

	SAAA CONTROLLED DOCUMENT	
	Reference / Name	IPM FO 002-002 Information Paper – Flight over populous areas
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	Owner	TACM

Information Paper

Flight over populous areas

This information paper provides guidance about airframe, engine and propeller choices, with regards to CASR 91.875(2)(f) Approval for flight over a populous area.

1. Introduction:

The approval for an Amateur-Built Experimental aircraft to fly over a populous area is not automatic, it must be sought and received, if it is desired to fly the aircraft over a populous area.

2. Populous area definition:

Over the years, CASA has used different terms in various publications to describe the same thing, *populous area*, *built-up area*, *closely settled area*, and so on.

CASR Vol 5 Dictionary says: “**populous area**” includes a city and a town.

A past CASA Instrument (65/16 – now expired) once said:

populous area means an area that has, or is expected to have, during the period of operation of an aircraft, a sufficient density of population that the occurrence of a fault in, or failure of, the aircraft would pose an unreasonable risk to the life, safety or property of somebody who is in the area but is not connected with the operation.

suitable forced-landing area means an area on land that is not a populous area where, in the event of a forced landing, it is less likely that serious injuries or loss of life will result.

CAOs 95:10 & 95.55 say:

closely-settled area, in relation to an aeroplane, means an area in which, because of:

(a) man-made obstructions such as buildings and vehicles; and

(b) the characteristics of the aeroplane;

the aeroplane could not be landed without endangering the safety of persons unconnected with the aircraft or damaging property in the area.

suitable landing area means an area in which an aeroplane, to which this Order applies, can be landed without endangering the safety, or damaging the property, of persons unconnected with the aeroplane.

Conclusion:

SAAA members and Authorised Persons shall take “*populous area*” as mentioned within CASR 91.875(2)(f) to have the same common meanings as the references found above.



3. CASA Regulations:

CASR 91.045 Approvals by CASA for Part 91

CASR 91.050 Approvals by Authorised Persons for subpart 91.T

These two regulations simply allow CASA or an Authorised Person to receive an application for the approval and issue it.

CASR 91.875 Experimental aircraft – operating requirements

91.875(2)(f) If the flight is over a populous area – the holder of the experimental certificate must hold an approval under regulation 91.045 or 91.050 for the purposes of this paragraph.

4. CASR 91.875(2)(f) approvals:

- Might be issued with no operational conditions, *or*
- Might be issued with some operational conditions, *or*
- Might not be issued at all.

There is no requirement for an SAAA AP to inspect the aircraft in order to issue an approval but they reserve the right to in order to assist their decision making process. The AP may also request information on the aircraft from other persons located closer to the aircraft, such as SAAA Technical Counsellor, SAAA AP, LAME, or other experienced builders of the same type, in order to assist their decision making process.

An approval can be given within the annex to an Experimental Certificate when issued, or can be given by separate letter for example if the request is made at a later date after the issue of an Experimental Certificate.

Notes regarding conditions:

CASR 11.055 and 11.056 permit approvals to be made, subject to (if required) conditions and limitations CASA or the authorised person considers necessary in the interests of the safety of other airspace users or persons on the ground or water.

Conditional Example 1:

CASR 91.875(2)(f) Approval is given for the aircraft to be operated over a populous area subject to the aircraft being, where practicable, at such a height or position that it may glide clear of the populous area in the event of an engine failure.

Conditional Example 2:

CASR 91.875(2)(f) Approval is given for the aircraft to be operated over a populous area only to the minimum extent necessary during take-off and landing.

Conditional Example 3:

CASR 91.875(2)(f) Approval is given for the aircraft to be operated over a populous area provided that the aircraft is maintained in accordance with all applicable CASA regulations, applicable airworthiness directives and product manufacturer service bulletins.



These examples are not the only conditions that may be written. Each aircraft will be assessed on its own merits.

SAAA members about to apply for the approval may first discuss their particular aircraft, engine and propeller fitment with an Authorised Person to ascertain the basic likelihood of an application being successful. For example, if by your own honest assessment, several items show in the HIGH concern level range, your application is unlikely to be successful.

5. Risk Assessment:

CASA requires all APs (not just ours in SAAA) to consider the risks involved – and that is, not the risks to you as pilot of an experimental aircraft, but the risks to others below you.

This section looks at the various parts of an amateur-built experimental aircraft that require consideration by an Authorised Person in order to arrive at a decision whether to approve flight over a populous area.

NVFR and IFR aircraft will also be subject to this risk assessment as those operations will not be able to restrict their operations to only over non-populous areas.

Excluded from this guide, and playing no part in the process:

- Pilot qualifications, experience, or perceived ability on type.
This is about the aircraft and the aircraft only. CASA does not set any requirements for pilots to qualify to fly over a populous area.
- Choice of flight instrumentation fitted to the aircraft.
CASR Part 91 now permits the use of *other than* conventional or certified instrumentation provided that it gives the same information to the pilot that he/she needs to fly.

6. A complicating factor:

CASR 91.920 Aircraft with Special Certificate of airworthiness – flight tests to be conducted in certain areas (*adjusted slightly here for ease of reading*)

(It has changed a little – the previous CAR 262AS items were the *open water* and the *sparsely populated area* mentions. Now there is a third item for amateur-built aircraft...)

(1) *Flight tests must be conducted over:*

- *Open water; or*
- *A sparsely populated area; or*
- *For an amateur-built aircraft – over an area for which the holder of the experimental certificate holds an approval under regulation 91.045 or 91.050*

(2) *The flight tests must be conducted*

- *In an area where, in the event of a loss of control of the aircraft, there would be minimal risk to other air traffic; or*
- *for an amateur-built aircraft – in an area for which the holder of the experimental certificate holds an approval under regulation 91.045 or 91.050*

All existing CAR 262AP(5) authorisations issued before 2 December 2021 remain 100% valid via CASR 91.045(5).



7. Risk assessment chart:

Applicants should also include any relevant supporting documentation or information.

AIRFRAME DESIGN HISTORY	examples	Concern level
Proven design	More than five examples flying.	NIL
<i>Comments</i>		
First of type.	Conventional designs.	CAUTION
<i>Comments</i>		
First-of-type. Modified designs.	Unconventional designs. Significantly modified proven designs.	HIGH
<i>Comments</i>		

ENGINE SELECTION	examples	Concern level
Recommended for the aircraft.	Correct brand/type. Correct HP range. No modifications incorporated.	NIL
<i>Comments</i>		
Recommended for the aircraft, but with modifications.	Dual third-party electronic ignition modules fitted.	CAUTION
<i>Comments</i>		
Not the recommended engine for the aircraft. No recommendation of engine for the aircraft.	Outside the correct range. (brand/type/hp) Unknown suitability.	HIGH
<i>Comments</i>		



ENGINE TYPE	examples	Concern level
NEW type certificated or otherwise approved, accepted or recognised aviation engine	Factory new or professionally overhauled & documented by approved workshop.	NIL
USED type certificated or otherwise approved, accepted or recognised aviation engine	With documentation showing within serviceable time & limits.	
<i>Comments</i>		
Any other engine (i.e. modified type certificated aircraft engine, automotive engine)	Modifications – various. eg electronic ignition(s) added, different model sump fitted for cowl clearance.	CAUTION
<i>Comments</i>		
First-of-type engines. Significantly modified aircraft engines. Engines overhauled or assembled by other than aviation approved workshop 2-stroke engines. Model aircraft engines	Prototype engine, conversion or reduction drive. i.e. Standard aircraft engines with a turbo charger added. Engine overhauled or assembled by the owner/builder or a LAME not licensed on engines. (no examples given) i.e. piston or turbine	HIGH
<i>Comments</i>		

PROPELLER SELECTION	examples	Concern level
Recommended for the engine and the aircraft	Within the correct size range. Correct type/brand/construction.	NIL
<i>Comments</i>		
Recommended for the engine only	Within the correct size range. Correct type/brand/construction.	CAUTION
<i>Comments</i>		
No recommendation	Unknown compatibility.	HIGH
<i>Comments</i>		



PROPELLER TYPE	examples	Concern level
NEW type certificated or otherwise approved, accepted or recognised aviation propeller USED type certificated or otherwise approved, accepted or recognised aviation propeller	Hartzell, Sensenich, MT-propeller etc. Commercially available wooden propellers for experimental aircraft that are well-known brands with significant proven history. With proper documentation showing within serviceable time & limits.	NIL
<i>Comments</i>		
Experimental (new types).	Factory-built specifically for experimental aircraft with no significant proven history	CAUTION
<i>Comments</i>		
Any other propeller	Home made. Home overhauled (eg CSU type) Non-documented serviceability status.	HIGH
<i>Comments</i>		

8. Risk Summary:

Identify the item of highest concern level from the topics above. Match to the table below.

Concern level	Recommendation
NIL	AP can approve, generally with no conditions.
CAUTION	AP can approve, with suitable conditions.
HIGH	AP will consider carefully and may be unlikely to approve.

Any one score in the HIGH range in any area, even though all other areas may score NIL concern level, will place the aircraft in the position of being unlikely to be approved for flight over a populous area. The pathway remains open for future applications to be made if circumstances with the aircraft should change significantly. An easy example might be as simple as replacement of a home-assembled aircraft engine with a factory new aircraft engine, should the owner decide to do that.

In all cases, the applicant for the approval should be informed to have the approval available to the pilot-in-command for reference at all times.



APPLICATION TO AUTHORISED PERSON

for CASR 91.875(2)(f) approval for flight over a populous area

Applicant details:

Name	
Address	
Phone	
Email	
SAAA Membership No.	

Aircraft Details:

Registration	VH -	First flown (year)	
Type		Serial No.	
Engine type		Certified type? Y / N	
Propeller type		Certified type? Y / N	
Airframe hours		Engine hours	
		Propeller hours	
Aircraft based at			

Information to be provided with this application form:

Item	tick
Receipt from SAAA for application fee for approval for flight over populous areas	
Copy of this Information Paper – Flight over a populous area with comments at each item	
Copy of Experimental Certificate (if already issued)	
Photographs of aircraft, exterior and interior – at least one of each	
Maintainer – if LAME, name or organisation:	
Maintainer – if self: Copy of SAAA Maintenance Procedures Course Certificate	
Maintenance Schedule name	
Copy of current maintenance release (all pages)	
Copy of past two maintenance releases (if available) – all pages	
Copy of maintenance logbook pages going back 3 years (if available)	
Accident damage details (if any)	
Significant modifications made (if any)	
List of designer (kit or plan) applicable service bulletins (if any) with results.	
Any additional supporting documentation	

As each aircraft is unique and must be considered on its own merits, there may be additional information requested or required by the Authorised Person.

Issue of any approval is not assured. Submission of this application is an acknowledgment that the application might result in no approval being able to be issued, or if issued, may contain conditions or limitations.

Applicant signature: _____

Date: ____ / ____ / ____