COMMONWEALTH OF AUSTRALIA DEPARTMENT OF TRANSPORT

# AIRCRAFT ACCIDENT INVESTIGATION SUMMARY REPORT

Publication of this report is authorised by the Secretary under the provisions of Air Navigation Regulations 283 (1)

Reference No. SI/761/1501

## 1. LOCATION OF OCCURRENCE

| | Height a.m.s.l. | Date | Time (Local) | Zone |
|---|---|---|---|---|
| Five kilometres north-east of Gatton, Queensland | 340 feet | 6.6.76 | 1410 hours | EST |

## 2. THE AIRCRAFT

| Make and Model | Registration |
|---|---|
| Cessna 172 | VH-BJS |

## 3. CONCLUSIONS

3.1 At approximately 1410 hours Eastern Standard Time on 6 June 1976, a parachutist was fatally injured on impact with the ground near Gatton, Queensland, following a free fall descent and failure of both the main and reserve parachutes to properly deploy.

3.2 The parachutist, Helen May Murphy, aged 24 years, had completed 211 parachute descents prior to the accident. There is no evidence to indicate that, prior to the accident, she had ever experienced a main parachute malfunction requiring it to be jettisoned.

3.3 For this descent, Miss Murphy was equipped with a back mounted Irvin Delta II Parawing main parachute and a 26 feet diameter chest mounted reserve parachute. The main parachute had been borrowed by Miss Murphy for trial with a view to purchase. She was equipped with her own body harness.

3.4 The Delta II Parawing is an advanced delta shaped gliding type of parachute and the model which was used by Miss Murphy was operated by a ripcord fitted with a 'blast' type handle designed for right hand operation. Features of this equipment were two steering lines fitted with toggles and an Opening Shock Inhibitor (OSI) which reduced the deceleration loads on the parachutist by holding all the lines in a reefed position thus preventing full inflation of the canopy on initial activation. The OSI was locked with a pin which could be withdrawn by the initial movement of the right steering line when the right hand toggle was pulled. In addition, standard '1½ shot Capewell' riser releases were fitted so that a malfunctioning main parachute could be jettisoned.

3.5 The reserve parachute was of standard construction. It was fitted with a pilot chute and was manually operated by a ripcord.

3.6 At the time of the accident the weather was fine, there was isolated cumulus cloud in the area, the visibility was some 32 kilometres and the surface wind was from the north-east at five knots.

3.7 Prior to the day of the accident, Miss Murphy had made only one descent using a Delta II Parawing parachute and this had been on 17 December 1972 for her 50th descent.

3.8 During the morning of 6 June 1976, Joseph Norman Armstrong, a qualified parachute packer, packed the main parachute assisted by Miss Murphy. She then made a descent using this particular equipment combination for the first time. Following activation of the parachute, some twisting of the suspension lines occurred initially, but the descent was completed successfully. Miss Murphy subsequently commented on the line twisting and also mentioned that she had found it necessary to pull hard to withdraw the OSI pin. She repacked the parachute under the supervision of Mr. Armstrong.

3.9 The descent which resulted in the accident was from Cessna 172 aircraft, registered VH-BJS. The aircraft was flown by Alan Robert McVinish, the holder of a private pilot licence, whose total flying experience amounted to 168 hours. On board the aircraft were parachutists Gregory Hill, Peter Barnett and Miss Murphy.

3.10 The three parachutists exited the aircraft normally at a height of 8000 feet and, after making a relative descent, separated at about 3500 feet and activated their main parachutes at about 2500 feet. Miss Murphy's parachute opened to the inhibited configuration and some suspension line twisting was observed. The parachute did not fully deploy and after a few seconds, it began to spiral to the right. After approximately three complete turns to the right, at an estimated height of 2000 feet, Miss Murphy appeared to attempt to jettison the main parachute but only the left risers released from the harness. The parachute then streamed and the rate of descent increased considerably. At a height of about 1000 feet, the reserve parachute was activated but the pilot chute became entangled in the suspension lines of the main parachute and the reserve canopy did not deploy. Miss Murphy continued attempts to free the entanglement until she struck the ground.

## 3. CONCLUSIONS (Cont'd)

3.11 There was no evidence of any error or omission in the packing of either parachute which may have contributed to the accident.

3.12 The locking pin of the OSI installed in the main parachute had not been withdrawn but was capable of normal operation.

3.13 The covers of the two riser releases associated with the main parachute were found to have been removed and the left release had been activated. The ring pull of the right release had not been operated.

3.14 Steady pull tests of the ring pull riser releases revealed that 16 lb of force was required to operate the left release and 26 lb of force was required to operate the right release. On repeated simultaneous tests the left release operated first and on several occasions the right release did not operate at first attempt. It is possible, by simple adjustment, to reduce the force required to operate this type of riser release. There is no evidence to indicate that the riser releases of the combination of harness and main parachute used by Miss Murphy had been tested or adjusted prior to her use of them.

3.15 The standard emergency procedure before jettisoning a malfunctioning main parachute of this type includes throwing away the ripcord handle prior to removing the covers from the riser releases and operating the riser releases with a sharp simultaneous pull of each thumb. The ripcord handle of Miss Murphy's main parachute was found under her body which suggests that she had retained it in her hand throughout the emergency. It is possible that this impeded her attempt to activate the right riser release.

## 4. OPINION AS TO CAUSE

The probable cause of the accident was that, after mating her harness to a main parachute in respect of which she was not experienced, the parachutist did not ensure that the riser releases were tested and adjusted.

| Approved for publication | ( R.H. Watts ) Delegate of the Secretary | Date 18.4.1977 |
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