

### **TANDEM INSTRUCTIONAL PROCEDURES**

British Skydiving has recently received several tandem incident reports, which may have been avoided by ensuring that adequate procedure is adhered to.

#### **1. Tandem Incident 02-06-2024**

A Tandem Student suffered a suspected sprain or dislocated left ankle injury, as a result of a Tandem Landing. On review of the incident footage, it was noted that the Tandem Instructor had disconnected the lateral straps under canopy and not reconnected these, prior to the Tandem pair landing on the ground (See picture 1). The student was 66 years old and had had a Body Mass Index (BMI) of 27, putting them in an overweight category.



Whilst having both lateral straps disconnected may not have contributed to the injury, it could be a casual factor leading to an example of poor practice. British Skydiving, United Parachute Technologies (UPT) and other world leading manufacturers of Tandem equipment, disapprove of this practice. Not reattaching the lateral connectors under canopy, increases the risk of incident, should any tandem instructor encounter any of the following scenarios:

1. If the lateral connectors are not reattached, there is a risk that a steering line can get caught in the connectors. This was identified as the potential cause of a double Fatality during a Tandem descent overseas.
2. In the event of a canopy collision, exposed lateral connectors may latch on to the suspension lines or any part of the equipment. Having the student attached to only the top hooks, may result in a more severe entanglement.
3. Should a cutaway be required after the lateral connectors have been removed (due to previously unseen damage to the canopy that's got worse, or following a canopy collision), the tandem student is now disconnected at the laterals, will pivot at the shoulders and could induce instability after the cutaway.
4. In the event of a Tandem instructor misjudging the landing whilst not having the lateral connectors attached, increases the risk of the tandem instructor going over the top of the student causing potential neck or back injuries for the Tandem Student.

When loosening the lateral straps, you should always ensure three points of contact, by disconnecting and loosening one side at a time. The only time when it may be advantageous to disconnect the lateral connectors prior to landing, should be in advance of a possible water landing.

## 2. Tandem Incident 12-06-2024

This report is detailed a breach of the Operations Manual, where a Tandem Student that was not connected to their instructor via the top hooks during take-off.

Once the Tandem Instructor realised the mistake and at an altitude of approximately 1,000ft AGL, both top hooks from the student harness were attached to the Tandem Instructor. Following an investigation of the incident, it was established that the instructor had become distracted when they boarded the aircraft and had inadvertently forgot to connect the top hooks. Analysis of previous and similar incidents indicates that distraction is often the main cause of these types of incidents.

The British Skydiving Operations Manual states the following:

*Section 10, Safety, Para 1, Safety in Aircraft, Sub para 1.10*

*1.10. All Student Tandem Skydivers, or skydivers acting as Student Tandem Skydivers are to be attached to the Tandem Instructor before take-off and must remain attached, except in the event of an aircraft emergency landing, where Tandem Instructors may have to separate from their Students inside the aircraft.*

Tandem Instructors are reminded of the importance of conducting a systematic check once they have boarded the aircraft, ensuring that the drogue, the drogue release handles, and emergency handles have not become dislodged when boarding the aircraft and sitting down with the student. A key part of that system check is ensuring that the student harness is connected at all four points of attachment, prior to the aircraft taking off.

In aircraft where skydivers' restraints are fitted, they must also be attached as part of the Tandem Instructors system check prior to take-off or landing on board the aircraft.

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### **Recommendations:**

1. *All Tandem Instructors should review, maintain or improve their systematic check of their handles and the student attachment points after boarding and prior to takeoff (if not already doing so), to ensure that the student is correctly attached to the Tandem Instructor before take-off.*
2. *PTOs may wish to implement a Safety Management System (SMS) audit and review of Jumpmaster procedures, to ensure any person appointed as a Jumpmaster is aware of their responsibility whilst taking charge of any particular aircraft lift. This should include a knowledge of Aircraft and Tandem Procedures.*
3. *All Tandem Instructors reattach the lateral connectors, once the lateral straps have been loosened under canopy. Ideally loosening and attaching one side at a time, to allow for three points of attachment whilst under canopy.*
4. *As well as number 2 above, PTOs are encouraged to implement an SMS audit of Tandem landings to ensure that adequate landing procedures are being followed. These can include:*
  - a. *Observing Tandem Instructors stacking and landing patterns, especially during final approach for landing, focusing on unnecessary toggle inputs prior to flaring.*
  - b. *The Tandem Instructors flaring technique and landing position.*
  - c. *Student harness attachment points.*
  - d. *Student landing positions, to include whether they should be assisting themselves to lift their legs and ankles to a higher position.*
  - e. *After landing considerations, to avoid any potential collisions with other tandem pairs coming into land.*

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