Aviation Safety Investigation Report 198900820

Kavanagh Hot Air Balloon E-260

13 August 1989

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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.

Occurrence Number: 198900820 **Occurrence Type:** Accident
Location: 14 km SSE of Alice Springs Airport NT
Date: 13 August 1989 **Time:** 705
Highest Injury Level: Fatal
Injuries:

	Fatal	Serious	Minor	None
Crew	1	0	1	1
Ground	0	0	0	-
Passenger	12	0	0	12
Total	**13**	**0**	**0**	**13**

Aircraft Details: Kavanagh Hot Air Balloon E-260
Registration: VH-NMS
Serial Number: KB 078
Operation Type: Charter
Damage Level: Destroyed
Departure Point: 14km SE of Alice Springs Airport NT
Departure Time: 0656
Destination: Old South Road, Alice Springs, NT

Approved for Release: 28th November 1989

Circumstances:

Five hot air balloons, including the two involved in the collision, VH-NMS and VH-WMS, were operating tourist charter flights from the same launch area. Flight plans had been submitted and correctly co-ordinated. All the balloons were ready at about the same time and took off within minutes of each other. VH-WMS was airborne about two minutes ahead of VH-NMS. The pilot of VH-WMS then requested an Airways Clearance for both his aircraft and VH-NMS. A clearance was issued for them to operate in the Alice Springs Control Zone not above 4000 feet. VH-WMS acknowledged for both aircraft. This clearance did not make specific reference for them to operate as a formation, but to operate in company. VH-WMS climbed to 4000 feet (2000 feet above ground level) and drifted in a westerly direction. Witness evidence revealed that the pilot did not use the burner for a considerable period of time while pointing out places of interest to the passengers. A video film taken from another balloon indicates that VH-WMS appeared to be descending at this time, while VH-NMS was climbing to follow it. During the climb the pilot of VH-NMS would have lost visual contact with VH-WMS due to his envelope causing a blind area above. VH-WMS was not fitted with the mandatory instrument package, without which the pilot would have been unable to accurately ascertain his altitude or judge his vertical movement. The pilot was wearing a wrist altimeter. Several of the passengers in VH-WMS had noted that the other balloon, VH-NMS, was below and climbing towards them from the east. They reported that it seemed to close on them at a fast rate until its envelope struck their basket. Evidence indicates that neither of the pilots were in contact with one another. Both balloons were equipped with UHF (Ultra High Frequency) radios operating on the same frequency. The basket of VH-WMS contacted the envelope of VH-NMS just below the velcro rip panel, tearing a hole in the fabric panel, which was under tension

from containing the large mass of hot air within the envelope. Tearing continued through adjacent panels and seams, creating a hole large enough for the basket of VH-WMS to enter and proceed more than half way down into the interior of the envelope. At the point where the basket of VH-WMS moved inside the envelope, it would have contacted and fouled against the control lines for the velcro rip panel vent, initiating activation of the rip panel Capewell safety locks, and as it moved further inside would have contacted the control line for the parachute vent. The parachute vent line remained fouled around the outboard end of the basket of VH-WMS as it swung clear of the hole in the envelope of VH-NMS. This caused the velcro rip panel to fully open as the two balloons separated. VH-NMS then descended as hot air escaped through the damaged envelope panels and opened velcro rip panel, causing the envelope to elongate and rapidly collapse. The degree of disruption of the envelope was such that the balloon could not remain inflated. The basket, with the deflated envelope trailing above it, then plummeted to the ground. The investigation did not reveal any abnormalities or defects to the balloon, its envelope material or methods of manufacture, which could be considered to have contributed to the accident. Following the accident, the pilot of VH-WMS mentioned to one of his passengers that he had not noticed the other balloon before they collided. Subsequently, the pilot of VH-WMS, following legal advice, refused to co-operate fully with the Investigator-In-Charge in spite of having been summonsed under the provisions of the Air Navigation Act. The Company's Operations Manual states - "FORMATION FLIGHT When two or more balloons are flying together the upper balloon must give way. Avoid basket to envelope contact when taking off or in close proximity."

Significant Factors:

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

1. The pilot of the upper balloon failed to maintain an adequate lookout and control of his aircraft in that he did not give way to the lower balloon.

2. The pilot of the lower balloon did not adequately assess the position of the upper balloon before climbing in close proximity with it.

3. The pilots of the two balloons involved in the collision were not in radio contact with each other.

4. Collision damage to the lower balloon was such as to render it uncontrollable.

Reccomendations:

1. The Civil Aviation Authority (CAA), in conjunction with the Australian Ballooning Federation (ABF), reassess separation requirements for manned balloons. Currently, Civil Aviation Regulations (CARs) 161, 162 and 163 in Part XI, Division 1 of the CARs does not address the Give Way Rule applicable to manned balloon operations, e.g., upper balloon gives way.

2. In view of the certification deficiencies found in the balloon log for the accident balloon, the CAA should improve their standards of surveillance of aircraft documentation and educate Balloon Maintenance Authority holders in their responsibilities.

3. The ABF address the surveillance of instructors and examiners to ensure that the requirements for issue of pilot certificates (balloons) are being met and then correctly logged and certified. These recommendations arose from findings during the course of the investigation, and were referred immediately to the relevant authorities for consideration. All these recommendations are being implemented.