

## Grob G115A, G-RAFA

<b>AAIB Bulletin No:</b> 8/2004	<b>Ref:</b> EW/C2003/09/07	<b>Category:</b> 1.3
<b>INCIDENT</b>		
<b>Aircraft Type and Registration:</b>	Grob G115A, G-RAFA	
<b>No &amp; Type of Engines:</b>	1 Lycoming O-235-H2C piston engine	
<b>Year of Manufacture:</b>	1989	
<b>Date &amp; Time (UTC):</b>	13 September 2003 at 1757 hrs	
<b>Location:</b>	Near RAF Wyton, Cambridge	
<b>Type of Flight:</b>	Training	
<b>Persons on Board:</b>	Crew - 2	Passengers - None
<b>Injuries:</b>	Crew - None	Passengers - N/A
<b>Nature of Damage:</b>	None	
<b>Commander's Licence:</b>	Commercial Pilot's Licence	
<b>Commander's Age:</b>	46 years	
<b>Commander's Flying Experience:</b>	1,280 hours (of which 120 were on type)	
	Last 90 days - 92 hours	
	Last 28 days - 24 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot and further AAIB enquiries	

### History of Flight

After completing the pre-flight checks, including a power check, the instructor and student took off from RAF Wyton on a training flight with the student at the controls. On passing 200 ft agl, just as the flaps were being retracted, the engine began to falter and lost power although the propeller continued to windmill. The instructor took control and completed the forced landing checks, during which it became apparent that the fuel cock was already in the 'OFF' position. With the checks completed the instructor was able to carry out a successful forced landing in a field beyond the airfield perimeter fence, without incurring damage to the aircraft or injuring its crew.

### Fuel Cock Description

#### G115A and G115B

Early versions of the Grob 115 have a single fuel tank contained in the fuselage. A single fuel cock exists in these models on the centre console between the pilots. The cock has two positions: either fuel 'ON' or fuel 'OFF' (see Figure 2).

**Figure 2: Fuel ON/OFF cock in G-RAFA**



Figure 2 - Fuel ON/OFF cock in G-RAFA  
(Note position relative to elevator trim wheel)

### **G115C, G115E and Grob Tutor**

In later models of the Grob 115 the single fuselage fuel tank is replaced by a tank in each wing. A fuel tank selector is incorporated in these models allowing selection of either tank independently or both tanks together. This selector is positioned on the centre console aft of the elevator trim wheel in the same position as the ON/OFF cock in the early models. The displaced ON/OFF cock was repositioned to the rear of the centre console (see Figure 3).

**Figure 3: Fuel tank selector and ON/OFF cock locations in later models**



Figure 3 - Fuel tank selector and ON/OFF cock locations in later models

## Grob Tutor Pre-Flight Procedures

The Grob Tutor is currently in service with the Royal Air Force (RAF) and is used for familiarisation flights and basic training. RAF procedures call for the fuel cock at the rear of the centre console to be left 'ON' permanently except during an emergency or at the end of a 50 hr check when the engine should stop within two minutes of the fuel cock being selected to 'OFF'. Normal RAF procedures require the aircraft to be started with the LEFT fuel tank selected and then taxied with the RIGHT tank selected. Finally, both fuel tanks are selected just prior to commencing the power assurance checks and the selector remains at BOTH for take off.

## Comment

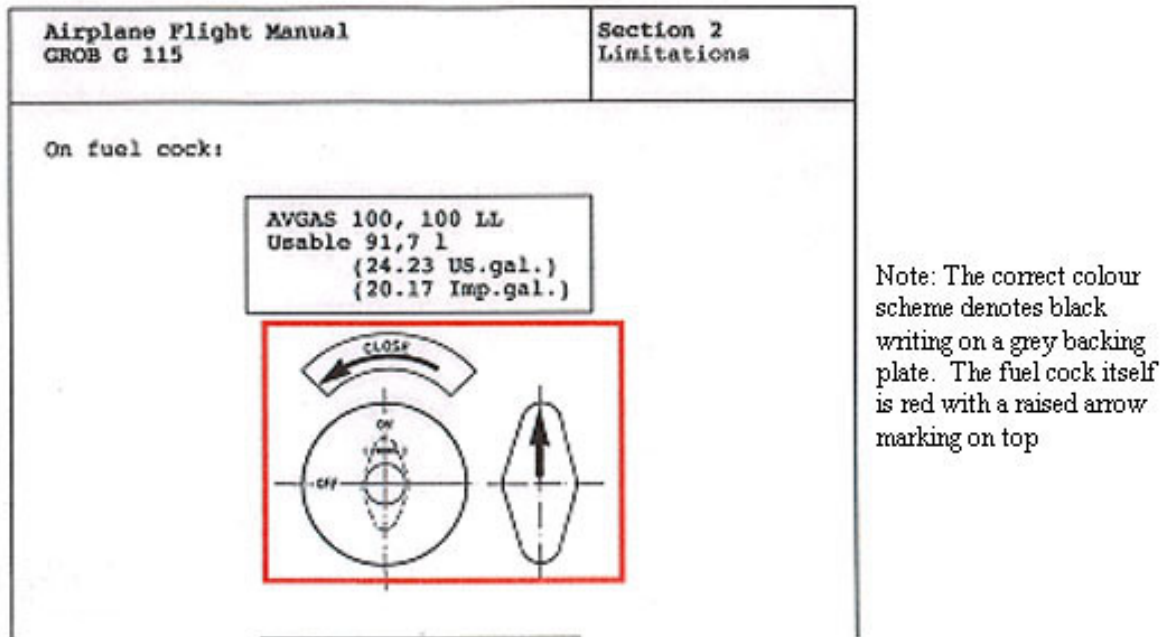
The aircraft involved in this incident was a Grob 115A model but the student had also flown with the RAF in the Grob Tutor. It is likely that prior to starting the BEFORE TAKE-OFF power assurance checks, the student instinctively changed the position of the selector immediately behind the elevator trim wheel, as he was used to doing on the Tutor. Since the tank selector and fuel cock share the same position on the respective aircraft models, in so doing he would actually have turned the fuel cock to

the 'OFF' position. Despite the fuel cock being shut, sufficient fuel remained available to the engine for the aircraft to have taken off before the supply downstream of the cock became exhausted.

Comparison of G-RAFA's fuel cock markings with information in the Flight Manual (Figure 1) revealed differences and omissions in the colour scheme and markings. These alterations may have made it more difficult for either pilot to realise the fuel cock was in the incorrect position before takeoff.

**Figure 1: Flight Manual Illustration of Fuel Cock Markings**

**G 115 Flight Manual (Issue 2, October 89):**



**Figure 1 - Flight Manual Illustration of Fuel Cock Markings**