

[PUBLICATION IN PART II SECTION 3 SUB-SECTION (i)
OF THE GAZETTE OF INDIA DATED 10.2.1973.]

GOVERNMENT OF INDIA
MINISTRY OF SHIPPING & TRANSPORT
(TRANSPORT WING)

NOTIFICATION
(MERCHANT SHIPPING)

G.S.R. No. 196 – in exercise of the powers conferred by section 87 read with sections 78 and 83 of the Merchant Shipping Act, 1958 (44 of 1958), the Central Government hereby makes the following rules, namely :-

PART I – PRELIMINARY

1. **Short title and commencement:-**

1. These rules may be called the Merchant Shipping (Examination of Engineers and Engine Drivers of Fishing Vessels) Rules , 1973.
2. They shall come into force on the date of its publication in the of Official Gazette.

2. **Definitions :-**

1. In these rules, unless the context otherwise requires -

- (a) “Act” means the Merchant Shipping Act, 1958 (44 of 1958);
- (b) “Examiner” and “Chief Examiner” means the persons specified as such in [Appendix A](#) of these rules;
- (c) “Examination” means the examination for the grant of certificates of competency as engineer or as engine driver of a fishing vessel;
- (d) “Sea service” means time actually spent at sea on sea going motor ships or fishing vessels excluding the time spent such as only offs for repairs, leave survey.

2. Words and expressions used in these rules but not defined shall have the meaning respectively assigned to them in the Act.

3. **Grade of Examination** - Examination shall be held in according with the provisions of these rules for the grant of certificates of competency in two grades, namely :-

(i) Engineer of a fishing vessel (motor); and

(ii) Engine driver of a fishing vessel (motor)

PART – II

Qualifications for Certificates of Competency as engine driver of a fishing vessels.

4. **AGE** :- A candidate for a certificate of competency as engine driver of a fishing vessel shall not be less than 18 years of age.

5. QUALIFICATIONS :- A candidate for a Certificate of Competency as engine driver of a fishing vessel shall possess one of the following qualifications, namely :-

- (i) satisfactory service performed after he attains the age of 14 years for a period of not less than 18 months as apprentice or fitter on work suitable for the training of an engine driver “ or other suitable machinery or both” in the manufacture or maintenance of internal combustion engines of a fishing vessel and sea service for a period of not less than 9 months in the engine room of a fishing vessels” propelled by internal combustion engines” having engines of not less than 40 brake horse power; or
- (ii) sea service for a period of not less than 2 years 3 months in the engine room of a fishing vessel having “internal combustion” engines of not less than 85 brake horse power ; or
- (iii) sea service for a period of not less than three years, in the engine room of a fishing vessel having “internal Combustion” engines of not less than 40 brake horse power; or
- (iv) sea service for a period of not less than four years in the engine room of a fishing vessel having “internal combustion” engines less than 40 brake horse-power; or
- (v) sea service for a period of not less than four years in the engine room of a fishing vessel having ‘Internal combustion” engines less than 40 brake horse –power after having obtained the second class engine driver’s certificate of competency granted under the Inland Steam Vessels Act, 1917 (1 of 1917) or an equivalent certificate granted under the Indian Ports Act, 1908 (15 of 1908), when the examination is conducted by an engineer and ship surveyor of the Mercantile Marine Department; or
- (vi) sea service for a period of not less than six months in the engine room of a fishing vessel having “internal combustion” engines of not less than 40 brake horse power after having obtained a diploma in Mechanical Engineering of a Board of Technical Education of any state; or
- (vii) a first class engine driver’s certificate of competency granted under the Inland Steam vessels Act, 1917 (1 of 1917) or an equivalent certificate granted under the Indian Ports Act, 1908 (15 of 1908) when the examination is conducted by an engineer and ship surveyor of the Mercantile Marine Department

PART – III

Qualifications for Certificate of Competency as engineer of a fishing vessel.

6. **AGE** – A candidate for a certificate of competency as engineer of a fishing vessels must have attained the age of 20 years.

7. **QUALIFICATIONS** :- A candidate for a certificate of competency as engineer of a fishing vessel shall possess any one of the following qualifications, namely :-

(i) satisfactory service performed after he attained the age of fifteen years for a period of not less than two years as an apprentice engineer or three years as an apprentice fitter on work suitable for the training of an engineer in the manufacture or maintenance of internal combustion engines of a fishing vessel or other suitable machinery or both and sea service for a period not less than twelve months as an engineer or fitter on regular watch on the main engine of a sea-going ship or a fishing vessel “propelled by internal combustion engine” of not less than 170 brake horse power.

Provided that where any candidate has not performed satisfactory service or performed for a period less than the required satisfactory service as an apprentice engineer or as an apprentice fitter, sea service rendered by him in the engine room of a sea-going ship or a fishing vessel “propelled by internal combustion engine” calculated in the following ratio, shall be taken into consideration as satisfactory service as an apprentice engineer or as an apprentice fitter, namely :

- (a) if the brake horse power of the main engine is not less than 170, then three months’ sea service is equal to two months’ satisfactory service as an apprentice engineer or as an apprentice fitter;
- (b) if the brake horse power of the main engine is less than 170 but not less than 85, then two months’ sea service is equal to one month’s satisfactory service as an apprentice engineer or as an apprentice fitter; or

(ii) sea service for a period of not less than 3 months in the engine room of a fishing vessel “propelled by internal combustion engine” of not less than 170 brake horse – power after having obtained a certificate of competency as engine driver of a sea-going motor ship; or

(iii) sea service for a period not less than 9 months in the engine room of a fishing vessel “propelled by internal combustion engine” of not less than 170 brake horse-power after having obtained the first class engine driver’s certificate of competency under the Inland Steam Vessels Act, 1917 (1 of 1917) or an equivalent

certificate granted under the Indian Ports Act, 1908 (15 of 1908), where the examination is conducted by the Merchant Marine Department ; or

(iv) Sea service for a period not less than 12 months in the engine room of a fishing vessel “ propelled by internal combustion engine driver of a fishing vessel under these rules and a diploma in mechanical engineering of a Board of Technical Education of any State Government.

(v) Sea service for a period of not less than 21 months in the engine room of a fishing vessel of not less than 170 brake horse-power after having obtained the certificate of competency as engine driver of a fishing vessel under these rules.

PART - IV **EXAMINATION**

8. **Examination for engine driver of fishing vessel** :- A candidate for a certificate of competency as an engine driver of a fishing vessel (motor) shall pass a viva-voce examination in engineering knowledge.

9. **Examination for engineer of fishing vessel** :- A candidate for the certificate of competency as an engineer of a fishing vessel (motor) shall pass examinations in the following two parts, namely :-

PART A

- (i) Elementary Mathematics (one paper of three hours);
- (ii) Elementary Drawing (one paper of three hours).

PART B

- (i) Elementary General Engineering ;
- (ii) (a) Engineering knowledge (one paper of three hours);
(b) orals.....

10. Syllabus:-

1. The syllabus for the examination for certificate of competency as engine driver for a fishing vessel shall be such as may be specified in [Appendix B](#) of these rules.

2. The syllabus for the examination for certificate of competency as engine driver for a fishing vessels shall be such as may be specified in [Appendix B](#) of these rules.

11. **Time and place of examination** :- The examination shall be held at Calcutta, Bombay, Madras, Goa, Cochin, Visakhapatnam and Jamnagar from time to time the date, time and schedule of the examinations shall be intimated on the notice board of the office of the Mercantile Marine Department of the Port concerned.

12. Application :-

1. A candidate who desires to appear for an examination shall apply to the Principal Officer, or Surveyor-in-Charge, Mercantile Marine Department of the Port or place at which the candidate desires to take the examination at least 15 days before the commencement of the examination.

2. The application shall be duly filled in and shall be accompanied by documents showing the nationality, age and qualifications of the applicant and his experience, ability, sobriety and general good conduct upto the period preceding the date of application.

13. Testimonials :-

1. Testimonials regarding satisfactory service as an apprentice engineer or as an apprentice fitter shall be signed by the person under whom the candidate has undergone the satisfactory service as an apprentice engineer or as an apprentice fitter and shall specify the nature of the work performed by him and the period of such work in each department.

2. (a) Testimonials regarding sea service shall testify to the candidate's sobriety, ability, general conduct and capacity in which service has been performed and shall be signed by the Chief Engineer or Driver –in-Charge and the superintending Engineer or Owners, who shall state clearly the period during which the applicant was on regular watch on the main engines.

(b) Any paper in service, exceeding 3 months at a stretch shall properly be accounted for.

3. Testimonials regarding sea service performed on foreign vessels shall be confirmed either by the consul of the country to which the ship in which the candidate served belonged, or some other recognized official authority of that country or by some responsible person having personal knowledge of the facts required to be established.

4. Specimen forms of the prescribed testimonials are given in [appendices D and E](#) of these rules.

5. Testimonials shall be returned to the candidate when the examination is completed.

14. Fees :-

1. Every application for examination as engine driver of a fishing vessel shall be accompanied by a fee of Rs. 15/- and every application for examination as engineer of a fishing vessel shall be accompanied by a fee of Rs. 15/- for each part of the examination.

2. Any person enquiring as to his eligibility to appear for the examinations shall be required to pay a fee of Rs. 10/- and if the applicant is found to be ineligible the fee shall be retained to his credit for the current financial year.

15. Medium :- Viva-Voce examination shall be conducted in English or Hindi and the written examination shall be conducted in English.

16. Marks required for a pass :-

1. Candidates shall have to secure a minimum of 40% in each subject of the written examinations and not less than one half of the total number of marks to secure a pass.

2. Candidates will be required to obtain a minimum of 60% marks in the oral examination.

3. The results of the examination will be communicated to the candidates by the Examiner.

PART V – MISCELLANEOUS

17. Service period to be insufficient :- If, after a candidate has passed the examination, it is discovered that his service is insufficient to entitle him to receive a certificate, the certificate shall not be granted until the candidates by the Examiner.

18. Copy of lost certificate: - An applicant for a certified copy of a lost certificate of competency shall make an application giving the necessary particulars, and deliver it to the Principal member of the Mercantile Marine Department who issued the certificate and every such application shall be accompanied with a fee of Rs. 10/- and a declaration as to the circumstances in which the certificate was lost, shall be made by the applicant before the Principal Officer.

Provided that if the applicant proves that the certificate was lost through shipwreck or fire a fee of Rs. 1/- shall be chargeable for granting such certified copy .

19. Penalty for misconduct at sea :- Candidates who have neglected to join their ships after having signed Article of Agreement, or who have deserted their ships after having joined, or who have been found guilty of gross misconduct , shall be required to produce satisfactory proof of two years' subsequent service and good conduct at sea in specimen form of testimonials set out in [Appendices D and E](#) of these rules, unless the Chief Examiner, after having investigated the matter considers it fit to reduce the time.

20. Re-examination :- Ordinarily a candidates may present himself for re-examination at any time after 2 months have elapsed since his previous attempt and where a candidate for the engineers examination fails 3 times in Part A or 3 times in Part B within the period of 6 months, he shall be debarred from re-examination for a period of 3 months :

Provided that where a candidate fails through ignorance of fundamental principles or on account of general defectiveness in the examination, he shall not be allowed to present himself for re-examination until a period of time to be fixed by the Examiner and such period shall not usually exceed 3 months.

21. Physical and mental defects :-

1. When a candidate suffers from a physical or mental defect of such a nature as might interfere with the proper performance of his duties as engineer or engine driver of a fishing vessel, the signatories of his testimonials shall be required to state whether such defect did not in fact interfere in any way with the efficient discharge of the candidates' duties .

2. Candidates suspected to be mentally unsound shall be required to produce a fitness certificate from a Government Mental Health Institution and the Director General of Shipping may debar such a candidates from appearing or withdraw his certificate if considered necessary.

22. Penalty for copying :- In the event of any candidate caught in the act of referring to any unauthorized book or paper or copying from another candidate's paper or communicating in

any way with any one during the time of examination or copying any part of the problems for the purpose of taking them out of the examination hall, he shall be regarded as having failed and shall not be allowed to present himself for re-examination for a period of twelve months.

23. Punishment for misconduct: -

1. Where in the opinion of the Chief Examiner a candidate has been guilty of any misconduct in relation to an examination (including insolence to any Examiner or disorderly or improper conduct in or about the room where the examination or a breach any of these rules, the candidate may be punished in one or more of the following ways namely :-

(a) where the examination has not commenced or is not completed, the candidate may not be permitted to appear in the examination or, as the case may be to take further part therein ;

(b) where the result of the examination has been declared, the result of the candidate may be amended;

(c) Where the candidate has been declared successful in the examination but has not been granted the necessary certificate, the certificate may be withheld, for such period as the Chief Examiner may direct;

(d) The candidate may be debarred from appearing from any of the examinations under these rules, for such period as the Chief Examiner may direct.

2. Pending investigation under rule 19, no candidate shall be allowed to appear for the examination.

24. Penalty for offering gratuity :- if a candidate shall offers or attempts to offer a gratuity to any officer or member of the staff of the Central Govt., he shall not allowed to take any examination for twelve months .

Explanation : this penalty shall be in addition to any penalty to which the candidate may be liable under the criminal law.

25. Aliens :- No alien shall be allowed, without the prior approval of the Chief Examiner, to sit for an examination.

26. Service performed in ships of the Indian Navy :- In the case of candidates who have performed sea service in ships of the Indian Navy, the Chief Examiner may assess such service at such rates as he may deem fit having regard to the type of machinery, duration of sea service and capacity in which served, but in no case a candidate shall be allowed to appear for the examination with sea service less than that prescribed for the service in fishing vessels.

27. Approval of training scheme :- The Chief Examiner may approve any organized Training Scheme or other educational attainments and grant such exemptions or remissions in the satisfactory service as an apprentice engineer or as an apprentice fitter or sea service or both, as he may deem fit having regard to the nature of the training imparted.

APPENDIX – A

[See Rule 2 (b)]

- 1. Engineer and Ship Surveyors in the Mercantile Marine Department including those promoted as Principal Officers.**
- 2. Engineer and Ship Surveyors attached to the Directorate General of Shipping, Bombay.**
- 3. Deputy Chief Surveyors with the Govt. of India who shall be the Deputy Chief Examiners.**
- 4. Chief Surveyor with the Govt. of India who shall also be the Chief Examiner.**

APPENDIX B

[Rule 10(1)]

Syllabus for engine driver of a fishing vessel.

- 1. A candidate must satisfactorily pass a viva voce examination on the working of the various types of internal combustion engines and**
- 2. A candidate must be able to :-**
 - (a) name the principal parts of the machinery ;**
 - (b) know what attention is required by the various parts of the machinery, understand the use and management of the different valves, cocks, pipes and connections, and be familiar with the various methods of supplying air and fuel to the cylinders;**
 - (c) describe the causes which may make the engine difficult to start and to explain how he would proceed to remedy the defects connected therewith so as to show that he understands the mechanism of the starting and reversing arrangements and that he is competent to deal with defects therein ;**
 - (d) overhaul the engine, to adjust the working parts and to put the engines together again in good working condition with understanding how to make good the loss resulting from ordinary wear and tear to the machinery and how to correct defect from accidents ;**
 - (e) know the nature and properties of the various fuel oils used in internal combustion engines ;**
 - (f) know the danger resulting from leakage from the various fuel oil tanks and understand the precautions to be taken against explosion ;**
 - (g) take the necessary precautions to guard against the escape of inflammable vapour when the engines are stopped and know how to deal with fire, when it breaks out ;**
 - (h) know the operation and maintenance of fire fighting appliances;**
 - (i) know the layout and working of electric light installations and battery installations;**
 - (j) know the work related to dry-docking including repairs to the propeller, tail shaft rudder and sea connections;**
 - (k) know elementary calculations pertaining to speed, consumption of fuel oil, and fresh water;**
 - (l) maintain a simple log book concerning the performance of engines;**
 - (m) know the arrangements for pumping out bilges;**
 - (n) know the construction and maintenance of insulated holds;**

- (o) convert pressure and temperature in one unit into another unit; and
- (p) show an elementary knowledge of common engineering materials used on fishing vessels.

Practical Test :- The candidate must also be able , if required, to show his practical knowledge by actually overhauling and operating the engines of a fishing vessel in the presence of an Examiner.

APPENDIX C

[See Rule 10 (2)]

Syllabus for Examination of Engineer of a Fishing Vessel.

Elementary Mathematics :-

- (a) Addition, Subtraction, Multiplication, Division, Decimals and Vulgar Fractions.
- (b) Powers and roots of numbers, Ratio and Proportion, Percentages, Direct and Inverse variation, Averages.
- (c) Areas and perimeters of a rectangle, triangle and circle, volumes and surface areas of box shaped bodies, cylinders pyramids, cones and spheres; Simpson's First Rules; Practical applications involving use of the above.
- (d) Solution of simple equations, involving use of given formulae, rearrangement of given formulae;

Elementary Drawing :-

- (a) Use of drawing instruments.
- (b) Reading of blue prints.
- (c) Production of working drawings of machine and engine parts.
- (d) Code of practice of General Engineering Drawing as published by Indian Standards Institution to be understood and followed (IS. 696-1960)-

Elementary General Engineering Science:-

- 1. Fundamental units.
- 2. Density and specific gravity.
- 3. Parallelogram of forces.
- 4. The Triangle of forces.
- 5. Moments and levers.
- 6. Moments and levers.
- 7. Centre of gravity.
- 8. Stress and Strain.
- 9. Friction.
- 10. Or,
- 11. Temperature scales.
- 12. Quantity of heat and specific heats.

13. Quantity of electricity and Faraday's Laws of Electrolysis.
14. Retroactivity.
15. (i)..... Low.
(ii) The measurement of resistance by the
Ammeter/Voltmeter method.

Engineering Knowledge :-

- (a) Principles of working, construction, operation and maintenance of two stroke and four stroke internal combustion engines (supercharged and naturally aspirated) used on board ship, with particular reference to starting and reversing arrangements and safety devices.
- (b) General uses and application of various materials used in machinery on board fishing vessels.
- (c) The construction, use and principals involved in the action of pressure gauge, thermometer, pyrometer and other measuring instruments commonly used on board ships.
- (d) Construction, operation and maintenance of centrifugal, bucket and gear type pumps.
- (e) Lay-out and operation a of bilge, ballast and fuel oil systems.
- (f) Construction, operation and maintenance of steering gears.
- (g) Lay-out and working of electric light and electric power installation with particular reference to safety devices.
- (h) Construction and care of starting air vessels including mountings.
- (i) Construction and operation of refrigerating plant and methods of insulating fish holds.
- (j) Construction and operation of trawling winches.
- (k) Estimation of fuel, lubricating oil and water consumption, for a given voyage.
- (l) Work related to dry-docking, including propeller, tail shaft, ruder, sea-connections.
- (m) Elements of ship construction.
- (n) Precautions against fire and explosions due to oil vapour or gas, flash point. The danger of oil leakage. Precautions while bunkering.
- (o) Explosion in crank cases and starting air systems.

(p) Construction, operation and maintenance of fire fighting appliances.

(q) Knowledge of statutory requirements concerning safety.

(r) Candidates will be expected to draw free hand sketches of machine and engine parts.

Viva Voce Examination :-

Candidates for this certificate shall be required to have a thorough knowledge of items (a) to (r) under Engineering knowledge.

APPENDIX D

[See Rule 13 (4)]

Specimen form of testimonial for workshop service. Name and address of Engineering Works

I certify that the following is a full and true statement of the satisfactory service as an apprentice's engineer or as an apprentice's fitter performed by Shri..... under supervision at the said Engineering Works.

<u>PERIOD OF SERVICE</u>	<u>TOTAL</u>	<u>1.Designation</u>	<u>Particulars of weekly</u>
From To		2. Nature of duties. (for appropriate description see below)	release period to permit apprentice to pursuer technical studies.

Report as to ability

Report as to conduct

Remarks (if any)

Signature of employer

Or his representative

.....

I (a) Installation or repair of substantial machinery in the machinery spaces of new and existing ships (nature of duties must be specified).

(b) Fitting, erecting or maintenance of machinery other than the above suitable for the training of engineers/ engine drivers (Nature of duties must be specified).

II. Fitting on machinery other than I.

III. Metal turning

IV. Machine work (other than lathe).

V. Other work, the nature of which should be specified.

APPENDIX - E

(See Rule 13 (4))

(SPECIMEN FORM OF TESTIMONIAL FOR SEA SERVICE)

Name and address of

Shipowner or company

I certify that the following is a full and true statement of the sea service performed by
Shri under my supervision on board the O. No.

Period of Service		Rank	Type of main engines, single or twin screw B.H.P.	Nature of duties *
From	To			

Number of days actually spent at sea

Report as to ability

Report as to sobriety

Signature of Chief Engineer/Engine Driver.

Remarks (if any).....

Signature of Engineer Superintendent

Of

Other representative of

Owners.

*Description of duties.

I. On regular watch on main engines as

(a) Engineer (b) Engine Driver (c) Serang, Tindal, Greaser or Cleaner.

Note : It is recommended that this form should be used when the seaman reported on or
when the Chief Engineer leaves as ship .

(F. No. 67-MA(1)/71)

sd/-
(V.V. SUBRAHMANYAM)
DEPUTY SECRETARY OT THE GOVT. OF INDIA

[PUBLISHED IN PART II, SECTION 3, SUB-SECTION (i) OF THE GAZETTE OF
INDIA DATED 07.07.1973]

GOVERNMENT OF INDIA
MINISTRY OF SHIPPING & TRANSPORT

New Delhi – 1, the 22nd June '73.

CORRIGENDUM

G.S.R. 716:- In the notification of the Government of India in the Ministry of Shipping and Transport (Transport Wing), No.G.S.R. 136, dated the 31st January, 1973, published on pages 269 to 274 of the Gazette of India, Part II, Section (i) dated the 10th February, 1973.

- (a) at page 269 - in sub-rule 1 of rule 2, for '(b) "Examiner" and "Chief Examiner" means the persons of certificates', read '(c) "Examination" means the examination for the grant of certificates'
- (b) at page 271 – in sub-rule 2 of rule 12, for "proceeding", read "preceding";
- (c) at page 272 –
 - (i) in rule 24, for "shall not allowed", read "shall not be allowed";
 - (ii) in Appendix A, in item 2, for "Engin-er", read "Engineer";
- (d) at page 273 – in Appendix C, under the heading "Viva voce Examination", for "through", read "thorough";
- (e) (i) at page 274 in Appendix D –
 - (1) for "apprentice's engineer or as an apprentice's fitter", read "apprentice engineer or as an apprentice fitter",
 - (2) for "periond", read "period";
- (ii) in Appendix E, for 'statement o', read "statement of".

[F. No. 67-Ma(1)/71]

Sd/-
(V.V SUBRAHMANYAM)
DEPUTY SECRETARY TO THE GOVT. OF INDIA