

## CHAPTER VII. OTHER FACILITY REQUIREMENTS

### 1. AIR CARGO FACILITY REQUIREMENTS

#### A. Existing Air Cargo Facilities

The three existing air cargo buildings comprise a total of 198,700 square feet.

A third cargo building, oriented east-west and on the north side of the cargo apron was completed in 1988. The building has approximately 78,700 square feet and a design annual capacity of approximately 32,800 total tons.

#### B. Future Requirements

Calculation of air cargo requirements utilized the FAA Advisory Circular 150/5360-2 for "Air Cargo Facilities" and the IATA Airport Requirements Reference Manual. Ratios of building area to weight of cargo enplaned were used in the calculations. Analysis for Sky Harbor shows that in 1986, the on-airport cargo buildings represented 2.9 square feet per enplaned total annual ton, a figure higher than the FAA and the IATA recommendations. In view of the forecasted increase of cargo activities, the current relationship of 2.9 square feet per total annual ton was used to determine future cargo facility requirements.

The U.S. Postal Service has recently relocated to the new Cargo Building C.

Table VII.1 shows the existing inventory of cargo building facilities and the facility requirements for each of the planning years.

This analysis indicates that there is adequate cargo building space through 1997. Currently, all space is leased and additional requests for space are pending. This apparent discrepancy is due to actual use of cargo space for other purposes, including general storage and equipment maintenance. The provision for airline use of areas designated for ground equipment maintenance may free some of this space for cargo handling. In the event that these non-cargo activities continue to be located in the cargo buildings, there will be a demand for additional space in the short-term.

The total available cargo apron area comprises several sections of apron separated by individual cargo facilities. The total area is approximately 171,111 square yards, including some 72,722 square yards east of the cargo facilities.

The cargo ramp, both east and west of the cargo buildings, is used for overflow parking of passenger air carrier aircraft. The city currently is reorganizing the miscellaneous activities on the north side of the east ramp to increase the operational effectiveness of the cargo apron. Any required expansion of the ramp after this is completed could occur either to the west (after Terminal 1 is

Table VII.1

## AIR CARGO BUILDING REQUIREMENTS, 1986-2007

|  | <u>Existing</u> | <u>Forecast</u> |         |         |         |
|--|-----------------|-----------------|---------|---------|---------|
|  | 1986            | 1992            | 1997    | 2002    | 2007    |
| Annual Tonnage                         | 36,976          | 51,600          | 65,400  | 80,140  | 98,200  |
| Sq. Ft. per Annual Ton                 | 2.9             | 2.9             | 2.9     | 2.9     | 2.9     |
| Required Cargo Bldg. (sq. ft.)         | ---             | 149,600         | 189,700 | 232,400 | 284,800 |
| Existing Cargo Bldg. (sq. ft.)         | 106,560         | 198,700         | 198,700 | 198,700 | 198,700 |
| Net Requirement <sup>a</sup> (sq. ft.) | ---             | ---             | ---     | 33,700  | 86,100  |

<sup>a</sup>Assumes that space in the cargo buildings is used exclusively for cargo functions.

Source: HNTB analysis.

removed) or to the east of the existing cargo apron.

Air cargo activity levels can fluctuate quickly, responding to decisions by individual companies to serve Phoenix. The requirements identified represent predictable, regular growth. If an unpredicted surge in demand were to occur in the future, the airport should be able to accommodate it. Room to expand beyond the above projected needs will be discussed in Chapter XI.

## **2. GENERAL AVIATION FACILITY REQUIREMENTS**

### **A. Existing Capacity**

General aviation aircraft at the airport are serviced by three FBOs. Aircraft are based at FBO hangars and tie-downs and in city-owned executive/corporate hangars, and additional facilities provided by the city. At the time of inventory (Fall 1987), there were approximately 400 aircraft based at the airport, including:

- 58 at FBOs
- 120 in small T-hangars
- 8 in large T-hangars
- 121 in open tie-downs
- 16 under covered tie-downs
- 32 in corporate/executive hangars

The forecasts of based general aviation aircraft predict a decrease in the based aircraft through the forecast period, from the current 355 (excluding corporate aircraft) to 206 in the year 2007. Therefore, no net increase in overall facilities is required.

### **B. Requirements**

The recent marked down-turn in general aviation activity is expected to continue. This is typical of major hubbing airports around the U.S. As pressures on the airfield become more intense during "banks" of incoming or outgoing commercial jet aircraft, the operating environment becomes less attractive for the private owner. The trend away from Sky Harbor to the reliever airports is one which is encouraged by the city as a matter of policy. Its purpose is to preserve the capacity of the air carrier airport for airline aircraft operations. Construction of new facilities which would attract light general aviation traffic is not proposed, although areas will be set aside for facilities for general aviation aircraft which must continue to operate out of PHX.

A summary of the general aviation facilities situation is as follows:

- There is currently a surplus of conventional corporate hangars. No more are proposed.
- There are deficiencies in covered tie-downs (25 units) and T-hangars (61 units), but additional facilities will not be constructed pending review of how demand changes over the next three to four years.
- Total tie-down spaces needed in the long-term will be 66, compared with 153 currently available. No new spaces will be planned.
- FBO apron areas are adequate for existing and future general aviation activity levels.
- Transient aircraft parking at the Executive Terminal accommodates 45-58 aircraft. This is adequate for future traffic levels.

### **3. SUPPORT FACILITY REQUIREMENTS**

#### **A. City Maintenance Facilities**

The maintenance facilities, located on a 6.5-acre site, on the west side of the airport, are scheduled to relocate to a site of approximately 8 acres to the immediate north of the existing facility. This facility, currently being prepared, will meet airport needs through 2007.

#### **B. Airline Maintenance Hangars**

There are currently two maintenance hangars on the airport: America West and DynAir.

The two-bay DynAir hangar is approximately 83,600 square feet and is located immediately southwest of Terminal 4. Large turbojet aircraft are maintained on a contract basis out of this facility. The lease on this area runs through 2004. After this year, the area is likely to be needed for expansion of Terminal 4. The America West hangar is part of that airline's new complex at the east end of the airport. It is approximately 104,200 square feet in four bays and is the location of America West's aircraft maintenance. The demand for aircraft maintenance facilities again is difficult to predict, resulting as it does from individual corporate decisions rather than routine growth tied to overall levels of airport activity. Opportunity for expansion of this function will be provided in the "aviation-related use" land use category.

#### **C. Fuel Storage Facilities**

The aircraft fuel supply is located at three separate Jet-A fuel storage areas. The principal airline facility, located in the northeast corner of the Airport, has a 2,520,000 gallon capacity. The above-ground city facility,

located near the DynAir hangar, has a 120,000 gallon capacity, and the underground city facility, adjacent to Terminal 1, has a 262,000 gallon capacity. The total Jet-A storage capability is 2,902,000 gallons. Approximately 5.5 - 6.0 million gallons of Jet-A fuel is pumped from these facilities in a typical month.

The standard for fuel storage capacity is a seven-day supply. The airport currently has a 15-day supply. It is anticipated that the current facilities will meet the needs throughout the forecast period. However, some consolidation of the fueling facilities will occur as a result of airport development which eliminates one or more of the smaller facilities. In the long-term, should fueling demand exceed the capability of the airline facility, it can be expanded at the present site.

#### **D. Airport Rescue and Firefighting Facility (ARFF)**

The firefighting and rescue equipment currently housed at the airport ARFF facility (formerly called the CFR facility) surpasses required Index D requirements, and actually meets Index E requirements, which would suffice for increased operations by B-747 aircraft. FAR Part 139 response time requirements to the mid-points of existing runways 8L-26R, 8R-26L, and to a future third runway can be met from the existing station.

The facility can remain at the existing location even with the construction of the northwest concourse of T-4, although this would involve minor restrictions on the use of the gates at the west side of this concourse and adjacent to the terminal. In the long-term, when the useful life of this facility is passed, it should be located, probably adjacent to T-3, immediately to the west of Taxiway Y.

In addition to the airport ARFF facility, a site for a remote fire station to the west of the airport has been identified by the city to serve the industrial park in this area. Although this station is not specifically required to meet FAA-mandated ARFF requirements, equipment located there will be available to supplement the ARFF during emergencies.

#### **E. Federal Aviation Administration Facilities**

The Air Traffic Control Tower (ATCT) is located in a separate building to the west of Terminal 3. The facility includes a one-story structure housing administrative offices and a 183-foot tall structure including a tower cab of 400 square feet.

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<sup>1</sup> Part 139 establishes requirements for ARFF vehicles' response times, and agent discharge rates according to the size of aircraft served. Index D covers aircraft less than 200 feet long in regular service (5 scheduled departures).

<sup>2</sup> Index E covers aircraft more than 200 feet long in regular service.

The FAA currently reports some technical line-of-sight problems relating to aircraft on Taxiway X. Current development of Terminal 4 and the proposed construction of Cross-Taxiway Y have the potential for worsening the situation. The need to relocate the tower from its current FAA-selected site is a possibility. Alternative sites are examined in Chapter XI.

The FAA Terminal Radar Approach Control (TRACON) facility is located in a separate building at a site on the west side of the airport. The consolidation of this facility with other FAA facilities, including Airways Facilities and the General Aviation District Office (GADO), should be considered by FAA in the formulation of long-term plans for Sky Harbor facilities.

#### **F. U.S. Postal Facility**

The U.S. Postal Service has requested a location for an airport postal facility of approximately 70,000 square feet. The optimum size would be 4.5 to 5.0-acres. The site should be accessible by private vehicles and trucks from the local highway system and by ramp vehicles directly to the passenger terminal ramps. The USPS is looking for a long-term (15-20 year) lease and prefers to develop the proposed new facility in the next five years.

#### **G. Airline Ground Equipment Maintenance Facilities**

Three airlines, USAir, TWA and Delta, have requested leases for the construction of small facilities for the maintenance of airline ground equipment. The areas required are less than one acre each.

#### **H. Airline Flight Kitchens**

The development of Terminal 4 and Taxiway BB require the removal of the Marriott and Sky Chefs catering facilities located south of Runway 8L-26R. Replacement sites for these flight kitchens are located at the west end of the airport between 24th Street and 24th Street relocated.