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SERVICE BULLETIN

DATE: July 27, 2011

SERVICE BULLETIN #: 2011001

SUBJECT: ICARUS Canopies - NEOS hard openings

STATUS: SERVICE HIGHLY RECOMMENDED

#OF PAGES: 3 pages

IDENTIFICATION:

This Service bulletin is applicable to all NEOS parachutes P/N 317524-XXX for Serial Numbers prior to 24112612 in all canopy sizes.

BACKGROUND:

The NEOS is a highly elliptical, ARC braced, high performance canopy with one of the most predictable on-heading deployments in the market today. Since it was introduced we have been receiving an increased number of complaints about occasional hard openings. Even though most NEOS canopies present soft on-heading openings, a few of them seem to produce random hard openings more frequently.

In order to understand the phenomena causing the hard openings to occur, we had to replicate the problem in-house. The randomness of the hard openings resulted in no video documentation. We initiated an investigation but found many difficulties in replicating the hard openings. Finally, we gathered a number of problematic canopies from the field, and put them through a comprehensive test program. After some time, we finally managed to reproduce hard openings under video monitoring that allowed us to develop an understanding of the source of the problem. By test jumping extreme variations of the problem, we managed to develop a solution that responded to our expectations. After hundreds of jumps to consolidate the change, we have revised the line set specification by modifying the length of one outer suspension line on each side of the canopy. This modification does not change the other performance characteristics of the canopy.

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All NEOS parachutes identified in this document shall be upgraded following these procedures.

An inspection/operation must be performed by a FAA Certified Master/Senior Parachute Rigger, foreign equivalent, or ICARUS Canopies.

The Inspector must perform the following steps:



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1. Follow the Technical Order OTEC870017-NEOS MODIFICATION
2. Produce a Record by completing the Form below, with the following information:
 - a. Parachute Part Number
 - b. Canopy Size (in square feet)
 - c. Serial Number
 - d. Manufacturing Data (DOM)
 - e. Explain the service done. C1 lines changed and checked. Warning Label "C1" identification MARK.
 - f. Name, Address, Phone Number, e-mail, of FAA Certified Master/Senior Parachute Rigger or foreign equivalent.
 - g. Date of service.

3. Send the Record to

ICARUS Canopies

icarusorders.eu@icaruscanopies.aero

COMPLIANCE DATE:

As soon as possible, prior to next use

AUTHORITY:

ICARUS Canopies

DISTRIBUTION:

1. ICARUS Canopies website, Facebook, and Dropzone.com
2. ICARUS Canopies dealer network

REFERENCE DOCUMENTS:

OTEC870017 NEOS MODIFICATION



INSPECTION/OPERATION RECORD

RECORD DATE: _____

TECHNICAL ORDER		OTEC870017
MASTER/SENIOR RIGGER DATA:		
NAME:		
ADDRESS:		
PHONE #:		
E-MAIL:		
CANOPY SIZE (ft ²)		
SERIAL NUMBER		
MANUFACTURING DATE		
DESCRIPTION OF SERVICE	C1 LINES CHANGED	
	STOP SLIDER POSITION CHECKED	
	WARNING LABEL "C1" MARKED	
SERVICE DATE		

Purpose: To provide detailed instructions describing how to replace the C1 lines on NEOS canopies.

Applicability: This Technical Order is applicable to the following canopies: P/N 317524-XXX NEOS with Serial Numbers PRIOR to 24112612.

Edition:

Revision	Written by	Aproved by	Date
Initial-00	Óscar Santos	F. Zapirain	August 29 th 2011

Authorized Repairman: FAA Senior or Master Parachute Rigger (or foreign equivalent).

Materials:

P/N	DESCRIPTION / DESCRIPCIÓN	QTY.
K-317524-XXX	Neos Repair Kit (2 x C1 line)	1

Note: XXX corresponds to the size of the canopy. Check that the size of your Kit is the same as the size of your Neos canopy.

Procedure:

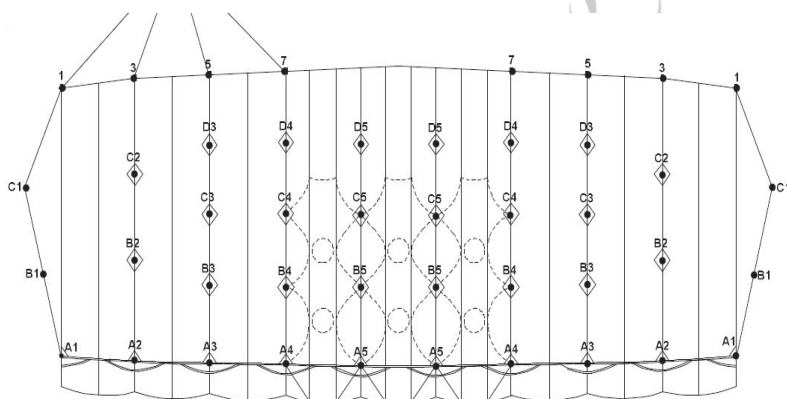


Fig. 1. Distribution of the lines in the Neos canopy.

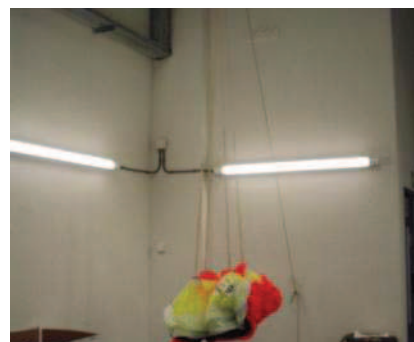


Fig. 2. Hang the canopy with the suspension lines at the same height. If the parachute is assembled on risers, make sure that they are the same length.

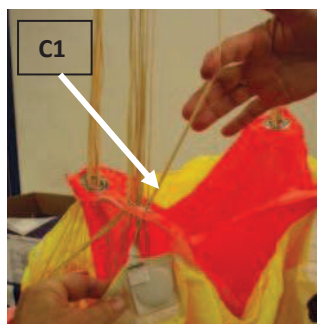


Fig. 3. Follow the C1 line from the canopy to the quick link.

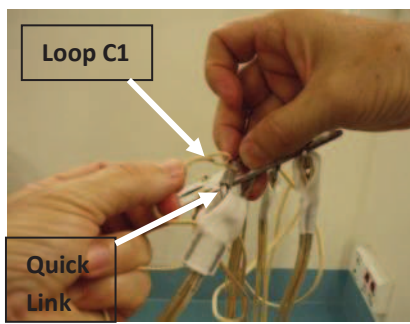


Fig. 4. Remove the C1 line from the quick link.

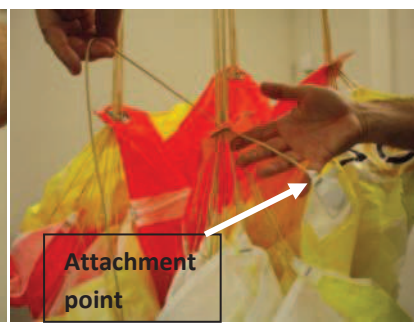


Fig. 5. Follow the C1 line to the attachment point.

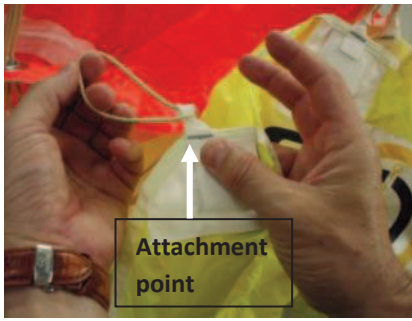


Fig. 6. Undo the knot at the attachment point.

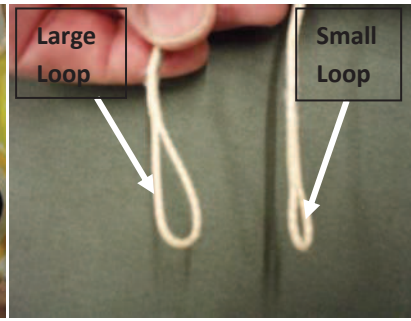


Fig. 7. Identify the large and small loops at the ends of the new C1 lines provided.

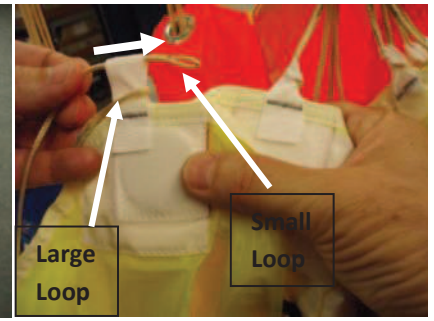


Fig. 8. First, pass the canopy attachment point through the large loop. Then pass the small loop through the attachment point.

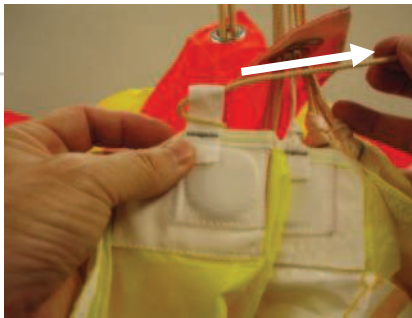


Fig. 9. Apply tension on the C1 line to fix the knot.



Fig. 10. Check the knot orientation line to fix the knot.

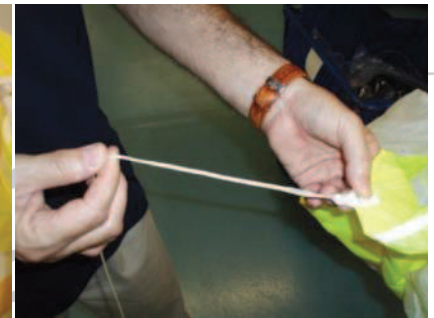


Fig. 11. Make sure there is no twist along the C1 line.



Fig. 12. Pass the C1 line through the corresponding slider grommet.

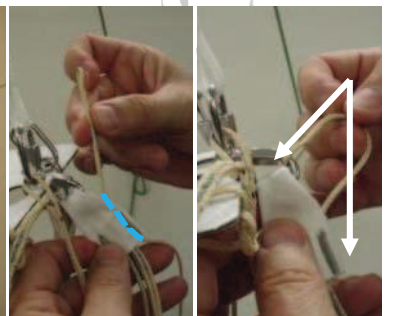


Fig. 13. Pass the line through the corresponding bumper. Attach the small loop of the C1 line to the corresponding quick link.

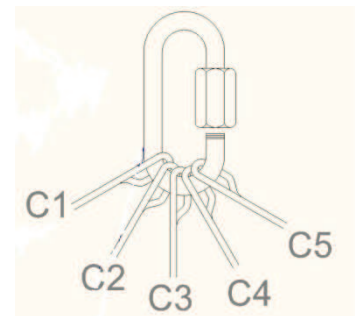


Fig. 14. The position of the C1 line attached to the quick link has to be at the outer position, as shown in Fig. 14, in both C1 lines.



Fig. 15. Take the C1 and B1 attachments and check that they are at the same height.

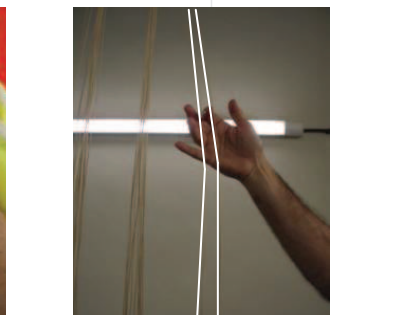


Fig. 16. Check that the line is not entangled.



Fig. 17. When the modification is completed, mark "C1" with permanent marker in the inspector box on the warning label.