



Maritime New Zealand Guidelines

MARINE GUIDANCE NOTICE ISSUE 4 – 2007

October 2007

SAFE WINCH OPERATION APPENDICES

Appendix 1 Maritime NZ accident data

Previous accidents

21 June 2006

A man was caught between two wire ropes and dragged into the winch, which was reeling in a net. He suffered a broken left arm and a crushed right arm.

14 December 2005

The deckhand was standing on the winch to manually guide the trawl wire onto the winch. His leg became trapped between the wire and the winch drum. His leg was amputated above the knee.

11 May 2005

The chief mate caught his hand in the winch during pot retrieval. He severed two fingers, almost completely severed another, and crushed two other fingers.

13 November 2003

The second mate was feeding the rope spacer around the winch drum with the wire to create a gap between the coils. During this process his glove was caught by the wire, drawing his hand under the wire and drum. He suffered crushing and amputation of his fingers.

25 November 2002

The deckhand's hand was in a bight of the "backbone" attempting to tighten a joining bloodknot. The winch mechanism was inadvertently operated, causing the drum to rotate. The 'backbone' tightened, causing several fingers to be amputated.

4 June 2001

The deckhand was attempting to guide on a small rope on a lifting winch, by hand, when his finger got caught and squashed.

Maritime NZ accident data for winches on fishing vessels 1995-2006

Page 2 of this guidance notice highlights the accidents involving winches on fishing vessels by splitting the results between serious and minor accident injuries. The following graphs provide an overview of all of the accidents. They outline the areas of the body injured, the type of injury and the cause of the accidents.

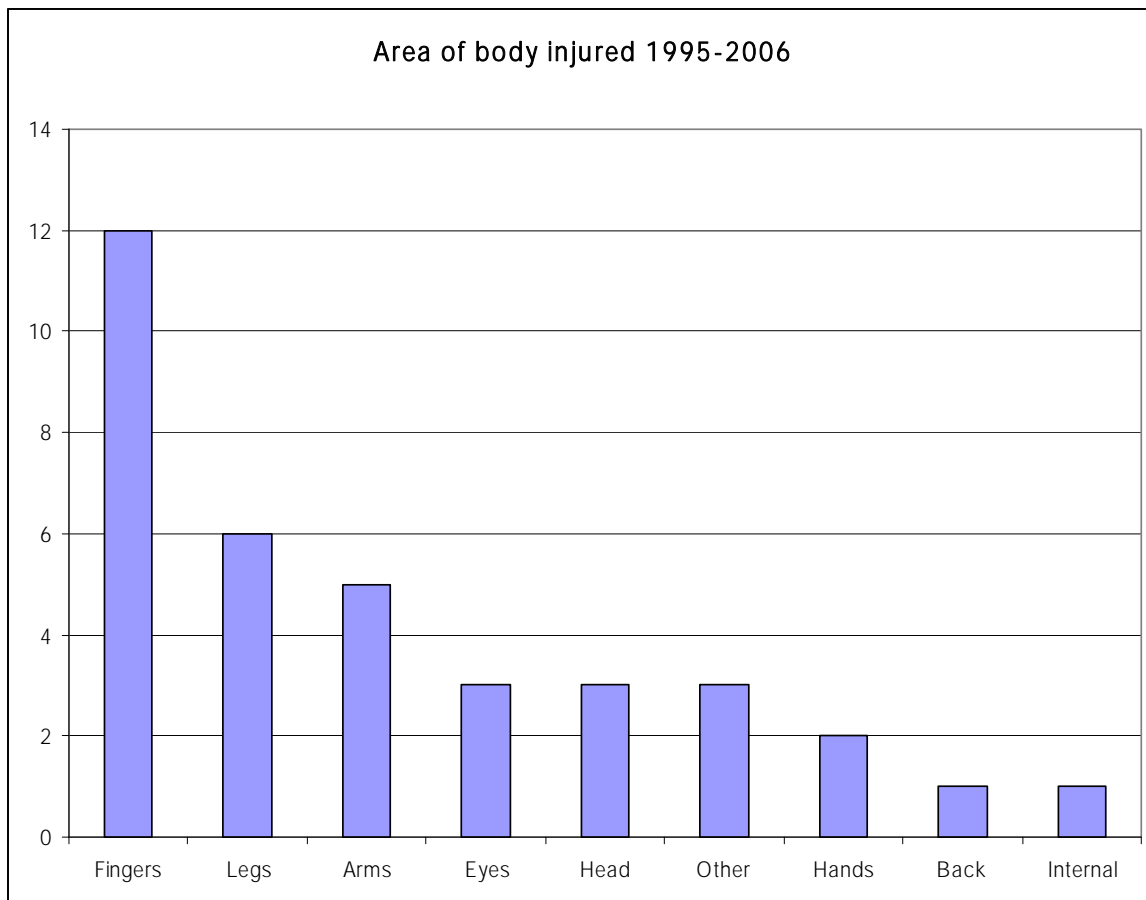
As can be seen:

- fingers are the most likely area of the body to be injured by a winch
- this is followed by legs and arms
- there is a 25% chance of bruising if you are caught in a winch but a 22% chance of amputation.

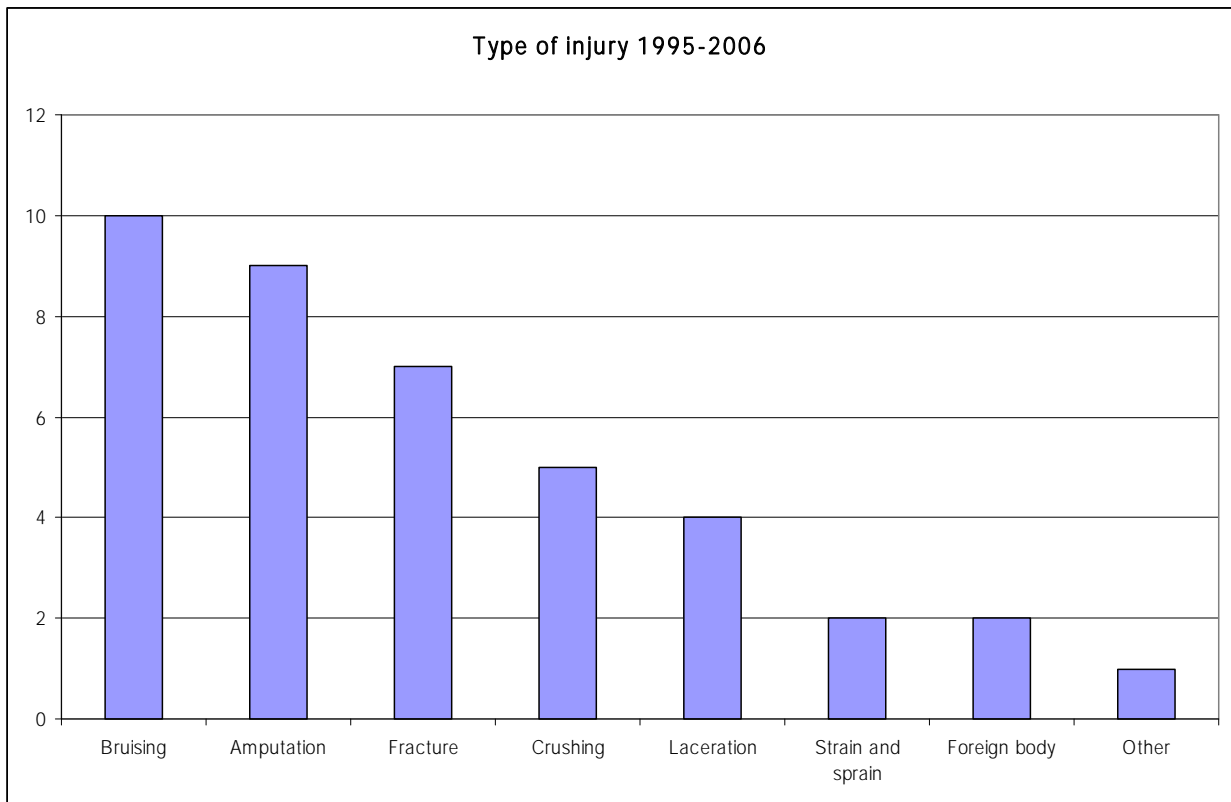
The main causes of accidents are:

- improper position or posture for task
- procedures not followed
- working on moving/dangerous equipment
- hazardous arrangement or condition
- distracted from task.

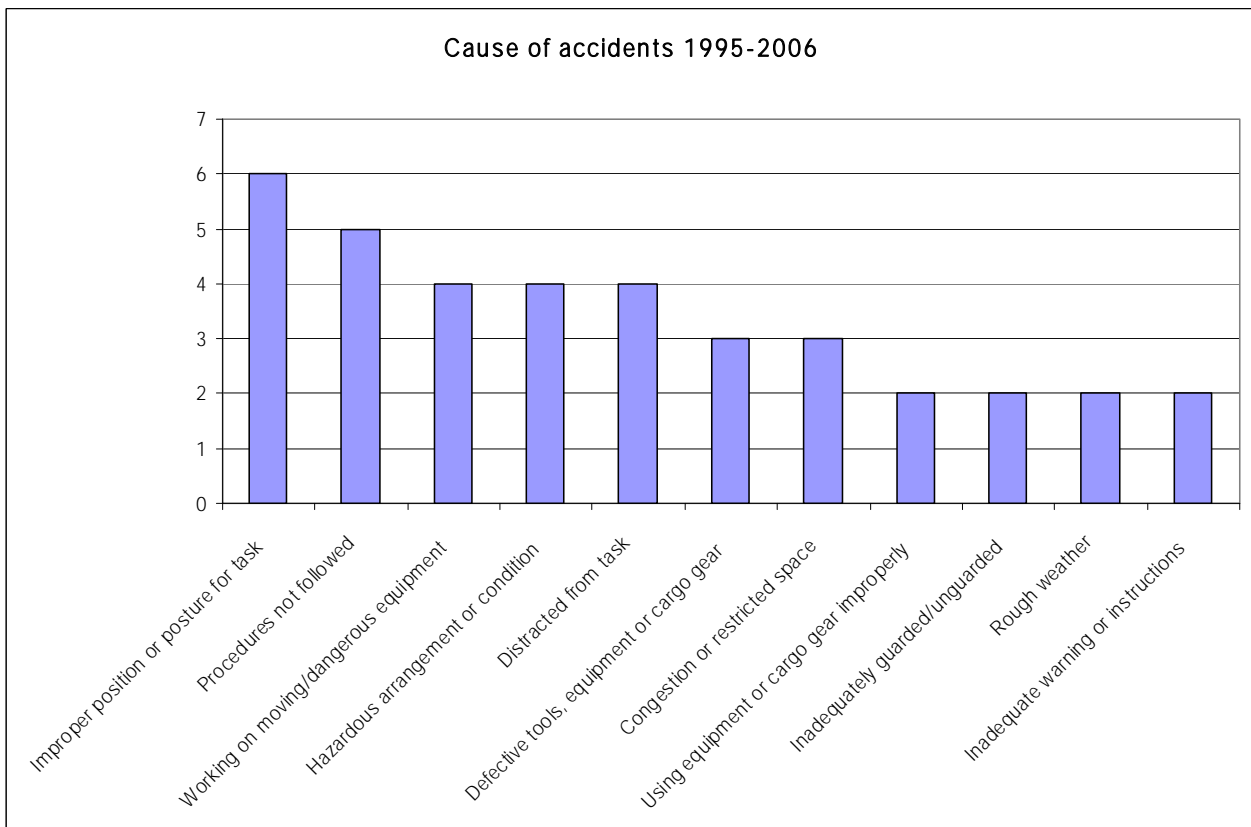
Many of these accidents can be resolved through training.



Source: Maritime NZ accident data base



Source: Maritime NZ accident data base



Source: Maritime NZ accident data base

Appendix 2 Identifying and managing the hazards

FishSAFE Guidelines to hazard identification

FishSAFE guidelines help you to put in place training, practices and procedures that ensure you operate safely and reduce losses due to injury, accident or incidents on your vessel.

To be able to operate safely you must be able to identify the hazards and identify which ones are significant (risk assessment). The following link provides a method of risk assessment using a risk matrix. The results of the risk matrix illustrate the significance of the hazard.

The FishSAFE website contains a hazard identification register and risk matrix that can be downloaded and used to identify the hazards associated with your winches.

This can be accessed from: www.fishsafe.co.nz/guidelines/docs/Hazard%20ID%20and%20Management%201.doc

Significant hazards must be either eliminated, isolated or minimised. The following sections provide advice on eliminating, isolating or minimising the hazard of a winch.

Eliminate the hazard

Eliminating the hazard would mean removing the winches from the fishing vessel. This is impractical and not viable.

Isolate the hazard

Taking into account the size of your vessel and the practicality of implementation you can isolate the hazard using:

- automatic guide-on gear
- sufficient guarding and fencing of moving parts of winches and of warp and chain leads (Maritime Rules Part 40D.67(1)).

Minimise the hazard

You can minimise the hazard caused by the winch through:

- training
 - identify the appropriate training
 - review the training when the winch, or parts of it, are changed or the present training is not working
 - repeat the training at relevant intervals, taking into account the length of time the crewmember has been working around the winches, as well as their level of competence and confidence around them
- making sure every crew member reads this guidance notice
- providing personal protective equipment and making sure it is used
- providing adequate lighting around the area of the winch operation when working at night
- using anti-skid surfaces around the winch operating area and ensuring they are kept clean and clear (Maritime Rules Part 40D.65(2))
- ensuring there is an unobstructed view of the winch operation from the control area (Maritime Rules Part 40D.67(2))
- providing winch barrels with means for fastening wire ends that are designed so as to prevent kinking of the wires (Maritime Rules Part 40D.67(7)).

Maritime Rules Parts 40D.65 *Protection of the crew (general)* and 40D.67 *Winches and other lifting equipment* follow in Appendix 3.

Maritime NZ's Health and Safety – A Guide

Health and Safety – A Guide, produced by Maritime New Zealand, provides you with information about your responsibilities under the Health and Safety in Employment Act 1992 and outlines important information for keeping your workplace healthy and safe.

Contact Maritime NZ for a hard copy of the guide or you can download it from:

www.maritimenz.govt.nz/publications/safety/MNZ_health_safety.pdf

Appendix 3 Maritime Rules

Maritime Rule 40D.65 Protection of the crew (General)

- (1) The surfaces of decks and of flooring in working spaces on board must be so designed or treated as to minimise the possibility of personnel slipping.
- (2) Decks of machinery spaces, galleys, fish handling and deck equipment operating areas, and the deck areas at the foot and head of ladders and in front of doors, must be provided with anti-skid surfaces.
- (3) Where necessary, stairways and ladders must be provided for safe working at sea and in port. They must be of adequate size and strength. Means of access to holds and similar parts of the ship must consist of fixed ladders or stairs. Fixed vertical ladders must be so situated as to be protected from damage. Treads of stairways must be flat and prepared to minimise slipping. Stairways of more than 1 metre in height must have handrails.

Maritime Rule 40D.67 Winches and other lifting equipment

- (1) Moving parts of winches and of warp and chain leads that may present a hazard must be, as far as practicable, adequately guarded and fenced.
- (2) The controls of winches must be placed so that the winch driver has ample room for their unimpeded operation and an unobstructed view of the winch and working area.
- (3) Where a winch is provided with local and remote controls, these must be arranged so as to prevent simultaneous operation.
- (4) Winches must be provided with means to prevent -
 - (a) overloading; and
 - (b) the accidental release of a load that might endanger the crew or ship if the power supply fails.
- (5) Winches must be equipped with means of effectively arresting and holding the safe working load. The brakes of winches on new ships must be proof tested before installation with a static load 25 per cent in excess of the maximum safe working load. Brakes must be provided with simple and easily accessible means of adjustment. Every winch drum that could be uncoupled from the drive must be furnished with a separate brake.
- (6) Where manually operated guiding on gear is installed, the operating wheels must -
 - (a) not have open spokes or protrusions that could cause injury to the operator; and
 - (b) be capable of being disengaged when the warps are paying out. On any new ship the guiding on gear must be capable of being disengaged when the warps are paying out.
- (7) Winch barrels must be provided with means for fastening wire ends that are so designed as to prevent kinking of the wires.
- (8) Where practicable, warps between lead rollers and sheaves and rollers must be guarded.
- (9) Chains and other suitable devices must be provided for stoppering off trawl boards.
- (10) Wires and warps provided must be of adequate strength for the anticipated loads.
- (11) All elements of a fishing gear system must be designed, arranged and installed to provide safe and convenient operation.
- (12) Every lifting appliance of a new ship and its associated working gear must be tested by a surveyor before it is brought into service or after it has undergone any substantial repairs. The proof load for such test must be 25 percent in excess of the safe working load of the lifting appliance. Following such test the lifting appliance must be marked with the safe working load to the satisfaction of the surveyor.
- (13) Lifting appliances and their associated working gear must be maintained in good order. Adequate restraint must be provided to prevent movement of lifted or hoisted fishing gear that could present a hazard to the ship or crew.