PARTING OUT

We're living through tough times in the aviation industry. 'Parting out' – removing serviceable parts from one aircraft to put in another – may help, but there's more to it than meets the eye.

The much slowed-down aviation industry of the past 12 months, together with supply chain difficulties, has resulted in many aircraft being withdrawn from New Zealand service.

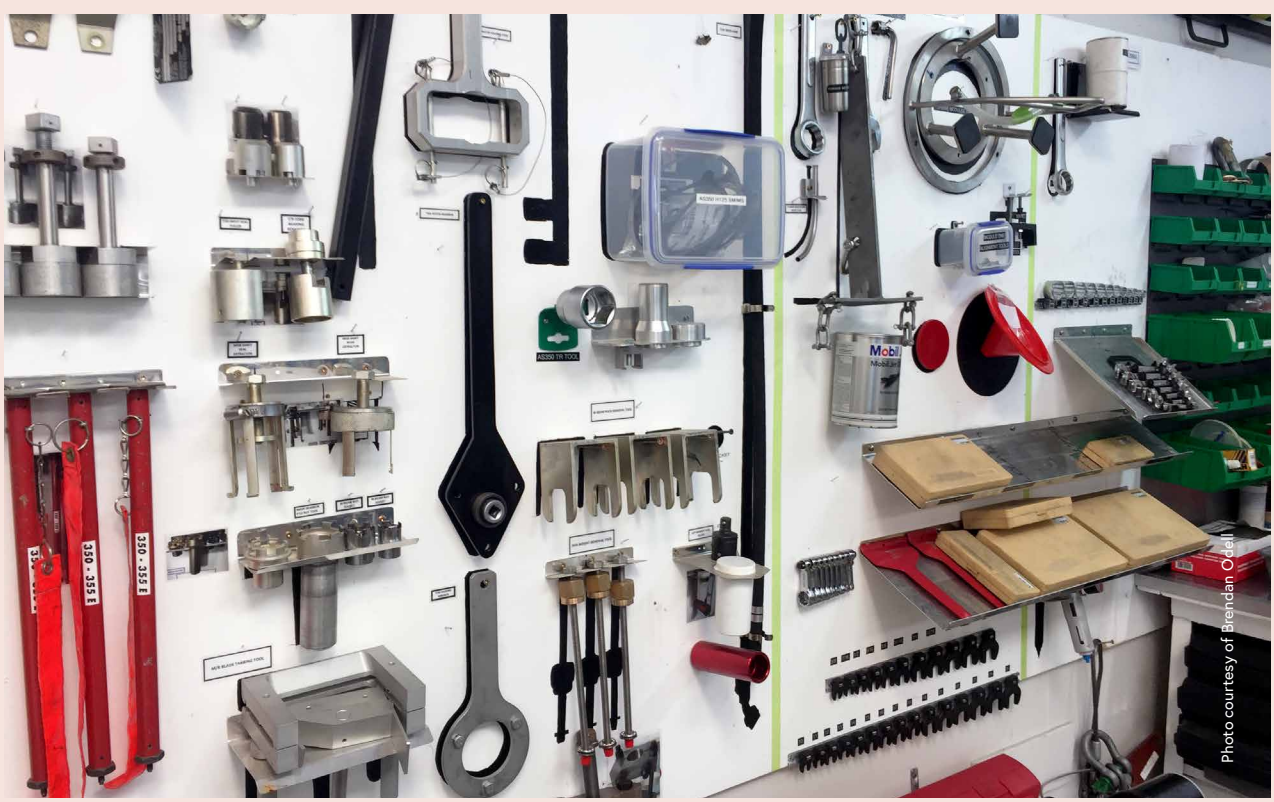
But this cloud might have a silver lining. The parts from retired aircraft could provide a solution for the operators and maintainers who're finding their 'just in time' model of obtaining parts to maintain their aircraft, is no longer viable.

Aircraft withdrawn from service are often used as a source of spare parts – a process described as 'parting out' or 'reduce to produce' or parts 'robbery' or even 'cannibalisation'.

Not only does it provide operators with the opportunity to use their own stocks, it's also becoming big business. The global market for recycled aircraft parts is expected to be worth more than $NZ8 billion by 2022, according to the World Economic Forum.

There are, however, important things to think about when removing parts from a retired aircraft, to install them on another aircraft.

Here, *Vector* is looking at parts that have been determined not to need overhaul or a 'shop visit' on removal, and can be immediately fitted to another aircraft.



// It's important to follow the manufacturer's removal instructions – this may require using special tools and/or holding fixtures.

These are referred to as 'removed serviceable' with the *ASA Dictionary of Aeronautical Terms* describing 'serviceable' (physical condition) as:

"The condition of a piece of equipment that allows it to be returned to service or to be installed in an operating aircraft."

The first thing for a maintainer or operator to consider is that parts removed from stored aircraft – although serviceable at the time the aircraft was placed in storage – may have been affected adversely by storage conditions. Those might be the environment in which the aircraft has been stored or the length of time it's been stored.

The second thing to do is check the aircraft's records for its history and that of its parts, before it went into storage.

The records should give you previous maintenance history, relevant mandatory continuing airworthiness information, and the modification and repair status of the parts being removed.

Any unusual events immediately prior to storage, eg, heavy landings or lightning strikes, will also have to be weighed.

It's important too, that removing the part is carried out using the same standards of work as those expected on an in-service aircraft.

Think about the following:

- The means by which the part is removed should be in accordance with acceptable technical data, eg, maintenance manuals, using the tooling specified.
- Adequate access equipment should be provided.
- If the aircraft for disassembly is outside, don't do it in bad weather, for obvious reasons.
- Appropriately qualified maintainers should be the only people to carry out the work.
- Appropriately blank all open connections.
- Provide a protected and enclosed quarantine storage area for the parts being removed in the immediate vicinity of the work area.
- Use normal maintenance procedures to dismantle the aircraft, for example, the use of work sheets or cards to record component removals, and label identification to show serviceability status.
- Update the aircraft records for the donor aircraft to clearly reflect which parts were removed at which time. Should the donor aircraft be restored to airworthy condition, it's critical to ensure the records' continuity and integrity.
- Consider the health and safety implications around the dismantling of aircraft and the very real hazards to anyone engaged in the disassembly.

Only a suitably licensed and rated/approved person or organisation should assess the condition of each removed part and its eventual return to service. A simple visual inspection alone should not be relied upon to determine airworthiness.

It's important to remember that the decision as to whether a part is eligible for installation lies with the installer. The assessment for eligibility must go beyond checking that a release to service has been signed.

And while a functional test of the part, once installed, is likely to be necessary, it should not be considered the sole means of verifying airworthiness.

About the Form Two

The purpose of the CAA Form Two is to identify the origin of items being transferred between aircraft or aircraft maintenance providers, and certification of the item's airworthiness.

It's used to track serviceable items on or off aircraft and into or out of stores.

It's valid only in the New Zealand aviation system (meaning it's unlikely to be recognised by foreign authorities). And it can be issued only for a part removed from an aircraft that has had an airworthiness certificate issued to it in New Zealand.

The use of the Form Two (or equivalent, which has been found acceptable to the Director) by Part 145 organisations, in all cases, must follow the procedures accepted by CAA in the organisation's relevant expositions.

Therefore, occasions do occur when parts passing between Part 145 organisations on a Form Two may be unacceptable to the receiving organisation due to their documented procedures (or maintenance is required that must be performed by a Part 145 organisation. Refer to rules 43.54 and 135.402 (a) (c) (1)).

In such cases, it might be appropriate to issue a Form One (rule 43.105 (a)(1) and (2)). A Form Two should not be used in place of a Form One.

Check out...

- Advisory Circular AC43-3
- ICAO Document 9760 Airworthiness Manual (Fourth Edition) Para 9.10.8
- IATA guidance for Best Industry Practices for Aircraft Decommissioning (BIPAD) (1st Edition November 2018)
- Airbus Helicopters Safety Information Notice 2152-S-00.