

Report Date: 14 Apr 2014

Summary Report for Individual Task
551-88K-4735
Determine Course to Steer to Prevent Collision, Utilizing Radar and Plotting Sheet
Status: Approved

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

DESTRUCTION NOTICE: None

Condition: Assigned as a small Tug Master, First Mate or a Boatswain. Given a complete risk assessment, an Operational Plan/Operations Order (OPLAN/OPORDER), a vessel in port or at sea, all applicable publications, forms, records, tools, materials, personnel, and equipment in all weather conditions, day or night and all MOPP levels in an operational environment scenario, and an operational radar or radar simulator in standby mode, that meets the standards of 33 CFR 164.38 and other applicable national and international performance standards. Some iterations of this task should be performed in MOPP 4.

Standard: On order, determine course to steer to prevent collision utilizing radar and plotting sheet, IAW references.

Special Condition: None

Safety Level: Low

MOPP: Sometimes

Task Statements

Cue: None

DANGER
None

WARNING
None

CAUTION
None

Remarks: None

Notes: None

Performance Steps

1. Establish the basic triangle and draw the Relative Motion Line (RML) past the center of the plotting sheet.
2. Change course/speed to avoid collision if necessary.
3. Determine when action is to be taken, and mark this point on the RML as point "mx".
4. Draw a New RML from point "mx" past the center of the plotting sheet tangent to the danger circle.
5. Parallel the New RML to point "m" in the triangle and draw it in the opposite direction of travel.
6. Using the same length of vector "e" to "r", measure from point "e" to the point of intersection on the New "r" "m" vector to establish point "r1".
 - a. Vector "r1" to "m" constitutes new DRM (Direction of Relative Motion) and new SRM (Speed of Relative Motion).
 - b. Vector "e" to "r1" constitutes New Own Ships' Course and Speed.
7. Change Own Ships' Course to the new direction of travel.
8. Determine the new Direction and Speed of Relative Motion.
9. Analyze the new triangle and explain the effect of the Course change on Relative Motion.
10. Return to base course after the situation has passed.

(Asterisks indicates a leader performance step.)

Evaluation Guidance: Score the soldier a GO if all performance measures are correctly completed/pass (P). Score the Soldier a NO-GO if any of the performance measures are missed or incorrectly performed/fail (F).

Evaluation Preparation: Test this task in conjunction with the Vessel Operations assessment. Ensure Soldier understands why this task is important to the overall safe navigation of the vessel.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Established the basic triangle and draw the Relative Motion Line (RML) past the center of the plotting sheet.			
2. Changed course/speed to avoid collision if necessary.			
3. Determined when action is to be taken, and mark this point on the RML as point "mx".			
4. Drew a New RML from point "mx" past the center of the plotting sheet tangent to the danger circle.			
5. Paralleled the New RML to point "m" in the triangle and draw it in the opposite direction of travel.			
6. Using the same length of vector "e" to "r", measured from point "e" to the point of intersection on the New "r" "m" vector to establish point "r1".			
7. Changed Own Ships' Course to the new direction of travel.			
8. Determined the new Direction and Speed of Relative Motion.			
9. Analyzed the new triangle and explain the effect of the Course change on Relative Motion.			
10. Returned to base course after the situation has passed.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	33 CFR	Navigation and Navigational	Yes	No
	COMDTINST M16672.2C	Navigation Rules - International-Inland	Yes	Yes
	DMA CHART NO 1	DMA CHART NO 1	Yes	Yes
	DUTTON	DUTTON'S NAVIGATION AND PILOTING 14th EDITION	Yes	Yes
	FM 4-01.502	ARMY WATERCRAFT SAFETY	No	Yes
	FM 55-50	Army Water Transport Operations (Reprinted w/Basic Incl C1)	No	No
	PUB. NO. 9	The American Practical Navigator - Bowditch	Yes	Yes
	TC 4-15.51	MARINE CREWMAN'S HANDBOOK	No	Yes

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT. AR 200-1 delineates TRADOC responsibilities to integrate environmental requirements across DOTMLPF and ensures all training procedures, training manuals, and training doctrine includes sound environmental practices and considerations. The Army's environmental vision is to be a national leader in environmental and natural resource stewardship for present and future generations as an integral part of all Army missions. Environmental protection is never completed. Continuously be alert to ways to protect our environment and reduce waste.

Leaders must ensure that their unit has an active and strong environmental program. They must understand the laws and know what actions to take. Leaders bring focus, direction, and commitment to environmental protection. Commanding officers should ensure the following environmental programs are in place and are being maintained:

- Hazardous materials program.
- Hazardous waste program.
- Hazardous communications program.
- Pollution prevention and hazardous waste minimization recycling program.
- Spill prevention and response plan program.

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination. All operations will be performed to protect and preserve Army personnel and property against accidental loss. Procedures will provide for public safety incidental to Army operations and activities and safe and healthful workplaces, procedures, and equipment. Observe all safety and/or environment precautions regarding electricity, cable, and lines. Provide ventilation for exhaust fumes during equipment operation and use hearing protection when required IAW AR 385-10, the Clean Air Act (CAA) and the CAA amendments, and the OSHA Hazard Communication standard.

Accidents are an unacceptable impediment to Army missions, readiness, morale, and resources. Decision makers at every level will employ risk management approaches to effectively preclude unacceptable risk to the safety of personnel and property affiliated with this task.

- (a) Take personal responsibility.
- (b) Practice safe operations.
- (c) Recognize unsafe acts and conditions.
- (d) Take action to prevent accidents.
- (e) Report unsafe acts and conditions.
- (f) Work as a team.

Prerequisite Individual Tasks :

Task Number	Title	Proponent	Status
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551-88K-1701	Prepare Visual Communication Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-1512	Observe Vessel Navigational Rules for Inland/International Waters	551 - Transportation (Individual)	Approved
551-88K-1504	Perform Vessel Pre-Sail Requirements	551 - Transportation (Individual)	Approved
551-88K-1705	Operate a Vessel's Electric Gyro System	551 - Transportation (Individual)	Approved
551-88K-3708	Monitor Navigational Duties Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-2712	Perform Vessel Movements Using Aids to Navigation (ATONS)	551 - Transportation (Individual)	Approved
551-88K-3710	Comply With Aids to Navigation Standards	551 - Transportation (Individual)	Approved
551-88K-1517	Perform Watch Standing Procedures Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-4702	Interpret Visual Communication Onboard a Vessel	551 - Transportation (Individual)	Obsolete
551-88K-4716	Conduct Dead Reckoning(DR) Techniques Onboard a Vessel	551 - Transportation (Individual)	Obsolete
551-88K-4715	Monitor Operations of Navigational Equipment Onboard a Vessel	551 - Transportation (Individual)	Obsolete
551-88K-1709	Operate Navigational Instruments Onboard a Class-A Vessel	551 - Transportation (Individual)	Approved

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
551-88K-1510	Prepare a Vessel for Harbor Tug Operations	551 - Transportation (Individual)	Approved
551-88K-1509	Prepare a Vessel for Inland Towing Operations	551 - Transportation (Individual)	Approved
551-88K-1511	Prepare a Vessel for Ocean Towing Operations	551 - Transportation (Individual)	Approved
551-88K-3708	Monitor Navigational Duties Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-3709	Enforce Navigational Rules Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-3710	Comply With Aids to Navigation Standards	551 - Transportation (Individual)	Approved
551-88K-2702	Perform Visual Communication Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-1517	Perform Watch Standing Procedures Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-1707	Determine Nautical Direction Using the Vessel's Magnetic Compass	551 - Transportation (Individual)	Approved
551-88K-1512	Observe Vessel Navigational Rules for Inland/International Waters	551 - Transportation (Individual)	Approved
551-88K-1513	Observe Aids To Navigation (ATON) Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-2712	Perform Vessel Movements Using Aids to Navigation (ATONS)	551 - Transportation (Individual)	Approved
551-88K-4715	Monitor Operations of Navigational Equipment Onboard a Vessel	551 - Transportation (Individual)	Obsolete
551-88K-1709	Operate Navigational Instruments Onboard a Class-A Vessel	551 - Transportation (Individual)	Approved
551-88K-1508	Prepare Vessel for Beaching and Retracting Operations, Class A Vessel	551 - Transportation (Individual)	Approved

Supported Individual Tasks :

Task Number	Title	Proponent	Status
551-88K-1513	Observe Aids To Navigation (ATON) Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-1511	Prepare a Vessel for Ocean Towing Operations	551 - Transportation (Individual)	Approved
551-88K-1707	Determine Nautical Direction Using the Vessel's Magnetic Compass	551 - Transportation (Individual)	Approved
551-88K-4702	Interpret Visual Communication Onboard a Vessel	551 - Transportation (Individual)	Obsolete
551-88K-4513	Enforce Vessel Pre-Sail Requirements	551 - Transportation (Individual)	Obsolete
551-88K-1707	Operate a Vessel Magnetic Compass	551 - Transportation (Individual)	Proposed
551-88K-1512	Observe Vessel Navigational Rules for Inland/International Waters	551 - Transportation (Individual)	Approved
551-88K-1705	Operate a Vessel's Electric Gyro System	551 - Transportation (Individual)	Approved
551-88K-1517	Perform Watch Standing Procedures Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-2710	Conduct Operation of Navigational Equipment Onboard a Class B Vessel	551 - Transportation (Individual)	Approved
551-88K-3511	Monitor Watch Standing Procedures Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-3708	Monitor Navigational Duties Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-3515	Enforce Vessel Pre-Sail Requirements	551 - Transportation (Individual)	Approved
551-88K-4715	Monitor Operations of Navigational Equipment Onboard a Vessel	551 - Transportation (Individual)	Obsolete

Supported Collective Tasks :

Task Number	Title	Proponent	Status
55-2-1503	Prepare Vessel for Sea	55 - Transportation (Collective)	Approved
55-2-0039	Conduct Towing Operations.	55 - Transportation (Collective)	Approved
55-2-0020	Support Shore-to-Shore Cargo Operations.	55 - Transportation (Collective)	Approved
55-2-0040	Transport Bulk Water	55 - Transportation (Collective)	Approved
55-2-0502	Deploy by Logistics Support Vessel	55 - Transportation (Collective)	Approved
55-2-0501	Conduct a Convoy by Vessel	55 - Transportation (Collective)	Approved
55-2-1508	Conduct Vessel Operations	55 - Transportation (Collective)	Approved
55-2-0036	Prepare Vessel for Towing Operations.	55 - Transportation (Collective)	Approved

ICTL Data :

ICTL Title	Personnel Type	MOS Data
MOS 88K Watercraft Operator SL 4	Enlisted	MOS: 88K, Skill Level: SL4, Duty Pos: TFJ