

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

Course Outline Cover Page

Proficiency in Survival Craft

Course Title

MM 171

Department and Number

Course Description: By successfully completing this course, learners will gain the skills and knowledge required to perform survival craft operations as required during shipboard emergency response situations.

Prepared by: Brent Villiers

State: FSM-FMI

	Hours per Week	No. Of Weeks	Total Hours	Semester Credits
Lecture	2/4/8	4/2/1	8	0.5
Practicum	26/13	2/4	52	1
Total Semester Credits:				1.5

Purpose of Course

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

Prerequisite Course(s): MSG 089 Survival Techniques

Signature, Chairman, Curriculum Committee

Date Approved by Committee

Signature, President, COM-FSM

Date Approved by the President

General Objective: By successfully completing this course, learners will have gained the skills and knowledge required to perform survival craft operations as required during shipboard emergency response situations.

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

1. Outline emergency response organization, emergency procedures, escape routes, and requirements for on board training on ships.
2. Describe the likely location, amount and correct operation of lifesaving appliances, including personal safety equipment on board ships and in survival craft.
3. Describe threats to survival, and personal preparation for abandonment.
4. Describe initial actions for survival, on abandonment from a ship
5. Describe the effects of hypothermia, its prevention and treatment; use of protective covers and garments including immersion suits and thermal protective aids.
6. Describe the apportionment of food and water in a survival craft.
7. Describe actions to be taken to maximize delectability and location of survival craft using; pyrotechnic distress signal, portable VHF radios, Satellite EPIRBs and SARTs.
8. Describe the construction, outfit and particular characteristics of lifeboats and rescue boats.
9. Describe launching and recovery techniques for various types of launching appliances and sea states.
10. Describe methods of starting survival craft engines.
11. Describe handling techniques for survival craft & rescue boats in rough weather.
12. Describe the construction, outfit and particular characteristics of liferafts.
13. Describe the various launching appliances and methods for liferafts.

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. Musters & Drills

- Types of shipboard emergencies.
- Shipboard emergency organisation.
- Emergency signals and signs.
- Muster lists.
- Emergency response drills.

2. Lifeboat operations

- Advantages, limitations, fittings, markings and equipment of; open, partially enclosed and totally enclosed lifeboats.
- Launching appliances and techniques.
- SOLAS '83 on-load release gear.
- Engine starting and operation.
- Lifeboat handling techniques.

4. Liferaft operations

- Advantages, limitations, fittings, markings and equipment of; manually launched and davit launched inflatable liferafts.
- Inflatable liferaft construction.
- Hydrostatic release mechanisms.
- Liferaft manoeuvring techniques.
- Liferaft servicing and inspection requirements.

5. Lifesaving appliances

- Operation, inspection and carriage requirements for:
 - Personal flotation devices, whistles and lights.
 - Lifebuoys, lights and MOB devices.
 - Immersion suits, TPA's.
 - Rocket line throwing appliances.

6. Detection and Search and Rescue
 - SAR co-ordination, methods and techniques.
 - Ship reporting systems & AMVER
 - Electronic detection devices; location and correct usage of:
 - EPIRBs
 - SARTs
 - Survival craft VHF radios.
 - Pyrotechnics; quantities carried and correct operation.

7. Survival Management
 - Personal abandonment preparation
 - Short term survival techniques
 - Long term survival techniques
 - Hypothermia; causes, prevention, recognition and treatment.
 - Cold water shock; effects and survival strategies.
 - Psychology of survival.

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

Learning Outcome 1 **Outline emergency response organization, emergency procedures, escape routes, and requirements for on board training on ships.**

- Assessment criteria
- 1.1 The incidents that may result in an emergency on a ship are listed.
 - 1.2 A typical emergency response arrangement used on board merchant vessels is described.
 - 1.3 The information available on a ship's emergency muster list is stated.
 - 1.4 The emergency muster and abandon ship signals are stated.
 - 1.5 The actions to be taken on hearing an emergency signal are explained.
 - 1.6 The value of regular and meaningful on board emergency training is discussed.
 - 1.7 The meaning of IMO safety symbols is stated.

- 1.8 The initial safety actions that should be taken on joining a new vessel are listed.

Conditions and
Method of assessment

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

- Multiple choice and short answer written examination.
- Oral examination.

Learning Outcome 2

Describe the likely location, amount and correct operation of lifesaving appliances, including personal safety equipment on board ships and in survival craft.

Assessment criteria

- 2.1 The lifesaving appliances carried on board vessels are listed.
- 2.2 The locations of lifesaving appliances on board vessels are stated.
- 2.3 A lifejacket is donned correctly.
- 2.4 A life jacket light is operated.
- 2.5 An immersion suit is donned correctly.
- 2.6 The operation of lifebuoys, lifebuoy lights and lines are described.
- 2.7 The method of deployment of a MOB combination light and smoke float is explained.
- 2.8 The operation of a rocket line throwing appliance is described.
- 2.9 The shelf life of pyrotechnics is stated.
- 2.10 The operation of hand held pyrotechnics is demonstrated.

Conditions and
Method of assessment

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

- Multiple choice and short answer written examination.
- Oral examination.
- On-going assessment during practical exercises.

Learning Outcome 3

Identify, describe and manage 5 specific conditions - heart attack, stroke, asthma, diabetes and epilepsy.

Assessment criteria	<p>3.1 The manner in which a person should dress for an abandonment is described.</p> <p>3.2 Items of shipboard equipment that should be placed into survival craft prior to abandonment, if time permits are listed.</p> <p>3.3 The actions to be taken in crash abandonment are described.</p> <p>3.4 The threats to survival imposed by the following are described:</p> <ul style="list-style-type: none"> • Cold water shock • Hypothermia • Psychological response to disaster • Loss of will to live • Sea sickness • Dehydration • Injuries • Starvation <p>3.5 Strategies that may be used to counter threats to survival are discussed.</p>
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Conditions and
Method of assessment

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

- Multiple choice and short answer written examination.
- Oral examination.

Learning Outcome 4

Describe initial actions for survival, on abandonment from a ship.

Assessment criteria	<p>4.1 The initial actions for survival management are listed.</p> <p>4.2 Jumping from a height of 3 meters whilst wearing a lifejacket is demonstrated.</p> <p>4.3 In-water survival techniques are demonstrated, including:</p> <ul style="list-style-type: none"> • The group huddle • Heat escape lessening posture • Swimming in a lifejacket
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- Towing with a lifejacket
 - Remaining afloat without a lifejacket.
 - Donning a lifejacket in the water
- 4.4. A liferaft is boarded unassisted, whilst wearing a lifejacket.
 - 4.5. An unconscious or injured person is pulled into a liferaft.
 - 4.6. The importance of launching all survival craft in an abandonment is discussed.
 - 4.7. Taking of a liferaft undertow from a lifeboat or rescue boat is described.
 - 4.8. A sea anchor and drogue are deployed.
 - 4.9. An exposure cover on an open lifeboat is deployed.

Conditions and
Method of assessment

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

- Multiple choice and short answer written examination.
- Oral examination.
- On-going assessment during practical exercises involving simulated abandonment using inflatable liferafts and lifeboats.

Learning Outcome 5

Describe the effects of hypothermia, its prevention and treatment, use of protective covers and garments including immersion suits and thermal protective aids.

Assessment criteria

- 5.1 The term hypothermia is defined.
- 5.2 The signs and symptoms of hypothermia are listed.
- 5.3 Actions to be taken to prevent the on-set of hypothermia are described.
- 5.4 Methods of treating hypothermia victims in a survival craft are discussed.
- 5.5 A thermal protective aid is used.
- 5.6 The precautions required to reduce the possibility of 'post rescue collapse' in a hypothermia victim are stated.

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"> • Multiple choice and short answer written examination. • Oral examination. • On-going assessment during practical exercises involving simulated abandonment using inflatable liferafts and lifeboats.
Learning Outcome 6	Describe the apportionment of food and water in a survival craft.
Assessment criteria	<p>6.1 The rations provided in survival craft are listed.</p> <p>6.2 The quantities of food and water to be issued in a survival craft are stated.</p> <p>6.3 The frequency of food and water ration issues in a survival craft are stated.</p> <p>6.4 Methods of supplementing food and water rations at sea and ashore are discussed</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"> • Multiple choice and short answer written examination. • Oral examination.
Learning Outcome 7	Describe actions to be taken to maximise detectability and location of survival craft using; pyrotechnic distress signals , portable VHF radios, Satellite EPIRBs and SARTs.
Assessment criteria	<p>7.1 The main aims and features of Ship Reporting Systems are described.</p> <p>7.2 The aims and operation of AMVER are described.</p> <p>7.3 The resources available to a typical MRCC are listed</p> <p>7.4 Search methods used by a typical MRCC are described.</p>

- 7.5 Methods for recognising and responding to an aircraft searching at night are described.
- 7.6 The methods used and precautions required for rescue by helicopter are stated.
- 7.7 A helicopter single lift strop is donned.
- 7.8 The means by which marine supply containers are deployed are described.
- 7.9 The alerting and detection aiding equipment provided on ships and survival craft are listed.
- 7.10 The normal locations of alerting and detection equipment on board vessels are stated.
- 7.11 An emergency position indicating radio beacon (EPIRB) is activated.
- 7.12 The capabilities of the following are described:
 - 121.1/243 MHz EPIRB
 - 406/121.5 MHz EPIRB
 - 'L' Band EPIRB
- 7.13 The capabilities of a search and rescue transponder (SART) are described.
- 7.14 Activate a SART.
- 7.15 The capability of a GMDSS survival craft portable VHF radio transceiver is described.

Conditions and
Method of assessment

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

- Multiple choice and short answer written examination.
- Oral examination.

Learning Outcome 8

Describe the construction, outfit and particular characteristics of lifeboats and rescue boats.

Assessment criteria

- 8.1 The carriage requirements for lifeboats and rescue boats on ships are stated.
- 8.2 The design features of open, partially enclosed and totally enclosed lifeboats are stated.
- 8.3 The advantages of differing designs of lifeboats are compared.

- 8.4 The function of lifeboat fittings is described.
- 8.5 The equipment carried in open and totally enclosed lifeboats is listed.
- 8.6 The features of a rescue boat are described.
- 8.7 The function of rescue boat fittings is described.
- 8.2 The equipment carried in a rescue boat is listed.

Conditions and
Method of assessment

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

- Multiple choice and short answer written examination.
- Oral examination.

Learning Outcome 9

Describe launching and recovery techniques for various types of launching appliances and sea states.

Assessment criteria

- 9.1 The markings on a survival craft are interpreted.
- 9.2 The principle of operation of lifeboat launching appliances is described.
- 9.3 The correct sequence of action is described for launching:
 - Free fall life boats
 - SOLAS '83 davit launched lifeboats
 - SOLAS '74 davit launched lifeboats.
- 9.4 Correct commands are given for:
 - Launching lifeboats
 - Boarding life boats
 - Clearing the ship
 - Handling a life boat
 - Recovery of a life boat
 - Disembarking persons from a lifeboat.
- 9.5 On-load, lifeboat fall release gear is operated safely.
- 9.6 The correct sequence is stated for the activation of an air supply and external water spray on an enclosed lifeboat.

- 9.7 The correct launching and recovery sequence for a rescue boat is described.

Conditions and
Method of assessment

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

- Multiple choice and short answer written examination.
- Oral examination.
- On-going assessment during practical exercises involving simulated abandonment using lifeboats.

Learning Outcome 10

Describe methods of starting survival craft engines.

Assessment criteria

- 10.1 The requirements of SOLAS for lifeboat engine starting devices are stated.
- 10.2 Pre starting engine checks are described.
- 10.3 The correct sequences of actions are listed for starting a hand cranked inboard diesel engine is listed.
- 10.4 The correct sequence of actions for starting an inboard diesel engine using an electric or hydraulic start is listed.
- 10.5 A lifeboat engine is shut down using the fuel cut off.

Conditions and
Method of assessment

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

- Multiple choice and short answer written examination.
- Oral examination.
- On-going assessment during practical exercises involving simulated abandonment using lifeboats.

Learning Outcome 11**Describe handling techniques for survival craft & rescue boats in rough weather.**

Assessment criteria

- 11.1 The different types of oxygen resuscitation equipment available on board a vessel are described.
- 11.2 The dangers associated with manoeuvring a lifeboat or rescue boat from under falls are identified.
- 11.3 A lifeboat is manoeuvred from under falls, under controlled conditions.
- 11.4 The effects and hazards on small low powered boats of a:
- head sea
 - following sea and
 - beam sea, are described
- 11.5 Strategies are described that may be used to overcome hazards caused by a:
- head sea
 - following sea
 - beam sea
- 11.6 An open and enclosed lifeboat under power is handled, under controlled conditions.
- 11.7 An enclosed lifeboat is steered by compass.
- 11.8 An open lifeboat under oars is commanded.
- 11.9 An open or enclosed lifeboat is manoeuvred under falls.
- 11.10 A person in the water is approached in a lifeboat or rescue boat.
- 11.11 Procedures are described for landing lifeboats through breaking surf.

Conditions and
Method of assessment

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

- Multiple choice and short answer written examination.
- Oral examination.
- On-going assessment during practical exercises involving simulated abandonment using lifeboats.

Learning Outcome 12	Describe the construction, outfit and particular characteristics of liferafts.
Assessment criteria	<p>12.1 The carriage requirements for liferafts on ships is stated.</p> <p>12.2 The construction features of a SOLAS liferaft are described.</p> <p>12.3 The fittings and equipment provided in a SOLAS liferaft are listed.</p> <p>12.4 The use of each item of liferaft equipment is stated.</p> <p>12.5 The advantages of liferafts and lifeboats are compared.</p> <p>12.6 The markings on a liferaft container are interpreted.</p> <p>12.7 The maintenance requirements for liferafts are described.</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"> • Multiple choice and short answer written examination. • Oral examination. • Practical exercises using davit and manually launched liferafts, fittings and equipment.
Learning Outcome 13	Describe the various launching appliances and methods for liferafts.
Assessment criteria	<p>13.1 The legal responsibilities for maintaining all of the above and the keeping of records are stated The procedures are stated for deploying a liferaft via:</p> <ul style="list-style-type: none"> - Manual throw over launch - Davit launch - Float free launch <p>13.2 A hydrostatic release is rigged to a liferaft.</p> <p>13.3 The operation of an automatic off-load release hook is described.</p> <p>13.4 A liferaft is boarded via a ladder.</p> <p>13.5 An inverted liferaft is righted whilst wearing a lifejacket.</p>

13.6 Manoeuvring techniques for liferafts are described.

Conditions and
Method of assessment

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

- Multiple choice and short answer written examination.
- Oral examination.
- Practical exercises using davit and manually launched liferafts, fittings and equipment.

Delivery strategy

This module is designed to be taught on or off-the-job. Candidates May have on-the-job seagoing experience covering a portion of the learning outcomes. Some areas of content may be common to more than one learning outcome, and thus integration may be appropriate.

This module will be delivered in full-time mode off the job.

Methods of instruction should include:

1. Classroom lectures
2. Handouts
3. Course notes
4. Overhead transparencies
5. Slide presentations
6. Video material
7. Whiteboard notes, together with:
 - Simulated abandonment and survival scenarios with role playing.
 - Practical demonstrations using shipboard equipment.
 - Practical exercises using lifeboats, rescue boat and liferafts and launching appliances.

Resource requirements

Delivery of the training will require:

- Classroom
- Whiteboard

- Overhead projector (or equivalent)
- Video player
- Totally enclosed lifeboat and davit.
- Open and enclosed lifeboats fittings and equipment.
- On load release gear training aid.
- Open lifeboat and davit.
- Rescue boat and launching appliance.
- Lifeboat and rescue boat equipment
- One lifejacket and hard hat per trainee
- Davit launched liferaft and davit.
- Inflatable throw over liferaft, cradle and hydrostatic release.
- Lifeboat/liferaft boarding ladders.
- Foul weather gear.
- Training pool with jumping platform.
- One immersion suit per trainee.
- Shipboard lifesaving, alerting and detection equipment items.

Assessment Strategy

Assessment Method

A range of methods is suggested for measuring progress towards and achievement of learning outcomes in this module. Knowledge-based criteria will be satisfied through written or oral questioning relating to practical assignments. Skill-based criteria will be satisfied through practical exercises throughout the learning period.

Condition of Assessment

Assessment will be undertaken on or off-the-job, however, where possible the environment will simulate a real work place situation.

Given access to all relevant information and equipment including:

- Marine survival craft, equipment and launching appliances commonly found on vessels;

- A training tank for in-water training; the candidates will be required to:
 - a) Provide answers in a, multiple choice and short answer written examination.
 - b) Provide oral answers in an examination.
 - c) Complete practical exercises using davit and manually launched liferafts, fittings and equipment.
 - d) Complete practical exercises involving simulated abandonment using inflatable liferafts and lifeboats.

Evaluation:

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.