

SECTION C PUERTO RICO AIRPORTS

The airports which comprise the LATTs Strategic Airports System include those which provide service to Latin America and, therefore, are gateways for Latin American trade flows. The system also includes those airports which have the greatest potential for direct services to Latin America by the year 2020. Additionally, some airports of particular importance to Alliance members were included although their potential role in Latin American trade is thought to be limited.

In Puerto Rico, two airports were included in the LATTs Strategic Airport System. These are:

- ▶ Luis Munoz Marin International
- ▶ Rafael Hernandez

Both airports met or exceeded study strategic criteria.

GENERAL CHARACTERISTICS OF PUERTO RICO AIRPORTS IN THE LATTs SYSTEM

Rafael Hernandez Airport has one runway, 8-26, with 4,000 feet of apron. Operations totaled 8,936 for 1997. Specialized cargo facilities include on site Customs and livestock handling facilities. The airport has access to an interstate highway. Federal Express is the only all-cargo carrier, and serves the Caribbean, Central or South America.

Exhibit C-1 RAFAEL HERNANDEZ AIRPORT

1996/97 Airport Facilities/Activity Levels						
RUNWAY DATA			Strength (000)			
Runway	Length (ft)	Width (ft)	Single Wheel	Dual Wheel	Dual Tandem	Approach
08/26	11,701	200	155	235	455	Non-Precision
AIRCRAFT OPERATIONS 8,936						
CARGO BUILDING AREA 121,000 SF						

Luis Munoz Marin International's airside facilities include two runways, 8-26 and 10-28. The operations for 1997 were 183,960.

**Exhibit C-2
LUIS MUNOZ MARIN INTERNATIONAL**

1996/97 Airport Facilities/Activity Levels						
RUNWAY DATA			Strength (000)			
Runway	Length (ft)	Width (ft)	Single Wheel	Dual Wheel	Dual Tandem	Approach
8/26	10,002	200	100	200	350	Precision
10/28	8,016	150	100	200	350	Precision
AIRCRAFT OPERATIONS 183,960						
CARGO BUILDING AREA 572,850 SF						

INVESTMENT NEEDS FOR THE LATTS STRATEGIC AIRPORTS IN PUERTO RICO

Investment needs for the LATTS Strategic Airports were based on the estimated forecast increase in air cargo tonnage, with specific emphasis on the need for facilities to accommodate Latin American air cargo.

Baseline Freight Volumes

The initial element of the investment needs analysis was the establishment of the baseline year (1996) cargo tonnage and facilities usage for the LATTS Strategic Airports. A determination of total air cargo tonnage (international, Latin American, domestic, and mail) by state was developed. Domestic cargo and mail tonnage was obtained from Airports Council International. Total international air cargo tonnage was derived by using ACI or DRI International data, whichever was larger. Since the DRI data is for freight only and excludes mail and express, this approach was used to derive an international estimate that is more inclusive of other freight sectors.

Latin American air cargo tonnage was derived by determining the ratio between DRI Latin American tonnage versus DRI international flows, and applying that ratio to the derived total international air cargo tonnage. This approach resulted in a Latin American estimate that is inclusive of all freight sectors (even those not reported by DRI).

Puerto Rico's 1996 air cargo tonnage for derived international and derived Latin American air cargo was 36,515 tons and 20,311 tons, respectively. According to this calculation, international and Latin American air cargo represent 9.8 percent and 5.5 percent of air cargo tonnage for the commonwealth.

Baseline Cargo Buildings

An inventory of baseline year cargo building facilities in the Alliance Region and a determination of baseline year international and Latin American air cargo building utilization was undertaken as part of these analyses. A survey was conducted which documented existing cargo building area as reported by the airport or as identified in airport master plans. A cargo building utilization rate was determined for each state's air

cargo facilities by dividing reported cargo building area by estimated annual airfreight tonnage.

LATTS System airports in Puerto Rico have an estimated 693,850 million square feet of cargo building area and an overall utilization of 1.9 square feet of building area per ton of annual airfreight. For planning study purposes, a rate of 1.5 square feet of building area per ton of annual airfreight is generally used to assess adequacy of air cargo facilities. This utilization rate is based on an average utilization rate at major U.S. airports.

Air Cargo Forecasts

Air cargo forecasts for the Alliance Region for the forecast year 2020 were based on the forecasts produced as part of the LATTS study. In addition, a control total for total (international and domestic) 2020 air cargo traffic through the Alliance was derived by applying a growth rate to the 1996 ACI estimate. A average annual growth rate of 5.9% was used. This is based on published air cargo industry forecasts such as the Airbus Global Market Forecast (1999). Based on this, air cargo for the Alliance Region is expected to grow from a 1996 base of 9.4 million tons to over 35 million tons in 2020, an increase of 26 million tons. Of that, approximately 6 million tons is expected to be international air cargo, over half (3.7 million) of which is expected to be Latin American air cargo.

Puerto Rico's 2020 air cargo tonnage for derived international and derived Latin American air cargo is estimated to increase to 140,492 tons and 75,977 tons, respectively. By 2020 total international derived tonnage will increase to 10.1 percent of total air cargo tonnage. The percent of Latin American tonnage will also increase to 5.5 percent.

This forecast reflects the study decision that forecasts for individual Alliance members were to be based on 1996 shares among the Alliance members. Moreover, the forecasts are based on zero constraint assumptions. Therefore, these forecasts do not account for potential shifts among states due to market changes, capacity constraints, or any other reason. These forecasts were used as a basis to compute future capacity needs for the Region as a whole. Actual apportionment of future capacity investment among the member states is dependent on individual state efforts to capture a share of future capacity improvements and market.

Additional Cargo Building Requirements

The investment needs assessment analysis determined 2020 cargo building area requirements for each Alliance member. As previously noted, a cargo building utilization of 1.5 square feet per ton of annual airfreight was used for general planning purposes. Total cargo tonnage forecast for 2020 was multiplied by 1.5 to arrive at the amount of cargo building area needed. Existing 1996 cargo building area was then subtracted from this amount to determine the need for new cargo building square footage. For Puerto Rico, it was estimated that an additional 1,388,245 square feet of building area will be needed by 2020.

Cargo Ramp and Apron Requirements

New air cargo ramp/apron area that would be needed also was estimated. This estimate was based on new building square footage and aircraft parking/maneuvering requirements. One aircraft parking position per 45,000 square feet of new cargo building area was used to estimate new air cargo ramp/apron areas. Ramp/apron area determinations were based on an adequate parking position/maneuvering area for a Boeing 767-300 freighter, which equates to 8,000 square yards of apron/ramp area. This aircraft parking position area would provide sufficient apron/ramp area for a mix of smaller or larger cargo aircraft. For Puerto Rico facilities, an additional 246,799 square yards of new cargo apron will be needed by 2020.

Infrastructure Needs Cost Estimate

As a final component of the needs analysis, an estimate of infrastructure costs for new cargo building and ramp area was developed. New cargo building costs were based on \$80 per square foot. New ramp/apron area was based on \$90 per square yard.

Estimated cargo building and ramp/apron costs for Puerto Rico will be \$111 million and \$22 million respectively, or a total of \$133 million dollars needed by 2020. Overall total air cargo building square footage in Puerto Rico will need to increase by 300 percent to accommodate projected total 2020 air cargo tonnage.

SUMMARY

Puerto Rico is a major gateway to Latin America for passenger and cargo traffic. Significant growth in cargo activity is projected with accompanying needs in building space and apron area to accommodate cargo.

Expanding bulk cargo and cargo associated with passenger aircraft is viable with the LATTS airports and their expected expansions. Growth in neighboring Caribbean Islands and the need for Latin American goods could enhance the potential cargo trade in Puerto Rico, as it is a principal feeder to many of these islands.