Guidance
on tests for renewal of certificates of competency for mechanists and engineer officers as well as tanker operation certificates at management level

No. 3/07 version 2.0 September 2008

Purpose
The purpose of this guidance is to describe the guidelines for how to renew a certificate of competency on the basis of tests, including a description of the contents and scope of the tests

Application/scope
The guidance is used when renewing certificates of competency as:
- a watchkeeping engineer officer, an engineer officer, 2nd class, an engineer officer, 1st class, a chief engineer, and
- a mechanist, 2nd class, a mechanist, 1st class.

Furthermore, it is used when renewing tanker operation certificates at management level for the above-mentioned persons.

Basis, references and annexes
1. Act on the manning of ships.
2. Order issued by the Danish Maritime Authority on the qualification requirements for seafarers and fishermen and on certificates of competency.
4. Education plans issued by the Danish Maritime Authority for:
   - course in fire-fighting for ship's officers,
   - course in the operation of lifeboats, liferafts and rescue boats, and
   - test for certificate of proficiency in motor operation.
5. Annexes: Tables 1, 2 and 3.

Procedure
1. General remarks
When you want to renew a certificate of competency or a tanker operation certificate and you cannot document the required seagoing service as an engineer officer, you can instead sit for and pass a test (renewal test). At the test, which often consists of several sub-tests, you must show that you have some specific qualifications.

As an alternative to the test, the renewal can be made if the person concerned documents having completed approved seagoing service. In this case, there is a difference between expired and non-expired documents of competency.

If the certificate of competency has not expired (valid)
The person concerned must document having completed approved seagoing service as an engineer officer for at least 3 months during the last 6 months immediately before the renewal of the certificate or for 12 months during the last 5 years.
If the certificate of competency has expired (invalid)
Before starting duty, the person concerned must have completed a course in maritime safety and a course in fire-fighting for ship's officers. (See education plans issued by the Danish Maritime Authority on course in the operation of lifeboats, liferafts and rescue boats as well as course in fire-fighting for ship's officers).

After having completed the above-mentioned courses, the person concerned can be issued with a certificate of competency of a lower rank than the one that has expired. However, it should be noted that the Danish Maritime Authority can make supplementary requirements if more than 10 years have passed since the person concerned served at sea. Application forms for the issue of certificates of competency are available from the webpage of the Danish Maritime Authority or through direct contact.

Subsequently, the person concerned must document having completed approved seagoing service for at least 3 months as an engineer officer in a supernumerary position or as an engineer officer of a lower rank that the one corresponding to the expired certificate of competency.

2. Renewal test
TABLE 1 shows – in connection with the various certificates – which of the qualifications presented in TABLE 2 the person concerned must demonstrate to have. TABLE 3 presents the criteria for passing the relevant test in the individual subjects as well as the test method.

3. Renewal of certificates of competency under the STCW Convention of 1978
Certificates of competency issued under the STCW Convention of 1978 (without a date of expiry) are invalid.

All new and renewed certificates of competency entitling the holder to serve on board merchant vessels and all new tanker operation certificates are certificates that have been issued in accordance with the STCW Convention of 1978, as amended (with a date of expiry).

Test requirements
Below are examples of test requirements:

1. If some of the qualifications have been maintained
Persons who, by virtue of their employment during the last 5 years, prior to renewal of a certificate of competency still believe that they have some of the required qualifications listed in TABLE 2 can request an approval of this. Such an approval will mean that a sub-test will not be required for a test in a given subject.

If such an approval is requested, the person concerned must inform about this when submitting an application for renewal of a certificate of competency. Furthermore, the application must contain an account of the holder's employment in recent 5 years and of how the qualifications listed are covered by this employment. The application must be accompanied by documentation of the employment listed in the account in the form of employer declarations, etc. as documentation of the extent and contents of the employment. The Danish Maritime Authority will – in each individual case – make an individual assessment of whether the test requirements can be relaxed.

2. Teachers at schools preparing for mechanist/engineer officer exams
Persons who have, in recent 5 years, prepared students at maritime training centres or engineer officer schools for the mechanist/engineer officer exam in one or more of the subjects mentioned in TABLE 2 can, against the school's documentation of this, have compliance with the qualification requirements in the relevant subjects approved.

3. If more than 10 years have passed since serving at sea
If more than 10 years have passed since the person concerned has served at sea, the Danish Maritime Authority can establish supplementary test requirements or training requirements.
A decision on these supplementary requirements will be taken following an individual assessment, taking account of the period that has passed since the person concerned was last serving at sea and which employment he or she has had in recent 5 years.

The tests
Below you will find information about the holding of renewal tests, etc.:

1. Time and place of the tests
The special tests for renewal of certificates of competency as a mechanist/engineer officer are held at SIMAC in Svendborg and for mechanists at MARTEC in Frederikshavn.

Tests for renewal of tanker operation certificates at management level are held at Marstal Nautical Training Institute (MARNAV).

The date and time of the tests are to be arranged with the training institution where the person concerned wants to sit for the test. Normally, the test consists of several sub-tests and has a total duration of approx. one day.

The test as such is free of charge. The expenses incurred for transportation, accommodation, food and any required teaching material as well as the course fee for the course in fire-fighting for ship's officers, the first aid course as well as the maritime safety course should be paid by the person sitting for the test.

2. Contents, etc. of tests
The more detailed contents of tests – including the criteria for passing them – depend on which exam was originally the basis of the certificate concerned.

In any case, emphasis will be on operational elements and developments in these elements within the subjects since the exam concerned was passed.

The training institution at which the candidate is to sit for a test can provide guidance about any preparation for the test, including proposals for textbooks, etc.

3. The holding of tests
The tests are held vis-à-vis two persons who are appointed by training institutions. The persons appointed – who must hold qualifications corresponding to at least "external examiner qualifications" in the subjects forming part of the tests – are to hold the exam and make the evaluation.

The grade given will be either passed or not passed. In case of the grade not passed, the person concerned will be told orally why the test was not passed.

When the test consists of a number of sub-tests, the grade not passed in a sub-test will mean that the entire test is not passed. Results of sub-tests cannot be transferred to other tests.

If a test is not passed, at least one month must pass before it is possible to sit for a new test for the same certificate of competency.

Once the test has been passed, the training institution will issue documentation to this effect. At the same time, the school informs the Danish Maritime Authority about the following:

- name and CPR no. of the person who sat for the test,
- the certificate of competency for which a renewal test has been passed,
- the elements of the renewal test,
- the date of the test, and
- the names of the persons holding the test.
4. Registration
Registration for tests should be made to SIMAC or MARTEC and MARNAV, if relevant.

When the candidate shows up for a test, he or she must bring along and present:
- the certificate of competency to be renewed. If such a certificate is not held, or if the certificate does not contain a photo and signature, the candidate must present valid photo ID,
- valid health certificate for seafarers and fishermen,
- certificates for courses required to be completed according to TABLES 1 and 2, and
- a letter from the Danish Maritime Authority about the contents of the renewal test, including any relaxations of the test requirements.

5. Right of appeal
Complaints about conditions related to the test for renewal of certificates of competency must be made in writing to the training institution where the test was held no later than one week after the test. The complaint must be clarified and reasoned. The complaint can concern:
- the basis of the test or evaluation, including the questions asked or the relevance of the assignment as regards the purpose of the test,
- the test as such, or
- the evaluation.

As part of the training institution's consideration of the complaint, it should be presented to the persons who held the test with a request for a comment. The training institution must present the comments to the plaintiff who must be given a chance to add any further comments in writing within a week.

The decision of the training institution, which must be in writing and reasoned, can
- offer a new test or
- inform that the complaint is rejected.

The plaintiff must be informed about the decision as soon as possible. The training institution will inform the persons who held the test about the decision. Complaints about decisions made by training institutions must be brought before the Danish Maritime Authority, which is the final appeals body.

Course for preparing tests
In special cases, the Danish Maritime Authority can arrange for the holding of special courses for renewal of certificates of competency. At these courses, the qualifications acquired must still be evaluated, but the method can be different from the one given in TABLE 2 when the course is held at a training institution approved by the Danish Maritime Authority which has a quality management system approved by the Danish Maritime Authority.

Entry into force
The guidance enters into force on 1 September 2008 and replaces the previously issued guidance.

Annexes: TABLES 1, 2 and 3.
<table>
<thead>
<tr>
<th>CERTIFICATE</th>
<th>QUALIFICATIONS (See also tables 2 and 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Certificate of competency as:</strong></td>
<td></td>
</tr>
<tr>
<td>Chief engineer</td>
<td>1.1, 1.2</td>
</tr>
<tr>
<td>Engineer officer, 1st class</td>
<td>2.1, 2.2, 2.3 and 2.4</td>
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<tr>
<td>Engineer officer, 2nd class</td>
<td>3.1</td>
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<tr>
<td></td>
<td>4.1</td>
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<tr>
<td></td>
<td>5.1, 5.2 and 5.3.</td>
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<tr>
<td><strong>Certificate of competency as:</strong></td>
<td></td>
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<tr>
<td>Mechanist, 1st class</td>
<td>1.1 and 1.2</td>
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<tr>
<td>Mechanist, 2nd class</td>
<td>2.3 and 2.4</td>
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<td></td>
<td>3.1</td>
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<td>5.1, 5.2 and 5.3.</td>
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<tr>
<td><strong>Certificate of competency as:</strong></td>
<td></td>
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<tr>
<td>Watchkeeping engineer officer</td>
<td>1.1 and 1.2</td>
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<tr>
<td></td>
<td>2.3 and 2.4</td>
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<td></td>
<td>3.1</td>
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<td></td>
<td>5.1 and 5.3</td>
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<tr>
<td><strong>Tanker operation certificate at management level in oil tankers</strong></td>
<td>T.0 and T.1</td>
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<tr>
<td><strong>Tanker operation certificate at management level in chemical tankers</strong></td>
<td>T.0 and T.2</td>
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<tr>
<td><strong>Tanker operation certificate at management level in gas tankers</strong></td>
<td>T.0 and T.3</td>
</tr>
<tr>
<td>NO.</td>
<td>QUALIFICATION</td>
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<tr>
<td>1.1</td>
<td>General practical knowledge of the clearing, upstart, operation and stripping of diesel engine systems, both propulsion and auxiliary machinery, including registration of data, safety measures in relation to both the internal and external environment.</td>
</tr>
<tr>
<td>1.2</td>
<td>General practical knowledge of major amendments of maritime legislation, including legislation in relation to the protection of the marine environment and the SOLAS Convention, since the last signing on.</td>
</tr>
<tr>
<td>2.1</td>
<td>General practical operational knowledge, including the operation and maintenance of heavy current technical systems in terms of safety.</td>
</tr>
<tr>
<td>2.2</td>
<td>General practical operational knowledge, including the operation and maintenance of vapour and cooling installations in terms of safety.</td>
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<tr>
<td>2.3</td>
<td>The use of the watchkeeping order in a given situation that a watchkeeping engineer officer may be presented with when the ship is at sea, at anchor or in port and the ability to decide how to act in such a situation as a watchkeeping officer.</td>
</tr>
<tr>
<td>2.4</td>
<td>Knowledge of precautions in case of loss or accident as well as of the use of general instructions and procedures related to a ship's fire and safety contingency, occupational health and safety.</td>
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<tr>
<td>3.1</td>
<td>Knowledge of the handling of dangerous goods, including the use of the IMDG Code.</td>
</tr>
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<td>4.1</td>
<td>Knowledge of the safety measures to be taken on board tankers.</td>
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<tr>
<td>5.1</td>
<td>Approved course in fire-fighting for ship's officers (5 days) completed during the last 5 years.</td>
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<tr>
<td>5.2</td>
<td>Approved first aid course – including resuscitation.</td>
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<tr>
<td>5.3</td>
<td>Approved maritime safety course – including the operation of life-saving appliances.</td>
</tr>
<tr>
<td>T.0</td>
<td>General knowledge of safety, operations, maintenance and environmental protection on board tankers.</td>
</tr>
<tr>
<td>T.1</td>
<td>Knowledge of special conditions related to safety, operation, repairs, maintenance, environmental protection and legislation related to oil tankers.</td>
</tr>
<tr>
<td>T.2</td>
<td>Knowledge of special conditions related to safety, operation, repairs, maintenance, environmental protection and legislation related to chemical tankers.</td>
</tr>
<tr>
<td>T.3</td>
<td>Knowledge of special conditions related to safety, operation, repairs, maintenance, environmental protection and legislation related to gas tankers.</td>
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</tbody>
</table>

**NOTE:**

1) Persons who have, in recent 5 years, completed an approved course in the handling of dangerous goods are not required to sit for sub-test 3.1.

2) Persons who have, in recent 5 years, completed an approved safety course in in tanker operation or the 1st part of the special course for oil, gas and chemical tankers are not required to sit for sub-test 4.1.

3) Persons who have, in recent 5 years, completed the 2nd part of the special course for oil, chemical or gas tankers are not required to sit for a sub-test in T.0 and T.1, T.2 or T.3 (depending on which type of the 2nd part the person concerned has completed).
<table>
<thead>
<tr>
<th>Qualification</th>
<th>Certificate (See table 1)</th>
<th>Criteria for passing (See table 2)</th>
<th>Type of test</th>
</tr>
</thead>
</table>
| 1.1           | **Certificate of competency as:** Chief engineer, Engineer officer, 1st class, Engineer officer, 2nd class, Watchkeeping engineer officer | The person must demonstrate knowledge of:  
• general practical measures related to the clearing, upstart, operation and stripping of diesel engine systems, including both auxiliary and propulsion machinery,  
• keeping an engine room log and an oil record book with appendices,  
• commonly used safety regulations and procedures in connection with the operation of machinery and electrical installations,  
• the use of personal protective aids and other safety equipment, and  
• measures to reduce environmental pollution. | Interview on the basis of practical cases and problems from ships fitted with major two-stroke engines (diesel) as propulsion engines with associated exhaust boiler system (steam). |
| 1.1           | **Certificate of competency as:** Mechanist, 1st class, Mechanist, 2nd class | As above. | Interview on the basis of practical cases and problems from small ships fitted with two-stroke and four-stroke engines (diesel) as propulsion engines. |
| 1.2           | **Certificate of competency as:** Chief engineer, Engineer officer, 1st class, Engineer officer, 2nd class, Watchkeeping engineer officer, Mechanist, 1st class, Mechanist, 2nd class | The person must demonstrate knowledge of the handling of common problems related to maritime legislation, especially within the following areas:  
• the master's and the seafarer's obligations and responsibilities,  
• the seafarer's legal position in connection with recruitment, notice of termination and dismissal,  
• provisions on hours of rest, including the provisions of the watchkeeping order,  
• instructions for newly signed on persons,  
• provisions related to oil and ballast discharges.  
The person must be able to use the Collection of Danish maritime acts and Notices from the Danish Maritime Authority A to E. | Oral exam, where it is permitted to use the collection of acts and common encyclopedia. The point of departure is practical problems. |
| 2.1           | **Certificate of competency as:** Chief engineer, Engineer officer, 1st class, Engineer officer, 2nd class | The person must demonstrate knowledge of:  
• common electrical installations in merchant ships (fishing vessels), including their operation and safety measures. | Oral exam with the point of departure in practical problems. |
| 2.2           | **Certificate of competency as:** Chief engineer, Engineer officer, 1st class, Engineer officer, 2nd class | The person must demonstrate knowledge of:  
• common vapour and cooling systems in merchant ships (fishing vessels), including their operation and safety measures. | Oral exam with the point of departure in practical problems. |
| 2.3           | **Certificate of competency as:** Chief engineer, Engineer officer, 1st class, Engineer officer, 2nd class, Watchkeeping engineer officer | The person must demonstrate knowledge of:  
• the watchkeeping order and other relevant regulations on the engine watch in merchant ships, including muster lists, etc. and the handling of critical situations such as fire, collision, etc. | Action test of approx. 60 minutes’ duration with the use of a colour-graphical operational engine room simulator. |
| 2.3           | **Certificate of competency as:** Mechanist, 1st class | The person must demonstrate knowledge of:  
• the watchkeeping order and other relevant regulations on the engine watch in rather | Action test of approx. 60 minutes’ duration with the use of a colour-graphical engine room simu- |
<table>
<thead>
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<th>Type of test</th>
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</table>
| 2.4           | Certificate of competency as:  
Chief engineer  
Engineer officer, 1st class  
Engineer officer, 2nd class  
Watchkeeping engineer officer  
Mechanist, 1st class  
Mechanist, 2nd class | Person must be able to:  
• give an account of the use of safety management systems in ships, including on the use of the ISM Code,  
• demonstrate understanding of the use, drawing up and revision of checklists and procedures,  
• demonstrate knowledge of the use of Notice A from the Danish Maritime Authority,  
• give an account of the arrangement of a ship's safety preparedness, including the planning of drills and maintenance of safety equipment. | Oral test with the point of departure in practical problems. |
| 3.1           | Certificate of competency as:  
Chief engineer  
Engineer officer, 1st class  
Engineer officer, 2nd class  
Watchkeeping engineer officer  
Mechanist, 1st class  
Mechanist, 2nd class | The person must be able to demonstrate an understanding of:  
• measures to be taken when carrying dangerous goods, including demonstrate the use of the IMDG Code. | Oral test. |
| 4.1           | Certificate of competency as:  
Chief engineer  
Engineer officer, 1st class  
Engineer officer, 2nd class  
Watchkeeping engineer officer  
Mechanist, 1st class  
Mechanist, 2nd class | The person must be able to demonstrate and understanding of:  
• safety measures to be taken on board tankers. | Oral test. |
| 5.1           | Certificate of competency as:  
Chief engineer  
Engineer officer, 1st class  
Engineer officer, 2nd class  
Watchkeeping engineer officer  
Mechanist, 1st class  
Mechanist, 2nd class | The person must have completed:  
• A course in fire-fighting for ship's officers in accordance with the education plan of the Danish Maritime Authority for course in fire-fighting for ship's officers (5 days). | In accordance with the education plan. |
| 5.2           | Certificate of competency as:  
Chief engineer  
Engineer officer, 1st class  
Engineer officer, 2nd class  
Mechanist, 1st class  
Mechanist, 2nd class | The person must have completed:  
• A first aid course containing "resuscitation". | Meets the requirements for passing the course in accordance with the course description/plan. |
<table>
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<tbody>
<tr>
<td>5.3</td>
<td><strong>Certificate of competency as:</strong> Chief engineer Engineer officer, 1st class Engineer officer, 2nd class Watchkeeping engineer officer Mechanist, 1st class Mechanist, 2nd class</td>
<td>The person must have completed: • Course in the operation of lifeboats, liferafts and rescue boats in accordance with the education plan of the Danish Maritime Authority for course in the operation of lifeboats, liferafts and rescue boats. Or • A general maritime safety course meeting tables A-VI/1-1 and VI/1-4 of the STCW-95 Code and offered by an approved maritime training institution.</td>
<td>In accordance with the education plan. In accordance with the STCW-95 Code.</td>
</tr>
<tr>
<td>T.0</td>
<td><strong>All tanker operation certificates at management level</strong></td>
<td>When functioning as the person responsible for tanker operations, the person must demonstrate an understanding of: • risk moments and safety measures related to tanker cargoes. Therefore, the person must: • Be able to find and use information about: ▪ characteristics of a safety-related importance to various substances, including toxicity and health risks, symptoms and effects in case of poisoning, ▪ technical equipment: pumps, valves, sounding and sampling equipment, monitoring systems and air ventilation systems, ▪ safety equipment: gas discharge valves (P/V), protective suits and masks, fresh-air apparatuses, evacuation equipment, special search and rescue equipment common on board tankers and also gas-measuring equipment, ▪ contingency plans, reporting and procedures in case of leakage and pollution accidents, ▪ safety management systems in tankers, including the ISM Code, ▪ measures for protecting the marine environment, ▪ measures for protecting persons, including instructions of crew members, ▪ special acts, orders, national and international provisions related to tankers, especially OPA 90 and occupational health provisions.</td>
<td>See T1, T2 or T3.</td>
</tr>
<tr>
<td>T.1</td>
<td><strong>Tanker operation certificate at management level in oil tankers</strong></td>
<td>When functioning as the person responsible for oil tanker operations, the person must demonstrate an understanding of oil tanker operations, including knowledge of: • how to procure knowledge about tank, pipe, pump and ventilation systems, sounding and heating arrangements as well as stripping systems on board a given ship, • how loading and unloading plans are drawn up, • loading, unloading, • Ship to Ship Transfer, • Ship to Ship Transfer Guide (petroleum), latest version • ballast operations, • cargo calculations, • tank cleaning • how to keep an &quot;Oil Record Book&quot;. • Be able to find and use information about • MARPOL Annex I, • tank cleaning provisions, • special risk moments related to oil products.</td>
<td>Oral and practical test together with the subjects in T0. The duration of the test is approx. 120 minutes. The point of departure is a case where the type of information and handbooks normally found on board tankers are used. Drawings, diagrams and tanker simulators are used where relevant and possible.</td>
</tr>
<tr>
<td>Qualification</td>
<td>Certificate (See table 1)</td>
<td>Criteria for passing (See table 2)</td>
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</table>
| T.2           | Tanker operation certificate at management level in chemical tankers | When functioning as the person responsible for chemical tanker operations, the person must demonstrate an understanding of:  
• chemical tanker operations, including  
• how to procure knowledge about tank, pipe, pump and ventilation systems, sounding arrangements as well as temperature control systems on board a given ship,  
• how to draw up loading and unloading plans, also in consideration of the provisions on compatibility, ship type, tank type, coating as well as the specific gravity of the cargo or any temperature sensitivity,  
• loading, unloading,  
• ballast operations,  
• cargo calculations,  
• tank cleaning,  
• how to keep a "Cargo Record Book" and an "Oil Record Book".  
• use a ship's P&A manual  
• Be able to find and use information about:  
• MARPOL Annex II,  
• tank cleaning provisions,  
• specific safety-related, technical and operational requirements related to various products,  
• IBC/BCH Codes together with Certificate of Fitness, and the recent versions of MEPC.2/Circ.  
• special fire-fighting methods or problems in connection with chemical fires, especially as regards the arrangement of the fire preparedness on board,  
• special measures to be taken in connection with first aid, especially the use of antidotes in accordance with the MFAG. | Oral and practical test together with the subjects in T0.  
The duration of the test is approx. 120 minutes.  
The point of departure is a case where the type of information and handbooks normally found on board tankers are used. Drawings, diagrams and tanker simulators are used where relevant and possible. |
| T.3           | Tanker operation certificate at management level in gas tankers | When functioning as the person responsible for gas tanker operations, the person must demonstrate an understanding of gas tanker operations, including:  
• how to procure knowledge about tank, pipe, pump and compressor systems, ventilation, sounding arrangements as well as pressure and temperature control systems on board a given ship,  
• how loading and unloading plans are developed, also in consideration of the regulations on compatibility, ship type and tanker type,  
• loading, unloading,  
• cargo calculations,  
• tank cleaning,  
• how to keep a "Cargo Record Book" and an "Oil Record Book".  
• Use a ship's P&A manual.  
• Be able to find and use information about:  
• MARPOL Annex II,  
• tank cleaning provisions,  
• the IGC Code together with Certificate of Fitness,  
• specific safety-related, technical and operational requirements in connection with various products,  
• special fire-fighting methods or problems in connection with gas fires, especially as regards the arrangement of the fire preparedness on board,  
• special measures to be taken in connection with first aid, especially the use of antidotes in accordance with the MFAG and Material Safety Data Sheet (MSDS). | Oral and practical test together with the subjects in T0.  
The duration of the test is approx. 120 minutes.  
The point of departure is a case where the type of information and handbooks normally found on board tankers are used. Drawings, diagrams and tanker simulators are used where relevant and possible. |