

Radar, ARPA & Navigation Simulator Course (RANSCO) - Management Level

Training Circular No. 7 of 2004

No.11-TR(31)/2003

Dated: March 22, 2004

Sub: Guidelines - Radar, ARPA & Navigation Simulator Course (RANSCO) - Management Level

Maritime safety and efficiency is of utmost concern to the Directorate General of Shipping(DGS), the constituted authority of the Government of India for all maritime affairs.

It was noticed that some training institutes barely met the minimum standards set by the Directorate, while other provided training facilities that were world class. In order to bring about uniformity of training, amenities and equipment provided by all, old guidelines were revised and new ones formulated. This was done by the DGS in consultation with the training institutes and employers (shipowners and manning agencies). Draft guidelines were displayed on the website of the DGS and comments invited from interested parties, regardless of the position or office held.

Meetings of interested parties were held and modification made to the draft guidelines. In keeping with Government policy, the guidelines have been made in as transparent manner as practicable. The final guidelines for [Radar, ARPA & Navigation Simulator Course \(RANSCO\)](#) - (Management Level) is attached herewith.

It is expected that training institutes would follow these guidelines in letter and spirit.

The above guidelines shall come into force w.e.f. 01.05.2004.

This issues with the approval of the Director General of Shipping and ex-officio Addl. Secretary to the Government of India.

Sd/-

(Naresh Salecha)

Sr.Dy. Director General of Shipping

GUIDELINES FOR THE CONDUCT OF AUTOMATIC RADAR PLOTTING AIDS (ARPA) COURSE

ISSUED BY

THE DIRECTORATE GENERAL OF SHIPPING

To avoid unnecessary repetition, reference has been made herein to DGS Order no: 1 of 2003 (Guidelines for the conduct of Pre-Sea Training courses for Merchant Navy) wherever appropriate.

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RADAR OBSERVER SIMULATOR COURSE (ROSC)

1. BASIC DETAILS OF THE COURSE

i. Aims

This course provides training in the basic theory and use of radar for officers in charge of a navigational watch. It is based on the standards of competence as per Section A-II/1 of STCW 95.

Appendix M-II/1C of META Manual Vol. II & IMO Model Course 1.07 should be used in the preparation of material for this course.

ii. Objectives:

A student successfully completing this course and meeting the required performance standards will recognise when radar should be in use; will select a suitable mode and range setting for the circumstances; will be able to set the controls for optimal performance; and will be aware of the limitations of the equipment in detecting targets and in terms of accuracy.

iii. Application:

Compliance with these guidelines shall be mandatory for all institutes from 1st May 2004.

2. QUALIFICATION & ELIGIBILITY OF STUDENTS

i. Entry standards:

This course is intended for students prior to certification as officers in charge of a navigational watch. Before being admitted to this course, students should have completed a minimum period of twelve months at sea.

ii. Required attendance:

100% attendance is required for successful completion of the course. However, in exceptional circumstances, a student is allowed absence of up to one day subject to his attending the lectures missed out during the next course at the same institute. The institute shall keep proper records of such cases and intimate Chairman of respective Academic Council.

iii. Course intake limitations:

The number of students shall not exceed 24 per class.

Course intake will be limited to not more than three students per available radar display to allow each student sufficient practice in the operation of the equipment.

3. INFRASTRUCTURE REQUIREMENT

- i. The Radar Simulator equipment for this course shall be of a type approved or accepted by the DGS.
- ii. Paper charts for the exercise areas must be available.
- iii. Each Radar set shall be inside a soundproof cubicle (called an own ship) such that the discussions and orders given in one cubicle cannot be heard by other own ships.
- iv. Each own ship cubicle shall be not less than 4m² in area and have a chart table of appropriate size, chart table lamp and charts of the simulation areas.
- v. There shall be a classroom of not less than 1.5m² per sanctioned strength of students for use for lectures and plotting practice.
- vi. Individual table (not less than 60 cm x 45 cm) and chair shall be provided per student. Writing tablets (chairs with attached writing surfaces) will not suffice for this course as radar plotting requires use of a textbook, plotting sheet, calculator and drawing/writing instruments.
- vii. Plotting Sheets, Parallel Rulers, Dividers, Compasses, etc.
- viii. Video Films/CDs/DVDs including "Bridge Watchkeeping Procedures".
- ix. Physical requirement for classrooms, black/white boards, overhead projector, screen, notice board, faculty room, study environment and teaching equipment etc are to be provided as per DGS order 1 of 2003.
- x. The institute shall have a library-cum-reading room of not less than 36 m² in area
- xi. Additional infrastructure, equipment, Training Aids, Video Cassettes/CDs/DVDs and Reference Books etc., required for this course are as per Annexure 1

4. COURSE DETAILS

- i. Course duration: 10 days
- ii. Course outline: As per Annexure 2
- iii. Detailed Teaching Syllabus: As per Annexure 3

5. HOLIDAYS

- i. Sundays shall be holidays.
- ii. Independence Day and Republic Day shall be compulsory holidays.

6. FACULTY REQUIREMENT

- i. Qualifications and experience of course in charge:
- ii. Certificate of competency, issued or recognised by the Government of India, as Master of a Foreign Going Ship

And

iii. At least 5 years service on Merchant ships

And

iv. At least one year in the rank of Master

Or

v. One year as Chief Officer and one year as regular (full time) faculty member in ROSC, ARPA Course, RANSCO, SMS Course, Pre-sea degree courses for deck cadets or Competency Courses.

RADAR OBSERVER SIMULATOR COURSE (ROSC)

1. BASIC DETAILS OF THE COURSE

i. Aims

This course provides training in the basic theory and use of radar for officers in charge of a navigational watch. It is based on the standards of competence as per Section A-II/1 of STCW 95.

Appendix M-II/1C of META Manual Vol. II & IMO Model Course 1.07 should be used in the preparation of material for this course.

ii. Objectives:

A student successfully completing this course and meeting the required performance standards will recognise when radar should be in use; will select a suitable mode and range setting for the circumstances; will be able to set the controls for optimal performance; and will be aware of the limitations of the equipment in detecting targets and in terms of accuracy.

iii. Application:

Compliance with these guidelines shall be mandatory for all institutes from 1st May 2004.

2. QUALIFICATION & ELIGIBILITY OF STUDENTS

i. Entry standards:

This course is intended for students prior to certification as officers in charge of a navigational watch. Before being admitted to this course, students should have completed a minimum period of twelve months at sea.

ii. Required attendance:

100% attendance is required for successful completion of the course. However, in exceptional circumstances, a student is allowed absence of up to one day subject to his attending the lectures missed out during the next course at the same institute. The institute shall keep proper records of such cases and intimate Chairman of respective Academic Council.

iii. Course intake limitations:

The number of students shall not exceed 24 per class.

Course intake will be limited to not more than three students per available radar display to allow each student sufficient practice in the operation of the equipment.

3. INFRASTRUCTURE REQUIREMENT

- i. The Radar Simulator equipment for this course shall be of a type approved or accepted by the DGS.
- ii. Paper charts for the exercise areas must be available.
- iii. Each Radar set shall be inside a soundproof cubicle (called an own ship) such that the discussions and orders given in one cubicle cannot be heard by other own ships.
- iv. Each own ship cubicle shall be not less than 4m² in area and have a chart table of appropriate size, chart table lamp and charts of the simulation areas.
- v. There shall be a classroom of not less than 1.5m² per sanctioned strength of students for use for lectures and plotting practice.
- vi. Individual table (not less than 60 cm x 45 cm) and chair shall be provided per student. Writing tablets (chairs with attached writing surfaces) will not suffice for this course as radar plotting requires use of a textbook, plotting sheet, calculator and drawing/writing instruments.
- vii. Plotting Sheets, Parallel Rulers, Dividers, Compasses, etc.
- viii. Video Films/CDs/DVDs including "Bridge Watchkeeping Procedures".
- ix. Physical requirement for classrooms, black/white boards, overhead projector, screen, notice board, faculty room, study environment and teaching equipment etc are to be provided as per DGS order 1 of 2003.
- x. The institute shall have a library-cum-reading room of not less than 36 m² in area
- xi. Additional infrastructure, equipment, Training Aids, Video Cassettes/CDs/DVDs and Reference Books etc., required for this course are as per Annexure 1

4. COURSE DETAILS

- i. Course duration: 10 days
- ii. Course outline: As per Annexure 2
- iii. Detailed Teaching Syllabus: As per Annexure 3

5. HOLIDAYS

- i. Sundays shall be holidays.
- ii. Independence Day and Republic Day shall be compulsory holidays.

6. FACULTY REQUIREMENT

- i. Qualifications and experience of course in charge:
- ii. Certificate of competency, issued or recognised by the Government of India, as Master of a Foreign Going Ship

And

- iii. At least 5 years service on Merchant ships

And

- iv. At least one year in the rank of Master

Or

- v. One year as Chief Officer and one year as regular (full time) faculty member in ROSC, ARPA Course, RANSCO, SMS Course, Pre-sea degree courses for deck cadets or Competency Courses.

7. Qualifications and experience of faculty members:

- i. Qualifications and experience of faculty members:

And

- ii. At least 5 years service on Merchant ships of which at least one year should have been at management level.
- iii. Radio Officer with Class II Certificate of Proficiency and with seagoing experience on merchant ships may be permitted to take classroom lectures pertaining to technical aspects of Radar.

8. Training of Trainers & Assessors Course:

As per DGS Order no: 1 of 2003.

Visiting faculty members:

Qualifications and experience of visiting faculty members should be the same as that of regular faculty as specified above

Age limit for regular faculty members:

As per DGS Order no: 1 of 2003.

9. FACULTY STRENGTH

Not less than one Master Mariner (inclusive of the course-in-charge who shall be on regular basis) for every three own ships.

Additional faculty member/s (Master Mariner/s) may be on visiting basis.

A minimum of 50% of the entire portion must be covered by regular faculty.

10. COURSE DURATION

A total of 33 hours of lectures, practical training and assessment.

11. ASSESSMENT

At the end of the course, there shall be assessment by practicals & oral examination on operation of ARPA and on ROR.

12. QUALITY STANDARDS

As per DGS Order no: 1 of 2003.

13. INSPECTIONS

As per DGS Order no: 1 of 2003.

14. FEES TO GOVT.

As per DGS Order no: 1 of 2003.

Annexure 1

TEACHING AIDS

Equipment

The following equipment shall be made available for conducting the course

- Overhead Projectors and Transparencies
- Navigation charts

Video Films/CDs/DVDs

The available video cassettes / films shall include following films:

- Automatic Radar Plotting Aids
- Bridge Watchkeeping Procedures

Publications

For implementation of this course, Institutes should, for reference and guidance use appropriate books and publications, which may include:

- STCW 95 as amended
- IMO Performance standards for radar equipment
- The International Regulations for preventing Collision at Sea, 1972.
- IMO Performance standards for ARPA
- IMO Performance standards for gyro compasses
- IMO Performance standards for devices to indicate speed and distance
- IAMSAR Manual Vol III
- International convention for Safety of Life at Sea, 1974 (SOLAS 1974)
- Shipborne Radar & ARPA by Capt. H. Subramaniam,
- Radar Observer's Handbook for Merchant Navy Officers by W.Burger
- Radar and ARPA Manual by A.G. Bole and W.O. Dineley
- Shipborne Radar & ARPA by Capt. H. Subramaniam,
- Radar & Electronic Navigation by Sonnenberg
- Admiralty Manual of Navigation
- A Guide to the Collision Avoidance Rules, A.N. Cockcroft and J.N.F. Lameijer,

ANNEXURE 2

RADAR, ARPA & NAVIGATION SIMULATOR COURSE

COURSE OUTLINE

Subject Area	Lecture Simulator	
	Hours	Hours
Knowledge, understanding and proficiency		
Operate ARPA and Navigation Controls	1.0	1.0
Demonstrate familiarity with own-ship characteristics and operate ARPA and navigation controls	1.0	1.0
Perform Radar Plotting		
Factors affecting radar plotting are identified correctly	2.0	-
Carry out radar plotting	-	4.0
	2.0	4.0

Use ARPA and Navigation Information to Control Safe Navigation and Collision Avoidance

	-	6.0
Apply COLREGS in open waters in restricted visibility	2.0	8.0
Plan and control navigation in confined waters	1.0	5.0
Control navigation in/near traffic separation schemes	2.0	-
Manage a bridge team	5.0	19.0

Plan and Co-ordinate Search and Rescue

	1.0	-
Respond to a distress message	1.0	-
Co-ordinate search and rescue operation	-	4.0
Execute a search and rescue operation	2.0	4.0
Total	10	28
Subject Total	38	