



June 2003

NEWSLETTER

Volume 2, Issue 2

## Marine Refrigeration Course

### Courses

- Management Courses
- Cargo Handling Courses
- Shiphandling Simulator Courses
- SAS-BRM Course
- DNV ISM & Internal Audit Courses
- Computer Courses
- AMOS Windows Course
- GMDSS Course
- Technical Courses
- Upgrading courses Cooks and messmen
- Welding Courses
- Alfa Laval Courses
- Wärtsilä Courses
- Framo Courses

**Duration: 5 days**

**For: Engineers and Electricians**

**Equipments: Refrigerated Containers & AC Units**



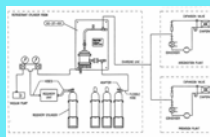
Carrier 5H 120 Compressor



UCP Marine Provision Condensing Unit



UCA Marine A/C Condensing Unit



**Contents:** This training course is a mixture of classroom lecture and hands-on in the workshop. To fully understand the refrigeration business it is a must to know the basics. The marine systems for obtaining the desired temperatures in Air Conditioning and Provisions rooms have been designed to reflect the systems found on board. Both the provision and the A/C systems will be run achieving the temperatures desired for both installations. Some operational disturbances will be presented, illustrating errors in control circuits - lack of maintenance - clogged filters - lack of cooling water - leakages - etc. to introduce the students to practical trouble shooting on board also described as "the real world". This will allow the participants to recognize and rectify a medium expensive disturbance before it changes state to a very expensive disaster.

Replacement of a "broken compressor" will be introduced, and the proper procedures for replacing it. The students will have to physically remove the "old, broken compressor" and collect a new one from the shelf, and install it according to valid rules & regulations; and according to good refrigeration practice, of course! This very realistic exercise is what all will face on board eventually, and by knowing the "tricks of the trade" the risk for future breakdowns can be minimized, as well as the downtime during repair.

The students have to close down the system, recover the gas without anything being vented to the atmosphere, drain the oil, pressure test the system, evacuate (vacuum) the new compressor, align the belt driven provision compressor and the direct driven AC compressor. After this they have to start up, charge with the recovered refrigerant, fine tune the system and leak test it.

At the end of each training course there will be a graded written test that will take approx. 2 - 2,5 hours. The result of the written test will be added to the observations of each student during the practical sessions, and a diploma / certificate will be granted students who pass the test.



**The implementation of this course is based on your positive feed-back.**

**If so, we plan to start first course end of 2003**

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# BACKGROUND

The Norwegian Training Center-Manila (NTC-M) was established by the [Norwegian Shipowners' Association \(NSA\)](#) in order to provide relevant upgrading training for Filipino seafarers serving on the ships of its members. NTC-M came into operation in February 1990 and was shortly after made part of Norwegian Maritime Foundation of the Philippines, Inc. (NMFPI), chartered in May 1990. Improving the human factor in ship operation was a key objective and the establishment of NTC-M constituted an important element of this challenge.



Seafarers of all nationalities, also from non-Norwegian principals are welcome to attend any of the courses provided the space is available and their course fees are paid for by their local agents or their sponsoring companies.

## New Courses Continued;



*Lilleborg was established in 1883 and has through generations been the leading company in Norway for hygiene related products. Lilleborg is the market leader in Norway for hygiene and cleaning products to the professional users.*



**Courses will be conducted by Norwegian Senior Instructors**

See our website for

**ENROLLMENT FORMS**

**PRICES:**

**Ship Security Officer**

**Company Security Officer**

**USD 350,00**

**Cleaning & Maintenance**

**USD To be announced**

**Marine Refrigeration**

**USD To be announced**

**EPA Classification**

**USD To be announced**

**Schedules:**

**Ship Security Officer**

**Course 1: May 26th**

**Course 2: May 29th**

**Course 3: June 9th**

**Course 4: June 12th**

**Company Security Officer**

**Course 1: June 2nd**

**Course 2: June 5th**

### Cleaning & Maintenance in Accommodation

**Course starts October 2003**

- Elementary knowledge about cleaning chemicals.
- Floor care, hard surfaces.
- Floors, carpets/upholstery
- Bathroom and lavatory
- Galley
- Personal hygiene
- Laundry

## **UNITOR** EPA Certification Course **UNITOR**

This course is designed to assist technicians in becoming EPA certified. The EPA certificate is compulsory in the US and on US flag vessels for anybody to carry out repairs, adjustments, charging refrigerants or maintenance on refrigeration systems. There will be classroom instruction, lectures, discussion, review including a question & answer portion preparing the students for the official written EPA exam held at the end of the course. EPA exams will be sent for grading to Ferris State University in US, who issue EPA certificates to the students who has a minimum 70% score on the exam. The EPA training and exam requires an EPA proctor (teacher) which will be from Unitor. The EPA training is theory only, and takes 3 days. In the marine world this is only valid for US flag vessels, but if required by customers this can be provided as well.

**WE ALSO NEED YOUR FEED-BACK IF THIS IS INTERESTING FOR YOU**