CHECK SHEET - CONLUSION PROCESSING

FILE REF: 6/744/1027

ACTION	DATE	OFFICER
REVIEW COMPLETED	3/12/74	C.J. George-Petty 5162
CONCLUSIONS SUBMITTED		
CONCLUSIONS APPROVED		
DRAFT PROOF READ		
DRAFT TO PPC		
PRINTED CONCLUSIONS FROM PPC		
CONCLUSIONS DESPATCHED TO REGION		

AIR SAFETY INVESTIGATION REPORT REVIEW

Aircraft Type - Registration C172A .... VH-UEV .. File Reference 6/744/1027 ....

Place and Date 3 km NE of Sanderston, S.A. 14/7/74. Investigator G. Benfield ....

INVESTIGATION Operations - Engineering - Aviation Medicine -

1 Inadequate information regarding method recommended by manufacturer for positioning rigging lines and wing tip fabric inside OSI wrap.

2. Origin of manuscript note in owners manual apparently not ascertained. I.E. Amendment by authority of manufacturer or otherwise.

3. Photographic evidence, (photo 3), conflicts with specialist advice that right wing tip rigging line had pulled through OSI wrap.

4. Ground witnesses could have been probed in greater depth regarding observations of parachutist on descent.

5. No details of DZ or weather provided.

REPORT

Evidence Presentation

(a) See 3 above

(b) There is doubt that the opinion reflected in the captions to photos 5, 6, 7 & 8, regarding "right" and "wrong" way to wrap OSI, is satisfactorily authoritative. (See also section 20, para 3.)

Analysis

1 Inadequate consideration given to 1, 2 & 3 above.

2 Possibility that chance twisting of lines during deployment might have led to malfunction, rather than other way around as indicated by the specialist, not apparently considered.

CA Form 149A

Satisfactory

Contraventions

Possible infringement of manufacturers instruction to avoid twisting while wrapping OSI, not discussed.

CAUSAL FACTORS

Date ... 11/12/74 .... Signature ... C.J. Geoghegan ... S1G2 ....

DSIG

This personal note is attached to explain what has been done with respect to conflicting evidence in the report concerning whether or not the right wing tip was pulled out, as indicated in the specialist report. The red rigging lines attached to each wing tip can be readily identified in photo 8, by the respective knots and the white fabric covering the first few inches of the lines. The wording of the caption in photo 3 suggests that the photograph was taken before the parachute had been disturbed following unwrapping of the OSI, i.e., in the as found condition. In photo 3 it can be seen that the knots and covering fabric on each wing tip line is below the wrap, suggesting that the right wing tip had not pulled out.

2. Following discussion with Paul, who arranged contact through Stan Cooper, I spoke to Geoff about the confliction. He initially indicated a belief that the photo was taken before the parachute had been disturbed but rang back several days later to say that he could not be sure it was not a reconstruction photo. Photographs of the parachute were taken shortly after the accident, apparently by the pilot. (Probably photos 1 & 2 were two of those.) Additional photos taken immediately after the accident were sent by Geoff over to Trevor Burns, following our discussion. Trevor was able to positively establish from one of them that the right wing tip was in fact out of the OSI wrap when photographed just after the accident and photo 3 must have been a reconstruction.

3. I am uncertain if SA/NT Region will be following this up in writing but I am satisfied that the right wing tip did pull through the OSI wrap and that we can state this in the conclusions. It should be noted that the fact that the right wing tip pulled through is not regarded as a particularly significant piece of evidence but I thought the discrepancy should be resolved.

CJG
(CJG)
SIG2

11 .12.74

GOVERNMENT OF AUSTRALIA DEPARTMENT OF TRANSPORT

AIRCRAFT ACCIDENT INVESTIGATION SUMMARY REPORT

Publication of this report is authorised by the Director-General of Civil Aviation under the provisions of Air Navigation Regulation 283(1)

Reference No. AS/744/1027

1. LOCATION OF OCCURRENCE

Location	Height a.m.s.l.	Date	Time (Local)	Zone
Three kilometres north-east of Sanderston, South Australia	128 metres	14.7.74	1259	CST

2. THE AIRCRAFT

Make and Model	Registration
Cessna 172A	VH-UEV

3. CONCLUSIONS

At approximately 1259 hours, central standard time, on 14 July, 1974, a parachutist was fatally injured by impact with the ground following a free fall descent near Sanderston, South Australia.

(ii) The parachutist, Terence Anthony DANIEL, aged 23 years, had previously made 8 static line descents and 86 free falls with time delays of up to 35 seconds. Mr. Daniel was a member of The Adelaide Skydiver's Club which was holding a weekend meeting near Sanderston.

(iii) For the descent on which the accident occurred Mr. DANIEL was equipped with a back mounted Irvin Parawing Delta II type main parachute and a chest mounted 24 feet diameter reserve parachute. He was also equipped with a chest mounted altimeter.

(iv) The main parachute and the reserve parachute were owned by Terence Brian CLARK who had made a descent earlier in the day using this equipment. Mr. CLARK repacked the main parachute following that descent and he and Mr. DANIEL then agreed to exhange equipment for their next descent to gain experience with parachutes that neither had used previously.

(v) When fully deployed the canopy of the Irvin Parawing Delta II type parachute forms an approximate ~~triangular~~ Delta "wing" shape. A feature of this parachute is the opening shock inhibitor, (OSI), a length of webbing attached to the left "wing" tip which is designed to reduce the opening shock by controlling inflation of the wing progressively from the nose to the trailing edge. During packing the webbing is progressively wrapped around the rigging lines which are in a colour coded sequence so that during deployment of the "wing" the rigging lines are sequentially released from the nose to the trailing edge.

(vi) The weather conditions and the characteristics of the drop zone were not factors in the accident.

(vii) The descent on which the accident occurred was from a Cessna 172A aircraft, registered VH-UEV and flown by Jiri PALLIDIJ, the holder of a valid private pilot licence. Jiri PALLIDIJ was also the holder of the certificate of registration for this aircraft. Also on board the aircraft were parachutists Lawrence Vincent MORRIS, Terence Brian CLARK and Terence Anthony DANIEL.

(viii) At an altitude of 6000 feet the three parachutists exited the aircraft together, with the intention of attempting a three man link-up during the free fall section of the descent. Immediately on stabilising Mr. CLARK, the lighter of the three, realised he would not be able to achieve this aim and tracked away. Theother two parachutists manoeuvred into close proximity but did not make contact and when Mr. MORRIS saw his altimeter reading just over 3000 feet he tracked away and deployed his parachute. Mr. MORRIS's parachute opened at a height of about 2,250 feet and when this occurred he glanced over his shoulder and noticed Mr. DANIEL's parachute appeared to be fully deployed about 150 feet below him.

(ix) Witnesses on the ground saw the three parachutes open but became aware that something was wrong with one which was spiralling to the left and descending much faster than the other two. Observers thought the rigging lines appeared to be twisted for at least three quarters of the way up to the canopy. Just before the parachutist disappeared behind low trees the main parachute was jettisoned and a flash of white was observed as the reserve parachute apparently started to deploy at a very low height.

(x) After the accident the reserve canopy was found out of its container but the rigging lines were pulled from only the first of the ten stowage points. Examination of the reserve parachute failed to reveal evidence of any error or omission in packing or defect in the parachute which might have contributed to the accident and the non completion of the deployment sequence was apparently due to activation at too low a height. Inspection of the altimeter failed to reveal evidence of any pre-existing defect which might have affected its accuracy and information gathered during the investigation suggested it had been correctly set to indicate height above the drop zone.

(xi) Examination of the main parachute did not reveal signs of any pre-existing defect. When the main parachute was inspected it was found the red and gold rigging lines, the last in the sequence to be released, were still contained within the OSI wrap which had not unwound for the last two ~~hours~~ turns.

→ The right hand wing tip ~~was found to~~ had pulled through the OSI wrap. →

3. **CONCLUSIONS** (Cont'd)

Unwinding the OSI wrap revealed that the last group of rigging lines held in the OSI had been twisted into the fabric of the "wing" tips, and it was evidently the binding action associated with this which prevented completion of the deployment sequence and resulted in the main parachute malfunction.

4. **OPINION AS TO CAUSE**

The cause of the accident was that, following a malfunction of the main parachute, the parachutist failed to take timely action to jettison the main parachute and activate the reserve.

Approved for publication	Delegate of the Director-General of Civil Aviation	Date