FLORIDA'S GEOGRAPHIC ADVANTAGE

Airports with historically significant air cargo activity typically have geographic locational advantages which have made them successful in supporting the air cargo industry. Airports with air cargo hub activity typically are in a central location and may vary in scale from regional hubs to national and international hubs. In addition, airports with air cargo hub activity benefit from dense populations and manufacturing activity in the hub airport's market area to bolster additional cargo tonnages. A few of the world's largest cargo airports, however, function as intercontinental air cargo hubs but are located in relatively remote parts of the world away from dense populations.

As discussed in a previous section, airports with air cargo activity may have a functional role as either gateways to international destinations, intercontinental national or regional hubs or as origin and destination cargo airports. In some instances the airport may function in more than one functional role. An airport's location on the globe, as well as available customer base, are key factors air cargo carriers consider when choosing which airports to operate at. Attracting cargo carriers to airports is a difficult challenge fraught with competition from other airports, ensuring sufficient cargo demand and having adequate facilities and services.

This section of the report discusses the following:

- Aircraft range
- Great circle route by aircraft
- Polar routes by aircraft
- Remote intercontinental air cargo hubs
- International gateways
- Potential Intercontinental Air Cargo Hub Scenarios

AIRCRAFT RANGE

Improvements in aircraft manufacturing and design have led to aircraft that can fly longer distances and still transport a significant amount of payload. As a result, the number of international gateways has increased, and established gateways may now be bypassed. Prior to the advent of extended-range aircraft, most international gateways in North America were located along east and west coast cities. Aircraft with extended ranges, both passenger and cargo air carriers, are now able to fly from cities located in the interior United States such as Memphis, Indianapolis, and Denver to overseas destinations. For example, FedEx began operating in 1997 a nonstop flight from Memphis (MEM) to Osaka (KIX), over 6,800 miles in length.

Exhibit 1G identifies typical freighter aircraft and their maximum range used for air cargo transport. It should be noted that heavier payloads decrease the range of an aircraft as do weather conditions, but most cargo aircraft never reach more than 80 percent load factor due to cubic capacity being reached before weight capacity.

Exhibit 1G
Typical Freighter Aircraft Range

Freighter Aircraft Type	Aircraft Body Type	Max Range Nautical Miles	Max Range Statute Miles
B747-200F	Wide	4,000	4,603
B747-400F	Wide	7,670	8,724
MD-11F	Wide	4,450	5,122
757-200 Freighter	Narrow	2,737	3,150
767-300 Freighter	Wide	2,841	3,270
767-200ER	Wide	5,734	6,600
DC8-72F	Narrow	4,000	4,603
AB340	Wide	6,950	8,000
AB380	Wide	5,647	6,500
Source: Manufacture's Aircraft Technical Specifications			

GREAT CIRCLE ROUTE BY AIRCRAFT

Aircraft flying long distances typically navigate by flying what is known as the great circle route or path. The great circle route is the shortest distance between two places on the earth's surface. This is the assumed path that an aircraft takes on any given route since it's the most optimal path. When traveling, an aircraft will truly fly more than mileage calculated as a result of traffic, routing, and other logistical issues. However, the distance calculated by the Great Circle Map mileage calculator should be comparable to the official mileage as deemed by the air cargo carriers.

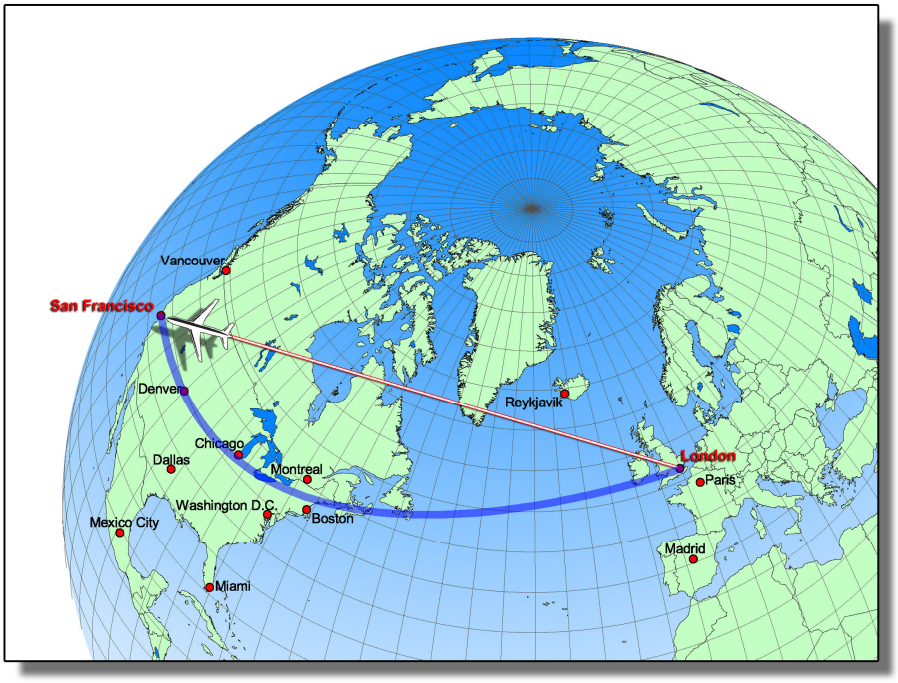
One might point out that the earth is not a actually a sphere and thus we are not truly calculating the great circle distance. This is technically true, however, geodesic path is the term that should describe the route. Great circle path or route is the common and popular terminology. Accordingly, there are minor errors in these calculations since the earth is not truly a sphere, although these are negligible for our purposes.

Exhibit 2G identifies a great circle route from London Heathrow International Airport (LHR) to San Francisco International Airport (SFO). On flat maps, drawing a straight line is an incorrect method of showing the shortest route, even though the line is “shorter” than the arc of the great circle. This is the result of the two-dimensional flat map representing a three-dimensional sphere and distortions associated with the projection of the globe. Exhibit 1G identifies the arc as passing over the southern tip of Greenland, which is a common occurrence for flights from North America to Europe. As illustrated in the world diagram in **Exhibit 3G** the great circle route (upper route) is shorter than the route, which looked straight on the flat map (Exhibit 2G). One can also imagine the upper route as being part of a bigger circle going all the way around the earth.

Exhibit 2G
Great Circle Route LHR to SFO

Source: Wilbur Smith Associates

Exhibit 3G
Great Circle Route LHR to SFO



Source: Wilbur Smith Associates

POLAR ROUTES BY AIRCRAFT

Nonstop flights between North America and Asia via the North Pole, while long recognized as advantageous, have become practical with the advent of long range jet aircraft. These routes are known as polar routes since many of them cross over the Arctic Ocean when flying from Asia to Europe and North America. For example, a flight from Anchorage to London may pass over the southern portion of the Arctic Ocean and northern Greenland, as illustrated in **Exhibit 4G**. In addition, increased access to Russian airspace, the gradual liberalization of bilateral air traffic agreements, and growing demand for international service to and from Asia are among the factors that have helped make the new routes viable.

Canadian Airports Council has also recognized the potential of polar routes:

> Polar routings have long been recognized as offering greater economies than traditional routings between Asia and North America. The technical and political impediments to their widespread use are being addressed, and demonstration flights have confirmed the viability and economics of such routings. This has the potential not only to shake up traditional routings but also to change which airports are used as gateways to North America as well.[1]

The governments of Russia, China, Canada, and the United States are continuing to develop the polar route system through the ongoing activities of the Russian-American Coordinating Group for Air Traffic. Support from the airlines through the International Air Transport Association (IATA) has been very important and will continue to be critical to the future development of the polar route system.

Exhibit 4G
Polar Route ANC to LHR

Source: Wilbur Smith Associates, Great Circle Mapper

[1] *Air Cargo Issues-A Discussion Paper*, Canadian Airports Council, December 2000.

Remote Intercontinental Air Cargo Hubs

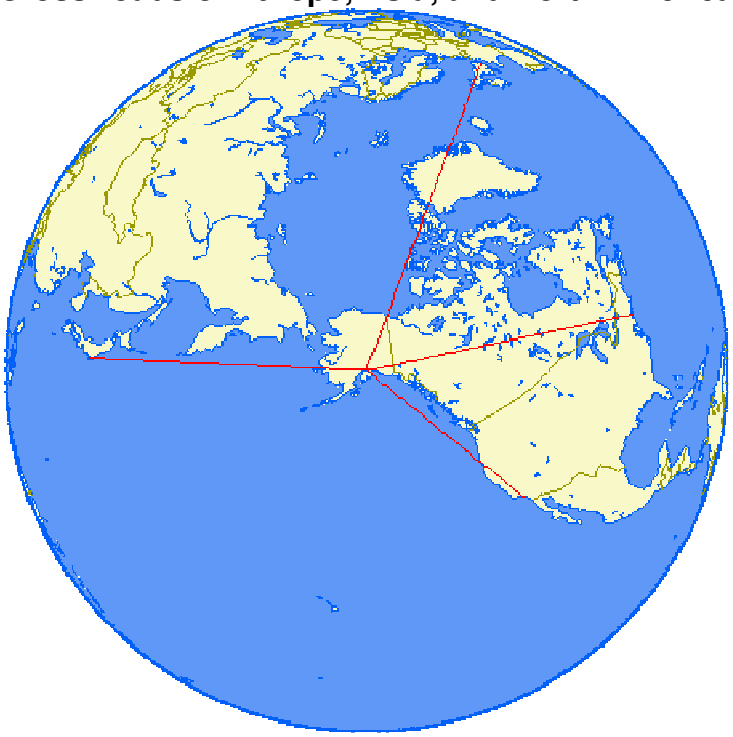
Several passenger airports in the world have developed into significant air cargo airports by taking advantage of their airport's strategic location. Three airports where air cargo is activity has increased as a result of the airport's strategic location on the globe include:

- Ted Stevens Anchorage International Airport, Anchorage, Alaska, USA
- Dubai International Airport, Dubai, United Arab Emirates
- Changi International Airport, Singapore, Singapore

Ted Stevens Anchorage International Airport

Anchorage's location at the cross-roads of Europe, Asia, and North America continues to make Ted Stevens Anchorage International Airport (ANC) a top-ranked air cargo airport in North America and the world (see **Exhibit 5G**). According to Airports Council International (ACI), ANC ranked fourth in the world in air cargo tonnage in 2003[2] with 2,102,025 metric tons of cargo and an 18.7 percent increase over 2002. Operators of B747 freighters and other wide-body aircraft maximize payload and avoid payload penalties by utilizing great circle routings that naturally include Anchorage. Over 25 European, Asian, and North American cities are currently linked by direct scheduled cargo flights to and from Anchorage.

Exhibit 5G
Ted Stevens Anchorage International Airport (ANC)
Cross-roads of Europe, Asia, and North America



Source: Wilbur Smith Associates, Great Circle Mapper

[2] 2004 data was released by ACI midway through this study period.

In 1957, SAS began polar service from Copenhagen (CPH) to Tokyo (NRT) via Anchorage. From that time through the mid-1980s, flights through the polar region increased as Anchorage became the primary stopping point for passenger traffic between Europe and East Asia. In the early 1990s, international passenger traffic declined at the airport as a result of longer-range aircraft and international geopolitical changes affecting airspace issues over Russia and other nations. In the late 1980s, FedEx bought Flying Tiger Airlines which had a hub at ANC. In 1989-90, FedEx and UPS established a major transpacific sorting hubs in Anchorage and air cargo volumes increased substantially.

At the end of 1996, FedEx expanded its international sorting complex while UPS tripled the size of its North Air Park facility at ANC during 1996 and 1997. Also during the mid –1990s, United Airlines selected Anchorage as its primary Pacific hub for its new Asia/North America international freighter service. In addition, Alaska Airlines constructed an $8 million freight facility in Anchorage, while Polar Air Cargo significantly increased its cargo sort at Anchorage as a result of their new frequencies to Japan. By 2000, KLM and Northwest Airlines (NWA) Air Cargo decided to mesh their respective freighter timetables so that flights would meet in Anchorage. Both carriers were already in ANC, but their schedules were not coordinated. In 2001, NWA initiated a Cincinnati (CVG) to ANC to NRT route, with 50 percent of the capacity contracted by DHL Worldwide Express. Today, attempts are being made to target the Anchorage Airport's area potential for light manufacturing and high tech assembly as a complementary activity to the expanding air cargo industry.

Dubai International Airport

Dubai International Airport (DXB) has always benefited from its strategic location at the crossroads of trade and commerce between East and West. Dubai is the gateway to growing markets that spans the Mid East, North, East and South Africa, the Indian Subcontinent and Western and Eastern Europe. According to Airports Council International (ACI), DXB ranked 18th in the world in air cargo tonnage in 2003 with 956,795 metric tons of cargo and a 21.9 percent increase over 2002. All types of commodities are accommodated at the airport. A growing garment industry in the Mid East utilizes the airport as does the oil and gas industry. A new flower center which opened in 2004 routes cut flowers from Africa and India directly to Japan and the Far East saving precious shelf life and increasing the export market out of Dubai. **Exhibit 6G** identifies the location of DXB to other air cargo gateways.

Dubai's growth has been both driven and mirrored by its national flag carrier, Emirates Airlines. Emirates has grown from shipping just 2,000 tons of cargo in 1985, its first year of operations, to 660,435 tons in fiscal year 2003-04, the latter representing a 26 percent increase from the previous year. Serving 75 cities across the globe, Emirates is the first airline to offer a direct flight between the Mid East and North America, as they began their New York City – Dubai route in June 2004. It is estimated that the Emirates Group, which consists of Emirates Airline, Emirates SkyCargo, Dnata Travel Agency and Emirates' Destination and Leisure Management division, contributed $3.6 billion to the U.A.E. economy during 2003. In addition, in the late 1990s FedEx and DHL built airside facilities on the north side of the airport.

Exhibit 6G
Dubai International Airport (DXB)
Cross-roads of Europe, Asia, and Africa

Source: Wilbur Smith Associates, Great Circle Mapper

Changi International Airport, Singapore

Geographically, Changi International Airport (SIN) is at the center of an emerging growth region situated between China and India. In fact, the presence of 1,200 Chinese and 1,400 Indian companies in Singapore testifies to this. As a result of the robust growth, as well as growth in the Asia-Pacific Region, Changi International Airport has experienced significant growth in its air cargo hubbing activity. According to Airports Council International (ACI), SIN ranked 8th in the world in air cargo tonnage in 2003 with 1,795,646 metric tons of cargo and a 10.0 percent increase over 2002. In 2004, over 70 airlines called at the airport, providing over 3,700 scheduled flights each week which connect Singapore to 175 cities in 55 countries. Of these 19 airlines have freighter operations. Singapore Airlines is the dominant air cargo carrier at the airport. **Exhibit 7G** identifies the location of SIN to other air cargo gateways.

Exhibit 7G
Changi International Airport (SIN)
Cross-roads of Asia, India and South Pacific

Source: Wilbur Smith Associates, Great Circle Route Mapper

Singapore is often used as the regional base for the Asian and international operations of overseas companies. Singapore is consistently ranked one of the best places in the world for doing business. As well as factors cited, such as infrastructure and telecommunications facilities, office rents and investment costs, investors find Singapore attractive because of the tax breaks they get for setting up regional headquarters in the country.

INTERNATIONAL GATEWAY ROUTES

Polar routes and intercontinental air cargo routes typically operate from one international gateway to another. An air cargo gateway is similar to a passenger airline hub airport, but relies on the airport's market area, as well as surrounding markets several hundred miles away, to generate sufficient air cargo volumes to justify scheduled air cargo aircraft operations. Gateway airports function as consolidation, distribution, and processing points for international air cargo and are very reliant on the freight forwarder industry. As with an air cargo hub, the majority of material moving through a gateway airport does not originate from, and is not destined for, that gateway airport's surrounding market area. It should be noted, however, that it is very beneficial for gateways to be located in large cities to tap into the local market area's air cargo demand. For example, DHL estimates that 33 percent of their freight in the Miami gateway is derived in the local market area and the remainder is trans-loaded[3] freight.

All-cargo carriers may intentionally create routes with a stop in a second market before arriving at the carrier's hub or final destination. This routing serves two markets with aircraft service and maximizes the average payload on the freighter. Markets with shared aircraft, however, generally have earlier cutoff times for customers and later arrival times into the hub since the stop usually is 30 minutes in length for a domestic narrow-body cargo aircraft and two hours for a wide-body intercontinental aircraft. DHL operates a considerable number of domestic routes with a stop. Air cargo routes with stops also extend the "range" of an aircraft, but at a cost of losing time. Northwest Airlines, FedEx, and UPS have stops in Anchorage, Alaska, to refuel and transfer cargo. A stopover that just involves refueling or crew change-out is referred to as a technical stop or "tech" stop. Aircraft making tech stops in Anchorage are usually older B747-200 aircraft and DC8s, which lack the range of newer extended-range aircraft.

Occasionally a cargo carrier will add a stop to an existing route if demand warrants and aircraft capacity is available on the aircraft. For example, CargoLux added Calgary (YYC) as a stopover on flights out of Seattle (SEA) that go on to Prestwick International Airport (PIK) near Glasgow, Scotland, and then Luxembourg (LUX).[4] This flight operates three times a week. The YYC stop added only 26 miles to the entire route. Alberta's mainstay livestock and energy industries provide the economic anchor for the flights. PIK is a jump-off point for the oil fields of the North Sea, as well as a semiconductor-manufacturing base for IBM. CargoLux is the only main-deck, full freighter currently linking Canada and Europe.

Airlines may also move a second stop to a different airport in order to save time and operating costs. During the first Gulf War, Lufthansa Air Cargo, faced with escalating fuel costs, rerouted a Frankfurt–Anchorage-Tokyo (FRA-ANC-NRT) route to stop in Fairbanks (FAI) rather than ANC. The FAI tech stop saved the carrier from flying an additional 200 miles.

[3] Trans-loaded freight is freight transferred between aircraft at the airport.

[4] *Western Space Race*, Air Cargo World, February 2002

Intercontinental Hub Scenario

This scenario was developed to compare whether select airports offer location advantages to function as an intercontinental air cargo hub similar to Anchorage, Dubai, or Singapore. The distances from the top 10 air cargo gateways in North America, Europe and Latin America[5] to five select airport locations[6] in the eastern U.S were calculated and total distances between gateways and the hub were derived. The airports analyzed include:

- JFK International Airport, New York City, New York
- The Global Transpark, Kinston, North Carolina
- Miami International Airport, Miami, Florida
- Luis Munoz Marin International Airport, San Juan, Puerto Rico
- New Orleans International Airport, Louisiana

These airports were selected since they either function today in some capacity as an intercontinental cargo airport serving North America, Europe, and Latin America, or they could potentially function as such and would compete for air cargo business.

Using great circle routing analysis distances traveled from the top 10 cargo airports in Latin America, the top 10 cargo airports in Europe and the top 10 cargo airports in North America were analyzed. Distances from these airports to the five select hub airports identified above were calculated and then compared. If an airport was less than 135 miles from a hub it was assumed that route would be trucked. The results of the analysis are identified in **Exhibit 8G**.

Exhibit 8G
Intercontinental Air Cargo Hub Scenario
Total Aircraft Distance Traveled

Airport	Number of Aircraft Routes Required^	Total Distance* Traveled by All Aircraft to Intercontinental Hub	Variance in Miles Flown	Average Distance Per Air Route	Miles Flown Efficiencies In Percent
JFK International	28	85,371	0	3,049	0.0%
Global Transpark, NC	30	85,667	296	2,856	-0.3%
Miami International	29	89,620	4,249	3,090	-5.0%
San Juan International	29	89,815	4,444	3,097	-5.2%
New Orleans International	30	94,824	9,453	3,161	-11.1%

*Based on aircraft flying the great circle route one way to intercontinental hub.
^Routes less than 135 miles are trucked in each scenario thereby impacting the number of aircraft routes required.
Source: Wilbur Smith Associates, Great Circle Mapper

[5] Latin America Region is defined as Caribbean, Latin America including Mexico and South America nations.
[6] These airports were selected since they are more centered geographically between the three continents.

JFK International Airport

JFK is the most central location with a total distance of 85,371 miles to the top 10 airports on each of the three continents. The average distance to each continental gateway is 3,049 miles and a total of 28 air routes are required to service the network. Airports in the New York Metro Area John F. Kennedy International and Newark Liberty International (JFK & EWR) would be serviced by truck. It is noteworthy to point out that although JFK is further north in latitude, flight distances to Europe are shortened and South American airports are actually to the south and east of JFK which cuts off some distance. South America is unique in that its location is actually southeast of North America and could actually be named "Southeast America." **Exhibit 9G** identifies the air routes to the continental gateways and is centered on JFK.

In 2003, JFK ranked number nine in the world in air cargo tonnage and number five in North America. Today, the airport serves as an intercontinental hub and is served by passenger and all cargo carriers from all three continents analyzed.

Exhibit 9G
Intercontinental Hub Located at JFK Serving Three Continents

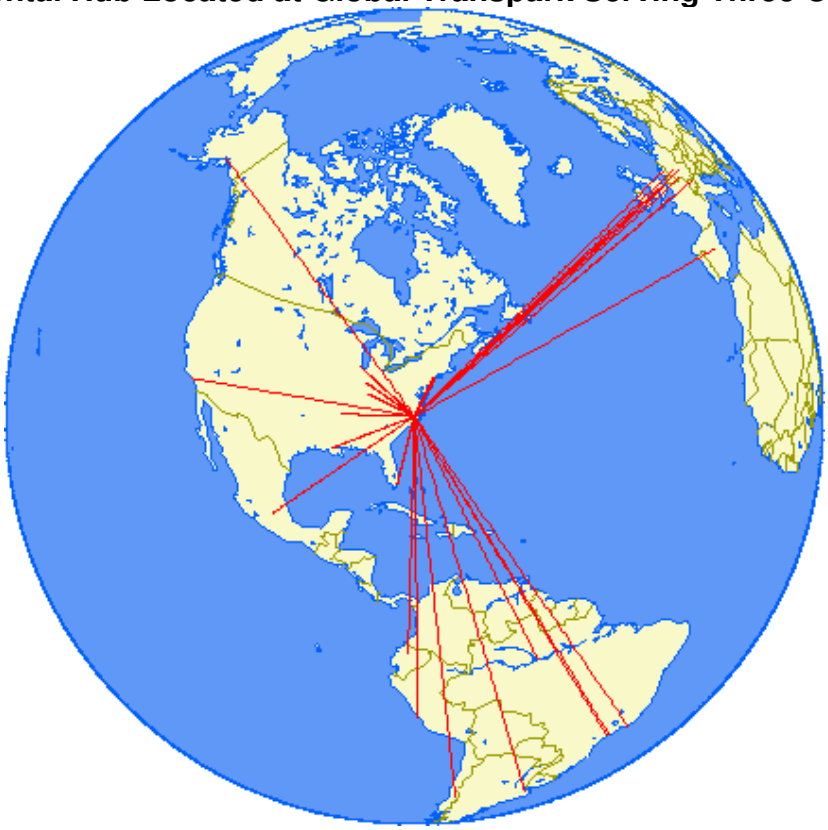
Source: Wilbur Smith Associates, Great Circle Route Mapper

The Global Transpark

The Global Transpark (ISO) is located on the eastern seaboard in Kinston, North Carolina, and has vigorously pursued the development of air cargo even being called an air cargo airport by economic development officials and airport management from it inception. Interestingly ISO is

the second most central location with a total distance of 85,667 miles to the top 10 cargo airports on each of the three continents from the intercontinental hub resulting in a variance of 296 miles. This variance is a negligible 0.3 percent. The average distance to each continental gateway is 2,856 miles but a total of 30 air routes are required to service the network. **Exhibit 10G** identifies the air routes to the continental gateways and is centered on ISO. Although ISO is in an optimal location to serve three continents as an intercontinental hub it has yet to be utilized by any international air cargo carriers since its development in 1991.

Exhibit 10G
Intercontinental Hub Located at Global Transpark Serving Three Continents



Source: Wilbur Smith Associates, Great Circle Route Mapper

Miami International Airport

Miami International Airport (MIA) is located on the southeastern tip of the Florida peninsula. The airport has served an air cargo role since the airport was developed in 1929. MIA is the third most central location in this analysis with a total distance of 89,620 miles to the top 10 cargo airports on each of the three continents from the intercontinental hub resulting in a variance of 4,249 miles. This is a variance of -5.0 percent indicating it is less efficient in aircraft utilization. The average distance to each continental gateway is 3,090 miles and a total of 29 air routes are required to service the network. **Exhibit 11G** identifies the air routes to the continental gateways and is centered on MIA.

In 2003, MIA ranked eighth in the world in air cargo tonnage and fourth in North America. Like JFK, MIA serves as an intercontinental hub and is served by passenger and all cargo carriers from each continent analyzed in this scenario.

Exhibit 11G
Intercontinental Hub Located at Miami International Serving Three Continents

Source: Wilbur Smith Associates, Great Circle Route Mapper

Luis Munoz Marin International Airport, San Juan, Puerto Rico

Air cargo is a significant industry at Luis Munoz Marin International Airport, (SJU) in San Juan, Puerto Rico. The airport is an air cargo distribution center for points in North America and the Caribbean. SJU ranked as the fourth most central location in this analysis with a total distance of 89,815 miles to the top 10 cargo airports on each of the three continents from the intercontinental hub resulting in a variance of 4,444 miles. This is a variance of -5.2 percent indicating it is less efficient in aircraft utilization than JFK. The average distance to each continental gateway is 3,097 miles and a total of 29 air routes are required to service the network. **Exhibit 12G** identifies the air routes to the continental gateways and is centered on SJU. The recent closing of Roosevelt Roads Naval Air Station on the Island has generated interest in converting the base into an air cargo distribution center.

In 2003, SJU ranked 68th in the world in air cargo tonnage and fourth in Latin America. Many U.S.-based manufacturing firms have elected to take advantage of Puerto Rico's relatively well-educated and inexpensive labor force and favorable tax laws to set up plants in the

Commonwealth. Chief among these industries are the pharmaceuticals and medical instruments industries, with well-known names such as Abbott, Baxter, Bristol-Myers-Squibb, Ethicon, Lilly, Medtronic, and Pfizer, among others, all located on the Island. Pharmaceuticals comprise a significant portion of the air cargo commodities at SJU.

Exhibit 12G
Intercontinental Hub Located at San Juan PR Serving Three Continents

New Orleans International Airport (MSY)

New Orleans International ranked as the least central location for an intercontinental hub airport in this analysis. A total distance of 94,824 miles is required to reach the top 10 cargo airports on each of the three continents from the intercontinental hub resulting in a variance of nearly 9,500 miles. This is a variance of -11.1 percent and indicates it is the least efficient in aircraft utilization. From New Orleans, average distance to each continental gateway is 3,161 miles and a total of 30 air routes are required to service the network. **Exhibit 13G** identifies the air routes to the continental gateways centered on MSY.

Based on the intercontinental hub analysis, competing airports on the eastern seaboard and Caribbean have locational advantages over New Orleans due to their proximity to Europe and South America.

Exhibit 13G
Intercontinental Hub Located at New Orleans Serving Three Continents

Source: Wilbur Smith Associates, Great Circle Route Mapper

LATIN AMERICA – NORTH AMERICA INTERCONTINENTAL HUB SCENARIO

This Latin America – North America intercontinental hub scenario is similar to the previous intercontinental scenario but does not include European air cargo gateways in the equation. The scenario was developed to determine the location advantages of five select airports to function as an intercontinental air cargo hub serving as an air cargo gateway in North America and Latin America. The distances between the top 10 air cargo gateways in North America, and Latin America[7] and five select hub airport locations in the eastern U.S were calculated and total distances between gateways and the hub were derived. **Exhibit 14G** Identifies the Airports, associated city and country in rank order.

[7] Latin America includes Caribbean, Latin America including Mexico and South America.

Exhibit 14G
Location Analysis For Air Cargo Hub Airport Serving Top 10 Air Cargo Gateways In North America And Latin America

Latin America			North America		
ID	City	Country	ID	City	Country
GRU	Sao Paulo	Brazil	MEM	Memphis	USA
SCL	Santiago	Chile	ANC	Anchorage	USA
MEX	Mexico City	Mexico	LAX	Los Angeles	USA
SJU	San Juan	USA	MIA	Miami	USA
LIM	Lima	Peru	JFK	New York	USA
CPQ	Campinas	Brazil	SDF	Louisville	USA
EZE	Buenos Aires	Argentina	ORD	Chicago	USA
UIO	Quito	Ecuador	IND	Indianapolis	USA
GIG	Rio de Janeiro	Brazil	EWR	Newark	USA
MAO	Manaus	Brazil	ATL	Atlanta	USA

Source: Airports Council International

The hub airports examined include:

- JFK International Airport (JFK), New York City, New York
- The Global Transpark, Kinston (ISO), North Carolina
- Miami International Airport, Miami(MIA), Florida
- Luis Munoz Marin International Airport (SJU), San Juan, Puerto Rico
- New Orleans International, Louisiana (MSY)

These hub airports were selected since they either function today in some capacity as an intercontinental cargo airport serving North America and Latin America or they could potentially function as such and would compete for air cargo business.

Using great circle routing analysis, distances traveled from the top 10 cargo gateway airports in Latin America, and the top 10 cargo gateway airports in North America were calculated to the five hub airports. Distances from these top 20 gateway airports to the five select hub airports identified above were calculated and then compared. If a top gateway airport was less than 135 miles from a hub airport analyzed it was assumed that route would be trucked. The results of the analysis are identified in **Exhibit 15G**.

Exhibit 15G
Intercontinental Hub Scenario (Latin America and North America)
Total Aircraft Distance Traveled

Airport	Number of Aircraft Routes Required^	Total Distance* Traveled by All Aircraft to Intercontinental Hub	Variance in Miles Flown	Average Distance Per Air Route	Miles Flown Efficiencies In Percent
Miami International	19	43,005	0	2,263	0.0%
Global Transpark	20	44,712	1,707	2,236	-4.0%
New Orleans Int'l	20	45,836	2,831	2,292	- 6%
San Juan International	20	45,980	2,975	2,299	- 9%
JFK International	18	48,340	5,335	2,686	-12.4%

*Based on aircraft flying the great circle route one way to intercontinental hub.
^Routes less than 135 miles are trucked in each scenario thereby impacting the number of aircraft routes required.
Source: Great Circle Mapper, Wilbur Smith Associates

Results of the analysis indicate MIA is the most geographically central hub when compared to the other four US airports. Total distance traveled from the top 20 gateways to the hub one-way on a daily basis is calculated at 43,005 miles utilizing 19 aircraft. The average distance traveled to MIA by aircraft is 2,263 miles. When comparing the routes flown to an intercontinental hub at New Orleans from the same 20 cargo gateways, the distance traveled to the hub one-way on a daily basis by 20 aircraft is 45,83 This indicates the New Orlean hub would be 6 percent less efficient than the Miami intercontinental hub. As a result of its northern location, the proposed intercontinental hub at the JFK is the least efficient of all four hub locations, coming in 12.4 percent less efficient.