



भारत सरकार / GOVERNMENT OF INDIA
पत्तन, पोत परिवहन और जलमार्ग मंत्रालय
MINISTRY OF PORTS, SHIPPING AND WATERWAYS
नौवहन महानिदेशालय, मुंबई
DIRECTORATE GENERAL OF SHIPPING, MUMBAI

DGS (EAC-ENGG) Circular No. 25 of 2026

File No. 13-11031/1/2021-ENGG - DGS	Date: May 19, 2026
Subject: Issuance of Electro-Technical Rating Certificate of Proficiency & progression to ETO certification, reg.	
References:	a) DGS Training Circular No. 12 of 2020 issued on 01/04/2020 b) NT/ENGG Circular No.2 of 2016 issued on 20/09/2016
I. Background 1. The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, specifically the 2010 Manila Amendments, introduced the formal recognition of Electro-Technical Officers (ETOs) and Electro-Technical Ratings (ETRs) on merchant and passenger ships. These roles are now defined under STCW Regulations III/6 (ETO) and III/7 (ETR). 2. The Directorate General of Shipping had issued various circulars/guidelines related to the conduct of ETO course and for streamlining the process of induction, training and certification of qualified seafarers as an ETO. These were issued with the intent to cause minimum disruption to the career paths of existing Electrical Officers and for a smooth transition to the new requirements as per STCW amendments. 3. Recognizing that the modern merchant ships have become more complex, with advanced electrical and electronic systems being increasingly used for propulsion, navigation, automation, and various onboard services; there is an increasing role for individuals with specialized knowledge and skills in electrical and electronic engineering.	

4. Noting that the electric and hybrid marine vessels are gaining wider acceptance in the maritime decarbonization scenario worldwide, the Directorate General of Shipping anticipates a larger demand for qualified and certified ETOs and ETRs who should be better equipped to understand the operations of such ships, comprehend the risk profile & the associated mitigatory measures for a reliable and efficient transition to greener technologies.
5. This Circular supersedes the NT/ENGG Circular No.2 of 2016 issued on 20/09/2016 and prescribes the eligibility criteria for seafarers interested in applying for the Certificate of Proficiency (CoP) as 'Electro-Technical Rating'. This Circular intends to provide more clarity to the eligibility criteria for the ETO course as notified by the DGS Training Circular No. 12 of 2020 issued on 01/04/2020 and widen the pathway to enable the Electro-Technical Ratings (Indian) CoP holders to undertake the ETO course and appear for the CoC examinations conducted by the DG Shipping.

II. Training & Certification as Electro Technical Rating (ETR)

The Merchant Shipping (STCW) Rules, 2014, as amended has prescribed the minimum requirements for certification of Electro-Technical ratings within Rule 49. Further, for the purpose of clarity and widening the entry level criteria, with respect to qualifications that meet the technical competence in table A-III/7 of the STCW Code, the sea going service requirements and age of the eligible seafarer, the following criteria shall be required to be followed for considering issuance of ETR CoPs:

Educational Qualification [#]	Sea going service [*]
Criteria I • Pass Std 10 from a recognized board, with science, mathematics as subjects & aggregate 40% marks, and • Minimum 40 % marks in English in 10th or 12th or Diploma or Degree, and • ITI trade certificate (full time) in electrical or electronics streams	Nine months' service on a sea-going ship powered by main propulsion machinery of 750 KW propulsion power or more having performed duties relevant to electrical functions.
Criteria II • Pass three years' Diploma in Electrical/Electronics/ Telecommunication/	Six months service on a sea-going ship powered by main propulsion machinery of 750 KW propulsion power or more having performed

Communication/Instrumentation/Control Engineering or equivalent from a Board recognized by the State/Central Government or AICTE, and • Minimum 40 % marks in English in 10th or 12th or Diploma	duties relevant to electrical functions
Criteria III • Pass Degree in Electrical/Electronics/Telecommunication/Communication/Instrumentation/Control Engineering or equivalent from a university recognized by the State/Central Government or AICTE, and • Minimum 40 % marks in English in 10th or 12th or Diploma or Degree	Six months service on a sea-going ship powered by main propulsion machinery of 750 KW propulsion power or more having performed duties relevant to electrical functions.
Criteria IV • Complete DG Shipping approved General Purpose (GP) Rating Course & pass the Exit Exam, and • Minimum 40 % marks in English in 10th or 12th or Diploma or Degree • Complete DGS approved 'Bridging Course in basic electrical functions for seafarers with GP Ratings course certificate.' The syllabus for the course is attached to this Circular. Any trainee Electro-Technical Rating (ETR) should complete this course before being engaged as a 'Trainee ETR' onboard a ship after issuance of this circular.	Twelve months service on a sea-going ship powered by main propulsion machinery of 750 KW propulsion power or more, having performed duties relevant to electrical functions.

As permitted by the Article IX of the STCW Convention, the DGS notified Orders/Notices/Circulars establishing equivalence with regards to the educational qualification, training and seagoing service of Indian Navy or the Indian Coast Guard personnel shall be considered after examining the relevant DGS Order/Notices/Circulars issued for the said category of CoP.

*The Directorate General of Shipping has approved a '**ETR-Training and Assessment Record (TAR) Book**' for all the seafarers performing the sea going service referred above and the same shall be verified by the assessing officers of the Mercantile Marine Department (MMD) prior to the issuance of the CoP and is a mandatory requirement.

III. Progression from Electro-Technical Rating to Electro-Technical Officer

The seafarer who has been issued with an ETR CoP, after completing the minimum sea going service as detailed below, can join the 4-month ETO pre-sea course at any DG Shipping approved Maritime Training Institute (MTI). The age limitation for enrollment to the ETO Course for those eligible seafarers who have the necessary sea service after getting the ETR CoP has been done away with. The two pathways for progression from ETR to ETO, are further categorized as below, for a better understanding of the requirement to be met by the ETR, prior applying to the MMDs for assessment and for the eligibility criteria to be followed by the MTIs prior admitting these candidates:

Category A: ETR without a Diploma / Degree in Electrical or Electronics stream

For progression from Electro-Technical Rating (ETR) to Electro Technical Officer (ETO):

- (a) the seafarer after being issued with a ETR CoP, have a minimum of 24 months sea going service on merchant ships powered by main propulsion machinery of 750 KW propulsion power or more, having performed duties relevant to electrical functions at a support level under the supervision of a senior in full charge, out of which minimum 12 months sea going experience should be with an approved ETO TAR Book.
- (b) thereafter, attend DGS approved 4 months pre-sea ETO course;
- (c) appear written and oral examinations conducted by DG Shipping for ETO CoC Certification.

Category B: ETR holding a Diploma / Degree in Electrical or Electronics stream

For progression from Electro-Technical Rating (ETR) to Electro Technical Officer (ETO) for a ETR holding Diploma / Degree holder in electrical or electronics stream from a (State/Central/AICTE) recognized university, the seafarer should:

- (a) after being issued with ETR CoP, have a minimum of 12 months sea going service on merchant ships powered by main propulsion machinery of 750 KW propulsion power or more, having performed duties relevant to electrical functions at a support level under the direct supervision of a senior in full charge, out of which minimum 6 months sea going experience should be with an approved ETO TAR Book.
- (b) thereafter, attend 4 months pre-sea ETO course.
- (c) appear written and oral examinations conducted by DG Shipping for ETO CoC Certification.
- This issues with the approval of the competent authority.



(Praveen Nair)

Dy. Chief Surveyor cum Sr. DDG (Tech.)

To

1. The Principal Officers, Mercantile Marine Department, Mumbai/Kolkata/Chennai/Kandla/Kochi.
2. The Surveyor-in-Charge, Mercantile Marine Department, Goa/Jamnagar/Port-Blair/Visakhapatnam/Tuticorin/Noida/Haldia/Paradip/Mangalore
3. Indian National Shipowner's Association (INSA), Mumbai.
4. Foreign Owner and Ship-Managers Association (FOSMA)
5. The Maritime Association of Ship Owners, Ship Managers and Agents (MASSA)
6. Indian Coastal Conference Shipping Association (ICCSA), Mumbai
7. Institute of Marine Engineers (India)
8. Engineering Wing
9. Hindi cell
10. Computer cell

Copy to:

11. The Chief Surveyor with the Govt.of India
12. Nautical Advisor to the Govt.of India
13. Surveyors of Engineering wing of the DGS

Syllabus for the Bridging Course in basic electrical functions for seafarers with GP Ratings course certificate

[Duration: 10 working days]

1. Course Objective

To provide basic training to GP Rating certificate holders in fundamental electro-technical knowledge, practical skills, and shipboard safety in compliance with the requirements of STCW Convention, as amended, Regulation III/7 and Section A-III/7, enabling them to meet the prescribed standards of competence for Electro-Technical Ratings at the operational level, serve effectively as Trainee Electro-Technical Ratings (ETR) on board seagoing ships, and qualify for the issue of the Electro-Technical Rating Certificate of Proficiency upon completion of the mandated sea service.

2. Eligibility

All engineering stream candidates who have successfully completed the GP Ratings course and have passed the exit examination are eligible to enrol for this Bridging, if they are keen to work as 'Electro-Technical Ratings'.

3. Course Contents (Summary)

A. Electrical Safety & Safe Working Practices familiarisation		
Causes and prevention of electric shock	Safety precautions before commencing electrical work	Isolation procedures and Emergency Response
Awareness of shipboard voltage systems	Introduction to Lock-out/Tagout (LOTO)	
B. Basic Electro-Technology		
Basic electrical theory and electrical machine fundamentals	Power distribution concepts: DBs, feeders, protection devices	Introduction to coupling/load sharing
Familiarization with hand tools and measuring instruments		
C. Shipboard Machinery & Systems (Awareness)		
Prime mover and propulsion basics	Auxiliary machinery (pumps, compressors, purifiers)	Steering gear systems
Hospitality services and electrical loads		
D. Maintenance & Repair (Support Level) familiarisation		
Routine maintenance procedures	Safe disposal of waste materials	Reading basic electro-technical drawings
Fault identification and basic troubleshooting	Maintenance of lighting systems and small electrical loads	

3. Assessment

- Written test (basic concepts & safety)
- Practical evaluation (tools, isolation awareness, basic measurements)
- Viva-voce on safety procedures & shipboard responsibilities

Detailed Syllabus

Minimum standard of competence for Trainee electro-technical ratings, exclusively applicable to those belonging to the intake criteria IV: GP Rating (without ITI / Diploma/Degree)

Function: Electrical, electronic and control engineering at the support level – 35 hours

Competence	Knowledge, understanding and proficiency	Theory hours	Practical hours
Safe use of electrical equipment	Knowledge of the causes of electric shock and precautions to be observed to prevent shock. Basic of Isolated and Earth neutral system Familiarisation of safe use and operation of electrical equipment, including: .1 safety precautions before commencing work or repair .2 isolation procedures and isolation permit. .3 emergency procedures .4 different voltages on board and hazards of high voltage .5 Grounding and bonding, .6 Hazardous area equipment's.	5	4
Familiarization for monitoring operation of electrical systems and machinery	Brief knowledge of the operation of mechanical engineering systems, including: .1 prime movers, main propulsion plant .2 engine-room auxiliary machineries .3 steering systems .4 hotel systems .5 Navigation equipment's., Navigation lights .6 MGPS, ICCP, Shaft Earthing <i>Basic knowledge of:</i> .1 electro-technology and electrical machines theory	6	4

Competence	Knowledge, understanding and proficiency	Theory hours	Practical hours
	E.g. Brushless Alternator, Motors. .2 electrical Main switch board and safeties, power distribution boards and electrical equipment .3 Bus coupling, load sharing and changes in electrical configuration		
Familiarisation with use of hand tools, electrical and electronic measuring equipment for fault finding, maintenance and repair operations.	Safety requirements for working on shipboard electrical systems Familiarisation with safe working practices <i>Basic knowledge of:</i> .1 Use of measuring instruments, machine tools, and hand and power tools. .2 Electro- Hydraulic & electro pneumatic control .3 Electrical drives and starter control panel. .4 UMS operation – .5 BNWAS, Dead Man's Alarm & Watch keeper alarms .6 Flammable areas: explain explosion-proof type of protection of electrical equipment for gas-explosive area, Intrinsic barrier safety & Explosion protection techniques .7 Ships refrigeration system .8 Fire Detection & alarm System .9 Sensors – Temperature, pressure, flow and level.	4	4
Familiarisation of the stored energy, i.e. batteries on board	Safety equipment's while working on the batteries. Personal protective equipment's to be used, hazards associated with the stored energy, ventilation of such spaces	4	4
Total		19	16

Function: Maintenance and repair at the support level – 15 hours

Competence	Knowledge, understanding and proficiency	Theory Hours	Practical Hours
Familiarization in shipboard maintenance and repair activities	Use of lubrication, cleaning materials and equipments. Knowledge of safe disposal of waste materials. Familiarisation of routine maintenance and repair procedures. Understanding manufacturer's safety guidelines and shipboard Instructions.	5	2
Familiarization in maintenance and repair of electrical systems and machineries on board	<i>Safety and emergency procedures:</i> Brief knowledge of electro-technical drawings and safe isolation of equipment and associated systems required before personnel are permitted to work on such plant or equipment. Familiarisation to test, detect faults and maintain/restore electrical control equipment and machinery to operating condition. Familiarization in safe maintenance and repair procedures Maintenance and repair of lighting fixtures and supply systems.	4	4
Total		9	6

Function: Controlling the operation of the ship and care for persons on board at the support level – 7 hours

Competence	Knowledge, understanding and proficiency	Theory Hours	Practical Hours
Apply occupational health and safety procedures	Familiarisation of safe working practices and personal shipboard safety, including: .1 electrical safety .2 lockout/tag-out .3 mechanical safety .4 permit to work systems .5 working aloft .6 working in enclosed spaces .7 lifting techniques and methods of preventing back injury .8 chemical and biohazard safety .9 personal safety equipment	3	4
Total		3	4

Assessment: 3 hours

Competence	Knowledge, understanding and proficiency	Theory Hours	Practical Hours
Written Test	Basic Concept safeties	1.0	0
Practical evaluation	Perform in front of the assessor	0	1
Orals and feedback	Viva voce of safety procedures & shipboard responsibilities	0	1
Total		1	2
Grand total (60 hours)		32	28