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CHINA: Leading the Rebirth of Asia's Commercial Aircraft Industry?

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China is set to begin deliveries this year of its ARJ21 regional jet, the first indigenous passenger jet produced in Asia. Although it faces considerable technological and economic challenges, China could be the first Asian country to penetrate the highly competitive international commercial aircraft market.

WITH ANY LUCK, China will by the end of the year start deliveries of the ARJ21, its first indigenously designed and developed commercial regional jet. Although relatively modest in ambition and scope, the ARJ21 could be the precursor to a whole new industrial sector in Asia – large passenger jets – offering serious competition to a field that is currently dominated by just a handful of firms.

Of course, it is not as if Asian aerospace companies have not tried before to break into the “big boys’ club” of commercial aircraft production – and failed miserably. Just four companies dominate the global passenger jet business: Boeing and the European consortium Airbus are the sole manufacturers of large commercial aircraft (125 to 650+ seats), while Canada’s Bombardier and Embraer of Brazil vie to supply regional jets in the 35-to-125 seat capacity. The ARJ21, however, is perhaps Asia’s best and strongest hope for finally penetrating this tight market.

Asia: The Elephants’ Graveyard of Commercial Aircraft Ventures

The Asian aerospace industry is littered with the bones of failed commercial aircraft endeavours. Most ventures were stillborn, such as South Korea’s plans in the 1990s to produce a 50-seat regional jet. Two of the most ambitious efforts were the part of Indonesia and Japan. Suharto, at the urging of his Minister of Technology (and later his successor as President) B.J. Habibie, poured billions of dollars into IPTN, Indonesia’s aircraft manufacturer. Out of this came the N-250, a 50-passenger turboprop commuter plane, of which only two prototypes were built before IPTN collapsed under the weight of the Asian Financial Crisis of the late 1990s. Another IPTN project, the N-2130, a 100-seat regional jet, never even got off the drawing board.

Japan was even more ambitious with its plans to become a leading commercial aircraft manufacturer. In the 1960s, it built the YS-11, a 60-seat turboprop commuter plane that many thought would be the first in a series of Japanese-made commercial airliners. In fact, one of the more alarmist notions to come out of the Japan-bashing school in the late 1980s and early 1990s was the belief that by the turn of the century we would all be flying wide-bodies produced by Mitsubishi or Kawasaki.

The reality was much more sobering. From the late 1960s to the early 1990s, the Japanese government and industry laboured together on a number of passenger jet projects, starting with the YX, a planned 200-seat commercial jet. This was later scrapped in favour of the more modest YXX, a 100-150 passenger airliner, and later the even more modest YSX, a 60-seat regional jet. None of these aircraft ever made it beyond the specifications stage, let alone fly.

Today, most Asian aerospace firms have to be content with being subcontractors and suppliers to the leading Western aircraft manufacturers like Boeing and Airbus. Not that this cannot be very lucrative: Japanese aircraft firms have a 20 percent stake in the Boeing 777 programme and a 35 percent workshare in the Boeing 787, including production of the critical central wingbox. On the other hand, being a subcontractor has none of the glamour and cachet of having your company's name on the outside of the aircraft.

Can China Save Asia's Commercial Aircraft Business?

The ARJ21 could turn around Asia's commercial aircraft sector. To be sure, China has also had its share of failed passenger airliner schemes. In the 1970s, it developed the Y-10, a clone of the venerable Boeing 707. In the 1990s, it licensed-produced the McDonnell Douglas MD-80 passenger jet. The Y-10 never made it out of the prototype stage, while MD-80 production was abandoned after only 35 aircraft were built.

The ARJ21 regional jet, launched in 2002, is different -- a more realistic venture. It is a smallish plane, seating between 90 and 105 passengers, designed for short-haul flights of less than three hours. It is intended first and foremost to meet China's burgeoning demand for internal air transport; estimates are that the country will acquire up to 900 medium-sized passenger planes over the next 20 years. Consequently, the ARJ21 has a huge domestic market to tap into and build upon.

The ARJ21, in fact, has already secured over 180 firm orders from Chinese airlines. It has also scored overseas customers, including GECAS, an Irish-American commercial aircraft leasing company, which has ordered five ARJ21s, with an option on 20 more. In fact, China is rapidly becoming *the* commercial aerospace hub of Asia. In addition to the home-grown ARJ21, China is license-assembling the Airbus A320 commercial airliner in Tianjin, while Embraer has a joint venture in Harbin to co-produce the 35-50 passenger ERJ family of regional jets.

China's domestic aircraft industry is not resting on its laurels. Last year it unveiled a scale-model of a 150-200 seat commercial airliner, designated the C919. An obvious play on the Boeing B7x7 designator system, one can infer that the Chinese intend this plane to be a player in the global commercial aircraft market.

Continuing Uncertainties

Can Asia, led by China, do with commercial aircraft what it did with consumer electronics, automobiles, semiconductors, and personal computers? In other words, can it leverage its comparative advantages in low-cost manufacturing and growing technological prowess to become a global powerhouse in this sector as well? Despite recent progress, the Chinese aircraft industry still faces some substantial challenges. The passenger jet business has very high entry costs – and these costs are likely to soar as China tries to develop an all-indigenous airliner, with a locally-built engine, avionics, and flight controls (all of which

are currently imported). Additionally, the ARJ21 faces stiff competition from Bombardier and Embraer, and they are not going to cede sales quietly.

Finally, airlines value safety and reliability as much as they do price. The Chinese, given their continuing problems with quality control, will likely face considerable scepticism when it comes to buying their indigenous commercial airliners.

None of these hurdles are likely to deter the Chinese from their efforts, however. The commercial aircraft business is as much a matter of national pride as it is one of profits. The momentum that propels China to advance itself in microelectronics, automotives, space, and emerging technologies is also driving its aircraft industry. The ARJ21 may not end up being a commercially successful airliner, but it is a big step forward in China becoming a major manufacturer of commercial aircraft.

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