

# Aircraft primes: Still an elite club

The aircraft business is now in its fifth year of growth. This is an almost unprecedented upturn, in terms not only of volume but of duration and breadth as well. It is the first simultaneous civil and military upturn in over 25 years. Barring a drastic, unpleasant global event such as a massive economic downturn or a devastating terror attack, growth looks set to continue through 2011 at least. Strong fleet utilization is also contributing to a healthy, profitable outlook.

Yet despite this growth and prosperity, the number of aircraft industry players remains relatively constant. Although the industrial consolidation of the last two decades has ceased, there are few signs of significant new market players. A very broad range of factors is responsible for this stasis.

### Mergers and exits

It is very easy for manufacturers in this business to fail. It is also quite easy for them to see the attraction of merging or being absorbed by larger players. Being part of a larger company gives a manufacturer financial critical mass, essential for surviving industry downturns and for developing a broader range of new products and bringing them to market at a faster pace. It allows companies to pursue a

greater range of markets, avoiding dependence on any one or two core pursuits. It gives them greater leverage when negotiating for raw materials, an increasingly expensive part of high-tech manufacturing.

Size offers huge advantages in customer finance and customer support. In addition, it provides a broader marketing capability, particularly as companies internationalize and establish a presence in more countries. A bigger economic footprint—employment and tax revenue—gives larger companies better access to government assistance for regulatory changes, economic incentives, international military marketing, and, of course, defense contracts from the home military.

Before the current Airbus/Boeing duopoly, the jetliner business included McDonnell Douglas, Lockheed, and numerous earlier players such as Convair. Ultimately, the smaller participants saw the advantage in being part of something larger, or of exiting the market.

The regional aircraft market provides a more extreme example of these trends. Looking back 10 years, there were eight manufacturers. Only three survive today. This market grew at a healthy pace in the 1990s, yet pricing stayed quite soft. Of those gone, BAE Systems and Saab decided to exit the market. In fact, BAE completely exited the civil aircraft business when it sold its business jet unit and its 20% share in Airbus. Beech/Raytheon (now Hawker Beechcraft) exited and focused on business jets. Fairchild Dornier and Fokker went bankrupt; the first ceased to exist in any form.

Despite this collapse in regional market participants, three new players are seeking to enter the market. Russia's United Aircraft wants to build its SuperJet; China's AVIC wants to build its



ARJ-21; and Japan's Mitsubishi wants to build its MRJ. But even these relatively established aircraft manufacturers face an uphill battle breaking into a new market. All three want to build a 70/90-seat regional jet, just as the market for jets in this class looks set to hit a plateau.

This situation is not very different from the 1980s and 1990s, when numerous players tried to break into the turboprop market, which seemed to offer boundless, long-term growth before it collapsed in the mid-1990s. In addition to the players mentioned above, other companies such as Indonesia's IPTN and Spain's CASA tried and failed to break into the regional turboprop business.

As a result of manufacturer consolidation and market exits, the aircraft industry is notably concentrated. The top nine companies—Boeing, EADS, Lockheed Martin, Bombardier, Finmeccanica, Dassault, Embraer, Textron (Cessna and Bell Helicopter), and General Dynamics' Gulfstream unit—account for over 85% of industry revenues. Most of these players have absorbed several smaller players over the past decades, increasing their shares of a growing market.

Yet this market share growth and industry consolidation is somewhat decep-



tive. Although prime contractors have increased their dominance at the top end, they are also increasing the amount of work they give away through outsourcing. Manufacturers have always outsourced 50-60% of the value of any given aircraft (engines, avionics systems, interiors, and so on). But today, primes are partnering with second-tier companies for major airframe structures. The primes seek to spread new program risk and costs and focus on top-end product integration and marketing. Boeing's 787 is the best example of this trend.

Because of this outsourcing, the industry has seen the growing power of subcontract players specializing in aircraft structures. The structures industry too is relatively concentrated. The major second-tier companies include Spirit Aero-Systems, Vought Aircraft, Finmeccanica, and Japan's Mitsubishi, Kawasaki, and Fuji Heavy Industries. All of these increasingly important manufacturers are sited in high-cost production areas, implying barriers to entry that are just as high as in the prime contractor arena.

Many airframe subcontractors are current and former aircraft manufactur-

ers, finding themselves in a different position as prime contractors in the industry and bidding on additional aircraft-related work. Stork's Fokker unit, Saab, and Kaman are the best examples of these.

### Barriers and entrants

Harry Stonecipher, ex-CEO of McDonnell Douglas, once famously remarked of the jetliner business, "If we weren't in this industry, we'd be trying to get into it." This was basically a pipedream, as evidenced by the firm's subsequent exit from that market (and the entire company's absorption into Boeing). In fact, between 1960 and 2005, only one all-new company—Embraer—succeeded in entering the market for jet-powered aircraft.

The military side of the industry is even tougher on newcomers than the civil side. There have basically been no new military aircraft market entrants in many decades. The growing UAV market has attracted a few new players, especially General Atomics with its Predator series, but there are few hopes for manned aircraft market entrants.

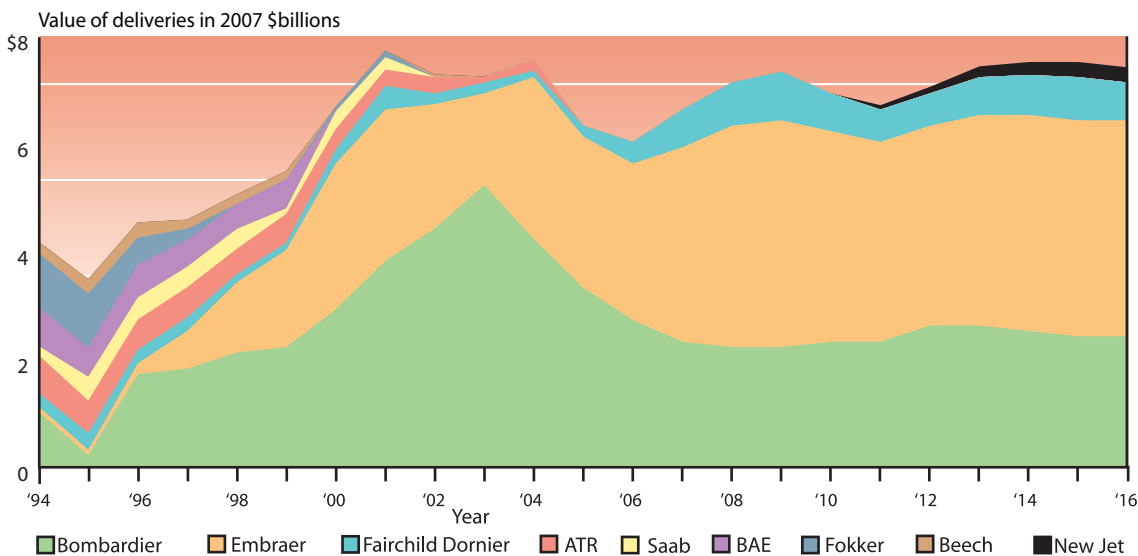
The reason for these high entrance barriers is simple. If a need for critical



mass favors consolidation, companies that have achieved that mass have the power to crush start-up companies, even if the new players offer a superior product. For example, any new-start business jet player must contend with the likes of Cessna, a company with an enormous and loyal customer base, deep pockets, and a very extensive product sales and support network. Not only does the new company need to develop a design and start producing it; it also must pay for selling and supporting the new plane, and these costs can exceed those of design and tooling.

Another problem concerns volume. Many export-driven economies, particularly in Asia, thrive on enormous production volumes of televisions, DVD players, cars, and car components. They use these volumes to move up the production learning curve, increasing quality, lowering manufacturing costs, and quickly repaying up-front expenses. The aircraft industry offers no such volumes. In fact, worldwide, fewer than 4,000 turbine-powered aircraft were produced last year, including helicopters

## REGIONAL AIRCRAFT MANUFACTURERS' MARKET SHARE



and light turboprops. No type of aircraft achieved an annual production rate above 300 planes.

For the future, there is one exception to both of these problems. Honda is seeking to manufacture its HondaJet, a light business jet. A prototype aircraft flew in 2003. It features an over-wing configuration for its two Honda engines. It will enter service in 2010 and will be built at a new facility in North Carolina.

Honda, of course, has very deep pockets and considerable production experience. If its new jet finds a receptive market, the company could spend billions developing a worldwide support network and additional products. Or it could decide that the money is better spent on a market it understands—cars.

It will be interesting to follow HondaJet's fortunes. If it fails to find more than a niche market, it will be a clear lesson that new market entrants are basically doomed, no matter what financial advantages they enjoy.

### The newcomers

Embraer's 45-year reign as sole new market entrant has been challenged in the past three years. Three new market entrants show varying degrees of success.

The first is Korean Aerospace Industries (KAI). A merged entity incorporating older South Korean companies experienced in subcontract work and license production of foreign aircraft, KAI has introduced two new trainer/light attack aircraft. The first was the purely indigenous KT-1 turboprop trainer. The second is the T-50/A-50 jet trainer/attack aircraft, developed with assistance from Lockheed Martin. Both types have successfully entered series production.

The reason for KAI's success in entering the market is quite simple—government funding created it and maintains it as an ongoing enterprise. KAI's business future depends on the Korean govern-



ment's continued willingness to fund it, and on the occasional export sale as a modest enhancement to national defense work. It does not need to worry about commercial aircraft marketing and support, or about up-front new product development expenses. KAI's international presence has also been helped by Lockheed Martin.

The lesson of KAI, therefore, is to obtain enormous amounts of government money. This is a difficult prospect. Defense self-sufficiency has proven to be illusory, with even medium powers like Israel and Japan abandoning hope of meeting national needs with indigenous products. And in a time of economic reform and



free-enterprise predominance, government industrial policies that favor new civil aircraft companies are almost nonexistent.

The second and third new entrants have no government funding advantage, and have suffered for it. The second was Sino-Swearingen, with its SJ30 light business jet. The first of these aircraft was delivered in late 2006. This development followed well over 20 years of slow, frequently confounded development efforts. Unfortunately, there has been only one other delivery. Worse, in September 2007 the chief financial backer, Taiwan, sold the company to a distributor and a small

private equity firm. Neither has any experience in manufacturing, and both probably lack the resources and skills needed to finally bring the plane to market.

The third new entrant is Eclipse Aviation, manufacturer of the Eclipse 500 very light jet. This company also achieved its first delivery in late 2006. By December 2007 Eclipse had delivered about 68 planes to customers. However, the company's admitted breakeven point is 600 jets per year, a virtual impossibility. There are signs of Eclipse's financial rupture, with

the company announcing personnel layoffs while trying to ramp up production, and aggressive pricing tactics designed to



bring in additional short-term funding. The only question is whether Eclipse's likely demise casts a pall over new players to come, making entrance barriers even higher.



In all, the aircraft industry stands in stark contrast to its cousin, the airline industry. The airline business has been very tough to exit, because of political interference and lenient bankruptcy regulations. It is also easy to enter, thanks to plentiful manufacturer financing for new airplanes, a surplus of easily obtained used planes, and a broad variety of unexplored service niches. The aviation manufacturing industry suffers from the exact opposite situation, and despite today's excellent market conditions, there are few signs of change.

**Richard Aboulafia**  
Teal Group

raboulafia@tealgroup.com

