

Commercial Airliner Technology is International

The Memorandum of Understanding signed by McDonnell Douglas and the Taiwan Aerospace Corporation can lead to a dynamic new era for the United States' oldest commercial airliner builder. Rather than losing 40% of an icon of American aerospace, McDonnell Douglas will be gaining majority ownership in the newest and potentially the most promising aerospace company in the world. Unencumbered by debt and outdated facilities, the McDonnell Douglas/Taiwan Aerospace alliance will be able to produce the lowest cost, highest quality airliners in the world. For the first time in several decades, an American aerospace company will be able to begin development of a new airliner virtually debt-free. Moreover, the manufacturing and final assembly of the new plane will take place in newly built facilities optimized for commercial airliner construction. No other aerospace company or consortium in the world will have those advantages.

Technology Transfer

Commercial aerospace technology has never been a unique American institution. Foreign governments and enterprises realized the advantages of air travel before the Americans, but it was Donald Douglas, with private capital, who developed the first series of commercially viable - passenger friendly - airliners. World War II pressed Douglas' DC-3 into military service as the C-47. The more than 10,000 military transports which were nothing more than a stripped-out version of the airliner, coupled with the four-engined DC-4, helped win the war but were almost the undoing of the commercial airliner industry. The end of the war left American factories intact but it also left a glut of transport aircraft and parts that would keep airlines around the world supplied for years.

As Douglas and other aviation companies struggled for private capital to fund aircraft like the DC-6, the first airliner with a pressurized cabin, the Europeans were beginning anew. It was the British who developed the jet engine and produced the first jet-powered airliner, which entered service in 1952, six years before America's first jetliner, the Boeing 707. France followed quickly with the jet-powered Caravelle series of airliners in 1959. Later, the British and French would team to build and put into commercial service (1976) the world's first supersonic transport, the Concorde.

The growth of America's commercial aircraft industry did not come from superior technology or taxpayer funded development, it came because America's airlines like TWA, PanAm, Eastern, Delta and American took risks to build domestic and world-wide routes and increase customer acceptance of flying as the preferred means of travel. Satisfying those risks demanded the development of long range aircraft. The land-mass size of the United States, and American business investing in overseas markets

had more to do with the growth of the aircraft manufacturing industry than technology. Without customers, there can be no industry.

Today, America still designs and assembles the majority of the world's airliners, but does not have an exclusive lock on large-airframe technology. The European consortium, Airbus (France, Germany, Britain, Spain), formed in 1970, builds some of the market's most technologically advanced airliners. With the help of generous government subsidies, they have captured more than 20% of the airliner market. On a smaller scale, but none-the-less impressive are the growing commercial aircraft industries in Brazil, Netherlands, Romania, Sweden, Israel, and the Soviet Union. (See accompanying list) The Russian airline AEROFLOT is the world's largest airline flying all indigenous aircraft.

The internationalization of the biggest aerospace companies began years ago as builders sought sources for parts and subassemblies and markets for finished products. McDonnell Douglas began building commercial aircraft wings in Canada in 1964. Today, 16% of the MD-80 and 20% of the MD-11 are produced by foreign entities. The offshore content of Boeing airliners are similar, but the proportion will rise dramatically as Boeing offers 777 technology to Japanese subcontractors.

What Technologies Are Important?

McDonnell Douglas' military transport technologies are not part of this agreement. The corporation has already begun to make a clean separation of its military and commercial businesses. It would not be in McDonnell Douglas' interest to share its military technologies with either a foreign or a U.S. competitor.

By maintaining majority ownership of this new international company, McDonnell Douglas interests will maintain control over design and systems integration, final assembly and flight test. Taiwan's strengths will come from the capitalization of basic manufacturing, fabrication and subassembly which in itself does not position them to singly build a finished product that would compete in the airliner market. Given that most industrialized nations in the world are already accomplishing the type of work that Taiwan will undertake, there is no technology transfer. Both parties benefit from McDonnell Douglas' established marketing and product support network.

Future Competition

Once a final agreement for this alliance is reached, Taiwan is unlikely to ever become a competitor. As a partial owner of this new company, their viability will lie in making the enterprise successful. There would be very little motivation for them to build a parallel competing industry that would hurt their own market share. With or without U.S. assistance, wealthy industrialized nations will attempt to develop their own aerospace

industries. If a foreign entity builds one on their own, the U.S. has absolutely no control over the technology developed and could end up fighting off a competitor. By building a strong and dynamic aerospace alliance, McDonnell Douglas may be in a position to prevent other countries from entering the market.

Real National Security

McDonnell Douglas will end up with a 100% owned government business and a 60% owned commercial transport company. The gained financial resources give the corporation additional strength to pursue future world wide military business. U.S. industrial capacity is preserved and strengthened.

Jobs

One last thought on jobs. Without the capability to introduce new aircraft, like the MD-12, McDonnell Douglas is locked into two narrow market segments. Both of those markets have been eroded by direct foreign competition from Europe. If markets continue to erode, McDonnell Douglas' commercial aircraft business will cease to grow and jobs will be lost. By becoming a challenger in the most lucrative market segments, the U.S. segment of McDonnell Douglas' work force can look forward to stability and growth.

FOREIGN COMMERCIAL AIRCRAFT IN PRODUCTION

BRITISH AEROSPACE (UK)

BAE 146	JET	128 passenger
BAE 748	TURBO PROP	64 passenger
BAE 31	TURBO PROP	19 passenger

EMBRAER (BRAZIL)

EMB 120	TURBO PROP	30 passenger
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AIRBUS (EUROPE)

A300	JET	267 passenger
A310	JET	218 passenger
A320	JET	179 passenger
A340	JET	335 passenger

ATR (INTERNATIONAL)

ATR 42	TURBO PROP	42 passenger
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FOKKER (NETHERLANDS)

FOKKER 50	TURBO PROP	50 passenger
FOKKER 100	JET	107 passenger

BUCURESTI (ROMANIA)

ROMBAC 1-11 (based on BAE 1-11)	JET	84 passenger
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CASA (SPAIN)

AVIOCAR	PROP	25 passenger
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SAAB (SWEDEN)

SAAB 340A	PROP	35 passenger
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DORNIER (GERMANY)

328 TURBO PROP 30 passenger

CANADAIR (CANADA)

601 JET 50 passenger

BOEING CANADA

DHC DASH-8 PROP 50 passenger