

SAFETY INFORMATION

3/19

TANDEM SKYDIVING SAFETY

On the 09 November 2019, a serious Tandem Incident took place, where an AAD activation of the reserve canopy saved the lives of the Tandem Instructor and his student.

Below is the extract of the Minutes from the STC meeting of the 14 November 2019.

The Chair reported that last weekend a serious incident occurred where an AAD fired, saving the lives of a Tandem Instructor and his Student. This involved a Tandem Instructor with a total of 225 Tandem descents. Following an uneventful Tandem skydive from 10,000ft, the Tandem Instructor went through the main canopy deployment sequence at approximately 6000ft, by pulling the drogue release handle on a Tandem System.

The main canopy deployed and did not appear to be malformed, however the canopy started to spin to the left. The Tandem Instructor made the decision to initiate his emergency drills. Due to the severity of the spin, the Instructor could not locate his emergency handles simultaneously, only being able to locate the cutaway handle, which had moved and was situated high and level with his right shoulder. The Instructor opted to go through the cutaway procedure without locating the reserve handle.

As the Instructor cut away the main canopy, the RSL failed to pull the reserve pin. The Tandem pair continued in free fall and the Instructor attempted several times to locate the reserve handle but could not find it. The Instructor noticed that the RSL had disconnected and was moving in the airflow. The Instructor attempted to grab and pull the RSL to activate the reserve but struggled to get hold of it, at which point the Cypres AAD activated the reserve canopy. The Tandem pair landed safely on the PLA without further incident. The Instructor had carried out one previous Tandem descent that day. The Tandem Instructor has not carried out any further Tandem descents since that time.

The Chair stated that a photograph taken on board the aircraft showed that the RSL appeared to be connected and situated in the correct place. However, at some stage the RSL became disconnected.

The Chair reported that following this incident he visited the PTO concerned and inspected the equipment. He stated that the RSL was also inspected and put through several pull tests using a hook scale. The recorded poundage force did not exceed 2.5 lbs.

All the other RSLs at the PTO were also tested and the RSL involved in the incident had the lowest recorded poundage force. The incident RSL has been taken out of service.

The Chair reported that this incident had also been discussed at the Riggers' Subcommittee meeting this afternoon.

Pete Sizer reported that the Riggers' Subcommittee were keen to ascertain how many other instances that may not have actually been logged as an actual incident where an RSL has inadvertently come undone.

This could have occurred in freefall, as a result of someone maybe doing a systems check and knocking it off or someone that has just landed and noticed that the RSL was not done up, but they were fairly certain it had been connected before they left the aircraft.

The Riggers' Subcommittee have asked PTOs to check their RSL clips / shackles to see how much force it actually takes to undo them.

The causes of the Automatic Activation Device (AAD) activation on the Next Century Tandem System were due to several contributing factors.

- *The Reserve Static Line (RSL) shackle disconnected from the riser ring. However, it is not known at what point the disconnection took place. This may have happened during the free fall phase of the Tandem Skydive or during the malfunction of the main canopy.*
- *Also, during the malfunction of the main canopy and due to the severity of the spin, the position of the emergency handles had moved considerably. This prevented the Tandem Instructor from locating both the emergency handles, only being able to locate the cutaway handle. As the Tandem Instructor cut away the main canopy, the RSL failed to pull the reserve pin, leading to the Tandem pair going back into free fall. The instructor was unable to locate the reserve handle, which led to the activation of the AAD.*

During the inspection of the equipment, the Tandem harness adjustment tabs were found to be in place, and both were positioned on the small setting. The Tandem Instructor received a flight line check prior to boarding the aircraft and everything was found to be in order.

British Skydiving has no guidelines from the manufacturers of the RSL shackles, as to what the recommended poundage force should be. From tests carried out at the PTO after the incident, the recorded pressures varied from a minimum 2.5lbs up to 7lbs with the RSL attached to the riser ring.

Since the incident, further research has been conducted to try and ascertain whether Tandem Instructors have experienced disconnections of RSLs in the past, as no data is currently available for such type incident.

Several British Skydiving Parachute Training Organisations (PTOs) were contacted and a number reported that their instructors had experienced disconnections of the RSLs in the past, mainly on Next Tandem Systems. The causes for this are unknown.

From the information obtained, it appears as if the disconnection of the RSL on Next Tandem System is not an isolated incident and these shackles may come undone with ease.

Therefore, the following safety points must be considered during Tandem Operations:

- PTOs should check the serviceability of their RSL shackles on all Tandem Equipment at the earliest opportunity, if they have not done so already. It is advised that PTOs keep a record of the amount of pressure taken to release the RSL shackle from the riser ring. However, it may be difficult to obtain accurate readings without specialist equipment.
- It is recommended that the RSL shackle be inspected as part of the 100-jump check inspection and a pull test be carried out. The recorded figure should be annotated in the blue (main canopy packing) book.

- During the completion of the Systems Check, caution must be taken when touching or grasping the RSL shackle, so that no excessive pressure may cause the RSL shackle to become disconnected. A previously recorded incident of this description resulted in the instructor re-attaching the RSL shackle to the three rings whilst he was still in free fall.
- As risers lift off the shoulders during the deployment sequence, the emergency handles will move from their original position. Checking the position of the Cutaway Pad, Reserve Handle is part of the systems check whilst under canopy. The emergency handles will be located higher than expected once the main canopy is deploying or deployed. Once the position of the emergency handles have been checked, attention must be drawn to the connector hooks. This is also a good opportunity to check that the RSL shackle is also connected when checking the top hooks.
- Should an RSL be found disconnected after a Tandem Skydive, which has not been purposely disconnected by the instructor under canopy, this should be reported to British Skydiving HQ, via the completion of Form 118A, detailing the cause for the incident.
- If a Tandem Instructor has disconnected the RSL under canopy, they should re-connect the RSL or inform the packers prior to the repacking of the main canopy. This may eliminate speculation by packers should they come across the RSL being disconnected.
- Chief Instructors (CIs) should consider whether they wish their Tandem Instructor's to wear Full Face helmets during Tandem Descents due to the potential of reducing or restricting visual contact with the RSL shackle during the Systems Check.
- Tandem Instructors must check the harness adjustment points as part of their equipment checks before carrying out a Tandem descent on that set of equipment, as the harness may have been adjusted by another Tandem Instructor on the previous day or even the previous lift. Attention must also be paid to the correct adjustment of the leg straps before emplaning. This will reduce the chances of the harness moving considerably whilst experiencing a malfunction.
- When practicing the monthly suspended harness drills, a scenario where the handles are not where they are expected to be, should be considered and where possible practiced. Shaking the Tandem Instructors harness during the practicing of the drills may be advantageous for simulating a canopy malfunction.

6 Dec 2019

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Distribution

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