"A PERSISTENT EXCEPTION TO TEXTBOOK ECONOMICS": A HISTORICAL OVERVIEW OF INTERNATIONAL AIRLINES

Erik Benson
Ouachita Baptist University

ABSTRACT

The recent centennial of the Wright Brothers' flight stimulated study of the history of aviation in general and this historical overview of international airlines in particular. International airlines are commercial enterprises, but their history suggests that the economics behind their development was often overridden by political, diplomatic, strategic, imperial, cultural, and emotional pressures. International airlines have not always been economically rational enterprises.

An article in the September 15, 2003, *U.S. News and World Report* chronicled the struggles within the US airline industry and the airlines' efforts to resolve their problems. Author Richard J. Newman observes that "airlines are a persistent exception to textbook economics."[1] International airlines are commercial enterprises, but because the economics behind their development was often overridden by political, diplomatic, strategic, imperial, cultural, and emotional pressures, they have not always been economically rational enterprises.

International airlines were born in the interwar period. World War I produced aeronautical advances and a glut of airplanes and pilots that combined to attract entrepreneurs to commercial aviation. The Allies anticipated a new world of aviation enterprise at war's end and in 1917 formed a commission to establish a framework for international airlines. The Paris Convention agreed that nations would maintain sovereign control over their airspace and that international routes would be subject to diplomatic negotiation.[2] International aviation was a child of economics and politics.

International airlines sprang up. In Britain, the government insisted that the enterprise must, in the words of Winston Churchill, "fly by itself" (p. 32). Competition from subsidized French and Dutch companies drove British airlines out of business by early 1921. The loss of flag carriers was a blow to British prestige, so the government reversed its position and offered subsidies to revive the British airlines. An ad hoc committee concluded that, in light of the foreign competition, it was wasteful to support competing British airlines, and recommended that the government merge them into one "chosen

instrument" (p. 41). That instrument would issue stock to private shareholders, but the government would appoint the airline's administrators, oversee its operations, and ensure its financial health with subsidies. The airline would be a public corporation with private stockholders. The government implemented the committee's recommendation, and in April 1924 Imperial Airways began operations.[3]

The primary interest of the British government, and thus the airline, was to strengthen imperial ties. Secretary of State for Air Samuel Hoare later stated that "as a Conservative who had been brought up in the days of Rudyard Kipling, Joseph Chamberlain, and Milner, I saw in the creation of air routes the chance of uniting the scattered countries of the Empire and the Commonwealth" (p. 20). Political rather than commercial considerations drove Imperial during the interwar years. It built a vast network spanning the Mediterranean, Africa, Asia, and the Indian Ocean during the 1920s and 1930s, connecting many British possessions with the homeland, but the enterprise failed to cover costs. Government subsidies for Imperial increased thirteenfold between 1924 and 1939.[4]

The British government paid because, as the aviation historian Marc L. J. Dierikx explains, more than money was at stake: commercial considerations meant little in the development of many international airlines. Prospects were poor: performance limitations of aircraft kept international services from covering costs and forced airlines to rely on subsidies to maintain operations. Nevertheless, the great powers entered the field. Their overriding concern was not cost effectiveness but national prestige. International airlines represented "one of the more visible means by which imperialist rivalry was continued in Africa and Asia" during this period. "Airlines were regarded as high-profile national flag-carriers, rather than as a means of transport." They were "a yardstick by which the technological capabilities of the mother country could be judged." If another nation's carrier forged ahead in the field, subject and foreigner alike might see this as a sign of national backwardness. Great powers built international airlines for political not economic reasons.[5]

Although commercial interests played a greater role in the founding and development of US airlines than they did in other nations' flying companies, they would not be the primary driving force behind US airlines. The birth of the US chosen instrument, Pan American Airways, owed much to the strategic interests of the federal government. In the early 1920s a German-controlled airline, Sociedad Colombo-Alemana de Transportes Aereos (SCADTA), planned

a route between Colombia and the United States. A projected flight path that would take SCADTA aircraft over the Panama Canal raised fears in Washington about the strategic implications of the service. Federal officials began casting about for an American champion to counter the European threat. Major Henry "Hap" Arnold of the US Army Air Corps drew up a plan for an American international airline, Pan-American Airways (PAA). He shared this vision with several American businessmen, who established a company under that name in 1927. It accomplished much of what the government wanted and became the dominant airline in the hemisphere.[6]

PAA operated with little direction from the government in its early years, and commercial considerations shaped the firm until the late 1930s. As war loomed in Europe, the Roosevelt administration feared the influence of Axis-controlled airlines in Latin America. When hostilities erupted in September 1939, the administration turned to PAA to eliminate this threat. On occasion, the US government and PAA cooperated: when US officials pressured Latin American governments to ground Axis airlines, PAA offered replacement services and assistance in developing indigenous airlines. Cooperative efforts notwithstanding, the Roosevelt administration and the airline were no strangers to conflict. PAA bought SCADTA in 1931 but retained its German employees. While this arrangement was good business, it opposed US strategic interests. In 1940 PAA administrators and US government officials squabbled over removing the Germans, but politics won out; by the time the United States entered the war, PAA had assumed a strategic role.[7]

World War II dramatically altered international airline operations. The British Overseas Airways Corporation (BOAC), which replaced Imperial in 1939 as the British chosen instrument, suspended many services when war broke out. The ever-changing strategic situation after the fall of France made it difficult to maintain an aerial network. Moreover, the struggle strained BOAC's resources. After Pearl Harbor, PAA faced similar problems. The Japanese cut trans-Pacific routes, occupied key bases, and destroyed equipment. Wartime demands on men and materiel, while less severe than what BOAC faced, also affected PAA.[8]

Advances in air transport played an increasingly vital role in the war effort. In the submarine-infested waters of the Atlantic, Mediterranean, and Caribbean, aircraft provided a safe means of carriage for men and supplies. In the Asian theater, aircraft flew over the Himalayas to deliver badly needed supplies to China. The British and Americans developed a massive air supply route from the United States to the Mediterranean front via the Caribbean, Brazil, the Atlantic,

and West Africa. Operations that would have been unimaginable before the war became routine. Air transport grew by leaps and bounds. BOAC flew 65 million miles and carried 325,000 people between 1939 and 1945. American airlines flew over 3 billion passenger miles between 1942 and 1945. US manufacturers churned out 17,000 transport aircraft. Thousands of people trained as pilots, ground crew, and support personnel. By the end of the war, international airlines were endowed with aircraft, personnel, and operational experience. The stage was set for a postwar boom.[9]

The stage was also set for a shift to a more market-driven industry. New aircraft could carry more passengers over greater distances at higher speeds with increased efficiency. The Lockheed Constellation could carry 54 passengers at 310 miles per hour for 3,000 miles, and because the cabin was pressurized, it could fly at high altitudes where it burned less fuel and avoided the bumpy ride at lower altitudes. Along with these advances, the flight-travel infrastructure built during the war was available for peacetime use, and hundreds of thousands of people knew firsthand how convenient air travel was. The market potential was there. Aviation historian Suzanne L. Kolm summed up the state of affairs: "Air travel had become a mass market." The number of international airline passengers increased in the postwar period—BOAC's passenger traffic increased 25 percent between 1948 and 1950.[10]

And there were other changes that promised to support the growth of commercial air travel. European empires were in decline along with the prewar interest in imperial prestige. In the United States the chosen-instrument approach gave way to a competitive system with several US airlines plying the international airways. Many of the prewar fears about the military and strategic implications of airlines had faded. It appeared that non-economic considerations had lost their hold, and airlines would become market-driven.

Yet non-economic considerations remained prominent in the industry. Many international airlines continued to operate as they had in the 1930s. As the director of the International Air Transport Association (IATA) lamented in 1950, despite the increase in the number of passengers, the airlines were still losing money. He cited their failure to reach out to the mass market as the cause. Most airlines continued to focus on first-class travel, which meant catering to a limited clientele who expected expensive services. Few people could afford first-class tickets, but airline management did not concern itself with costs and revenues, knowing they could fall back on government subsidies. There was no incentive to reach out to the less prosperous traveler.[11]

Airliners reflected the first-class mentality. With the technological advances of the day, it made economic sense, as one observer noted, to pack "as many paying customers as decently possible into one aeroplane," *sans* frills. But the airlines operated aircraft with cocktail lounges, dressing rooms, and sleeping berths. Such amenities made the flight more pleasant but increased operating expenses and priced the services out of the range of most people.[12]

A notable manifestation of the first-class mindset was the Bristol Brabazon airliner of the late 1940s. The British designed it from the start "to compete with ships for the lucrative traffic carried before the war in the First Class cabins of transatlantic ocean liners" (p. 1). The Brabazon's specifications were staggering. It weighed over 300,000 pounds and had a greater wingspan than a Boeing 747, a technical triumph twenty years in the future.

The airliner was intended to provide "a luxury non-stop overnight service for fifty passengers" (p. 1). Luxury was an understatement. The Brabazon had cabins with tables and reclining seats that converted to comfortable sleeper beds. It boasted "a roomy passenger lounge with a fully stocked bar, a large powder room, changing rooms, separate lavatories for men and women, and on some flights a separate dining room" (p. 1) that could double as a movie theater. The plane was to carry an onboard chef to provide gourmet meals. The Brabazon did not cater to the mass market. Furthermore, the motives behind the project were not economic but political. The aircraft was a prestige venture that the British government pursued in the hope of leaping ahead of the Americans in commercial airliner design. Ultimately, the venture failed: the government cancelled the project in the early 1950s before a commercial flight ever took place.[13]

Meanwhile, the British pursued another daring but ill-fated project. World War II had produced tremendous advances in jet aircraft; yet in the late 1940s, this new technology held little commercial promise. Surplus piston-engine aircraft were available to airlines at significantly lower costs than the anticipated high operating costs of futuristic jet-engine planes. The British, however, were willing to take what Jeffrey Engel describes as "an expensive gamble." They would mate one of their most advanced jet engines, the Rolls-Royce Avon, to a commercial airliner, the "Comet," to put the first commercial jet airliner into service. Certainly the British had economic reasons for this project. American designers were years away from putting a similar aircraft on the market. The British hoped that the Comet could beat the Americans to the proverbial punch, cornering the international market for jets before the Americans could join the

fray. Engel calls the Comet the "crown jewel" in a British planned economy that emphasized increasing exports.[14]

Yet the Comet was more than an export. For a weakened empire, the Comet was a means of showing the flag. Imperial decline did not diminish the prestige value of airlines; rather the British saw this technological marvel as a bolster for their global standing. The Comet must have been an impressive sight to British subjects who witnessed its inaugural service between London and Johannesburg in 1952, as well as to those who saw later flights in the Middle East, India, and East Asia. These aircraft plied the empire, its Dominions, and the new Commonwealth states. The importance of the Comet's prestige value is all the more notable in light of its poor economic performance. The original Comet carried 36 to 44 passengers; the contemporary Lockheed Super Constellation carried over 100. Small payloads coupled with high operating costs meant the Comet was hardly a moneymaker, but the red-ink bottom line did not discourage international airlines, including several American companies, from buying it.[15] Prestige was the driving force behind the demand for the plane; no one wanted to be left behind, even if the aircraft was not profitable.

The Comet was also a diplomatic issue. The British desperately wanted to market their new airliner widely to reap the economic benefits. The United States objected. Although Americans did not want the British to get a jump on US manufacturers, they concentrated on potential security risks. If the Comet sold widely, its advanced engines might fall into Soviet hands through espionage or accident. US officials claimed that jet engines fell under the terms of a 1949 Anglo-American regulatory agreement that allowed one side to veto the other's sale of jointly developed technologies. The British rejected the claim and began months of debate between the two powers. Two events resolved the matter in 1954. One, the Soviets demonstrated a bomber with engines more powerful than the Comet's, effectively negating any security concerns. Two, several Comet crashes doomed its export fortunes. It did not fulfill its promise—economic, symbolic, or political.[16]

The next major British gamble in commercial aviation was the technological leap into supersonic flight. Faster-than-sound flight might well be the next logical step in airliner development; after all, one of commercial aviation's biggest selling points is speed. As supersonic technology entered military use, many naturally thought that commercial applications would follow, but supersonic commercial flight was not simply a business matter.

In the early 1960s, at the height of the Cold War, the world's superpowers

made supersonic commercial aviation a target for their rivalry. Americans and Soviets launched competing programs to develop a supersonic airliner. The British wanted to join the contest and reestablish themselves in the international airliner market, but because their resources were more limited, they sought to collaborate with another power. In 1962, the British signed an agreement with the French to jointly develop a supersonic airliner, the Concorde. Like most issues surrounding international commercial aviation the alliance was not strictly economic but political as well. The United Kingdom had applied for membership in the European Common Market, and a joint venture with the French strengthened their application. Obviously, pooling British and French resources would make the project more economically viable, but, as Ronald Miller and Donald Sawers point out, the British developed the Concorde "more with an eye to prestige than commercial benefits." It was an expensive project that required extensive government financing. That both nations were willing to pay the price, state Miller and Sawers, "reveals how far governments are still prepared to go to see that their country gains the prestige that is supposed to be derived from possessing the most technically advanced airliners that money can buy."[17]

Economic problems almost killed the project. Soon after its inception, a wave of inflation hit the British economy. A weakening pound and mounting deficits forced the British government to make deep budgetary cuts that ravaged the British aviation industry and forced cancellation of promising programs, including the British Aircraft Corporation TSR.2 attack/reconnaissance aircraft and the Hawker P1154 supersonic "jump jet." The government eyed the Concorde program, and rumors abounded that the Americans, in exchange for an IMF loan to bolster the sagging pound, demanded an end to the program. The British government denied that the United States was pressuring for cancellation of the Concorde but considered ending it because of its high and escalating costs. But the Concorde was part of a treaty with France that would have been difficult, perhaps impossible, to break. Moreover, withdrawal would incur stringent financial penalties. The government determined that it would be less costly, both financially and politically, to stick with the program.[18]

Concorde was expensive. Original cost estimates fell by the wayside as overruns became the norm. The estimate for the Olympus engines to power the aircraft had been 150 million pounds ($420 million); by 1969, that figure had risen to 730 million pounds ($1.75 billion). Peter W. Brooks has estimated that the total launch cost for the aircraft was $2.1 billion. The only aircraft

with a comparable launch cost was its giant contemporary, the Boeing 747.[19] Escalating costs were compounded by marketing problems: Concorde did not sell. Environmentalist in the 1970s charged that the aircraft would contribute hazardous levels of noise and atmospheric pollution. In response, the United States limited the Concorde's operations to coastal airports. Politics played a role in that decision, since many policymakers did not want a rival supersonic aircraft operating in the United States.[20]

But the Concorde's demise can be traced directly to economic problems. Design restrictions limited the capacity of supersonic airliners. The Concorde could carry 100 passengers, whereas the Boeing 747 could carry 350 to 500. Moreover, fuel consumption rates and other costs associated with supersonic travel were higher than for subsonic travel. Brooks has estimated that it cost two-and-a-half times as much per passenger mile to fly the Concorde as to fly the Boeing 747. While speed is a prime selling point for airlines, operating efficiency is the key to success. Since the two aircraft cost about the same to purchase, international airlines did not face a difficult choice. Only Air France and British Airways (which had replaced BOAC) operated the Concorde, each purchasing ten of the supersonic liners. By 1980 Boeing had built over 400 of its 747s and hundreds more would follow.[21]

British Airways did not want the economically unattractive Concorde but was compelled to accept it in exchange for the government's having absorbed the aircraft's development and production costs (supposedly, British Airways paid one pound for each airplane). The Concorde entered commercial service in January 1976 and went on to make what one observer described as a "handsome operational loss" for the airline. The problem was not a lack of passengers. By most accounts, load factors on the Concorde were good—over 80 percent for most flights, and over 90 percent for flights between London and New York. For those with the means, Concorde became a hot ticket. British Airways charged several thousand dollars for a flight on the Concorde, a rate many times greater than for a flight on a subsonic airliner. Despite its popularity and high fares, Concorde was a consistent financial drain on British Airways. Its carrying capacity could not generate adequate revenue to cover its operating costs, and as Kenneth Hudson and Julian Pettifer conclude, the Concorde made "no economic sense."[22]

By the early 1980s it was evident that Concorde would not generate sales. Moreover, commercial airlines were entering a tough economic period. British Airways suffered a net loss of 145 million pounds in 1980–81 owing to rising fuel

prices, inflation, and a host of other problems. With the British government looking to privatize the longtime chosen instrument, British Airways needed to economize. An obvious target in the budget was the Concorde, and rumors abounded that the airline might ground the liner. It survived the tough times, however, and by the 1990s, British Airways was showing a solid profit, and the Concorde had become a fixture in commercial aviation. Few talked of eliminating the prestigious supersonic service.[23]

One of Concorde's more remarkable credits is that it never suffered an accident in almost a quarter century of operation. That record would be commendable for any airliner, but for one flying at supersonic speeds with 1960s technology, it is stunning. Unfortunately, in 2000, a Concorde leaving Paris crashed shortly after take-off, killing over 100 crew and passengers. Investigations later indicated that the Concorde had sucked a blown tire from another aircraft into its engines. Air France and British Airways grounded the aircraft, made modifications, and resumed service. But the comeback was short-lived. In April 2003, both airlines announced they were retiring the aircraft. They blamed the tough economic times of the post-9/11 world, noting that the Concorde was losing money. One magazine headline declared, "Travel Buyers' Cost Cutting Speeded Concorde Demise." While doubtless the Concorde was losing money, this line of reasoning overlooks a key point: the supersonic liner had always lost money. Why were the airlines now interested in cutting this liability? Had the Paris crash tarnished the Concorde's luster? After all, an airliner that made no economic sense had only its prestige to offer; once this was tainted, it had nothing.[24]

The Concorde still captured enough public imagination to drive a campaign, led by the colorful billionaire Richard Branson, to save the aircraft. In a 2003 article in *The Spectator* entitled "Come Fly with Me—A Plan to Save the Concorde for the Nation," Branson made an impassioned plea on behalf of the airplane. He began by asserting that the true father of flight was not an American but a British subject by the name of Sir George Cayley, who flew an unpowered "aircraft with a modern wing" in 1853. Ironically, Branson noted, few people in Britain were even aware that 2003 marked the 150th anniversary of this achievement. He continued, "even stranger . . . the closest Britain is coming to celebrate either 150 years of flight or even 100 years of powered flight is to allow a perfectly serviceable supersonic commercial aircraft to be chucked into the dustbin of history." Worse, British Airways was not going to allow anyone else to fly Concorde. Branson moaned, "narrow commercial interests and petty jealousy were about to consign the image of Britain's technological achievements

in aviation in the 20th century to a sad static display at the back of a museum hangar." He called upon his readers to "galvanise ourselves before it's too late to make sure that Britain's pivotal role in the history of aviation is recognised before the end of the year." Branson announced that his airline, Virgin Atlantic, was raising its original offer of 1 pound for each of the five operational Concordes to 1 million pounds. Virgin was, he asserted, ready to fly the aircraft in regular service; however, British Airways seemed set against the idea, and it was "increasingly difficult to see that logic will prevail."

Branson offered an alternative plan. He would help form a heritage trust that would keep the Concorde "flying in a semi-commercial service." Charter flights and even some scheduled services could provide funding to "keep her flying for the nation well into the middle of the twenty-first century." He promised 1 million pounds for such a trust if British Airways, British Aerospace, Rolls-Royce, Air France, and Airbus would do likewise. To Branson, Concorde was more than an aircraft; it was a symbol of British prestige and accomplishment. Nevertheless, Concordes stopped flying late in 2003. It is fitting that a few months later Britain launched its new flag bearer in the realm of commercial transport, the Queen Mary 2, an ocean liner built for the British by the French.[25]

While the Concorde's demise involved prestige and national pride as much as economics, it certainly fit the business climate. As one article in *Barron's* proclaimed, "as Concorde faces its final run, British Airways looks to a leaner, meaner and more profitable future." This change was part of the "liberalisation" of European airlines during the last two decades of the twentieth century. The airline industry had long been a strongly regulated, government-dominated business. Most European airlines were subsidized, controlled, or owned outright by their governments. In general, they fell under the authority of the IATA, which set rates, seating structures, and levels of service. Even in the more open US market, the Civil Aeronautics Board (CAB) held great sway, assigning routes, granting landing rights, and shaping the fortunes of the nation's airlines. While the IATA held less sway over US airlines, they cooperated with it.[26]

The 1970s brought change. In the United States, growing discontent with federal regulation, taxation, and spending fed a movement to curtail the government's economic role. Airlines were deregulated in 1984, and the CAB was dismantled.[27]

Europeans resisted the deregulation trend. During the 1970s, the Americans tried to negotiate a less restrictive international airline agreement with the United Kingdom; but Harold Wilson's Labour government showed little inclination to

reduce the government's role in business, and British Airways saw no advantage in competing with American airlines in a freer market. Attitudes changed during Margaret Thatcher's ministry, which moved to liberalize British commercial aviation with a series of initiatives. One, it committed to the privatization of British Airways, a major reversal of British aviation policy dating from the Second World War. Two, it permitted greater competition among its international airlines. The government opted to allow the market to decide what was commercially viable. Britain pressed the European Community (EC) to liberalize its domestic and international airlines. Historically, the nations of the EC had exercised stringent control over their airlines and limited competition to protect them. By 1990 British prodding had produced policy changes but international commercial aviation was still shaped by non-commercial considerations. Even the Thatcher government pursued limited liberalization.[28]

Freddie Laker's Skytrain, founded in 1977, offered Spartan service and low tariffs on flights between the United Kingdom and the United States. A British subject, Laker attracted customers from both British Airways and U.S. airlines. Flyers welcomed the chance to discount high IATA rates. Laker earned profits and the enmity of established airlines whose managers matched his rates and tapped into the low-end market. Laker, who went bankrupt in 1982, sued British Airways and others for conspiring to drive him out of business. He filed his case in the United States, which irked the British government, since both Skytrain and British Airways were British companies. If British Airways were assessed steep financial penalties under US antitrust laws, it would lose investors and find it harder to privatize. The legal prognosis did not look good for British Airways. It had a weak case made worse by plans in the US Department of Justice to bring separate charges against the British airline for price fixing. Determined to head off a disaster, Thatcher applied diplomatic pressure through her close ally, Ronald Reagan. President Reagan called off the Justice Department, and British Airways settled with Laker for 33 million pounds and cleared the way for privatization. The British were committed to liberalization but not to the extent of accepting competition from Laker. A 1984 White Paper made it clear that British Airways would remain the UK's dominant international airline. By the early 1990s, British Airways controlled over 90 percent of Britain's overseas routes. Its only competition on long-haul routes was Branson's Virgin Atlantic, which operated five Boeing 747s.[29]

Liberalization progressed slowly in Europe. The EC delayed full European cabotage[30] for four years, and allowed limitations on flight frequencies and

restrictions on fares. British Airways complained that the EC left "member states with too many powers to intervene, in too many ways." Governments were permitted to finance or subsidize struggling airlines to the detriment of their competitors. Several European carriers faced tough financial times in the mid-1990s. When their governments stepped in with financial assistance, they not only contravened liberalization but fed increased opposition to it. The French government proved particularly obstructive. When Air France faltered, the French government provided almost $3.5 billion in aid. Moreover, it opposed further liberalization, since this would expose Air France to further competition. Other governments with struggling carriers sided with the French. Although progress had been made, Europe was still far from an airline industry driven by the market.[31]

In 2001, a shocking event made manifest the issues at stake for Europeans and their airlines. Swissair, long admired as a financially sound international airline, collapsed. It had losses totaling $1.7 billion in 2000, and was more than $4.5 billion in debt. Its stock plummeted, costing private investors billions of Swiss francs. The Swiss government reorganized Swissair, dumped Swissair's holdings in other airlines and related businesses, and at the expense of a national deficit pumped in billions of dollars to keep the airline afloat. The reason for the "Swiss meltdown," as one periodical called it, was an ambitious program that had proved disastrous.

In the midst of Europe's liberalization in the mid-1990s, Swissair executives faced a challenge: how would the airline maintain a global presence and access to the changing European market? They decided that the answer lay in a high-risk strategy of expansion. They began building a European network by buying minority holdings in smaller airlines. The expansion created a debt that in the year 2000 led to losses and write-offs totaling $2.3 billion. Worse, the airlines that Swissair bought into were often struggling, the foremost example being the Belgian carrier Sabena. In 1955 Swissair acquired a 49 percent share in Sabena for over $150 million. The Belgian airline had long struggled to make money and soon became a perennial drain on Swissair. The investment in Sabena was a serious blunder.[32]

The Swissair collapse was more than a bad investment or an economic tale of woe; it was a humiliation for the Swiss. Children had been given Swissair shares as gifts. For adults, a place on the Swissair board of directors paid very little, perhaps a few thousand dollars per year, but, as Tom Buerkle and Rick Smith note, it had been "the ultimate accolade, a certification that one had arrived in

the corridors of power." The failure of Swissair reflected badly on the nation's business leaders and damaged the Swiss image abroad. It is perhaps fitting that Swiss pride took a hit, for hubris had led to the disaster. When Swissair embarked on expansion, its officials "arrogantly believed" they could keep pace with British Airways and Lufthansa; moreover, they had "global aspirations" for their airline, aspirations beyond their reach.[33]

Swissair had sought an alliance in 1993 with some well-respected small European airlines, including Dutch KLM, but neither the Dutch nor the Swiss would surrender their flag carriers to a multinational corporation—national pride remained a key element in the international airline business. In part, Swissair's goal of maintaining a global presence was an expression of national pride. The international carrier shows the flag and demonstrates a nation's standing in the world. The Swiss are not alone. *The Economist* observed that Europe had twenty-eight scheduled airlines in 2001, not counting small regional operations; such a large number is economically "ludicrous." The United States, which has a larger air-travel market, has but seven major airlines. Rationalization in Europe would mandate fewer airlines, yet a reduction in the number of carriers seems unlikely. Why? National pride. The airlines are flag carriers, and nations are loath to lose them, whatever the market might demand.[34]

International airlines have witnessed technological, political, and economic changes. But non-economic factors continue to keep them from making economic sense. As with most airlines, they remain "a persistent exception to textbook economics." [35]

NOTES

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2. Alan P. Dobson, *Peaceful Air Warfare: The United States, Britain, and the Politics of International Aviation* (Oxford: Clarendon Press, 1991), 7–8.
3. Dobson, *Peaceful Air Warfare,* 30–42. See also A. S. Jackson, *Imperial Airways and the First British Airlines, 1919–40* (London: Terence Dalton., 1995), 9–24.
4. Dobson, *Peaceful Air Warfare,* 40. See also Erik Benson, "Suspicious Allies: Wartime Aviation Developments and the Anglo-American International Airline Rivalry, 1939–45," *History and Technology* 17 (2000): 24; and Jackson, *Imperial Airways,* 12–88.
5. Marc L. J. Dierikx, "Struggle for Prominence: Clashing Dutch and British

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6. Erik Benson, "The Chosen Instrument? Reconsidering the Early Relationship Between Pan American Airways and the U.S. Government," *Essays in Economic and Business History* 22 (2004): 97–110.
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9. Benson, "Suspicious Allies," 28–31, and "Flying Down to Rio," 69.
10. Benson, "Suspicious Allies," 30; Kenneth Hudson and Julian Pettifer, *Diamonds in the Sky: A Social History of Air Travel* (London: Bodley Head, 1979), 130; and Suzanne L. Kolm, "Who Says It's a Man's World? Women's Work and Travel in the First Decades of Flight," in *The Airplane in American Culture*, ed. Dominick A. Pisano (Ann Arbor: University of Michigan Press, 2003), 154.
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17. Ronald Miller and David Sawers, *The Technical Development of Modern Aviation* (New York: Praeger, 1968), 280–82; Peter W. Brooks, *Modern Airliner: Its Origins and Development* (Manhattan, KS: Sunflower University Press, 1982), 172–73; and Lewis Johnman and Frances M. B. Lynch, "The Road to Concorde: Franco-British Relations and the Supersonic Project," *Contemporary European History* 11, no. 2 (May 2002): 229–52.
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19. Brooks bases these estimates on 1980 dollar values.
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21. Ibid.
22. Phil Scott, "Concorde, Unplugged," *Air and Space Smithsonian* 18, no. 6 (February/March 2004): 10; Bickers, *Century of Manned Flight*, 220–21; and Hudson and Pettifer, *Diamonds in the Sky*, 203–4.
23. Alan P. Dobson, *Flying in the Face of Competition: The Policies and Diplomacy of Airline Regulatory Reform in Britain, the USA, and the European Community, 1968–94* (Aldershot, Hants, UK: Avebury Aviation, 1995), 183; J. C. D. Blaine, "Concorde Supersonic Airliner—The Struggle for Survival," *Aerospace Historian* 32, no. 1 (Spring 1985): 10–18; and Bickers, *Century of Manned Flight*, 221.
24. "Concorde, Grounded," *U.S. News and World Report* 129, no. 8 (August 28, 2000): 34; "Super Zero," *U.S. News and World Report* 134, no. 13 (April 21, 2003): 49; and "Travel Buyers' Cost Cutting Speeded Concorde Demise," *Supply Management* 8, no. 22 (October 30, 2003): 9.
25. Richard Branson, "Come Fly with Me—A Plan to Save the Concorde for the Nation," *The Spectator* 292, no. 9125 (June 28, 2003): 21; and Scott, "Concorde, Unplugged," 10.
26. Jay Palmer, "Now Boarding Investors," *Barron's* 83, no. 42 (October 20, 2003): 25–27; and Dobson, *Flying in the Face of Competition*, 21–38.
27. Dobson, *Flying in the Face of Competition*, 40–78.
28. Ibid., 119–97.
29. Ibid., 181–86; and Hudson and Pettifer, *Diamonds in the Sky*, 195–97.
30. Cabotage refers to the right of nations to restrict air service within their borders to airlines owned by their nationals. "Full European cabotage" means that as far as airlines are concerned, the whole of Europe will be treated as one nation, with any European airline being free to operate within any nation.
31. Dobson, *Flying in the Face of Competition*, 221–36.
32. Ibid., 228; "Scary Swiss Meltdown," *The Economist* 360, no. 8231 (July 21, 2001): 53–54; and Tom Buerkle and Rick Smith, "Who Lost Swissair?" *Institutional Investor* 36, no. 2 (February 2002): 42–50.

33. "Scary Swiss Meltdown," 53; and Buerkle and Smith, "Who Lost Swissair?" 42–50.
34. Ibid.
35. Textbooks set out the economics of efficient market operation, economic man, and benefits and costs. Once an organization abandons economic principles and profit maximization/loss minimization as its driving force, economics loses its explanatory power in favor of politics and psychology. See Newman, "New Flight Plan," 35.