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Business in the Fast Lane

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REGIONAL FOCUS
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FINANCIAL IMPACT
OF AIRCRAFT PARTS

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THE SUM OF ALL PARTS: WHAT ARE AIRCRAFT PARTS REALLY WORTH?

By Peter Lewis
CEO of Alpine Air Support GmbH

It's a question we hear nearly every day. "I have an ABC123 Valve that I want to sell – what's it worth?"

PRICE IS RIGHT

Peter Lewis (pictured) analyzes how the aviation industry structures its parts pricing policies.

Taking a deep breath, pausing only to search for the correct response, our answer is neutral to vague at best. We're not being coy, but the questioner may as well be asking, "How long is a piece of string?" Naturally, when you own an aircraft part, you take the optimist's stance

and presume that it must *at least* be worth full current list price, because, well, you have one, and everyone else will also want to share your joy and reward you with piles of cash. The dealer, on the other hand, may not quite share your enthusiasm and may offer you a meager 10 percent on the dollar...

...because, quite honestly, Jetstar parts aren't really fetching what they used to in the early 1970s!

This article is informative reading for corporate operators, FBOs, repair stations and parts organizations that own, stock, and wheel and deal aircraft parts as a part of their company activity. Previous *BART* articles have examined ways of purchasing spares and the types of parts business jet operators really need to stock (*BART* Jun/Jul '04 & Feb/Mar '05). This piece analyzes how the aviation industry structures its pricing policies and how the marketplace ultimately decides the true value of spares in a way similar to share prices fluctuating on world stock markets. Similar to Monty Python's *Life of Brian* sketch in

STILL POPULAR

The Garrett (now Honeywell) modulating valve on the Learjet is still a sought after unit despite its 30-year heritage.

which Brian tries to purchase a false beard from a dubious salesman, resulting in an impromptu lesson in haggling, purchasing used parts from the aviation marketplace can be equally daunting.

Parts economics. Well, what is the price of a part? Unfortunately, there is no single or correct answer to this question. Do we mean the new list price, actual acquisition cost, exchange fee, book value or package price?

The OEM (Original Equipment Manufacturer) will have a published list price, meaning a Factory New (usually with appropriate delivery period) product. However this price itself can have variables. Is there a quantity discount for large orders, or is an AOG fee levied for a quicker delivery? The OEM may well have their own list price, but the same part can be priced higher or lower with the airplane manufacturer depending on pricing politics.

Some enlightened OEMs may also offer serviceable equipment (meaning overhauled or repaired) as an alternative if their new stocks are depleted. Most do not though, as they would obviously be competing with their own new list priced equipment.

OEMs sometimes have a two-tier price list structure: For example a domestic (US) list price and an international list price some percentage points higher for the world's 96 percent non-US population. Whilst US-based manufacturers can normally clearly define their parts pricing policy based on vendor pricing in US Dollars, many international factories have to establish US Dollar list prices even though their highest costs (usually labor) are in their own local currency. Calculating foreign currency exchange risks is a subject unto itself, but a typical margin for currency fluctuation of 10 percent would be deemed appropriate if one were to publish a list price in advance based on projected sales prices in a foreign currency.

Let us look at the officially designated OEM dealers. They are usually to be found in the avionics and instrument markets offering their own parts pricing structures. Having established networks of authorized avionics dealers, like Honeywell and Rockwell Collins do, allows OEMs to concentrate on developing and manufacturing their products while their dealers push

the sales side of the business. This is most certainly the case with regards to business jets and turboprops, as the airlines will still negotiate their own requirements with the OEMs directly. Anyone can call Honeywell directly and obtain pricing for new and exchange units, but it is better to simply call an appointed dealer first who would be in a position to offer a discount. By offering discounts for quantities purchased, the distributor serves the needs of the customer and ultimately eases the workload of the OEM.

A clear trend is also developing with European OEMs commercially binding their sub-vendors into exclusive supply contracts and prohibiting them from selling their own parts directly to the aftermarket. This can be achieved passively by "camouflaging" sub-vendor part numbers and identities by creating OEM-specific part numbers. It can also mean that commercial pressure is exerted onto smaller manufacturers who rely on the OEMs for their profit and turnover. Whilst aerospace anti-monopoly commissions look at airline mergers and the wrangling of the Airbus/Boeing subsidies debate, the true money-making monopolies are alive and well, and are embedded in the OEM/sub-vendor culture. Parts that could theoretically be purchased at realistic market levels are monopolized by OEMs and billed at several hundred percent markup, usually justified by the golden nugget of OEM protectionism marketing sales pitches, "OEM quality = OEM safety".



List Prices

An interesting side note to how the OEMs actually create their list pricing is worth examining a little closer. To get their parts onto an airframe manufacturer's new model, OEMs have to enter a bidding system wherein they effectively showcase their products against competitors, and pay for the research and evaluation processes themselves not knowing if the dollars they are investing will ever see a commercial return. The winner may then have to enter into a long-term agreement with the airframe manufacturer whereby they would exclusively deliver the product for the first five years or so before being allowed to market their own part to the aftermarket or establish third-part repair agreements. In the meantime, the OEMs may have to cover initial warranties for many years and sell their product below actual production cost to the manufacturer just to be named as a vendor on a specific aircraft program.

Thereafter the OEM will create a list price based on a complicated equation of R&D (research and development) costs, production figures and forecast aircraft sales, as well as their own dealings with sub-vendors and material costs. The (sometimes rather high) resulting figure highlights the intricacies involved in developing new certified aircraft parts. Certain parts that rarely see the light of day are airframe-specific panels and empennage, which will only need to be replaced in case of physical damage, as they are neither life-limited nor subject to TBO (Time Between Overhaul) replacement.

Then along come the PMA companies who effectively copy an existing OEM part (high demand items) – leaving the OEM to produce the slow or never moving piece parts and compete for the last few percentage points of profit.

AFTERMARKET

PARTS TRADING

Exchanges and real costs. An exchange part is a lower cost option for replacing a faulty unit with a serviceable one. The unserviceable component is returned to the supplier and subsequently repaired and put back into the suppliers' parts pool. There are two types of exchange: the flat

costs), but could also require a \$5,000 replacement cathode ray tube. This is why you are hedging your bets when you pay \$6,500 for an OEM exchange. The OEM is likely either just covering their costs or hitting the jackpot, and you will never know which if exchanging.

clearly setting their sights on making money with aftermarket support, be that with direct parts sales or power by the hour (PBH) type programs. Using in-house statistics tracking failure and utilization reports for a host of components, manufacturers are now better equipped to deal with parts



COSTLY
Analog indicators are still the main navigation sources on classic (pre-EFIS) bizjet types. Replacement part costs are rising, making repairs prohibitively expensive.

rate type where a single charge is made to cover the cost of the exchange fee (basically the profit element of the transaction), which includes the estimated cost of repairing the broken core unit; and the second type (or "exchange plus cost"), where the exchange fee is charged in advance, and the actual repair cost of the core is billed after the exact repair fee is known at a later date. The second type is usually cheaper, but is normally only offered by parts dealers since OEMs have fixed fees based on their usage records with an appropriate mark-up factor calculated into the figure.

Bear in mind that when you exchange parts, your broken weather radar indicator may only require a \$ 0.20 fuse to be repaired (plus labor

The golden rule is to exchange your display screen units, and repair your mechanicals and hydraulics.

Direct costs and the aftermarket. The course of evaluating potential new or used business aircraft will most certainly involve a long process of route structure analysis, financing options, resale values and a host of aerospace industry acronyms like NRCs (Non-recurring costs) and DOCs (Direct Operating Costs), which will most likely ignore parts acquisition as a major cost factor. Having trimmed their profit margins on new production aircraft, aircraft manufacturers are

shortages and can predict shortfalls in advance based on recurring failure reports from operators.

So, which parts are worth real money? Inevitably, parts that see more extensive utilization or require more frequent replacement attract the higher retained values in the aftermarket. Quality used avionics (the newer the better), instrumentation and application-defined hydraulic components (pumps, undercarriage accessories) tend to keep their value as opposed to airframe-specific units that rarely see the mechanics wielding their Snap-On tools. Availability and the type of part concerned will determine current market pricing. A Sundstrand fuel boost pump used on a Gulfstream IV is not in short supply, and checking the price from ILS (Inventory Locator

Service) will reveal several possible suppliers with Gulfstream also holding quantities in stock; in this case one would expect healthy competition from the vendors, and the customer will be able to save real money when shopping around. Now take a look at a Honeywell DU- 880 EFIS Display Unit and see what the results show: just two or three companies listing inventory. Inevitably some units will not be readily available, and your choice will be down to one or two. You will be paying list or near list price to get your hands on one of these parts.

There are local factors that can also play a significant role in affecting market price. If a high quantity of a certain part is brought onto the market or a single end-user buys up a product, then the market will quickly change. Collins ALT-55Bs have kept their value for many years as the only piece of ProLine II equipment still used after RVSM installs, and their price is still increasing despite being on the aftermarket for almost two generations.

Speaking on behalf of Prime Industries in Atlanta, GA, Marc Lacourly, Company President, acknowledges that the aftermarket has also redefined itself as a source of spares supplies for the OEMs themselves. "Manufacturers are relying on smaller companies to assist them with their procurement needs for spare parts that have become hard to find. Large OEMs are regularly looking to purchase aftermarket spares and next higher assemblies to meet their internal contractual obligations with their own respective customers. Consulting with the aftermarket has allowed manufacturers the opportunity to not only save money, but to efficiently meet critical delivery requirements for daily AOGs and PBH contracts."

Quality. Faced with many companies offering similarly priced parts, how do you choose?

The fact of the matter is that parts companies are not required to be certified either by the FAA, EASA or any other national aeronautical governing body. This is based on the fact that when a company stocks parts, they aren't manufacturing, performing alterations or servicing parts. If they were, they would require licensing as a repair station. The FAA has taken an enlightened approach to the distributor issue and created Advisory Circular No.00-56 in September 1996.



AC 00-56 provided guidelines to aviation parts companies addressing not only methods of accrediting themselves but also setting a standard that would meet the FAA's quality requirements and ultimately set new standards for the aviation parts marketplace. The Washington DC-based Aviation Suppliers Association (www.aviationsuppliers.org) was one of several organizations that established a quality system to meet or exceed the FAA's AC 00-56 requirements, and the ASA-100 program that they created is now a standard recognized as being desirable to aviation parts stockists and distributors. Approved ASA and ISO companies that meet specified quality standards could be considered a more reliable source as they have quality as a core

part of their business rather than as an afterthought. Consider the warranty period offered when buying parts and the type of service given when closing a transaction – the price you pay may not be the only cost involved.

Obsolescence. The military have taken a lead in viewing obsolescence of spare parts as a critical factor affecting future flight dispatch availability and flight cost. Although the General and Business Aviation parts scene is possibly not quite so critical, sourcing hard to find parts can still be a headache, especially where there is no work-around.

Speaking for Milwaukee, WI-based instrument manufacturer Astronautics, Dan Wade, Director of Marketing, says: "We pride ourselves on standing behind our products, pro-

STEADY
Loral's A100S Flight Data Recorder is a typical multi-application avionics part that has a steady market price.

AFTERMARKET

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viding spares and repair support for instruments we designed going all the way back to the 1960s! Whereas we can't afford to stock every product we have ever made, we are currently building two spares of an electro-mechanical instrument for an aircraft that was last produced in the 1970s. Unfortunately, the cost of producing just two units will be quite high this late in its product life cycle."

the parts market in the 21st Century is that many end products now require spare parts that cost way in excess of the actual value of the finished unit itself!

Depreciation. One of the trickiest situations regarding parts pricing is the level of depreciation that they incur. If an operator purchases a new jet and builds up its own stock with factory new parts that gather dust for

to the new owner or try to offer "spares packages" to interested parts dealers – which is how many used equipment pieces re-enter the market. Clearly operators are not in the business of making money selling parts. They earn their dollars or euros operating or renting out flight time in their jets, and the parts they've bought would have been costs necessary to the support of their



Clearly, maintaining a healthy stock level of parts is the most cost-effective method of avoiding future inventory shortfalls and special orders.

These days, PMA suppliers can offer alternative approved parts, but these tend to be on specific airframe, powerplant and undercarriage assemblies, so your 1960s-era Gulfstream I hydraulic actuator is probably a lost cause.

As Dan Wade adds: "Astronautics understands the challenges for a customer flying one aircraft or a small fleet to stock spare parts. We try to reduce the investment and cost to these customers by utilizing common equipment or at least assemblies across multiple customers so that spares can be pooled in our stock, and by building spares together with a production run to gain economies of scale."

Investing in spare parts for the useful active life of your flight department's fleet is a wise move and, with the option of reducing costs via depreciation, is also an effective cost-saving measure. One of the idiosyncrasies of

about 10-15 years, then they will depreciate the value of the aircraft hull. But many somehow assume that their inventory is worth the same as what they paid for it. Not quite. New, unused parts are, in the long term, worth no more than repaired or overhauled parts over a longer period. Parts dealers pricing parts inventories examine market potential, trends and future resale values in much the same way as aircraft sellers do, and a new part will need to be re-certified after a period of time just like any other used part.

Moreover, avionics parts and especially cabin entertainment systems can be considered obsolete after less than ten years as newer products enter the market. The once standard 360 channel VHF transceiver Collins VHF-20A can now be picked up for around \$500, whilst the latest 8.33kHz channel spaced VHF-22Ds are factory new around \$12,000 with overhauled units picking up \$8,000. The once rock solid VIR-32 (-201 flavor used to pick up \$12,500 in early 2001) is now only worth around \$4,500 in 2006 terms, with the non-FM conform -001 version about half of that.

Corporate operators tend to sell their aircraft and then either try their luck selling their accumulated spares

flight department. One of the best indications of market values for parts is to compare how many have been withdrawn from service and cannibalized for parts reclamation versus the number of airframes still flying.

When Raytheon decided to cease production of their Starship a couple of years ago, they took the bold and unique step of buying back all the airframes to ensure that there would be no aftermarket, and had them all destroyed.

The 'Sum' of all the Parts. The ultimate (if oversimplified) answer to the question posed at the beginning of this piece - how much are parts worth - is basically, 'however much one is willing to pay for them'. With an AOG pending and paying passengers facing delays, the part's market price may not be as relevant as it would be if one were increasing stock levels on a routine basis. The law of supply and demand is alive and well in aviation parts trading.

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WEATHER RADAR

Detail of a Honeywell weather radar control panel part number 7008471-405.