

**HOT AIR BALLOON
MAINTENANCE
MANUAL
BALLONS CHAIZE
HOT AIR BALLOONS
TCDS EASA.BA.015**

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This manual Provides the maintenance instructions and inspection schedule for all type and variants detailed in EASA.BA.015 as required by EASA Certification Specification CS31HB



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HABMM-1806001
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MAINTENANCE AND AIRWORTHINESS MANUAL

BALLONS CHAIZE HOT AIR BALLOONS

Concerning this document

Models Concerned

This manual is valid for all type and variants detailed in EASA.BA.015 as required by EASA Certification Specification CS31HB .

Constructor:



Ballons Chaize SARL
Chemin de Mirecouly
07100 Annonay
contact@les-ballons-chaize.fr



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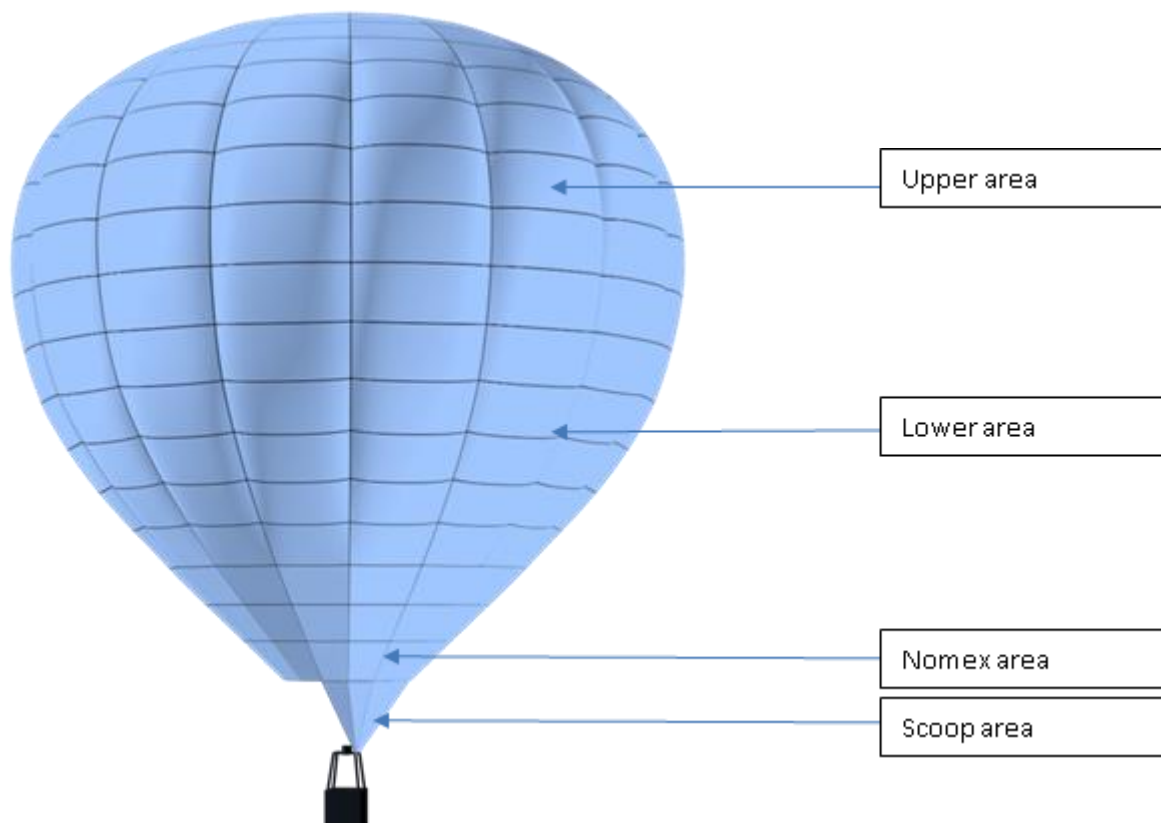
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SECTION I. OVERVIEW

The present manual describes how to repair, maintain and inspect Ballons Chaize hot air balloons.

Hot air balloons are aircraft and as such must be attended to and maintained by qualified persons or by authorised workshops recognised by the country of registration. Certain simple operations may be performed by the owner pilot.



I.1 Repairs Limitation

The approved data for the following repairs can be obtained from Ballons Chaize.

- Envelopes Replacement of more than 75% of the fabric gores constituting the original delivery.
- Basket: Replacement of more than 25% of the basket wickerwork.



The envelope cables must be ordered in clamped form, from Ballons Chaize.

I.2 Repairs performed by the owner pilot

The following tasks may be performed by the owner pilot, in line with Appendix VII of Part M of the EASA regulations.

Tasks performed by the owner pilot must be entered in the flight log.

- Placing a self-sticking patch without stitches below the equator over a hole, not exceeding 5 cm in length and at least 2 cm from any stitching.
- Replacing the fuse
- Changing the crown line – the cord must be replaced using equipment approved by Ballons Chaize.
- Changing the envelope's carabiners – the carabiner must be replaced with a carabiner provided by Ballons Chaize and accompanied by a Form 1.
- Repairs to the scoop
- Repairing the leather of the handrail on the basket
- Repairing the basket cladding
- Changing the basket's carabiners – the carabiner must be replaced with a carabiner provided by Ballons Chaize and accompanied by a Form 1.

For the burners, cylinders or other components from other manufacturers, please refer to the manufacturer's maintenance manual.



I.3 Spare parts and equipment

➤ **Items that must be provided by Ballons Chaize with a Form 1**

Product Designation	Reference
Identification Tag	BC-0002
Fuse	BC-0066
Crown ring for DC	BC-0071
Crown ring for JZ, JZX, SW	BC-0042
Slings, according to size	BC-0100
Crown ring for CS, JZ, JZX, SW	BC-0064
Parachute window	BC-0201
Window first gore	BC-0202

➤ **Items that must be provided by Ballons Chaize with a certificate of compliance**

Pulleys	
Rea Pulley 35 mm for parachute or FDS	FV 1327
Rea Pulley 35 mm for parachute or FDS former model	FV 1326
Rea 18 for Vent halyards	FV 1331
Rea 12 for 4 mm FDS halyards	FV 1353
Metrology	
Temperature indicator	FI 1103
Fuse	FI 1106
Fittings	
Sister clip	FV 1330
Stainless Steel Ring; aperture 1,5 cm for FDS	FV 1354



Stainless Steel Ring; aperture 2 cm for line guiding	FV 1357
Non-locking aluminium carabiners	FV 1333
Non-locking aluminium carabiners	FV 1324
All-balloon steel carabiners	FV 1325
Aluminium carabiners for DC only	FV 1356
Cords and tapes	
Crown line 10 mm	FX 1610
Red parachute line 8mm	FX 1607-R
White and red parachute line 8mm	FX 1617-BR
Parachute suspension halyard	FX 1605
FDS parachute suspension halyard	FX 1615
Green vent halyard 4 mm	FX 1614-V
Black vent halyard 4 mm	FX 1614-N
Load halyard for Dawn Chaser 3 Mm	FX 1618
Load tape 15 mm	FX 1509
Polyester load tape 25mm	FX 1503
Polyester load tape 20mm	FX 1502

➤ **Fabric**

All fabrics must be made from the same material as was used in the original panel. Only Ballons Chaize qualified materials can be used.

A list of fabric provider with certified and qualified fabrics references by Ballons Chaize can be obtained on request

➤ **Sewing thread**

Two types of thread may be used:

- Serafil 30 for all sewing
- Nomex 40 thread: certain stitches on balloon lower part



SECTION II. AIRWORTHINESS LIMITS

II.1 Introduction

This section is approved by the EASA and describes maintenance prerequisites for all aircraft and aircraft components described in TCDS EASA.BA.015

II.2 Inspection Period

Manufacturer	Components	Calendar	Permitted Variation	Flight hours	Permitted Variation
Ballons Chaize	Envelope	Annual	1 month	100 Hr	10 Hr
	Basket				
Cameron / Lindstrand / Sky Balloons	Basket	Annual	1 month	100 Hr	10 Hr
	Burner				
	Cylinders	Annual	1 month	None	None
	Cylinders	10 Years	3 months	None	None
Ultramagic (*)	Basket	Annual	30 days	100 Hr	None
	Burner				
	Cylinders	Annual	None	None	None
Kubiceck	All	Annual	None	100 Hr	None
	Cylinders	10 years	None	None	None
Schroeder Fire Balloos	All	Annual	None	100 Hr	None

(*) For Ultramagic, the inspections may be extended out of the limits only where the following conditions are met:

- The extension is not greater than 30 days and 100 flights hours are not exceeded since last inspections
- The provision is not adopted as a regular basis
- The extension is recorded and signed in the aircraft logbook
- The Extension is justified and approved by the person or organization responsible for the continued airworthiness management



- The extension does not concern components subject to service life limitations and or AD
- No instruction against the use of the extension have been set beforehand on previous inspections.

II.3 Personnel

Inspections must be carried out by a person or organisation approved by the national authority, or by the competent national authority.

II.4 Inspection Procedure

Inspection procedures are described in “SECTION IV Maintenance scheduling” of the present manual.

II.5 Component Life Cycles

When a component's life cycle is complete, it must be replaced by a component provided by the manufacturer. The replacement must be written up in the aircraft's flight log, formalised by an APRS and/or an entry in the aircraft component works dossier, accompanied by a Form 1.

Components without a limited life cycle must be replaced when they are worn or damaged.

For any details on cylinder or burner components, please refer to the manufacturer's manual.

Maintenance tasks can be found in the MM referenced in the following TCDS	Component	Service Life Limit
Cameron Balloons Limited TCDS.EASA.BA.506 TCDS.EASA.BA.501 TCDS.EASA.BA.021 TCDS.EASA.BA.503 TCDS.EASA.BA.502 TCDS.EASA.BA.504 TCDS.EASA.BA.505 TCDS.EASA.BA.013	Cylinder Pressure Relief valve	10 years (maximum storage life prior to installation 5 years)
	All burners hoses	10 years
Ultramagic SA TCDS.EASA.BA.014	Cylinder Pressure Relief Valve	10 years from date of supply (if not marked refer to D-Type inspection as specified in ultramagic maintenance manual)
SCHROEDER FIRE BALLONS GmbH	Burner Hoses	10 years of packaging (date on crimped hose sleeve on the fuel cylinder end)



TCDS.EASA.BA.016	Cylinder Pressure Relief valve	10 years (maximum storage life prior to installation 5 years) (see chapter 0 of Schroeder Fire Balloon maintenance manual for more details)
Balony Kubiceck spol s.r.o	Cylinder Pressure Relief valve	10 years (maximum storage life prior to installation 5 years) (date on crimped hose sleeve)
TCDS.EASA.BA.003 TCDS.EASA.BA.002 TCDS.EASA.BA.001 TCDS.EASA.BA.004	Burner Hoses	10 years

II.6 Minimum fabric strength

The envelope fabric has no life limitation. Its tear strength resistance is the limiting factor. The minimum value described in the chapter “IV.4 Grab test” must be achieved at every location of the envelope.

Grab test procedure is described in chapter “ III.1.6 Performing a grab test” minimum strength is 13.3 Kg

If the strength is close to the limit, the inspector may stipulate a pre-mature repetition of the grab-test (e.g. after further 50 operating hours). Refer to Grab-Test procedure “IV.4 Grab test”.

The parachute edge fabric resistance (up to 20 cm from the outside of the parachute) is not a limiting factor.



SECTION III. MAINTENANCE OPERATIONS

III.1 Envelope

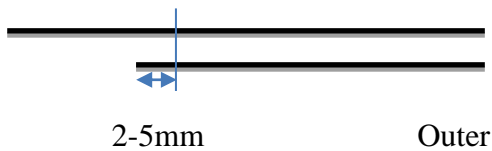
III.1.1 Overview

Form any replacement or repair, we recommend that you first take a look at an undamaged part of the balloon to see how the components should be assembled.

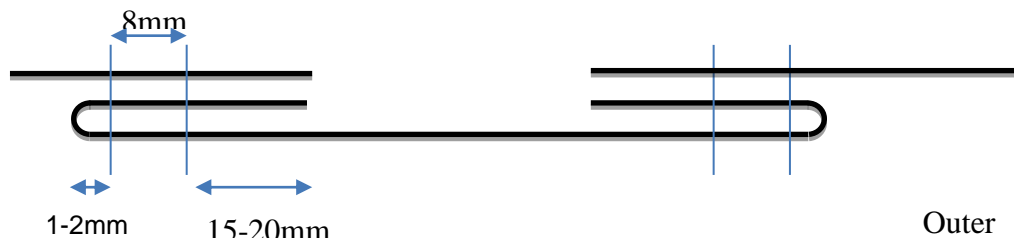
➤ **Machine adjustment**

	Needle size	Stitch length	Stitch width	Spacing
Double Stitching	110 / 120	2-6mm	NA	8mm
Single Stitching	110 / 120	2-6mm	NA	NA
Zigzag Stitching	110 / 120	3-4mm	3-4mm	NA

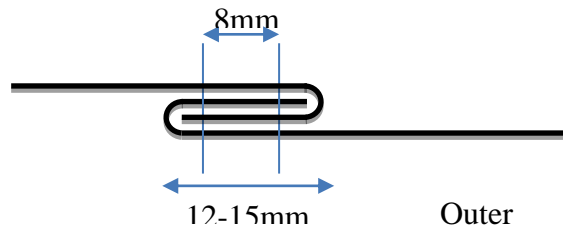
➤ **Single stitching**



➤ **Flat seams**



➤ **French Fell stitching**



III.1.2 Repairing the fabric

Summary of repairs and limits

Damage		Authorised workshop or organisation recognised by the national authority	Aeronautical Mechanic in possession of a Part 66 license or equivalent with the corresponding rating.	Owner pilot	Repair method
Repair requiring that more than 50% of the panel be changed or requiring more than 10 self-adhesive patches or more than 3 stitched patches. Any area of the envelope		Yes	No	No	Replacing an entire panel
Less than 50% of the panel is damaged Any area of the envelope		Yes	No	No	Partial replacement of a panel
The hole measures less than 15 cm	Above the equator	Yes	No	No	Fitting a stitched patch
	Bellow the equator	Yes	Yes	No	Fitting a stitched patch
The hole measures less than 5 cm and is more than 2 cm away from any stitching	Above the equator	Yes	Yes	Yes	Fitting a self-adhesive patch
	Bellow the equator	Yes	Yes	Yes	Fitting a self-adhesive patch



III.1.2.1 Panel replacement procedure

➤ **Applicability**

It is necessary to replace the entire panel when:

- more than 50% of its area is damaged or
- it has more than 10 adhesive patches or
- more than 3 stitched patches.

➤ **Procedure**

1. Measure an undamaged panel in place, add 4.5 cm for the sewing room.
2. Remove the stitching around the existing damaged panel and extend the unstitching over 5 to 10 cm in all directions around the panel.
3. Cut out the replacement panel from a piece of approved fabric using the above-mentioned measurements; follow the same warp and weft orientation.
4. Stitch the gore into place using French fell (balloon) stitching (right hand edge over left-hand edge; lower edge over upper edge). No part of the balloon must be cut when adjusting the size.
5. Stitch the tapes back into place if required; they must be stitched over the fell stitching, using a double needle sewing machine, the tapes must not be cut; if necessary proper tension while stitching should be used to reduce the sinkage.



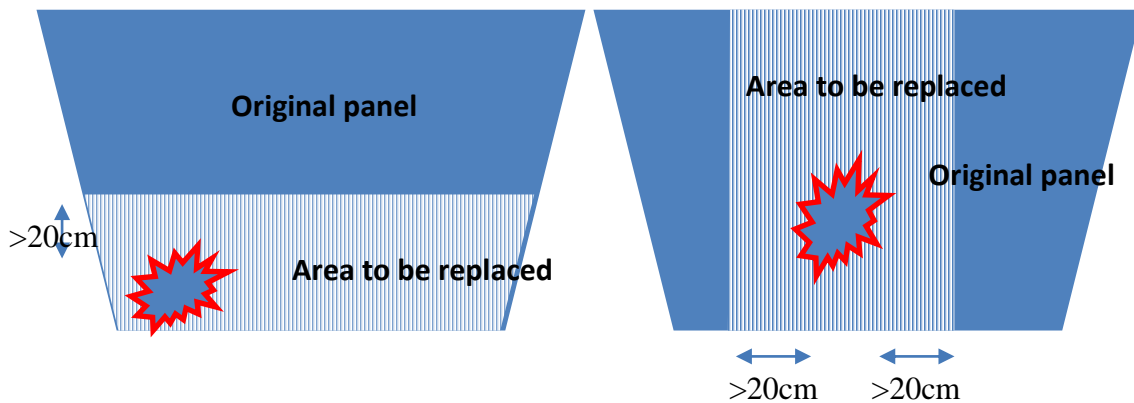
III.1.2.2 Partial replacement of a gore

➤ Applicability

When the panel is damaged over more than 50% of its area, and the tear/hole measures more than 15 cm in diameter, it is necessary to partly replace the panel, using the following procedure.

➤ Procedure

Determine which part of the area is to be replaced. Preserve a margin of at least 20 cm around the damaged area. (see diagram)



Unstitch the sewed parts of the panel that must be replaced and cut out the damaged part of the gore as determined above.

Use the cut out piece as a jig to cut out a new piece using approved fabric with equivalent characteristics (hyperlast, standard ripstop, light ripstop); preserve an adequate margin for the sewing room.

Stitch the piece into place using French fell stitching (right hand edge over left-hand edge; lower edge over upper edge). No part of the balloon must be cut when adjusting the size.

When the tape or tapes in place, stitch them back in.



III.1.2.3 Fitting a stitched patch

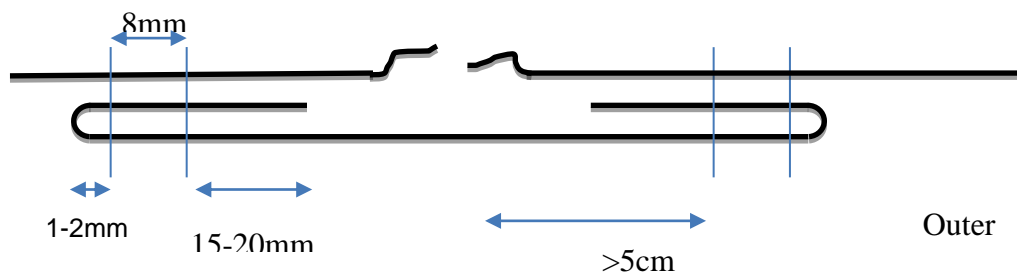
➤ **Applicability**

If a hole measures less than 15 cm above the equator and less than 20 cm below the equator, you may fit a stitched patch using flat seams.

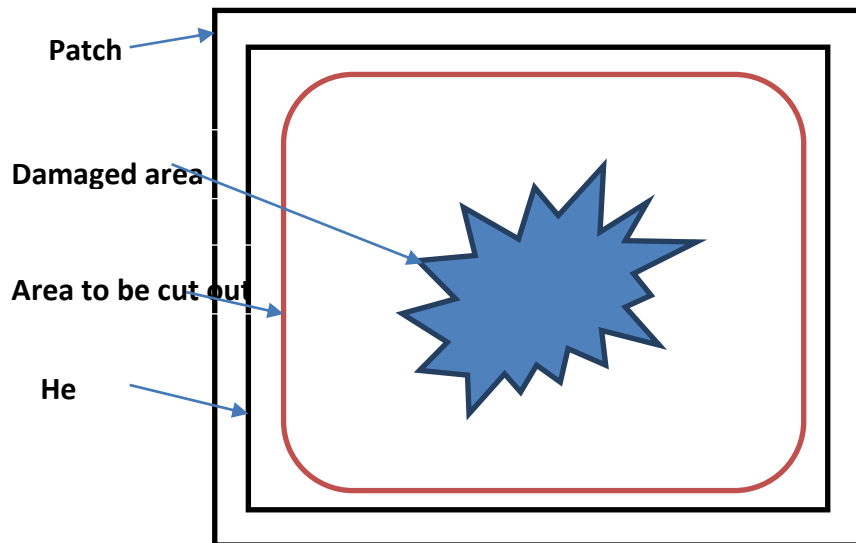
➤ **Procedure**

Cut out a rectangle from a piece of approved fabric measuring at least 5 cm more than the hole.

Sew it into place on the panel with a hem, and using a flat seam.



Cut out the initial gore behind the stitched patch, always maintaining 2 cm distance from the stitching, and never creating any sharp angles.



III.1.2.4 Fitting a self-adhesive patch

➤ Applicability

For holes measuring less than 2 cm, and less than 5 cm below the equator; if the hole is situated more than 2 cm from any stitching, you may use a self-adhesive patch.

➤ Procedure

On ripstop fabric:

- Cut out two self adhesive patches (round off the corners) so as to cover the hole with a margin of at least 2 cm.
- Fit the first patch on the outside.
- Fit the second patch on the inside.

On hyperlast:

- Fit the patch on the outside as you would on ripstop, and stitch the edge circumference using single stitching.



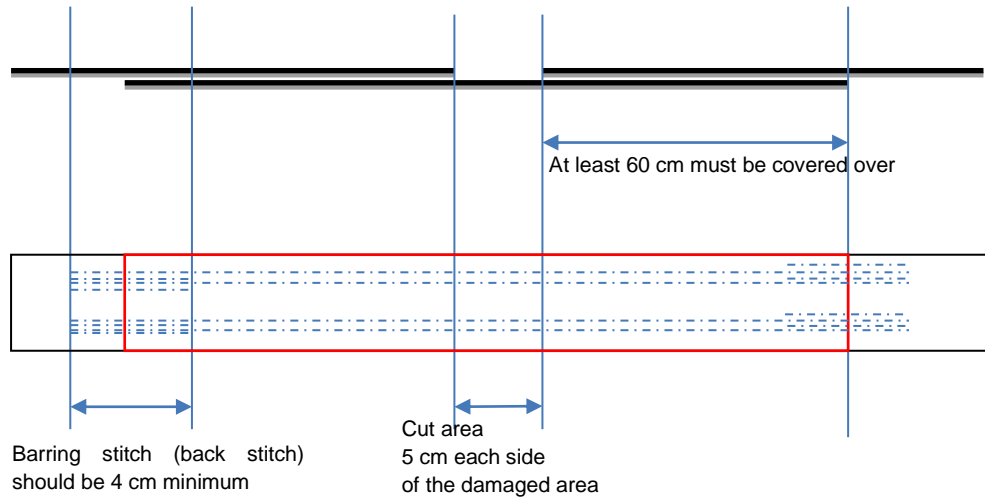
III.1.3 Repairing tapes

Tapes must be replaced using tapes with the same characteristics as the original tapes. Contact Ballons Chaize if in doubt.

Damage	Authorised workshop or organisation recognised by the national authority	Aeronautical Mechanic in possession of a Part 66 license or equivalent with the corresponding rating.	Owner pilot
Horizontal or vertical tape	Yes	No	No
On spider junctions	Yes	Yes	No
On the spider vertical tape	Yes	No	No

III.1.3.1 Repairs to vertical and horizontal tapes

1. Unstitch the tape along 60 cm on either side of the damaged area.
2. Use a hot knife to cut the damaged tape, 5 cm away from the damaged area.
3. Prepare a replacement tape measuring at least 1 m 20 more than the damaged area.
4. Join the tapes with at least 60 cm overlap on either side. Make a 4 cm barring stitch (back stitch) overlapping the existing tape and the new tape, at the start and at the end of the tape. Stitch over twice, i.e. four times in all.
5. Stitch the tape into place on the balloon

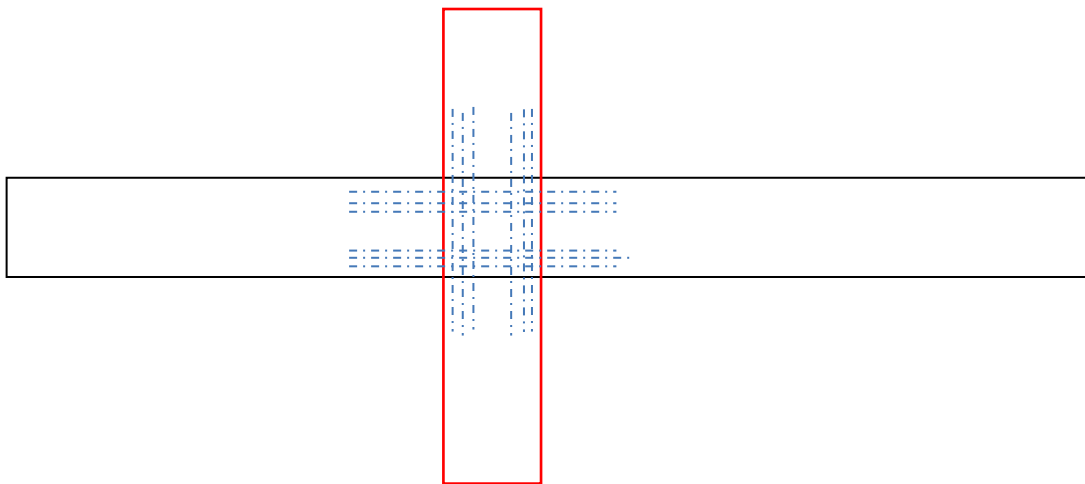




III.1.3.2 Repairing the parachute aperture edge tape crosspiece

In order to re-stitch the parachute aperture edge tape,

1. Place the tapes;
2. Make 2 horizontal and vertical double stitched barring stitches, stitching 1 cm further either side of the crosspiece.

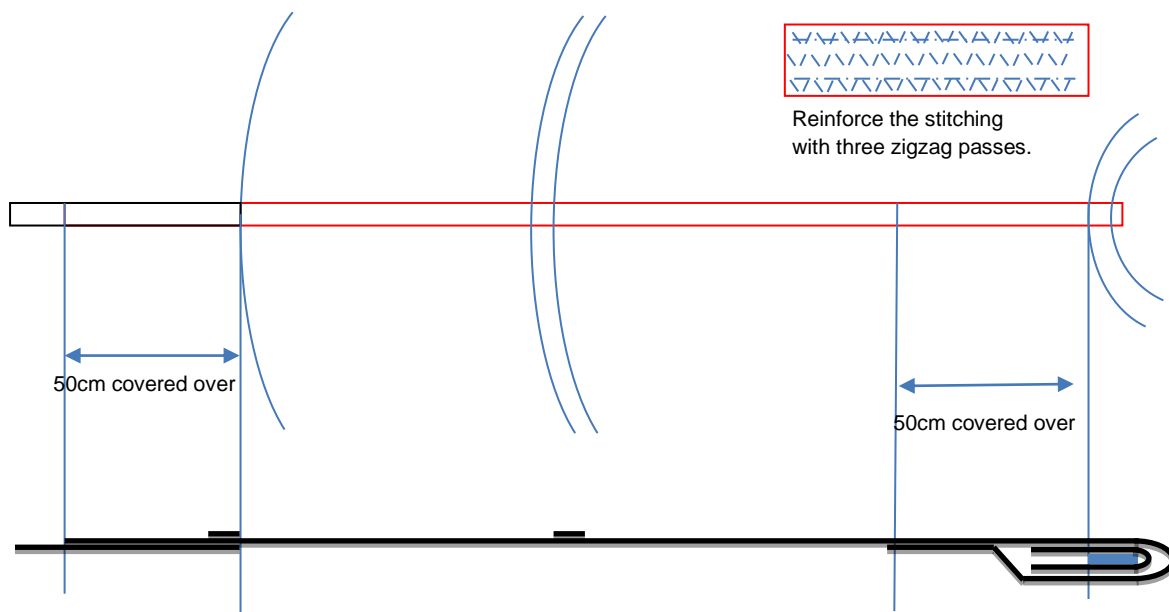




III.1.3.3 Repairing the parachute aperture tapes

If the vertical tapes are damaged, replace them entirely.

1. If there is a horizontal tape, mark it at the parachute aperture edge tape level (crosspiece).
2. Unpick the crosspiece (undo the stitching)
3. Unpick the tape along 60 cm at the apex of the envelope, and hot cut it at the level of the aperture.
4. Unpick (unstitch) the tape at the crown ring.
5. Measure the length of one of the undamaged tapes. Then measure the needed length of reinforcement on the unstitched tape.
6. Cut out the replacement tapes. (Leave a fold-over of 50 cm of the main tape, as well as 50 cm to cover the old tape).
7. Fit the reinforcement on the tape. Centre it on the fold back point.
8. Splice the rest of the original tape with the new end.
9. Stitch the tape into place on the envelope.
10. Stitch the tape to the crown ring using a double needle; perform three additional zigzag passes.
11. Re-stitch the crosspiece.





III.1.4 Lines

III.1.4.1 Overview

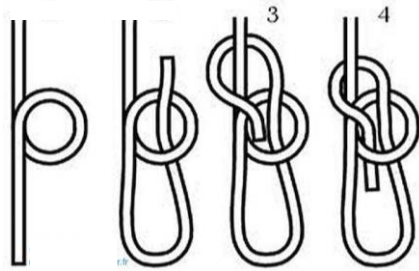
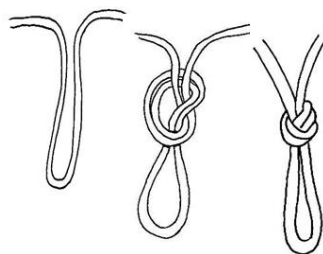
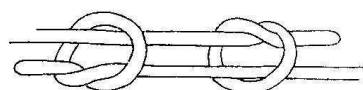
When replacing control lines, use lines that are identical to the original. They are fitted using "Chaise" knots with a single safety knot.

The free hanging ends of the lines must be trimmed using a cutting iron.

The ends of the Kevlar core inside the lines must be worked on by pushing back the protective sleeve 20 to 30 mm; the surplus Kevlar sticking out must be trimmed off; then pull the protective sleeve back into place and heat seal it.

The original control lines should be removed at the same time as the replacement control lines are fitted. Attach the replacement line to one end of the original control line. Pull the other end of the original control line so as to remove it from the envelope; at each pulley, untie and reattach the knot between the new line and the original line. This will guarantee that the replacement line follows the exact path of the original control line.

III.1.4.2 Knots

Name	Description	Use
Chaise knot		Any fixation of a line or a halyard to the balloon or to the parachute.
Loop knot		Finishing knot for a control line (parachute, FDS, vents, crown etc).
Fisherman's knot		A knot used to splice two lines or halyards (except the Technora halyards on the Racer)



III.1.4.3 Maintenance operation on control lines

Line	Damage	Authorised workshop or organisation recognised by the national authority	Aeronautical Mechanic in possession of a Part 66 license or equivalent with the corresponding rating.	Owner pilot	Repair method
Crown	Any damage can be repaired if there are no more than 2 splices over the entire length of the line	Yes	No	No	Splice the line
	If there are more than 2 splices on the line	Yes	No	No	Changing the entire line
Parachute FDS, vents	If the line is damaged on the 2 last metres	Yes	Yes	Yes	Splice the line on the ending side with a maximum 3 m
	If the line is damaged beyond the 2 last metres, with a single splice	Yes	Yes	No	Splice the line on the attachment end (side) with maximum 3 m
	If the line is damaged beyond the 2 last metres, with more than one splice	Yes	No	No	Changing the line
Parachute halyard or FDS	If the line is damaged less than 10 cm from a pulley or there are more than 2 splices on the halyard	Yes	No	No	Changing the line
	If the line is damaged more than 10 cm from a pulley or there are less than 2 splices on the halyard	Yes	Yes	No	Splice the line and place the knots in heat shrink sleeve



III.1.5 Replacing of other components

All components except the envelope can be replaced with an identical component supplied by Ballons Chaize.

Component	Authorised workshop or organisation recognised by the national authority	Aeronautical Mechanic in possession of a Part 66 license or equivalent with the corresponding rating.	Owner pilot	Repair method
Pulley	Yes	Yes	Yes	Replace with identical component
Sisterclip	Yes	Yes	No	Replace with identical component
Carabiners	Yes	Yes	Yes	Replace with identical component
Velcros	Yes	Yes	No	Replace with identical component
Attachment reinforcement	Yes	No	No	Replace with identical component
Line guide ring	Yes	No	No	Replace with identical component
Cables	Yes	No	No	Replace with identical component
Window	Yes	No	No	Replace with identical component

III.1.6 Performing a grab test

It may be necessary to perform a grab test on the fabric to check that it is strong enough.

The grab test must be performed on all colours and all types of fabric used



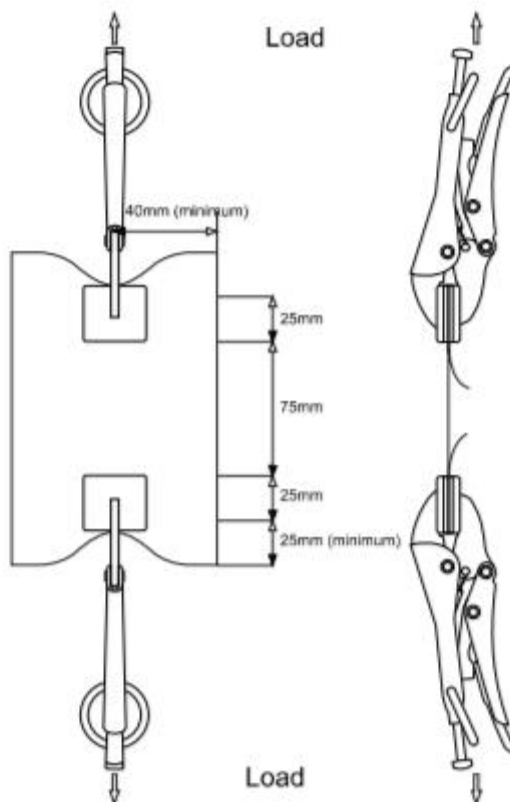
➤ **Procedure:**

For fabric colour and type, select an envelope panel that is as close as possible to the parachute aperture and that has never been repaired.

Select 2 areas, each measuring 2.5 cm x 2.5 cm, 7.5 cm apart, and pull them apart with a force of 13.3 kg.

If the fabric fails, perform the test again on the panel below until you find a panel that does not fail. All the panel of the same material and same colour and same height as the one that failed should be replaced.

Carry out the same operation on the parachute





III.2 Basket

III.2.1 Overview

Component	Authorised workshop or organisation recognised by the national authority	Aeronautical Mechanic in possession of a Part 66 license or equivalent with the corresponding rating.	Owner pilot
Cables and crimping	Yes	Yes	No
Wickerwork	Yes	Yes	No
Carabiners	Yes	Yes	No
Hand rail leather	Yes	Yes	Yes
Leather on the lower basket	Yes	Yes	No
Handles	Yes	Yes	Yes
Floor	Yes	No	No
Runners	Yes	Yes	No
Rods	Yes	Yes	Yes



III.2.2 Cables

The cables can be replaced with cables of identical quality and crimped using the procedure described below.

- Remove the runners.
- Remove the leather at cable outlet level
- Trim the cable from the crimping plug.
- Attach a 3 mm halyard, using strong duct tape and slowly pull the cable through the bottom of the basket, making sure that the halyard follows the right path.
- Replace the cable and pull out the halyard in the other direction, helping the cable along.
- Now crimp the cable.

III.2.3 Carabiners

Carabiners can be replaced using an identical carabiner.

III.2.4 Hand rail leather

If the leather or the suede is damaged, the damaged area must be patched using a piece of the same material. The patch must be cut out so as to cover the upholstered rim, and must be laced under the upholstery in the same way as the original. The edges of the patch must be hemmed before fitting.

III.2.5 Leather on the lower basket

The raw leather must be in good condition so as to protect the bottom of the basket. The damaged areas must be removed and replaced. The raw leather must be cut out to the shape of the hole and then pierced to allow the lacing to pass through. The raw leather must be braided into place using polyester cord.

III.2.6 Handles

The cords can be replaced with cord of equivalent quality, and must be braided into the basket.

III.2.7 Braiding the wickerwork

- Trim away the split strands.
- Humidify the new wickerwork strands for at least 48 hours.
- Re-braid the exposed area, taking care to start and finish the braiding inside the basket.

III.2.8 Floor

If the flooring is damaged (cracks in the wood), there are two possible ways to repair it.

- 1) Screw on an extra runner (strip of wood) at right angles to the crack.



- 2) Replace the flooring.

If in doubt, contact Ballons Chaize.

III.2.9 Runners

Damaged runners must be replaced. They must be made of "Douglas" wood or rot-proof wood, retained with flat head stainless steel minimum 8mm screws. The nuts must be tightened using strong lock wire. Any threaded rod (or screw) sticking out must be trimmed away.

III.2.10 Rods

In the event of damage, rods must be replaced with identical components. The rods are made of PA6.

III.2.11 Cable crimping

Use a Nicopress to crimp the cable and verify using a Nicopress gauge. The extra fold back length must be at least 5 mm before crimping.

Check using a Nicopress gauge; it should be possible to insert the crimped parts of the plug into the gauge's "oval P" without forcing and without any looseness.



III.3 Cylinders

Please refer to the manufacturer's maintenance manual for continued airworthiness information.

Maintenance tasks can be found in the MM referenced in the following TCDS
Cameron Balloons Limited TCDS.EASA.BA.506 TCDS.EASA.BA.501 TCDS.EASA.BA.021 TCDS.EASA.BA.503 TCDS.EASA.BA.502 TCDS.EASA.BA.504 TCDS.EASA.BA.505 TCDS.EASA.BA.013
Ultramagic SA TCDS.EASA.BA.014
SCHROEDER FIRE BALLONS GmbH TCDS.EASA.BA.016
Balony Kubiceck spol s.r.o TCDS.EASA.BA.003 TCDS.EASA.BA.002 TCDS.EASA.BA.001 TCDS.EASA.BA.004



III.4 Burner

Please refer to the manufacturer's maintenance manual for continued airworthiness information.

Maintenance tasks can be found in the MM referenced in the following TCDS
Cameron Balloons Limited TCDS.EASA.BA.506 TCDS.EASA.BA.501 TCDS.EASA.BA.021 TCDS.EASA.BA.503 TCDS.EASA.BA.502 TCDS.EASA.BA.504 TCDS.EASA.BA.505 TCDS.EASA.BA.013
Ultramagic SA TCDS.EASA.BA.014
SCHROEDER FIRE BALLONS GmbH TCDS.EASA.BA.016
Balony Kubiceck spol s.r.o TCDS.EASA.BA.003 TCDS.EASA.BA.002 TCDS.EASA.BA.001 TCDS.EASA.BA.004



SECTION IV. MAINTENANCE SCHEDULING

IV.1 Periods between inspections

➤ Routine inspection

To be performed after one calendar year (12 months) or 100 hours flying time.

➤ Tolerance

30 days or 10 hours.

➤ Weighing

Weighing should be performed: After any major modification or repair.

IV.2 Documentation

The following documentation must be present, in addition to this manual:

- Flight manual;
- Maintenance schedule;
- Airworthiness instructions;
- Equipment constructor or manufacturer service bulletins;
- Supplements to the maintenance manual for any components from other manufacturers.



IV.3 Envelope inspection

Brand	Model	Numéro de série
Flying time and number of launches		
Flying time and number of launches at previous inspection		
Temperature indicator: Display		
Presence of a fuse		
Applicable Airworthiness Instructions		

Please refer to the tolerances table for any damage observed

Section	Commentary	OK / KO Comments
Fabric	Inspect the gores, in order to detect any ripping or abnormal wear. Ensure that none of the holes exceed the authorised maximums.	
	Test the porosity of the fabric towards the top of the balloon by breathing through the fabric. If a large amount of air goes through the fabric, carry out a grab test.	



	Check that the ID plate is present at the base of the envelope.	
Stitching / seams	Inspect the condition of the seams: no severed threads etc.	
Tapes	Inspect the condition of the inside and outside tapes	
	Carefully inspect the tapes that link the upper part of the balloon to the crown ring and more specifically those areas where the tapes rub against the ring	
	Inspect the condition of the tapes at the level of the steel cables attachment points.	
Parachute	Inspect the parachute and the suspension cables, especially the points of fixation of the thin cords	
	Inspect condition of the suspension cables	
	Inspect the condition of the main pulley	
	Inspect the condition of the Velcros at the level of the seams	
Turning Vents	Inspect the condition of the fabric at the level of the turning vents apron.	
	Inspect the condition of the control lines at the level of the vents.	



Control line	Inspect the condition of the control lines (colour, any burns, premature wear and tear etc.	
	Inspect the condition of the pulleys and the control lines fixation points.	
Cables	Inspect the condition of the cables: no broken strands, no discolouration of the cable resulting from burns; No jagged surfaces or other parts on the crimped plugs or heart shaped thimbles.	
Carabiners	Ensure that carabiners can open and close properly.	



IV.4 Grab test

Grab test procedure is described in chapter “III.1.6 Performing a grab test”

Perform a grab test in the following cases:

- If the envelope is older than 5 years or has more than 250 hours flying time;
- If the temperature indicator went beyond 120°C;
- If there has been any contact with power lines;
- If the inspector deems that a test is required.

The grab test must be performed on all the colours and all fabric types at the apex of the balloon.

The grab test procedure is described in chapter “III.1.6 Performing a grab test”

Location of the test	Colour	Fabric type	Result





IV.5 Basket Inspection

Section	Commentary	OK / KO Comments
Hand rail leather	Inspect the condition of the leather and the hand rail braided cord; There should be no holes exposing the wickerwork or the stainless steel frame.	
Leather on the lower basket	Inspect the condition of the leather and the braided cord at the bottom of the basket; There should be no rips in the leather; the braided cord should not be torn off.	
Rods	Inspect the condition of the rods.	
Wickerwork	Ensure that there are no broken strands and no jagged strands on the outside of the basket.	
Cable	Inspect the condition of the cables specially at the level of the heart shaped thimble and the inlet to the hand rail.	
Floor	Inspect the condition of the floor: there must be no holes and no cracks.	
Runner	Inspect the condition of the runner and the retaining screws: they should not stick out from the runner.	
Control line	Check that the control line is present	
Fire extinguisher	Check that the fire extinguisher is present and has not expired.	

For the other components of the base please refer to the manufacturer's manual. (Burner, cylinders)

Then add the table of inspections here.



IV.6 Criteria and tolerances

Component inspected	Criterion	Tolerance
Envelope		
Scoop and Nomex	All fixations are present	NA
	Damage to the scoop or to the Nomex (hole or damaged area as a result of being burnt)	Maximum 5% of the panel inspected
Fabric	Holes	Holes of less than 0.5 cm are acceptable on the envelope on condition that there are less than 10 on the same gore.
	Grab test	Refer to procedure above.
Crown line	Any damage	NA
Control line (parachute, FDS and vents)	Damage to the line	The core should not be visible
Registration plate and flag	They should be present and legible	NA
Carabiners	They should be in good condition, and should close without forcing	NA
Steel cables	They should not be bent; there should be no broken strands; heart shaped thimbles should be present.	No more than 4 strands of a cable should be damaged. The heart shaped thimbles must be present
Vertical tape or halyard	No damage	None
Tape at the parachute spide	No damage	The stitching of 1 or 2 edge tapes may be unstitched
Velcro	The Velcros must adhere	NA
Pulley	The sheave must turn freely	NA
Parachute halyard or FDS	Traces of wear and tear	Traces of wear and tear are acceptable; they must be monitored and repaired if they deteriorate.
Balloon fixation loop	Any frayed sections or ends	One out of two tapes must be entirely intact.
Basket		
Leather	There must be no holes	A few holes are acceptable on condition the wickerwork underneath is not visible
Braiding	There must be no holes	Holes of less than 5 cm x 5 cm are acceptable
Basket cable	It should not be bent; there should be no broken strands; the heart shaped thimbles must be present.	No more than 4 strands of a cable may be damaged; the heart shaped thimbles must be present.
Runner	There must be no cracks or other damage	NA
Floor	No cracks or holes	NA