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BY THE VIRGINIA ECONOMIC DEVELOPMENT
PARTNERSHIP AND THE DEPARTMENT OF AVIATION

Southwest Virginia
Air Freight Feasibility Study

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

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Southwest Virginia Air Freight Feasibility Study
For
Virginia Highlands Airport & Lonesome Pine Airport

Table of Contents

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Executive Summary

This study, requested by the 2004 General Assembly, examines the feasibility of developing an air freight center at the Virginia Highlands Airport in Abingdon, Virginia, or at the Lonesome Pine Airport in Wise, Virginia. As outlined by the General Assembly, this review contains

- an analysis of the air cargo industry as a whole;
- survey results of businesses in both regions to ascertain current use and potential demand;
- an inventory of the current infrastructure and capacities of the two airports;
- the identification of infrastructure improvements that would be required at the respective airports, as well as adjacent improvements to house potential air freight businesses;
- an enumeration of all impediments to such development; and
- a recommendation as to which airport would better serve as an air freight center.

Today, the air cargo industry in the United States is a somewhat fragmented activity marked by much ambiguity regarding movement of goods by ground versus movement of goods by air. In other words, a package may be shipped by what appears to be air, but is never actually airborne. This is a result of the industry coming to the conclusion that distances and time frames once thought to be cost effective for using the air mode needed to be reconsidered. When this analysis was performed, previous parameters that automatically dictated the use of air have become more flexible, such that now, the more cost effective option for certain trip lengths is often to use some form of ground transportation, while still branding the service as "air cargo." Consequently, cargo is not necessarily broken down or referred to as ground vs. air much any more - except when the distances of either *transcontinental* or *intercontinental* are brought into the equation.

The air cargo industry, or at least that portion of it that is definitively measured as air cargo, is growing at a steady rate. This is in part due to the increasingly popular trend of retail shopping on the Internet, as well as the inventory process methodology known as "just in time delivery." Air cargo growth rates are forecast to be approximately 2%, on an average annual basis, for the domestic market during the next five years. Time sensitive goods that carry a relatively high value represent a large segment of dedicated air freight in the market today.

Business Demand Survey

An air freight demand survey was conducted to gauge business demand for air cargo service in the Southwest Virginia region. A total of 42 responses were received. The Appendix contains the survey questions and a summary of the data collected. Taken both individually and in aggregate, both study communities seem to be very pleased with their current level of air freight service – 90% of all respondents indicated that their overnight shipping needs are currently being met.

Findings

The Virginia Highlands Airport and the Lonesome Pine Airport both appear to possess adequate existing infrastructure to be the host of what is termed "feed" or "tertiary" cargo nodes to a dedicated secondary or primary level air cargo hub. Likewise, the two airports could also serve as host for a route representing a singular source of demand on a point-to-point basis. However, the two airports differ in their road access attributes and the level of inherent cargo demand they possess in their respective market areas.

Although both could handle the establishment of scheduled air cargo service at the tertiary level, neither is likely to do so in the current or future market environment. Air cargo services currently offered in the region act to mitigate the advantage of establishment of a new destination node and corresponding spoke to networked hub. Those services, along with the trend toward the utilization of ground transportation, act as impediments standing in the path of a possible initiation of regularly scheduled cargo service.

In the final analysis of the two airports identified by the General Assembly, the Virginia Highlands Airport would be the more plausible location should such regularly scheduled cargo service be needed.

Legislative Background

The Virginia General Assembly, through a budget amendment (Item 95#1c) in the FY 2005 budget, has requested an:

I. "examination of the feasibility of developing an air freight center at the Virginia Highlands Airport in Abingdon, Virginia, or the Lonesome Pine Airport in Wise Virginia."

The budget amendment further stipulates that:

II. "such feasibility review shall identify infrastructure improvements that would be required at the respective airports, as well as adjacent improvements to house potential air freight businesses."

Finally, the General Assembly directed that:

III. "the resulting report shall include an enumeration of all impediments to such development, a recommendation as to which airport would best serve as an air freight center, and a preliminary plan for the development of an air freight center."

The task of researching and compiling the report was assigned to the Secretary of Commerce and Trade with assistance to be provided by the Department of Aviation.

Air Freight Industry Background & Status

The air freight industry dates back to the evolution of the first packages transported commercially: the carriage of the U.S. mail in the 1920's. Because of the weight sensitive nature of airlifting goods, the statistics for movement of cargo by air are fairly nominal when compared to cargo moved by other transportation modes. Although this is still true in terms of raw tonnage, the value of air freight has increased dramatically over the years.

Four primary methods of transporting air cargo commercially have evolved over time and each is still in operation in the industry today.

- The first method is that of the "dedicated" air freight carriers, who have been in existence since the post WWII era. These are carriers who fly aircraft configured solely for the purpose of hauling packages and goods.

- Secondly, as commercial jet aircraft became more of the norm in terms of airline fleet composition during the early 1960's, an increasingly greater portion of air freight was carried in the "bellies," or cargo holds, of passenger aircraft.

- The third method is the emergence of the "express package" air freight service, which did not present itself as a consumer option until the 1970's. Over time, these carriers have grown from providing a dedicated overnight service in the small package business, to businesses that now ship in many modes.

- A fourth component of the industry is the emergence of air freight forwarders. These firms consolidate cargo, and then decide on the optimum source of transport and distribution from origin to destination. Data from forwarders is more difficult to track than that of dedicated carriers or express carriers.

Historically, freight transportation demand was segmented by mode: air, ocean, truck, and rail. Today, however, modal boundaries are blurring. For example, a substantial amount of regional "air express" traffic never gets airborne because trucks can offer similar door-to-door transit times and reliability at a fraction of the cost. Therefore, freight movement by truck has been increasingly used as a substitute for air cargo in the United States. According to recent Boeing Air Cargo World Forecasts, the amount of freight in the U. S. grew by 4.5%, between 1995 and 2000, while airfreight grew by only 1.9% annually over the same period. Much of that discrepancy, as alluded to above, can be traced to the shift from air to ground in the short to medium stage length trip of the package.

Air Freight Industry Growth Forecasts

Forecasts produced by the Boeing Commercial Aircraft Group are often cited as an industry standard for establishing reliable and practical forecasts for the amount of activity the air cargo industry will receive. The 2004 – 2005 global forecasts produced by Boeing demonstrate that air cargo shipments have recovered from the downturn experienced in the wake of the September 11th terrorist attacks. The global market showed surprising strength in 2003, with annual growth of nearly 4%. Also encouraging is the unusual market strength indicated by a further 10.7% increase in worldwide traffic for the first five months of 2004, compared with the same period in 2003.

Most industry analysts agree that economic activity, as measured by world gross domestic product (GDP), remains the primary driver for air cargo industry growth. Consequently, Boeing forecasts that world air cargo traffic will expand at an average annual rate of 6.2% for the next two decades, tripling over current traffic levels. Asian air cargo markets will continue to lead the international air cargo industry in average annual growth rates, with the domestic Chinese and intra-Asian markets expanding 10.6% and 8.5% per year, respectively.

Brian Campbell, President of Campbell Hill Aviation, an aviation and economic research consulting group, is a nationally known expert on the air cargo industry. Mr. Campbell, who was interviewed for this study, emphasizes that the trend of shipping via truck will continue to grow in medium and short haul markets. He notes that this trend began in the late 1990's and continues in earnest today. Time, rather than distance, is one threshold for shippers when deciding on one mode over another, he observes. Therefore, there will be fewer opportunities for airports at the tertiary "feed" level to serve as the destination of regularly scheduled cargo deliveries.

Tertiary destinations refer to the site of a regularly scheduled service that offers a collection of cargo feed to a dedicated hub. An example of this in Virginia would be the scheduled service that occurs at Roanoke. A secondary node would be essentially a lower tier hub, as is being planned in Greensboro, North Carolina by FedEx. A primary node is the central focus of a network operation, such as is the case in Memphis, Tennessee, for FedEx, Louisville, Kentucky, for UPS, and Wilmington, Ohio for DHL.

For purposes of this examination of opportunities and the feasibility for such an operation in Southwest Virginia, it is important to note that more mature North American markets will reflect slower and thus lower than average traffic growth rates - - - at least in terms of a comparison to the global picture. Brian Campbell estimates that the domestic North American market average annual growth over the next five years should be about 2%.

Existing Regional Air Cargo Services

Existing airports that offer commercial air freight services in the region convenient to Southwest Virginia are:

1. Tri-Cities Regional Airport (TRI), Tennessee
2. Roanoke Regional Airport (ROA), Virginia
3. New River Valley International Airport (NRV), Virginia
4. Piedmont Triad International Airport (PTI), North Carolina

Please see the Appendix for a map of these airports.

Tri-Cities Regional Airport (TRI)

Mr. Vaughn Barnett, who is responsible for air cargo at Tri-Cities Regional Airport, was interviewed for this report. The Tri-Cities Regional Airport in Blountsville, Tennessee, serves Northeast Tennessee and Southwest Virginia. The airport maintains the Tri-Cities Air Cargo Center (TCRA), which handled 2,000 tons of cargo in 2003. The year over year figures for air cargo growth at TRI are indicative of a 9.8% rate of growth. Currently, the airport has 23,000 square feet of cargo storage, handling, office, and covered canopy space. The Cargo Terminal Annex has an additional 7,350 square feet of storage, handling, and office space. TCRA, as well as the whole airport itself, is designated as a Foreign Trade Zone.

The TCRA facility development and expansion plan consists of three phases. Phase I is underway and involves the construction of a new 13,000-square foot air cargo terminal, which is the first facility in the Tri-Cities Air Cargo Logistics Center. This first facility is scheduled for completion in February 2005. The new facility follows on an investment of $10 million dollars in airfield, roadway and utilities infrastructure during the past three years. Four thousand linear feet of taxiways leading into a new 174,240-square-foot cargo ramp have already been completed. Also, a new industrial access road is now operational. Phase II includes the expansion of the first facility to the west and in front of the new cargo ramp as demand evolves. Phase III is targeted for future facility expansion to the west, and includes construction of additional cargo apron, taxiway, and taxiway connector.

Existing commercial cargo service providers at Tri-Cities Regional Airport are:

- Airborne Express
- Delta Connection
- Emery Worldwide
- BAX Global
- FedEx
- UPS

Roanoke Regional Airport (ROA)

Located in the Roanoke Valley, the Roanoke Regional Airport serves Southwest Virginia, the Southern Shenandoah Valley and portions of Southeastern West Virginia. Mr. Efren Gonzales, Deputy Executive Director of the Roanoke Airport Authority, was interviewed for this report.

Roanoke has been expanding its air cargo capabilities over the past several years. In 1998 ROA opened a $9.8 million ramp and cargo sorting area at the airport. The air cargo ramp was specifically designed for the current and projected needs of Roanoke's air freight carriers and includes parking positions to accommodate one Airbus A300, two Boeing 757's, one Boeing 727, and one McDonnell Douglas DC-9 concurrently. The new cargo handling area covers 12 acres, with the aircraft ramp alone occupying 418,000 square feet. The sorting area under roof occupies an area of 133,000 square feet, and collectively serves UPS, FedEx and Airborne Express.

The Roanoke Airport Commission embarked on the project when it became apparent that the cargo facilities at the airport could not keep up with the growth rates that were occurring. Consequently, the air cargo facility was built, as a 20 percent average annual growth rate in air freight activity had been experienced over the previous ten years.

In 2003, the airport sorted over 13,000 tons of cargo, which shows that the total for the airport remains on a growth curve, as the year to year growth indicated a 1.5% positive rate. 2004 seems to be similarly robust, as Roanoke Regional Airport reports a 13% increase year to year for the period through the end of September.

Service for air cargo at Roanoke Regional Airport is provided by:

- Airborne Express
- Air Cargo Carriers
- Ameriflight
- Atlantic Southeast Airlines
- Comair
- Delta
- FedEx
- Northwest Airlink
- Mesaba
- Pinnacle
- Quest Diagnostics
- RAM Air Freight
- United Express
- UPS
- US Airways Express

New River Valley International Airport (NRV)

Mr. David Tickner, the Community Development Director for Pulaski County, was interviewed for this report. The New River Valley International Airport is located in Virginia's New River Valley. The airport was established in 1962. At the time, the airport was able to sustain regularly scheduled commercial passenger service through Piedmont Airlines. New River Valley Airport is an international airport, with its own on-site customs agent. The runway is approximately 6,200 feet in length by 150 feet in

width, which makes it the longest and largest general aviation runway in Southwest Virginia. Due to its Instrument Landing System, it is an all-weather facility capable of receiving aircraft at any time.

The airport is home to Port of Entry #1481 and Foreign Trade Zone #238, with a dedicated Customs Officer, which facilitates any international shipping or passenger needs. Additionally, there is an existing 6,800 square foot hangar facility that has the potential of being leased out. It is a privately-owned building. The Airport Commission also has ample land adjacent to the runway to locate a structure(s) to accommodate numerous additional facilities. Virginia's first regional Industrial Park, the New River Valley Commerce Park - a 500 acre industrial park owned by 12 municipalities - is across and adjacent to the south side of the runway. There is no single site adjacent to an airport with this much acreage available in all of Southwest Virginia, and very few in the entire Commonwealth. A portion of the park immediately adjacent to the Airport has been dedicated for aviation-oriented industries.

There is currently no regularly scheduled air cargo service offered at New River Valley International Airport. However, non-scheduled air cargo arrives at the airport fairly regularly for Radford Foundry, TRW Industries, and Volvo, North America.

Piedmont Triad International Airport (PTI)

Piedmont Triad International is not in the near vicinity of Southwest Virginia or the two study airports. However, Piedmont Triad International Airport has been selected to be the East Coast hub for Federal Express, and the implications of that selection for nearby markets are important.

An interview with Mr. Ted Johnson, Executive Director of Piedmont Triad Airport Authority, was conducted for this study.

FedEx chose Piedmont Triad International Airport as the location for their East Coast hub in the late 1990's, but had a slight delay in the implementation of those plans. They are developing a 170 acre site at Piedmont that will be linked to the local road system by a new 2.7 mile ground freight access connector. Also, the airport is constructing a new parallel 9,000 foot runway to accommodate FedEx. This new runway will be complemented by all the requisite associated taxiway systems.

A ramp suitable in size to accommodate 23 MD-11 aircraft will adjoin several structures that will total about 600,000 square feet under roof. Work on these projects will begin in the summer of 2006, with an opening scheduled for mid 2009.

Once operational, the hub at Piedmont Triad International Airport will be but one of a handful of cargo hubs in the nation for FedEx. FedEx will use the PTI hub as their north-south flow point along the eastern seaboard. Initially a staff of 750 will be hired, with a maturity level of about 1,500 employees projected.

The significance of this new FedEx hub at the Piedmont Airport is that many markets within the driving vicinity of Greensboro who choose to use FedEx services will have their product trucked to the new hub before it is placed on an aircraft. Whether or not Southwest Virginia will be within such a radius remains to be seen, but the notion of introducing any new FedEx secondary level hub in this region would seem to be very unlikely. An interesting possibility is that flight times from Virginia Highlands Airport and Lonesome Pine Airport could offer an advantage worth pursuing, given that east-west drive times across the Appalachians are fairly long. At this time, as the survey results highlighted in this study demonstrate, there is not sufficient business demand for such a hub.

Air Cargo services at Piedmont Triad International Airport are offered through:

- FedEx
- Airborne Freight Corp.
- Air Cargo Services
- Emery Worldwide
- Ryan International
- Trade Winds
- UPS
- US Postal Service
- Nine commercial air carriers also offer freight services through aircraft cargo hold.

Existing Conditions at Lonesome Pine Airport and Virginia Highlands Airport

This portion of the feasibility study outlines the existing physical and infrastructure conditions of the Lonesome Pine Airport in Wise and the Virginia Highlands Airport in Abingdon.

Table 1 outlines the existing physical infrastructure at the Lonesome Pine Airport. A critical component of the infrastructure for purposes of this analysis is that the airport has existing instrument approaches. The airport has a localizer DME Approach to RW 24, and GPS Approaches to both RW 24 & 6. These navigational aids allow the airport to be accessed in marginal weather conditions - access which is crucial for either time sensitive on-demand deliveries, or regularly scheduled freight shipments. It should be noted that Lonesome Pine Airport is programmed to receive an Instrument Landing System. This will be accomplished by having its localizer augmented with a glideslope. This will allow for a precision approach during inclement weather.

Also, the airport has the amount of available aircraft apron or ramp (almost 11,000 SF) that would accommodate the sort of activity that could be expected at a low level tertiary, or feed node.

TABLE 1

Lonesome Pine Airport (Wise, Virginia)	
General Information	
Classification	General Aviation Regional
Three Letter Identifier	LNP
Communication	CTAF/UNICOM
Closest Arterial Highways	U.S. 23 (5 miles from the airport)
Land	
Fee Simple	417.09 Acres
Runway 6-24	
Length	5,400’
Width	100’
Type	Grooved Asphalt
Pavement Strength	42,000 lbs Single Wheel, 55,000 lbs Double Wheel
Instrument Approaches	
Approach Runway 6	Visual
Approach Runway 24	Nonprecision
NAVAIDS R/W 24	SDF Localizer/DME, RNAV/GPS, ODALS, VASI-4
Taxiways	
Parallel	Partial 35’ wide
Exits	4 Min 35’ wide
Turnaround	R/W 6
Lighting	
Runway	MIRL
Parallel Taxiway	MITL

Exits	MITL
Visual Approach	36" Rotating Beacon, Segmented Circle, Lighted Wind Cone
Apron	
Size	10,875 SF
Tiedowns	14
Hangars	
T-Hangars	6 – 10,400 SF Total
Corporate Hangars	3 – 10,100 SF Total
Maintenance Hangar	none
Fuel Farm	
Jet A Fuel Storage	12,000 gallon
Avgas Fuel Storage	12,000 gallon
Terminal Building	4,000 SF
Auto Parking (Spaces)	32

Table 2 summarizes existing infrastructure at the Virginia Highlands Airport. Again, the elements most important for this review indicate a level of adequacy that would match anticipated demand. The instrument landing capability is currently equipped with a localizer/DME. The airport master plan calls for the airport to be upgraded with a vertical guidance system that will enhance this instrument capability.

The available aircraft ramp (305,000 SF) is very generous, and would be more than suitable to accommodate Caravan class cargo aircraft for a tertiary level node.

TABLE 2

Virginia Highlands Airport (Abingdon, Virginia)	
Classification	General Aviation Airport
Three Letter Identifier	VJI
Field Elevation	2087,4' MSL
Communication	122.8 UNICOM/CTAF 128.125 AOS-III
Land	
Fee Simple	246.81 Acres
Easement	15.36 Acres
Runway 6-24	
Length	4471'
Width	75'
Type	Asphalt
Pavement Strength	12,500 lbs Single Wheel
Instrument Approaches	
Precision	None
Non-Precision	Runway 24
NAVAIDS	Localizer RW 24, VOR/DME or GPS-B RW 24
Taxiways	
Parallel	Yes, 5 Exit taxiways 40' wide
Lighting	

Runway	MIRL
Parallel Taxiway	MITL
Visual Approach	36” Rotating Beacon, Segmented Circle, Lighted Wind Cone
Apron	
Size	Based – approximately 250,000 SF Transient – approximately 55,000 SF
Condition	Excellent
Tiedowns	60
Hangars	
T-Hangars	1-4 units, 2-10 units, 1-14 units
Corporate Hangars	4-Approx 8,000 SF, 1-Approx 10,000 SF
Maintenance Hangar	1-Approx 5,000 SF
Fuel Farm	
Type	Above Ground
Jet A Fuel Storage	12,000 gallon
Avgas Fuel Storage	12,000 gallon
Terminal Building	9,000 SF
Auto Parking (Spaces)	124

Study Airports: Feasibility Review

For purposes of this review, the study will examine three key elements for the two airports in question.

- Demand – The existing manufacturing and services base for the airport service area is important as it provides an insight into the overall market and cargo demand that could be expected to be generated for air freight. The survey data is used to gauge the potential demand.

- Access - Highway and other access options, including existing air freight centers in the general region that are available for the airport are important because (1) a dedicated air freight center must have quick and safe ground transportation, and (2) close proximity air freight services currently satisfy the market area.

- Infrastructure - Airport infrastructure should be adequate in the airside, landside, and airspace segments within an airport environment. The size of the aircraft parking ramp, and/or buildings that might be needed would be gauged, along with the ability to grow to keep current with accelerating demand. Finally the availability and type of instrument landing aids would be considered in light of the degree of weather limiting access throughout the calendar year that could be expected.

Methodology of the Air Freight Demand Survey

An air freight demand survey was conducted to gauge business demand for air cargo service in the Southwest Virginia region. A total of 42 responses were received. The survey was dispersed in October 2004 through several regional and local organizations: the Wise County Chamber of Commerce, Wise County Economic Development, City of Norton, Dickenson County Chamber of Commerce, Dickenson County Economic Development, Virginia Coalfield Economic Development Authority, Russell County Industrial Development Authority, Russell County Chamber of Commerce, Washington County Industrial Development Authority, Washington County Chamber of Commerce, Smyth County Industrial Development Authority, Smyth County Chamber of Commerce, and Virginia's aCorridor. Responses were received for up to a month following the date when the survey was distributed.

The size of the businesses that responded to the survey varied widely, from a minimum of 3 employees to a maximum of 2,400 employees, with the majority falling in the 50-400 employee range. The types of businesses covered a wide range as well, as members of virtually all sectors of the economy in each of the two communities responded. Some of each community's largest employers responded. Due to the fact that such an extended period of time (one month) was given for companies to respond, non-response by companies (particularly ones that employ large portions of the area's workforce) can be read as an implied level of satisfaction with the current air freight situation.

The Appendix contains the survey questions and a summary of the data collected. Taken both individually and in aggregate, both communities seem to be very pleased with their current level of air freight service – 90% of all respondents indicated that their overnight shipping needs are currently being met. For two-day shipping and other miscellaneous shipping, the rates are even higher – 95% and 93%, respectively.

Lonesome Pine Airport (LNP)

The manufacturing and services base in the far Southwestern portion of Virginia that is served by Lonesome Pine Airport in Wise County is only nominal from the perspective of generating air cargo demand. A mere eleven businesses felt compelled to respond to the air freight survey. Those that did respond indicated a high level of satisfaction with the current situation – nine of the eleven respondents indicated that their overnight shipping needs are being met, and the two that did respond favorably to this question did not offer any comments as to specific problems. Frequency of use of air freight companies (UPS, FedEx, and DHL) was not overwhelming: three companies use air freight between one to five times per month, three companies use air freight six to ten times per month, two companies use air freight 11 to 20 times per month, and only three companies use the service daily. The survey summary, located in the appendix of this report, can provide further illumination on the demand and satisfaction levels of businesses located in the vicinity of the Lonesome Pine Airport.

This low level of potential demand is further exacerbated by the lack of direct and convenient access to a major arterial highway for the airport. As previously noted in the existing infrastructure section, the closest arterial highway is U.S. 23, which is five miles from the airport.

The marginality of these two elements alone would act to poorly position Lonesome Pine Airport to be considered as a legitimate candidate to host a tertiary level air freight center. On the other hand, Lonesome Pine Airport is not situated nearby any existing air freight centers, especially in light of the mountainous terrain that trucks must traverse to reach nearby destinations. Consequently, should there be any dramatic rise in future business demand, there could plausibly be an option for Lonesome Pine Airport to serve as a tertiary level cargo node.

It is important to note that as with any of the general aviation airports in the Virginia Airport System, Lonesome Pine Airport will still be able to fill its role of providing excellent access to the local community and surrounding region, including being the destination for infrequent, non-bulk, high-value goods needing to arrive as close as possible to a specific destination point as soon as is practical.

For example, Mr. Bob Spera, who operates Liberty Flying Service (local Fixed Based Operator) at Lonesome Pine Airport, was interviewed for this report, and described how the airport is currently used for air cargo. According to Spera, Kalitta Air Freight on occasion brings in auto parts for an assembly plant in Lebanon. The coal mining industry has utilized the airport in the past when a critical need exists to airlift a

crucial part for mining machinery. These sorts of deliveries are typically made by corporate class aircraft, and are expected to remain an important, albeit somewhat infrequent, occurrence.

For a tertiary level of air freight to be accommodated physically at Lonesome Pine Airport, the basic infrastructure is in place. The ramp size for aircraft at Lonesome Pine Airport is approximately 1000 feet x 500 feet, which could be suitable for routine cargo deliveries. A portion of this ramp could be dedicated for air cargo purposes. It is estimated that five Cessna Caravan class aircraft could be parked on a dedicated ramp at the same time, and that delivery truck traffic could access these aircraft for unloading and loading purposes.

The instrument approaches are listed as follows. The airport has a localizer DME Approach to RW 24, and GPS Approaches to both RW 24 & 6. These navigational aids allow the airport to be accessed in marginal weather conditions - access which is crucial for either time sensitive on-demand deliveries, or regularly scheduled freight shipments. It should be noted that Lonesome Pine Airport is programmed to receive an Instrument Landing System, by having its localizer augmented with a glideslope. This will allow for a precision approach during inclement weather.

In summary, it is estimated that no special infrastructure improvements would need to be made to the airport facility itself in order to be able to accept and process tertiary levels of scheduled air cargo service. However, as previously stated, the overall likelihood for Lonesome Pine Airport to be the site for a tertiary node in the near future appears slim due to the lack of inherent demand, and the less than optimal ground access situation.

Virginia Highlands Airport (VJI)

The manufacturing and service base in the market area of Virginia Highlands Airport is fairly strong and, based on the number of responses to the survey of demand, elicits more response from local businesses. Thirty-one companies responded, 21 of which use some form of air freight service on a daily basis. The companies in this region also seem to be fairly satisfied with the current status of the air freight situation, as 94% responded that their overnight shipping needs are currently being met.

The airport is immediately adjacent to US Route 11, and is located only a half mile from the closest interchange to Interstate 81, which is recognized as one of the more important freight corridors on the east coast. Therefore, the ground access component is excellent for the feasibility of a future air cargo center at Virginia Highlands Airport.

Mr. Ron Deloney is the Airport Manager at Virginia Highlands Airport. He was interviewed for this report, and he noted that the airport has had commercial air freight in the past. Martinair ran two Donier twin turbo-prop aircraft to the airport on a Monday through Friday basis. The service was a joint arrangement with UPS, and focused primarily on the delivery of auto parts. The service ran from Knoxville to Abingdon. Martinair offered the service from late 1996 through early January 1998,

when the shift toward trucking over shorter distances took hold in the air freight business.

The previous existing infrastructure section for Virginia Highlands Airport (see page 11) details the significant area of existing aircraft ramp space that is available at the airport. Mr. Deloney indicates that the airport could currently accommodate a dedicated cargo service with fairly high aircraft volume on the NE aircraft ramp. This ramp is 375 x 225, providing over 84,000 square feet of aircraft parking and truck maneuvering. It is estimated that this would be adequate for five Cessna Caravan aircraft to be parked simultaneously.

As indicated in the existing infrastructure section, the airport has Localizer DME on RW 24 instrument procedures, and as well has a VOR Approach for RW 24. Consequently, the airport could be reasonably be forecast to be available (due to weather conditions) at least 90% of the time throughout the calendar year. Deloney indicates that Virginia Highlands Airport often serves as the back-up destination to other airports in the region that may be below instrument meteorological minimums.

The airport is in an excellent position in terms of being able to support the requirements of an air freight center in the future. In recent years, the airport commission has purchased approximately 125 acres. This acquisition is on the opposite side of RW 6-24, and opens up a new area for airport development. The existing southeast side of the runway is, for all practical purposes, built-out.

Development is being phased for opening up the new side of the airport. Phase I is under way, and includes the construction of a 1000 x 40 connector taxiway with two 370 x 20 taxi lanes. This provides for airside access. In addition to the taxiway, the site prep work is being conducted for the development of the Westside aircraft ramp. The landside access is being provided from the construction of 1300-foot long Westside access road comprised of two twelve foot lanes. This will connect to Route 611, which then connects to U.S. Route 11. The distance of the new west side development to I-81 is about 1 mile. The total project cost for the Phase I development of the west side airport development is approximately $2.1 million. As mentioned above, it is estimated that the expansion potential at Virginia Highlands Airport for air cargo growth is generous.

As a result of the higher levels of use, infrastructure capability, and ground transportation access, from a current and future air cargo market standpoint, the Virginia Highlands Airport would be a better candidate to house an air freight center than would the Lonesome Pine Airport.

In summary, it is estimated that no special infrastructure improvements would be needed at the Virginia Highlands Airport in order to be able to accept and process tertiary levels of scheduled air cargo service. Furthermore, the local leaders have planned well for the airport's ability to expand with any growth in the market. However, the likelihood that Virginia Highlands Airport would be the location of a tertiary node in an air cargo network is only nominally strong. This is due primarily to the availability of competing service at the Tri-Cities Regional Airport in Tennessee.

Findings

1. The air cargo industry is currently a somewhat fragmented activity marked by much ambiguity regarding movement of goods by ground versus movement of goods by air Previous parameters that automatically dictated the use of air have become more flexible, such that now, the more cost effective option for certain trip lengths is often to use some form of ground transportation, while still branding the service as "air cargo."

2. Taken both individually and in aggregate, the businesses in both the Lonesome Pine Airport area and the Virginia Highlands Airport area seem to be very pleased with their current level of air freight service – 90% of all respondents indicated that their overnight shipping needs are currently being met. Thus, there is no notable demand for a new air freight center.

3. All air cargo shipping needs are currently being met by the existing services offered in the geographic area under consideration. The scheduled services provided by the Tri-Cities Regional Airport, Roanoke Regional Airport, and Piedmont Triad International Airport, as well as the non-scheduled services provided by the New River Valley International Airport, Lonesome Pine Airport, and Virginia Highlands Airport are meeting the needs of businesses in the area.

4. The current conditions of the two studied airports do not require any major, on-site infrastructure upgrades to accommodate tertiary levels of air cargo service. The Lonesome Pine Airport has somewhat less favorable direct ground transportation access than does the Virginia Highlands Airport. Both are well suited to receive single point, on-demand service should business demand necessitate such service. In fact, both the Lonesome Pine Airport and the Virginia Highlands Airport currently serve their respective market areas in this manner.

5. As a result of a number of factors, including higher business demand, current infrastructure capability, and ground transportation access, from a current and future air cargo market standpoint, the Virginia Highlands Airport would be a better candidate to house a tertiary level air freight center than would the Lonesome Pine Airport.

Sources

Keith F. McCrea, Manager, Air Service & Policy, Office of the Director
Virginia Department of Aviation

Dr. Brian M. Campbell, Chairman
The Campbell-Hill Aviation Group

Boeing Commercial Aircraft Group

Vaughn Barnett, Air Cargo
Tri-Cities Regional Airport

Efren Gonzales, Deputy Executive Director
Roanoke Airport Authority

David Tickner, Community Development Director
Pulaski County

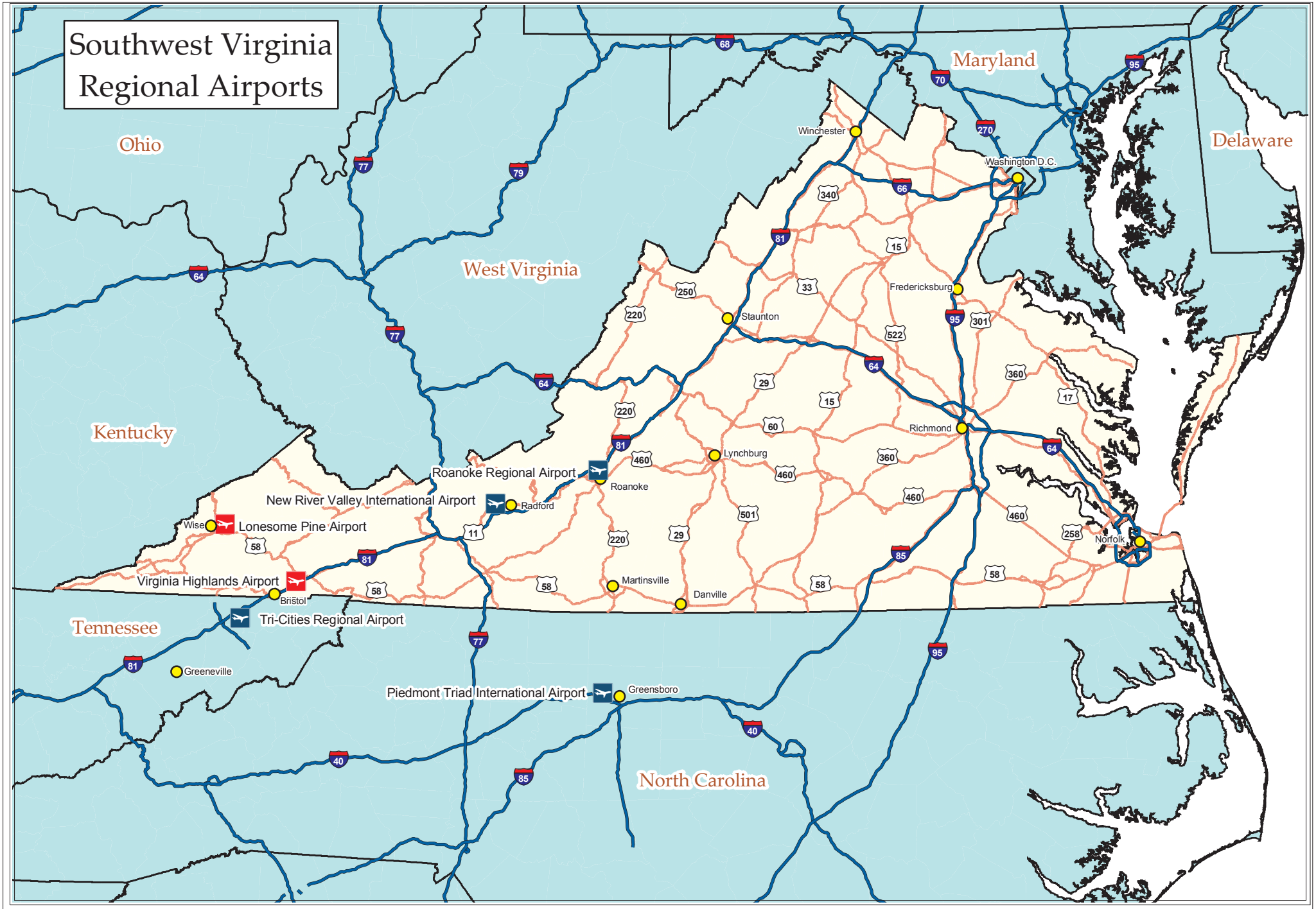
Ted Johnson, Executive Director
Piedmont Triad Airport Authority

Bob Spera, Owner
Liberty Flying Service

Ron Deloney, Airport Manager
Virginia Highlands Airport

Appendix

- Map of Airports
- Survey of Business Demand for an Air Freight Center
- Air Freight Demand Survey Results


Southwest Virginia
Regional Airports
Ohio
West Virginia
Kentucky
Tennessee
North Carolina
Maryland
Delaware
Winchester
Washington D.C.
Fredericksburg
Staunton
Richmond
Lynchburg
Roanoke
Roanoke Regional Airport
New River Valley International Airport
Radford
Wise
Lonesome Pine Airport
Virginia Highlands Airport
Bristol
Tri-Cities Regional Airport
Greeneville
Martinsville
Danville
Norfolk
Piedmont Triad International Airport
Greensboro
0 10 20 40 60
Miles
Regional Airports
Study Airports
US Interstate Highway
US Highways
Cities
Data Sources: ESRI 2003, VEDP 2003, VDOT 2001,US Census Bureau. December 2004

Survey of Business Demand for an Air Freight Center

General Information

- Company name _____
- Address _____
- Phone _____
- Website _____
- Number of employees _____
- NAICS _____
- Description of company _____

Shipping Needs

1. Currently use:
   - o UPS _____
   - o FedEx _____
   - o DHL _____
2. Frequency of use (on a monthly basis)
   - o 1-5 times/month _____
   - o 6-10 times/month _____
   - o 11-20 times/month _____
   - o Daily _____
3. Number of packages (on a monthly basis)
   - o 1-5 _____
   - o 6-10 _____
   - o 11-20 _____
   - o 21-30 _____
   - o 31+ (Please specify number) _____
4. Average weight of package
   - o 1-5 pounds _____
   - o 6-10 pounds _____
   - o 10+ pounds _____
5. Does the shipping company you currently use pick up packages at your location?
   Yes _____ No _____
6. If you answered 'No' to Question #5, do you have to drop packages off at a central location in order to use the service?
   Yes _____ No _____
7. Do you know what air freight center packages that you ship currently go through?
   Yes _____ No _____
   If Yes, where? _____
8. Are your overnight shipping needs are currently being met?
   Yes _____ No _____
9. Are your 2-day shipping needs currently being met?
   Yes _____ No _____
10. Are all of your other (not overnight or 2-day) shipping needs being met?
    Yes _____ No _____

Air Freight Demand Survey Results

- 42 responses
- Businesses located in
    - Abingdon
    - Atkins
    - Bristol
    - Chilhowie
    - Cleveland
    - Damascus
    - Lebanon
    - Norton
    - Rosedale
    - Saltville
    - St. Paul
    - Wise
    - Wytheville
- Types of businesses:
    - Mining Equipment (2)
    - Coal Company
    - Manufacture Metal Fasteners
    - Metal Screen Fabrication
    - Synthetic Filament Yarn
    - Steel Pressure Tanks/Vessels
    - Glass Coating
    - Flag and Lighting Poles
    - Carburetors
    - Manufacture Hermetic Compressors
    - Magnet Wire
    - Fiber reinforced polymer composites
    - Spa Products and Equipment
    - Precision Machine Shop
    - Exterior Wood Door Component Manufacturer
    - Refrigerated Van Trailers
    - Manufacture Store Displays and Fixtures
    - Manufacture Earth Mover Wheels
    - Manufacture Rack and Pinion Steering Gears
    - Manufacture Chain Hoists
    - Aluminum and Zinc Castings
    - Wholesale Distribution
    - Coal Fired Power Plant
    - Pharmaceutical Distribution/Long Term Care
    - Direct Marketer – Consumer Electronics
    - Farm and Riding Equipment (Retail)
    - Government (3)
    - Chamber of Commerce
    - Law Firm (3)
    - Financial Services
    - Consumer Banking

    - Newspaper and Printing
    - Skilled Nursing Facility
    - College
    - Church
- Carriers
    - 50% use more than one carrier
    - UPS – 35
    - FedEx - 28
    - DHL – 13
    - Other – 5 (Burlington Air), 2 (Emery)
- Frequency of Use
    - 1-5 times/month – 8
    - 6-10 times/month – 4
    - 11-20 times/month – 4
    - Daily – 24
- Volume of Use (number of packages)
    - 1-5/month – 7
    - 6-10/month – 6
    - 11-20/month – 4
    - 21-30/month – 10
    - 31+/month – 15
- Weight of Package
    - 1-5 lbs – 16
    - 6-10 lbs – 10
    - 10+ lbs – 15
    - DNR - 1
- Carrier pick up at company's office:
    - Yes: 86% (36)
    - No: 14% (6)
- Overnight shipping needs currently being met?
    - Yes: 90% (38)
    - No: 10% (4)
- 2-day shipping needs currently being met?
    - Yes: 95% (40)
    - No: 2% (1)
    - DNR: 2% (1)
- Other shipping needs currently being met?
    - Yes: 93% (39)
    - No: 7% (3)

<u>DATA FOR LONESOME PINE</u>

- 11 responses
- Types of Businesses:
    - Government (3)
    - Chamber of Commerce
    - Coal Fired Power Plant
    - Newspaper and Printing
    - Church
    - Law Firm

    - Skilled Nursing Facility
    - Consumer Banking
    - Direct Marketer – Consumer Electronics
- Businesses located in
    - Wise
    - Cleveland
    - Norton
    - St. Paul
    - Lebanon
- Carriers
    - 73% (8/11) use multiple carriers
    - UPS – 100% (11)
    - FedEx – 73% (8/11)
    - DHL – 9% (1/11)
- Frequency of Use
    - 1-5 times/month – 3
    - 6-10 times/month – 3
    - 11-20 times/month – 2
    - Daily – 3
- Volume of Use (number of packages)
    - 1-5/month – 2
    - 6-10/month – 2
    - 11-20/month – 2
    - 21-30/month – 3
    - 31+/month – 2
- Weight of Package
    - 1-5 lbs – 5
    - 6-10 lbs – 4
    - 10+ lbs – 2
- Carrier pick up at company's office:
    - Yes: 64% (7)
    - No: 36% (4)
- Overnight shipping needs currently being met?
    - Yes: 82% (9)
    - No: 18% (2)
- 2-day shipping needs currently being met?
    - Yes: 82% (9)
    - No: 9% (1)
    - DNR: 9% (1)
- Other shipping needs currently being met?
    - Yes: 91% (10)
    - No: 9% (1)

<u>DATA FOR VA HIGHLANDS</u>

- 31 responses
- Types of Businesses
    - Mining Equipment (2)
    - Coal Company
    - Manufacture Metal Fasteners

    - Metal Screen Fabrication
    - Synthetic Filament Yarn
    - Steel Pressure Tanks/Vessels
    - Glass Coating
    - Flag and Lighting Poles
    - Carburetors
    - Manufacture Hermetic Compressors
    - Magnet Wire
    - Fiber reinforced polymer composites
    - Spa Products and Equipment
    - Precision Machine Shop
    - Exterior Wood Door Component Manufacturer
    - Refrigerated Van Trailers
    - Manufacture Store Displays and Fixtures
    - Manufacture Earth Mover Wheels
    - Manufacture Rack and Pinion Steering Gears
    - Manufacture Chain Hoists
    - Aluminum and Zinc Castings
    - Wholesale Distribution
    - Pharmaceutical Distribution/Long Term Care
    - Law Firm (2)
    - Financial Services
    - College
    - Farm and Riding Equipment (Retail)
- Businesses located in
    - Abingdon
    - Bristol
    - Saltville
    - Rosedale
    - Wytheville
    - Damascus
    - Chilhowie
    - Atkins
- Carriers
    - 58% (18/31) use multiple carriers
    - UPS – 77% (24/31)
    - FedEx – 65% (20/31)
    - DHL – 39% (12/31)
    - Burlington Air – 16% (5/31)
    - Emery – 6% (2/31)
- Frequency of Use
    - 1-5 times/month – 5
    - 6-10 times/month – 1
    - 11-20 times/month – 2
    - Daily – 21
- Volume of Use (number of packages)
    - 1-5/month – 5
    - 6-10/month – 4
    - 11-20/month – 2

    - 21-30/month – 7
    - 31+/month – 13
- Weight of Package
    - 1-5 lbs – 11
    - 6-10 lbs – 7
    - 10+ lbs – 13
- Carrier pick up at company's office:
    - Yes: 94% (29)
    - No: 6% (2)
- Overnight shipping needs currently being met?
    - Yes: 94% (29)
    - No: 6% (2)
- 2-day shipping needs currently being met?
    - Yes: 100% (31)
    - No: 0
- Other shipping needs currently being met?
    - Yes: 94% (29)
    - No: 6% (2)