British Aerobatic Association

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COMMENTS ON EASA PROPOSALS "IMPLEMENTING RULES FOR PILOT LICENSING" NPA 2008-17 A, & B, IN RELATION TO AEROBATICS

Status of commentator

I am fixed-wing, powered aircraft flying instructor specialising in aerobatic training. I have over 3,000 aerobatic instructional flying hours, am currently Chairman of the British Aerobatic Association and I am also the UK Delegate to CIVA, the FAI's International Aerobatic Commission. I have been UK Unlimited Aerobatic Champion four times.

I am making these comments in a personal capacity and not as a spokesman for any body of which I am a member.

Comments

Regulation	Comment
FCL.800 Aerobatic rating (a) Holders of a pilot licence for aeroplanes, helicopters or sailplanes shall only undertake aerobatic flights when they hold the appropriate rating. (b) Applicants for an aerobatic rating shall have completed: (1) at least 40 hours of flight time as pilot-in-command in the appropriate aircraft category; (2) theoretical knowledge instruction appropriate for the rating; (3) 5 hours of dual aerobatic instruction time. (c) The privileges of the aerobatic rating shall be limited to the aircraft category in which the flight instruction was completed. This limitation may be withdrawn and the privileges extended to another category of aircraft if the pilot holds a valid license for that aircraft category and has successfully completed at least one dual familiarization flight with an instructor holding an aerobatic rating for that category of aircraft.	(b)(1) and (b)(3) Time limits are inappropriate for sailplane aerobatics, and should be quoted in launches or experience gained rather than hours. For sailplane aerobatics, the requirement in (b)(1) should be 50 launches and in (b)(3) the requirement should read: *"sufficient dual instruction to satisfy the flight instructor that the pilot is competent to perform the figures"*

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FCL 905 LAFI (e) towing and aerobatic ratings in the appropriate aircraft category, provided that the LAFI holds the appropriate rating and, in the case of aerobatics, has at least 20 hours of experience in aerobatic flying;	Satisfactory
FCL 905 FI (g) an aerobatic rating, provided that the FI holds such a rating and has completed 20 hours of experience in aerobatic flying;	Satisfactory
AMC to FCL.800 **Aerobatic Rating – Theoretical knowledge and flying training** 1. The aim of the aerobatic training is to qualify licence holders to perform aerobatic manoeuvres. 2. The approved training organisation should issue a certificate of satisfactory completion of the instruction for the purpose of licence endorsement.	Satisfactory
THEORETICAL KNOWLEDGE 3. The theoretical knowledge syllabus should cover the revision and/or explanation of: 3.1. Human factors and body limitation – spatial disorientation – airsickness – body stress and gforces, – positive and negative – effects of grey and black out	Satisfactory
3.2. Technical subjects – legislation affecting aerobatic flying to include environmental and noise subjects – principles of aerodynamics to include slow flight, stalls and spins, flat and inverted – general airframe and engine limitations	Satisfactory

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3.3. Limitations applicable to the specific aircraft category (and type) – airspeed limitations (aeroplane, helicopter, touring motor glider, sailpane – as applicable) – symmetric load factors (type related - as applicable) – rolling g's (type related – as applicable)	Satisfactory
3.4. Aerobatic manoeuvres and recovery – entry parameters – planning systems and sequencing of manoeuvres – rolling manoeuvres – over the top manoeuvres – combination manoeuvres – entry and recovery from developed spins, flat, accelerated and inverted	"over the top manoeuvres" is non-standard terminology and its meaning is unclear. Perhaps it should read "looping manoeuvres".
3.5. Emergency procedures – recovery from unusual attitudes – drills to include use of parachutes and aircraft abandonment	– drills to include use of parachutes and aircraft abandonment (if worn). Parachutes are not mandatory for aerobatics, but are recommended, especially in non-certifcated aircraft.
FLYING TRAINING 4. The exercises of the aerobatic flying training syllabus should be repeated as necessary until the applicant achieves a safe and competent standard. The training should be tailored to the category of aircraft and limited to the permitted manoeuvres of that type of aircraft. The exercises should comprise at least the following practical training items (if permitted):	The wording of this paragraph would allow an aerobatic rating to be issued based on limited training in a very limited aircraft. Replace the last sentence with: "The exercises should comprise at least the following manoeuvres, with additional exercises included if permitted on type." The manoeuvre list should then be split into essential and optional elements, as below.

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4.1. Aerobatic manoeuvres – Chandelle – Lazy Eight – Aileron Roll – Barrel Roll – Rudder Roll – Loop and inverted loop – Immelmann – Split S	Some terminology is not in common usage nor well defined. These terms have been changed below. 4.1. Aerobatic manoeuvres – Chandelle – Lazy Eight – Loop – Quarter Clover (Half Barrel Roll, Half Loop) – Aileron Roll (not sailplanes) – Barrel Roll (not sailplanes) – Half Cuban Eight (5/8ths Loop, Half Roll, 1/8th Loop) – Half Loop, Half Roll (Immelmann - not sailplanes) Additional exercises (if permitted) – Half Roll, Half Loop (Split S) – Rudder (Flick or Snap) Roll – Inverted (Outside) Loop – As excluded above, for sailplanes – Precision Spins
4.2. Confidence manoeuvres and recoveries – slow flights and stalls – steep turns – side slips – engine restart in flight (if applicable) – spins and emergency recovery – recovery from spiral dives – recovery from unusual attitudes	In any aerobatic training syllabus, these exercises really should precede those listed above at paragraph 4.1. Consideration should be given to reversing the order of these two paragraphs.

Authentication

Chairman
British Aerobatic Association