

Warranty management

Successful warranty recovery remains a crucial activity for aircraft operators and maintainers. As the industry faces back-to-back global challenges, from the 2008 peak in oil prices to the current economic downturn, operators are, now more than ever, forced to closely examine cost saving opportunities

For many carriers, successfully processing valid warranty claims has a significant impact on the bottom line, however the complexity and high overhead cost of generating claims often outweigh the associated savings. Warranty personnel can spend an excessive amount of time manually reviewing task cards and contracts rather than generating claims revenue and negotiating with manufacturers and vendors. Alternatively, an inability to successfully execute warranty claims forces the operator to absorb all of the associated costs.

Given the potential for multiple warranty contracts to be applicable to a single task, component or aircraft, the simple question of 'can I recover warranty compensation for this work/defective component?' becomes quite complicated. Evaluating the applicability of multiple warranties against each aircraft, component and defect can be a complicated and costly process. This is particularly true when the investigation is performed using maintenance management software that does not allow for warranty traceability at the component level, or worse, when sifting through paper-based records.

Maximising the recovery of costs goes beyond prompt and successful claim submission. It also includes intelligent management and use of parts, and informed repair routing. Both maintenance and

supply departments should have a clear understanding of component warranty status, allowing for optimal use of inventory still under warranty. Allowing warranties to expire as a part sits on the shelf while many unwarranted parts fly with the fleet exposes the organisation to unnecessary repair costs in the event of a failure. Clear indication of component warranty status should be a supply decision aide readily available to all applicable roles in order to optimise organisational value.

Warranty relationships

To fully appreciate the complexities that come with aviation warranties, it is important to consider the various types of warranties available. Warranties are available in several forms from multiple sources, including aircraft, assembly, and component manufacturers and repair facilities. They can also range

from asset warranties to manufacturer-sponsored task warranties, such as service bulletins. Additionally, component vendors may offer frontline warranty on the parts they distribute.

Adding to the challenge, aircraft warranties can apply not only to the aircraft itself, but to components that are installed on the aircraft at delivery. This is typically limited to a predefined list of applicable systems and parts; however, in rare cases, it may be a full complement of the installed components. Identifying which components are covered under the original aircraft warranty represents a significant challenge when determining applicability. Consider that the original warranty may or may not remain valid for a repairable component as it moves from aircraft to aircraft, as defined in the warranty contract terms and conditions. Part of an aircraft warranty will cater to resolving →



Taking delivery of new aircraft is always exciting but looking after warranties once it is in service is a complex business (photo: Airbus)

aircraft defects such as premature corrosion and the costs associated with maintaining and rectifying such scenarios.

Major aircraft assemblies, such as the primary engines and auxiliary power plant, may also offer warranties with similar attributes to those of aircraft warranties, again propagating to some, or all, installed sub-components. Assembly warranty brings additional complexity as the terms may change with the use of the assembly; an example being an engine with the potential for operating at multiple thrust ratings.

While components are usually covered under an original manufacturer limited warranty, they may also be warranted by the distributing vendor. This may augment the original warranty, or may be the only applicable warranty on a refurbished repairable component.

In addition to the aforementioned warranties, repair facilities that warrant their work should also be considered to further reduce costs. Repair warranties may be applicable to the aircraft, assembly and components. Serviceable assets returned from a recent repair may, for a time, be covered under additional guarantees.

It is worthwhile to note that aircraft manufacturers may also cover the costs related to the incorporation of some service bulletins and aircraft modifications, depending on the purchasing agreements between parties.

Terms and conditions

Furthering the complexity of revenue recovery, warranty contracts include many terms and conditions that are used to qualify or disqualify applicability. These may include the age of the aircraft/assembly/inventory, the flight usage (hours or cycles), the performance and reliability of the unit, and a filing timeframe from the initial defect to the warranty claim submission. An operator must prove all terms and conditions have been satisfied before a claim can be validated. Failure to provide information supporting the claim or to respond within a designated timeframe may disqualify even the most well-prepared claims, leading to a loss in the possible recovery of funds.

Many warranty contracts will stipulate that work be carried out either by the vendor, or at a vendor-approved facility. It is essential

these warranty terms be considered, and promptly identified to the maintenance repair planners. Failure to do so may result in work being performed at a facility that is not recognised by the warranty provider. This will render the recovery of warranty compensation impossible.

The terms of a particular warranty may also require that specific work instructions be followed when executing a repair. This may include, for example, predetermined labour hours for completing the task. The operator may choose to incorporate more costly repairs above and beyond the set cost at their own expense.

Key contract terms

To further reduce maintenance costs, operators need to ensure that they are claiming all applicable cost line items associated with each claim. These line items may include labour to replace a defective rotatable component, consumable components used to conduct a repair, and maintenance technician and engineering support labour required to resolve a defect. Additional line items such as shipping charges should also be incorporated where applicable – a practice that historically may not have offered a reward, given the effort required.

Managing warranties profitably

To fully realise the potential opportunities when collecting on warranties, maintenance organisations need to address the fundamental issues that lead to a lack of warranty contract visibility. While aircraft configuration and maintenance execution data are essential to the tracking and claiming of warranties, warranty data is often managed separately, and in separate software systems from the engineering and maintenance data.

Some software vendors in the market have recognised this link, and have achieved great results by integrating warranty management concepts into their maintenance and engineering tools. The result is software that automatically tracks all relevant warranty information, without the large resource investment.

The integrated design of a purpose-built, component-based maintenance management software system provides powerful tools to define warranty contracts. This allows for continuous evaluation of warranty applica-

bility across an operator fleet and inventory pool, working efficiently by proactively generating claims as warranty applicable work is performed.

Evaluating warranty items

As James Elliott, business aviation specialist at Mxi Technologies describes, “The software that has been able to successfully reduce the costs associated with warranty program management does so through task automation and increased labour and resource efficiency within aircraft operators.”

This is applicable to successful warranty recovery on multiple levels, including automated evaluation of warranty applicability, real-time alerts of recoverable work, and detailed tracking of component life cycles.

In order to determine the real-time warranty available on each aircraft and component, these software systems enable operators to define the warranty contracts and rules electronically. Rather than reviewing warranty contract terms and conditions each time a claim is processed, modern systems define key contract details, identifying the terms and conditions for real-time evaluation of warranty applicability, and further, more proactive warranty claim generation for all valid claims. This avoids relying heavily on an individual with highly specialised contract management knowledge.

“As maintenance is performed, modern systems, such as the Maintenix® software, are able to evaluate every task and record each defect repair completed against any available warranty contract,” continues Elliott. “The software automatically identifies every applicable task and part used that are covered under one or more warranty contracts, while at the same time providing all the details required to submit a warranty claim.”

When successfully managed, a warranty program can lead to significant savings for an aviation organisation, and in a volatile economy, it is becoming increasingly important to maximise such opportunities. As such, modern, purpose-built software systems that can drill down, track and apply business rules at the component-level, provide organisations with the tools they need to implement a successful program, with a direct impact on the bottom line of the maintenance organisation. ■