PART 31B Crewing and Watchkeeping
Offshore, Coastal and Restricted
(Non-Fishing Vessels)

Issue No. 31B-1 October 2001

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AC 31B.1 General advice on purpose of advisory circulars

Maritime Safety Authority advisory circulars are designed to give assistance and explanations about the standards and requirements set out in the rules. However, the notes contained in advisory circulars should not be treated as a substitute for the rules themselves, which are the law.

If advisory circular material advises how a rule requirement can be satisfied, then compliance with that advice ensures compliance with the rule. Other methods of complying with the rule may be possible, however the Maritime Safety Authority would require satisfying that those alternative means of compliance were to an equivalent standard to the advice in the advisory circular. The advisory circular would then be amended to include those equivalents.

This AC 31B supports maritime rules Part 31B.
### AC 31B.2  Summary of Main Part 31 Compliance Requirements

<table>
<thead>
<tr>
<th>Rule 31A.7</th>
<th>Rule 31B.6</th>
<th>Rule 31C.7</th>
<th>Compliance date</th>
</tr>
</thead>
<tbody>
<tr>
<td>STCW Vessels</td>
<td>Other Vessels</td>
<td>Fishing Vessels</td>
<td>IN FORCE February 2001</td>
</tr>
</tbody>
</table>

Owners and masters of all vessels to assess crew numbers and qualifications necessary to operate safely and must ensure those numbers and qualifications are on board. This must then be monitored.

| Tables of watchkeeping numbers and qualifications to be complied with PLUS necessary non-watchkeeping crew | Tables of total crew numbers and qualifications to be complied with | IN FORCE February 2001 Except 1 February 2003 for vessels 6m and under |

| Must hold Minimum Safe Crewing Document issued by Director on basis of minimum safe crewing assessment | Must hold Minimum Safe Crewing Document issued by Director on basis of minimum safe crewing assessment EXCEPT vessels that are not listed as high risk or special cases may choose to comply with tables of minimum numbers and qualifications | 1 February 2002 |
AC 31B.3 Part 31B Minimum Safe Crewing Document

Rule 31B.6(2) requires the owner and the master of any vessel of seven listed classes to operate under a Minimum Safe Crewing Document.

In addition, Rule 31B.6(1)(b) allows the owner and the master of any other vessel to choose to operate under a Minimum Safe Crewing Document. This provision allows for an assessment of any vessel for which the crewing tables and flowcharts in Part 31B are considered inappropriate.

The assessment covers both crew numbers and crew qualifications.

Rule 31B.8(1) requires the owner to submit the proposal to the Director. The proposal will then be assessed for the Director by technical staff from the Rules, Seafarer Licensing, and Maritime Operations groups of MSA. They will take into account-

- Whether the proposal has already been assessed by an SSM company and whether that company has provided written support for the proposal;
- Whether the vessel’s crew, or their representatives, have been consulted about the proposal, and what the outcome of any such consultation was. Where MSA considers this consultation essential to the assessment, MSA will discuss with the owner how this consultation can best be achieved before proceeding with assessment of the application;
- The safety record of the vessel;
- Whether the operator had a record of satisfactory operation with the crewing proposed before any rule changes which required this assessment;
- How the proposal compared with other proposals considered;
- The particular circumstances of vessel, equipment, crew, passengers, weather, operating area, length of voyage, shore support, other vessel support, etc;
- Whether the overall package of crewing, training, qualifications, operating limitations, safety equipment, monitoring, experience etc, equates to the standard requirements and balances any shortcomings;
- Normal risk management principles involving assessment of the probability of hazardous events and their consequences;
- The advice of the local Maritime Safety Inspectors;
- Whether the vessel is purpose built/converted for the proposed crewing;
- Whether the operation has undergone a safety assessment satisfactory to the Director;
- The accident and incident record of, and relative to, the vessel, the port, and the operator;
- Hours of work and rest for the crew;
- Whether night operations are required;
- Size, specifications, and equipment of the vessel;
- Amount of bridge and engine-room automation;
- Whether repairs and maintenance are carried out on board and by whom;
- Whether crew work together regularly or not;
- Whether crew are all physically fit.
In addition, for Vessel Handling Harbour Tugs

- Whether the operation is restricted to sheltered waters as defined by maximum wind speed and/or wave height:
- Whether the engineer has sufficient experience on vessel handling harbour tugs to act as master or as deckhand:
- What arrangements have been made in case the vessel is required to proceed outside sheltered waters for emergency responses:
- Whether other vessels are available to assist:
- Whether the vessel is single engine or multi-engined:
- Whether the crew hold the National Certificate in Tug Operations, or whether there is another training and assessment regime in place for the particular vessel:
- Whether a quick release is fitted for the towline:
- Whether tug's line is used:
- Whether the master can observe the person on deck:
- What the required towing tasks will be in that port:
- Whether fire fighting operations are required:
- Whether trainees are to be carried.

Notes:

1. Part 31 allows that minimum crew numbers and crew qualifications can be different for different circumstances, eg one number for day and another for night, or different numbers for different tasks.

2. An option may be to carry an extra person for a provisional period, possibly as a supervising observer.

3. A flowchart for MSA processing of an application follows:
Owner of Part 31B vessel

Proposal for crew numbers and qualifications submitted with supporting arguments including any support from SSM of crew representatives

Nautical Analyst opens file, opens charging account, and considers whether application in accord with rule requirements

No

Yes

Proposal considered by team of at least three appropriate technical staff from Rules, Seafarer Licensing, and Maritime Operations

Consideration of key aspects listed in AC 31B

No

Yes

Recommendation made to Director to approve proposal with conditions if necessary

No

Yes

Nautical Analyst issues Document, advises SSM company and other appropriate persons, closes account, and files documents

The owner must be advised that the approved Minimum Safe Crewing is the absolute minimum and that, in addition, it remains the responsibility of the owner and the master to ensure that the vessel is safely crewed on each particular voyage
AC 31B.4 Engineering System Requirements

Rule 31B.2 - Definitions - states that "System" means any system for which an engineer is responsible, other than the main propulsion machinery. "Systems" are then referred to in the flowcharts that were developed with industry for determining engineer qualifications. Examples include—

(a) Bilge system with oily water separator:
Where the bilges are normally and routinely pumped overboard through the oily water separator when it is legal to do so. If, because of the vessel’s normal operational pattern, bilge water is pumped into a holding tank and thence ashore – even though an oily water separator may be fitted – this shall not count as a system.

(b) Purifiers and oil fuel transfer systems:
the fuel is stored in two or more storage tanks and there is pipework and pumping capacity to enable fuel to be transferred between storage tanks for reasons of stability; for consumption the fuel is pumped from the storage tanks to a settling tank, and thence through a purifier to a daily service tank (or tanks) which supplies the main and auxiliary engines.

(c) Boiler and any associated heating system:
an oil-fired boiler supplying steam under pressure for tank or accommodation heating, or for process work in an on-board factory area.

(d) Automatic sprinkler system:
a fire-fighting sprinkler system protecting the passenger or crew accommodation or cargo spaces which is set off automatically by fire/smoke detectors in the event of fire occurring in the area.

(e) Cold chambers with separate refrigerating plant:
cargo spaces for the carriage of chilled or frozen cargo, with a central refrigeration plant supplying all spaces. Does not include chambers or plant solely for carriage of supplies for crew and passengers.

(f) Water ballast and transfer system:
two or more tanks and associated pipework and pumping systems enabling ballast water to be routinely pumped into or out of any tank or tanks, or transferred between tanks, as a means of controlling the vessel’s stability.

(g) Computer-controlled machinery:
main and auxiliary machinery so arranged that all functions (starting, controlling, and stopping engines, pumps and other machinery) can be set up to occur automatically under the control of a central computerised system.

(h) Auxiliary generators capable of operating in parallel:
where two or more generators or alternators can be connected in parallel to run the electrical systems through a central switchboard. Does not apply if two or more generators each supply an electrically-separate part of the system, or if it is not possible to connect more than one generator to the switchboard at a time.
(i) **Reticulated hydraulic system:**
where one or more hydraulic pumps supply more than one hydraulic motors from a central location by way of an hydraulic ring-main;

(j) **Transverse thrusters:**
transverse thrusters driven by mechanical, electrical or hydraulic means. Does not include azimuthing or Voith-Schneider main propulsion machinery.
AC 31B.5 Passenger Vessel Minimum Safe Crewing Assessments

Rule 31B.6(2) requires the owner of the following vessels to prepare and submit to the Director a proposal for a minimum safe crewing level —

(a) a passenger vessel operating in the offshore or coastal areas;
(b) a passenger vessel carrying 50 or more passengers in the inshore area; or
(c) a passenger vessel carrying 100 or more passengers in the enclosed area.

The following tables and flowcharts provide some initial guidance for assessments.

### Offshore area

<table>
<thead>
<tr>
<th>Vessel</th>
<th>Minimum Required Qualifications</th>
<th>Minimum Crew</th>
</tr>
</thead>
</table>
| 24 m or more length overall but less than 45 m length | Master – NZOM endorsed STCW  
Mate – NZOW  
Deckhand – ADH  
Chief Engineer – MEC 4  
Second Engineer – in accordance with the flow-chart and may be the mate or deckhand | 4            |
| Less than 24 m length overall              | Master – NZOM endorsed STCW  
Mate – NZOW  
Chief Engineer – MEC 4  
Second Engineer – in accordance with the flow-chart and may be the mate | 3            |

![Flowchart](image-url)
### Coastal area

<table>
<thead>
<tr>
<th>Vessel</th>
<th>Passengers on board</th>
<th>Minimum Required Qualifications</th>
<th>Minimum crew</th>
</tr>
</thead>
</table>
| 24 m or more length overall but less than 45 m in length | 50 or more          | Master – NZOM  
Mate – NZOW  
Deckhand – ADH  
Engineer – in accordance with the flow-chart                                                          | 4            |
|                                 | Less than 50        | Master – NZOM  
Mate – ILM  
Deckhand – ADH  
Engineer – accordance with the flow-chart and may be the mate or deckhand                           | 3            |
| Less than 24 m length overall   | 50 or more          | Master – NZOM  
Mate – ILM  
Engineer – in accordance with the flow-chart and may be the mate                                                                                | 2            |
|                                 | Less than 50        | Master – NZOW endorsed command  
Mate – ILM  
Engineer – in accordance with the flow-chart and may be the mate                                                                                  |              |

![Diagram](image.png)
Inshore area

<table>
<thead>
<tr>
<th>Passengers on board</th>
<th>Minimum Required Qualifications</th>
<th>Minimum Crew</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 or more</td>
<td>Master – NZOW endorsed command</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Mate – ILM</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Deckhand – ADH</td>
<td></td>
</tr>
<tr>
<td>100 to 199</td>
<td>Engineer – in accordance with the flow chart and may be the mate or deckhand</td>
<td></td>
</tr>
<tr>
<td>50 to 99</td>
<td>Master – if High Speed Craft, NZOW endorsed command, otherwise ILM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Deckhand – ADH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engineer – in accordance with the flow chart and may be the deckhand</td>
<td></td>
</tr>
</tbody>
</table>

Note: If the master of a vessel operating within any defined section of the coastal area not beyond the 12 mile territorial sea of New Zealand, which has been assigned to that vessel by a surveyor in accordance with Part 20, holds an NZOW or an ILM, the master must ensure that the vessel remains within 30 miles of a safe haven that is specified in the vessel’s Safe Vessel Management Certificate or Safe Operating Plan.
### Enclosed area

<table>
<thead>
<tr>
<th>Passengers on board</th>
<th>Minimum Required Qualifications</th>
<th>Minimum Crew</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 or more</td>
<td>Master – ILM</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Deckhand – ADH</td>
<td>3</td>
</tr>
<tr>
<td>100 to 199</td>
<td>Engineer – in accordance with the flow chart and may be the deckhand</td>
<td></td>
</tr>
</tbody>
</table>

**Diagram:**

1. **Engineer**
   - Is highest powered engine over 750 kW?
     - Yes ➔ Not required
     - No ➔ Is highest powered engine over 2000 kW?
       - Yes ➔ Has vessel 4 or more systems?
         - Yes ➔ MEC 5
         - No ➔ MEC 4
       - No ➔ Is engine and system maintenance either carried out ashore or under warranty?
         - Yes ➔ MEC 5
         - No ➔ MEC 4
AC 31B.6 Approvals for issue of Part 35 Certificates

Maritime Rule Part 31B - Crewing and Watchkeeping – Offshore, Coastal and Restricted (Non-fishing Vessels) - requires the Skippers of any commercial non-fishing boat, operating within the inshore or enclosed limits, of less than 6 metres in length or of any length operating within a marine farm, and which is not carrying any passengers at all, to hold either a Local Launch Operator Certificate or an “industry specific training qualification issued under Part 35”. This particular rule in Part 31B has a lead-in time for it to come into force on 1 February 2003.

Maritime Rule Part 32 – Vessels’ Personnel – Qualifications – sets out the standards for the Local Launch Operator Certificate. Grandparent provisions allow the issue of a certificate of service as LLO to any person with two years experience exercising the privileges of the LLO.

Where an operator wishes to issue their own qualification to operate other small vessels, rule 31B.6(1)(b) allows the option of putting a case to MSA to allow this.

Maritime Rule Part 35 – Training and Examinations – contains rule 35.10(1) – Approval of organisations, which states—

“The Director may, having regard to the risk to maritime safety existing in an organisation’s maritime operation, approve that organisation to issue certificates of competency for the operation of –

(a) craft of six metres or less in length overall; or
(b) non-passenger boats which are not fishing boats, of 15 metres or less in length overall, and which operate only within restricted limits:

If the Director has approved, in accordance with rule 35.11, a training framework developed by the organisation for the certificates of competency that the organisation intends to issue”.

As the rule parts inter-relate, rule 31B.6(1)(b) would be required to support rule 35.10 (1)(b).

Rule 31B.6(1)(b) would also be required to support any variation from the detail stated in Part 35 - although Section 2 of Part 35 has been drafted specifically for the “Training Framework and Approved Organisations for Industry Specific Training”.

Rule 35.11 of Section 2 – Training framework – specifies the conditions for the issue of the approval and can therefore be used as a checklist for both industry applicants and for MSA. All items on it must be satisfied as it is a rule requirement. A copy of this checklist is attached.
In addition, MSA will take account of the following—

1. The standard sought should serve the same purpose as an LLO certificate of service issued by MSA, or an LLO certificate of competency issued by MSA on the basis of the criteria listed in rule 32.9, bearing in mind both the restrictions endorsed on an LLO, against the restriction on the industry issued qualification under Part 35 that it can only be used when operating under the issuing organisation.

2. An application will be facilitated if the organisation has NZQA registration or other recognised quality assurance system.

3. The MSA assessment will be conducted by an MSA nautical examiner. A second MSA official will assist the assessment when desired by the examiner, when requested by the industry applicant, or from time to time as a quality assurance check.

4. The application should cover how MSA will be kept informed of when training and assessment will be taking place, and of what arrangements are proposed for allowing MSA to audit the training, assessment, and ongoing use of the industry issued qualifications.

5. The application should also cover how MSA will be kept informed of the details of those issued with certificates, and how the approved organisation will monitor the performance of certificate holders and advise MSA of any breaches of standards which may warrant action by MSA.

The approval will be issued in the form of a certificate on MSA embossed paper; and will accompanied by an Instrument of Delegation from the Director of Maritime Safety with the approval of the Minister of Transport.

The cost of applications and audits under Part 35 are specified in the Shipping (Charges) Regulations 2000 and are based on an hourly charge of $101 including GST plus travel costs.

**CHECK LIST**

The Director may approve a training framework for a certificate of competency if the Director is satisfied that the training framework—

(a) identifies the duties to be performed by the holder of the certificate and the training to be provided to enable the holder to undertake the duties; and

(b) identifies the risks, including health and safety and environmental risks, involved in the operation of any vessel to which the certificate relates; and

(c) identifies the training that will be given to enable applicants to recognise and avoid or respond to each risk identified under rule 35.11(1)(b); and
(d) identifies the skill level of persons providing training for applicants, including nautical, instruction, and assessment experience; This should obviously be a package that is sufficiently above the qualification being taught and assessed and

(e) identifies how the training will be given to applicants, including –
   (i) which parts of the training will be classroom based and which parts will be carried out on board a vessel; and
   (ii) the length of time for the delivery of each lesson, including, if relevant, whether training will be undertaken in darkness; and
   (iii) how applicants will be assessed; and

(f) outlines the training schedule; and

(g) outlines the minimum number of hours of boating experience required for the granting of the certificate; because of the specific privileges allowed under the industry certificate, the seetime may be considerably less than required for LLO and this is one of the advantages to an organisation of this option and

(h) identifies the medical and eyesight standards that will be required of the holder of the certificate; the ongoing use of the I'M AFLOAT personal checklist would be useful here and

(i) identifies the requirements that existing operators must fulfil to be issued with the certificate; existing operators with 2 years experience may qualify for an MSA Certificate of Service as LLO. However the area conditions on that LLO may not meet the organisation's needs and

(j) outlines how continued proficiency of certificate holders will be maintained; this should include ensuring all certificate holders receive copies of MSA safety and education publications and

(k) outlines how continued proficiency of persons providing training will be maintained; and

(l) identifies how the fit and proper person requirements of section 41 of the Act will be satisfied. This will require the applicant completing a form, obtainable from any Court office, and submitting that form, at present without any cost, to the police. If any individual is unable to do this, the case should be referred for advice to MSA which has experience of these assessments.

(2) The organisation must ensure that the form of the certificate issued to a successful applicant has been approved by the Director. This will have to include specifying that it can only be used commercially when operating under the issuing organisation and providing that organisation holds a current approval under Part 35. It should also specify any conditions applying to its use within the organisation.
AC 31B.7 Operating Limits for Endorsement on Local Launch Operator (LLO) Certificates

Background: Under the previous 'Qualification' and 'Manning Regulations', Local Launchman's Licences (LLL) were endorsed with River and/or Extended River Limit areas where the holders were permitted to operate. More recently this has applied also to holders of LLO certificates issued under maritime rules Part 32 'Vessels' Personnel – Qualifications'.

With the implementation of maritime rules Part 31 'Crewing and Watchkeeping' and revocation of the 'Manning Regulations' the River and Extended River Limit areas will, in time, disappear from legislation. The operating limits for endorsement on LLO certificates therefore need revision to meet the provisions of the new maritime rules.

The River and Extended River Limit areas previously endorsed were appropriate to the level and scope of the qualification and, after consultation during the maritime rule making process, it was decided to continue with similar but slightly expanded limits for holders of LLO.

New Legislation: Maritime rules Part 32 'Vessels Personnel – Qualifications' requires under 32.9 that the Director endorse LLO certificates with the intended area of operation.

The Crewing and Watchkeeping rules Parts 31B 'Offshore, Coastal and restricted (non-fishing vessels)' and 31C 'Fishing Vessels' require that the holders of LLO operating as master must keep their vessels within the area of operation endorsed on their certificate.

Maritime rules Part 20 'Operating Limits' define the areas of 'Enclosed Water Limits' and the areas of the 'Inshore Limits'. These new areas replace the River and Extended River Limits contained in the previous regulations.

Explanation of the areas that may be endorsed by the Director on LLO certificates under maritime rules:

Under the previous regulations LLL holders, and more recently LLO holders, have had their certificates endorsed with River Limit or Extended River Limit areas prescribed in the Restricted-Limits regulations. Holders of LLL and LLO are allowed to operate as skipper of named vessels of up 20 metres in the named Restricted-Limit areas. These limitations are appropriate to the level and scope of the qualification.

Under maritime rules Part 20 'Operating Limits' the Enclosed and Inshore Limits are significantly different to River and Extended River Limit areas. It is therefore necessary for the Director to prescribe new and appropriate areas for LLO certificate holders to operate in. There is little difference in the LLO and previous LLL qualifications and therefore the areas are, for the most part, closely aligned with areas prescribed in the previous regulations.
The nominated areas contained in this advisory circular are in the Enclosed and Inshore Limits in Appendix 1 of maritime rules Part 20 'Operating Limits', with one or two exceptions. Under maritime rules Part 31 'Crewing and Watchkeeping' there is also provision for holders of LLO to operate in inshore limits other than those contained in Appendix 1 of Part 20. Such areas must be within 15 miles of a nominated 'safe haven' and within 4 miles of the coast. The 'safe haven' and area declared by the applicant must be within the vessel's operating limits prescribed by the safe ship management company or on the safe operational plan.

Under maritime rules Part 32 the Director may make up to a maximum of 6 endorsements on an LLO certificate. These endorsements may consist of any combination of vessels and areas e.g. 4 vessels and 2 areas.

**AREAS THAT THE DIRECTOR MAY ENDORSE ON LLO CERTIFICATES:**

1. New Zealand inland water areas e.g. Lake Taupo, Waikato River-Hydro Lakes.
2. Enclosed water limits set out in Appendix 1 of Part 20 'Operating Limits'

**THE FOLLOWING AREAS CONTAINED WITHIN THE INSHORE LIMITS SET OUT IN APPENDIX 1 OF PART 20 'OPERATING LIMITS. ALL BEARINGS AND DIRECTIONS ARE TRUE. (Please note that where the term '6 miles from the coast' is used the term 'coast' means 'The baseline as defined in the 'Territorial Sea, Contiguous Zone and Exclusive Economic Zone Act 1977.' For practical purposes '6 miles from the coast' may be also taken to mean a distance which is 6 miles towards the shore from the 12 mile seaward limit of the territorial sea marked on the appropriate New Zealand chart):**

**NORTH ISLAND AREAS ARE NUMBERED 3 – 31.**

3. **NORTH CAPE TO CAPE KARIKARI:**
   Within the Northland inshore limits between a line extending 090° from North Cape, south eastwards, to a line extending 045° from Cape Karikari and within 6 miles of the coast.

4. **CAPE KARIKARI TO CAVALLI ISLANDS:**
   Within the Northland inshore limits between a line extending 045° from Cape Karikari, southeastwards to a line extending 045° from Motuiwi and within 6 miles of the coast.

5. **CAVALLI ISLAND TO CAPE BRETT:**
   Within the Northland inshore limits between a line extending 045° from Motuiwi southeastwards to a line extending 090° from Cape Brett and within 6 miles of the coast.
6. Cape Brett to Tutukaka Head – Includes Poor Knights Islands:
Within the Northland inshore limits between a line extending 090° from Cape Brett
southwards to a line extending 090° from Tutukaka Head within 6 miles of the coast
and including the area within 6 miles of the Poor Knights Islands.

7. Motutohe Island to Taiharuru Head – Includes Poor Knights Islands:
Within the Northland inshore limits between a line extending 070° from the shore
through the southern end of Motutohe Island Southwards to a line extending 080°
from Taiharuru Head, within 6 miles of the coast and including the area within 6
miles of the Poor Knights Islands.

8. Taiharuru Head to Bream Tail – Includes Hen and Chicken Islands :
Within the Northland/Barrier inshore limits between a line extending 080°
6 miles from Taiharuru Head thence to a position 070° 16.9 miles from Bream Tail,
thence to Bream Tail.

9. Bream Tail to Coromandel Peninsula:
Within the Barrier inshore limits between a line extending 070° 16.9 miles from Bream
Head thence a direct line to a position 080° 17.6 miles from Cape Rodney to Takatu
Point. (This does not include the Auckland inshore limits)

10. Great Barrier Island:
Within the Barrier inshore limits from Takatu Point to a position 080°
17.6 miles from Cape Rodney thence to a position 059° 15.8 miles from
Cape Rodney to a point 000° 4.0 miles from Needles Point (Great Barrier Island).
Thence from Cape Barrier to a position 090° 6 miles from the shore south of the
Pinnacles (Coromandel Peninsula) thence 270° to the shore and thence along the
shore to Kaiti Point.

11. Auckland Inshore Area – Includes Kawau Island and Hauraki Gulf:
Inside a straight line from Kaiti Point to Takatu Point.

12. North Coromandel to Mercury Bay – Including the Mercury Islands:
Within the Barrier/Bay of Plenty inshore limits from the shore south of the Pinnacles
thence 090° for 18.8 miles thence to a position 090° 6.0 miles from the east point of
Red Mercury Island thence to a position 090° 16.5 miles from Hereheretaura Point
thence 270° to the shore.

13. Mercury Bay to Homunga Bay – Including the Alderman Islands and Mayor
Island:
Within the Bay of Plenty inshore limits between a line extending 090°
14.9 miles from Tokarahu Point thence to a position 090° 16.5 miles from Heretaura
Point thence within 6 miles of the coast to a line to a line extending 090° from
Homunga Bay.

14. Whangamata to Town Point – Including Mayor Island & Tauranga:
Within the Bay of Plenty inshore limits between a line extending 090° from
Whangamata Harbour entrance (North side) southeastwards to a line extending 045°
from Town Point and within 6 miles of the coast.
15. **TOWN POINT TO TE KAHAI POINT – INCLUDING WHAKATANE:**
   Within the Bay of Plenty inshore limits between a line extending 045° from Town Point eastwards to a line extending 320° from Te Kaha Point, limited to within 6 miles from the North Island shore and 6 miles seaward of Rurima and Moutohora Islands.

16. **TE KAHAI POINT TO CAPE RUNAWAY:**
   Within the Bay of Plenty inshore limits between a line extending 320° from Te Kaha Point northeastwards to a line extending 000° from Cape Runaway and within 6 miles of the coast.

17. **WAIKAHAWAI POINT TO MAWHAI POINT:**
   Within the Mahia inshore limits between a line extending 090° from Waikahawai Point southwards to a line extending 090° from Mawhai Point and within 6 miles of the coast.

18. **MAWHAI POINT TO GABLE END FORELAND:**
   Within the Mahia inshore limits between a line extending 090° from Mawhai Point southwards to a line extending 090° from Gable End Foreland and within 6 miles of the coast.

19. **GABLE END FORELAND TO YOUNG NICKS HEAD:**
   Within the Mahia inshore limits between a line extending 090° from Gable End Foreland southwards to a line extending 090° from Young Nicks Head and within 6 miles of the coast.

20. **YOUNG NICKS HEAD TO TABLE CAPE:**
   Within the Mahia inshore limits between a line extending 090° from Young Nicks Head southwards to a line extending 090° from Table Cape and within 6 miles of the coast.

21. **TABLE CAPE TO PORTLAND ISLAND:**
   Within the Mahia inshore limits between a line extending 090° from Table Cape southwards to a line extending 180° from Portland Island lighthouse and within 6 miles of the coast.

22. **PORTLAND ISLAND TO WHAKAKI LAGOON – HAWKE BAY:**
   Within the Mahia inshore limits between a line extending 180° from Portland Island lighthouse northwestwards to a line extending 180° from the shore at longitude 177° 35'E (near Whakaki lagoon) and within 6 miles of the coast.

23. **WHAKAKI LAGOON TO WAIKARI RIVER MOUTH - HAWKE BAY:**
   Within the Mahia inshore limits between a line extending 180° from the shore at 177° 35'E westwards to a line extending 135° from the Waikari River mouth and within 6 miles of the coast.

24. **WAIKARI RIVER MOUTH TO CAPE KIDNAPPERS – HAWKE BAY:**
   Within the Mahia inshore area between a line extending 135° from the Waikari River mouth southeastwards to a line extending 090° from Cape Kidnappers and within 6 miles of the coast.
25. CAPE KIDNAPPERS TO RED ISLAND:
Within the Mahia inshore limits between a line extending 090° from Cape Kidnappers southwards to a line extending 090° from the coast through Red Island and within 6 miles of the coast.

26. WELLINGTON:
Inside a straight line commencing at Turakirae Head from there 205° for 5 miles from there to the position 205°, 5 miles from Karori Rock from there 025° through Karori Rock to the shore.

27. KAPITI – INCLUDES KAPITI ISLAND:
Inside a straight line commencing at Ohau Point from there 315° for 5 miles 035° for 31.5 miles from there 120° to the shore.

THE FOLLOWING AREAS 28, 29, 30 AND 31 ARE OUTSIDE THE INSHORE LIMITS SET OUT IN APPENDIX 1 OF PART 20 'OPERATING LIMITS.

28. MANAWATU – FOXTON:
Between a line extending 270° from the shore in latitude 40° 23’S southwards to a line extending 270° from the shore in latitude 40° 33’S and within 6 miles of the coast.

29. WANGANUI – PATEA:
Between a line extending 240° from the shore at latitude 40° 00’S westwards to a line extending 240° from the shore at latitude 39° 45’S and within 6 miles of the coast.

30. TARANAKI:
Between a line extending 315° from the Oakura River mouth northeastwards to a line extending 270° from Pariokariwa Point and within 6 miles of the coast.

31. KAIPARA:
Between a line extending 240° from the shore at latitude 36° 30’S northwestwards to a line extending 240° from the shore at latitude 36° 14’S and within 6 miles of the coast.

SOUTH ISLAND AND STEWART ISLAND AREAS ARE NUMBERED 32 – 47.

32. NELSON – TASMAN BAY:
Within the Nelson/Marlborough inshore limits. Southwards of straight lines commencing at Farewell Spit Lighthouse, thence 150° 16 miles, thence 094½° to the Northern headland of Greville Harbour, and also of a straight line joining Bonne Point and Clay Point in Admiralty Bay.

33. MARLBOROUGH SOUNDS:
Within the Nelson/Marlborough inshore limits. Inside straight lines from East Head to West Head, Tory Channel and commencing at Cape Koamaru thence 045° 5 miles thence to a position 030° 1 mile from Stephens Island lighthouse thence 278° 5 miles thence 215° 12 miles thence 206° to the shore at Cape Soucis.
34. **Waipapa Point to Conway River – Includes Kaikoura Peninsula**
Within the Kaikoura inshore limits inside a line extending 130° from Waipapa Point southwards to a line extending 115° from the north bank of the Conway River mouth and within 6 miles of the coast.

35. **Waimakariri River to Steep Head – Includes Lyttelton Harbour**:
Within the Banks Peninsula inshore limits inside a line extending 090° from the North side of the Waimakariri River mouth southeastwards to a line extending 090° from Steep Head lighthouse and within 6 miles of the coast.

36. **Steep Head to Lake Forsyth – Includes Akaroa Harbour**:
Within the Banks Peninsula inshore limits inside a line extending 090° from Steep Head lighthouse southwards to a line extending 180° from the West Bank of the Lake Forsyth entrance and within 6 miles of the coast.

37. **Cornish Head to Cape Saunders – Includes North Otago Peninsula**:
Within the Otago inshore limits inside a line extending 090° from Cornish Head southeastwards to a line extending 090° from Cape Saunders and within 6 miles of the coast.

38. **Cape Saunders to Taieri River**:
Within the Otago inshore limits inside a line extending 090° from Cape Saunders southwestwards to a line extending 113° from the South bank of the Taieri River mouth and within 6 miles of the coast.

39. **Shag Rock to Waipapa Point – Includes Bluff**:
Inside the Fouveaux Strait inshore limits. Inside a straight line commencing at Shag Rock in position 46° 35.1'S 168°16.4'E thence 225° 5 miles, thence to a position 180° 6 miles from Stirling Point, thence to Waipapa Point.

40. **Shag Rock to Whakaputa Point – Includes Invercargill and Riverton**
Inside the Fouveaux Strait inshore limits. Inside a straight line commencing at Shag Rock in position 46° 35.1'S 168°16.4'E, thence to a position 170° 5 miles from Howells Point, thence to a position 169° 5 miles from Whakaputa Point thence to Whakaputa Point.

41. **Stewart Island – North Eastern Area**:
Inside straight lines commencing at Black Rock Point thence 350° 5 miles thence 112° 9.6 miles thence 136° 15 miles thence 180° 17.5 miles thence 270° through White Islet to the shore.

42. **Fiordland – Chalky and Preservation Inlets**:
Within the Fiordland inshore limits inside a line extending 230° from Cape Puysgur northwestwards to a line extending 230° from Cape Providence and within 6 miles of the coast.

43. **Fiordland – Breaksea and Dusky Sounds**:
Within the Fiordland inshore limits inside a line extending 270° from South Point, Dusky Sound northwards to a line extending 300° from Towing Head and within 6 miles of the coast.
44. **FIORDLAND – Dagg, Doubtful and Thompson Sounds:**
Within the Fiordland inshore limits inside a line extending 300° from Towing Head northwards to a line extending 305° from Shanks Head and within 6 miles of the coast.

45. **FIORDLAND – Nancy, Charles and Caswell Sounds:**
Within the Fiordland inshore limits inside a line extending 305° from Shanks Head northwards to a line extending 315° from Round Head and within 6 miles from the coast.

46. **FIORDLAND – George, Bligh and Sutherland Sounds:**
Within the Fiordland Inshore limits inside a line extending 315° from Round Head northeastwards to a line extending 315° from Bell Point and within 6 miles of the coast.

47. **FIORDLAND – Milford Sound:**
Within the Fiordland Inshore limits inside a line extending 315° from Bell Point northeastwards to a line extending 315° from Stripe Point and within 6 miles from the coast.
AC 31B.8 Hovercraft Crewing

Hovercraft are, under the definition, High Speed Vessels; and under rule 31B.6(2)(d) commercial hovercraft operators are required to hold a Minimum Safe Crewing Document. This requirement offers the advantage of flexibility in crew qualifications as, in New Zealand, neither industry nor MSA offers any specific qualification to hovercraft drivers.

As with any other commercial vessel, the owner must complete a safe crewing assessment as specified in rule 31B.8 and submit it to the Director in accordance with rule 31B.7.

The submission should specify the driver qualification as—

1. (a) the same as specified in the Part 31B tables for a vessel of its length and passenger numbers in its operating area; and

   (b) the type rating and high speed vessel endorsement required by rule 31B.11; or

2. (a) (as for jet boat drivers under Part 80 rule 7.2) not less than 50 hours experience as a hovercraft driver, under the supervision of an experienced driver before driving solo with passengers. The 50 hours experience must include a period in the area in which the driver will operate commercially; and

   (b) the training and examination for the qualification specified in rule 1(a); and

   (c) the type rating and high speed vessel endorsement required by rule 31B.11.

In addition, the operating requirements of Part 40F will have to be complied with.

AC 31B.9 Fitness for Duty and Fatigue

Rule 31B.16 requires

(1) The owner and the master of a vessel to establish and implement procedures in respect of the vessel’s crew to ensure that all crew are fit for duty when keeping a watch; and

(2) The crew of a vessel to ensure that they are fit for duty at all times when keeping a watch; and

Rule 31B.17 requires

(1) The owner and the master of a vessel to establish and implement procedures to ensure a seafarer is fit for duty; and

(2) A seafarer to consider whether they are fit for duty.
Those rules can not prescribe actual hours of work or rest because there is such a range of vessels in this Part, from single crew owner/operator charter yachts up to fast ferries and offshore supply boats, that no tables can cover the vast range of operations.

The following table gives some guidance on the effects of fatigue and associated signs and symptoms—

<table>
<thead>
<tr>
<th>PERFORMANCE IMPAIRMENT</th>
<th>SIGNS and SYMPTOMS</th>
</tr>
</thead>
</table>
| Impaired attention, loss of concentration, and diminished decision-making power | • Overlook or incorrectly order sequential task element  
• Preoccupation with single tasks or elements  
• Exhibit lack of awareness or poor performance  
• Failure to appreciate the gravity of a situation  
• Failure to anticipate danger  
• Failure to observe and obey warning signs |
| Diminished memory | • Overlook a task or elements of a task  
• Fail to remember the sequence of task or task elements  
• Inaccurate recall of operational events |
| Delayed reaction time | • Respond slowly or fail to respond altogether to normal, abnormal, or emergency stimuli  
• Reduced attention span |
| Diminished problem solving ability | • Display poor judgement of distance, speed, and/or time  
• Inaccurate interpretation of a situation  
• Display problems with such things as arithmetic and geometry |
| Mood change | • Less conversant then normal  
• Irritability, tiredness, depression  
• Distracted by discomfort |
| Attitude change | • Display willingness to take risks  
• Ignore normal checks and procedures  
• Display a “don’t care” attitude |
| Adverse physiological effects | • Exhibit speech effects – slur, rate, content  
• Impaired co-ordination of control skills – key punch entry errors, switch selection |
| Impaired alertness | • Succumb to uncontrollable sleep – nap, long sleep episode  
• Display automatic behaviour syndrome |
AC 31B.10 Navigational Watchkeeping at Sea

Rule 31B.18 requires the owner and the master of a vessel to establish and implement watchkeeping procedures, and the crew to comply with those procedures. The following guidelines are copied from the STCW requirements for Part 31A vessels and the wording adapted slightly to make them more applicable to smaller vessel. Owners, masters, and crew of smaller vessels should focus on those underlying principles and further adapt the detail as necessary for their own vessels, including interpreting terms such as "officer," "bridge," etc., as appropriate to their own vessel.

(1) The master of every vessel should ensure that watchkeeping arrangements are adequate for maintaining a safe navigational watch. Under the master's general direction, the officers of the navigational watch are responsible for navigating the vessel safely during their periods of duty, when they will be particularly concerned with avoiding collision and stranding.

The master and the crew should be aware of the serious effects of operational or accidental pollution of the marine environment and should take all possible precautions to prevent such pollution, taking into account the requirements of the marine protection rules and the Resource Management (Marine Pollution) Regulations 1998.

(2) The officer in charge of the navigational watch is the master's representative and is primarily responsible at all times for the safe navigation of the vessel and for complying with Part 22.

(3) A proper look-out must be maintained at all times in accordance with rule 22.5 and should serve the purpose of –

(a) maintaining a continuous state of vigilance by sight and hearing, as well as by all other available means, with regard to any significant change in the operating environment; and

(b) fully appraising the situation and the risk of collision, stranding and other dangers to navigation; and

(c) detecting vessels or aircraft in distress, shipwrecked persons, wrecks, debris and other hazards to safe navigation.

(4) The look-out must be able to give full attention to the keeping of a proper look-out and no other duties should be undertaken or assigned that could interfere with that task. The duties of the look-out and helmsperson are separate and the helmsperson should not be considered to be the look-out while steering, except in small vessels where an unobstructed all-round view is provided at the steering position and there is no impairment of night vision or other impediment to the keeping of a proper look-out. The officer in charge of the navigational watch may be the sole look-out in daylight, provided that on each such occasion –
(a) the officer in charge of the watch has carefully assessed the situation
taking into account all relevant factors, including, but not limited to the
state of weather; visibility; traffic density; proximity of dangers to
navigation; and the attention necessary when navigating in or near
traffic separation schemes; and

(b) the officer of the navigation watch has established without doubt that it
is safe to be the sole look-out; and

(c) assistance is immediately available to be summoned to the bridge when
any change in the situation so requires.

(5) In determining that the composition of the navigational watch is adequate to
ensure that a proper look-out can be maintained continuously, the master
should take into account all relevant factors, including –

(a) visibility, state of weather and sea; and

(b) traffic density, and other activities occurring in the area in which the
vessel is navigating; and

(c) the attention necessary when navigating in or near traffic separation
schemes or other routeing measures; and

(d) the additional workload for the master and crew caused by the nature of
the vessel’s functions, immediate operating requirements and
anticipated manoeuvres; and

(e) the fitness for duty of any crew members on call who are assigned as
members of the watch; and

(f) knowledge of and confidence in the professional competence of the
vessel’s crew; and

(g) the experience of each officer of the navigational watch, and the
familiarity of that officer with the vessel’s equipment, procedures, and
manoeuvring capability; and

(h) activities taking place on board the vessel at any particular time,
including radio-communication activities, and the availability of
assistance to be summoned immediately to the bridge when necessary;
and

(i) the operational status of bridge instrumentation and controls, including
alarm systems; and

(j) rudder and propeller control and vessel manoeuvring characteristics;
and

(k) the size of the vessel and the field of vision available from the conning
position; and

(l) the configuration of the bridge, to the extent that such configuration
might inhibit a member of the watch from detecting by sight or hearing
any external development; and
(m) any other relevant standard, procedure or guidance relating to watchkeeping arrangements and fitness for duty which has been adopted by the International Maritime Organisation.

(6) When deciding the composition of the watch on the bridge, which may include appropriately qualified ratings, the following factors, amongst others, should be taken into account—

(7) (a) at no time should the bridge be left unattended; and
(b) weather conditions, visibility and whether there is daylight or darkness; and
(c) proximity of navigational hazards that may make it necessary for the officer in charge of the watch to carry out additional navigational duties; and
(d) the use and operational condition of navigational aids such as radar or electronic position-indicating devices and any other equipment affecting the safe navigation of the vessel; and
(e) whether the vessel is fitted with automatic steering; and
(f) whether there are radio duties to be performed; and
(g) procedures for the use, and limitations of, UMS controls, alarms and indicators provided on the bridge; and
(h) any unusual demands on the navigational watch that may arise as a result of special operational circumstances.

(8) Taking over the watch

(a) The officer in charge of the navigational watch should not hand over the watch to the relieving officer if there is reason to believe that the latter is not fit for duty and therefore is not capable of carrying out the watchkeeping duties effectively, in which case the master should be notified.

(b) The relieving officer should ensure that the members of the relieving watch are fully capable of performing their duties, particularly as regards their adjustment to night vision. Relieving officers should not take over the watch until their vision is fully adjusted to the light conditions.

(c) Prior to taking over the watch, relieving officers should satisfy themselves as to the vessel’s estimated or true position and confirm its intended track, course and speed, and UMS controls, if fitted, and should note any dangers to navigation expected to be encountered during their watch.

(d) Relieving officers should personally satisfy themselves regarding the—
(i) standing orders and other special instructions of the master relating to navigation of the vessel; and
(ii) position, course, speed and draught of the vessel; and
(iii) prevailing and predicted tides, currents, weather, visibility and the effect of these factors upon course and speed; and
(iv) procedures for the use of main engines to manoeuvre when the main engines are on bridge control; and
(v) navigational situation, including but not limited to –
   (aa) the operational condition of all navigational and safety equipment being used or likely to be used during the watch; and
   (bb) the errors of gyro and magnetic compasses; and
   (cc) the presence and movement of vessels in sight or known to be in the vicinity; and
   (dd) the conditions and hazards likely to be encountered during the watch; and
   (ee) the possible effects of heel, trim, water density and squat on under-keel clearance.

(e) If at any time the officer in charge of the navigational watch is to be relieved when a manoeuvre or other action to avoid any hazard is taking place, the relief of that officer should be deferred until such action has been completed.

(9) Performing the navigational watch

(a) The officer in charge of the navigational watch should –
   (i) keep the watch on the bridge; and
   (ii) in no circumstances leave the bridge until properly relieved; and
   (iii) continue to be responsible for the safe navigation of the vessel, despite the presence of the master on the bridge, until informed specifically that the master has assumed that responsibility and this is mutually understood; and
   (iv) notify the master if in doubt as to what action to take in the interest of safety.

(b) The officer in charge of the navigational watch should, during the watch, check the course steered, position and speed at sufficiently frequent intervals, using any available navigational aids necessary, to ensure that the vessel follows the planned course.

(c) The officer in charge of the navigational watch should have full knowledge of the location and operation of all safety and navigational equipment on board the vessel and should be aware of and take account of the operating limitations of such equipment.
(d) The officer in charge of the navigational watch should not be assigned or undertake any duties which would interfere with the safe navigation of the vessel.

(e) Officers of the navigational watch should make the most effective use of all navigational equipment at their disposal.

(f) The officer in charge of the navigational watch should not hesitate to use, when necessary, the helm, engines and sound signaling apparatus. However, timely notice of intended variations of engine speed should be given where possible or effective use made of UMS engine controls provided on the bridge in accordance with the applicable procedures.

(g) Officers of the navigational watch should know the handling characteristics of their vessel, including its stopping distances, and appreciate that other vessels may have different handling characteristics.

(h) A proper record should be kept during the watch of the movements and of activities relating to the navigation of the vessel.

(i) It is of special importance that the officer in charge of the navigational watch at all times ensures that a proper look-out is maintained. In a vessel with a separate chartroom, the officer in charge of the navigational watch may visit the chartroom, when essential, for a short period for the necessary performance of navigational duties, but should first ensure that it is safe to do so and that proper look-out is maintained.

(j) Operational tests of on board navigational equipment should be carried out at sea as frequently as practicable and as circumstances permit, in particular before hazardous conditions affecting navigation are expected. Such tests should also be carried out prior to port arrival and departure.

(k) The officer in charge of the navigational watch should make regular checks to ensure that –

(i) the person or the automatic pilot steering the vessel is steering the correct course; and

(ii) if practicable, the standard compass error is determined at least once a watch and, when possible, after any major alteration of course; and

(iii) the standard and gyrocompasses are frequently compared and repeaters are synchronized with their master compass; and

(iv) the automatic pilot is tested manually at least once a watch; and

(v) the navigation and signal lights and other navigational equipment are functioning properly; and

(vi) the radio equipment is functioning properly in accordance with Part 43; and

(vii) the UMS controls, alarms and indicators are functioning properly.
The officer in charge of the navigational watch should bear in mind the necessity to comply at all times with the steering gear requirements in Part 23. The officer of the navigational watch should take into account –

(i) the need to station a person to steer the vessel and to put the steering into manual control in good time to allow any potentially hazardous situation to be dealt with safely; and

(ii) that with a vessel under automatic steering it is highly dangerous to allow a situation to develop to the point where the officer in charge of the navigational watch is without assistance and has to break the continuity of the look-out in order to take emergency action.

Officers of the navigational watch should be thoroughly familiar with the use of all electronic navigational aids carried, including their capabilities and limitations, and should use each of these aids when appropriate and should bear in mind that the echo-sounder is a valuable navigational aid.

The officer in charge of the navigational watch should use the radar whenever restricted visibility is encountered or expected, and at all times in congested waters, having due regard to its limitations.

The officer in charge of the navigational watch should ensure that range scales employed are changed at sufficiently frequent intervals that echoes are detected as early as possible. It should be borne in mind that small or poor echoes may escape detection.

Whenever radar is in use, the officer in charge of the navigational watch should select an appropriate range scale and observe the display carefully, and should ensure that plotting or systematic analysis is commenced in ample time for the safe navigation of the vessel.

The officer in charge of the navigational watch should notify the master immediately –

(i) if restricted visibility is encountered or expected; and

(ii) if the traffic conditions or the movements of other vessels are causing concern; and

(iii) if difficulty is experienced in maintaining course; and

(iv) on failure to sight land, a navigation mark or to obtain soundings by the expected time; and

(v) if, unexpectedly, land or a navigation mark is sighted or a change in soundings occurs; and

(vi) on breakdown of the engines, propulsion machinery remote control, steering gear or any essential navigational equipment, alarm or indicator; and

(vii) if the radio equipment malfunctions; and
(viii) in heavy weather, they consider weather damage is possible; and
(ix) if the vessel meets any hazard to navigation, such as ice or a derelict; and
(x) in any other emergency or if in any doubt regarding any matter concerning the safety of the vessel, its crew or the protection of the marine environment.

(r) Despite the requirement to notify the master immediately in the foregoing circumstances, the officer in charge of the navigational watch should in addition not hesitate to take immediate action for the safety of the vessel, where circumstances so require.

(s) The officer in charge of the navigational watch should give watchkeeping crew all the instructions and information that are necessary to ensure the keeping of a safe watch, including a proper lookout.

(t) In areas of high traffic density, in conditions of restricted visibility and in all other hazardous navigational situations where the automatic pilot is used, it should be possible for the officer of the navigational watch to have available without delay the services of a qualified helmsperson who should be ready at all times to take over steering control.

(u) The officer in charge of the navigational watch should ensure that the change over from automatic to manual steering and vice versa is made by or under the supervision of an officer whom the officer in charge of the navigational watch has made responsible for that task.

(v) The master should ensure that the manual steering is tested after prolonged use of the automatic pilot, and before entering areas where navigation demands special caution.

(w) The master should ensure that where navigation demands special caution, vessels, where capable, have more than one steering gear power unit in operation.
(10) Watchkeeping under different conditions and in different areas

*Clear weather*

(a) The officer in charge of the navigational watch should take frequent and accurate compass bearings of approaching vessels as a means of early detection of risk of collision and bear in mind that such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large vessel or a tow or when approaching a vessel at close range. The officer in charge of the navigational watch should also take early and positive action in compliance with the applicable rules within Part 22 – and subsequently check that such action is having the desired effect.

(b) In clear weather, whenever possible, the officer in charge of the navigational watch should carry out radar practice.

*Restricted visibility*

(c) When restricted visibility is encountered or expected, the first responsibility of the officer in charge of the navigational watch is to comply with the relevant rules of Part 22 – with particular regard to the sounding of fog signals, proceeding at a safe speed and having the engines ready for immediate manoeuvre. In addition, the officer in charge of the navigational watch should immediately –

(i) inform the master of the restricted visibility; and

(ii) post a proper look-out; and

(iii) exhibit navigation lights; and

(iv) operate and use the radar.

*In hours of darkness*

(d) The master and the officer in charge of the navigational watch, when arranging look-out duty, should have due regard to the bridge equipment and navigational aids available for use, their limitations, procedures and safeguards implemented.

*Coastal and congested waters*

(e) The largest scale chart on board, suitable for the area in which the vessel is navigating and corrected with the latest available information, should be used. Fixes should be taken at frequent intervals, and should be carried out by more than one method whenever circumstances allow.

(f) The officer in charge of the navigational watch should positively identify all relevant navigation marks.
Navigation with pilot on board

(g) Despite the duties and obligations of pilots, their presence on board does not relieve the master or officer in charge of the navigational watch from their duties and obligations for the safety of the vessel. The master and the pilot should exchange information regarding navigation procedures, local conditions and the vessel’s characteristics. The master and/or the officer in charge of the navigational watch should co-operate closely with the pilot and maintain an accurate check on the vessel’s position and movement.

(h) If in any doubt as to the pilot’s actions or intentions, the officer in charge of the navigational watch should seek clarification from the pilot and, if doubt still exists, should notify the master immediately and take whatever action is necessary for the safety of the vessel before the master arrives.

Vessel at anchor

(i) If the master considers it necessary, a continuous navigational watch should be maintained at anchor. In all circumstances while the vessel is at anchor, the officer in charge of the navigational watch should –

(i) determine and plot the vessel’s position on the appropriate chart as soon as practicable; and

(ii) when circumstances permit, check at sufficiently frequent intervals whether the vessel is remaining securely at anchor by taking bearings of fixed navigation marks or readily identifiable shore objects; and

(iii) ensure that proper look-out is maintained; and

(iv) ensure that inspection rounds of the vessel are made periodically; and

(v) observe meteorological and tidal conditions and the state of the sea; and

(vi) notify the master and undertake all necessary measures if the vessel drags anchor; and

(vii) ensure that the state of readiness of the main engines and other machinery is in accordance with the master’s instructions; and

(viii) if visibility deteriorates, notify the master; and

(ix) ensure that the vessel exhibits the appropriate lights and shapes and that appropriate sound signals are made in accordance with Part 22 and any other applicable regulatory requirements; and

(x) take measures to protect the environment from pollution by the vessel and comply with applicable pollution regulatory requirements.
AC 31B.11 Engine-room Watchkeeping at Sea

Rule 31B.18 requires the owner and the master of a vessel to establish and implement watchkeeping procedures, and the crew to comply with those procedures. The following guidelines are copied from the STCW requirements for Part 31A vessels and the wording adapted slightly to make them more applicable to smaller vessel. Owners, masters, and crew of smaller vessels should focus on those underlying principles and further adapt the detail as necessary for their own vessels, including interpreting terms such as "officer," "engine-room," etc., as appropriate to their own vessel.

The master and the crew should be aware of the serious effects of operational or accidental pollution of the marine environment and should take all possible precautions to prevent such pollution, taking into account the requirements of the marine protection rules and the Resource Management (Marine Pollution) Regulations 1998.

The chief engineer officer of every vessel is bound, in consultation with the master, to ensure that watchkeeping arrangements are adequate to maintain a safe engineering watch.

(1) Definitions

(a) The term engineering watch means either a person or a group of crew comprising the watch, or a period during which –
   (i) an officer is responsible for the machinery spaces; and
   (ii) the physical presence in the machinery spaces of that officer may or may not be required.

(b) The officer in charge of the engineering watch is the chief engineer officer's representative, who is primarily responsible at all times, for the safe and efficient operation and upkeep of machinery affecting the safety of the vessel and is responsible for any inspection, operation and testing of all machinery and equipment under the responsibility of the engineering watch.

(2) Watch arrangements

(a) The composition of the engineering watch should, at all times, be adequate to ensure the safe operation of all machinery affecting the operation of the vessel, in either automated or manual mode, and be appropriate to the prevailing circumstances and conditions.

(b) When deciding the composition of the engineering watch, which may include appropriately qualified ratings, the following criteria should be taken into account –
   (i) the type of vessel and the type and condition of the machinery; and
   (ii) the need for adequate supervision, at all times, of machinery affecting the safe operation of the vessel; and
(iii) any special modes of operation dictated by conditions such as weather, ice, contaminated water, shallow water, emergency conditions, damage containment or pollution abatement; and

(iv) the qualifications and experience of the engineering watch; and

(v) the safety of life, vessel, cargo and port, and protection of the environment; and

(vi) the observance of international, national and local regulatory requirements; and

(vii) maintaining the normal operations of the vessel.

(3) Taking over the watch

(a) The officer in charge of the engineering watch should not hand over the watch to the relieving officer if there is reason to believe that the latter is not fit for duty and therefore is not capable of carrying out the watchkeeping duties effectively, in which case the chief engineer officer should be notified.

(b) The relieving officer of the engineering watch should ensure that the members of the relieving engineering watch are fully capable of performing their duties effectively.

(c) Prior to taking over the engineering watch, relieving officers should make themselves aware of at least the following –

(i) the standing orders and special instructions of the chief engineer officer relating to the operation of the vessel’s systems and machinery; and

(ii) the nature of all work being performed on machinery and systems, the crew involved and potential hazards; and

(iii) the level and, where applicable, the condition of water or residues in bilges, ballast tanks, slop tanks, reserve tanks, fresh water tanks, sewage tanks and any special requirements for use or disposal of the contents thereof; and

(iv) the condition and level of fuel in the reserve tanks, settling tank, day tank and other fuel storage facilities; and

(v) any special requirements relating to sanitary system disposals; and

(vi) the condition and mode of operation of the various main and auxiliary systems, including the electrical power distribution system; and

(vii) where applicable, the condition of monitoring and control console equipment, and any equipment that is being operated manually; and

(viii) where applicable, the condition and mode of operation of automatic boiler controls such as flame safeguard control systems,
limit control systems, combustion control systems, fuel-supply control systems and other equipment related to the operation of steam boilers; and

(ix) any potentially adverse conditions resulting from bad weather, ice, or contaminated or shallow water; and

(x) any special modes of operation dictated by equipment failure or adverse vessel conditions; and

(xi) the reports of engine-room ratings relating to their assigned duties; and

(xii) the availability of fire-fighting appliances; and

(xiii) the state of completion of the engine-room logbook.

(4) Performing the engineering watch

(a) The officer in charge of the engineering watch should ensure that the established watchkeeping arrangements are maintained and that, under direction, engine-room ratings, if forming part of the engineering watch, assist in the safe and efficient operation of the propulsion machinery and auxiliary equipment.

(b) The officer in charge of the engineering watch should continue to be responsible for machinery-space operations, despite the presence of the chief engineer officer in the machinery spaces, until specifically informed that the chief engineer officer has assumed that responsibility and this is mutually understood.

(c) All members of the engineering watch should be familiar with their assigned watchkeeping duties. In addition, every member should, with respect to the vessel they are serving in, have knowledge of –

(i) the use of internal communication systems appropriate to their onboard duties; and

(ii) the escape routes from machinery spaces; and

(iii) the engine-room alarm systems and be able to distinguish between the various alarms, with special reference to the fire-extinguishing media alarm; and

(iv) the number, location and types of fire-fighting equipment and damage control gear in the machinery spaces, together with their use and the various safety precautions to be observed.

(d) Any machinery not functioning properly, expected to malfunction or requiring special service should be noted by the officer in charge of the engineering watch along with any action already taken. Plans should be made by the officer in charge of the engineering watch for any further action if required.
(e) When the machinery spaces are in the attended condition, the officer in charge of the engineering watch should at all times be readily capable of operating the propulsion equipment in response to needs for changes in direction or speed.

(f) When the machinery spaces are in the periodic unattended condition, the designated duty officer in charge of the engineering watch should be immediately available and on call to attend the machinery spaces.

(g) The officer in charge of the engineering watch should ensure that all bridge orders are promptly executed. Changes in direction or speed of the main propulsion units should be recorded by the officer in charge of the engineering watch, except where the Director has determined that the size or characteristics of a particular vessel make such recording impracticable. The officer in charge of the engineering watch should ensure that the main propulsion unit controls, when in the manual mode of operation, are continuously attended under stand-by or manoeuvring conditions.

(h) The officer in charge of the engineering watch should ensure that due attention is paid to the ongoing maintenance and support of all machinery, including mechanical, electrical, electronic, hydraulic and pneumatic systems, their control apparatus and associated safety equipment, all accommodation service systems equipment and the recording of stores and spare gear usage.

(i) The chief engineer officer should ensure that the officer in charge of the engineering watch is informed of all preventive maintenance, damage control, or repair operations to be performed during the engineering watch. The officer in charge of the engineering watch should be responsible for the isolation, bypassing and adjustment of all machinery under the responsibility of the engineering watch that is to be worked on, and should record all work carried out.

(j) When the engine-room is put in a stand-by condition, the officer in charge of the engineering watch should ensure that all machinery and equipment which may be used during manoeuvring is in a state of immediate readiness and that an adequate reserve of power is available for steering gear and other requirements.

(k) The chief engineer officer should ensure that officers in charge of an engineering watch are not assigned nor undertake any duties which would interfere with their supervisory duties in respect of the main propulsion system and ancillary equipment. They should keep the main propulsion plant and auxiliary systems under constant supervision until properly relieved, and should periodically inspect the machinery in their charge. They should also ensure that adequate rounds of the machinery and steering-gear spaces are made for the purpose of observing and reporting equipment malfunctions or breakdowns, performing or
directing routine adjustments, required upkeep and any other necessary tasks.

(l) Officers in charge of an engineering watch should direct any other member of the engineering watch to inform them of potentially hazardous conditions which may adversely affect the machinery or jeopardize the safety of life or the safety of the vessel.

(m) The officer in charge of the engineering watch should ensure that the machinery space watch is supervised, and should arrange for substitute crew in the event of the incapacity of any engineering watch crew. The engineering watch should not leave the machinery spaces unsupervised in a manner that would prevent the manual operation of the engine-room plant or throttles.

(n) The officer in charge of the engineering watch should take the action necessary to contain the effects of damage resulting from equipment breakdown, fire, flooding, rupture, collision, stranding, or other cause.

(o) Before going off duty, the officer in charge of the engineering watch should ensure that all events related to the main and auxiliary machinery which have occurred during the engineering watch are suitably recorded.

(p) The officer in charge of the engineering watch should co-operate with any engineer in charge of maintenance work during all preventive maintenance, damage control or repairs. This should include but not necessarily be limited to –

(i) isolating and bypassing machinery to be worked on; and

(ii) adjusting the remaining plant to function adequately and safely during the maintenance period; and

(iii) recording, in the engine-room logbook or other suitable document, the equipment worked on and the crew involved, and any safety steps that have been taken and by whom, for the benefit of relieving officers and for record purposes; and

(iv) testing and putting into service, when necessary, the repaired machinery or equipment.

(q) The officer in charge of the engineering watch should ensure that any engineering ratings who perform maintenance duties are available to assist in the manual operation of machinery in the event of automatic equipment failure.

(r) The officer in charge of the engineering watch should bear in mind that changes in speed resulting from machinery malfunction, or any loss of steering, may imperil the safety of the vessel and life at sea. The officer in charge of the engineering watch should notify the bridge immediately –
(i) in the event of fire; and
(ii) in the event of any impending action in machinery spaces that may cause reduction in the vessel's speed, imminent steering failure, stoppage of the vessel's propulsion system or any alteration in the generation of electric power or similar threat to safety.

This notification, where possible, should be accomplished before changes are made, in order to afford the bridge the maximum available time to take whatever action is possible to avoid a potential marine casualty.

(s) The officer in charge of the engineering watch should notify the chief engineer officer without delay –

(i) when engine damage or a malfunction occurs which may be such as to endanger the safe operation of the vessel; and

(ii) when any malfunction occurs which the officer in charge believes may cause damage or breakdown of propulsion machinery, auxiliary machinery or monitoring and governing systems; and

(iii) in any emergency or if in any doubt as to what decision or measures to take.

(t) Despite the requirement to notify the chief engineer officer in the circumstances set out above, the officer in charge of the engineering watch should not hesitate to take immediate action for the safety of the vessel, its machinery and crew where circumstances require.

(u) The officer in charge of the engineering watch should –

(i) give the watchkeeping crew all appropriate instructions and information which will ensure the keeping of a safe engineering watch; and

(ii) ensure that routine machinery upkeep, performed as incidental tasks as a part of keeping a safe watch, is set up as an integral part of the watch routine; and

(iii) ensure that detailed repair maintenance involving repairs to electrical, mechanical, hydraulic, pneumatic or applicable electronic equipment throughout the vessel is performed with the knowledge of the officer in charge of the engineering watch and chief engineer officer; and

(iv) ensure that these repairs are recorded in the engine room log book.

(5) Engineering watchkeeping under different conditions and in different areas

*Restricted visibility*

(a) The officer in charge of the engineering watch should ensure that permanent power is available for sound signals and that at all times bridge orders relating to changes in speed or direction of operation are
immediately implemented and, in addition, that auxiliary machinery used for manoeuvring is readily available.

_Coastal and congested waters_

(b) The officer in charge of the engineering watch should ensure that all machinery involved with the manoeuvring of the vessel can immediately be placed in the manual mode of operation when notified that the vessel is in congested waters. The officer in charge of the engineering watch should also ensure that an adequate reserve of power is available for steering and other manoeuvring requirements. Emergency steering and other auxiliary equipment should be ready for immediate operation.

_Vessel at anchor_

(c) When a vessel is at anchor in an open roadstead, or any other virtually “at-sea” condition, the engineer officer in charge of the engineering watch should ensure that –

(i) an efficient engineering watch is kept; and

(ii) periodic inspection is made of all operating and stand-by machinery; and

(iii) main and auxiliary machinery is maintained in a state of readiness in accordance with orders from the bridge; and

(iv) measures are taken to protect the environment from pollution by the vessel, and that applicable pollution prevention requirements are complied with; and

(v) all damage-control and fire-fighting systems are in readiness.
AC 31B.12 Watchkeeping in port

Rule 31B.18 requires the owner and the master of a vessel to establish and implement watchkeeping procedures, and the crew to comply with those procedures. The following guidelines are copied from the STCW requirements for Part 31A vessels and the wording adapted slightly to make them more applicable to smaller vessel. Owners, masters, and crew of smaller vessels should focus on those underlying principles and further adapt the detail as necessary for their own vessels, including interpreting terms as appropriate to their own vessel.

The master and the crew should be aware of the serious effects of operational or accidental pollution of the marine environment and should take all possible precautions to prevent such pollution, taking into account the requirements of the marine protection rules and the Resource Management (Marine Pollution) Regulations 1998.

On any vessel safely moored or safely at anchor under normal circumstances in port, the master should arrange for an appropriate and effective watch to be maintained for the purpose of safety. Special requirements may be necessary for special types of vessels' propulsion systems or ancillary equipment and for ships carrying hazardous, dangerous, toxic or highly flammable materials or other special types of cargo.

(1) Watch arrangements

(a) The master should ensure that arrangements for keeping a deck watch when the vessel is in port are at all times adequate to –

   (i) ensure the safety of life, of the vessel, the port and the environment, and the safe operation of all machinery related to cargo operation; and

   (ii) observe international, national and local rules; and

   (iii) maintain order and the normal routine of the vessel.

(b) The master should decide the composition and duration of the deck watch depending on the conditions of mooring, the type of the vessel and the character of duties.

(c) If the master considers it necessary, a qualified officer should be in charge of the deck watch.

(d) The officer in charge of the deck watch should ensure that the necessary equipment is so arranged as to provide for efficient watchkeeping.
Taking over the watch

(a) Officers in charge of the deck or engineering watch should not hand over the watch to their relieving officer if they have any reason to believe that the latter is not capable of carrying out watchkeeping duties effectively, in which case the master or chief engineer should be notified accordingly. Relieving officers of the deck or engineering watch should ensure that all members of their watch are fully capable of performing their duties effectively.

(b) If, at the moment of handing over the deck or engineering watch, an important operation is being performed that operation should be concluded by the officer being relieved, except when ordered otherwise by the master or chief engineer officer.

Taking over the deck watch

(c) Prior to taking over the deck watch, the relieving officer should be informed of the following by the officer in charge of the deck watch –

(i) the depth of the water at the berth, the vessel’s draught, the level and time of high and low waters; the securing of the moorings, the arrangement of anchors and the scope of the anchor chain, and other mooring features important to the safety of the vessel; the state of main engines and their availability for emergency use; and

(ii) all work to be performed on board the vessel; including the nature, amount and disposition of cargo loaded or remaining, and any residue on board after unloading the vessel; and

(iii) the level of water in bilges and ballast tanks; and

(iv) the signals or lights being exhibited or sounded; and

(v) the number of crew members required to be on board and the presence of any other persons on board; and

(vi) the state of fire-fighting appliances; and

(vii) any special port regulations; and

(viii) the master’s standing and special orders; and

(ix) the lines of communication available between the vessel and shore personnel, including port authorities, in the event of an emergency arising or assistance being required; and

(x) any other circumstances of importance to the safety of the vessel, its crew, cargo or protection of the environment from pollution; and

(xi) the procedures for notifying the appropriate authority of any environmental pollution resulting from vessel activities.

(d) Relieving officers, before assuming charge of the deck watch, should verify that –
(i) the securing of moorings and anchor chain is adequate; and
(ii) the appropriate signals or lights are properly exhibited or sounded; and
(iii) safety measures and fire protection regulations are being maintained; and
(iv) they are aware of the nature of any hazardous or dangerous cargo being loaded or discharged and the appropriate action to be taken in the event of any spillage or fire; and
(v) no external conditions or circumstances imperil the vessel and that it does not imperil others.

Taking over the engineering watch

(e) Prior to taking over the engineering watch, the relieving officer should be informed by the officer in charge of the engineering watch as to –
(i) the standing orders of the day, any special orders relating to the vessel operations, maintenance functions, repairs to the vessel’s machinery or control equipment; and
(ii) the nature of all work being performed on machinery and systems on board the vessel, crew involved and potential hazards; and
(iii) the level and condition, where applicable, of water or residue in bilges, ballast tanks, slop tanks, sewage tanks, reserve tanks and special requirements for the use or disposal of the contents thereof; and
(iv) any special requirements relating to sanitary system disposals; and
(v) the condition and state of readiness of portable fire-extinguishing equipment and fixed fire-extinguishing installations and fire-detection systems; and
(vi) authorised repair crew on board engaged in engineering activities, their work locations and repair functions and other authorised persons on board and the required crew; and
(vii) any port regulatory requirements pertaining to vessel effluents, firefighting requirements and vessel readiness, particularly during potential bad weather conditions; and
(viii) the lines of communication available between the vessel and shore personnel, including port authorities, in the event of an emergency arising or assistance being required; and
(ix) any other circumstance of importance to the safety of the vessel, its crew, cargo or the protection of the environment from pollution; and
(x) the procedures for notifying the appropriate authority of environmental pollution resulting from engineering activities.
(f) Relieving officers, before assuming charge of the engineering watch, should satisfy themselves that they are fully informed by the officer being relieved, as outlined above, and should –

(i) be familiar with existing and potential sources of power, heat and lighting and their distribution; and

(ii) know the availability and condition of vessel’s fuel, lubricants and all water supplies; and

(iii) be ready to prepare the vessel and its machinery, as far as is possible, for stand-by or emergency conditions as required.

(3) Performing the watch

*Performing the deck watch*

(a) The officer in charge of the deck watch should –

(i) make rounds to inspect the vessel at appropriate intervals; and

(ii) pay particular attention to –

(aa) the condition and securing of the gangway, anchor chain and moorings, especially at the turn of the tide and in berths with a large rise and fall, and if necessary, take measures to ensure that they are in normal working condition; and

(bb) the draught, under-keel clearance and the general state of the vessel, to avoid dangerous listing or trim during cargo handling or ballasting; and

(cc) the weather and sea state; and

(dd) the observance of all regulations concerning safety and fire protection; and

(ee) the water level in bilges and tanks; and

(ff) all persons on board and their location, especially those in remote or enclosed spaces; and

(gg) the exhibition and sounding, where appropriate, of lights and signals; and

(iii) in bad weather, or on receiving a storm warning, take the necessary measures to protect the vessel, persons on board and cargo; and

(iv) take every precaution to prevent pollution of the environment by the vessel; and

(v) in an emergency threatening the safety of the vessel, raise the alarm, inform the master, take all possible measures to prevent any damage to the vessel, its cargo and persons on board, and, if necessary, request assistance from the shore authorities or neighbouring vessels; and
(vi) be aware of the vessel’s stability condition so that, in the event of fire, the shore fire-fighting authority may be advised of the approximate quantity of water that can be pumped on board without endangering the vessel; and

(vii) offer assistance to vessels or persons in distress; and

(viii) take necessary precautions to prevent accidents or damage when propellers are to be turned; and

(ix) enter in the appropriate logbook all important events affecting the vessel.

Performing the engineering watch

(b) Officers in charge of the engineering watch should pay particular attention to –

(i) the observance of all orders, special operating procedures and regulatory requirements concerning hazardous conditions and their prevention in all areas in their charge; and

(ii) the instrumentation and control systems, monitoring of all power supplies, components and systems in operation; and

(iii) the techniques, methods and procedures necessary to prevent violation of the pollution regulations of the local authorities; and

(iv) the state of the bilges.

(c) Officers in charge of the engineering watch should –

(i) in emergencies, raise the alarm when in their opinion the situation so demands, and take all possible measures to prevent damage to the vessel, persons on board and cargo; and

(ii) be aware of the deck officer’s needs relating to the equipment required in the loading or unloading of the cargo and the additional requirements of the ballast and other vessel stability control systems; and

(iii) make frequent rounds of inspection to determine possible equipment malfunction or failure, and take immediate remedial action to ensure the safety of the vessel, of cargo operations, of the port, and the environment; and

(iv) ensure that the necessary precautions are taken, within their area of responsibility, to prevent accidents or damage to the various electrical, electronic, hydraulic, pneumatic and mechanical systems of the vessel; and

(v) ensure that all important events affecting the operation, adjustment or repair of the vessel’s machinery are satisfactorily recorded.
(4) Watch in port on vessels carrying hazardous cargo

(a) The master of every vessel carrying cargo that is hazardous, whether explosive, flammable, toxic, health-threatening or environment-polluting, should ensure that safe watchkeeping arrangements are maintained. On vessels carrying hazardous cargo in bulk, this will be achieved by the ready availability on board of a duly qualified officer or officers, and ratings where appropriate, even when the vessel is safely moored or safely at anchor in port.

(a) On vessels carrying hazardous cargo other than in bulk, the master should take full account of the nature, quantity, packing and stowage of the hazardous cargo and of any special conditions, including those conditions on board, afloat and ashore.