



INFORMATION RELATING TO SAVIOUR TECHNICAL STRETCHER

Saviour Stretchers are built to order under stringent quality control in the UK. This makes Saviour Stretchers unaffected by the Brexit process.

The Saviour Technical Stretcher will fit through an opening of 610mm.

The Saviour Technical Stretcher by design only adds 10mm to the dimensions of the patient, and as such its ability to fit through tight spaces is only limited to the dimensions of the patient. Therefore the Saviour Technical Stretcher will fit through an opening of 610mm (See User Manual for understanding of packaged patient - Appendix 1)

Saviour Technical Stretcher Materials List

- 50mm Polyester Webbing Strap (various colours)
- 25mm Polyester Webbing Strap (various colours)
- 50mm Plastic Sliding Bar
- 50mm Plastic Bar
- 25mm Marine Stainless Steel 3 Bar
- Poly Ethylene Handles
- 20's Thread
- 3mm Low Density Poly Ethylene skin
- 25mm and 30mm Marine Stainless steel eyelets
- Head Pocket comprised Vinyl and Velcro
- Vinyl Bag with Velcro fastening and stainless eyelets

Saviour Technical Stretcher carrying ability

All lifting points of the Saviour Technical Stretcher are tested to a weight of 200kg (Conformity certificate attached Appendix 2)

The Saviour Technical Stretcher is 1900mm long. It is designed for use in patients between 1400 - 2000mm. The Saviour Technical Stretcher by design wraps around the chest and is adjustable to each individual patient, and is thus not limited by chest depth or injury pattern.

The Saviour Technical Stretcher 200kg rating is for vertical and horizontal lifting, assuming the Saviour lifting bridle or other certified lifting strops / bridles are used. (Conformity certificate attached Appendix 2)

Head and Neck Support is achieved via the Head Hugger system

Saviour Technical Stretcher's unique head hugger system wraps around the head protecting the patient. Airway access is not hindered and the head hugger can be used in conjunction with a cervical immobilisation collar if required by using the lower black strap to secure hugger to collar. (see image below)

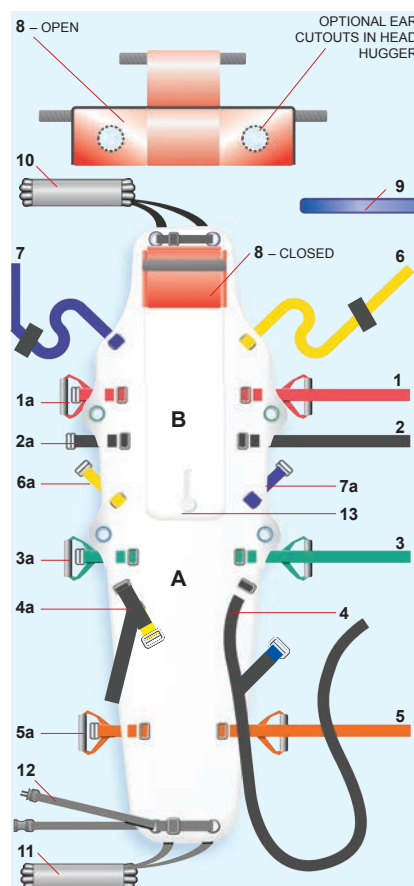


Decontamination and Infection Control

The Saviour Technical Stretcher is designed to be disinfected by the end user using non-corrosive biological detergents such as Chemgene or Trigene. There is no requirement for offsite complicated cleansing. The skin is easily decontaminated with no inaccessible areas to prevent IPC issues. Stitching within the straps has been minimised to reduce the potential for contamination and the head hugger is vinyl and wipe clean.

Should any part of the Saviour Technical Stretcher system be contaminated beyond reasonable recovery, then every single part of the Saviour Technical Stretcher is simply replaceable by the end user without factory assistance and a full and comprehensive set of spare parts is available. (see below)

IDENTIFICATION OF PARTS LIST



KEY TO PARTS LIST:

- Non-replaceable items
 - A. MAIN SKIN
 - B. INNER SKIN
- Replaceable straps:
 - 1. Chest strap – closure side with handle
 - 1a. Chest strap – buckle side with handle
 - 2. Waist strap – closure side
 - 2a. Waist strap – buckle side
 - 3. Hip strap – closure side with handle
 - 3a. Hip strap – buckle side with handle
 - 4. Figure 8 / Groin Harness – closure side
 - 4a. Figure 8 / Groin Harness – buckle side
 - 5. Leg strap – closure side with handle
 - 5a. Leg strap – buckle side with handle
 - 6. Left shoulder strap – with integral wrist cuff
 - 6a. Left shoulder strap – buckle side
 - 7. Right shoulder strap – with integral wrist cuff
 - 7a. Right shoulder strap – buckle side
- Other replaceable items:
 - 8. Head Hugger
 - 9. Chin strap
 - 10. Drag harness (optional)
 - 11. Drag harness (optional)
 - 12. Closure strap
 - 13. Inner skin retainer
 - 14a Stretcher carry bag – tube type
 - 14b Stretcher carry bag – rucksack type

Assembled without Instruction

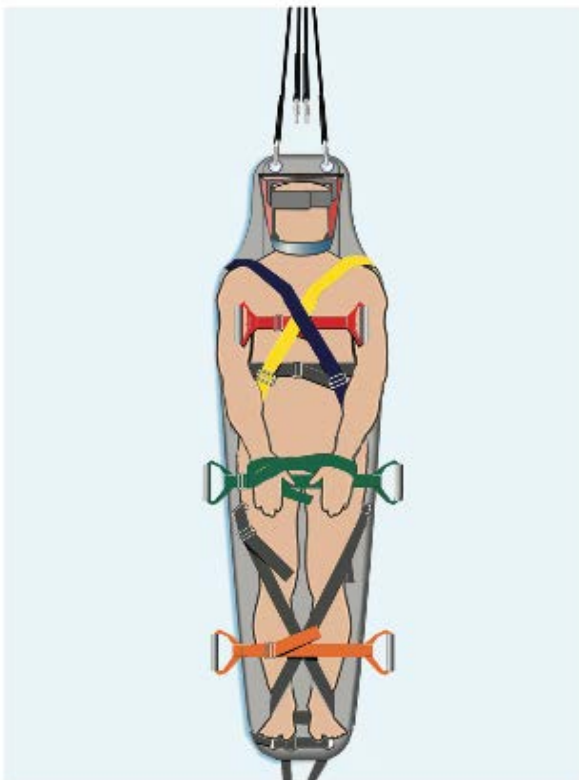
The Saviour Technical Stretcher is designed to be used without the need for complicated instructions. All straps are colour coded, and the design is such that whilst there is an optimal order for straps to be applied, they can be applied in any order and the stretcher still be 100% safe and retain all its user functions. Strap colours can be seen in the parts list above, and standard strap attachment in the User Manual attached as Appendix 1.

Horizontal or Vertical hauling ability

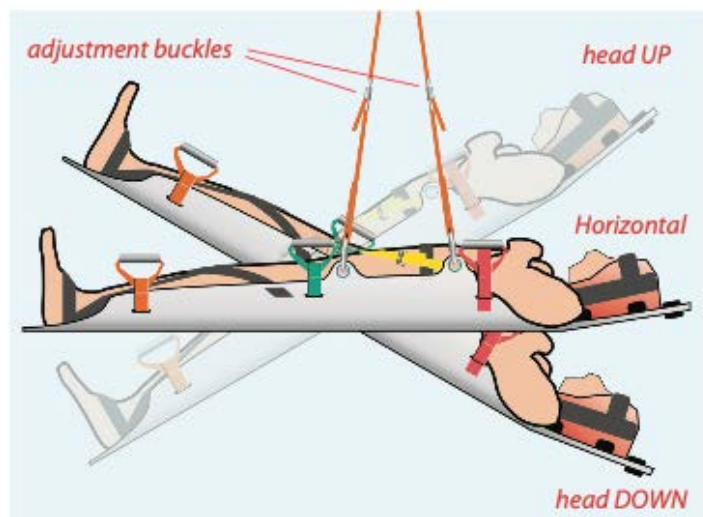
The Saviour Technical Stretcher has 6 lifting eyes, all rated to allow up to 200kg load, allowing for a variety of hauling positions, not just limited to straight horizontal or vertical.

It can be lifted by any suitable commercial lifting bridle, however we do recommend the Saviour Adjustable Lifting Bridle, which is a purpose deigned, tested and certified ancillary to complement the stretcher and allows for infinite lifting angles.

Saviour Technical Stretcher: **VERTICAL HAUL**



Saviour Technical Stretcher: **HORIZONTAL HAUL**



Usage within Temperature Range:

The Saviour Technical Stretcher's low density polyethylene LDPE skin is ductile and flexible material.

It is stable in the temperature range from -50 to 85°C , the melting point is from 105 to 115°C .

The Saviour Technical Stretcher Polyester webbing should be used in the temperature range of -40 degrees C to 90 degrees C

All other components of the stretcher are not affected by changes in temperature.

Usage within Humidity Range:

Humidity has no detrimental effect on the materials used to manufacture the Saviour Technical Stretcher.

This being so the Saviour Technical Stretcher may be used in an environment of 10% to 95% humidity.

Construction

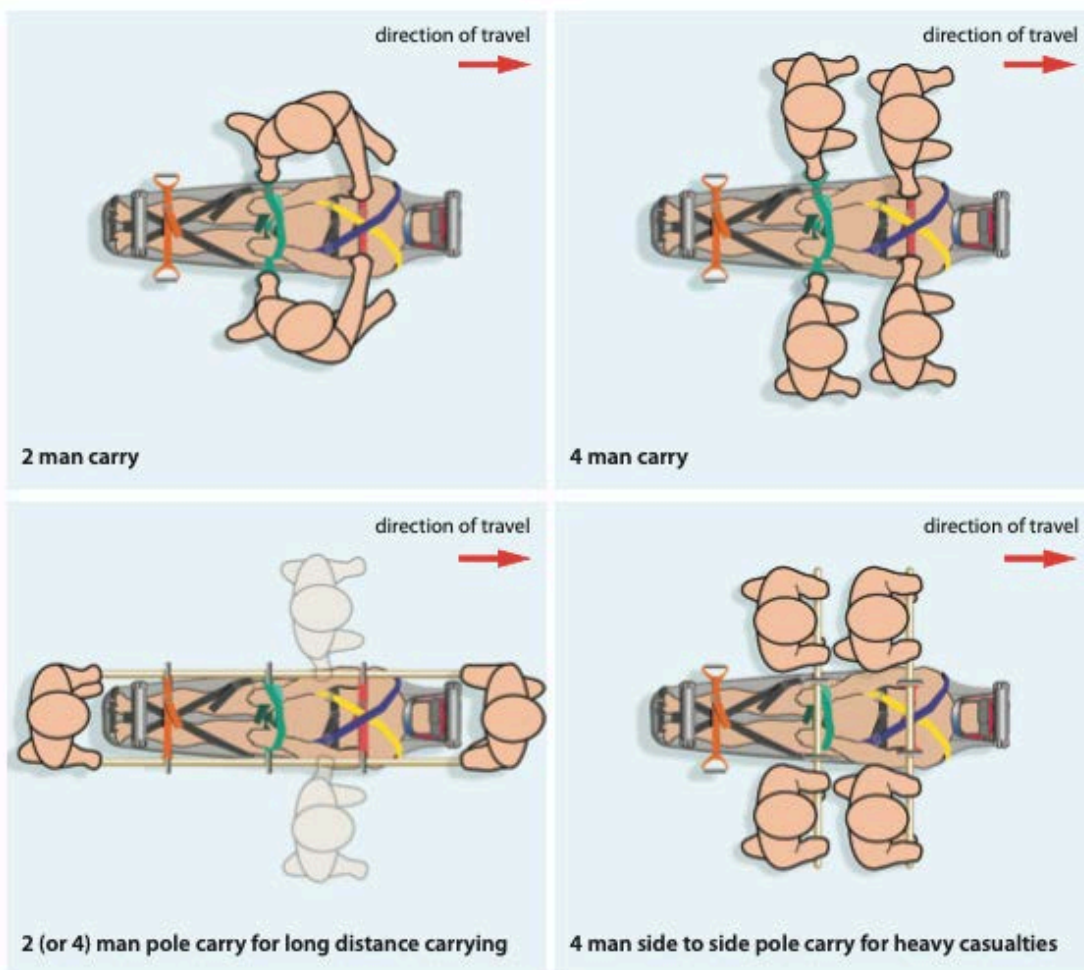
The Saviour Technical Stretcher requires no construction parse, just requires unrolling and laying flat with straps clear for use, and therefore is easily constructed by a single operator.

Carrying

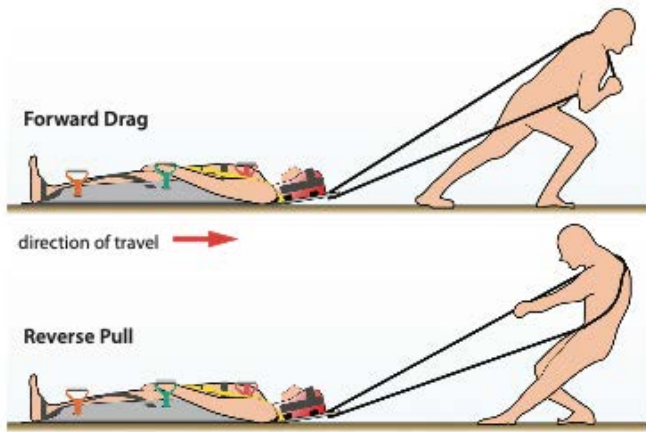
The Saviour Technical Stretcher can be carried by two, four or six people. It can also be dragged by one or two people. Should they be available and be more convenient for the operators, the six handles have been designed to allow poles of any sort to be accommodated to create a more traditional carrying style if desired. The Saviour Technical Stretcher is neutrally buoyant and when used in conjunction with a lifejacket / buoyancy aid of 50N or above, floats well and allows casualties to be recovered from or taken easily across water.

Please see images below for carrying examples.

Saviour Technical Stretcher: **CARRYING THE CASUALTY**



Saviour Technical Stretcher: **IN WATER**



Storage Dimensions

The Saviour Technical Stretcher rolls easily to 700mm H x 300mm W x 250 mm D to fit inside its storage bag. It can be rolled extremely tightly down to 127mm depth if required, and as such would take up a space 700mm H x 127mm W x 127mm D. The packed stretcher weighs 5.1 Kg.

Spinal Support

The Saviour Technical has an inner second skin to allow for the most rigidity and spinal protection possible in a flexible roll up stretcher. In addition, the close-fitting casualty-hugging design allows for the maximum curve to be placed in the LDPE skin, maximising longitudinal stability and spinal protection.

Compatibility

The Saviour Technical Stretcher fits inside standard NATO orange basket stretchers, SAR Airframe stretchers and Ambulance litters for a seamless "point of injury to CT scanner" patient journey. This reduces casualty transfers between stretchers and the subsequent harm that can create.

Maintenance and Technical Documentation

The Saviour Technical Stretcher is made from materials which will not corrode even in harsh environments, and is designed to work in wet, sandy, saline environments.

The Saviour Technical Stretcher is essentially maintenance free bar 6-monthly routine visual inspection on station - the details of which are within the user manual attached as Appendix 1 of this document.

The Saviour Adjustable Lifting Bridle is CE approved to BS EN 354:2018 Personal protective equipment for work positioning and prevention of falls from height. The standard specifies a minimum static load of 15kN.

The adjustable lifting bridle and stretcher conform to all the requirements of Lifting Operations and Lifting Equipment Regulations 1998 relevant to the lifting of personnel.

Stress testing in arduous conditions can be evidenced by the Saviour Stretchers having been used in Maritime Search and Rescue with the RNLI and SLSGB since 2013. It is carried aboard every RNLI ILB (both Atlantic and D class) as well as their Rescue Hovercrafts.

The Saviour Technical Stretcher and Adjustable Lifting Bridle is also in use within the military in the Medical Section of UK Special Forces since 2016, with use across the full range of operating environments to great critical acclaim and user feedback.

CE Marking

The Saviour Technical Stretcher and Saviour Adjustable Lifting Harness have CE and EN certifications and comply with all UK and EU safety requirements. This is evidenced in the Certificates of Conformity (Appendix 2)

Attachments

Appendix 1 - User Manual



Manual and Technical Specifications for the Saviour Technical Stretcher

MANUAL AND TECHNICAL SPECIFICATION

Saviour Technical Stretcher

Publication reference: CIVTEC Man Version 2: April 2018

This Equipment conforms to CE 93/42/EEC Class 1 and is covered by EEC Directive 93/42/EEC CLASS 1 DEVICE. This Equipment is registered with the Competent Authority (UK) and confirms to Article 11(5) Annex VII Section 3.

INTRODUCTION: Saviour Technical Stretcher

The Saviour Technical Stretcher is a rapid response stretcher to evacuate casualties safely from hazardous areas. Provision is made for up to six persons carrying and two Head Haul Eyelets which can be used in conjunction with the lifting harness or drag straps, for vertical lifting and lowering, as well as dragging or hauling along evacuation routes. The Saviour Technical may also be lifted horizontally using a suitable lifting strop arrangement. The Saviour Technical may be placed directly into a suitable basket stretcher for onward patient transportation if required. Users must be trained and competent in accepted standards and rescue procedures.

The Saviour Technical may be used to transport the casualty throughout the treatment journey, into the A&E and onwards, as it is x-ray translucent and CT friendly. Study has also shown that during the treatment journey the Saviour Technical stretcher performs as an effective pelvic splint when tightened fully.

Manufactured from materials suitable for harsh environments the Saviour Technical will not deteriorate during storage but should not be subjected to prolonged exposure (weeks not hours) to strong sunlight. Subject to the recommended inspection and cleaning the Saviour Technical's skin and fixings will have a 10 year service life. Straps have a service life of 5 years and may be replaced by the user or returned to the manufacturer/distributor for refurbishment.

The contents of this manual should be read and fully understood before use.

Incorrect use will reduce the service life of the stretcher and may endanger the casualty.

CONSTRUCTION MATERIALS:

- All closure, carry straps handles and stitching are POLYPROPYLENE
- All buckles and keepers are 316 STAINLESS STEEL
- Main body and inner skin are LDPE
- Head Hugger and Carry Bag are PVC
- Head Haul Eyelet is 316 STAINLESS STEEL and NYLON 66
- Eyelets for Foot Loop are NICKLE PLATED BRASS
- Head Haul Strop is POLYPROPYLENE SUPERTAPE
- Inner Skin retainer and screw is NYLON 66

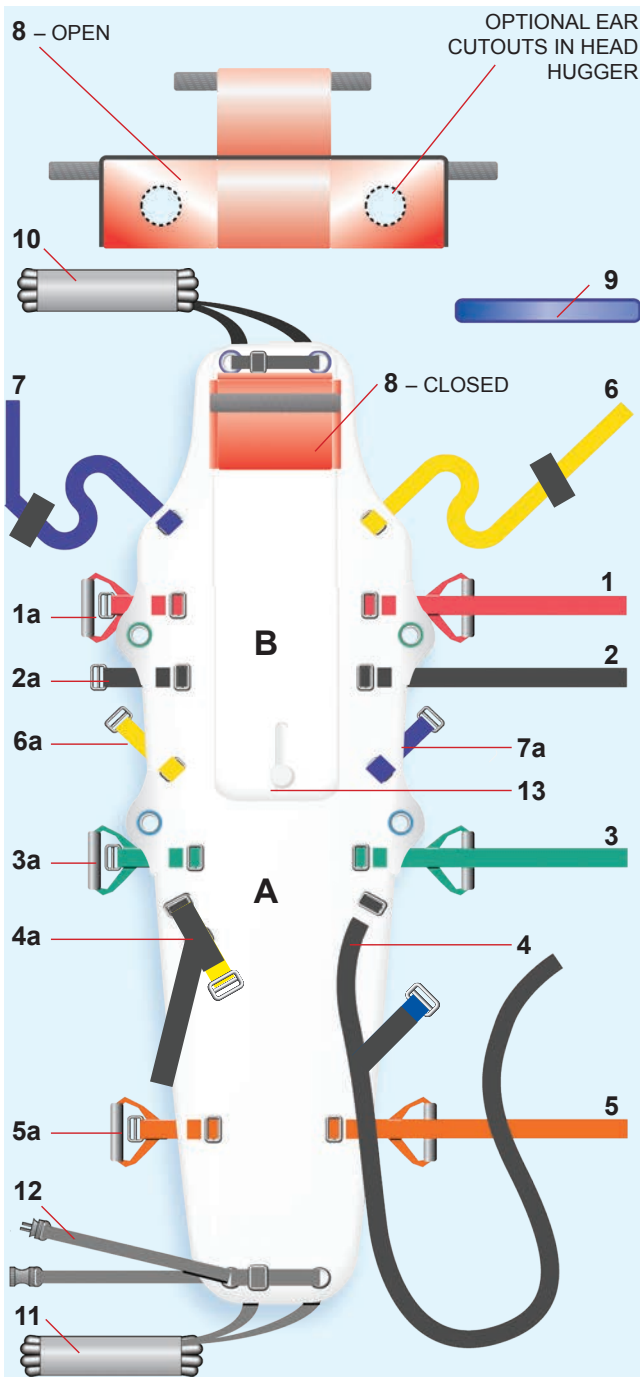
Packed Carry Bag Dimensions (both):
70 cm x 30 cm x 30 cm

Weight of packed
Technical Stretcher:

5 Kg
or
9 Kg including
lifting strops



IDENTIFICATION OF PARTS LIST



KEY TO PARTS LIST:

Non-replaceable items

- A. MAIN SKIN
- B. INNER SKIN

Replaceable straps:

1. **Chest strap**
– closure side with handle
- 1a. **Chest strap**
– buckle side with handle
2. **Waist strap**
– closure side
- 2a. **Waist strap**
– buckle side
3. **Hip strap**
– closure side with handle
- 3a. **Hip strap**
– buckle side with handle
4. **Figure 8 / Groin Harness**
– closure side
- 4a. **Figure 8 / Groin Harness**
– buckle side
5. **Leg strap**
– closure side with handle
- 5a. **Leg strap**
– buckle side with handle
6. **Left shoulder strap**
– with integral wrist cuff
- 6a. **Left shoulder strap**
– buckle side
7. **Right shoulder strap**
– with integral wrist cuff
- 7a. **Right shoulder strap**
– buckle side

Other replaceable items:

8. **Head Hugger**
9. **Chin strap**
10. **Drag harness** (optional)
11. **Drag harness** (optional)
12. **Closure strap**
13. **Inner skin retainer**
- 14a **Stretcher carry bag**
– tube type
- 14b **Stretcher carry bag**
– rucksack type

Saviour Technical Stretcher: **GENERAL NOTES FOR PACKAGING AND STRAPPING**

Below are listed the important points to be considered before packaging and strapping the casualty. The following three pages contain illustrated guides of the sequences for packaging and strapping a casualty into the Saviour Technical stretcher.

Any injuries present MUST be taken into account before packaging and transporting a casualty. If neck injuries are present, or suspected, a Cervical collar may be used if desired. Medical devices should be fitted by a suitably qualified person.

Points to remember:

- Counter bending each end of the stretcher will allow it to lay flat after removing from bag.
- Make sure all straps are laid out to the sides and none are trapped underneath.
- Follow the instructions of the team leader or first aider when rolling the casualty on to the stretcher.
- Follow strapping sequence as described.
- **Do not fit the chin strap unless a Cervical Collar has been fitted. There is a danger of strangulation if fitted without a collar present.**
- When tightening the straps grasp the buckle end in one hand and 'pull and push' to tighten the straps so the casualty is not rolled about. Do not over tighten Chest Strap as this may compromise the casualties breathing.
- The wrist cuffs on straps 6 and 7 may be used to secure the arms of the casualty if required.
- Once all straps have been tightened check them all again to ensure that the casualty is secure. It is important to check that the Leg Loop is secure after the body straps are tightened.
- Tuck in all loose ends to prevent the carry party from tripping over during transporting.

Saviour Technical Stretcher:

CASUALTY PACKAGING SEQUENCE

Note: Any injuries present must be taken into account when packaging.

Stretcher Loading:

- All carry handles 200 kg
- Closure straps and buckles 200 kg
- Head haul eyelet 200 kg
- Foot loop 100 kg
- Overall stretcher rating 200 kg

Packaging the casualty:

- Remove the stretcher from the carry bag and unclip the closure strap.
- Unroll the stretcher, **folding it back on itself** so that it lies flat along side the casualty.
- Lay the stretcher beside the casualty with the head hugger slightly higher than the casualty's head, making sure all the straps are clear, (see Figure. 1).
- Log roll the casualty onto the stretcher. Slide the casualty diagonally up so that they are central on the stretcher, with the casualty's head centred on the head hugger. (see Figure. 2).

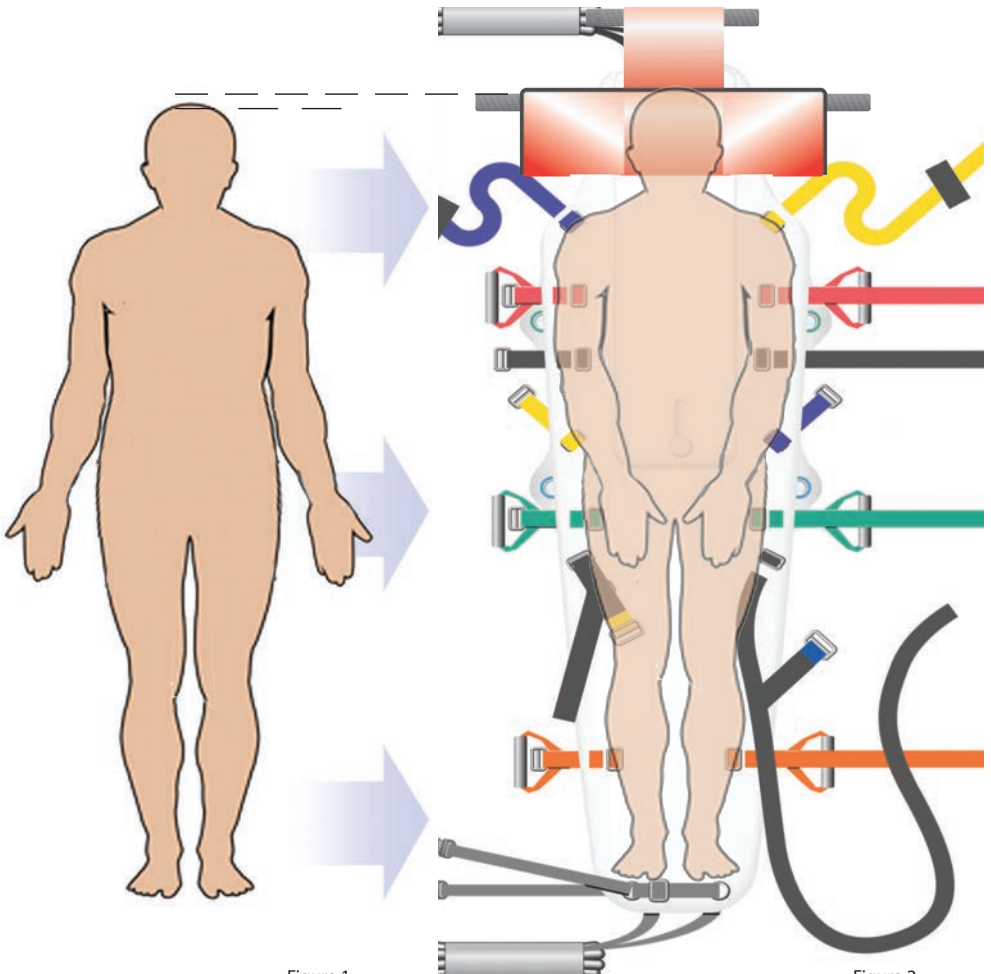


Figure 1

Figure 2

CASUALTY STRAPPING SEQUENCE

Note: If lower limb injuries present see sequence overleaf and use groin harness not figure of eight.

Strapping the casualty:

1. Fasten and tighten the Chest strap first. Pass the straps across the chest, keeping the casualty's arms out. The carry handles should be located under the casualty's arms as shown on Figure 3.

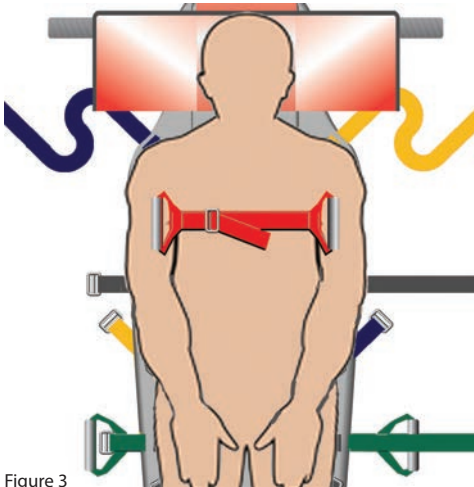


Figure 3

3. Next fasten and tighten the Hip strap. For an unconscious casualty, their hands may be secured later using the wrist cuffs on straps 6 and 7, (the yellow and blue chest straps).

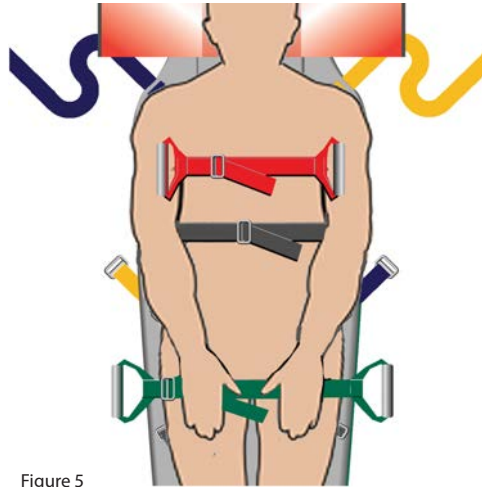


Figure 5

2. Next, fasten and tighten the Waist strap as shown on Figure 4.

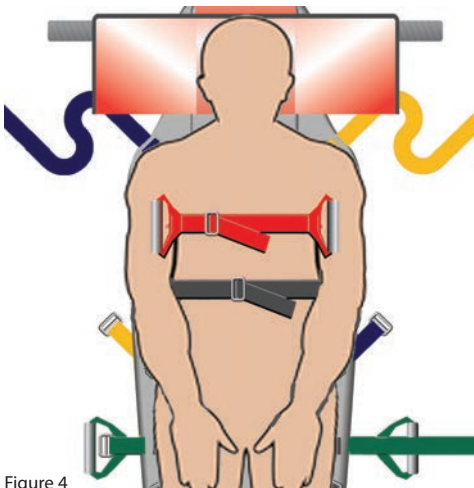


Figure 4

4. **Foot Figure of 8:** Use strap 4 into the yellow buckle on 4a to form a figure of 8 around the feet as shown on Fig 6. Padding around the ankles and legs should be added if required.

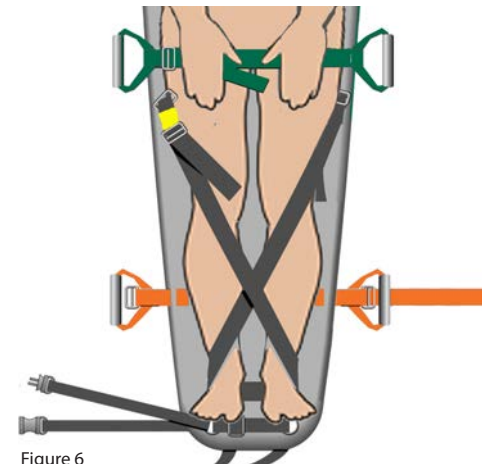


Figure 6

5. Once the figure of eight is complete, secure the final cross strap. This should be secured where it lies on top of the foot loop as shown on Figure 7.

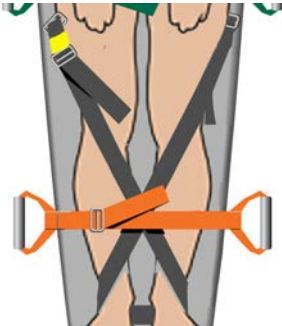


Figure 7

6. Now fasten the diagonal straps across the chest. Secure the strap over the casualty's left shoulder first.

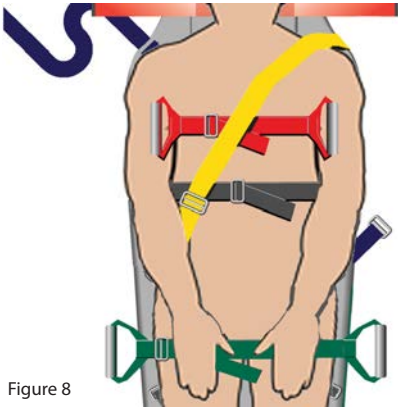


Figure 8

7. Then secure the strap over the casualty's right shoulder. Proceed to tighten up both shoulder straps remembering not to overly tighten and restrict the casualty's ability to breathe. At this point secure the arms into the wrist cuffs on the diagonal chest straps if required.

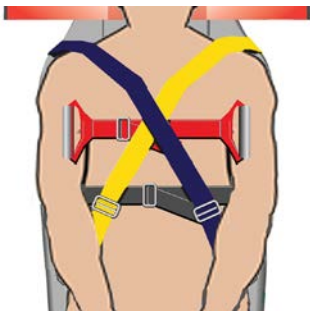


Figure 9

8. Fold up the three sides of the head hugger and secure using the velcro strap above the forehead. Secure the top panel to the sides with the velcro tabs. DO NOT use the chin strap if a collar is not used (as shown on Figure 10) as this can choke the casualty.

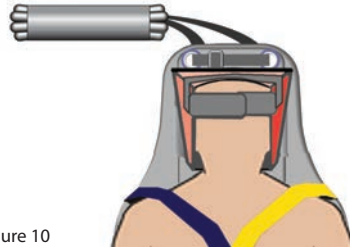


Figure 10

9. If a collar is being used, attach the velcro chin strap across the collar and to the head hugger as shown on Figure 11.

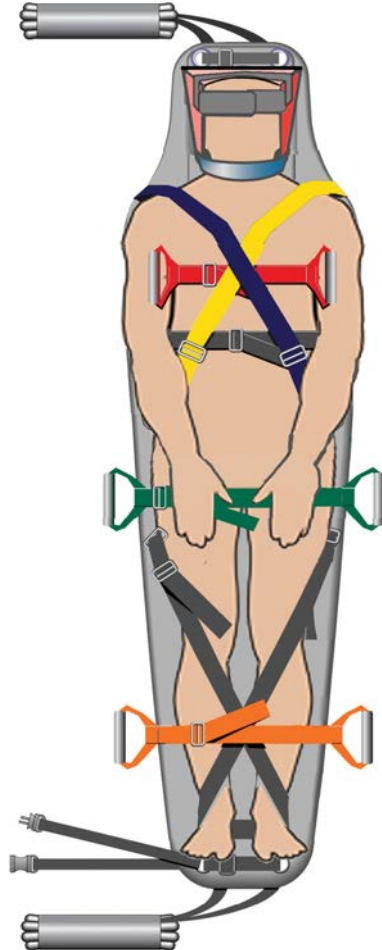


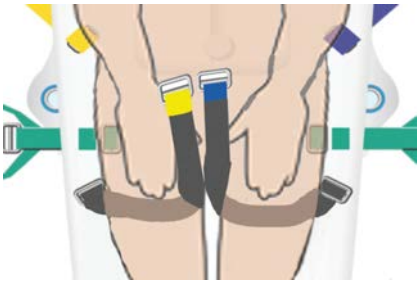
Figure 11

Strapping the casualty:

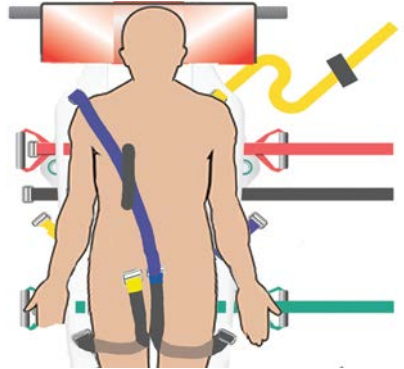
1. Taking the blue buckle on strap 4, pass it under the casualty's left leg and bring it up between their legs, to around casualty belt level. To achieve this, the length of this strap can be adjusted by moving the black nylon slider buckle.



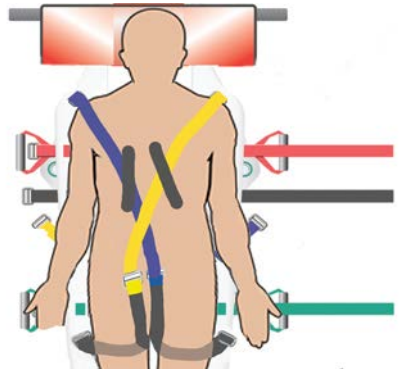
2. Do the same with the yellow buckle on strap 4a, passing it under the right leg, and again up to belt level. This also has an adjuster for optimal length.



3. Now bring the blue shoulder strap, (7) over the casualty's shoulder and attach to the blue buckle on strap 4.



4. Do the same with the yellow shoulder strap, (6), bringing it over the shoulder and attaching to the yellow buckle on strap 4a. This will form the groin harness.



5. Now follow the previous strapping instructions for when using a figure of eight, carrying out steps; 1 (red chest strap), 2 (black waist strap), 3 (green hip strap), 5 (orange foot strap) and finally 8 (head hugger). Note, buckles 6a and 7a are not used when forming a groin harness.

NOTE: For stability the groin harness should always be strapped BELOW the red, black, and green straps which should be applied after the groin harness has been formed.

Saviour Technical Stretcher: **NOTES ON TRANSPORTING THE CASUALTY**

Below are listed the important points to be considered before transporting the casualty. The following pages contain illustrated guides showing the methods of transporting a casualty in the Saviour Technical stretcher.

Any injuries present MUST be taken into account before packaging and transporting a casualty. If neck injuries are present, or suspected, a Cervical collar may be used. Medical devices should be fitted by a suitably qualified person.

Points to remember:

- Counter bending each end of the stretcher will allow it to lay flat after removing from bag.
- Depending on the weight of the casualty 2 to 6 persons are required to ensure a efficient carry.
- Select a team leader or first aider to issue all instructions to effect a smooth transport.
- Elect a team member to be the 'casualties friend' (preferably a first aider if injuries are involved) whose job it is to make sure the casualty is not distressed during the evacuation.
- Chose a evacuation route before commencing (plan ahead). If there are unavoidable obstacles extra rescuers may be placed in readiness to help the main carry party.
- If possible select a team of similar height to keep the casualty level. It is preferable to keep the casualty slightly head up. When travelling down slope carry the casualty feet first. When carrying up slope carry the casualty head first.
- The Saviour Technical stretcher has a low co-efficient of friction and must be secured at all times when on slopes or it may slide under the weight of the casualty. This is best effected by fitting the lifting strops into the head haul eyelets and attaching a suitable rope (recommended to be at least Class A EN1891 semi static) The rescuer securing the stretcher must be secure to prevent accidental slipping. This is especially important on steep slopes.
- The Saviour Technical is NOT designed to be lifted from the ends of the stretcher, but can be made to flex if required for confined space rescue, by lifting or bending from one end.
- The Foot Strap must not be used to lift the stretcher. It is to guide the stretcher when negotiating slopes or past obstacles.
- When dragging a casualty remember that the stretcher is a relatively thin skin so choose the route with care.
- When evacuating up or down a steep slope a head rope should be used deployed from a suitably secured haul team. Rescuers may lift the stretcher whilst the haul party undertakes a co-ordinated haul (or lower) to ensure a smooth passage. On steep slopes the security of the individual rescuers must be addressed.
- If the Saviour Technical stretcher is vertically lifted or lowered then it is recommended that the Saviour Adjustable Lifting Harness is used for this purpose. Saviour Medical Ltd do not take any responsibility for the use of persons own lifting harnesses.
- The Saviour Technical stretcher , with a casualty in place, may be fitted directly into a suitable basket stretcher without decanting the casualty.

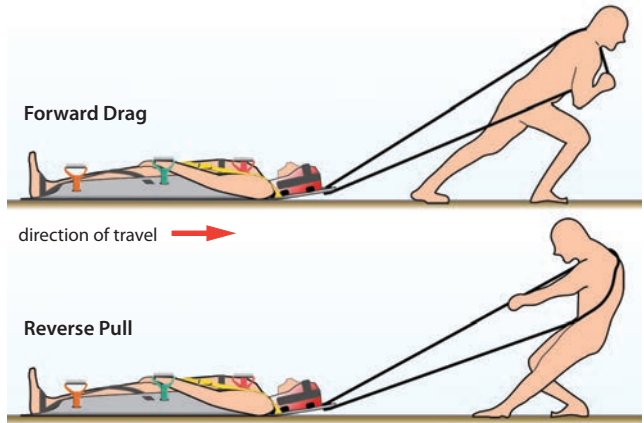
Saviour Technical Stretcher:

USE OF THE OPTIONAL DRAG HARNESS

Optional drag harnesses can be used at either end of the stretcher. On removing the protective sheath, a tape loop is released that is permanently attached through metal eyelets on the stretcher.

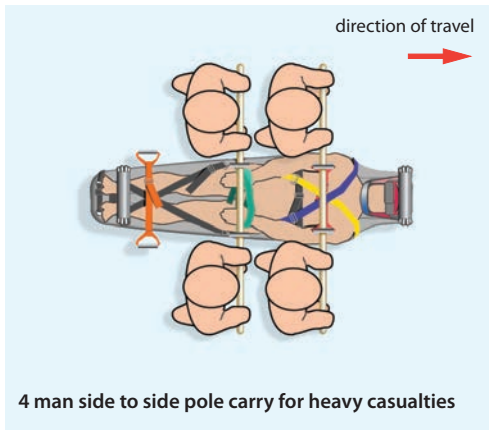
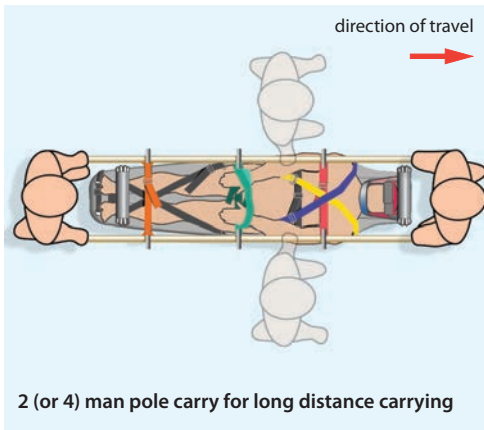
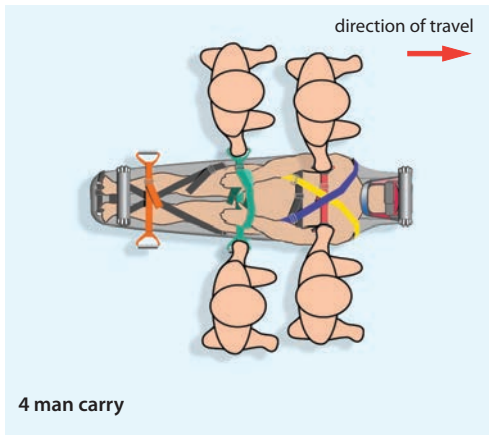
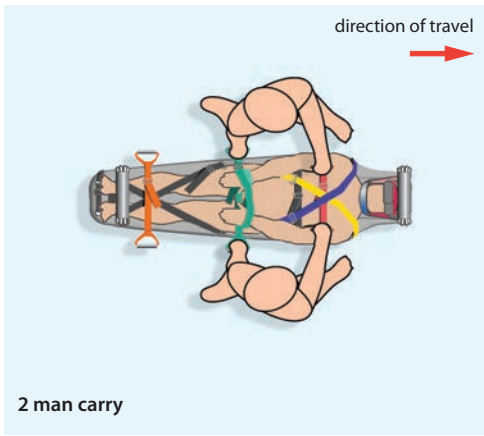
Placing the loop over the head and around the shoulders will allow the rescuer to drag or pull the casualty in the required direction while having their hands free to carry out other duties.

The same dragging or pulling technique is used when moving the casualty head or feet first.



Saviour Technical Stretcher:

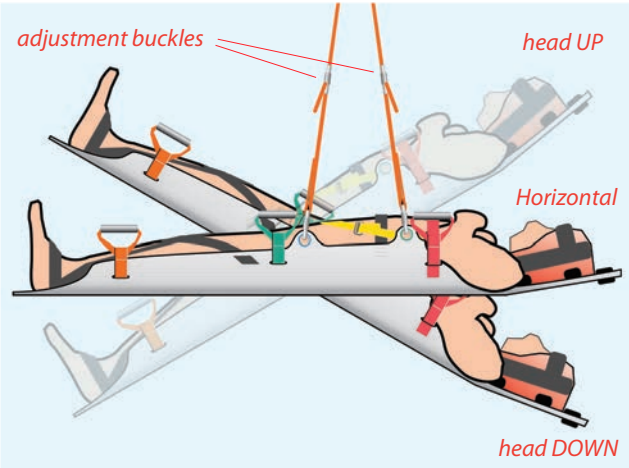
CARRYING THE CASUALTY



Saviour Technical Stretcher: **HORIZONTAL HAUL**



The Saviour Technical stretcher is rated at 200 Kg for horizontal hauling via the four eyelets on the sides of the stretcher. We recommend the use of the Saviour Adjustable Lifting Harness which is sold separately.

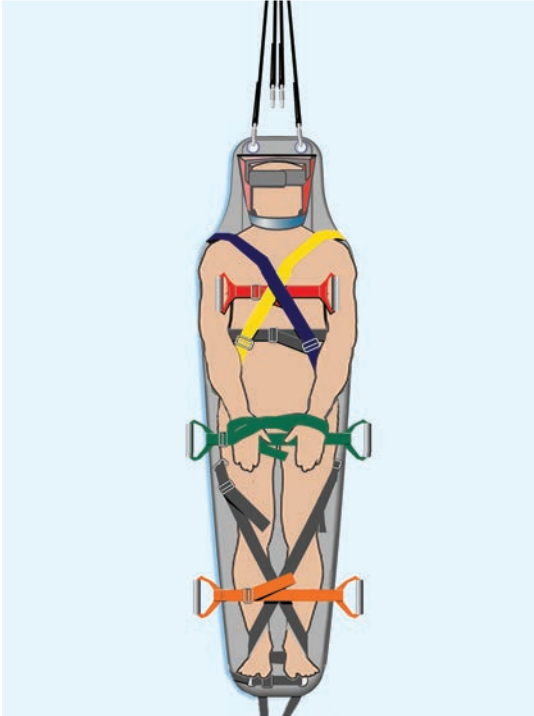


Once the casualty is fully secured into the Saviour Technical stretcher, connect the Saviour Adjustable Lifting Harness to the stretcher eyes, using the triple lock carabiners. Using this harness, infinite positions are possible from head down, through horizontal to head up attitudes.

The eyelets can also be connected to other independent winching systems such as helicopter, fixed platforms etc.



Saviour Technical Stretcher: **VERTICAL HAUL**



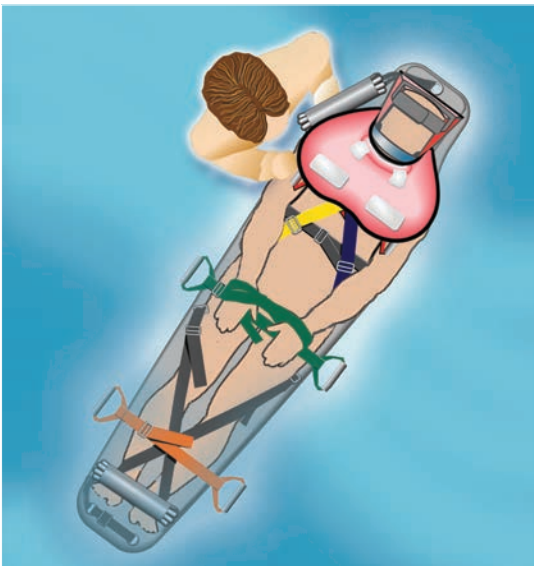
The Saviour Technical stretcher is rated at 200 Kg for vertical lifting from the top eyelets.

It is recommended that the Saviour Adjustable Lifting Harness, which is sold separately is used for this purpose.

Any system that only effects a single point of contact with the casualty should be backed up by a second safety line secured to the casualty.

In order to make the vertical haul easier, it is also recommended that if already attached, the optional upper drag harness be removed from the stretcher to allow easy attachment of the strops. The lower drag harness can be used to stabilise the stretcher during vertical hauling if required.

Saviour Technical Stretcher: **IN WATER**



Being neutrally buoyant, the Saviour Technical stretcher floats without assistance.

A casualty can be placed in the Saviour Technical stretcher with a lifejacket fitted and then swum/ towed to the point of rescue using the drag harness. Casualties can also be put into the Saviour Technical stretcher in the water, (as long as the sea is calm enough), and a lifejacket is fitted first. This would be ideal for spinal casualty recovery in calm water.

Saviour Technical Stretcher: **MAINTENANCE**

The Saviour Technical stretcher is made from materials which will not corrode in most harsh environments but may be subjected to damage or wear and tear during practices and use.

It is recommended that after each use or at intervals of not more than six months the unit is inspected by a competent person and the results recorded. Each unit has a unique serial number.

- Check the outer skin for tears or worn patches.
- Check the slots in the skin that attach the straps and carry handles for splits.
- Check there is no distortion to the skin around the Head Haul Eyelet.
- Check the edges of the skin for tears or splits.
- Check all straps and carry handles for cuts or wear. Take particular notice of the strap area around buckles. If cuts or fraying is present quarantine the stretcher and replace strap(s).
- Check Head Haul strop is not worn, cut or frayed.
- Check that the Velcro fasteners are clean and secure correctly.
- Check the Carry bag is not damaged and the attachment and closure Velcro straps are in good order.
- Check all components are present before re-packing into carry bag.

Notes.

The outer skin will scratch and show signs of wear after use.

The stretcher should not be used if the skin is penetrated or worn through.

All straps can be replaced by the user.

The drag harness may be worn if the stretcher is dragged over rough ground.

The drag harness must always be in first class condition. If in doubt replace.

If splits around the slots that attach the carry handles and straps are longer than 2mm the unit should be withdrawn from service immediately.

Distortion around the Head Haul Eyelet will only be seen if the unit is subjected to a heavy load (such as a arrested fall). If the skin is distorted or penetrated the unit should be withdrawn from service immediately.

The edge of the skin may become scuffed during use.

If in doubt return to the manufacturer for refurbishment.

If in any doubt about the integrity of the stretcher return or refer to the manufacturer/distributor.

Saviour Technical Stretcher: **CLEANING AND STORING**

- The stretcher should be stored, after cleaning and inspection, in the Carry bag provided.
- It is recommended that a tagging system is used to ensure that a stored unit has been cleaned and inspected since last use.
- It is recommended that the stretcher is inspected at intervals not exceeding six months.
- The stretcher should thoroughly rinsed in cold fresh water after every use. A mild detergent may be used if rinsed afterwards.
- A LOW pressure power washer may be used (with care) to remove mud or sand. If contaminated by body fluids the stretcher and straps should be treated with a non corrosive disinfectant following the makers instructions and then thoroughly rinsed in fresh water before storing.
- If the stretcher and straps are contaminated with fuel or chemicals the straps and drag harness should be replaced before re-using.

Further information and assistance can be obtained by visiting our website:

www.lhrmarine.com

