

ECONOMIC IMPACT OF GENERAL AVIATION ON SOUTH CAROLINA

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Introduction and Summary

The purpose of this paper is to quantify the direct effects of general aviation on South Carolina in terms of revenue collections of the state. The indirect impacts were not quantified.

The state had a population of 2.9 million with a personal income of \$18.3 billion in 1978. State revenues amounted to \$1.7 billion with a labor force of approximately 1.3 million in 1979. The state has 81 public use airports (including 5 air carrier, and 4 military airports), 54 private airports and 8 heliports. There were 1,668 airplanes based with a total operations of 1,475,458 in 1979.

In the state there were 7,186 pilots, 418 flight instructors and 922 aviation mechanics in 1979. The 54 fixed base operators (FBO's) sold over 4.5 million gallons of aviation fuel, and employed approximately 600 people. A total of 2010 people were directly employed in general aviation in the state, with an immediate income of \$40.4 million. Assuming a 2.10 multiplier factor, this amounted to a total estimated income of \$84.84 million. Based on these figures, the total estimated impact on state revenue collections are as follows: Sales Tax - \$1,357,473; Income Tax - \$3,393,684; Sales Tax on Fuel - \$306,443, adding up to a total of \$5,057,500.

For the same year (1979) the budget of the South Carolina Aeronautics Commission was \$1.4 million, and the agency administered over \$0.9 million for airport improvements, matched by over \$6 million for FAA grants. This resulted in an estimated \$500,000 in state revenue. The FBO goods and services were estimated at \$3 million with a contribution of \$120,000 in sales tax. Although the total impact on state revenue seems insignificant, when compared to the state investment, the return is quite high.

Although no dollar value was placed on the identified indirect impacts, of the numerous industries moving to the state, over 68 percent identified the outstanding aviation facilities as one of the prime reasons. In the future it will be essential to quantify these indirect benefits.

In a country as large as the United States, good transportation of one kind or another is essential to the conduct of business as well as the maintenance of social activity. The geographic area of the 48 coterminous states alone is so large compared with most western countries that distance is a special problem to overcome. Generally, 300-400 miles is considered to be the distance at which air competes with ground modes. In the case of general aviation, it may indeed be much less, simply because of superior speed.

Demand for general aviation, like that for any other transportation mode, is what economists term a derived demand; that is, the demand for it is not for its own sake, but because it is a means to an end. The only exceptions to this are, of course, pleasure flying and sports flying, which are ends in themselves. But the bulk of the nation's general aviation activity exists to serve some other purpose, broadly divisible in the business or personal trip purposes. South Carolina is no exception to this.

General aviation business flying nationally in 1979 constituted several times as many flying hours as all domestic air carrier services combined. It also comprised some 72 percent of all general aviation flying. Business flying includes not only

executive jets owned by major corporations, but also smaller twin and single engine aircraft on company business. Freight shipment is an important and growing general aviation activity. Special activities such as aerial photography, agricultural spraying and construction projects are also important types of business aviation activity.

The economic impact of general aviation on South Carolina will be detailed in the following paragraphs. Since it was impossible to show a relationship to GNP on a national level, a means of relating it to the revenue collections of the state was sought. While it is easy to quantify the direct impact of general aviation on the state, quantifying the indirect impact was more difficult.

Background

South Carolina is comprised of 46 counties representing various stages of growth. The major growth areas are located in the larger urban counties: Richland, Lexington, Greenville, Spartanburg and Charleston. The remaining counties are in various stages of growth with Jasper County being the poorest county based on per capital income. The state had a population of 2,918,000 with personal income of \$18,346,000,000 in 1978. The capital investment planned for 1979 was \$1.6 billion and total labor force was 1,298,000 people. State revenues amounted to \$1.7 billion in 1979.

South Carolina has 81 public use airports, 54 private airports and 8 heliports. Of the 81 public use airports, 5 are air carrier airports and 4 are military airports. Only one of the military airports will not accept general aviation aircraft unless it is an emergency. There are 1,668 airplanes based in the state comprised of the following:

4 place and over	873
Under 4 place	465
Multi-engine	312
Helicopters	15
Seaplanes	3
Total	1,668

General aviation operations in the state in 1979 were as follows:

Local	804,091
Itinerant	671,367
Total	1,475,458

The pilot population in South Carolina numbered 7,186 as of December, 1979. There also were 488 flight instructors and 922 aviation mechanics as of the same date. The 54 fixed base operators (FBO's) received 5,590,170 gallons of aviation fuel in 1979 and sold over 4,500,000 gallons. The largest FBO in the state employs over 150 people. The smallest consist of one person. The total number of people employed at FBO's is approximately 600 people.

Direct Impacts

The total amount of people employed in general aviation in South Carolina was 2010. These are the people who have the most direct contact with the industry. A survey conducted by the staff of the South Carolina Aeronautics Commission determined that the average annual income of these people was \$20,000. This allowed the immediate income accounted for by general aviation to be calculated to be \$40,401,000 in 1979. The Division of Research and Statistics for the state provided data showing that for every \$1.00 of income there is a multiplier effect of \$2.10. This made the total estimated income attributable to the general aviation industry to be \$84,842,100.

The estimated impact on state revenues through tax generated was then determined. Using the \$84,842,100 total estimated income, the relative share used for personal consumption was determined to be \$33,936,840. This was then multiplied by the 4 percent sales tax for \$1,357,473.60. The total estimated income was then multiplied by 4 percent to project the relative share generated for personal individual income tax in the amount of \$3,393,684. The sales tax on aviation fuel used in general aviation was \$306,342.63. Total estimated impact on state revenue collections in 1979 was as follows:

Sales Tax	\$1,357,473.60
Income Tax	3,393,684.00
Sales Tax on Fuel	306,342.63
Total	<u>\$5,057,500.23</u>

The budget of the South Carolina Aeronautics Commission in 1979 was \$1,400,000. The agency was responsible for administering over \$900,000 of capital improvement bonds for airport improvements. This money was then matched by over \$6,000,000 of FAA construction money. These funds, through jobs created and goods purchased, generated an estimated \$500,000 in state revenue.

FBO goods and services were surveyed to determine if an amount could be determined for the state. The amount of \$3,000,000 was estimated for the year 1979 based on the survey. This would contribute only \$120,000 in sales tax. When all of these are related to total state revenues, it is about 0.003 percent.

Indirect Impacts

An effort was made to determine indirect impacts but it was found impossible at this time to quantify them. One major impact was identified: numerous industries are moving into South Carolina and over 68 percent of these indicate that one of their prime reasons was the outstanding aviation facilities available in the state. If the impact analysis is to be complete, it is essential to determine the indirect economic impacts in the future.

SUMMARY

In the development of the economic impact of general aviation on South Carolina, several methods of determining the impact were considered. Even though the impact on state revenues seems insignificant when compared to the amount of state monies invested, the return on the state's investment is quite high.

GUIDELINES FOR FUTURE GENERAL AVIATION
ECONOMIC IMPACT STUDIES
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Introduction and Summary

There is a substantial interest currently in undertaking economic impact studies (EIS) for general aviation airports. This is due to the failure of airports to meet many of the necessary conditions of the free market system. The local communities believe that they are bearing the disbenefits (noise) while others are gaining the benefits. They are generally withdrawing their financial support due to this notion of inequity.

The justification for public support is based on the free market system under which right things are produced and consumed at right price, based on factors such as many buyers and many sellers, an

undifferentiated product, perfect knowledge, etc. Airports fail to meet many necessary conditions and there are many pricing problems due to cost structure.

These include high fixed costs for establishing an airport, but low marginal costs for providing an extra unit of service (landing), which cause the marginal cost pricing to generate inadequate revenue. The problem is further complicated due to the production of indirect cost and benefits.

Cost-benefit analysis is generally prescribed by the economist for establishing the proper balance of taxes and resource allocations. But, distinct difficulties are faced in measuring all the costs and benefits of a general aviation system in monetary terms. These difficulties lead to a judgment process, entering the political arena, and point to the need for a decision making process, which in the context of general aviation, must recognize two groups: (a) An active local group against general aviation; and (b) a dispersed group which benefits directly and indirectly. The first group is more influential due to their concentration on the local scene, and the political weakness of the second group is due to their dispersed nature.

The aim of an EIS is to correct this imbalance, but in many instances, it has not been effective due to the weak methodology. There is a need for a well conceived and uniform methodology which could be applied on a widespread basis. This would lead to a better understanding of the distribution of general aviation impact on the national level.

Economic impact studies are important and have become very popular lately. This is evidenced both by the recent proliferation of papers and meetings dealing with this subject, and also the growing interest by local aviation groups and communities around general aviation airports wanting economic impact studies (EIS) done for their areas.

Possible reasons for this interest are that for a long time the public has been bearing some of the cost of operating the general aviation system by way of direct taxes that go to support the FAA's operation. In addition, those around the airports bear an indirect cost from the noise of the aircraft going over their property. There is a growing awareness of these costs developing on the part of local communities and some are beginning to withdraw their support. This reaction by the local community is, by and large, attributed to the notion of inequity, in that insufficient compensation is being passed on to those in the community who are adversely affected by the presence of the general aviation airport. The net result of this loss of support is also the loss of general aviation airports, and an apathetic view that the general aviation system can carry on without them.

Is there any justification for general aviation getting public support? Why should the general public have to support general aviation and keep it going? If those involved directly in general aviation are not willing to pay the full cost of the system, then why should it continue to exist?

The free market system is relied upon heavily in the United States to help provide the proper distribution of wealth. It is assumed that under most conditions the free market price will get the 'right' things produced and consumed at the 'right' price. But to function perfectly, there must be such things as many buyers and many sellers, an undifferentiated product, perfect knowledge, etc. Although it is rare to find a market which meets