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Information Paper

I plan to buy an Experimental Aircraft

This information paper provides some guidance to persons who plan to buy an experimental amateur-built aircraft. What sort of things should you look at?

1. INTRODUCTION:

Buying an amateur-built Experimental aircraft is quite a thing and if you don't know much about Experimental aircraft and the regulations, here are some ideas on what you should look at.

2. BASIC RECORDS.

Here is a quick list of the basic documents the seller should provide to you up front:

- **CASA Certificate of Registration.** Should be in the name of the seller (or sometimes maybe a company name – that's OK.)
- **CASA Registered Operator Certificate.** Will usually be the same name but could be different. If so, ask why.
- **CASA Special Certificate of Airworthiness** – more commonly called the *Experimental Certificate*. It has several pages. The first page is the Certificate itself. Next pages are the Annex to the certificate – the operating conditions and limitations (if any) for THAT aircraft. On page one – the certificate, the most important thing to look for is NO EXPIRY DATE. Experimental Certificates issued to newly built aircraft undergoing “Phase 1 - Test Flying” **do** have an expiry date. After test flying is completed, another certificate is sought by the owner for what's called “Phase 2 – Ongoing Operations” (for normal ongoing use.) Some aircraft records have been seen by the author of this info paper clearly showing that the certificate expired years ago, in one case, 12 years earlier. The owner was without a clue he had been operating illegally for 12 years.
- **Airservices “Permission to operate without a Noise Certificate.”** Issued under the Air Noise Regulations (nothing to do with CASA). Most amateur-built experimental aircraft need this, it's an operational thing. It is issued to us on the basis that **if** the aircraft exceeds noise limits, it is not considered excessive. (No, we don't get our aircraft tested for noise.) Some aircraft are exempt, such as aircraft that are specifically designed and used for aerobatics – eg Pitts Special, One Design and others. Your average VANS RV is not such an animal. Usually the permission is on an Airservices Letterhead page, older ones may have a rubber stamp mark with the issue statement. Recent permissions seen have a clause in them that the permission **expires** with change of ownership. New owner must apply for new permission. Earlier documents seen do not have that statement/proviso. If the seller cannot provide it, it's not a show-stopper, you can apply to Airservices for it. Is it ever asked for anyone? Oddly, no.



3. MAINTENANCE RECORDS.

Perhaps the most important thing with buying an Experimental aircraft is to FIRST look at the maintenance records – the aircraft logbook(s). **Do not take one single step towards the aircraft!** If the records are no good, there may be no point looking at the aircraft. If you look at the aircraft first, you'll probably decide to buy it regardless of any other matters with the records – that can go horribly wrong.

What to look for in the maintenance records:

- **Aircraft Maintenance Logbook** or books – some aircraft have separate books for engine and propeller, some are all combined. Types of books seen – the standard CASA Loose leaf logbook in a huge binder. The SAAA non-complex single engine Aircraft Logbook – professionally designed and supplied to us by Plane Torque Australia in Perth. Logbooks must be CASA compliant, pages all numbered, sections for this and that, airworthiness directives, service bulletins and such. Sometimes we see other types of logbooks. What books are **not** CASA compliant? Those tiny little logbooks sold in USA for experimental aircraft there.
- **CURRENT Maintenance Release.**
PART 1 – the first page:
Look at the issue date, then carefully the expiry date – Sometimes we see the same date as issue! Private aircraft are max 12 months between annual inspections, regardless of hours flown. Often we see “100 hours” or sometimes “12 months or 100 hours (whichever occurs first).” Look for the nominated maintenance schedule to be stated – could be “as per the logbook statement” or perhaps actually naming the schedule eg “CASA Schedule 5” – or something else. Look for that statement actually being missing! Next, look at who issued it – sometimes we see “Mr Squiggle’s” signature – no idea who it might have been, no identifying information. Was it a LAME workshop (should be very clear, describing their workshop name and approval number if so) or was it issued by perhaps the owner/builder of the aircraft who **should be** a person entitled to do so and **should be** able to prove that to you very easily. If they cannot prove it, that could be a small **red flag**. Do not blindly accept “*well I built it so I can maintain it.*” While true, there’s actually more to it than that. What is the proof you need to see? Would you like to buy an aircraft that has been maintained for years by a person not entitled to do that?

CASA issues a General Legislative Instrument document for us (it’s a permission, it’s not an exemption) each 3 years called “**Maintenance (Certain amateur-built, kit built and Light Sport Aircraft) Instrument** (plus year of issue is stated). The main proviso in it that lets builders of amateur-built experimental aircraft conduct maintenance and issue a maintenance release each year is that they must complete a course of training on regulatory matters such as the SAAA Maintenance Procedures Course (MPC). Our course is **the only** CASA approved course available. Persons who complete this course receive a certificate of attainment – this itself **is not** an approval to do anything. CASA issues the approval as that Instrument with the proviso that the person has the MPC Certificate. Together, those two things equal entitlement for the builder (and in some limited other situations, someone who has bought an essentially similar aircraft to one they built) to maintain the aircraft. The seller should easily be able to show you their MPC Certificate and the latest current CASA Instrument (permission) document – which does have an expiry date clearly on it. If what they



show you has expired, this is generally a sign that they do not properly and fully understand their responsibilities as aircraft maintainer. If they claim to have the MPC certificate but cannot find it, (too commonly seen.....) the SAAA's Technical Advisor can do a bit of digging for you to see if one was issued.

The ***Maintenance Required*** section:

You should see a few entries here at least, certainly the next oil and filter change due, plus details of other routine maintenance performed during the life so far of that maintenance release. If it is totally blank – another red flag – the owner does not understand their maintenance responsibilities. You will hopefully know that at the very least, when the next oil change is due and that it ***must*** be stated there! Other things might be next transponder check, maybe a Service Bulletin coming up, etc. One item (the next oil change) is the absolute bare bones minimum that ***must*** be there. Also, look for maintenance times overdue – should be readily apparent to you as a pilot looking at a maintenance release each time you fly.

PART 2 – The Endorsements and Clearing endorsements page.

Endorsements and clearing (cancelling) endorsements we sometimes like to call “Faults Found” and “Faults Fixed”. Could be as simple as a flat tyre written up, or there may be none. Also, information about maintenance actually performed (the oil changes) should be detailed here.

PART 3 – The daily inspection page.

Look at the dates and times the aircraft has flown. Was a daily inspection PROPERLY signed off each day? Do the flight times add up?

Overall, does the Maintenance Release ***appear*** to be well detailed? That is a good sign. That is what you want to see. Some people are reluctant to write up even the smallest maintenance item encountered, they just fix it and say nothing. The same happens in the general aviation world with Cessnas. That is a very poor practice as it devalues the records and is an attempt to hide the truth. Very detailed records where every little thing was written up – that’s fantastic! It shows that the owner understands their responsibilities as aircraft owner and maintainer.

Now imagine there were two virtually identical aircraft for sale. One has very detailed logbooks and records, nothing missed, and the other has next to nothing written up. Do you really believe that the one with nothing is telling the whole truth? How can you be sure? Take the owners word for it? Maybe. What about the detailed records aircraft – would they be telling the truth? Probably, or certainly far more likely would be the obvious answer. They appear to have hidden nothing – that’s a good thing. It’s not what goes wrong with an aircraft that matters – it’s how it is dealt with and documented.

- **EXPIRED Maintenance Releases.** Aircraft owners **MUST** retain all expired maintenance releases with the aircraft records.
- **All past (previous) annual inspection checklists and documentation.** If not, why not? **Red flag.**



- **Maintenance Manuals.** The owner should readily have maintenance schedules and manuals for airframe, engine and propeller available. If not – another **red flag**. What are they using if they don't have it on hand?
- **Service Bulletins.** The owner should be able to provide records of for example kit manufacturer, engine and prop manufacturer Service Bulletins and how each was dealt with. Ask how they track and monitor those bulletins from the kit manufacturer. A poor answer would be something like "I check the website for them" – That is checking the website for them, it's not a methodical system to track and monitor them. Few people would truly have a good methodical system to track and monitor service bulletins.
- **Airworthiness Directives:** The owner should be able to provide records of Airworthiness Directives (also recorded in aircraft logbook). Fortunately, there really aren't many that directly affect experimental aircraft. There's a few generics.

What if you don't like what you see or have concerns about answers supplied? Can you consult with other owners/maintainers of similar aircraft? Can you get them to take a look? Can they even go with you at first visit to help you? Is the owner willing to let you show the books to a LAME or someone in the know. (Obviously, you won't be able to take them away! Photograph the pages.)

Do you understand now why it is so important to **not** look at the aircraft first?

What else can you do for research before you go look at the aircraft?

Do a google search of the aircraft registration. It is very likely you will find photos of the aircraft, you may also find interesting things, maybe a mention of an accident, maybe an ATSB report, who knows. It's surprising what you can find with five minutes looking online.

4. MOVING ON TO THE AIRCRAFT!

Assuming you are now well satisfied with the maintenance records, or will be seeking external advice to double-check anything odd, it's now time to go see if there is an aircraft attached to those records.

In this info paper, we will not go into what mechanical inspections you should do – that's a specialty area. Either you know what you are looking at, or you might have a trusted friend familiar with the aircraft type go with you. You might be able to take a friendly LAME along with the owner's permission. If owner says "NO! NO LAMEs!" **Red flag**. If they are confident in the aircraft and all the records "any inspection welcome" that is advertised is a good thing. Use it! Take experts with you.

Generally, if the maintenance records are good and detailed, the aircraft could be too. Is there anything you see which doesn't give you a warm and fuzzy feeling? Rusty nuts and bolts etc.



What else is there to look at?

Flight Manual or Pilot Operating Handbook, laminated checklists and the mandatory passenger warning placard visible to passengers:

WARNING

PERSONS FLY IN THIS AIRCRAFT AT THEIR OWN RISK.

THIS AIRCRAFT IS NOT OPERATED TO THE SAME SAFETY STANDARDS AS A NORMAL COMMERCIAL PASSENGER FLIGHT.

CASA DOES NOT SET AIRWORTHINESS STANDARDS FOR EXPERIMENTAL AIRCRAFT.

Too often, we see this warning placard totally obscured by a later installed iPad mount.

One quick story might be timely now:

*The author of this Info Paper was asked some years ago by a friend to go take a look at an aircraft for sale – he was interstate. I own the exact same aircraft type. I knew the aircraft in question, so I went along to see it where it was stored by the non-owner, and the first thing I went to was the aircraft logbook. There was nothing in it for the last 15 years, and when I say nothing, I mean **NOTHING**. No record of maintenance, no annual inspections, no damage. Absolutely nothing. Yes, the aircraft was still occasionally flying too (not a VH aircraft) and had flown to its current location from another airfield at some point in recent years. The actual aircraft was old, tired, grubby and had a very significant non-standard engine control feature suited to the owner, made and installed by him – with absolutely no records of that being done.*

Okay, so no maintenance recorded – most likely because it was never properly performed in the last 15 years. Fact, or rumour? I personally knew the owner who had recently passed away and I am still in contact with the previous owner! From both those people, I knew that the aircraft had three significant prop strikes in its life. They told me about them! The owner that had passed away – he was a chronic fiddler, bit of a bush mechanic – “near enough is good enough” – “that’ll do” sort of guy. Whenever I visited him at the previous airfield he told me himself of all the fiddling he had been doing. I also saw him working on it.

I reported my findings back to the prospective buyer friend and he did end up buying it for next to nothing, based on “it’s a tired old grubby aircraft with worthless incomplete records and a very questionable engine.” He had a new VW engine built up for it and professionally installed by a LAME who also went over the entire aircraft properly and got it up to a standard fit for flight again.

5. DOES SAAA HAVE A STANDARD SALE AGREEMENT FORM?

No. Nor do we have any sample seller’s liability agreement/form. We are not able to give legal advice on those topics. We do have another Info paper which might give some ideas how to research the topic: SAAA Info paper - “Selling an Experimental Aircraft”

6. CASA FORMS FOR CHANGE OF OWNERSHIP:

CASA FORMS 027-1 and 027-2 Transfer of aircraft Ownership. Just google those forms by number, they will come up.

7. SEE ALSO THE SAAA INFO PAPER “I just bought an Experimental Aircraft!” for important information about maintenance of Experimental Aircraft.