

This month we welcome Mike Busch to *AOPA Pilot*. Busch is a nationally renowned expert in maintenance from the owner's perspective. His company, Savvy Aviator, provides owners with access to expert analysis and assistance with a variety of engine and airframe maintenance issues.



Tectonic shifts

Changing competitive landscape in piston GA engines

BY MIKE BUSCH

ONE OF the most significant announcements to me, as an aircraft owner and maintenance professional, at this year's EAA AirVenture in Oshkosh was that Continental Motors had acquired the assets of Danbury AeroSpace of San Antonio, Texas.

"Danbury who?" you might ask. Danbury is a major supplier of piston aircraft engine components and experimental engines sold under the Engine Components International (ECi) and Titan brand names. ECi and Titan Engines Inc. are wholly owned subsidiaries of Danbury.

I found the Continental/Danbury announcement significant because it will result in major changes to the competitive landscape in the piston aircraft engine market. These changes will be excellent news for some aircraft owners and rather bad news for others.

SOME BACKGROUND

To put this in perspective, we need to go back four decades to a time when two Texas-based companies—Superior Air Parts (SAP) and ECi—first obtained FAA parts manufacturer approval (PMA) to produce replacement parts for Continental and Lycoming engines. Prior to that

time, Continental and Lycoming were the sole-source supplier of replacement parts for the engines they manufactured.

SAP was founded in 1967 for the purpose of producing PMA parts at lower cost than what was available from engine manufacturers. In the mid-1970s, ECi entered the PMA game. Prior to that, ECi's business had been chrome plating of cylinders and reworking of crankcases, crankshafts, and camshafts. In fact, ECi began its corporate life in the 1940s as Pennington Channelchromium Co. That parts-refurbishing business still exists, although chrome plating of cylinders gave way to nickel-carbide plating ("Cerminil") in the late 1990s. But ECi's PMA parts business grew rapidly in the

late 1990s and early 2000s, and became the firm's dominant focus.

The entry of these two Texas companies had a profound effect on the affordability of piston aircraft engine overhaul and repair parts. This was the heyday of piston GA aircraft production, and the major focus of both Continental and Lycoming was on producing new engines for the flood of new aircraft rolling off the lines at Beech, Cessna, Mooney, Piper, and a dozen smaller manufacturers. So they didn't pay all that much attention to these two upstart manufacturers of PMA parts.

That changed in the mid-1980s, when piston GA production imploded, and the market for new piston aircraft engines all but dried up. By the early 1990s, it was apparent that the salad days of new aircraft production were gone and weren't coming back any time soon (if ever). The primary focus of Continental and Lycoming shifted

“This was proof of the very powerful impact that third-party competition had on piston aircraft engine parts prices.”

from producing new engines to rebuilding old ones. Suddenly, the field overhaul shops became Continental's and Lycoming's chief competitors.

Predictably, the response of both manufacturers was to lower the prices of their factory-rebuilt engines while simultaneously increasing their parts prices. This put a squeeze on field overhaul shops, and a bunch of them were forced out of business. For the engine shops that survived, the saving grace was the availability of low-cost cylinder assemblies and other PMA parts from SAP and ECI.

EXPATRIATION

In 2006, something odd happened: A small German manufacturer of certified GA diesel engines—Thielert Aircraft Engines (TAE)—acquired SAP for \$10 million. TAE's principal motivation was to create a U.S. distribution channel for its Centurion series of diesel aircraft engines. But this seemingly innocuous acquisition set the stage for a series of events that was unforeseeable at the time.

In April 2008, TAE declared insolvency after its board of directors found that company founder Frank Thielert had been cooking the books. The board fired Thielert and decided to raise cash by selling off its SAP subsidiary. An interested buyer immediately appeared: Lycoming. Lycoming's parent Avco Corp. agreed to purchase the assets of SAP from TAE for \$11.5 million, on the condition that SAP itself declare bankruptcy so that Avco could acquire its assets in bankruptcy court. It became apparent that Avco's intention was to buy SAP's PMAs and bury them in a deep hole in the ground, thereby eliminating SAP's competition to Lycoming's parts business.

TAE's board agreed; SAP declared bankruptcy on December 31, 2008; and the court approved an auction of the SAP assets to be held on February 24, 2009. The auction was expected to be a mere formality and Avco was expected to be the only credible bidder.

But things didn't quite work out that way. Lycoming's arch-rival Teledyne Continental Motors advised the court that it intended to submit its own bid for SAP's assets, and that its bid would be higher than Avco's \$11.5 million offer. It started to look like there might be a bidding war over SAP.

ANTITRUST?

About this time, I received a phone call from Bret Fulkerson, an attorney in the Texas Attorney General's Office, Antitrust Division. Fulkerson said his office was conducting an investigation of the possible antitrust implications of a purchase of SAP's assets by Lycoming. He asked for my opinion, and I said I felt strongly that the acquisition of SAP's PMAs by Lycoming (or Continental) would result in major increases in engine overhaul and replacement part prices, and have a serious adverse impact on aircraft owners. Fulkerson asked if I could offer him any proof.

A week later, I emailed Fulkerson a spreadsheet that I'd prepared comparing Lycoming's prices on parts for which there



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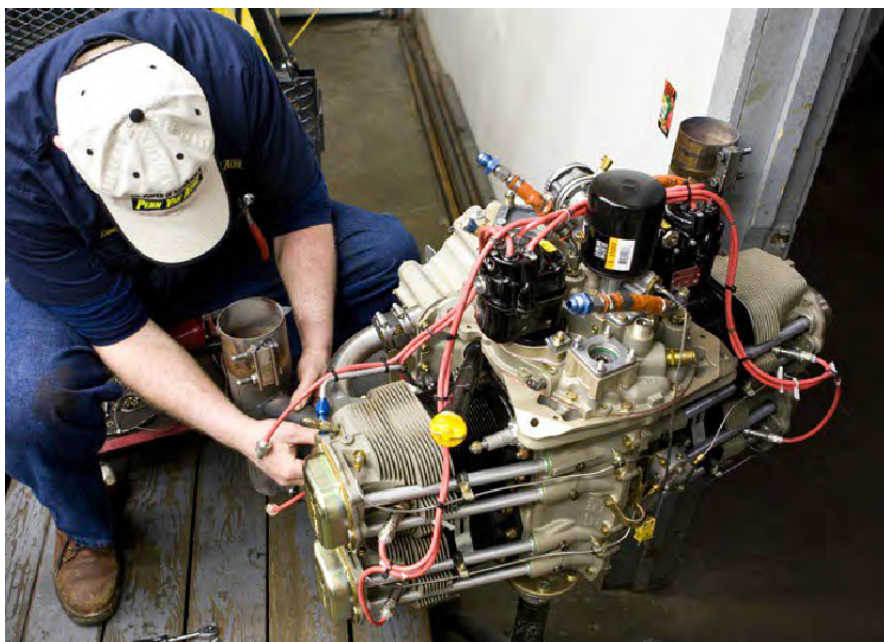
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were PMA equivalents available from SAP or ECi to similar parts for which Lycoming was the sole source. It demonstrated that Lycoming charged prices for its sole-source parts that were two to three times higher than the prices it charged for parts for which PMA equivalents existed. I told Fulkerson that I felt this was proof of the powerful impact that third-party competition had on piston-aircraft engine parts prices, and why I feared what might happen if such competition went away.

On February 23, 2009—the day before the scheduled auction of SAP’s assets—Fulkerson sent an official letter to Avco (copied to the bankruptcy judge) stating his office was “investigating the possibility of a reduction in competition in the market for replacement parts for piston-driven general aviation engines,” and had concerns that the acquisition of SAP’s PMAs by Lycoming or Continental might violate various Texas antitrust statutes. The auction was cancelled, and Lycoming and Continental were effectively eliminated as suitors for SAP.

Ultimately, in August 2010, Superior was purchased by Chinese industrialist Shenzong Cheng in partnership with the Chinese government. Cheng and his wife own 60 percent of Superior Aviation Beijing, and the other 40 percent is owned by the Beijing municipal government. (Cheng also acquired Brantley Helicopter, and

attempted a \$1.3 billion buyout of Hawker-Beechcraft that ultimately fell through.)

CHINESE INVASION

Cheng’s purchase of SAP turned out to be the first in a succession of Chinese acquisitions of key U.S.-based GA firms. In February 2011, the highest-volume manufacturer of piston GA aircraft in the United States, Cirrus Aircraft, was acquired by China Aviation Industry General Aircraft Co. (CAIGA) of Zhuhai, China, a wholly-owned subsidiary of Aviation Industry Corporation of China (AVIC). Headquartered in Beijing, AVIC is an aviation conglomerate owned by the government of the Peoples Republic of China, with more than 70,000 employees across 400 subsidiaries and with operations in more than 50 countries.

Months later, in April 2011, AVIC acquired Continental Motors from Teledyne Technologies for \$186 million. And just to prove that what goes around comes around, in July 2013 AVIC acquired the assets of Thielert Aircraft Engines (TAE).

The Chinese invasion wasn’t over yet. In October 2013, Mooney Aviation Company was purchased by a group of Chinese investors headed by Taiwanese industrialist Cheng Yuan (also known as Jerry Chen). Then in May 2015, AVIC-owned Continental Motors Group announced it had entered into a preliminary agreement

to acquire the assets of Danbury AeroSpace, and at AirVenture 2015 announced that Continental’s acquisition of Danbury was a done deal.

WHO WINS? WHO LOSES?

I speak with thousands of aircraft owners each year at events such as EAA AirVenture and the AOPA Regional Fly-Ins. Many tell me they are horrified to see China acquiring key U.S. GA firms as if they were a row of dominoes. My view is a bit different.

Although I’d certainly have preferred to see companies like SAP and Cirrus and Mooney and Brantley remain under U.S. ownership, I’d much prefer to see them thriving as Chinese-owned entities than to go under—which in most of these cases is what likely would have happened without an infusion of Chinese capital. So all in all, I think American owners of GA piston aircraft (like me) are better off as a result of this Chinese invasion.

Having said that, the recent acquisition of Danbury/ECi by Continental Motors really concerns me for the same reasons that the near acquisition of SAP by Lycoming did (and why the Texas attorney general put the kibosh on it): It eliminates competition that keeps the cost of overhaul and replacement parts low.

Actually, the competitive impact of the Continental/Danbury is complicated. Continental President Rhett Ross confirmed to me at AirVenture that he does indeed intend to terminate ECi’s production of PMA replacement parts for Continental engines (with the exception of nickel-carbide cylinders, which will remain in production, at least for now). At the same time, he indicated that Continental will provide capital to fund aggressive expansion of ECi’s production of PMA parts for Lycoming engines, and to help expedite the certification of ECi’s Titan-brand Lycoming-clone engines (currently offered only to the Experimental aircraft market).

What this means, so far as I can see, is that Lycoming owners will be winners in this new competitive landscape, and Continental owners (like me) will be big losers. I hope I’m wrong. **AOPA**

MIKE BUSCH is an A&P/IA
EMAIL mike.busch@savvyaviator.com