



MANUFACTURER INSTRUCTION & MAINTENANCE MANUAL CHILD RESCUE CAPSULE MIM 200025

Issue 4

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General

This manual is provided for use with the Child Rescue Capsule Assembly and provides operating and maintenance instruction to be used by the operator/user in using and caring for this equipment. The aircraft Limitations and operational information is contained in the approved Flight Manual Supplement issued to the aircraft.

If SETS Child Rescue Capsule is used in conjunction with other equipment, such as a winch hook connector, 'capewell' or Y Piece assembly, reference should be made to the Manufacturer User/Instructions for that equipment for information concerning technical data, instructions for use and operational limitations.

The approvals associated with this equipment prescribe the minimum performance standards which have been met by this assembly for the purpose of a person using this equipment for helicopter external lift. It is the responsibility of those wishing to install the SETS Child Rescue Capsule on or within an aircraft to determine that the aircraft's installation conditions are within the approval requirements. The SETS Child Rescue Capsule may only be installed if further evaluation, by the user/installer, substantiates an acceptable installation and is approved by the Civil Aviation Safety Authority or approved representative.



Figure 1: The SETS Child Rescue Capsule (CRC)

AMENDMENT RECORD

1. All amendments to content are to be recorded below;
2. All new content inserted during an amendment will be shown with a vertical line in the margin indicating the extent of the amended portion.

Amendment		Summary	Incorporated	
No.	Date	Sections/Pages Affected	Date	Name
1	06.2014	Page 3, 4, 7, 8, 10, 14, 15, 17, 21, 22, 23	06.2014	JB
2	09.2017	Page 3, 4, 16, 17	09.2017	LD
3	06.2022	Page 17	06-2022	JB
4	03.2024	Title Page – Page 1	03.2024	JB
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1. Limitations of Use

SETS Child Rescue Capsule (CRC) is to be used in accordance with the instructions in this manual and the Approved Flight Manual Supplement issued to the aircraft.

The SETS CRC is not a 'seat belt', it is provided for use outside the aircraft cabin when attached to the winch hook as a means of winching (lifting on a winch hook), a small to medium child into the helicopter when the child is too small or other factors prevent the child to be lifted by a 'Rescue Strop'. The SETS CRC attaches to the winch hook & would normally, but not necessarily, be used in conjunction with a winchman in a helicopter rescue harness.

The SETS CRC is only to be used by personnel trained in the correct fitting, assembly, disassembly and emergency release of the CRC, and who are familiar with the assembly's limitations and guidelines for installation and use as set out in this manual and the Approved Flight Manual Supplement.

CAUTION

Any modifications, additions or alterations to any part of the CRC assembly must be approved prior to use.

If any part of the webbing, covering material or door materials becomes exposed to corrosive or hazardous chemicals, the CRC should be retired from service.

Any repairs must be completed & certified by an approved repairer prior to placing the CRC back into service.

If any part of the assembly is worn or damaged, consult this manual or the manufacturer direct to establish the serviceability of the assembly prior to next use.

2. Design & Construction

SETS Child Rescue Capsule (CRC) Part Number: HW-CRC []

- i. The SETS CRC is a winching 'valise', which has been designed to safely lift children & infants on an external helicopter winch up to a total weight of 50kg.
- ii. The SETS CRC is constructed using heavy-duty nylon cloth, webbing, tape, clear window, mesh, zipping & stitching.
- iii. The capsule has two configurations:
 - a) the first is the 'standard' or short configuration which will comfortably fit a small child or infant;
 - b) The second is with the foot extension folded out to accommodate a larger child.
- iv. The capsule is fluoro yellow in colour with reflective tape on the top, both ends & on the base.
- v. The dimensions & weight of the capsule are:
 - a) Short Length.....67 cm (26.4")
 - b) Length with Foot Section Extended.....99 cm (38.9")
 - c) Width.....36 cm (14.2")
 - d) Depth.....32 cm (12.6")
 - e) Weight (empty).....3.5 kg (7.7 lb)
 - f) Maximum allowable load.....50 kg (110 lb)

3. Description

- i. The SETS CRC includes two reinforced top opening door assemblies.
 - a) The main access door assembly comes with a rigid handle, which allows the two large side zips to open the door with one movement. The entire main door assembly folds back to allow easy & wide access to the capsule.
 - b) When there is an occupant in the capsule the top door assembly (the smaller door flap) can be opened & secured to the rear of the door assembly. This allows voice access to the interior of the capsule so the rescuer can speak to the occupant. The occupant is still protected with a reinforced mesh panel.
 - c) The main access door assembly is fastened down the front of the capsule, using hook & loop fastener & two one inch side release buckles.
- ii. The SETS CRC is constructed using closed cell high density foam removable pads in the base, end & side pads which:
 - a) stiffen the capsule during operational use;
 - b) gives some protection to the occupant whilst inside the capsule.

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CAUTION

The SETS CRC is not designed as a life raft, personal flotation device or buoyancy aid.

- iii. The SETS CRC base pad includes a three point restraint/positioning harness with waist/body straps, two shoulder straps & a crutch strap, which interlock using 'child lock' fastener, to provide stable positioning within the capsule in all directions.
- iv. The foot section of the capsule can be extended to facilitate a larger child.

To extend this section:

- a) undo the hook & loop fastener on the sides, top & the foot end pad & fold the extension down;
- b) position the end pad into the floor of this section.

To return the capsule to the normal/short configuration:

- a) fold this section back up to the normal position tucking in the sides;
- b) fasten the side & top hook & loop fasteners;
- c) re-position the end pad to its original position.

CAUTION

The foot extension only has the foam pad in the floor. There are no foam pads in the walls or roof of this section.



Figure 2: CRC with foot extension opened

4. **Lifting**

- i. The SETS CRC has two lifting handles on each side of the capsule. These handles have a yellow cover at the winch hook attachment point.
- ii. The lift points are folded & covered to:
 - a) enable easy identification for attachment to the winch hook;
 - b) provide wear resistance of the lift 'handles'.
- iii. The lifting handles are constructed using heavy duty webbing, which continues down the sides & under the base of the capsule.
- iv. The handles are reinforced at the junction where they are attached to the capsule with webbing reinforcement on the inside & outside of the capsule. The outside webbing is a one-piece length of webbing from the foot of the capsule around the front & to the opposite side. The juncture points are reinforced with heavy duty stitch patterns at each of these junctures & around the front of the capsule.
- v. Under expected loads, when the occupant is in the restraint harness the centre of gravity will be between these lift points & in a slightly 'head-up' attitude.



Figure 3: SETS CRC attachment points (yellow section of handles).

Any of SETS Y Piece Assemblies (HW-YP [] fitted with the large gate two action snaps) may be used with the SETS CRC.

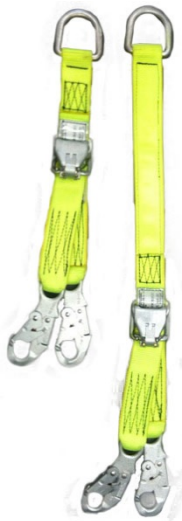


Figure 4: SETS CRC compatible winch hook connectors (Y Piece) shown with Capewell Release installed.



Figure 5: SETS CRC compatible winch hook connector (Y Piece) shown without Capewell Release installed.

5. Carrying the CRC

- i. The SETS CRC is fitted with a closed, padded & stiffened carry handle on each end.
- ii. These handles have been closed off to minimise any snag risk during an operational winch.
- iii. These handles are large enough for crew to use to carry the CRC or as 'grab' handles to assist in the emplaning of the capsule.

6. Drainage

- i. The SETS CRC is constructed with drainage ports at the foot end of the capsule.
- ii. These drainage ports allow water to drain from the CRC.

CAUTION

The Operator should be aware that there may be some ingress of water during a water winch through the drainage ports or the doors & the safety of the occupant should be closely monitored.

7. Visibility

- i. The SETS CRC has been constructed using a fluoro yellow material for high visibility for day & night use;
- ii. Reflective tape has been attached to the ends, the top of the foot extension, the top door section, the base & the carry handles;
- iii. The base harness pad also has an infant image for correct orientation of the occupant.

8. Lowering Un-assisted

- i The SETS CRC can be lowered in its operational ready state with the lift handles or using an 'extension strop' such as the SETS HW-STPX [];
- ii The SETS CRC can also be lowered in its folded state;

CAUTION

When lowering without assistance, the operator should be aware that the SETS CRC might experience some movement due to the rotor downdraft.

9. Folding the CRC

- i To fold the SETS CRC:
 - a) open the top door section;



Figure 6: open the top door section

- b) fold the end panels so that they lie against the base;



Figure 7: fold the end panels against the base

- c) fold the sides in keeping the lifting handles tucked inside the folds;
d) secure the black webbing 'folding' straps & secure with the hook & loop fastener.



Figure 8: fold sides and secure with straps

10. Rescue of Survivor

- i Detach one or both the handles from the winch hook;
- ii If the CRC has been lowered in its folded state, release the packing straps & pull the sides apart;
- iii Open the CRC & position the inner end pads at each end – the base of the pads should be already in position – push the top of the pads into position against the hook fastener on the capsule;
- iv Place the survivor into the CRC;
- v Position the survivor on the base pad in the correct orientation;
- vi Attach the retention shoulder & crotch straps to the child lock fastener hardware;



Figure 9: Survivor Orientation.



Figure 10: Survivor Harness Retention System.

- vii Fold out the foot extension as required (if the survivor doesn't fit comfortably within the CRC in it's short configuration);
- viii Close the door panel & secure the zip handle hook & loop fastener & secure both 'side release' buckles;
- ix Attach both handles, using the yellow coloured wear tabs as reference, to the winch hook;
- x If necessary, open the smaller top door to allow communication with the survivor during the winch;
- xi Once the capsule is at the door, the winch operator can use the carry handle on either end to pull the capsule into the cabin.

NOTE

It is not always necessary to fold the foot extension down when the survivor's legs are too long for the capsule, if the lift can be achieved with the survivors knees raised.

11. Storage

- i. SETS equipment should be stored in a secure area which is free from dirt, oil, grease, moisture, direct sunlight, extreme changes in temperature & rodents;
- ii. The SETS CRC should be stored away from non-aircraft/industrial products.

CAUTION

Inappropriate storage of the SETS CRC may lead to a deterioration of the materials, webbings & tapes.

12. Maintenance - General

- i. The recommended maintenance schedules for the inspection of the SETS CRC are as follows:
 - a) Before & after use;
 - b) Yearly inspection & recertification by a CASA Approved Maintenance Workshop.
- ii. The recommended maintenance repair of the SETS CRC is 'on condition' due to damage or wear. This maintenance may be carried out by a CASA approved maintenance workshop using the appropriate tools & materials as described & limited herein.

13. Inspection

i. Before & After Use:

The CRC should be inspected by the crew member as follows:

- a) Inspect the webbing handles with particular attention to the winch hook attachment loops & at the capsule reinforcing horizontal straps to ensure there is no damage, pulled stitches or tears – some wear on the fabric ‘wear covers’ at the winch hook attachment loops is OK as long as it doesn’t extend into the main handles;
- b) Inspect the capsule fabric (including the foot extension) for damage – tears, cuts etc;
- c) Inspect the internal foam pads fabric & hook & loop fastener for damage & to ensure the fastener tapes hold adequately;
- d) Inspect the inner positioning harness for damage of the fastener straps & hardware;
- e) Inspect the door panels to ensure the zips function adequately, the visibility through the clear top door is OK, the reinforcing tapes are not damaged, the ‘side release’ buckles are not damaged, the seams are not pulled or torn & the handle is not damaged;
- f) Inspect the carry handles for security & damage.

ii. Yearly inspection & recertification:

The yearly inspection routine should be carried out per the Before & After Use inspection.

13.1. Continued Airworthiness:

- i. The SETS CRC requires a yearly inspection & recertification for continued airworthiness to the end of life at 10 years.

ii. *Text Deleted Amd 3 06-2022*

Recertification Requirements:

- a) Complete a yearly service inspection & repair/replace any necessary sub parts.
- b) *Text Deleted Amd 3 06-2022*

14. Salt Water Immersion

To clean the capsule:

- i. Remove all inner pads from the capsule;
- ii. Thoroughly wash the capsule & pads in warm water;

CAUTION

If using soaps & detergents in the cleaning of the CRC, the product should be checked to ensure there will be no detrimental effect on the webbings & materials in the CRC.

- iii. Thoroughly rinse the entire assembly in clean water – it may require several rinses;
- iv. Air-dry the assembly out of sunlight & away from any heating elements;
- v. When dry, re-assemble & complete the 'Before & After Use' inspection.

15. Fresh Water Immersion

To clean the capsule:

- i. Remove all inner pads from the capsule;
- ii. Thoroughly rinse the entire assembly in clean water – it may require several rinses;
- iii. Air-dry the assembly out of sunlight & away from any heating elements;
- iv. When dry, re-assemble & complete the 'Before & After Use' inspection.

16. Inspection Sheet - Example

- i. The following Inspection Sheet can be used for the purpose of logging maintenance as completed.

CRC MIM 200025	
CRC - Inspection Sheet	
Date: ____/____/____	Job No: _____
Name: _____	Lic/Auth. _____
Description: Part # _____	Sno. _____
Dom. _____	Man. _____
Data Referenced: _____	
<u>Inspection:</u>	<u>Work Required</u> <u>Completed</u>
Item	Check
Lift Handles:	webbing _____
	stitching _____
Reinforcing Straps:	webbing _____
	stitching _____
Carry Handles:	webbing _____
	stitching _____
Door Panels:	webbing _____
	tapes _____
	clear _____
	mesh _____
	zips _____
	stitching _____
	fabric _____
Carry Handles:	_____
Inner Pads:	ends _____
	sides _____
	base _____
	harness _____
Main Valise	_____
	fabric _____
	reflective tape _____
	hook & loop fastener _____
ID Tag:	_____
Final Inspection By: Signature: _____ Lic. No.: _____	
Release:	
Date: ____/____/____	No: _____ Signature: _____
_____ Safety Equipment Technical Services Pty Ltd	

Figure 11: Inspection Sheet Sample

17. Repairs - Limitations

- i. Repairs are limited to the following schedule:
 - a) Hook & loop fasteners:

Overstitching of non-damaged tapes.

Replacement of damaged or worn out tapes – removal of old tape by unpicking or cutting is required.
 - b) Reflective tapes:

Overstitching of non-damaged tapes.

Replacement of damaged reflective tapes by removing old & re-stitching new.
 - c) Carry handles:

Replacement of entire assembly.

Resew using polyester thread 130 – stitch pattern as per original.

Replacement handles are available from manufacturer.
 - d) Inner pads:

Replacement of complete pad.

Replacement pads are available from the manufacturer.
 - e) Door panels:

Replacement of 'side release' buckles by removing damaged & replacing with same or equivalent 1" type. Re-sew using bar-tack stitching as per original.

Replacement of leading edge hook & loop fastener by either removing old & restitching new or restitching new over original.

Patching of clear & mesh using same material (available from manufacturer) & glue or stitch in place using conventional patching techniques.

No repairs allowed to any other part of the door panel.

Replacement of entire assembly by manufacturer.

f) Webbing:

Handles – no repairs allowed.

Reinforcing webbing & tapes – no repairs allowed.

g) Fabric:

For cuts & tears – patch area using same type fabric (1000den cordura/kodra) allowing a 25mm overlap of damaged area on all sides.

No repairs to fabric for tears or damage which is 25mm (1") or less from webbing, seam or other part. Send to manufacturer for repairs.

h) Harness Assembly:

No repairs allowed.

Send to manufacture for repairs or replacement of entire base pad assembly.

18. Materials

Item	Part No.	Description
Main Bag	MB	Complete Assembly
	B2	fastener - loop - black 280 x 50mm
	B3	fastener - loop - black 670 x 50mm
	B4	fastener - loop - black 450 x 50mm
	B5	fastener - loop - black 380 x 100mm
	B6	fastener - hook - black 275 x 100mm
	B11	webbing - A4056/44 – black x 500
	B12	fastener - hook - black 180 x 38mm
	B13	fastener - loop - black 200 x 50mm
	B14	fastener - loop - black 320 x 50mm
	B15	fastener - loop - black 280 x 50mm
	B16	fastener - loop - black 320 x 100mm
	B17	fastener - loop - black 320 x 50mm
	B20	reflective tape - yellow 380 x 50mm
	B21	reflective tape - yellow 380 x 50mm
	B25	webbing - blue 80 x 25mm
	B26	fastex buckle - 1" – Male
	B28	material - yellow – lift point wrap 170 x 45
	B30	fastener - loop - black 380 x 50mm
Carry Handle	CH	Complete Assembly
Top Panel	TP	Complete Assembly
	T5	reflective tape - yellow – 650 x 50mm
	T6	reflective tape - yellow – 440 x 50mm
	T7	fastener - hook - black 320 x 50mm
	T8	fastener - loop - black 380 x 50mm
	T9	fastener - loop - black 250 x 50mm
	T10	fastener - loop - black 40 x 50mm
	T16	fastener - hook - black 140 x 25mm
	T17	tape - red – tab 80 x 1"
	T18	tape - yellow - small zip tag 180 x 1"
	T19	tape - black - large zip tag 180 x 1"
	Z4	fastener - hook - black 140 x 38mm
	Z5	Webbing – blue 160 x 25mm
	Z6	fastex buckle - 1" - Female
End Pads	EP	Complete Assembly
	P3	fastener - hook - black 360 x 50mm
	P4	fastener - loop - black 360 x 50mm
Side Pads	SP	Complete Assembly
	P7	fastener - hook - black 640 x 50mm
	P8	fastener - loop - black 640 x 50mm
Base Pad	BP	Complete Assembly
	P11	fastener - hook - black 320 x 50mm
Harness Ass.	HA	Complete Assembly

19. Tools & Equipment

Sewing Machine – light/medium industrial – straight lock stitch

Sewing Machine – heavy industrial – straight lock stitch
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Sewing Machine – light/medium – bar-tack stitch

Sewing Machine – light/medium – twin needle binding machine

Sewing Machine – light/medium – ziz zag stitch
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