



Chapter 3 - Airside Analysis

3.0 INTRODUCTION

As part of the Airport Impact Analysis/Master Plan a forecast of aviation demand was prepared that projected enplaned passengers and aircraft operations through the year 2020. The forecast was unconstrained and represented the potential market demand for air service at Love Field (DAL) assuming that adequate facilities and procedures are provided. In terms of annual aircraft operations, the forecast projected the potential for over 476,000 operations by the year 2020. This compares to present levels of approximately 265,000 operations.

A key determinant of the ability of DAL to handle future traffic is the airside element. While the present runway layout would, under normal circumstances, be capable of providing a relatively high capacity, constraints posed by the proximity to DFW seriously affect the ability of the airport to process traffic. This working paper presents the analysis of airside capacity at DAL. As will be seen, the annual capacity of the present airfield is significantly less than the unconstrained forecast of aircraft operations. This capacity will be used as the basis for determining the Airport's constrained demand, which in turn will be used as the basis for developing the aircraft gate, terminal and landside facility requirements.

This report is one in a series of working papers being prepared as part of the Airport Impact Analysis/Master Plan and documents an airside analysis that was conducted as part of the work program. Following this brief introductory section, the report provides an overview of the regional airspace environment including the basic air traffic jurisdictions, terminal airspace boundaries, and major arrival and departure routes in Section 3.1. Section 3.2 describes airfield capacity and aircraft delay analysis used to develop demand-delay curves for DAL under different operating scenarios. Results of these analyses provide estimates of practical airside capacity which reflect the constrained demand needed to determine aircraft gate requirements and, subsequently, terminal and landside facility requirements.

3.1 REGIONAL AIRSPACE CONSIDERATIONS

The purpose of this section is to provide an orientation to the Dallas Metroplex airspace and define terms that are used in the airside analysis presented in this section. A description of Metroplex airspace jurisdiction, focusing on how airspace is allocated to Dallas/Fort Worth International (DFW) and DAL is provided, followed by a discussion on the various air traffic control facilities in the Dallas/Fort Worth Metroplex and the primary airspace routes to and from DFW and DAL.

3.1.1 Airspace Jurisdictions

“Controlled airspace” is a generic term that encompasses the different classifications of airspace specified in Federal Aviation Regulations (FAR) Part 71 within which air traffic control service is provided. The controlled airspace surrounding DFW and DAL consists of Class B and Class D airspace jurisdictions. The FAA defines these jurisdictions as follows (a discussion of Class C airspace is also included for reference):

Class B Airspace. Class B airspace is defined as the airspace surrounding the nation's busiest airports in terms of aircraft operations or passenger enplanements. The configuration of Class B airspace is individually tailored, but generally consists of a surface layer and two or more additional layers



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designed to contain all published instrument procedures associated with an airport. All aircraft that operate within Class B airspace must obtain air traffic control (ATC) clearances and receive separation services within the airspace. In addition, all aircraft operating within Class B airspace are required to carry certain communications equipment to ensure they can be monitored by air traffic controllers.

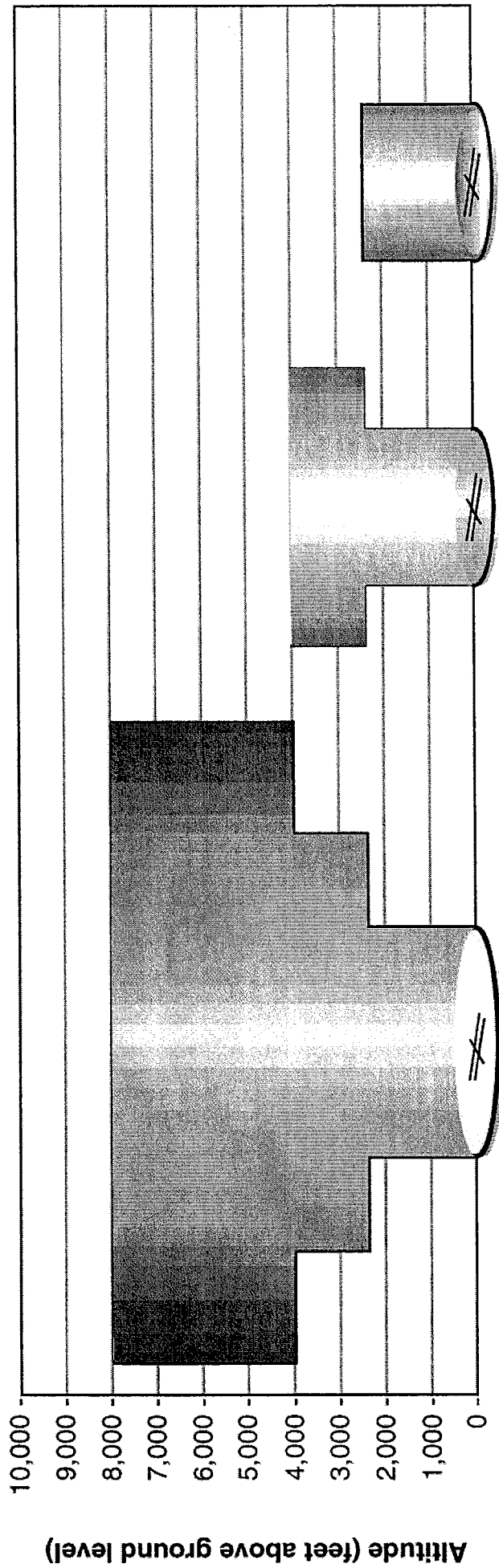
Class C Airspace. Class C airspace consists of the airspace surrounding airports that have an operational airport traffic control tower (ATCT), are serviced by radar approach control, and accommodate minimum levels of aviation activity as specified by the FAA.¹ Like Class B airspace, Class C airspace is individually tailored for the airports they serve. These airspace areas generally consist of a surface area with an additional layer above it, resembling an upside-down wedding cake. Pilots are required to establish two-way radio communications with the ATC facility providing air traffic services prior to entering Class C airspace and must maintain those communications while in the airspace. Within Class C airspace, air traffic controllers are required to separate aircraft operating under visual flight rules (VFR) from aircraft operating under instrument flight rules (IFR), but are not required to separate VFR operations from one another.

Class D Airspace. Class D airspace consists of the airspace surrounding airports that have an operational ATCT, but do not meet the other requirements necessary to be designated as Class C airspace. Class D airspace is individually tailored for each airport, but generally consists of a single layer that extends from the ground to an altitude of 2,500 feet above the airport's elevation. Air traffic controllers are not required to provide separation services to VFR flights within Class D airspace.

Figure 3-1 shows an idealized generic profile of Class B, Class C, and Class D airspace. This diagram does not represent the actual configuration of these classes of airspace in the Dallas Metroplex but does provide a basis upon which these airspace jurisdictions can be compared. As shown in the figure, Class B airspace extends higher than Class C and Class D airspace. The figure also shows how the various airspace jurisdictions are centered on the airports with which they are associated.

Figure 3-2 shows a plan view of the boundaries of Class B and Class D airspace in the Metroplex. The DFW Class B airspace consists of several layers that extend from the surface up to 11,000 feet above mean sea level (MSL). The DAL airspace is located totally within the DFW Class B airspace. Class D airspace jurisdictions are associated with Addison Airport, Redbird Airport, Fort Worth Meacham Field, NAS Fort Worth/Carswell, Alliance Airport, and McKinney Airport. Class D airspace is generally located beneath the Class B airspace associated with the principal air carrier airport. In addition, adjacent Class B airspace significantly influences the boundaries of Class D airspace. For

¹ FAA Order 7400.2D, Procedures for Handling Airspace Matters, specifies that Class C airspace should accommodate at least (1) 75,000 annual instrument operations at the primary airport, (2) 250,000 passenger enplanements at the primary airport, or (3) 100,000 annual instrument operations at the primary airport and any secondary airports within the Class C airspace.



LEGEND



DALLAS LOVE FIELD
AIRPORT MASTER PLAN



GENERIC AIRSPACE PROFILE
FIGURE 3-1

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