	4	261
	2006	246	6	1	4	4	261
	2008	246	6	1	4	4	261
	2009	246	6	1	4	4	261
	2010	246	6	1	4	4	261
	2011	246	6	1	4	4	261
	2012	246	6	1	4	4	261
	2013	246	6	1	4	4	261
	2014	246	6	1	4	4	261
	2015	246	6	1	4	4	261

Source: 2001 FAA Terminal Area Forecast.

TABLE 5.2
FAA TERMINAL AREA FORECAST AIRPORT OPERATIONS DATA
Double Eagle II Airport
Master Plan Study

Historical/ Forecast	Year	General Aviation		Military	Air Taxi	Total
		Local	Itinerant			
Historical	1996	33,762	15,513	1,825	0	51,100
	1997	33,762	15,513	1,825	0	51,100
	1998	33,762	15,513	1,825	0	51,100
	1999	33,762	15,513	1,825	0	51,100
	2000	33,762	15,513	1,825	0	51,100
Forecast	2001	33,762	15,513	1,825	0	51,100
	2002	33,762	15,513	1,825	0	51,100
	2003	33,762	15,513	1,825	0	51,100
	2004	33,762	15,513	1,825	0	51,100
	2005	33,762	15,513	1,825	0	51,100
	2006	33,762	15,513	1,825	0	51,100
	2007	33,762	15,513	1,825	0	51,100
	2008	33,762	15,513	1,825	0	51,100
	2009	33,762	15,513	1,825	0	51,100
	2010	33,762	15,513	1,825	0	51,100
	2011	33,762	15,513	1,825	0	51,100
	2012	33,762	15,513	1,825	0	51,100
	2013	33,762	15,513	1,825	0	51,100
	2014	33,762	15,513	1,825	0	51,100
	2015	33,762	15,513	1,825	0	51,100

Source: 2001 FAA Terminal Area Forecast.

The most recent plan, issued in 2000 by the NMSHTD Aviation Division, includes forecast parameters to be considered when developing forecasts of airport activities for Double Eagle II Airport. The 2000 plan indicated that the number of general aviation aircraft in New Mexico has risen since the last NMASP (1990) and is expected to continue to rise through the year 2020. Similar to the national trend in general aviation aircraft, the number of registered aircraft in the state is expected to continue to increase at a conservative rate of one percent per year for the next 20 years resulting in a statewide general aviation fleet of 2,650 in 2020. Reversing the declining trend of the early 1990s, the industry has a sense of renewed optimism due to the enactment of the General Aviation Revitalization Act (GARA) of 1994. Since the passage of the Revitalization Act, active general aviation aircraft have been steadily increasing.

5.1.7 Summary of Previous Master Plan Forecasts

Greiner, Inc. developed the previous forecasts of aviation activity at Double Eagle II Airport in 1991 for the *Draft Airport Master Plan Update*. In 1991, three forecast scenarios were developed based on variables including: 1) modest growth, 2) closure of Coronado Airport by 2000, and 3) increased general aviation activity because of potential overflow from Albuquerque International Sunport. Forecast-based aircraft and operations are listed in Tables 5.3 and 5.4, respectively.

TABLE 5.3
1991 DRAFT DOUBLE EAGLE II AIRPORT MASTER PLAN UPDATE BASED AIRCRAFT FORECAST
Double Eagle II Airport
Master Plan Study

Historical/ Forecast	Year	Single- Engine	Multi- Engine	Turboprop	Turbojet	Helicopter	Other	Total
Historical	1989	30	5	0	0	3	0	38
	1990	35	3	0	0	4	0	42
	1991	56	4	0	0	5	0	65
Forecast - Scenario 1	1995	61	9	2	3	4	4	83
	2000	73	10	3	3	4	5	98
	2005	84	11	3	4	5	6	113
	2010	95	13	4	5	5	6	128
Forecast - Scenario 2	1995	78	11	3	4	4	5	105
	2000	245	33	10	10	13	16	327
	2005	270	37	11	11	14	18	361
	2010	295	40	12	12	16	20	395
Forecast - Scenario 3	1995	98	13	4	5	5	5	130
	2000	280	37	11	11	15	15	369
	2005	315	45	13	14	17	17	421
	2010	354	50	15	16	19	19	473

Source: Draft Double Eagle II Airport Master Plan Update, Greiner, Inc., August 1991.

TABLE 5.4
1991 DRAFT DOUBLE EAGLE II AIRPORT MASTER PLAN UPDATE
AIRCRAFT OPERATIONS FORECAST
Double Eagle II Airport
Master Plan Study

Historical/ Forecast	Year	General Aviation		Military	Air Taxi	Total
		Local	Itinerant			
Historical	1986	7,500	8,000	500	0	16,000
	1987	7,500	8,000	500	0	16,000
	1988	7,500	8,000	500	0	16,000
	1989	7,500	8,000	500	241	16,241
	1990	27,375	9,125	500	12,775	49,775
Forecast - Scenario 1	1995	43,160	23,240	500	3,320	70,220
	2000	44,100	29,400	500	3,680	77,680
	2005	43,505	35,595	500	3,960	83,560
	2010	41,600	41,600	500	4,160	87,860
Forecast - Scenario 2	1995	54,600	29,400	500	4,200	88,700
	2000	147,150	98,100	500	12,262	258,012
	2005	138,985	113,715	500	12,636	265,836
	2010	128,375	128,375	500	12,838	270,088
Forecast - Scenario 3	1995	68,640	36,960	500	5,280	111,380
	2000	167,850	111,900	500	13,988	294,238
	2005	164,010	134,190	500	14,910	313,610
	2010	155,675	155,675	500	15,568	327,418

Source: Draft Double Eagle II Airport Master Plan Update, Greiner, Inc., August 1991.

5.1.8 Closure of Coronado Airport

Coronado Airport, a private airport in north Albuquerque owned by the Sandia Business Development Corporation (a Federally-chartered corporation whose sole shareholder is the Pueblo of Sandia), closed on November 30, 2001. The airport based approximately 100 to 120 aircraft in its final year. These based aircraft were moved to Double Eagle II Airport; Alexander Municipal Airport and Mid-Valley Airpark in Valencia County; Moriarty Airport in Torrance County; and Sandia Airpark and Santa Fe Municipal Airport in Santa Fe County. Thirty-nine aircraft from Coronado Airport (38 single-engine propeller and 1 twin-engine propeller aircraft) were relocated to Double Eagle II Airport. All aircraft are currently in tie-down areas.

5.2 HISTORICAL AVIATION ACTIVITY

Understanding trends in aviation activity and the factors influencing activity levels is important in projecting future growth. Thus, historical activity statistics were compiled for the three primary airports in the study area (Double Eagle II Airport, Albuquerque International Sunport, and Coronado Airport).

Data was compiled for various categories of activity including itinerant and local operations, the number and type of based aircraft, and the number of instrument operations for the past decade (1990-2000). Due to the unavailability of annual statistical records, some interpolation and extrapolation of the historical data was necessary. This data is provided and discussed in the following paragraphs.

5.2.1 Based Aircraft

The projection of the number and type of based aircraft is necessary to determine facility use, demand capacity, and future facility requirements. Historical based aircraft data was obtained from the City of Albuquerque Aviation Department, the 1991 Draft Double Eagle II Airport Master Plan Update and the FAA's TAF for Double Eagle II Airport (2001). Data is reported as "n/a" or "not available" for 1999 because of significant discrepancies between FAA TAF reported based aircraft (261) and 2000 City of Albuquerque Aviation Department records (162). This data is presented in Table 5.5. The City's figures for 2001 indicate that there are 229 aircraft based at Double Eagle II Airport, which include recently moved Coronado Airport aircraft. These aircraft include 187 single-engine propeller, 14 multi-engine propeller, 6 turboprop, 2 turbojet, 17 helicopters, and 3 other aircraft types (balloon, ultralight, and hang glider).

For comparison purposes with other airports, the based aircraft totals for Double Eagle II Airport and Albuquerque International Sunport for the year 2001 have been compiled and are presented in Table 5.6.

5.2.2 Aircraft Operations

The NMSHTD Aviation Division conducted an air traffic activity survey at Double Eagle II Airport during the months of August through October 2001. During this period, a two-week survey was conducted on each runway independently as well as simultaneously. Air traffic activity levels were obtained using an aircraft operation counting machine that collected data based on noise event "loudness." This machine only recorded fixed wing aircraft departures from the runways. Fixed-wing operations were determined by doubling the surveyed departures. Additional information was obtained from the primary Double Eagle II Airport helicopter operators to account for helicopter operations to and from the helicopter pad. A correlation was established between the totals and fuel sales for the same period. This correlation was then applied to fuel sales data for Calendar Year (CY) 2001 to obtain CY 2001 fixed-wing aircraft operations. The helicopter operations data gathered from the helicopter operators was added to the fixed-wing aircraft operations to comprise the base case (2001) operational levels.

**TABLE 5.5
HISTORICAL BASED AIRCRAFT
Double Eagle II Airport
Master Plan Study**

Year	Single-Engine	Multi-Engine	Turboprop	Turbojet	Helicopter	Other	Total
1989	30	5	0	0	3	0	38
1990	35	3	0	0	4	0	42
1991	56	4	0	0	5	0	65
1992	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1993	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1994	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1995	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1996	107	4	0	0	4	0	115
1997	107	4	0	0	4	0	115
1998	107	4	0	0	4	0	115
1999	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2000	133	14	0	1	12	2	162
2001	187	14	6	2	17	3	229

n/a = data not available.

Sources: 1989-1991 - Double Eagle II Airport Draft Master Plan Update, Table 3.7, 1991.
1996-1998 - FAA TAF, 2001.
2000-2001 - City of Albuquerque, Department of Aviation, 2002.

**TABLE 5.6
ALBUQUERQUE AREA BASED AIRCRAFT (2001)
Double Eagle II Airport
Master Plan Study**

Airport	Single-Engine Propeller	Multi-Engine Propeller	Turboprop	Jet	Helicopter	Other	Total
Double Eagle II	187	14	6	2	17	3	229
Albuquerque International	139	80	n/a	9	5	0	233
Area Totals	326	94	6	11	22	3	462

n/a = not available (Albuquerque International Sunport based aircraft not defined as turboprop).

Sources: Double Eagle II Airport - City of Albuquerque, Aviation Department, 2002.
Albuquerque International Sunport's *Draft Master Plan*, February 2000.

Double Eagle II Airport historical annual aviation activity levels are shown in Table 5.7. Activity has increased from 36,500 operations in 1990 to an estimated 120,903 operations in 2001. For comparison purposes with other airports, operational data for Double Eagle II Airport, Albuquerque International Sunport, and Coronado Airport (when operational) for the year 2001 has been compiled and is presented in Table 5.8.

5.2.2.1 Local and Itinerant General Aviation Operations

Recent data on general aviation operations gathered from study area airports and shown in Table 5.8 indicate the concentration of training operations taking place at both Double Eagle II Airport and Coronado Airport. Reported traffic at Albuquerque International Sunport shows only 16 percent of general aviation operations as local with the balance of 84 percent as itinerant. Data from Coronado Airport (when operational) and Double Eagle II Airport indicate a common local/itinerant split of 67 percent local/33 percent itinerant and 69 percent local/31 percent itinerant, respectively.

**TABLE 5.7
DOUBLE EAGLE II AIRPORT HISTORICAL AIR TRAFFIC ACTIVITY
Double Eagle II Airport
Master Plan Study**

Year	General Aviation		Military	Air Taxi	Total
	Local	Itinerant			
1986	7,500	8,000	0	0	15,500
1987	7,500	8,000	0	0	15,500
1988	7,500	8,000	0	0	15,500
1989	7,500	8,000	0	0	15,500
1990	27,375	9,125	0	0	36,500
1991	n/a	n/a	n/a	n/a	n/a
1992	n/a	n/a	n/a	n/a	n/a
1993	n/a	n/a	n/a	n/a	n/a
1994	n/a	n/a	n/a	n/a	n/a
1995	n/a	n/a	n/a	n/a	n/a
1996	33,762	15,513	1,825	0	51,100
1997	43,329	19,907	1,825	0	65,061
1998	52,895	24,301	1,825	0	79,021
1999	62,461	28,696	1,825	0	92,982
2000	72,026	33,091	1,825	0	106,942
2001	81,592	37,486	1,825	0	120,903

n/a = not available.

Sources: 1985-1990 - Double Eagle II Airport Master Plan Update, 1991.
1996 - FAA TAF, 2001.
1997-2000 - Operational levels interpolated, URS Corporation, 2001.
2001 - NMSHTD, Aviation Division; URS Corporation, 2001.

**TABLE 5.8
ALBUQUERQUE AREA HISTORICAL AIR TRAFFIC ACTIVITY BY AIRPORT (2001)
Double Eagle II Airport
Master Plan Study**

Airport	General Aviation				Air Carrier	Military	Air Taxi	Total
	Local	% Total General Aviation	Itinerant	% Total General Aviation				
Double Eagle II	81,592	69%	37,486	31%	0	1,825	0	120,903
Albuquerque International	11,351	16%	61,430	84%	81,615	40,443	35,154	229,993
Coronado ¹	57,093	67%	27,682	33%	0	0	1,730	86,505

¹ CY 2000 - Coronado Airport closed permanently in November 2001.

Sources: Double Eagle II Airport - City of Albuquerque Aviation Department, 2001.
Albuquerque International Sunport - FAA Form 5010, 2001.
Coronado Airport - FAA Form 5010, 2000.

5.2.2.2 Military Operations

Current itinerant military operations at Double Eagle II Airport are the result of C-130 and Helicopter aircraft from Kirtland Air Force Base in Albuquerque practicing instrument approaches. Although the C-130 aircraft do not physically touch down on the runway because of the weight-bearing capacity of the runway, each aircraft approach and departure is still counted as an operation. Historical military operations are presented in Table 5.7.

5.2.2.3 Instrument Operations

Due to the absence of an airport traffic control tower, total instrument operational counts have not been documented at Double Eagle II Airport. However, based on conversations with airport users and airport management, it is estimated that there are approximately two instrument approaches daily (730 annually). This estimate does not include the military instrument approach practice activity.

5.3 FORECAST METHODOLOGY

Forecasts of aviation activities at Double Eagle II Airport considered the capacities and demands on the airport and other airports within the region. In updating the forecasts, airport management; FAA; NMSHTD, Aviation Division; historical aviation activity statistics; input from Eclipse Aviation; and previously developed aviation forecasts were evaluated. Forecasts of regional aviation demands were developed. Those demands included growth at Albuquerque International Sunport, Double Eagle II Airport, and the closure of Coronado Airport.

Forecasts of based aircraft and operations developed for the region were then desegregated among the airports according to aviation activity scenarios developed as part of this forecast that could potentially occur within the 20-year planning period.

5.3.1 General Forecast Assumptions

Forecasts of aviation demand are those levels of activities that are anticipated to occur at Double Eagle II Airport based upon the probable future of the aviation industry in the state, the FAA region, and the nation. On this basis, generalized forecasting trends, which have been developed by the FAA for the state, regional, and national aviation industry were considered. Beyond the assessment of aviation activity growth trends at regional and national levels, local community commitment to support development at the airport were also considered as key factors in long-term forecasting of aviation activities for Double Eagle II Airport.

5.3.2 Eclipse Aviation Forecast

As previously discussed in Section 2.0, Facility Overview, it is anticipated that Eclipse Aviation would be fully operational at Double Eagle II Airport by 2005. Site and facility planning/preliminary designs are currently underway. Based on conversations with Eclipse Aviation representatives and airport management, estimates of based aircraft (sales/marketing/fleet of demo aircraft) and additional estimated aviation activity generated by this facility were projected and are presented in Table 5.9.

5.3.3 Low Forecast Scenario Assumptions

The low base case assumption is predicated on regional general aviation demand remaining unchanged throughout the 20-year forecast period. Growth in based aircraft would reflect the growth in the U.S. General Aviation Aircraft Fleet according to the FAA's *Aerospace Forecasts, 2001-2012* (March 2001). It was further assumed that Albuquerque International Sunport improvements would serve to accommodate additional commercial activity without the need to off-load local general aviation demand to other regional general aviation airports.

TABLE 5.9
PROJECTED ECLIPSE AVIATION BASED AIRCRAFT AND AIR TRAFFIC ACTIVITY
Double Eagle II Airport
Master Plan Study

Year	Operations				Total Operations
	Based Aircraft	Aircraft Test Flights	Warranty Checks	Sales/Marketing Aircraft Operations	
Monthly					
2006	12	85	28	146	259
2011	12	187	62	249	498
2016	12	187	62	249	498
2021	12	187	62	249	498
Annually					
2006	12	1,012	337	1,742	3,091
2011	12	2,250	750	2,980	5,980
2016	12	2,250	750	2,980	5,980
2021	12	2,250	750	2,980	5,980

Sources: Eclipse Aviation, 2001.
 URS Corporation, 2001.

The following specific assumptions apply to the low forecast scenario:

- Eclipse Aviation would be fully operational at Double Eagle II Airport by 2005.
- No new general aviation reliever airport would be constructed in the Albuquerque study area within the 20-year planning period.
- No cargo, maintenance (large aircraft), or corporate service center facility would be established at Double Eagle II Airport.
- Military aircraft activity at Double Eagle II Airport would remain constant through 2021.

5.3.4 Medium Forecast Scenario Assumptions

The medium forecast scenario is predicated on the implementation of a Level 1 airport traffic control tower by the year 2005. In addition, forecasted growth is at a higher rate than the low forecast scenario and was established based on the percent projected future increase in general aviation operations and based aircraft at Albuquerque International Sunport according to the Sunport's *Draft Master Plan* (February 2000).

The following specific assumptions apply to the medium base case:

- Eclipse Aviation would be fully operational at Double Eagle II Airport by 2005.
- An airport traffic control tower and extension of Runway 4/22 would be operational at Double Eagle II Airport by 2006, thus increasing itinerant general aviation aircraft activity levels by 15 percent annually (after 2006 forecast year).
- No new general aviation reliever airport would be constructed in the Albuquerque study area within the 20-year planning period.
- Fixed base operator (FBO) facilities would expand to meet demand and other development opportunities (i.e., a corporate service center facility) would become a reality at Double Eagle II Airport.

- No cargo or large aircraft maintenance facilities would be established at Double Eagle II Airport.
- Military aircraft activity at Double Eagle II Airport would remain constant through 2021.

5.3.5 High Forecast Scenario Assumptions

The high forecast scenario assumes that a new airport traffic control tower would be operational at Double Eagle II Airport by 2005 (similar to the medium forecast scenario), thereby creating a higher demand of general aviation traffic and attracting up to 50 percent of Albuquerque International Sunport general aviation operations by 2015. In addition, forecasted growth is based on the percent projected future increase in general aviation operations and based aircraft at Albuquerque International Sunport, based on the Sunport's *Draft Master Plan* (February 2000).

The high forecast scenario assumption of attracting up to 50 percent of Albuquerque International Sunport general aviation operations (and based aircraft) is based on an increasing role of Double Eagle II Airport as a reliever airport in the Albuquerque area. In addition, the high forecast assumes that FBO facilities and other development opportunities (surface transportation improvements, commercial developments such as hotels and rental car facilities, etc.) would attract the local and itinerant general aviation user. The high forecast scenario assumes that general aviation based aircraft and operations would gradually move from Albuquerque International Sunport when these improvements have been made to Double Eagle II Airport – 10 percent in 2011, 20 percent in 2012, 30 percent in 2013, 40 percent in 2014, and 50 percent in 2015 through 2021.

The following is a list of all high forecast scenario assumptions:

- Eclipse Aviation would be fully operational at Double Eagle II Airport by 2005.
- An airport traffic control tower and extension of Runway 4/22 would be operational at Double Eagle II Airport by 2006, thus increasing itinerant general aviation aircraft activity levels by 15 percent annually (after 2006 forecast year).
- No new general aviation reliever airport would be constructed in the Albuquerque study area within the 20-year planning period.
- FBO facilities would expand to meet demand and other development opportunities (i.e., corporate service center facility) would become a reality at Double Eagle II Airport.
- No cargo or large aircraft maintenance facilities would be established at Double Eagle II Airport.
- Approximately 50 percent of the general aviation activity occurring at Albuquerque International Sunport (beginning in 2011) would shift to Double Eagle II Airport during the planning period.
- Military aircraft activity at Double Eagle II Airport would remain constant through 2021.

5.4 BASED AIRCRAFT AND AVIATION ACTIVITY FORECASTS

Based on the previously outlined forecast scenarios, the forecast of based aircraft and aviation activity at Double Eagle II Airport is presented in the following sections.

5.4.1 Based Aircraft

The following sections present the based aircraft forecasts for the study period considering the low, medium, and high forecast scenario assumptions presented in Section 5.3.

5.4.1.1 *Low Forecast Scenario*

The low forecast scenario for based aircraft was derived from the FAA's Aerospace Forecasts (2001-2012). Annual growth trends in active general aviation aircraft were applied to the base year and forecast period. It is assumed that the growth in active general aviation aircraft is directly related to the general aviation growth experienced at Double Eagle II Airport. This growth is moderate with an increase of only 48 total aircraft throughout the planning period. "Other" aircraft types were assumed to remain at current based aircraft levels. Forecast results of the low base case are presented in Table 5.10 and on Figure 5.1.

5.4.1.2 *Medium Forecast Scenario*

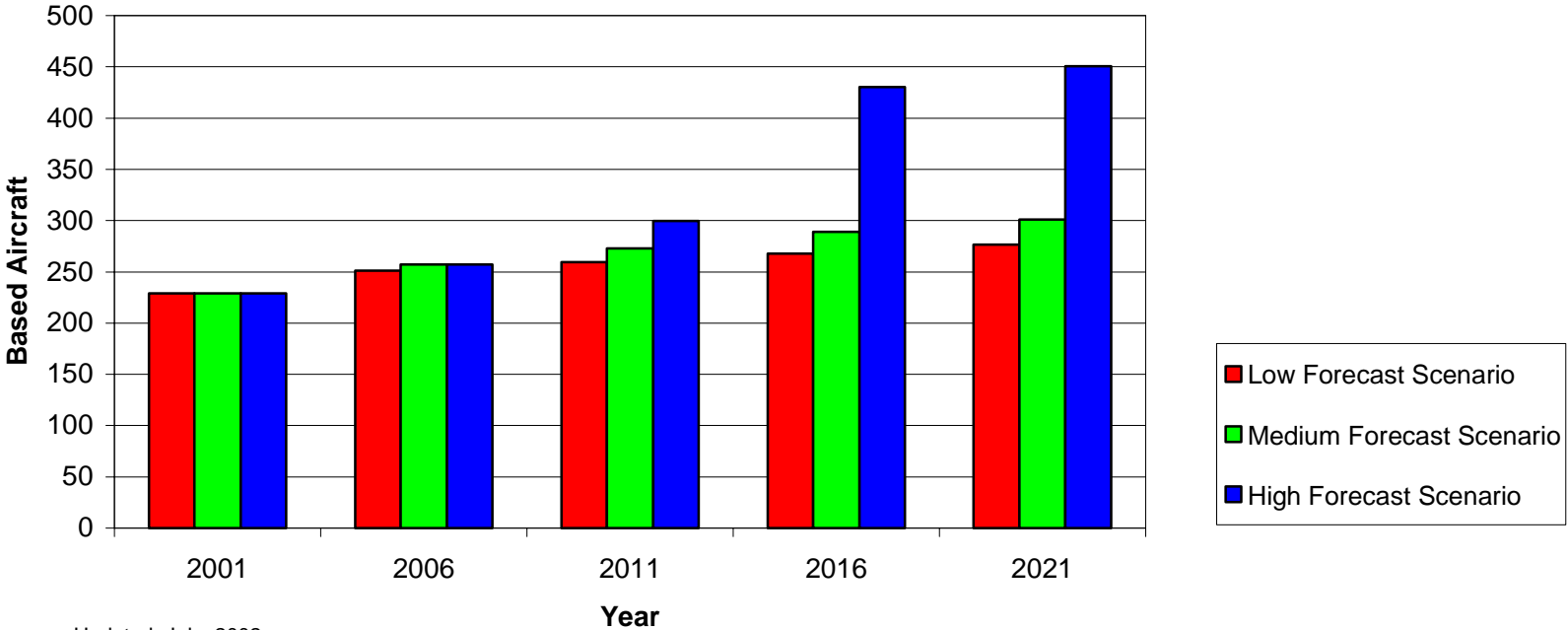
The medium forecast scenario for based aircraft were derived from the annual general aviation growth rates forecast at Albuquerque International Sunport, according to the Sunport's *Draft Master Plan* (February 2000). In this case, it is assumed that Albuquerque International Sunport and Double Eagle II Airport would grow at comparable rates throughout the planning period. Albuquerque International Sunport is projected to maintain a general aviation based aircraft market share comparable to the last decade. Applying this trend to Double Eagle II Airport, the forecast of based aircraft fleet is expected to increase by 72 aircraft throughout the 20-year planning period. Forecast results of the medium forecast scenario are presented in Table 5.10 and on Figure 5.1.

**TABLE 5.10
BASED AIRCRAFT FORECAST SCENARIOS**

Year	Fixed Wing					Helicopter	Other	Total
	Piston		Turbine					
	Single Engine	Multi-Engine	Turboprop	Eclipse Turbojet	Turbojet			
Low Forecast Scenario								
2001	187	14	6	n/a	2	17	3	229
2006	194	14	6	12	3	19	3	251
2011	200	14	7	12	3	20	3	260
2016	207	14	7	12	3	21	4	268
2021	213	14	7	12	4	23	4	277
Medium Forecast Scenario								
2001	187	14	6	n/a	2	17	3	229
2006	198	15	6	12	3	20	3	257
2011	209	15	7	12	4	24	3	273
2016	219	16	7	12	5	27	3	289
2021	230	17	7	12	6	27	3	301
High Forecast Scenario								
2001	187	14	6	n/a	2	17	3	229
2006	198	15	6	12	3	20	3	257
2011	224	24	7	12	5	25	3	300
2016	301	61	7	12	15	31	3	430
2021	316	64	7	12	18	31	3	451

Source: URS Corporation, 2002.

FIGURE 5.1
BASED AIRCRAFT SCENARIO SUMMARY
Double Eagle II Airport
Master Plan Study



Updated: July, 2002.
Source: URS Corporation, 2002.

5.4.1.3 High Forecast Scenario

The high forecast scenario for based aircraft were derived from the annual general aviation growth rates forecast at Albuquerque International Sunport, according to the Sunport's *Draft Master Plan* (February 2000), and assumes that 50 percent of Albuquerque International Sunport general aviation based fixed-wing aircraft would relocate to Double Eagle II Airport by 2015 (helicopter and other aircraft type based aircraft levels would remain the same throughout the planning period). This scenario assumes that Albuquerque International Sunport would maintain its current general aviation facilities; however, at some point, space would become a premium and some activity would naturally shift to Double Eagle II Airport. For planning purposes, Albuquerque International Sunport has projected within its Draft 2000 Master Plan to maintain a general aviation market share comparable to the last decade. The Albuquerque International Sunport forecast is shown in Table 5.11. As stated earlier, the high forecast scenario anticipates that up to 50 percent of the Albuquerque International Sunport based aircraft shown in Table 5.11 would migrate to Double Eagle II Airport by 2011.

An overall increase of 222 aircraft would occur during the 20-year planning period with the high forecast scenario. Results of the high forecast scenario are presented in Table 5.10 and on Figure 5.1.

5.4.2 Aircraft Operations

The following sections present the air traffic activity forecasts for the study period considering the low, medium, and high forecast scenario assumptions presented in Section 5.3.

5.4.2.1 Low Forecast Scenario

The low forecast scenario for aircraft operations were derived from the FAA's *Aerospace Forecasts* (2001-2012). Annual growth trends in active general aviation aircraft were applied to the base year and forecast period. It is assumed that the growth in active general aviation aircraft is directly related to the general aviation growth experienced at Double Eagle II Airport. Military aircraft activity at Double Eagle II Airport remains constant. This growth is moderate with an increase of only 28 percent (33,278 operations) throughout the 20-year planning period. Analysis results are presented in Table 5.12 and on Figure 5.2.

5.4.2.2 Medium Forecast Scenario

The medium forecast scenario for aircraft operations was derived from the annual general aviation growth rates forecast at Albuquerque International Sunport, according to the Sunport's *Draft Master Plan* (February 2000). In this case, it is assumed that Albuquerque International Sunport and Double Eagle II Airport general aviation activity would grow at comparable rates throughout the planning period. Albuquerque International Sunport is projected to maintain a general aviation based aircraft market share comparable to the last decade. The introduction of an airport traffic control tower at Double Eagle II Airport would increase itinerant general aviation operations by 15 percent after 2006. Military aircraft activity at Double Eagle II Airport would remain constant. Applying this trend to Double Eagle II Airport, the forecast of aircraft operations is expected to increase by 57 percent (69,226 operations) throughout the 20-year planning period. Forecast results are presented in Table 5.12 and on Figure 5.2.

TABLE 5.11
ALBUQUERQUE INTERNATIONAL SUNPORT
FORECAST GENERAL AVIATION BASED AIRCRAFT
Double Eagle II Airport
Master Plan Study

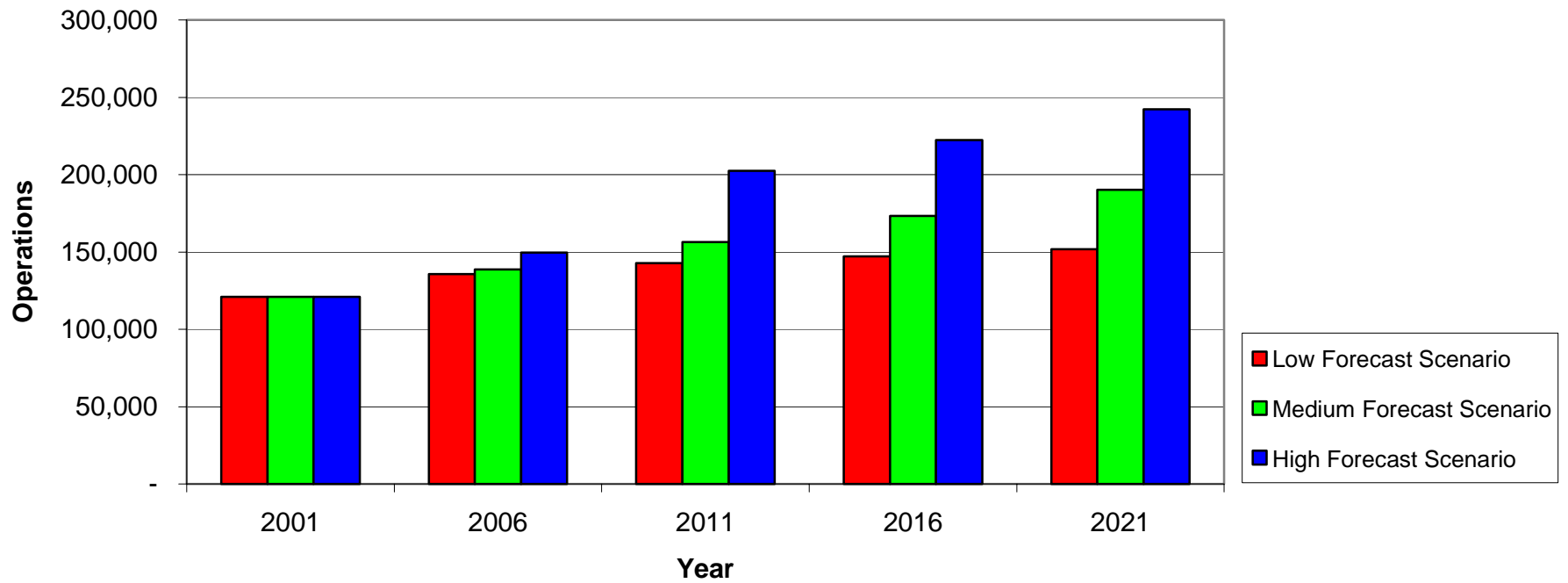
Year	Single-Engine	Multi-Engine	Turbojet	Helicopter	Other	Total
1999	135	79	8	5	0	227
2000	137	80	9	5	0	231
2001*	139	80	9	5	0	233
2002	141	81	10	6	0	238
2003	142	82	11	6	0	241
2004	144	82	11	6	0	243
2005	146	83	12	6	0	247
2006	147	84	13	6	0	250
2007	149	84	14	6	0	253
2008	150	85	14	7	0	256
2009	152	85	15	7	0	259
2010	153	86	16	7	0	262
2011	155	87	17	7	0	266
2012	156	88	18	7	0	269
2013	158	88	18	7	0	271
2014	160	89	19	8	0	276
2015	161	90	20	8	0	279
2016	163	91	21	8	0	283
2017	165	92	22	8	0	287
2018	166	92	22	8	0	288
2019	168	93	23	8	0	292
2020	170	94	24	8	0	296
2021	171	95	25	8	0	299
2022	173	96	26	9	0	304
2023	175	96	26	9	0	306
2024	176	97	27	9	0	309
2025	178	98	28	9	0	313

* = Existing.

Note: All activity levels derived through linear interpolation of Albuquerque International Sunport *Draft Master Plan* except for data for 1999, 2005, 2010, and 2025.

Sources: Albuquerque International Sunport *Draft Master Plan*, Table II-X, Page II-35, 2000.
 URS Corporation, 2002.

FIGURE 5.2
OPERATIONS SCENARIO SUMMARY
Double Eagle II Airport
Master Plan Study



Updated July, 2002
Source: URS Corporation, 2002.

**TABLE 5.12
AIR TRAFFIC ACTIVITY FORECAST
Double Eagle II Airport
Master Plan Study**

Year	General Aviation		Military	Air Taxi	Total
	Local	Itinerant			
Low Forecast Scenario					
2001	81,592	37,486	1,825	0	120,903
2006	91,013	42,650	1,825	0	135,487
2011	95,506	45,495	1,825	0	142,826
2016	98,473	46,858	1,825	0	147,156
2021	101,557	48,275	1,825	0	151,657
Medium Forecast Scenario¹					
2001	81,592	37,486	1,825	0	120,903
2006	93,172	43,642	1,825	0	138,638
2011	100,280	54,393	1,825	0	156,498
2016	105,918	65,529	1,825	0	173,272
2021	110,319	77,985	1,825	0	190,129
High Forecast Scenario¹					
2001	81,592	37,486	1,825	0	120,903
2006	98,185	49,601	1,825	0	149,611
2011	107,017	93,443	1,825	0	202,285
2016	113,088	107,329	1,825	0	222,242
2021	117,923	122,535	1,825	0	242,283

¹ Double Eagle II Airport medium and high forecast scenario 2011-2021 itinerant general aviation totals are increased an additional 15 percent for induced demand resulting from the establishment of an airport traffic control tower.

Source: URS Corporation, 2002.

5.4.2.3 High Forecast Scenario

The high forecast scenario was derived from the annual general aviation growth rates forecast at Albuquerque International Sunport, according to the Sunport's *Draft Master Plan* (February 2000), and assumes that 50 percent of Albuquerque International Sunport general aviation activity would relocate to Double Eagle II Airport by 2015. This scenario assumes that Albuquerque International Sunport would maintain its current general aviation facilities; however, at some point, space would become a premium and activity would naturally shift to Double Eagle II Airport. Similar to the based aircraft forecasts, Albuquerque International Sunport has projected for planning purposes that its general aviation market share will remain comparable to the last decade. The Albuquerque International Sunport forecast is shown in Table 5.13. However, the Double Eagle II Airport high forecast scenario anticipates that up to 50 percent of the Albuquerque International Sunport general aviation activity shown in Table 5.13 would occur at Double Eagle II Airport by 2015. Also, the introduction of an airport traffic control tower at Double Eagle II Airport would increase itinerant general aviation operations by 15 percent after 2006. Military aircraft activity at Double Eagle II Airport would remain constant. These factors increase the operational count throughout the 20-year planning period by 100 percent (121,380 operations). The high forecast scenario results are presented in Table 5.12 and on Figure 5.2.

TABLE 5.13
ALBUQUERQUE INTERNATIONAL SUNPORT
FORECAST GENERAL AVIATION AIRCRAFT OPERATIONS
Double Eagle II Airport
Master Plan Study

Year	Local	Itinerant	Total
2001*	11,351	61,430	72,781
2002	11,588	63,748	75,336
2003	11,826	66,065	77,891
2004	12,063	68,383	80,446
2005	12,300	70,700	83,000
2006	12,500	71,960	84,460
2007	12,700	73,220	85,920
2008	12,900	74,480	87,380
2009	13,100	75,740	88,840
2010	13,300	77,000	90,300
2011	13,473	78,100	91,573
2012	13,647	79,200	92,847
2013	13,820	80,300	94,120
2014	13,993	81,400	95,393
2015	14,167	82,500	96,667
2016	14,340	83,600	97,940
2017	14,513	84,700	99,213
2018	14,687	85,800	100,487
2019	14,860	86,900	101,760
2020	15,033	88,000	103,033
2021	15,207	89,100	104,307
2022	15,380	90,200	105,580
2023	15,553	91,300	106,853
2024	15,727	92,400	108,127
2025	15,900	93,500	109,400

Note: All activity levels derived through linear interpolation of Albuquerque International Sunport's *Master Plan* data for 2005, 2010, and 2025.

* = Existing.

Sources: FAA Form 5010, 2001.
 Albuquerque International Sunport's *Draft Master Plan*, Table II-X, Page II-35, 2000.
 URS Corporation, 2002.

5.5 OTHER FORECASTS

5.5.1 Instrument Approaches

Based on conversations with airport users and airport management, it is estimated that there are approximately two instrument approaches daily (730 annually). Instrument approaches are expected to increase approximately 15 percent once an airport traffic control tower is operational at Double Eagle II Airport.

5.6 FORECAST SUMMARY

This section analyzed low, medium, and high forecast scenarios, based on different assumptions of possible future events. As shown in Table 5.14, Double Eagle II Airport would realize a significant amount of growth if an airport traffic control tower becomes operational at the airport, Runway 4/22 is lengthened, and a shift of some of the general aviation activity occurs from Albuquerque International Sunport. The City of Albuquerque Aviation Department must monitor air traffic activity and continue to plan for these occurrences should they become reality. A tabular summation of the aviation forecasts for Double Eagle II Airport is presented in Table 5.14. For medium- and long-term facilities planning at Double Eagle II Airport, the high forecast scenario will be used and shown in subsequent sections of this Master Plan. The medium forecast scenario is summarized in Table 5.15 for inclusion in the FAA's Terminal Area Forecast (TAF). A graphical summation of based aircraft and aircraft operations forecasts is presented on Figures 5.1 and 5.2.

**TABLE 5.14
FORECAST SUMMARY
Double Eagle II Airport
Master Plan Study**

	2001			2006			2011			2016			2021		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
Operations															
General Aviation Local	81,592	81,592	81,592	91,013	93,172	98,185	95,506	100,280	107,017	98,473	105,918	113,088	101,557	110,319	117,923
General Aviation Itinerant	37,486	37,486	37,486	42,650	43,642	49,601	45,495	54,393	93,443	46,858	65,529	107,329	48,275	77,985	122,535
Military	1,825	1,825	1,825	1,825	1,825	1,825	1,825	1,825	1,825	1,825	1,825	1,825	1,825	1,825	1,825
Air Taxi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	120,903	120,903	120,903	135,487	138,638	149,611	142,826	156,498	202,285	147,156	173,272	222,242	151,657	190,129	242,283
Based Aircraft															
Single-Engine	187	187	187	194	198	198	200	209	224	207	219	301	213	230	316
Multi-Engine	14	14	14	14	15	15	14	15	24	14	16	61	14	17	64
Turboprop	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7
Turbojet*	2	2	2	15	15	15	15	16	17	15	17	27	16	18	30
Helicopter	17	17	17	19	20	20	20	24	25	21	27	31	23	27	31
Other	3	3	3	3	3	3	3	3	3	4	3	3	4	3	3
Total	229	229	229	251	257	257	260	273	300	268	289	430	277	301	451

* Includes Eclipse Aviation turbojet aircraft.

Source: URS Corporation, 2002.

TABLE 5.15
SUMMARY OF AIRPORT PLANNING FORECASTS
Double Eagle II Airport
Master Plan Study

	A. Medium Forecast Levels and Growth Rates								
	Specify Base Year: 2001								
	Base Yr. Level 2001	Base Yr. + 1 yr. 2002	Base Yr. + 5 yr. 2006	Base Yr. + 10 yr. 2011	Base Yr. + 15 yr. 2016	Average Annual Compound Growth Rates			
						Base Yr. to +1	Base Yr. to +5	Base Yr. to +10	Base Yr. to +15
Passenger Enplanements									
Air Carrier	0	0	0	0	0	n/a	n/a	n/a	n/a
Commuter	0	0	0	0	0	n/a	n/a	n/a	n/a
TOTAL	0	0	0	0	0	n/a	n/a	n/a	n/a
Operations									
Itinerant									
Air Carrier	0	0	0	0	0	n/a	n/a	n/a	n/a
Commuter/Air Taxi	0	0	0	0	0	n/a	n/a	n/a	n/a
Total Commercial Operations	0	0	0	0	0	n/a	n/a	n/a	n/a
General Aviation	37,486	38,717	43,642	54,393	65,529	3.28%	3.09%	3.79%	3.79%
Military	1,825	1,825	1,825	1,825	1,825	0.00%	0.00%	0.00%	0.00%
Local									
General Aviation	81,592	83,908	93,172	100,280	105,918	2.84%	2.69%	2.08%	1.75%
Military	0	0	0	0	0	n/a	n/a	n/a	n/a
TOTAL OPERATIONS	120,903	124,450	138,639	156,498	173,272	2.93%	2.78%	2.61%	2.43%
Instrument Operations	730	730	840	840	840	0.00%	2.85%	1.41%	0.94%
Peak Hour Operations	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cargo/Mail	0	0	0	0	0	n/a	n/a	n/a	n/a
(enplaned+deplaned tons)									
Based Aircraft									
Single Engine (Nonjet)	188	191	199	210	220	1.60%	1.14%	1.11%	1.05%
Multi Engine (Nonjet)	19	19	20	21	22	0.00%	1.03%	1.01%	0.98%
Jet Engine	2	2	15	16	17	0.00%	49.63%	23.11%	15.34%
Helicopter	17	20	20	24	27	17.65%	3.30%	3.51%	3.13%
Other	3	3	3	3	3	0.00%	0.00%	0.00%	0.00%
TOTAL	229	235	257	274	289	2.62%	2.33%	1.81%	1.56%

TABLE 5.15 (Continued)
SUMMARY OF AIRPORT PLANNING FORECASTS
Double Eagle II Airport
Master Plan Study

	B. Medium Forecast Operational Factors and Growth Rates								
	Base Yr. Level 2001	Base Yr. + 1 yr. 2002	Base Yr. + 5 yr. 2006	Base Yr. + 10 yr. 2011	Base Yr. + 15 yr. 2016	Average Annual Compound Growth Rates			
						Base Yr. to +1	Base Yr. to +5	Base Yr. to +10	Base Yr. to +15
Average Aircraft Size (Seats)									
Air Carrier									
Domestic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
International	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Commuter	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Average Enplaning Load Factor									
Air Carrier									
Domestic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
International	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Composite	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Commuter	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
General Aviation Operations per Based Aircraft	520	522	532	565	593	0.35%	0.47%	0.82%	0.88%

Source: URS Corporation, 2002.