

The following guidelines shall be initiated on a cruise by cruise basis with the aim of full compliance by April 01-2001.~~0~~ *These guidelines are under development. Please contact D. Morse, CCG Operations, (902)-426-5114 if you have any questions.*

On a cruise by cruise basis, Science personnel in consultation with the vessel concerned shall endeavor to have certified, as per the following guidelines, the equipment to be used in the process. Particular attention shall be given to equipment which is to be engaged in potential high risk functions such as heavy lift and towing operations. Additionally, the certification and testing of blocks and shackles for use in upcoming cruises shall be considered a priority.

DRAFT GUIDELINES FOR THE CERTIFICATION OF SCIENTIFIC EQUIPMENT ON BOARD COAST GUARD VESSELS

SAFE WORKING LOADS (SWL) AND STRESSES

The SWL of all equipment used in the process shall be 5:1 ratio.

Except where as stated, the SWL shall be permanently marked.

Where the SWL or stresses involved in an operation are calculated. The calculations shall be conducted, documented and signed by a duly qualified mechanical engineer. The forgoing shall be part of the complete documentation required for equipment as specified in the section headed, Equipment Requirements.

Where the SWL of a device cannot be determined from manufacturing data or due to modifications to a device which may have altered its limitations, the SWL may be determined by calculation.

In the case of operations such as CTD casts, where it is not feasible to maintain a SWL of 5:1 throughout the operation, special work procedures shall be put into place to ensure the safety of personnel. For example, at great depths the weight of the CTD wire will itself cause the 5:1 safety factor to be reduced. Before the operation is commenced, Scientific personnel will provide to the Commanding Officer with data indicating the depth at which the 5:1 SWL will commence being compromised.

In the case of some towing operations, where it is not currently possible to accurately measure the stresses to be involved in an operation, the following shall apply: Calculation shall be made to determine the stresses which would be encountered in the normal operation of the device and the SWL ascertained. When the equipment is put into use the actual stresses are to be measured to ensure the SWL is not compromised. The measurements are to be documented and the equipment altered as necessary as not to exceed the SWL.

Proof load testing of equipment not considered to be ships tackle shall be 25% in excess of the SWL. Proof testing of equipment, except where stated, shall be conducted before it is taken into use. Proof loading of equipment shall be done at intervals of no more than 48 months for equipment in continuous use. Equipment such as wire and winches, which have not been utilized in six months shall be proof loaded on a yearly basis or before it is taken into use.

EQUIPMENT PARTICULARS

The following lists the particulars required for equipment used in the processes in regards to inspection , testing and certification.

Documentation shall be provided in regards to all the requirements detailed and shall be made available to the commanding officer or his delegate before the equipment is put into service or in the case of heavy equipment , loaded.

All equipment of substantial weight shall be weighed and marked before being accepted for loading. The weight marked shall take into consideration the total operational mass of the equipment. For example: weight of winch and heaviest length of wire which could be carried on the spool or weight of piston core including the core sample.

All equipment in continuous use shall be inspected on a yearly basis by a competent person and for equipment which has not been utilized in the previous six months, before being taken into use. A competent person shall be considered to be a person who by the nature of his training or experience with the equipment concerned can perform a thorough inspection. This qualified person may be a Ships Officer, Technician or Mechanical Engineer.

All equipment shall be examined for defect or deficiency before and while in use. All defects or deficiencies shall be documented in form C and communicated to the inventory holder.

Fixed Lifting Devices

Equipment permanently fitted to vessels shall be marked with the SWL and maintained as per normal ships lifting gear in regards to certification and inspection.

Blocks and Shackles

Blocks and shackles which are connected to lifting gear shall be tested , marked and certified by a competent authority and have T4 certification.

All other blocks and shackles used in the processes may be tested and certified in house.

All blocks shall be:

- marked with SWL
- have T4 certification and marking or certification by a qualified mechanical engineer as appropriate
- proof loaded
- have an up to date record of maintenance which shall include documentation which details the forgoing items

All Shackles shall be:

- marked with the SWL
- have T4 certification and marking or certification by a qualified mechanical engineer as appropriate
- proof loaded
- have an up to date record of maintenance which shall include documentation which details the forgoing items

Winches

All winches shall be :
-marked with the SWL
-marked with the maximum weight of the winch
-proof loaded
-have an up to date record of maintenance which shall include documentation which details the forgoing items

Lifting Points on Scientific Equipment

Equipment used in the processes shall have been proof tested based on the maximum working weight as described previously. If proof testing is not possible then the documentation of the SWL criteria along with the work procedure used in fabrication of the lifting point shall be deemed acceptable.

In the case of equipment such as mooring floats which are identical in construction and in number such that individual proof loading is impractical : one such device of the lot shall be proof loaded and the documentation of the SWL criteria along with the work procedure used in fabrication of the lifting point shall be deemed acceptable for the lot.

Wires and terminations

Wires are to be certified and accompanied by the appropriate T4 certificate

Where the wire ends in a termination , be certified and accompanied by both a T4 and T5 certificate

Be proof tested

In the case of a wire/termination where it is not reasonably possible to have certification and testing conducted as per the issuance of a T4/T5 certificate the following will apply:

Wires	-Documentation detailing the determination of the SWL -proof load testing
Terminations	-Documentation detailing the determination of the SWL -proof load testing

Where the termination is of a standard design and determination of SWL is in relation to testing to destruction, then other identical terminations shall be considered to have the same SWL but must be proof loaded where possible.