Aviation Safety Investigation Report 199702303

Piper Aircraft Corp Chieftain

16 July 1997

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NOTE: All air safety occurrences reported to the ATSB are categorised and recorded. For a detailed explanation on Category definitions please refer to the ATSB website at www.atsb.gov.au.

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Occurrence Number:	199702303	**Occurrence Type:**	Incident
Location:	Moorabbin, Aerodrome		
State:	VIC	**Inv Category:**	4
Date:	Wednesday 16 July 1997		
Time:	0944 hours	**Time Zone**	EST
Highest Injury Level:	None		

Aircraft Manufacturer:	Piper Aircraft Corp		
Aircraft Model:	PA-31-350		
Aircraft Registration:	VH-OZT	**Serial Number:**	31-7405157
Type of Operation:	Air Transport Domestic Low Capacity Passenger Scheduled		
Damage to Aircraft:	Minor		
Departure Point:	Wynyard Tas		
Departure Time:	0720 EST		
Destination:	King Island Tas		

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	ATPL	600.0	2580

Approved for Release: Monday, March 23, 1998

VH-OZT, a Piper PA31 Chieftain was operating Flight 102 from Wynyard to King Island and then to Moorabbin. On arrival at King Island, when the pilot selected the landing gear down, the red gear-unsafe warning light illuminated. None of the three green gear-extended lights illuminated, and the gear selector did not return to neutral position. A pilot in another aircraft at King Island viewed OZT in flight and advised that the gear had not extended but that the main landing gear doors were open. The pilot of OZT then elected to proceed direct to Moorabbin. En route he advised Air Traffic Services (ATS) of the gear unsafe condition so that emergency services would have ample warning to prepare for his arrival. At Moorabbin he flew passed the control tower several times to enable company engineers and a Civil Aviation Safety Authority (CASA) flying operations inspector to view the aircraft, assess the problem and advise the pilot of actions to be taken.

All attempts to lower the gear, including manual extension, were unsuccessful. To minimise the risk of injury and damage to the aircraft, the pilot was advised to land on the hard surface in preference to the grass area beside the sealed runway. After confirming that emergency services were in attendance and with the emergency checklist items completed, the pilot landed the aircraft on runway 35 left.

While retrieving the aircraft from the runway, engineers found that the hydraulic hand pump pressure line had cracked. This allowed the hydraulic oil from the landing gear system to be pumped overboard, initially by the engine driven pumps and subsequently by the manual pump. With the loss of all of the oil, there was no means of extending the landing gear in flight.

A metallurgical examination of the hydraulic pressure line concluded that the cracking was caused by fatigue initiated in a small region of intergranular cracking created by the action of a corrosive environment. The approximate time in service for the hydraulic line was 21,000 hours.

Emergency response aspects.

The Melbourne Metropolitan Fire Brigade (MFB) is the fire authority for all emergencies within the perimeter of Moorabbin airport. However, if an aircraft emergency occurs outside the airport boundary, the attending fire service may be the MFB or the Country Fire Authority (CFA). Both the MFB and the CFA have limited experience in aircraft rescue fire fighting roles.

When notified of the emergency situation, an MFB officer proceeded to the control tower to coordinate rescue and fire fighting activities. Prior to OZT landing he consulted with Federal Airports Corporation (FAC) officers, company pilots endorsed on the PA-31 Chieftain, the company maintenance controller, a CASA flying operations inspector endorsed on the PA-31, and the tower controller. The fire officer maintained radio contact with his fire crew who were awaiting the arrival of OZT. While in the control tower, the fire officer received details of the aircraft and the aerodrome layout, and radioed relevant information to his crew.

Two concerns were subsequently raised by those who responded to the emergency. The first involved media representatives who made their way to the disabled aircraft without first gaining permission. The FAC safety officer had secured a small area around the disabled aircraft but was unable to prevent unauthorised access by the media who had climbed over a fence and made their way to the aircraft. When the unauthorised access occurred, the tower controller monitored movements of both aircraft and personnel to ensure safe operations were maintained. He advised that if necessary he would have closed the airport to all aircraft arrivals and departures. Other media personnel who had sought permission to gain access to the aircraft were ferried to and from the aircraft by a safety officer.

Concern was also expressed about ease of access to the runways when the control tower is not manned. It was determined that for an emergency after the hours of tower operation, local police should guard the wreckage, keep spectators away and control the media.

The second concern involved the capability of the MFB and the CFA to cope with an aircraft emergency because of limited training in aircraft RFFS. The Manual of Air Traffic Services (MATS) (reference 17-6-1 paragraph 15) states that where there is no airport fire service, in the event of an emergency, ATS will activate the airport emergency procedures. Local fire service personnel rarely attend an aviation emergency. It cannot be assumed that the local firemen will be aware of all the risks to themselves, or to those they may attempt to rescue from an aircraft. Similiarly the coordinating fire officer may not be familiar with the possible hazards which could be ascertained from aviation specialists.

The current Moorabbin Airport Emergency Procedures includes a checklist item : "Aircraft type (basic description)". It was considered that being advised of a basic description might be inadequate in situations where an aircraft is equipped with hazardous equipment, such as medical oxygen cylinder(s) fitted to ambulance aircraft.

The safety of local fire crews, and persons to be rescued, would be enhanced if airport emergency procedures included a checklist item to cover the hazards associated with the specific aircraft. Information should be obtained from personnel familiar with the aircraft.

Safety Action.

The Bureau is currently examining the adequacy of emergency response procedures at airports that are not normally supported by specialist aviation rescue and fire fighting services.