**Safety Regulation Group**
**Safety Investigation and Data Department**

# Follow-up Action on Occurrence Report

***ACCIDENT TO JET PROVOST T3A, G-BVEZ, NEAR HUMBERSIDE AIRPORT ON 18 AUGUST 2002***
**(PILOT BECAME HYPOXIC AFTER OXYGEN PROBLEM DURING AIR TEST CLIMB)**

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| **CAA FACTOR NUMBER** | : | F26/2003 |
| **FACTOR PUBLICATION DATE** | : | 10 September 2003 |
| **OPERATOR** | : | Private |
| **CAA OCCURRENCE NUMBER** | : | 2002/05847 |
| **AAIB REPORT** | : | Bulletin 8/2003 |

**SYNOPSIS**

(From AAIB Report)

The aircraft was due to undertake a flight test to renew its Permit to Fly. The pilot carrying out the test was accompanied by an observer whose task it was to note and record the various instrument readings required. The observer had no flying qualifications and sat in the left-hand seat in order to read the main instruments more easily.

Since the test involved flying above 10,000 feet, both the pilot and the observer were wearing oxygen masks connected to the oxygen hoses attached to their ejection seats. The pilot stated that as part of his pre-flight check he visually checked the oxygen hoses were properly connected. He also checked the Standard Warning Panel (SWP) by means of the test switch on the instrument panel; amongst the various captions are two labelled 'OXY', one for each seat. These captions should illuminate during the SWP test and at any time if either of two 'pull apart' connections between the pilots' oxygen masks and their oxygen supply hoses are not established. All seemed satisfactory and the aircraft departed Humberside Airport to carry out the flight test.

The pilot requested permission from ATC to climb to FL250 to conduct the initial part of the test, but he was cleared only to FL240. ATC also gave the pilot instructions to remain inside radar coverage and clear of controlled airspace. The aircraft began its climb with the relevant information being recorded every 5,000 feet for the air test. As the aircraft approached FL240, the observer noticed that the aircraft began to roll to one side, the roll becoming progressively steeper. The pilot's face was obscured by his helmet's dark visor and oxygen mask, but he was sitting upright with his hands on the controls. The observer spoke to him but, getting no reply, took the controls and attempted to fly the aircraft himself.

The aircraft had been on a northerly track approaching Airway L975. ATC repeatedly passed instructions to try to turn it onto a southerly heading but no reply was received and the aircraft flew through Airway L975, later crossing the coast and flying out to sea. At first the controller suspected the aircraft had experienced an electrical failure and contacted the ATC Distress and Diversion cell, but when its flight path became erratic, he was concerned that there might be a problem with the crew's oxygen. The aircraft's transponder was unserviceable and contact had been maintained throughout the flight by primary radar alone. The pilot's previous report to ATC, however, had informed them that he was passing FL140 in the climb.

The observer managed to maintain control of the aircraft and descend to about FL210. At this point the pilot became conscious and took the controls putting the aircraft back into a climb. The aircraft continued its ascent to approximately FL270, the pilot rapidly falling unconscious again. The observer, realising the pilot was hypoxic,


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continued to fly the aircraft and put it into a descent in the hope that the pilot would once again regain consciousness. The pilot did indeed 'come round' but it took about half a minute before he was coherent enough to take control, during which time the observer ensured the aircraft was not put back into another climb. The pilot stated that he had no recollection of events after approaching FL240, until he was aware of the aircraft descending again through approximately FL150.

The ATC controller reported eventually regaining radio contact, although the pilot's transmissions were initially described as unintelligible with the aircraft continuing to fly erratically. The controller passed the pilot his position as 5 nm east of Flamborough Head whereupon the pilot stated he was returning to Humberside. The controller stated that he continued to carry out radio checks with the aircraft but it was not until the pilot reported being at 2,500 feet that the pilot's voice became completely intelligible again.

The aircraft made an uneventful landing at Humberside Airport. Upon inspection of the cockpit, it was discovered that the pilot's oxygen hose (the right hand seat) was disconnected at the break point connector between the seat and the cockpit floor. This connection cannot easily be checked once the seat is occupied and it could be affected by items firmly stowed between the ejection seat pan and the cockpit wall.

**FOLLOW UP ACTION**

The two Safety Recommendations, made by the AAIB following their investigation, are reproduced below, together with the CAA's responses.

**Recommendation 2003-27**

The Civil Aviation Authority should consider whether ex-military aircraft operated in accordance with a Permit to Fly and CAP 632 may still be operated in accordance with the original limitations and procedures specified in the Military Aircrew Manual after changes to the design standard that have an impact on the aircraft's operation.

**CAA Response**

The CAA accepts this Recommendation.

The CAA will, by 29 February 2004, review, and if necessary amend, its procedures for the approval of changes to the design standard of ex-military aircraft operated in accordance with a Permit to Fly and CAP 632. The review will ensure that procedures identify those design changes that have an impact upon the aircraft's operation and in such cases, require both that a risk assessment is conducted and any amendments to original limitations and procedures specified in the Military Aircrew Manual are established and implemented.

**CAA Status - Open**

**Recommendation 2003-29**

The UK Civil Aviation Authority should review the air test schedules of all ex-military aircraft on the UK Register to harmonise those schedules with any additional limitations placed upon the aircraft resulting from changes to the design standard.

**CAA Response**

The CAA accepts this Recommendation.

The CAA will, by 29 February 2004, annotate air test schedules of all ex-military aircraft on the UK Register to require the test pilot to observe any limitations stated on the Permit to Fly for that aircraft and to require the pilot to notify the CAA where this results in a conflict with the schedule. This will facilitate effective and timely identification of any issues that may need to be harmonised as a result of conflicts between the schedule and any additional limitations placed upon the aircraft resulting from changes to the design standard.

**CAA Status - Open**