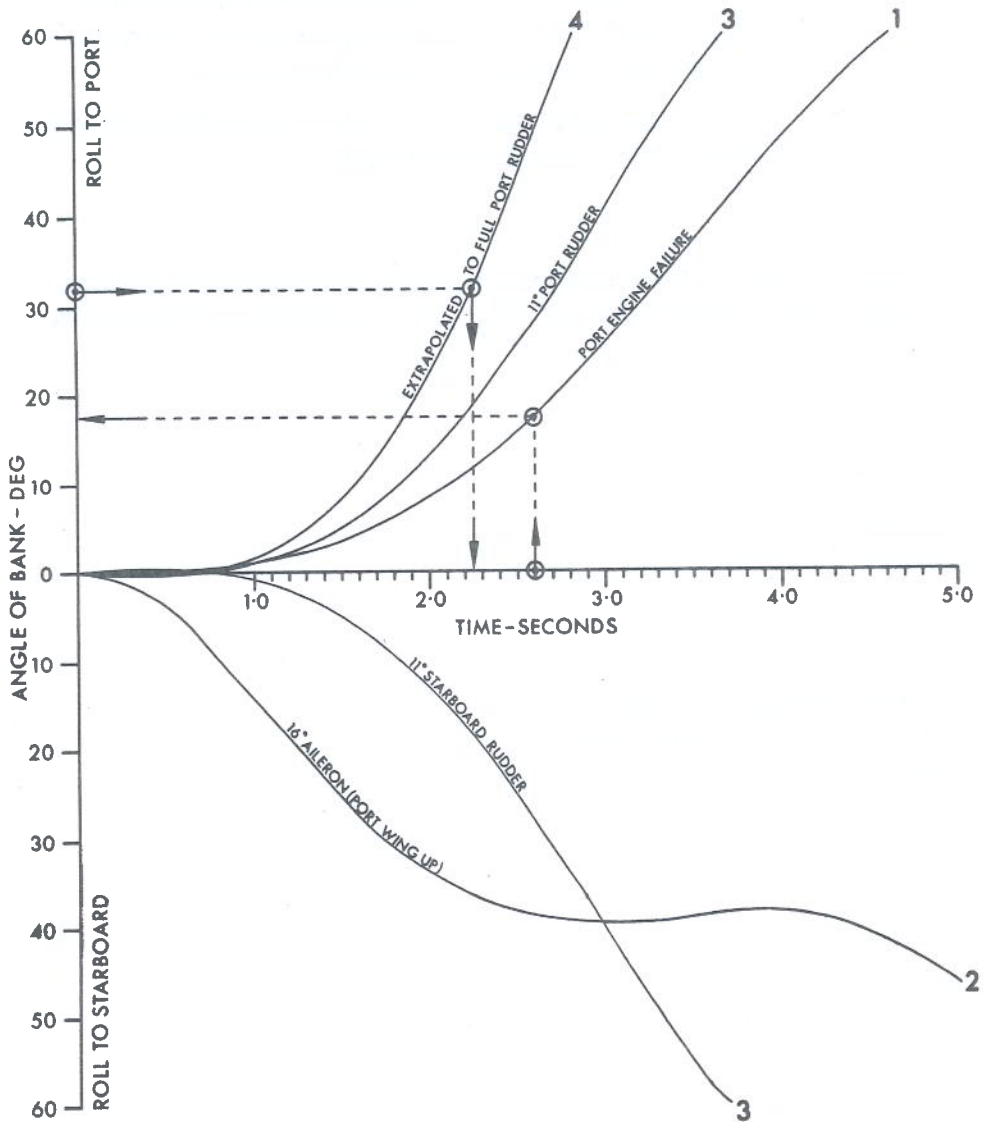


HS 125 SERIES 3B
 AIRCRAFT RESPONSE TO ENGINE FAILURE AND CONTROL INPUT
 ANGLE OF BANK vs TIME

ASSUMPTIONS: AIRCRAFT WEIGHT.....19700 LB.
 ENGINE FAILURE SPEED.....130 KT. EAS
 HEIGHT.....SEA LEVEL
 OUTSIDE AIR TEMPERATURE.....11°C
 LOADING.....0.35 MC



APPENDIX 2 RESCUE AND SURVIVAL

1. General situation

(Note: The accident occurred at 17.29 hrs GMT which will be referred to as 'T' throughout this appendix.)

The accident was witnessed by Edinburgh Airport Fire Services firemen on duty who, as stated in the report, arrived at the scene with their appliances in less than one minute, (T + 0.55 minute). Use of a dry powder extinguishant supported by foam application proved very effective and the fire was brought under control by T + 01 minute. Consequently fire damage to the aircraft was restricted to the outer section of the port wing and scorching of the fuselage paintwork. However, throughout the rescue operation, fire was a constant hazard and the removal of the pilots had to proceed with the possibility that it might recur.

Both the pilots were trapped in the wreckage and rescue attempts were hampered by the awkward situation of the nose section and the confined internal space due to the crushing of the cockpit area which prevented the use of major rescue apparatus. Two doctors, who happened to be in the airport terminal buildings at the time, went to the scene to render such assistance as they were able (approximately T + 10 minutes) and they were joined at T + 15 minutes by a local general practitioner. The Scottish South-Eastern Fire Brigade appliances arrived from Edinburgh at T + 16 minutes, followed shortly afterwards by a medical team from the Edinburgh Royal Infirmary at approximately T + 20 minutes.

Equipment available with the airport fire services vehicles, including an electrically powered circular saw and a powered pneumatic chisel, was used to force an entry through the starboard windscreen through which Captain Nethercot was rescued at approximately T + 21 minutes. It was then seen that access to Captain I'Anson was blocked by the forward cockpit structure and the right hand seat and that his rescue would have to be effected from the rear. Attempts to move the right hand seat by the normal release mechanism were unsuccessful and a portable electric hacksaw which was included in the equipment carried in the Scottish South-Eastern Fire Brigade rescue tender, was used to cut it away. Use was also made of a Coles crane to lift the obstructing control pedestal clear. At approximately 20.00 hrs, (T + 2 hours 31 minutes), Captain I'Anson was released and immediately transported by ambulance to the Royal Infirmary, Edinburgh.

2. The aircraft battery

When the airport fire service crew arrived at the scene they found that some of the aircraft lights were still on indicating that the battery was still connected. Although they had information concerning the HS 125 that the battery was in the rear of the aircraft they also understood (correctly) that this is not always so. (The RAF Dominie – military version of the HS 125 has its battery in the nose.) Therefore, there was some uncertainty as to where the battery was. As the aircraft was resting on its tail and the normal battery access was inaccessible, it was decided to proceed with the rescue operation without delay and at the same time, provide and man equipment in case the fire broke out again. When the rescue had been completed it was decided to leave the aircraft with the battery connected as any attempt to break into it to disconnect it might cause a greater hazard. In any case it was known that experts from the manufacturers were due to arrive who would be able to deal with the matter.

3. The aircraft fuel

The airport fire service, having extinguished the fire in the port wing, were well aware that there was a heavy fuel leak from the aircraft to such an extent that fuel was lying in pools on the ground. However, once again, it was appreciated that the rescue of Captain I'Anson must proceed without delay and the risk of a further outbreak of fire provided against. It was known that the nature of the fuel (aviation kerosene) was such that the danger could be contained and arrangements were made for keeping a watch with the necessary equipment to hand in case there was another outbreak. It was necessary to cover risks caused by the use of power tools as well as risks resulting from the battery which was still connected. It was considered that had defuelling been attempted the necessary equipment would have increased the danger. Therefore, in addition to covering the exposed fuel with foam a channel was dug to convey fuel some distance from the aircraft where it could soak away. By the time the rescue had been accomplished the fuel leak had substantially reduced. A fire guard was maintained at the aircraft and, as with the battery, it was decided that the defuelling operation was safer and better left to the experts.

4. Rescue equipment

The airport fire service had all the equipment they needed to commence their rescue operations at the scene from the outset. When the Scottish South-Eastern Fire Brigade appliances and rescue tender arrived at approximately T + 16 minutes use was made of their equipment also and probably the most useful tool available, considering the very limited space for working inside the aircraft was the electrically-powered hacksaw carried by the latter vehicle. Nevertheless two blades were broken before a sufficient amount of the co-pilot's seat had been cut away to enable it to be lifted clear.

5. Medical attention

The airport ambulance was sent to the aircraft immediately the accident occurred and following a public appeal, the two doctors who happened to be at the airport at the time also went to the scene (T + 10 minutes). At approximately T + 20 minutes a medical team consisting of the medical registrar and a staff nurse, arrived from the Edinburgh Royal Infirmary by police car and took over responsibility for the medical care of Captain I'Anson. As there was some doubt as to the number of casualties, several ambulances arrived in case they were needed at various times within T + 20 minutes. When the necessary apparatus became available and was set up, an intravenous drip of plasma was administered to Captain I'Anson and a sample of blood was obtained which was taken to the Royal Infirmary by police car for matching. The matched supply was then returned for transfusion. A helicopter was also kept in readiness to convey Captain I'Anson to hospital if necessary but when he was extricated it was decided to convey him by ambulance. On arrival at hospital he was found to have died.

Observations

- (i) During the course of this investigation the doctors who were present at the airport and attended the accident suggested that an intravenous drip might have been started earlier if there had been plasma available as part of the airport's First Aid equipment. Whilst on this occasion a few minutes would have been saved, it must be recognised that it was purely fortuitous that there were some doctors about. Nevertheless, this point has been put to the Department of Trade and Industry's medical authorities.
- (ii) The airport fire service is to be commended on its efficient turnout on this occasion which was under way before the aircraft had come to rest. Its prompt action and the effective use of dry powder extinguishant were undoubtedly instrumental in the rapid control of the fire and the rescue of Captain Nethercot who was badly injured and trapped in the wreckage.