

**College of Micronesia – FSM
P.O. Box 159
Kolonia, Pohnpei**

Course Outline Cover Page

Radiotelephony
Course Title

MME 163
Department and Number

Course Description: To provide the student with the knowledge and skills required to:

- Use correct radiotelephone operating procedures particularly those relating to distress, urgency and safety messages. Operate the controls of marine radio equipment to ensure maximum performance.
 - Conduct routine maintenance required to keep radio equipment in good working order and to repair simple faults
 - Operate radio equipment in accordance with regulations applicable to radiotelephone ship stations

Prepared by: Brent Villiers

State: FSM-FMI

	Hours per Week	No. Of Weeks	Total Hours	Semester
Credits				
Lecture	2/4/8/16	8/4/2/1	16	1
Laboratory	3/6/12	16/8/4	48	1
		Total Semester Credits:		2

Purpose of Course

Degree Requirement _____
 Degree Elective _____
 Advanced Certificate _____
 Certificate _____ XX _____
 Remedial _____
 Other (Workshop) _____

Prerequisite Course(s): Safety Certificate

Signature, Chairman, Curriculum Committee

Date Approved by Committee

Signature, President, COM-FSM

Date Approved by the President

General Objective: In addition to meeting COM-FSM's Certificate of Achievement criteria, this course is targeted at students and mariners who wish to obtain a Certificate of Competency as Master Grade 6 in accordance with the South Pacific Maritime Code. This course covers part of the syllabus requirements as described in the code and on successful completion of this course the student or mariner will be able to use correct radiotelephone operating procedures particularly those relating to distress, urgency and safety messages and operate the controls of marine radio equipment to ensure maximum performance. In addition the student will conduct routine maintenance required to keep radio equipment in good working order, repair simple faults and operate radio equipment in accordance with regulations applicable to radiotelephone ship stations.

Learning Outcomes: On successful completion of this course the student will be able to:

1. Adjust and maintain marine radio equipment to ensure optimum performance
2. Operate radio equipment in accordance with General Regulations
3. Use the correct operating procedures when conducting routine communications
4. Use the correct operating procedures when conducting distress communications
5. Use the correct operating procedures when conducting urgency communications
6. Use the correct operating procedures when sending and receiving safety signals
7. Operate several types of Emergency Position Indicating Radio Beacons to give maximum effect
8. Conduct public correspondence communications using the correct techniques
9. Demonstrate an ability to use digital selective calling (DSC) operating procedures, particularly those relating to distress, urgency and safety.

STUDENTS SHOULD BE MADE AWARE OF OCCUPATIONAL HEALTH AND SAFETY ISSUES IN ALL SITUATIONS AND BE EXPECTED TO DEMONSTRATE SAFE WORKING PRACTICES AT ALL TIMES.

Outline of Content:

This course contains:

1. Marine Radio Communication Equipment
 - MF, HF and VHF propagation
 - Component parts of radio equipment
 - Transceiver controls
 - Battery wiring and maintenance
 - Hazards and faults
2. General Regulations
 - Authority of master
 - Secrecy
 - False and deceptive distress, urgency and safety calls
 - Unnecessary and profane transmission
 - Log keeping
 - Avoidance of interference
 - Ship station identification
3. Routine Operating Procedures
 - Test transmissions
 - Calling and working frequencies
 - Calling procedures
 - Repeating calls
 - Replying to calls
 - Communications difficulties
 - Silence periods – times, purpose and frequencies
 - Monitoring of frequencies
 - Phonetic alphabet
4. Distress and Alarm Signals
 - Priority
 - Authority
 - Frequencies
 - Distress call and message
 - Distress position
 - Acknowledgment
 - Distress traffic
 - Restricted working
 - Relay procedures
5. Urgency
 - Urgency signal and message

- Circumstances of use
- Authority
- Frequencies

6. Safety

- Safety call and message
- Circumstances of use
- Frequencies

7. Emergency Position Indicating Radio Beacons

- Types of EPIRB
- Detection and location
- COSPAS/SARSAT system
- Limitations of detection
- Identification and registration of 406MHz EPIRB's
- Inadvertent activation
- Testing

8. Public Correspondence

- Shore stations
- Transmission and reception of radio telegrams
- Ship to shore radiotelephone calls

Learning Outcomes: On completion of this course the learner will be able to:

Learning Outcome 1 **Adjust and maintain marine radio equipment to ensure optimum performance**

Assessment criteria

- 1.1 The propagation of MF, HF and VHF radio signals is explained
- 1.2 Functions of a transmitter, receiver, antenna, earth, power supply, microphone and fuse are outlined
- 1.3 The function and correct operation of Transceiver controls is demonstrated
- 1.4 Lead acid battery construction, charging, maintenance and stowage is explained
- 1.5 Calculation of power and voltage using series and parallel wiring of batteries is demonstrated
- 1.6 Precautions against chemical burn and explosive hazards are described

	1.7 Basic fault finding procedures are explained and demonstrated
Conditions and Method of assessment	As specified in the Assessment Strategy listed at the end of this outline and by a combination of: <ul style="list-style-type: none"> • Written Assessment • Calculations • Assignments • Oral assessment
Learning Outcome 2	Operate radio equipment in accordance with General Regulations.
Assessment criteria	<p>2.1 The ultimate authority of the ships master over radio communications is defined.</p> <p>2.2 The obligation to preserve the secrecy of communications is explained.</p> <p>2.3 Severe penalties for the transmission of false or deceptive distress, urgency or safety signals are explained.</p> <p>2.4 The prohibition of unnecessary, profane and obscene transmissions is stated.</p> <p>2.5 The need to avoid unnecessary interference is defined.</p> <p>2.6 The requirement to identify each and every transmission with ships call sign is explained</p>
Conditions and Method of assessment	As specified in the Assessment Strategy listed at the end of this outline and by a combination of: <ul style="list-style-type: none"> • Written assessment • Assignments • Oral assessment • Practical test
Learning Outcome 3	Use the correct operating procedures when conducting routine communications
Assessment criteria	<p>3.1 Correct usage of the phonetic alphabet is demonstrated.</p> <p>3.2 The distinction between calling and working frequencies is explained.</p> <p>3.3 The use of correct test transmission procedures is demonstrated.</p> <p>3.4 The correct terminology and procedure for calling and replying is demonstrated.</p>

- 3.5 Procedures to be used when repeating calls are defined.
- 3.6 The reasons for silence periods, designated frequencies, timing and duration are stated.
- 3.7 Frequency monitoring requirements and techniques for use in difficult communications conditions are explained.

Conditions and
Method of assessment

As specified in the Assessment Strategy listed at the end of this outline and by a combination of:

- Written assessment
- Assignments
- Oral assessment
- Practical test

Learning Outcome 4

Use the correct operating procedures when conducting distress communications.

Assessment criteria

- 4.1 The absolute priority of distress communications over all other traffic is explained.
- 4.2 The authority of the Master, Skipper or person responsible for the safety of a vessel is required before transmission of a distress call is specified.
- 4.3 International distress frequencies are stated.
- 4.4 The content of a distress call and message is described.
- 4.5 Procedures to be used when acknowledging distress traffic are stated.
- 4.6 Procedures for the control of distress traffic, distress relay procedures and restricted working procedures are explained.

Conditions and
Method of assessment

As specified in the Assessment Strategy listed at the end of this outline and by a combination of:

- Written assessment
- Oral assessment
- Assignments
- Practical test

Learning Outcome 5	Use the correct operating procedures when conducting urgency communications.
Assessment criteria	<p>5.1 The circumstances when an urgency signal can be used are defined.</p> <p>5.2 The use of an urgency message to obtain urgent medical advice.</p> <p>5.3 The urgency signal and message content are detailed.</p> <p>5.4 Frequencies to be used are listed.</p> <p>5.5 Authority for the transmission of urgency signals is defined.</p>
Conditions and Method of assessment	<p>As specified in the Assessment Strategy listed at the end of this outline and by a combination of:</p> <ul style="list-style-type: none"> • Written assessment • Oral assessment • Assignments • Practical test
Learning Outcome 6	Use the correct operating procedures when sending and receiving safety signals
Assessment criteria	<p>6.1 The circumstances when a safety signal can be used are defined.</p> <p>6.2 The contents of a safety call and message are detailed.</p> <p>6.3 Frequencies available for use are listed.</p>
Conditions and Method of assessment	<p>As specified in the Assessment Strategy listed at the end of this outline and by a combination of:</p> <ul style="list-style-type: none"> • Written assessment • Oral assessment • Assignments • Practical test
Learning Outcome 7	Operate several types of Emergency Position Indicating Radio Beacons to give maximum effect.
Assessment criteria	<p>7.1 The basic operational characteristics and limitations of 121.5/243 and 406 EPIRBs are explained.</p>

- 7.2 Detection and location procedures including model specific limitations are detailed
- 7.3 The COSPAS/SARSAT satellite global detection system is described
- 7.4 Identification and registration procedures for 406 EPIRB's are detailed
- 7.5 Action to be taken when an EPIRB is accidentally activated is specified
- 7.6 Prohibition of on-air testing is stated

Conditions and
Method of assessment

As specified in the Assessment Strategy listed at the end of this outline and by a combination of:

- Written assessment
- Oral assessment
- Assignments
- Practical test

Learning Outcome 8

Conduct public correspondence communications using the correct techniques.

Assessment criteria

- 8.1 Communications services provided by shore stations are stated
- 8.2 Procedures for sending and receiving radio telegram messages are detailed
- 8.3 Procedures for making and receiving radiotelephone calls are detailed

Conditions and
Method of assessment

As specified in the Assessment Strategy listed at the end of this outline and by a combination of:

- Written assessment
- Oral assessment
- Assignments
- Practical test

Learning Outcome 9

Demonstrate an ability to use digital selective calling (DSC) operating procedures, particularly those relating to distress, urgency and safety.

Assessment criteria

- 9.1 Outline the concept of digital selective calling.
- 9.2 Describe the method used for identification of stations using digital selective calling
- 9.3 List the information contained in a DSC alert.

- 9.4 List the frequencies allocated for MF/HF and VHF marine bands for DSC distress, urgency and safety alerts
- 9.5 List the MF/HF and VHF radiotelephony frequencies associated with DSC alert frequencies for distress, urgency and safety alerts
- 9.6 Describe watchkeeping arrangements on DSC distress, urgency and safety frequencies.
- 9.7 Describe DSC call formats
- 9.8 Describe DSC distress alert procedures
- 9.9 Describe the procedure for acknowledgement of receipt of a DSC distress alert on 2187.5 or VHF channel 70
- 9.10 Describe the procedure for transmission of a DSC distress alert relay
- 9.11 Describe the procedure for cancellation of an inadvertent DSC distress alert

Conditions and
Method of assessment

As specified in the Assessment Strategy listed at the end of this outline and by a combination of:

- Written assessment
- Oral assessment
- Assignments
- Practical test

Delivery strategy

The module provides for delivery by on or off-the-job training and assessment.

Some areas of content may be common to more than one learning outcome, and therefore integration of training and assessment may be appropriate.

Methods of instruction include:

1. Classroom lectures with handouts, course notes, overhead transparencies (or equivalent), slide presentations, video material, and whiteboard notes;
2. Calculation via examples and tutorials; and
3. Practical demonstrations and exercises.

Resource requirements

Delivery of this course will require:

- Classroom
- Whiteboard

- Overhead projector (or equivalent)
- Access to appropriate vessels or models.
- HF and VHF radios
- 121.5/243 and 406Mhz EPIRBs
- Two 12v lead/acid batteries
- Hydrometer

Assessment Strategy

Assessment Method

Knowledge based criteria will be satisfied through a combination of, written and oral assessments.

Skill based criteria will be satisfied through practical exercises.

Condition of Assessment

This module may be assessed on and off-the-job. Competence may be assessed in the following situations: classroom; laboratories; appropriate vessels.

Final Grade for this course will be based on meeting the course requirements at the following percentage rates:

96% - 100%	A – Superior
90% - 95%	B – Above Average
80% - 89%	C – Average
69% - 79%	D – Below Average
0 % - 69%	F – Failure

Attendance:

The COM-FSM attendance policy will apply.