UNITED KINGDOM

AERONAUTICAL INFORMATION CIRCULAR

AIC 127/2006
(Pink 110)
7 December

NATS Limited
Aeronautical Information Service
Control Tower Building, London Heathrow Airport
Hounslow, Middlesex TW6 1JJ
Editorial: 020-8745 3457
Distribution: 0870-8871410 (Tangent)
Content: 01293-573101 (Flight Department)
Website: www.ais.org.uk

Cancels AIC 67/2002 (Pink 36)

TAKE-OFF, CLIMB AND LANDING PERFORMANCE OF LIGHT AEROPLANES

1 Introduction

1.1 Accidents, such as failure to get airborne in the distance available, collision with obstacles owing to inadequate climb and over-run on landing, continue to occur fairly frequently to light aeroplanes (ie those below 5700 kg maximum weight). Many such accidents have occurred when operating from short strips, often taking-off or landing out of wind, or with sloping ground. Poor surfaces such as wet grass or ice were also frequent contributory factors. What is not generally realised by many pilots is that these are PERFORMANCE accidents and many, if not all, of these accidents could have been avoided if the pilots had been fully aware of the PERFORMANCE LIMITATIONS of their aeroplanes.

1.2 The pilot-in-command of ANY UK REGISTERED aeroplane has a legal obligation placed on him by Article 52 of the Air Navigation Order 2005 which requires him to check that the aeroplane will have adequate performance for the proposed flight. The purpose of this Circular is to remind pilots of private flights of the actions needed to ensure that the take-off, climb and landing performance will be adequate.

1.3 Aeroplane Performance is subject to many variables including:

Aeroplane weight;
Aerodrome altitude;
Temperature;
Wind;
Runway length;
Slope;
Surface;
Flap setting;
Humidity.

1.3.1 The performance data will usually allow adjustment to be made for these variables. On certification, allowances are made to cater for slight variations in individual pilots' handling of a specific technique.

2 Where to Find the Information

2.1 Performance figures may be given in a variety of publications and it is important for pilots to know where to find the data needed to predict the performance in the expected flight conditions. The appropriate document is specified in the Certificate of Airworthiness and may be any one of the following:

(a) The UK Flight Manual;

(b) the Owner's Manual or Pilot's Operating Handbook. These documents, which sometimes contain CAA Supplements giving additional performance data which may either supplement or override data in the main document, are the ones applicable to many light aeroplanes;

(c) the Performance Schedule (applicable to a few of the older aeroplanes);

(d) for some imported aeroplanes, an English language flight manual approved by the Airworthiness Authority in the country of origin, but with a UK Supplement containing the performance data approved by the CAA.

3 Use of Performance Data

3.1 The majority of modern, light aeroplanes were originally classified in Performance Group E for the purposes of public transport. The performance information contained in the Manuals and Handbooks of these aeroplanes is UNFACTORED. This means the data represents the performance achieved by the manufacturer using a new aeroplane in ideal conditions. This level of performance will not be achieved if the flying techniques used by the manufacturer are not followed closely or if the meteorological conditions are not as favourable as those encountered during testing. It is therefore PRUDENT TO ADD SAFETY FACTORS to the data in order to take account of less favourable conditions.