

## **Air Cargo's Cutting Edge: Transfer Flexibility in Anchorage**

**Darren Prokop**

*Address for correspondence:* Darren Prokop, Department of Logistics, College of Business and Public Policy, University of Alaska Anchorage, 3211 Providence Drive, Anchorage, Alaska 99508 USA: [afdjp1@cbpp.uaa.alaska.edu](mailto:afdjp1@cbpp.uaa.alaska.edu).

### **Abstract**

This paper discusses the current state of air cargo liberalization at Ted Stevens Anchorage International Airport. Air cargo transfer options were enhanced in 2004 and these now involve U.S. exit options on top of the U.S. entry options granted in 1996. While setting these options in the context of co-terminalization and cabotage the paper presents a case study of air cargo practice and policy options in Anchorage. It is noteworthy that this liberalization process is unilateral and, significantly, is intended to enhance the operational possibilities for foreign air cargo in Anchorage. All such activity would serve to maintain Anchorage's status as a geographically significant air cargo center. The policy options recommended here suggest a way to leverage air cargo operations in order to promote opportunities for bringing value-added manufacturing to Anchorage.

## 1. Introduction

This paper outlines the regulatory implications for Ted Stevens Anchorage International Airport (hereafter ANC) resulting from the \$60 billion, four year Federal Aviation Administration (FAA) reauthorization bill known as *Vision 100 - The Century of Aviation Reauthorization Act*, 2004. This bill amended 49 U.S.C. Sec. 41703- Navigation of Foreign Civil Aircraft. While the bill increased the FAA cargo entitlement funding formula from 3% to 3.5% (giving ANC \$13 million in 2004 as opposed to \$10 million the year before) the most significant gain was in the enhancement of the air cargo transfer flexibility allowed at ANC. A foreign carrier transferring air cargo at ANC is no longer considered by the FAA to be breaking the international journey. The co-mingling language was a rider added to the bill by Senator Ted Stevens (R-AK), then chairman of the Senate Appropriations Committee.

The U.S. Department of Transportation defines transfer flexibility as a type of air cargo deregulation applied to foreign-to-foreign and domestic-to-domestic transfers. A foreign-to-domestic transfer is called air cargo co-mingling and is considered a subset of the transfer flexibility options. The latest form of liberalization discussed in this paper applies only to ANC and Fairbanks International Airport (FAI). The first round of liberalization in 1996 covered co-mingling options and were available to ANC, FAI and Honolulu International Airport (see Prokop, 2002).

## 2. Ted Stevens Anchorage International Airport: An Overview

ANC is strategically placed along the great circle route and is within nine hours flying time to 95% of the industrialized world. From ANC that would be as far westward as Beijing and Moscow; as far eastward as London and Frankfurt; and as far southward as Mexico City.

Servicing 625 air freighters per week it is the world's busiest airport in terms of "landed weight" (i.e., the sum of aircraft and cargo weight)<sup>1</sup>; and volume-wise it is the number 2 (3) most important airport for FedEx (UPS). Ramp capacity allows for up to 49 air freighters to be refueled simultaneously. The typical refueling stopover allows a freighter to carry up to an extra 100 tons of cargo thus trading off flight time for cargo revenue. Since Anchorage rests on a peninsula and the approaches to ANC are over water there are no noise restrictions affecting landing times. Finally, unlike many of its competitors, ANC has up to 374 acres of undeveloped land available for expanded air cargo operations.

In terms of freight handling (i.e., landing and parking fees) ANC is the lowest cost airport in comparison to several competitors as shown in Table 1.

Air cargo growth at ANC has averaged about 9.6% over 2000 to 2005. Taking the set of airports which were consistently in the top 10 for air cargo volume over the time period it can be seen in Table 2 that ANC has had strong and consistent growth compared with the other major cargo airports. Indeed of these only ANC and Memphis were able to sustain growth over the 2001 economic downturn.

**Table 1**  
Average Freight Handling Costs for ANC and Competitors (2004)

Airport		Cost (\$US/ton)
<b>Anchorage</b>		<b>85</b>
<b>Asia</b>	Hong Kong	100
	Shanghai	102
	Incheon	105
	Singapore	110
	Tokyo (Narita)	130
<b>North America</b>	Chicago (O'Hare)	100
	Seattle	112
	Los Angeles	113
	San Francisco	120
	New York (Kennedy)	135
<b>Europe</b>	Paris	130
	Zurich	150
	Amsterdam	170
	London (Heathrow)	190
	Frankfurt	200
Source: Schmeling, 2004.		

**Table 2**  
Air Cargo Volume Growth Rates for the World's Largest Cargo Airports (2000-2005)

Airport	Percentage Change in Cargo Volume						
	2000	2001	2002	2003	2004	2005	Mean
<b>Anchorage</b>	<b>8.8</b>	<b>3.9</b>	<b>5.5</b>	<b>18.7</b>	<b>7.2</b>	<b>13.4</b>	<b>9.6</b>
Memphis	3.2	5.7	28.8	0.0	4.8	1.2	7.3
Hong Kong	13.4	-7.4	19.3	6.6	16.9	9.9	9.8
Tokyo (Narita)	4.9	-13.0	19.1	7.6	10.1	-3.5	4.2
Frankfurt	11.1	-5.7	1.1	1.2	11.4	6.7	4.3
Los Angeles	5.1	-13.0	0.3	2.8	4.3	1.3	0.1
Singapore	12.0	-10.3	8.5	1.7	10.0	3.3	4.2
Source: Airports Council International ( <a href="http://www.airports.org">http://www.airports.org</a> ).							

ANC has had a history of working to preserve its advantage in the face of potential overflying by carriers and polar routing by taking the lead on liberalization of air cargo operations in the United States. Indeed, Fairbanks International Airport (FAI) lost all of its Air France cargo flights in 2003 due to the carrier's acquisition of three new Boeing 747-400ER (Extended Range) aircraft allowing an economical non-stop flight between Paris and Japan via Siberia. According to Dave Carlstrom, FAI's former Director of Marketing, this brought the airport's weekly cargo flights down from 33 to 23 producing a loss of \$12.5 million in annual revenue (King, 2003c; p.10).

In May 2006, Lufthansa's Germany-to-Asia cargo flights began flying directly through Kazakhstan saving four hours on each leg and translating into fuel cost savings of about \$12,000US/flight. Fortunately for ANC, UPS' six flight per week frequency rights into China are conditioned by the US Department of Transportation's (USDOT) requirement for ANC to be the last point of departure out of, and the first point of arrival into, the United States (King, 2003a; p. 12).

ANC faces competition from other airports along the great circle route between North America and Asia that wish to attract foreign carriers. Two such airports are in Vancouver Canada, and Khabarovsk in the Russian Far East. Having completed a \$26 million reconstruction of its north-south runway and taxiway in 2003, ANC is in a better position to handle the congestion that had been building up to that time. FedEx, UPS and Northwest Airlines were experiencing delays of up to 45 minutes waiting for traffic to clear the taxiway. ANC has also earmarked FAA funds to upgrade the east-west (north-south) runway by 2008 (2009) so that it can handle larger cargo planes; specifically, the next generation Boeing 747-400F and the Airbus A-380F.

### **3. Air Cargo Transfer: Previous Practice**

Since 1996, USDOT has allowed co-mingling of cargo on an intra-fleet basis for foreign carriers and an inter-fleet basis provided one of the carriers is a U.S. domestic. Only when the second carrier proceeded directly to a non-U.S. destination would air cargo transfer between two foreign carriers be permissible.

The first phase of the co-mingling discussion centered, in part, around the preservation of U.S. jobs. Basically foreign carriers could not, in effect, create new routes by co-mingling cargo onto a domestic carrier headed for a city the foreign carrier did not otherwise fly to (Prokop, 2002; p.113). Labor unions such as the AFL-CIO and the Airline Pilots Association (ALPA) have been vocal against the second phase to be outlined below. With its more flexible treatment of foreign carriers many unions felt these foreign carriers would leverage a different foreign carrier's routing network in the contiguous U.S. at the expense of the domestic carriers. AFL-CIO Trade Representative, Sonny Hall, was quoted as saying the language in the FAA reauthorization bill "... threatened the already ailing airline industry and its workers by recklessly permitting foreign air cargo carriers such as China Airlines to prey on the U.S. marketplace." (Keane, 2003; p.17). However, it should be noted that some Anchorage-based unions have been supportive; notably, the Aircraft Mechanics Fraternal Association and the Carpenters' Union. In this way, U.S. jobs in the form of domestic carrier flight crews face competition from the foreign carriers. Some unions see it as a transfer of U.S. jobs to foreigners--

- but this is only to the extent that pre-existing domestic interlining contracts are allowed to expire and the business transferred to a foreign carrier.

During the first phase of liberalization in 1996 no two carriers had systematically taken advantage of the new rules at ANC. Revenue gains for the airport, therefore, were negligible. However, after section 4 outlines the latest phase of the liberalization process, section 5 discusses two airlines which are now leveraging the possibilities afforded under the second phase of liberalization in 2004.

#### 4. Air Cargo Transfer: New Options

Under the latest options outlined in the *Vision 100-The Century of Aviation Act* (2004) domestic and foreign carriers are afforded more flexibility and, furthermore, the outbound-U.S. operations through ANC have been liberalized for the first time. There are four new options as described below.

##### *U.S. Entry Operations via ANC*

- (1) A U.S. carrier enters the U.S. at ANC and transfers cargo to a non-U.S. carrier which will deliver it to a point in the contiguous U.S. or--- which was the *only* option under the 1996 rules--- the carrier departs ANC for a third country. The transfer is permissible so long as the foreign carrier has either a pre-existing code-share agreement or some other contractual arrangement with the domestic carrier serving ANC.
- (2) The same operation as in (1) only the transfer is between two *different* non-U.S. carriers. The same contractual proviso applies. For example, suppose China Airlines wishes to transfer cargo at ANC to a Japan Airlines plane traveling to the contiguous U.S. Japan Airlines has to have a *pre-existing* code share agreement with a U.S. domestic carrier (likely Northwest Airlines) for its flight to the contiguous U.S.; or another revenue sharing agreement of some kind must pre-exist. China Airlines will be required to note this code-share on its air waybill and Northwest Airlines will receive a portion of the revenue payable to Japan Airlines.

##### *U.S. Exit Operations via ANC*

- (3) A non-U.S. carrier picks up cargo in the contiguous U.S. and drops it off at ANC for transfer to a different plane in its fleet which is also exiting the U.S. This is an outbound transfer operation akin to interlining within the carrier's own fleet. Note, even with this foreign intra-fleet transfer, a code-share agreement with a domestic carrier using ANC must still be in place.
- (4) The same operation as in (3) only now the receiving airplane in ANC is of a *different* non-U.S. carrier. This form of interlining allows the two carriers to truly leverage each others' operational network. The impetus might be that the inbound ANC carrier is a gatherer for the outbound ANC carrier; or the inbound ANC carrier wishes to leverage the outbound ANC carrier's destinations. Again, a domestic code-share agreement must be in place.

Options (1) and (2) show that a carrier's interlining and leveraging off of another's U.S. and non-U.S. network is allowed; and the distinction of domestic and international carrier is now immaterial to the cargo transfer option. Under the 1996 rules inter-fleet cargo transfer among different non-U.S. carriers required the second plane to proceed directly to a non-U.S. destination.

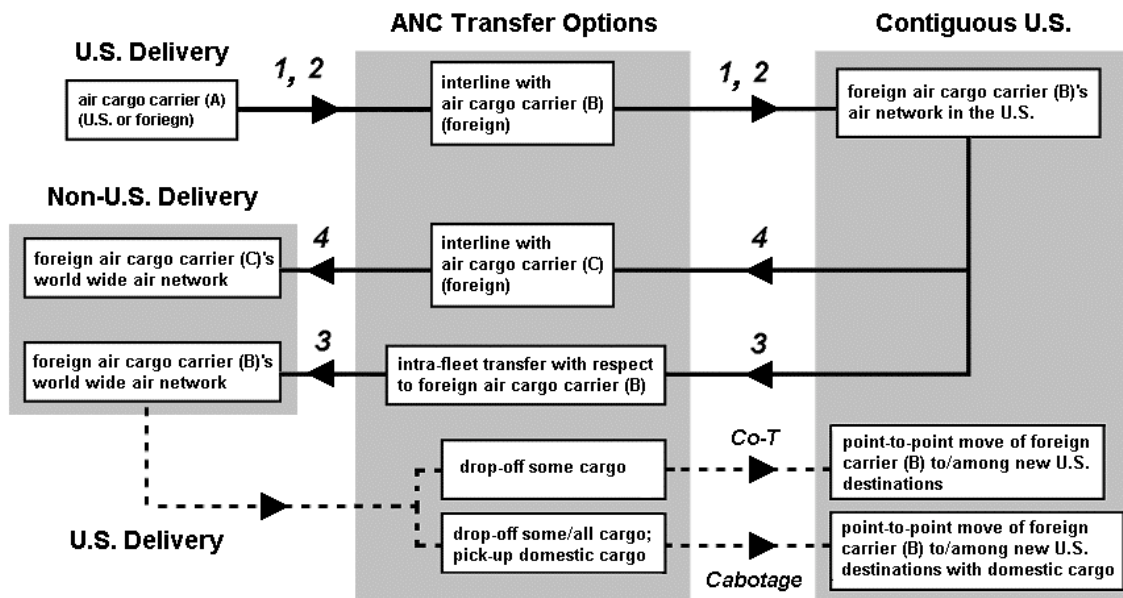
If the cargo, in effect, proceeds through three or more countries then, depending on the point of origin and destination, the move described in options (1) through (4) would be *de facto* fifth freedom if the origin-destination of the run (in which the contiguous U.S. and ANC are in-between) is in the carrier's domicile. If it is not, the move would be *de facto* seventh freedom. For a discussion of the eight different "Freedoms of the Skies" see Button and Stough, 2000.

Option (1) also shows that while the cargo shipper benefits from increased routing flexibility, the carrier's airplanes are doing nothing beyond the bilateral air agreement between the appropriate governments. Option (2), on the other hand, shows that the cargo routing is more flexible and the cargo may, in effect, travel to points allowed within the bilateral air agreement applicable to the other non-U.S. carrier. This is especially useful when the bilateral air agreements in question have sufficient differences among the various foreign domiciles.

It is also worth noting that point (2) is in the "spirit" of how the U.S. Bureau of Customs and Border Protection (CBP) views the treatment of international cargo in the trucking industry (see Prokop, 1999). As far as the Bureau is concerned a point-to-point move of U.S. cargo is not considered cabotage so long as the final U.S. destination (based on the bill of lading) has not been reached. In other words, the cargo is still considered to be international during any stop-overs along the way. Of course, in the air cargo industry the bilateral air agreement trumps any liberties any border control officials would grant. Air cargo cabotage is still strictly interpreted in the bilateral agreements to be the picking up and dropping off of freight by a foreign carrier operating within the same domestic territory. However, since the cargo transfer options were unilaterally granted they trump the view of the U.S. Immigration and Customs Enforcement (ICE) which, indeed, still considers point-to-point haulage of any kind to be cabotage. CBP regulates the conveyance itself while ICE regulates its operator.

The four transfer options discussed in this section may be summarized and compared by way of Figure 1. Each of the numbers in the figure corresponds to the particular option. In this way, the ANC cargo transfer operations may be more easily compared and contrasted with more liberal ones such as co-terminalization and cabotage. The dotted lines indicate two other possible air cargo transfer environments which are currently not available to foreign carriers at ANC or any other U.S. airport. Technically, as long as an Open Skies agreement exists with the U.S., co-terminalization (defined in this section) is allowed. But as a single exception only limited co-terminalization (co-T) is available within the U.S.-Canada bilateral air agreement. As part of the 1995 Open Skies agreement, co-T is allowed among the two countries' air carriers provided the take-off weight of the aircraft is within 35,000 lbs. Obviously, this is a very restrictive requirement. For an overview see Shurvell and Crockatt, 2000. The co-T and cabotage options are, however, diagramed in the context of a foreign carrier which is inbound-U.S and transfer option (2) is implied. Cabotage, currently prohibited in the U.S., would be the most liberal form of deregulation since it would involve foreign carriers competing for U.S. cargo on a level playing field with U.S. carriers. Co-T, on the other hand, would simply involve proceeding to more than one airport within the contiguous U.S. with international cargo only.

**Figure 1**  
*Air Cargo Transfer Options at ANC*



In summary, options (1) through (4) are not allowed at any other U.S. airport with the exception of ANC and FAI. While co-T may occur through several U.S. airports only ANC has the freedoms and cargo landings to realistically offer the option for a foreign carrier to combine co-T with interlining operations within its fleet or with another foreign carrier. No other U.S. airport offers such potential economies in networking. Section 5 will explain how carriers are beginning to take advantage of these options; and section 6 offers a way to further leverage these options to the benefit of Alaska's economic development.

### 5. Leveraging Air Cargo Transfer by the Airlines

Northwest Airlines (NWA) is currently the only U.S. commercial airline still using freighter planes as part of its cargo operations. The fleet is comprised of twelve Boeing 747-200Fs. With its average of seven daily cargo landings NWA is a natural U.S. code-share partner for any non-U.S. cargo carrier operating through ANC.

Korean Airlines (KAL), with its freighter fleet of Boeing 747-400Fs and MD-11Fs, is the non-U.S. cargo carrier with the largest number of cargo landings at ANC. It averages about eight landings per day. Unlike the situation Air France took advantage of, as noted above, with its new Boeing 747-400ERs, KAL's Asia-Pacific network is wide enough to necessitate an average of thirty such planes landing at ANC per month. ANC is obviously important to KAL's operations and routing.

NWA and KAL started a code-share arrangement in February 2005. NWA and KAL flights from Seoul to the contiguous U.S. via ANC carry each other's codes. Furthermore, each airline is selling belly capacity at ANC to its partner in order to add efficiency to cargo transport between the United States and Asia. Since the current rules are now defined on a U.S. entry and

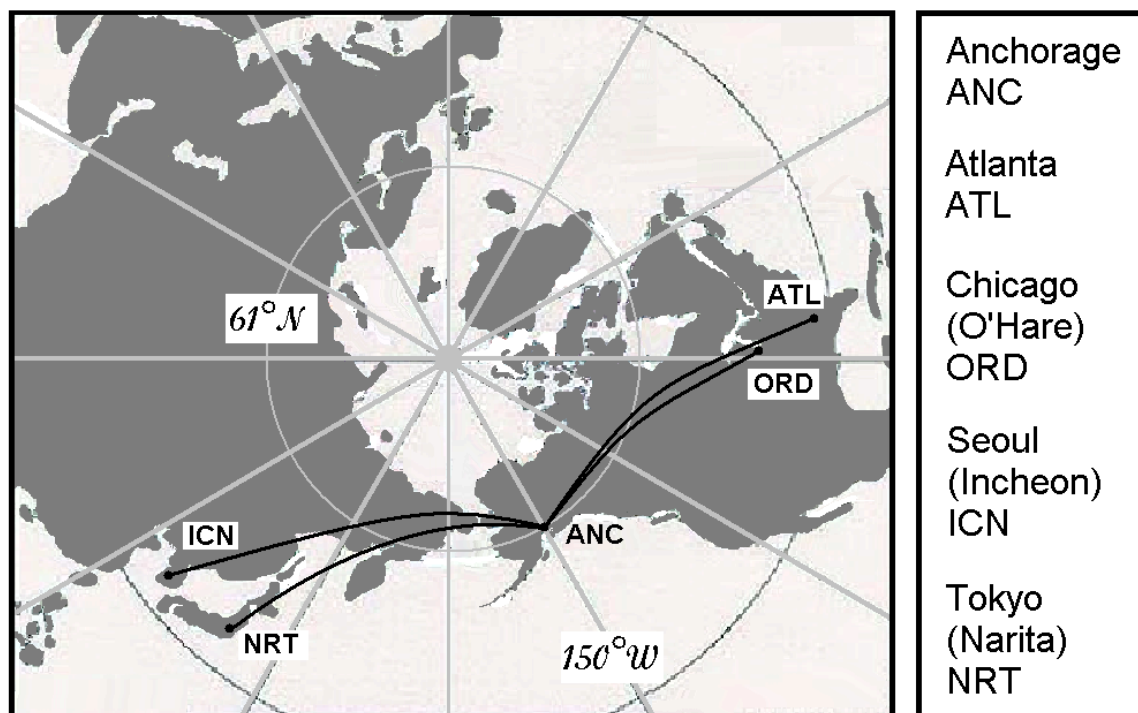
exit basis, both legs of the U.S.-Asia trade flow may benefit. Thus, this code-share agreement is the first to systematically leverage the air cargo transfer options allowed at ANC.

The transfers are occurring on the inbound U.S. flights from Asia at a frequency of about eight cross-load transfers per week. The transfers are mostly two-way trades but sometimes the trade can be one-way. In both cases the transfers are not insignificant, comprising about 10% of the belly's cargo.

NWA's Tokyo-Chicago flight and KAL's Seoul-Atlanta flight are dispatched so that they arrive in ANC at approximately the same time in order to facilitate cargo transfer.<sup>2</sup> Furthermore, next day service for more of their customers is also facilitated. Figure 2 is a circumpolar map showing the two routes converging in Anchorage and giving an illustration of the network economies NWA and KAL are sharing in Far East Asia and the U.S. Midwest.

These network economies, unique to ANC (and FAI), are likely to expand since each airline enhanced its U.S. cargo routes in 2006. NWA's operations at the ANC hub are being expanded with spokes to Atlanta, Dallas/Fort Worth, and San Francisco. Likewise, KAL will add Cincinnati and more landing slots at Chicago O'Hare to its network.

**Figure 2**  
*NWA and KAL Air Cargo Transfer*



KAL moved completely out of Calgary International Airport in April 2005. While it may be argued that there was not enough local freight to accommodate both it and Asiana Airlines the fact that these flight stop-overs are now rerouted to ANC will serve to strengthen its alliance with NWA. In effect, KAL is hoping that its gas-and-go may be topped up by more trans-shipping opportunities.

With an effective code-share agreement and cargo alliance now in place other non-U.S. carriers may wish to see how it plays out before making similar arrangements among themselves.



Two developments which bode well for ANC are: (1) the more liberal U.S.-China bilateral air agreement<sup>3</sup> finalized in July 2004; and (2) the fact, noted earlier, that ANC has over 374 acres of land available for expansion.

## **6. Air Cargo Transfer: Next Steps**

Air cargo transfer flexibility, as an impetus for more international flights through ANC, cannot be ignored. “[O]ne new overseas flight per day creates approximately 90 more jobs in Alaska and a payroll of \$13 million.” (Jim Friedel, President of Northwest Airlines’ cargo division, quoted in King, 2003b; p.1.) Certainly, enhanced interlining provides cargo flexibility on U.S. runs via ANC without the need to re-negotiate any applicable bilateral air agreements. Of course, there are further deregulatory steps one can envision in-between co-terminalization moves and cabotage transportation.

Value-added through manufacturing or other activities within a foreign trade zone (FTZ) requires a layover of in-coming cargo as opposed to direct transfer from airplane to airplane. The FTZ at ANC may be part of the solution to a problem that has vexed Alaska businesses and politicians for many years: how to attract manufacturers to the state as opposed to only resource extractors and service sector businesses. Value-added can occur through the packaging of items or through their consolidation into multi-item products.

Items entering a U.S. FTZ from anywhere in the world, do so duty-free. As well, items transferred among FTZs do so duty-free. Manufacturing within a FTZ makes sense when the duty on the imported components is much higher than the duty on the finished product itself. If the layover involves value-added at ANC’s FTZ, previous to loading the final good on an airplane departing the U.S., there would be no duty applicable on either the input(s) or the final good. Since neither the input(s) nor the final good entered the U.S. on a commercial basis, no duty is assessed.

Value-added manufacturing takes place at several air cargo hubs in the U.S.--- notably in Memphis, TN and Louisville, KY because of the respective presence of the FedEx and UPS corporate headquarters. Just-in-time manufacturers at these locales naturally find it convenient to leverage the availability of cargo lift to destinations throughout the world. In terms of having a manufacturing presence at or near ANC, a benefit in the form of time-savings may be had; especially if the markets for inputs and/or final goods are in Asia. Indeed, all U.S. inbound/outbound carriers which are Asia-domiciled stopover at ANC (which is the only U.S. airport with that distinction).

To date, however, no manufacturer has made use of the FTZ in Anchorage (located at ANC and the nearby Port of Anchorage). One possible explanation is that ANC markets strictly for air cargo landings while the local trade organizations and the municipal government market for businesses to set up a locale in the FTZ. An attempt to bring air cargo operations (commonly thought of as only in-transit at ANC) together with local economic development goes to the heart of a strategic vision for air cargo at ANC and, indeed, for Anchorage itself. This would require ANC to work closely with the organizations supporting the FTZ in order to speak with one voice and explain how air cargo logistical operations can be leveraged to enhance manufacturing in Anchorage unlike anywhere else in the U.S.

Remote locale means that Alaska-based manufacturing for global supply chains needs to work in unison with air cargo operations. Of course, the marketing of these should be handled in unison as well. Marketing undertaken by the Anchorage Economic Development Corporation

(AEDC) has revealed that potential clients interested in import-export activities are not conversant in the way of FTZs, let alone the precise nature of air cargo transfer options at ANC. Recent FTZ inquiries fielded by AEDC involved a U.S.-based heavy tool manufacturer looking for proximity to Alaska's North Slope oil production. Another involved a U.S.-based LD3 air cargo container manufacturer. Discussions are on-going.

As noted above, NWA and KAL handle both two-way and one-way cross-plane transfers, averaging a total of about eight transfers per week. The one-way transfers involve the cargo sitting at the sender carrier's cargo warehouse waiting for the incoming plane of its code share partner who receives the cargo. As a variation on that activity, any FTZ value-added applied to off-loaded cargo could be handled such that it could be transferred to any incoming plane from the code-share partner, not necessarily the very next one after the outgoing plane has departed. Currently, the air cargo transfer regulations do not restrict how long the cargo sits in storage while waiting for a code-share partner's plane to arrive.

In the value-added situation, however, the importer of record who operates in the FTZ would need to be recognized in the dispatching activities of the two code-share partners; in other words, it would be useful to know the time when the importer of record is ready to release the cargo for re-shipment. Compliance with U.S. Customs and Border Protection (CBP), the oversight body for all FTZs, is not a source of excessive paperwork and time delay in this case. When the cargo is first received at ANC it may go straight to the FTZ for value-added activity. If the importer-of-record wishes to send the value-added cargo to another FTZ within the contiguous U.S. or to a third country, it can be loaded onto the next available plane without delay. Only when the item is ready to enter the U.S. economy on a commercial basis would duties be assessed. CBP accepts weekly updates on the incoming and outgoing cargo from businesses operating in FTZs in order to assess retroactive duties if need be. The weekly submission of paperwork is one of the main reasons why FTZs are popular with just-in-time importers.

Of course, if the importer were to leverage this option and perform value-added activity on incoming cargo, there is always the chance that expeditious flights may not be available with the code-share partner. If that were the case, NWA could simply offer a code-share to a different non-U.S. carrier. In that way, the air cargo transfer options could begin to expand beyond KAL; indeed partnerships could form among the non-U.S. carriers themselves with NWA acting as the code-sharing lynch-pin. As would be expected it is the demand for cargo lift which will determine the nature and effectiveness of any partnerships between air cargo carriers.

## **7. Policy Recommendations and Regulatory Impacts**

There are two policy recommendations which arise in order to help make effective usage of value-added activities at ANC possible. The first recommendation is for the air carriers and ANC to gather and share new data. It is standard for shared data to relate only to aircraft type, number of cargo landings and cargo weight for the purpose of assessing and paying appropriate airport user fees. But, in this new context, it would be useful to also know: the aggregate value and type of the cargo; and when it was deplaned and enplaned. Values and types would obviously be identical on the two-way cross-transfers; but on the one-way cross-transfers the increased value reported would give some idea of the amount of value-added activity taking place at ANC. The second recommendation is for ANC, in its role as a state agency, to share these data and work closely with those municipal and non-profit agencies in Anchorage that wish to promote business

development. In effect, ANC would be required to act as a conduit between two seemingly disparate groups: (1) air carriers wishing to fill cargo bellies; and (2) municipal groups looking to attract new businesses to the area. In effect, ANC and its partners would be bringing together carriers and shippers in order to enhance their supply chain management.

With such publicly available data prospective importers of record would have a better idea as to: “what’s in the containers”; what are the potential value-added opportunities for them when locating in the FTZ at ANC; and what are the timeframes over which cargo is transferred. But, as noted above, the regulatory implications of success would be an expansion of more code-share partners once incoming belly space on expeditious flights is competed for. A short-term effect would likely be the bidding up of freight rates as belly space is rationed. But a longer term effect, if increased cargo lift were not forthcoming quickly enough, would be pressure from various U.S. importers and Asian governments for more liberal bilateral air agreements with the U.S. and any third countries along the routes.

Regarding its major Asian trade partners the U.S. has Open Skies agreements with South Korea, Singapore and Japan (in air cargo only). Pressure to negotiate Open Skies with China (which has four cargo carriers using ANC already) would mount as a means to secure route flexibility along with belly space. But irrespective of Open Skies with the U.S., the Asian countries would have to secure acceptance of a U.S. layover with any third country sources or destinations in the route. In other words, while Open Skies means the U.S. would accept being in the middle of a 5<sup>th</sup> freedom route, the third country may object to being the source or destination on the route. In any case, more negotiations for liberalized air transport would have to arise if air cargo transfer options were to become widespread across all non-U.S. carriers using ANC.

## **8. Conclusions**

This paper has outlined the nature of the latest phase of air cargo transfer flexibility at ANC. It has been shown that specific benefits can accrue to foreign carriers with respect to the U.S. marketplace. With its continued drive to remain a relevant and strategic air cargo hub ANC is pushing the envelope of air cargo deregulation in North America. It also represents a unique example of unilateral trade liberalization on the part of the United States government. What is also instructive is that such concessions can be made outside of the contentiousness of bilateral air agreements.

This paper also notes the benefits that can accrue to ANC if more air cargo transfers take place. The attracting of businesses into the FTZ and the ability to demonstrate that expeditious flights and belly space are available require ANC to more aggressively market its exclusive transfer options and work strategically with municipal organizations on the common goal of increased business activity as facilitated by air cargo operations. Of the other FTZs located at a major U.S. air cargo hubs Anchorage was distinguished in that it did not have a pre-existing manufacturing base. Its FTZ, alone, has not proven to be a sufficient magnet. This paper demonstrates how air cargo transfer in ANC offers operational freedoms which an informed manufacturer could leverage.

There are further deregulatory measures which remain for ANC to pursue. With eight years separating the first and second phases of the liberalizations there is evidence that events can move quickly for ANC. Time will tell if the NWA and KAL air cargo transfer arrangement will spread to include other non-U.S. air cargo carriers operating through ANC. And time will

tell if deregulation continues along lines of co-T, cabotage and value-adding layovers as noted in this paper.

### Endnotes

<sup>1</sup> This is the definition used by the Federal Aviation Administration (FAA) and is the measure by which it allocates funding for cargo infrastructure improvements.

<sup>2</sup> NWA's Tokyo-Chicago flight is comprised of considerable cargo from China since the airline has fifth freedom rights between Japan and Guangzhou. The U.S.-Japan bilateral air agreement allows for Open Skies only in air cargo.

<sup>3</sup> Of the 111 all-cargo flights per week between the U.S. and China, to be phased in by 2010, 62 of these will proceed through ANC.

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