

Report Date: 14 Apr 2014

Summary Report for Individual Task
551-88K-4716
Conduct Dead Reckoning (DR) Techniques Onboard a Vessel
Status: Approved

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

DESTRUCTION NOTICE: None

Condition: Assigned as a Small Tug Master, First Mate or Boatswain onboard an Army vessel, given a requirement to assist the vessel master in plotting a DR track as your vessel travels from one point to another, a completed risk assessment, all applicable publications, forms, records, tools, materials, personnel, and equipment, day or night, in all weather conditions and all MOPP levels in an operational environment scenario. Some iterations of this task should be performed in MOPP 4.

Standard: Assist the vessel master in plotting the course to be traveled on the nautical chart. All dead reckoning (DR) positions, course, and speed must be neatly labeled with correct symbols and abbreviations. Accuracy: distance +/- 0.1 nautical mile; speed +/- 0.5 knot and course +/- 0.5 degree.

Special Condition: None

Safety Level: Low

MOPP: Sometimes

Task Statements

Cue: Given a requirement to conduct dead reckoning techniques onboard a vessel.

DANGER

None

WARNING

None

CAUTION

None

Remarks: None

Notes: The Soldier is required to perform the requirements for his skill level.

Performance Steps

1. Select the plotting instruments.

a. Pencil and erasers.

b. Navigator's kit

(1) Drawing compass for constructing circles and arcs.

(2) Dividers to measure distance.

(3) Screwdriver for adjusting points.

c. Parallel rules for plotting direction.

d. Triangles for transferring a direction from one part of a chart to another.

e. Drafting Machine or Parallel Motion Protractor.

Note: This plotting device is anchored to the chart table and consists of two links and a drafting arm. An elbow between the two links permits unrestricted movement.

f. Binoculars and a flashlight.

2. Determine point A (starting) and point B (destination).

3. Draw a straight line from A to B.

4. Determine DR track.

5. Determine desired speed.

6. Label the line with course recorded above the line and speed recorded below the line.

7. Take dividers to latitude scale and measure the distance traveled in 30 minutes.

8. Transfer dividers to A and a point on the course line.

9. Make a dot on the course line where the point fell on the course line.

10. Draw a half circle around the dot on the course line.

11. Label DR position.

12. Repeat step 7-10 from last DR position to destination.

(Asterisks indicates a leader performance step.)

Evaluation Guidance: Score the Soldier GO if all performance steps are passed (P). Score the Soldier NO-GO if any performance step is failed (F). If the Soldier fails any step, show what was done wrong and how to do it correctly.

Evaluation Preparation: Ensure that all materials required to perform the task are available. Tell the Soldier that he/she will be evaluated on conducting dead reckoning techniques onboard a vessel.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Selected plotting instruments.			
2. Determined point A (starting) and point B (destination).			
3. Drew a straight line from A to B.			
4. Determined DR track.			
5. Determined desired speed.			
6. Labeled the line with course recorded above the line and speed recorded below the line.			
7. Took dividers to latitude scale and measured the distance traveled in 30 minutes.			
8. Transferred dividers to A and a point on the course line.			
9. Made a dot on the course line where the point fell on the course line.			
10. Drew a half circle around the dot on the course line.			
11. Labeled DR position.			
12. Repeated steps 7-10 from last DR position to destination.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	PUB. NO. 9	The American Practical Navigator - Bowditch	Yes	No
	TC 4-15.51	MARINE CREWMAN'S HANDBOOK	Yes	No

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
551-88K-2709	Maintain Vessel Nautical Charts and Publications Onboard a Class B Vessel	551 - Transportation (Individual)	Approved
551-88K-2710	Conduct Operation of Navigational Equipment Onboard a Class B Vessel	551 - Transportation (Individual)	Approved
551-88K-3708	Monitor Navigational Duties Onboard a Vessel	551 - Transportation (Individual)	Approved
551-88K-2711	Perform Dead Reckoning(DR) Techniques Onboard a Class-B Vessel	551 - Transportation (Individual)	Approved
551-88K-3710	Comply With Aids to Navigation Standards	551 - Transportation (Individual)	Approved

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
551-880-9066	COMPUTE MID-LATITUDE SAILING	551 - Transportation (Individual)	Approved

Supported Individual Tasks :

Task Number	Title	Proponent	Status
551-88K-3706	Monitor a Vessel Electronic Gyro System	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

Supported Collective Tasks :

Task Number	Title	Proponent	Status
55-2-0047	Perform Search and Rescue Operations	55 - Transportation (Collective)	Approved
55-2-0039	Conduct Towing Operations.	55 - Transportation (Collective)	Approved
55-2-0071	Receive Commitments from Battalion Headquarters	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