Alliance (KAFW) Logistics Airport Case Study

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Introduction:

Fort Worth Alliance airport was opened in 1989, and is publicly owned by the city of Fort Worth and privately operated by Alliance Air Services. When it opened, it was billed as the first purely industrial airport in the western hemisphere. The airport is part of a larger (17,000 acres) real estate development effort by Hillwood Development Company, owned by H. Ross Perot. In contrast to most other airports, Alliance was planned as a logistics center, with the airport being just one of the transportation options to this site. The airport is 14 miles north of Fort Worth, TX, and is adjacent to I-35W. The airport is also adjacent to a BNSF Railway intermodal facility, as seen in Figure 1.

![Figure 1](image-url)
Purpose of paper:

This paper will examine the features that have made the Alliance facility successful, and attempt to understand how this model can be used to help other logistics-oriented facilities succeed in using airports as part of their transportation infrastructure.

Land Use-Noise:

As is visible in Figure 2, the location for Alliance was chosen partly due to its proximity to the Dallas-Fort Worth metro area but also due to its relative remoteness to dense residential areas. This is a large development project (17,000 acres), which was carved largely from farm land. At the time of construction, there were few residences nearby to complain about airplane noise. Although the development does include some residential areas, it is primarily an industrial site with the airport near the middle. This, and other parts of the development set aside as cattle land (cows don’t complain) creates a buffer (from a noise perspective), which will largely insure against disruptions due to noise complaints. This also allows the airport to operate 24 hours a day which is very important to its logistics purpose.
Foreign Trade Zone:

The Alliance development includes 9600 acres as a “foreign trade zone”, which allows companies to store inventory without having to go through customs or pay state taxes on it. If the company subsequently sends the inventory out of the United States, then it never has to go through customs, which gives considerable flexibility. They can also transfer it to another foreign trade zone without having to officially “import” it. Customs does conveniently reside on the airport if importation is necessary.
Multi-modal facility:

The Burlington Northern Santa Fe Railway operates an intermodal facility on the west side of the development (visible in Figure 2). This facility connects the road system with the train system with the air system. There is also connection to Union Pacific rail lines. This allows easy access to Asian imports/exports from the west coast. Alliance bills itself is an inland port.

Alliance is adjacent to I-35, which runs north to I-40 and I-70 and to Canada, and south to I-20 and then to Mexico. The airport claims to be within a one-day truck drive from 48 million people, and a two-day truck drive from 111 million people. 6.4 millions people live in the Dallas-Fort Worth Metro area, making it the 4th largest metro in the US. This airport is very central to the United States.
Runway System:

Alliance has two parallel runways (as seen in Figure 5 and Figure 6) that handle approximately 80,000 operations per year. The longer of the two runways is 9600 ft, and the shorter one is 8220 ft; they are both 150 ft wide. Construction is underway to extend the longer runway to 13,000 ft, which will allow direct flights to and from Asia. This runway extension was originally a ~$133 Million project (2001 dollars) which involved moving a state highway and a railroad, but the scope has increased since inception (from a 11000 runway to a 13000 runway).

Many of the businesses based on the airport have direct taxiway access. So, far there is no significant passenger facility at the airport, but there is room to expand. Dallas-Fort Worth airport (DFW) is congested, and there have been talks of repealing the
Wright amendment which could allow Alliance to acts as a passenger reliever airport for DFW. Southwest already has significant operations at Love field in Dallas though, and Meacham field in Fort Worth is closer to the city and already has some airline service.

Figure 5
Figure 6
Business and other use:

Alliance is currently home to many companies that take advantage of its logistics strengths and proximity to the Dallas-Fort Worth metro area.

These companies include:

<table>
<thead>
<tr>
<th>Coca Cola</th>
<th>FedEx</th>
<th>Hewlett Packard</th>
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</thead>
<tbody>
<tr>
<td>Exel Logistics</td>
<td>American Airlines</td>
<td>Ryder North America</td>
</tr>
<tr>
<td>JC Penney</td>
<td>LG Electronics</td>
<td>Nestle</td>
</tr>
<tr>
<td>SC Johnson &amp; Sons</td>
<td>Texas Instruments</td>
<td>General Motors</td>
</tr>
<tr>
<td>Michaels Stores</td>
<td>Mitsubishi Motors</td>
<td>UPS</td>
</tr>
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<td>Kraft Foods</td>
<td>Tech Data Corporation</td>
<td>Safeway</td>
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<td>VW of America</td>
<td>Lockheed Martin</td>
<td>General Mills</td>
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<td>Hyundai Motor America</td>
<td>Ford Motor Company</td>
<td>The Home Depot</td>
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<tr>
<td>Con-Way Freight</td>
<td>Motorola</td>
<td>Honeywell</td>
</tr>
<tr>
<td>Bell Helicopter</td>
<td>TD Ameritrade</td>
<td>Bridgestone/Firestone</td>
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</tbody>
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American Airlines uses the relatively uncongested Alliance facility for maintenance on its airplane fleet. Dallas-Fort Worth airport (KDFW), which is just ~15 miles away and is American’s main hub, is very congested, so this allows Alliance to serve as a non-passenger reliever airport. FedEx uses it as a cargo facility which further serves to relieve DFW.

There are also many military flights (training) into the facility due to its long runways, and uncongested nature. The lack of congestion also allows an annual air-show which attracts several hundred thousand people and many performances.
Model for success:

The basic model for success at Alliance started with a large area of undeveloped land near a large population center and central to the US with access to transportation corridors such as highways and railways. It requires some entity with the wherewithal to acquire it, in this case Ross Perot, but it could be a government entity. The model also is largely dependent on the ability to gain FTZ designation (there are a couple 100 of these, many already associated with airports). A long runway needs to be possible (~10,000 feet); it’s not clear that two are required. 24/7 operation is central, so noise concerns need to be addressed as well.

Other possible sites:

I will discuss a few sites that I think could accomplish something similar, or that have accomplished something similar. This is not meant to be an exhaustive discussion, I am just trying to give a few examples to further illustrate how the model might work.

KVCV: Southern California Logistics Airport, Victorville Ca

This is an old air-force base with a 15,000 ft runway, located near (~60 miles away) Los Angeles. It has proximity to the LA Basin including the port of Los Angeles, one of the busiest ports in the world. This site has a large foreign trade zone designation. It also has access to major North-South (I-15, I-5) and East-West (I-10, I-40) interstate highways, and rail systems. It would seem that noise concerns would have been previously addressed since this is an old air-force base.
KSAV: Savannah / Hilton Head International Airport, Savannah Ga

This site has a 9000 ft runway, located near Savannah Ga. It is right next to the port of Savannah, the fastest growing container port in the US. It has a foreign trade zone designation, and access to North-South (I-95, I-75) and East-West (I-16 to I-20) interstate highways and rail systems. There is also a large (1500 acre) site adjacent to the airport that is zoned industrial but has not yet been developed.
KGSP: Greenville Spartanburg International Airport, Greer SC

GSP has an 11,000 ft runway and is adjacent to a large industrial area that includes a BMW manufacturing facility. This site currently lacks a foreign trade zone designation. There is access to major interstate highways (I-26, I-85) and nearby rail lines.
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