
Riggers' Subcommittee

Minutes of the meeting held on

Thursday 6 February 2020 at 1700

at British Skydiving HQ, 5 Wharf Way, Glen Parva, Leicester LE2 9TF

Present: Pete Sizer (RE) - Chair
Dave Major (AR)
Gary Stevens (AR)
Karen Saunders (AR)
Rick Boardman (RE)
Ralph Mitchell (PR)
Noel Purcell (RE)
Josh Clark (AR)
Mary Barratt (PR)/Council
Alan Hewitt (RE)
Jonathan Charles (PR)

Key:

AR = Advanced Rigger

PR = Parachute Rigger

RE = Rigger Examiner

Apologies: George Panagopoulos, Andy Shaw.

In Attendance: Jeff Montgomery - STO/Chair STC
Tony Butler - Chief Operating Officer
John Hitchen - Vice Chair STC
Trudy Kemp - Assistant to COO/STO (Secretary)

Observers: Steve Saunders, Hans Donner.

ITEM

Ian (Wobby) Robertson

The Committee had learned with great sadness that Ian (Wobby) Robertson had passed away recently after a short illness in December 2019.

Ian became a Rigger Examiner in 1979 and held this rating for nearly 30 years. He examined and coached on many BPA Rigging Courses, coaching or qualifying over 100 riggers. Wobby helped develop the processes that led to the course structures we have today, as well as contributing to many other BPA projects including the student quarterbag deployment systems and modern-day ram air static line bags.

The Chair and members of the Committee send their sincere condolences to Ian Robertson's family and friends.

1. DECLARATIONS OF INTEREST

Any declarations of interest would be made at the item/s to which they relate.

2. MINUTES FROM THE RIGGERS' SUBCOMMITTEE MEETING OF 14 NOVEMBER 2019

It was proposed by Rick Boardman and seconded by Dave Major that the Minutes of the Riggers' Subcommittee Meeting of 14 November 2019 be accepted as a true record.

Carried Unanimously

3. MATTERS ARISING FROM THE RIGGERS' SUBCOMMITTEE MEETING OF 14 NOVEMBER 2019

Page 1, Item 3 – Equipment Inspection Policies Working Group. There was nothing further to report at this time.

Page 5, Item 12 – AOB (ii) - Riggers & Advanced Packers Personal Development & Safety Day – Expo Industry Day 2020. The Chair reported on the Riggers & Advanced Packers Personal Development Day held on Friday 24 January as part of Expo Industry Day. He stated that there had been a number of presentations and packing demos, which had been well received. An e-mail with a link to an online form had been circulated to Riggers and Packers asking those who had attended to complete if they wished to communicate any feedback from the event.

The Chair of STC reported that there had been interest expressed by several manufactures to take part in next year's Safety Day, and it was the intention to vary the content of the programme for next year.

4. MATTERS ARISING FROM THE STC MEETING OF THE 14 NOVEMBER 2019

There were no matters arising from the previous STC Minutes.

5. TANDEM HARNESS & CONTAINER SYSTEM – INITIAL ACCEPTANCE REQUEST

A proposed Tandem Harness & Container System – Initial acceptance request from Ralph Mitchell had been circulated with the agenda, together with the relevant paperwork.

It is requested that the Ex-military Relative Workshop Tandem Vector Container system (Serial No:43472, DOM: 2.4.06) & the Relative Workshop Harness, (Serial No: 40920, DOM: 28.09.04) be accepted for general use with the following modifications:

Extra-large 3 rings
Additional load ring & bellyband
Different RSL Setup under flap.

The British Skydiving Riggers endorsing the application were Pete Sizer (RE) and by David Gould (AR).

Following consideration, it was proposed by Gary Stevens and seconded by Josh Clark that the above request be accepted.

Carried Unanimously

The relevant paperwork, including drawings, would be attached to the Minutes for information (Appendix A).

6. RIGGERS COURSE REPORTS

There had been two Rigging Courses held since the last meeting. Copies of the reports had been circulated with the Agenda:

- i) British Skydiving expressed its thanks to Jason Farrant for kindly hosting the Course and also to Andy Shaw for allowing the Rigging room to be used at Skydive Buzz from the 2 – 6 December 2019.

The Examiners conducting the Course were: George Panagopoulos, Andy Shaw and Allan Hewitt.

There were 3 candidates on the Basic Riggers Course: Andy Goodall, Alex Dale and Ryan Clark. All candidates successfully completed the Course and were awarded Basic Rigger status.

There was 1 candidate on the PR Course: Cameron Clark successfully completed the Course and was awarded Parachute Rigger status.

Karen Saunders also attended the Course as an observer working towards her Rigger Examiner rating.

During the Course, the Examiners discussed a number of amendments to the British Skydiving rigging processes, which would be put forward for consideration at a future Riggers' Subcommittee meeting.

- ii) British Skydiving expressed its thanks to Target Skysports for hosting the Course from the 13 – 18 January 2020 and for allowing the use of the rigging room and their facilities for the duration of the Course.

The Examiners conducting the Course were: Noel Purcell and Pete Sizer.

There were 2 candidates on the Basic Riggers Course: Eloy Navarro Fisher and Benjamin Mitchell. Both candidates successfully completed the Course and were awarded Basic Rigger status.

There were 2 candidates on the Parachute Riggers Course: Jack Bradford and Ralph Mitchell. Both candidates successfully completed the Course and were awarded Parachute Rigger status.

Karen Saunders was assessed on her second phase of the requirements for Rigger Examiner status. The Examiners were satisfied for Karen to progress to the final phase of the process.

During the Course, the Examiners discussed the syllabi for each course, which would be discussed with other Examiners for their input.

7. PROPOSAL FROM GEORGE PANAGOPOULOS

A request from George Panagopoulos has been circulated with the Agenda to run an AP(S) Course at Netheravon to also include the test phase in the same time frame for Panayiotis Panayi.

George Panagopoulos had provided further details of his request, and had stated that Panayiotis was a current British Skydiving member and D Licence holder who is a club member at the DZ in Dhekelia, Cyprus. He started packing reserves from September 2003 under the Greek/Cypriot Mil system and has completed a total of 880 reserve repacks to date.

Following consideration, it was proposed by Rick Boardman and seconded by Karen Saunders that the above request be accepted.

Carried Unanimously

This request had highlighted the fact that there were currently no rules or procedures for integrating a non-British Skydiving Packer or Rigger into the British Skydiving system.

Following discussion, it was agreed by those present that the Committee look at developing a syllabus for non-British Skydiving-rated Packers and Riggers in the same way that is already in place for non-British Skydiving qualified Instructors.

The Chair asked for further input on this subject to be sent to him direct.

8. DISCUSSION ON RESERVE RE-PACK CYCLES

Allan Hewitt had asked the Riggers' Subcommittee to discuss the British Skydiving reserve repack cycles.

Allan had reported that a number of countries around the world operate to a 12 months reserve repack cycle, and he had asked for the views from British Skydiving Riggers with regard to the UK following the same international standards.

The Chair reported that E-mail correspondence had been received from George Panagopoulos and Andy Shaw with their views on this subject.

Allan Hewitt stated that following research with other organisations, he believed that by extending the reserve repack cycle for non-Student/Tandem equipment, it would in his opinion create a much better system for the UK Riggers because of the pressures and time constraints they currently face.

This subject generated a great deal of discussion, which in turn led to other matters relating to reserve packing being discussed.

Allan Hewitt reported that research had shown that increased handling led to greater degradation to the reserve canopy. Obviously, this would lessen if the re-pack cycle was increased. However, concerns were also raised by Riggers present regarding the increase in wear and tear and faults that would be evident on the container if the repack cycle is extended.

The Committee believed that much more research was needed to justify a reason for changing the current system. It was therefore agreed that a Working Group be formed to look at the whole subject area of reserve packing,

The Chair requested further input from Riggers, so that a terms of reference for the Working Group could be established.

9. EQUIPMENT-RELATED INCIDENT REPORT RÉSUMÉ

The Chair STC reported that the following equipment-related incident report had been received since the last meeting:

On 23 November 2019, during the inspection of a parachute system at a PTOs. During the inspection process, it was discovered that the end of the reserve ripcord cable was not in place around the reserve pin on the end of the RSL. Therefore, if the RSL was disconnected or the jumper had a total malfunction, they would have had no method of manually deploying the reserve.

The equipment was an Icon SF, Smart 190 reserve with a Vigil quattro AAD.

The Chair STC reported that due to the severity of the incident, the Packer and Rigger ratings of the Packer concerned had been suspended immediately, and would remain suspended until they undertook a complete reassessment of their packing procedures, which had yet to take place.

The Packer concerned was also requested to provide a list of names and dates for all previous pack jobs going back 6 months from the date of the suspension, and required to inform all those on the list to have their equipment inspected by another qualified packer or Rigger.

The Chair STC provided the meeting with further details of this incident and was able to answer a number of questions from those present. He stated that one of the issues that this incident had highlighted was the inability to trace some of the equipment owners, due to lack of contact information on the ROI sheet.

This prompted some discussion from those present, and it was felt that consideration be given to including a section on the ROI sheet for recording the name and contact details of the equipment owner.

In the meantime, the Committee recommends that Riggers and Packers record the name and contact number of the equipment owner on the ROI sheet for traceability purposes.

10. **ADVANCED PACKER (AP) COURSE REPORTS**

The following Advanced Packer Courses have been held since the last meeting:

- i) George Panagopoulos has run an AP Examination at Netheravon from 18 – 19 November 2019. The Course was attended by Dave Keevers who successfully completed the course and was awarded AP (Grade S) status.
- ii) Andy Shaw has run an AP Training Course at Dunkeswell from the 18 – 21 November 2019. The Course was attended by Alexander Potter, who was advised to practice under supervision in preparation for the examination phase of the Course at a later date.
- iii) Gary Stevens has run an AP Training Course at Rhomech Rigging from 21 – 24 November 2019. The Course was attended by Thomas Ward, who was advised to practice under supervision in preparation for the examination phase of the Course at a later date.
- iv) Pete Sizer has run an AP Examination Course at Skydive Headcorn from 25 – 26 November 2019. The Course was attended by Ryan Clark, who successfully completed the Course and was awarded AP (Grade S) status.
- v) George Panagopoulos has run an AP Examination at Netheravon from 26 – 27 November 2019. The Course was attended by Andy Clark who successfully completed the course and was awarded AP (Grade S) status.
- vi) Pete Sizer has run an AP Training Course at Skydive Headcorn from 25 – 28 November 2019. The Course was attended by Lucy Smith and Hayley Jones, both of whom were advised to practice under supervision in preparation for the examination phase of the Course at a later date.
- vii) Noel Purcell has run an AP Training Course at Skydive Hibaldstow from 4 – 7 December 2019. The Course was attended by Eloy Navarro Fisher, Charlie Diprose and Benjamin Fenwick. All candidates were advised to practice under supervision in preparation for the examination phase of the Course at a later date.
- viii) Noel Purcell has run an AP Examination Course at Hibaldstow from 7 – 8 January 2020. The Course was attended by Eloy Navarro Fisher, who successfully completed the Course and was awarded AP (Grade S) status.

11. **British Skydiving Safety Notices/Information Bulletins**

There had been one British Skydiving Safety Information Bulletin (SI 03/19) issued since the last meeting. This SI had been raised following a serious Tandem incident in November 2019, as reported at the Riggers' Subcommittee meeting on 14 November 2019 (Item 8 (ii) refers).

The Chair reported that 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. He stated that 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.

It appears from the information obtained that if the disconnection of the RSL on Next Tandem System is not an isolated incident and these shackles may come undone with ease.

It was felt that a number of safety points must be considered during Tandem operations. Full details of which are included in SI 03/2019, which would be attached to the Minutes for information (Appendix B).

12. Manufacturers' Safety Notices/Information Bulletins

British Skydiving HQ had not been notified of any new manufacturers' Safety Notices or Information Bulletins.

13. A.O.B.

- i) Circulated to those present was a chart that gives the maximum all-up weights (MAUW) for various Icarus Tandem canopies manufactured by different companies, as they differ depending where they are made.

The Chair stated that when reporting Tandem incidents or Tandem injuries on an Icarus Tandem canopy it is important that the manufacturer's name (from the data panel) is stated. If the manufacturer's name is not reported it can be difficult to demonstrate that you have been operating within the specified MAUW.

Noel Purcell stated that when determining MAUW, jumpers should also be including the reserve canopy.

A copy of the MAUW chart for Icarus Tandem canopies would be attached to the Minutes for information (Appendix C).

- ii) The Chair reported that at the Tandem Instructors' Personal Development & Safety Day, held on the Industry Day at Skydive the Expo 2020, Noel Purcell had presented statistical findings for the last 4 years regarding Tandem injuries and incidents.

Noel Purcell made a number of comments to those present regarding the statistics relating to Tandem malfunctions that had been caused by packing errors. He reported that in 2019, there had been 59 Tandem malfunction deployments, 75% of which were directly caused by packing issues, not including twists. However, if twists were included, then 88% of the malfunction activations were caused by packing errors.

A résumé of Noel Purcell's statistical analysis would be circulated with the Minutes for information.

12. DATES OF 2020 MEETINGS

The dates of 2020 Riggers' Subcommittee Meetings are as follows:

2 April, 28 May, 23 July,
17 September, 12 November.
Thursdays at 17:00 at British Skydiving HQ

Distribution:

Chair Riggers' Subcommittee, All CIs, All Riggers, APs, Council, CAA, Editor – Skydive

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TANDEM HARNESSES & CONTAINER SYSTEM – INITIAL ACCEPTANCE

This form is to be used when requesting BPA acceptance and approval for new Tandem Harness and Container systems. Two Adv. Riggers must recommend. The details shown below are required so that a true and clear record can be kept, showing exactly what was on the container at the time of its acceptance. This will be helpful in the future to determine whether a manufacturer's 'upgrade' to an existing system is either a minor change (requiring BPA Form 209 - Student Equipment Change Application) or a major change, perhaps requiring a new separate acceptance, again using this form.

DETAILS OF ADVANCED RIGGERS RECOMMENDATIONS

Advance Rigger's Recommendation: *[Signature]*

Advanced Rigger's Details: PA SIZER RE 186

Independent Advanced Rigger's Details: DAVID GOULD NR 197

Name of Parachute Training Organisation:

DETAILS OF CONTAINER & HARNESSES

Name and Model: VECTOR TANDEM * 43472 2.4.06

Manufacturer's Name: RELATIVE WORKSHOP * 40920 28.9.04

TSO Type & Category:

Postal Address:

Website Address:

INSTRUCTORS HARNESS DETAILS :

a: 3 Ring: Large: Y/N Other: EXTRA LARGE

b: Harness Type: Y/N Hip rings: /N Chest rings /N Adjustable MLW Y/

c: RSL type: Shackle Y/ Link /N

d: Emergency handles: Pad/Handle: Y/N Pad/Pad Y/N

e: DRD: /N

f: Drogue Diameter: Drogue Release:

g: Leg straps: B12 Snaps Y/ Step in /N

h: Other relevant details: EX MILITARY TANDEM VECTOR WITH EXTRA LARGE B12 SNAPS
ADDITIONAL LOAD RING + BELLY BAND
DIFFERENT RSL SETUP UNDER FLAP

CONTAINER DETAILS:

- a: AAD set up type: 'Cypres' type Other?:
- b: AAD Manufacturer, make and model:
- c: Postal Address
- d: Website Address:
- e: Main deployment: Primary
- Secondary

f: Other relevant details:



- a: Name and Model: ...
- b: Size of reserve:
- c: Serial number:
- d: Manufacturer's Name:
- e: Postal Address:
- f: Website Address:

- a: Name and Model:
- b: Manufacturer's Name:

c: TSO Type

d: Postal Address:

e: Website Address:

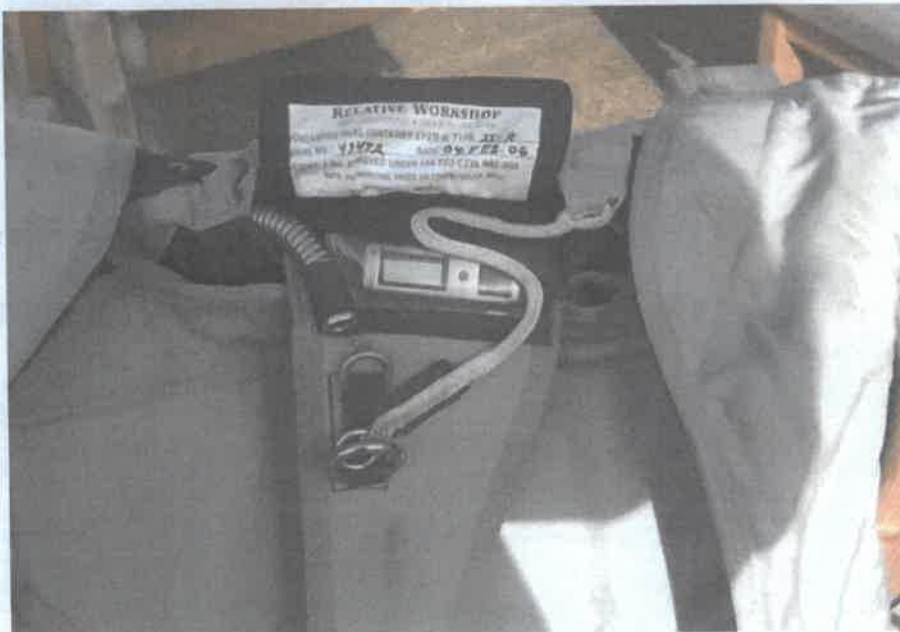
f: Harness Type:

h: Legstraps:

i: Main Attachment:

e: Side adjustment:

f: Other relevant details:



Y/N

Y/N
Y/N

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

Jeff Montgomery
Safety & Technical Officer

Pete Sizer
Chairman Riggers' Subcommittee

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POTENTIAL FOR CONFUSION OVER MAXIMUM EXIT WEIGHTS FOR "ICARUS" TANDEM CANOPIES

| MAXIMUM ALL UP WEIGHTS FOR "ICARUS" TANDEM CANOPIES (lbs) | | | | |
|---|-----|---------------|----------------------------------|------------|
| MANUFACTURER: | | NZ Aerosports | CIMSА/IcarusWorld/IcarusCanopies | |
| CANOPY NAME: | | Icarus Tandem | Icarus Tandem | TX2 Tandem |
| S I Z E | 300 | 500 | 399 * | - |
| | 310 | - | - | 500 |
| | 330 | 500 | 441 * | 500 |
| | 365 | 500 | 487 * | 500 |
| | 400 | 500 | 534 * | 500 |

* converted from Kg

Icarus tandem canopies were originally made by NZ Aerosports and then also by CIMSА/IcarusWorld under licence from NZ Aerosports. The two manufacturers have rated their canopies' maximum all up weights (MAUW) in quite different ways. Tandem instructors jumping an Icarus main need to know the MAUW allowed on their canopy. This can be checked on the data panel of the canopy, if it is still legible, or they can check the size and manufacturer and refer to the table above.

MAUW (also known as Exit Weight) is the combined weight of tandem instructor, tandem student, tandem parachute system including both canopies, tandem student harness, all jumpsuits/clothing/helmets/cameras. While you would have to make some effort to find a tandem pair that would exceed the 500 lb limit, it is relatively easy to exceed the limit on some of the smaller Icarus tandem canopies.

When reporting tandem incidents or tandem injuries on an Icarus tandem canopy, please report the manufacturers name (from the data panel). If the manufacturers name is not reported, it can be difficult to demonstrate that you have been operating within the specified MAUW.