

**Aviation Safety Investigation Report  
198703492**

**Embraer, EMB-820C**

**10 August 1987**

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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](http://www.atsb.gov.au).**

**Occurrence Number:** 198703492  
**Location:** Mt Isa QLD  
**Date:** 10 August 1987  
**Highest Injury Level:** Nil  
**Injuries:**

**Occurrence Type:** Accident

**Time:** 1329

	Fatal	Serious	Minor	None
Crew	0	0	1	1
Ground	0	0	0	-
Passenger	0	0	0	8
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>

**Aircraft Details:** Embraer, EMB-820C  
**Registration:** VH-HVA  
**Serial Number:** 820C-045  
**Operation Type:** Charter  
**Damage Level:** Substantial  
**Departure Point:** Alice Springs N.T.  
**Departure Time:** 1112  
**Destination:** Mt Isa QLD

**Approved for Release:** February 28th 1989

#### **Circumstances:**

The aircraft departed Sydney on 8 August 1987, with the pilot and eight French tourists, for a twelve day Air Safari. The trip was uneventful until about 35 km west of Mt Isa, when the left engine failed during the descent. The pilot did not attempt to lower the landing gear and flap until the aircraft was on final approach. However, the landing gear did not extend. A go-around was carried out and on the subsequent circuit the pilot attempted to release the hydraulic hand pump so that he could manually pump the gear down. He was unable to release the handle. This fact, combined with an indication of rising temperatures on the operating engine necessitated a reduction in power on that engine, with a resultant loss of aircraft performance. The pilot then decided to carry out a "wheels-up landing" on the grassed area adjacent to the main runway. During the approach and landing the cowl flaps on the operating engine remained closed. An inspection of the aircraft revealed that the engine failed due to the separation of the induction system when the number 3 cylinder hold down bolts broke. These bolts failed as a result of fatigue probably as a result of the studs either not being torqued correctly at installation or becoming loose in service. The landing gear failed to extend by the normal method due to too low a hydraulic pressure possibly caused by low fluid level in the reservoir. It was found that the hydraulic hand pump handle required a two-handed effort to release it. This was due to it being clogged with dirt and old grease.

#### **Significant Factors:**

The following factors were considered relevant to the development of the accident

1. Fatigue failure of the No. 3 cylinder hold down bolts due to either them being under torqued at installation or becoming loose in service.

2. Pilot did not use the written checklist and as a result neglected to check the operation of the hydraulic pump prior to attempting to lower the gear.
3. Pilot made improper inflight decision in not selecting gear down earlier in the descent.
4. Normal Gear Operation failed, due to too low a hydraulic pressure possibly caused by low fluid level in the reservoir.
5. Pilot could not use Emergency Gear Extension System due to dirt and old grease jamming the telescopic handle.
6. Passengers could not assist because none seated near the pilot could speak English.