

**NATIONAL TRANSPORTATION: IS PROFIT POSSIBLE FOR
AMTRAK AND THE AIRLINE INDUSTRY?**

QUEST CLUB PAPER

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This paper will be presented in three parts; first, we will look at the development of passenger rail service and the airline industry through 1970; second, we will outline what occurred with both of these industries during the 1970's; and third, we will consider what they can do with respect to profitability.

From the middle 1800s until approximately 1920, nearly all intercity travelers moved by rail. The trains were owned and operated by private, for-profit companies. Return on investment occasionally reached 10% which was considered a spectacular financial success at the time. Railroads traversed the nation from the East Coast to California and became the lifeblood of commerce.

In 1887 the Interstate Commerce Commission (ICC) became the primary regulator of the industry as Congress acted on accusations railroads were abusing their economic power. Under ICC regulation, railroad profits were reduced, the growth of the rail system stagnated, and railroads underinvested in passenger rail facilities. Labor costs advanced, and passenger fares increased, just as automobiles started to gain a foothold.

In the mid-1930s, railroads regained brief passenger attention with service improvements and new, modern equipment. Even with the improvements traffic continued to erode. By 1940 railroads accounted for 67% of passenger-miles in the United States. World War II changed the trend. During the war, troop movements and restrictions on automobile fuel increased passenger traffic by 6 times. After the war, railroads rejuvenated equipment,

which inspired the last major resurgence in passenger rail travel. By 1946, there remained 45% fewer passenger trains than in 1929.

During this time, the ICC played a leading role in setting prices and intervened in other ways detrimental to passenger rail business. In 1947, the ICC ruled that passenger trains could not travel more than 79 miles per hour without in-cab signaling systems, which railroads criticized as unnecessary and expensive. Subsequent to this ruling, railroads scrapped plans to develop high speed intercity rail service. In 1958, the ICC was granted authority to approve the modification of passenger routes. Many routes required pruning, but the ICC delayed action for months. When it did authorize modifications, the ICC insisted that unsuccessful routes be merged with profitable ones. The ICC was even more critical of corporate mergers. Many railroad combinations were delayed for years and even decades. By the time the ICC approved the mergers in the 1960's, the flight of passengers to air travel and the automobile had taken their toll and the mergers were unsuccessful.

Railroads also were saddled with antiquated work rules and an inflexible relationship with trade unions. Average train speeds doubled between 1919 and 1959, but unions resisted efforts to modify their existing 100 to 150 mile work days. As a result, work days were roughly cut in half, from 5-7 hours to 2-4 hours. Labor rules also perpetuated positions that had long been eliminated by technology.

While passenger rail faced internal and governmental pressures, new challenges undermined the dominance of passenger rail: highways and commercial aviation. Because of convenience and flexibility, the automobile became the preferred mode of

transportation for more and more Americans. In 1956, The National Interstate and Defense Highways Act was signed by President Eisenhower. Appropriating \$25 billion for the construction of 41,000 miles of interstate highways over a 20-year period, it was the largest public works project in American history to that point. Eisenhower argued for the highways for the purpose of national defense. In the event of an invasion by a foreign power, the military would need good roads to be able to quickly transport troops around the country.

Government also supported aviation. Governmental entities built airports, funded construction of highways to provide access to the airports, and provided air traffic control services.

Between 1946 and 1964, the annual number of rail passengers declined from 770 million to 298 million. Few trains generated profits; most produced losses. By the mid-1950's railroads lost more than \$700 million on passenger services (almost \$5.4 billion in today's dollars).

In the late 1960's, the end of passenger rail in the United States seemed near. First came the requests for termination of services; then came the bankruptcy filings. It now seemed that passenger rail's financial problems might bring down the entire railroad industry. Few in government wanted to be held responsible for the loss of the passenger train, so another solution was necessary.

HOW DID THE AIRLINE INDUSTRY DEVELOP?

The age of commercial aviation began when the Wright brothers made their first successful flight in 1903. But, the public did not embrace air travel, thinking it was too dangerous. The first major stimulus that helped to develop the industry was World War I. However, after the war the government stopped funding research and development, practically stagnating growth.

The industry revived as the Kelly Airmail Act of 1925 provided private airlines the opportunity to function as mail carriers. These private carriers, supported by airmail revenue, could then expand into carrying other forms of cargo, including passengers. Passengers were targeted as a way to augment the income of the airmail contracts.

The aviation industry backed the passage of the Air Commerce Act in 1926, which allowed Federal regulation of air traffic rules. The industry believed that without the government's action to improve safety, the commercial potential of the airplane would not be realized.

Then, in 1927, Charles Lindbergh electrified the world with the first successful solo flight across the Atlantic Ocean. This event created massive interest in flying with the general public.

In 1938, the airline industry for all practical purposes became a regulated public utility with profit and return on capital controlled by the federal government. Under the Civil Aeronautics Act of 1938, Congress created a new Civil Aeronautics Authority (CAA) with powers that included economic regulation of the airlines that flew across state lines.

Congress said that economic regulation of airlines should be “in the public interest,” and “in accordance with public convenience and necessity”. Renamed the Civil Aeronautics Board, it allowed competition among airlines on a limited scale to meet the needs of commercial business. The CAB regulated airfares and decided how many and which airlines could fly between cities. The Board regulated the number of flights during a given time period and the number of seats available. New airlines needed CAB approval before offering flights between particular cities, controlling competition. Existing airlines also needed CAB approval to serve any new routes, and they could not eliminate service without permission. Further, airlines needed approval to merge with or purchase other companies.

World War II helped to generate support for research and development of aircraft, which extended beyond the war to commercial aviation. A major post-war development was the four-engine aircraft. This innovation substantially cut the flying time for ocean and continent crossings. The 1950’s saw dramatic improvements in the capacity and comfort of commercial flights. Planes were modernized, and jet service was introduced in 1959, enabling even faster cross-country service.

After major in-air collisions in the 1950’s, the Federal Aviation Act was passed in 1958, creating the Federal Aviation Administration (FAA) to develop an air traffic control system. While the Federal Aviation Act repealed the 1938 Civil Aeronautics Act, economic regulation of the airlines remained the responsibility of the CAB. Over the next 20 years, the CAB wrote so many new regulations it became increasingly difficult for the airlines to comply with all of them.

LET'S LOOK AT WHAT HAPPENED IN THE 1970'S?

In 1970, Congress created the National Railroad Passenger Corporation (Amtrak) as a public corporation to receive taxpayer funding and assume operation of all intercity passenger trains nationwide. The act called for a 15 member board with the majority appointed by the President upon confirmation by the Senate.

Nearly everyone involved expected the experiment to be short-lived. The Nixon administration and many Washington insiders viewed Amtrak as a politically expedient way for the President and Congress to give passenger trains one last chance demanded by the public. They expected Amtrak to quietly disappear as the public lost interest.

Proponents of the bill sought government funding to assure the continuation of passenger trains. Proponents hoped governmental intervention would be brief as Amtrak would soon support itself. Neither view proved correct. Popular support has allowed Amtrak to continue in operation longer than critics imagined while financial results have made it infeasible to return to private operation.

Amtrak began operations in 1971 with \$40 million in direct Federal aid, \$100 million in federally insured loans, and private contributions. The corporation was molded from the passenger rail operations of 20 out of 26 major railroads in operation at the time. The railroads contributed equipment and capital. In return, they received approval to discontinue their passenger services, and at least some acquired common stock in Amtrak. Amtrak received no tracks or rail right-of-way at its inception.

Most tracks on which Amtrak operates are owned by freight railroads. This arrangement has two notable impacts on Amtrak operations. The host railroads are responsible for track maintenance and occasionally Amtrak suffers service disruptions from untimely track repair. When host railroads simply refused to maintain their tracks, Amtrak occasionally was compelled to pay the maintenance out of its own budget. Also, Amtrak enjoys priority over the host's freight traffic only for a specified window of time. When a passenger train misses that window, host railroads may direct passenger trains to follow freight traffic.

Amtrak soon had the opportunity to acquire railway. Following the bankruptcy of several northeastern railroads, Congress passed legislation to transfer to Amtrak railway from Boston to Washington, D.C. That northeast corridor became Amtrak's jewel, generating significant revenues.

Amtrak's ridership increased from 16.6 million in 1972 to 21 million in 1981. Amid uncertain government aid for the next 20 years, ridership stagnated at roughly 20 million passengers per year. Ridership increased in the 2000's after implementation of capital improvements in the Northeast Corridor and rises in automobile fuel costs. In the aftermath of the September 11 terrorist attacks, during which Amtrak kept running while airlines were grounded, the value of a national passenger rail service was briefly acknowledged in Washington. But when Congress returned to work following the attacks, the airlines received a \$15 billion bailout package, and inattention toward Amtrak resumed. With the dramatic rise in gasoline prices during 2007–2008, Amtrak's ridership increased to 28.7 million for the year ended September 30, 2008.

Annual direct Federal aid reached a 17-year high in 1981 of \$1.25 billion. By 1986, appropriations fell to a decade low of \$601 million. Amtrak was forced to borrow to meet short-term operating needs, and by 1995 Amtrak was on the brink of a cash crisis and unable to service its debts. In 1997 Congress authorized \$5.2 billion for Amtrak over the next five years on the condition that Amtrak submit to the ultimatum of self-sufficiency by 2003 or liquidation. Amtrak made financial improvements, but ultimately did not achieve self-sufficiency.

The most recent appropriation bill for Amtrak was signed into law by President Bush on October 16, 2008. This bill appropriates \$2.6 billion a year in Amtrak funding through 2013.

Government aid to Amtrak was controversial from the beginning. The formation of Amtrak in 1971 was criticized as a bailout serving corporate rail interests and union railroaders, not the traveling public. Critics assert that Amtrak has proven incapable of operating as a business and that it does not provide valuable transportation services meriting public support. They argue that subsidies should be ended, national rail service terminated, and the Northeast Corridor turned over to private interests.

Supporters point to government subsidies of the automobile and aviation industries. They assert government aid to those forms of travel was a primary factor in the decline of passenger service on privately owned railroads in the 1950s and 1960s. Therefore, they believe that Amtrak should only be as self sufficient as federally supported highways and airports.

HOW ABOUT THE AIRLINE INDUSTRY IN THE 1970'S?

During that decade, a movement to reduce economic regulation of the airline industry became popular. Congress thought the CAB should step back from economic regulation and allow open competition among airlines. Consequently, Congress passed the Airline Deregulation Act of 1978 (ADA). This Act ended most economic regulation in a series of steps over several years, and directed that CAB cease operations by the end of 1984.

Clearly, the biggest winner in the deregulated air travel environment has been the passenger as increased competition reduced average fares by almost 50% in real terms according to the Air Transport Association. As such, the U.S. witnessed an explosive growth in demand for air travel, as millions who had never or rarely flown became regular fliers.

The entry barriers for new airlines are lower in a deregulated market, and so the U.S. has seen hundreds of airlines start up, particularly, during downturns in the normal 8-10 year business cycle. The added competition, together with pricing freedom, meant that new entrants often took market share with reduced fares that, to some degree, full service airlines matched. As the business cycle returned to normalcy, major airlines could again dominate their routes through aggressive pricing and additional capacity offerings, often swamping new startups.

Toward the end of the century, a new style of low cost airline emerged. Offering a no-frills product at a lower price, these new air carriers represented a serious challenge to the so-called "legacy airlines", defined as those airlines which existed prior to deregulation.

Over the last 40 years, the airline industry has varied from reasonably profitable, to devastatingly depressed. As a result, a shakeout of airlines has occurred in the U.S. United Airlines, Continental Airlines, US Airways, Delta Air Lines, and Northwest Airlines have all declared Chapter 11 bankruptcy. Some of them filed bankruptcy more than once. Today, American Airlines is the only U.S. legacy carrier to survive bankruptcy-free. Delta and Northwest recently merged, creating the largest U. S. airline in terms of revenue.

In an effort to maximize revenue from each passenger mile, legacy airlines installed complex, computerized yield management systems to price seats. These systems allow airlines some price discrimination in order to sell tickets at varying prices simultaneously to different passenger segments. However, with increased competition along all routes and improved price comparisons through online websites, price competition has become intense. Another airline cost concern is the hedging of oil and fuel purchases. While hedging instruments can be expensive, they can easily pay for themselves many times over in periods of increasing fuel costs.

Since deregulation, the industry has been cyclical in its financial performance. Generally, four or five years of poor earnings precede five or six years of improvement. But lately, profitability in the good years is generally low; 2-3% net profit after interest and tax,

while in bad economic times, losses can be substantial. Since 1980, the industry has not earned back the cost of capital during the best of years.

IS PROFIT POSSIBLE FOR AMTRAK AND THE AIRLINE INDUSTRY?

Amtrak came into existence as a government owned company to provide passenger rail service throughout the nation. The Board and its management were appointed by the President. The business started with federal government support and now receives some state government support as well. The company has never made a profit in its existence. A few CEOs' desired to eliminate federal support, but those efforts never succeeded. Today, the principal duty of the Amtrak CEO is to lobby Congress for appropriations for operating expenses, debt reduction, and infrastructure improvements. Under its current structure, there is no way Amtrak could be profitable without government support.

In the September 30, 2007 independent auditor's report, Amtrak's auditor, writes "The company has a history of substantial operating losses and is highly dependent upon substantial Federal government subsidies to sustain its operations.....Without such subsidies, Amtrak will not be able to continue to operate in its current form and significant operating changes, restructuring or bankruptcy may occur."

Aside from its ownership, Amtrak is like most other companies in the transportation industry. Its operation requires large scale investment in capital equipment, which must be financed with long term debt or leased. Unionized labor and fuel are its largest cash

operating expenses. Just like other passenger oriented transportation companies the key to profitability is to keep its trains running and full of passengers.

Amtrak produces a Monthly Performance Report which it publishes on its website. In its fiscal September, 2008 unaudited report, Amtrak showed a net loss from operations of slightly more than \$1 billion, or about \$500 million if you exclude depreciation and interest charges. Amtrak divides its operation into three strategic business lines, the Northeast Corridor Spine, State Supported and Other Short Distance Corridors, and Long Distance. Only the Northeast Corridor Spine generates a profit from operations before depreciation and interest. Of \$2 billion in train system revenue, 50% comes from the Northeast Corridor. This corridor generates \$369 million in operating profit while the other two business lines lose almost \$600 million. From a ridership perspective, the Northeast Corridor transported almost 11 million passengers, 38% of total system ridership. By comparison, the Long Distance business line transports only 4.2 million passengers, 15% of total ridership, and loses \$480 million.

What is the Northeast Corridor Spine and why is that strategic business line profitable?

The Northeast Corridor serves Boston, New York City, Philadelphia, Baltimore, and Washington, D.C. and many communities in between. Four of the six busiest Amtrak stations are located in the Northeast Corridor; New York, Washington, Philadelphia, and Boston. In this Northeast corridor, Amtrak has segmented its market to appeal to the business traveler. You can leave Boston and be in New York City for a luncheon meeting and back home to Boston by late afternoon. You can travel between

Philadelphia and New York City in about an hour. You can leave New York at 7A and be in Washington D.C. by 9:45A. This geographic area enjoys a high concentration of travel passengers and Amtrak enjoys a competitive advantage over air travel and the automobile in terms of safety, convenience, and price.

Can Amtrak be profitable? Yes! But at a minimum they would need to discontinue long distance rail service. The ridership is too small to compete profitably with air travel and the automobile. But we need to note, terminating long distance service would hurt those riders who are afraid of or cannot afford air travel and do not drive or own an automobile. Will Amtrak be profitable some day? NO! Supporters in Congress believe nationwide passenger rail travel is vital to the transportation infrastructure of the country. And now given the billions Congress is investing in financial service and automobile industries, Amtrak's annual funding of \$2.6 billion looks like a rounding error.

WHAT CAN BE DONE ABOUT THE AIRLINE INDUSTRY????

The airline industry has many of the same financial characteristics as Amtrak as its operation requires large scale investment in capital equipment, which must be financed with long term debt or leased. Unionized labor and fuel are also its largest cash operating expenses. Aircraft need to be flying and full of passengers. But there are some differences. Airline companies are publicly traded companies with boards of directors elected by shareholders, who demand profits and a return on their investment. Also, the industry is subject to significant and increasing price competition.

There are also two types of airline carriers. Legacy airlines, already defined as carriers existing before deregulation and low cost airlines which were formed after deregulation. More importantly, legacy airlines carry over business models developed while under regulation.

Simply put, airlines' revenue depend upon what a carrier charges for its flights and the number of passengers it carries and their costs depend, among other factors, the price of fuel and the wages and salaries of union employees. For the longest time labor represented the biggest single category of airline costs. However, this decade, fuel expense surpassed labor for the first time as the biggest single category.

The airline product has changed as a result of longer trip times due to increased security, less expensive alternatives to air travel, and websites that search out the lowest offered fares. In addition to these considerations, the business traveler has become less willing to pay higher fares than leisure travelers. The legacy airlines now find themselves with more capacity than can be profitably supported at fares that passengers are willing to pay.

Some analysts believe the financial problem legacy airlines are encountering is associated with their continued long term adjustment to deregulation. They conclude its airline management's ability, or perhaps inability, to accurately forecast capacity and demand over the 8-10 year business cycle. According to Michael Boyd of the Boyd Group International, who made a presentation to the chamber last week, airlines are not entering a new business cycle, they are entering new economics.

Why are low cost airlines “low cost”? Generally, these airlines have expenses per passenger mile about 50% lower than legacy airlines. Let’s take a look at Southwest Airlines, the most successful low cost carrier in the country. What is the mission of Southwest? From their website you see, in part, it is “dedication to the highest quality of Customer Service”. Their focus is on the passenger experience. To be sure, the company also wants to maximize profitability and shareholder return and they do, having reported 36 consecutive years of profitability. They avoid fads and anything that increases costs or complicates the basic passenger experience.

Southwest began operations in 1971, seven years prior to deregulation but their business was never regulated by the Civil Aeronautics Board as they did not have any flight service outside of Texas until 1979 when they began service to New Orleans.

Southwest flies point to point using one aircraft configuration, the Boeing 737, which gives it flexibility and saves it millions in maintenance costs. There is only one class of service and no assigned seats. Only recently did Southwest begin to seat passengers based upon business service and preferred flier programs. Prior to this, passengers were seated on a first come first served basis. They pick destinations that have sufficient traffic potential and generally avoid large congested airports. For example, they do not have service to O’Hare Airport in Chicago, only Midway, which is closer to downtown. With this destination, their focus is the business traveler. They are also not afraid to discontinue destinations if traffic falls off. They have simple in flight service which allows planes to be unloaded, cleaned, and restocked in 20 minutes compared to 90

minutes with the legacy airlines. Southwest has resisted the urge to unbundle their services, choosing to maintain all inclusive ticket prices which include allowing passengers to check two pieces of luggage for free. Aggressive fuel hedging has served the airline well over the years. However, the airline reported its first quarterly loss in the fourth quarter on 2008 due in part to losses on hedged fuel contracts. Southwest continues to grow by adding additional destinations to its point to point service. Although, according to Michael Boyd, 50% of their passengers now connect to another flight. Southwest now flies more passengers domestically than any other airline.

How do major legacy airlines become consistently profitable? They only have two choices; first, improve their customer benefits to such an extent that passengers are willing to pay higher ticket prices, or reduce their costs to compete more effectively with low cost airlines. It is highly unlikely the airlines will be able to offset higher ticket prices with improved passenger benefits, so reducing costs becomes the only viable option. According to some industry watchers, they need to change their passenger value proposition, which one analyst articulated as “designed to take anyone from anywhere to everywhere, seamlessly”. Under regulation, this was accomplished efficiently by legacy airlines utilizing a hub and spoke business model first pioneered by Delta Airlines in 1955. This model designates certain airports as hubs or connectors with all traffic routed to the connector airport from other points around the hub. Flight schedules are designed to predominately attract high volume of low yielding connecting passengers and give them labor intensive processes capable of providing seamless connections anywhere in the world. Flights at the hub arrive and depart at peak times requiring longer aircraft

turnaround, traffic congestion, and aircraft downtime at origin cities to meet connection needs at the hub. Connecting passengers provide significantly lower yields per revenue mile than local passengers and necessitate more complicated logistics.

Consultants from the firm Booz, Allen, Hamilton suggested a new business model for the airline industry which would simplify core processes and operations around the needs of local passengers, making connections a byproduct of the operation (sounds like the Southwest model). They believe these changes should nearly halve turnaround times, increase aircraft utilization, reduce congestion, and improve labor productivity.

However, this new model is directly opposite from the current business model. In my opinion, this is not feasible without major restructuring of the each airline's route system.

There is no doubt legacy airlines must reduce costs. But they also need to look at their operations to see where they have competitive advantages over their low cost competitors. It seems one area the legacy airlines would have an advantage is in long haul and world wide destinations where the airlines have a better opportunity to compete on price over lower operating expenses. In addition, passengers might be willing to pay for greater comfort and amenities offered by legacy airlines over long distance flights.

There are two other topics to point out in this paper which researchers believe would help airlines to improve their passenger experience and reduce costs. However, both are beyond their control to change without substantial lobbying effort. In their December, 1998 paper entitled "AIRLINE DEREGULATION: THE UNFINISHED REVOLUTION" writers Robert W. Poole, Jr. and Viggo Butler have suggested that the

ability of airlines to gain greater efficiencies and lower costs have been constrained by areas of the air travel experience which continue under government regulation, namely airports and air traffic control. Current responsibility for airports rests with local government that operate airports either directly or through airport authorities. Air Traffic Control remains under the Federal Aviation Administration, which also regulates the safety of all aspects of civil aviation. According to Poole and Butler, the value that travelers place on air transportation reflects its convenience, price, and safety. Aviation infrastructure policy with respect to air traffic control and airport operations should enhance these attributes by reducing travel delays, facilitating greater airline competition, and using the most effective technology to keep flying safe.

Airport policy encompasses charging aircraft for their use of runways. Presently, large airports charge landing fees based upon the weight of the aircraft without regard to demand and supply of an airport's scarce resources. This system worked fine at a time when airports were uncongested, but today, the principal cost an aircraft imposes on a busy airport when it takes off and lands is that it delays other aircraft. Longtime air travel researchers, Steven A. Morrison of Northeastern University and Clifford Winston of the Brookings Institution, in their May, 2008 paper "Delayed! U.S. Aviation Infrastructure Policy at a Crossroads", believes the privatization of airports will, over time, reduce passenger delays and increase airline competition. Privatization would give airports the freedom and incentive to charge fees based upon demand and supply of resources using marginal cost concepts. According to Morrison and Winston, privatization would allow

airports to compete for passengers and airlines by effectively producing a level of service its user's value.

In her July, 2008 discussion paper for the Brookings Institution, author Dorothy Robyn believes the Federal Aviation Administration has an inherent conflict of interest in that it is responsible as both operator and regulator of the Air Traffic Control system.

Controllers use a 1950's era ground based radar to route planes, and pilots and controllers communicate using analog, voice only radios. Outdated technology seriously limits the capacity of the system, contributing to passenger delays. The limited precision of the aging radar requires controllers to maintain wide safety buffers between aircraft and require planes to travel along straight line "airways" defined by the locations of ground based beacons. Aircraft are directed by air traffic controllers to fly from one beacon to another, zigzagging their way across the country. While a movement is underway by the FAA to use GPS satellite based technology, its implementation throughout the air traffic control system is many years away.

Forecasts by the FAA call for more than 1 billion air travel enplanements by the year 2016. To return to profitability, many airlines must find ways to reduce costs and become more efficient within their business model. Also, without some improvement in the air travel infrastructure, airborne delays, particularly at the busiest airports, and their associated costs will become significantly worse. This will be a major problem beyond the control of airlines to reduce costs and become profitable.

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