ADDENDUM TO BULLETIN 2/91

Piper PA-32R-301, G-BIYM **Ref: EW/G90/10/13**

The report on this accident published in AAIB Bulletin 2/91 indicated that the electrical system would be fully checked as part of the post accident repair work, and that any new information which came to light would be published.

When the engine was started after the aircraft had been repaired, the alternator failure light stayed on. Further investigation showed that the wire connecting the alternator field brush to the field terminal was connected by two strands only. Additionally, the bus bar low volts warning lamp was not working. Following repairs, the electrical system functioned normally. The engineer points out that the alternator warning lamp was rather dim when illuminated on a bright day.

If an alternator fails for any reason to charge the battery, the battery will discharge at a rate determined by the electrical load demanded of it. If no action is taken to remove load from the DC bus then symptoms of the type experienced by this pilot will typically occur as the battery voltage falls due to progressive discharge, leading initially to erratic avionics read-out or radios "dropping off line", with additional complications arising if electrically actuated landing gears or flaps are operated, causing rapid depletion of the remaining charge.

Monitoring of the electrical systems to ensure that bus voltages are being maintained is essential, particularly in single engined (single generator) aircraft in IMC conditions when a failure to detect generator problems, load shed and recover VMC in good time has caused a number of accidents in the past.