# Class 1 / 2 Certification – Atrial Fibrillation

## Atrial Fibrillation

### Class 1 / 2 Certification

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### Cardiology review (note 1)
- Blood tests
- Exercise ECG
- 24 HOUR ECG(s)
- Echocardiogram
- Further tests as necessary

### Initial results, stroke risk assessment, and treatment acceptable (note 2)

### Follow-up results and treatment acceptable (note 3)

### Class 1 / 2 Unrestricted

### Follow-up (note 4)

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**NOTES:**

1. **By a cardiological specialist**
   - No significant symptoms and adequate rate control if paroxysmal, persistent or permanent

2. **Blood tests** – Thyroid function normal. Alcohol as a cause of AF should be excluded with a minimum of LFTs (to include GGT and MCV).

3. **Exercise ECG** – Bruce protocol and maximal effort or symptom limited on current treatment. At least 9 minutes with no significant abnormality or rhythm or conduction, not evidence of myocardial ischaemia. (See UK CAA exercise ECG protocol)

4. **24 hr ECG** – More than one may be required. The following criteria should be met:
   - If in sinus rhythm – no episodes of AF and no pauses >2.5s whilst awake. Ventricular arrhythmia should not exceed and aberrant beat count >2% of total, with no complex forms.
   - Established AF – RR interval >300ms and <3.5s (i.e. no very rapid rates or long pauses)
   - Paroxysmal, persistent & permanent AF – As above plus the longest pause on recapture of sinus rhythm should not exceed 2.5s whilst awake.

5. **Echocardiogram** – Should show no significant selective chamber enlargement, or significant structural or functional abnormality, and an LVEF of 50% or more.

6. **Further tests** – may include repeat 24 hour ECG recordings, electrophysiological studies, cardiac MRI, myocardial perfusion scanning and / or coronary angiography.

7. **Risk Assessment** in addition to rhythm control, applicants must have an acceptable low risk of stroke as judged by the CHADSvasc score. See supplement guidance (Pilots with atrial fibrillation: Assessment of Stroke Risk). Only CHADSvasc scores of 0 and 1 are compatible with class 1 OML and class 2 unrestricted certification.

8. **Acceptable treatment for rhythm control** includes Sotalol (with QT interval monitoring), Bisoprolol or other beta-blocking drugs, digitalis, Dronedaron (periodic blood testing required to check for hepatotoxicity), Diltiazem and verapamil. Exceptionally Flecainide or Propafenone may be used in consultation with the CAA (with 6 months demonstrated stability). Amiodaron is normally unacceptable for class 1, but may be acceptable for class 2 (maximum dose 200mg daily, night flying will require ophthalmological review). Following initiation or change in medication to achieve compliance with criteria in note 1, flying may resume after 3 months if there is no further recurrence or if criteria are satisfied during recurrences.

9. **Acceptable treatment for anticoagulation** includes Coumadins e.g. warfarin and members of the Direct Oral Anti Coagulant class (DOACs). If a pilot is anti-coagulated with a Coumadin (e.g. warfarin), 6 months stability of the INR (with at least 4 measurements within the target range) is required. Class 1 certification will require INR testing with a near patient testing device within 12 hours prior to flying and flight is only possible if the INR is within target range. A pilot taking a DOAC without side effects may return to flying at 3 months and renal function must be monitored.

10. **Initial cardiological follow-up** should be 6 monthly to include a minimum of 24 hour ECG monitoring. Subsequent follow-up at the discretion of the CAA, normally annual cardiological review with 24he ECG and echocardiogram. Other tests if clinically indicated.

11. **After 2 years follow-up** for class 1, only applicants with single original episode of AF with no recurrence may be able to achieve unrestricted class1 certification. Subsequent follow-up normally annual with 24hr ECG.

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