

INDUCTION RULES

FOR

TECHNICAL PERSONNEL OF

MERCHANT MARINE - 1998

## INDUCTION RULES FOR TECHNICAL PERSONNEL

The Induction Rules for Technical Personnel of Merchant Marine - 1987 amended in 1998 for Diesel Mechanics, Electrical Engineers, Electrician and Engine Drivers have been approved by Ports and Shipping Wing, Ministry of Communications, Karachi. The Eligibility conditions for issue of suitability certificate for seaman book are :-

1. Age : 18-<sup>40</sup>35 years (in all cases).
2. Medical Status : Fitness including Eye Sight and Hearing.
3. Nationality : Citizen of Pakistan
4. Academic Qualification : Minimum Secondary School Certificate /Equivalent.
5. Technical Qualification : As required for each category separately in the rules.
6. Safety Courses :  
i) Personal Safety and Social Social Responsibility.  
ii) Survival at Sea *As per* *Aspirancy to Certificate of Competency*  
iii) Fire Fighting, and *Technique*  
iv) First Aid.
7. Test : Suitability test every month at Mercantile Marine Department Karachi.

## TECHNICAL QUALIFICATIONS

### 1. ELECTRICIAN:

Minimum Secondary School Certificate/Equivalent.

3-years Diploma from a Polytechnic Institution of the country or abroad in Electrical/Electronics Technology and 6-months experience in the relevant field.

OR

Trade Apprentices having done 3-years Industrial training as "ELECTRICIAN" under the apprenticeship Ordinance of 1962 in a Marine Workshop.

OR

Ex-Naval Dockyard apprentice having completed 4-years industrial training in "ELECTRICIAN" trade under the Naval Dockyard training Scheme.

Oral Examination conducted by the Examiner(s)

### 2. ELECTRICAL ENGINEER:

Degree in Electrical Engineering or Electronic Engineering from any University in Pakistan or abroad and 6-months experience in the relevant field.

OR

3-years diploma from a Polytechnic Institution of the country or abroad in Electrical Technology, and One year Diploma in Electronic from a recognized institution and vice versa and 6-months experience in the relevant field.

OR

5-years service as Electrician on board.

Written test followed by oral examination conducted by the Examiners(s).

## DIESEL MECHANIC/FITTER:

Minimum Secondary School Certificate/Equivalent.  
3-years Diploma from a Polytechnic Institution of the country or  
abroad in the following:-

- (i) Auto/Diesel Technology; OR
- (ii) Mechanical/Power Technology; OR
- (iii) 3-years Trade apprenticeship as DIESEL  
MECHANIC/FITTER under the Apprenticeship Ordinance  
of 1962 in a Marine Workshop OR
- (iv) Ex-Naval Dockyard apprentices having completed 4-years  
industrial training in Mechanical/Diesel trade under the  
Naval Dockyard training Scheme.

6-months service/on the job Training in a Marine Workshop for  
operation and maintenance of Diesel Engines and Welding, OR

3-months prescribed course in the field of Marine Diesel Engine  
and Welding.

NOTE: Applicable to Section 6.2 para (i) & (ii) only.

Oral Examination conducted by the examiner(s).

Diesel Mechanics/Fitter so inducted will be eligible for certificate  
of competency examination of Marine Engineer Officers as per  
prescribed rules.

4. FIRST CLASS/SECOND CLASS ENGINE DRIVER/MASTER (INLAND).

Minimum Secondary School Certificate/Equivalent.  
First Class Certificate as Engine Driver/Master Inland.

OR

2<sup>nd</sup> Class Engine Driver/Master Certificate with 2-years service as Engine Driver/Master on board crafts.

5. NON-CATEGORY SEAFARERS:

The induction of seafarers in any other category not included previously will be considered for suitability certificate by the Administration subject to the following:-

1. Secondary School Certificate/Equivalent.
2. 3-years diploma and 6-months experience in the relevant field. OR  
3-years Trade Apprenticeship from Marine Workshop in the relevant field. OR  
4-years practical experience in the relevant field.
3. Oral Examination conducted by the examiner(s).

## SYLLABUS FOR ELECTRICAL ENGINEER

1. The Electric Circuit. Units — ampere, ohm, volt. Difference between Electromotive Force and Potential difference. Ohm's Law, Kirchoff's Laws. Simple series and parallel circuits involving e.m.f., currents and resistances. Non-linear resistors in parallel with constant value resistors. Power and energy, specific resistance. Temperature coefficient of resistance. Conductor resistance, effect of length, area, material and temperature. d.c. 2-wire distribution system. Types of insulation. Wheatstone net work bridge. Slide wire bridge, applications to steering gears, resistance pyrometers, strain gauges etc.
2. Electrolytic action and secondary cells. Theory of Electrolytic dissociation applied to common solutions. Uses of electrolysis. Secondary cells (acid or alkaline) construction and principles. Maintenance. Charging. Watt hour and ampere hour efficiencies.
3. Electro-magnetism, electromagnetic induction, magnetic circuit. Mutual inductance magnetic theory. Magnetic field. Lines of force. Field strength. Field intensity. Magnetic fields due to current in straight conductors, loops, coils and solenoids. Relative direction of current and field. Faraday's and Lenz's Laws. Magnitude and direction of induced e.m.f. Force produced on a current carrying conductor. Flux density. Effect of iron. Magnetomotive force (m.m.f.). Permeability, Reluctance. Simple magnetic circuit, typical B/H and U/B curves.
4. Electrostatics. Type of capacitor. Simple series and parallel circuits involving capacitors. Electric force and electric flux density, relative permittivity, charging and discharging currents of a capacitor connected in series with a resistor across a d.c. Supply. Energy stored in a capacitor. Generation of static electricity.
5. Electronics. Qualitative treatment of Atomic structure and bonding. Semi-conductors. Junction diodes. The characteristics of junction transistors, the effect of voltage feed back on amplifier gain, input and output impedances. Equivalent circuits. Rectification. Simple treatment of thyristors and zener diodes. Simple transistor circuits. Conduction in gases, insulators, semi conductors and conductors. Photo electric effect.
6. Alternating current theory, simple continuous periodic waves; Frequency, amplitude, instantaneous, maximum r.m.s. and average values; form factor. Phasor representation of a.c. quantities. Phase difference. The inductor. Inductance and its effect on the circuit. The capacitor. Capacitance and its effect on the circuit. Simple series and parallel circuits. Relationship between resistance, reactance and impedance. Simple treatment of power factor. Power in single phase a.c. circuit. Power factor improvement, Resonance, Star and Delta System.
7. Instruments. Qualitative treatment of the principles and function of a.c. and d.c. indicating instruments and relays. Uses of shunts and series resistance to increase the range. Rectifiers and transducers.
8. Distribution Systems. Systems for a.c. and d.c. Ship board installations. Protective devices such as fuses, circuit breakers, earth lamps. Cable material and installation. Connection of shore supply.

9. D.C. machines. The principles, construction details and production of d.c. series, shunt and compound wound motors and generators. Self-excitation, e.m.f. and load voltage equations. Load characteristics. Methods of voltage control, paralleling procedures and load sharing for generators. Need for and types of starter, speed and torque equations, speed control of d.c. motors.
10. A.C. machines. The principles, constructional details and protection of salient pole cylindrical and brushless alternators, squirrel-cage induction motors and single-phase transformers. Parallel running and synchronising theory. The EMF equation and automatic voltage regulation for an alternator. Auto transformers and current transformers.

#### SYLLABUS FOR TRAINEE ELECTRICAL ENGINEER

1. The Electric Circuit. Units — ampere, ohm, volt. Difference between Electromotive Force and Potential difference. Ohm's Law, Kirchoff's Laws. Simple series and parallel circuits involving e.m.f., currents and resistances. Non linear resistors in parallel with constant value resistors. Power and energy, specific resistance. Temperature coefficient of resistance. Conductor resistance, effect of length, area, material and temperature. d.c. 2-wire distribution system. Types of insulation. Wheatstone network bridge. Slide wire bridge, applications to steering gears, resistance pyrometers, strain gauges etc.
2. Electrolytic action and secondary cells. Theory of Electrolytic dissociation applied to common solutions. Uses of electrolysis. Secondary cells (acid or alkaline) construction and principles, Maintenance Charging. Watt hour and ampere hour efficiencies.
3. Electro-magnetism, electromagnetic induction, simple magnetic circuit. Simple magnetic theory. Magnetic field. Lines of force. Field strength. Field intensity. Magnetic fields due to current in straight conductors, loops, coils and solenoids. Relative direction of current and field. Faraday's and Lenz's Laws. Magnitude and direction of induced e.m.f. Force produced on a current carrying conductor. Flux density. Effect of iron, Magnetic motive force (m.m.f.). Permeability. Reluctance. Simple magnetic circuit, typical B/H and U/B curves.
4. Electronics. Qualitative treatment of : Atomic structure and bonding. Semi-conductors. Junction diodes. Junction transistors and their operating characteristics. Simple transistor circuits. Conduction in gases, insulators, semi-conductors and conductors. Photo electric effect.
5. Alternating current theory, simple continuous periodic waves; Frequency, amplitude, instantaneous, maximum r.m.s. and average values, form factor. Phasor representation of a.c. quantities. Phase difference. The inductor. Inductance and its effect on the circuit. The capacitor. Capacitance and its effect on the circuit. Simple series and parallel circuits. Relationship between resistance, reactance and impedance. Simple treat of power factor. Power in single phase a.c. circuit.
6. Instruments. Qualitative treatment of the principles and function of a.c. and d.c. indicating instruments and relays. Uses of shunts and series resistance to increase the range. Rectifiers and transducers.

## SYLLABUS FOR ELECTRICIANS

The candidate is expected to have good knowledge of the items below. He will have to appear for an oral examination. Passing marks 50%.

- (1) Electrical Circuits :-- Series and parallel circuits. Single 2-wire and 3-wire circuits. Simple calculation of current, voltage and resistance. Testing of circuits. Navigation light circuit.
- (2) Electrical Instruments :-- Ammeter, Voltmeter, Megger, Circuit breaker, Principles and construction details.
- (3) Units :-- Fair knowledge of Electrical Units.
- (4) Basic knowledge of :-- Residual Magnetism, Lines of force, Induction, e.m.f., Ohm's law.
- (5) Machine :-- Principles and working of A.C. & D.C. Generators and Motors.
- (6) Main Switch Board :-- Knowledge of operation and maintenance of instruments and Safety devices fitted on main panel; putting alternators/generators in parallel. Tracing earth faults.



### SYLLABUS FOR DIESEL MECHANIC

The candidate should have a good knowledge of the items listed below. He will be examined orally ; Passing marks 50%.

- (1) *Basic Principles of Diesel Engine* :— Timing Diagrams of 2-stroke and 4-stroke engine.
- (2) Name and function of various parts fitted on a Diesel Engine.
- (3) Practical knowledge in respect of overhauling of Diesel Engines including renewal of pistons and liners, adjustment of bearings and valve timings.
- (4) Operation of Fuel Pump, Fuel valves, Governors and other auxiliaries connected directly.
- (5) Lubrication, fuel, starting, scavenging and cooling systems of Diesel Engines.

ASSESSMENT FORM

Mk. \_\_\_\_\_ S/O. \_\_\_\_\_

CERTIFICATE OF COMPETENCY AS: \_\_\_\_\_

1. APPLICATION OF CANDIDATE: \_\_\_\_\_ DATED: \_\_\_\_\_

2. GENERAL CONDITIONS OF ELIGIBILITY:-

2.1. Age 18 - 35 Years. : DATE OF BIRTH (S.C.C.)  
AGE : \_\_\_\_\_

2.2. MEDICAL FITNESS CERT. FROM APPROVED DOCTOR. YES : DATED \_\_\_\_\_

2.3 NATIONALITY/DOMICILE. YES : DATED \_\_\_\_\_

2.4. SAFETY COURSES UNDER STCW-95. YES : FROM APPROVED INSTITUTE \_\_\_\_\_

3. TECHNICAL QUALIFICATION:

3.1 Minimum Secondary School Certificate/Equivalent. CERT.NO. \_\_\_\_\_  
ISSUED ON: \_\_\_\_\_  
FROM: \_\_\_\_\_

3.2 3-Years Trade Apprenticeship/Diesel Mechanic/Fitter. CERT:NO. \_\_\_\_\_ DT. \_\_\_\_\_  
OR

Ex-Naval Dockyard App. CERT NO: \_\_\_\_\_ DT. \_\_\_\_\_  
4-Years Mechanical/Diesel Trade.

3.3. 3-Years Diploma./Degree. (i) Auto/Diesel Technology, OR DIPLOMA NO. \_\_\_\_\_  
(ii) Mechanical/Power Technology, OR ISSUED ON \_\_\_\_\_  
(iii) Electrical Technology. FROM: \_\_\_\_\_

3.4. 6 Months Service/on the job Training in a Marine Workshop for operation and maintenance of Diesel Engine and Welding; CERT:NO: \_\_\_\_\_  
FROM: \_\_\_\_\_

OR  
3 Months prescribed course in the filed of Marine Diesel Engine, and Welding. CERT:NO. \_\_\_\_\_  
FROM: \_\_\_\_\_

4. VERIFICATION RECEIVED:

- (i) MATRICK CERTIFICATE. V.NO. \_\_\_\_\_ DT: \_\_\_\_\_
- (ii) DIPLOMA/APPR./DEGREE: V.NO. \_\_\_\_\_ DT: \_\_\_\_\_
- (iii) EXPERIENCE/SERVICE. V.NO. \_\_\_\_\_ DT: \_\_\_\_\_

The above Original Certificates may kindly be seen and submitted for the above examination on schedule date.

E&SS

A/O

U.D.C.

GOVERNMENT OF PAKISTAN



CERTIFICATE OF COMPETENCY  
TECHNICAL PERSONNEL

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CERTIFICATE NO. \_\_\_\_\_

This is to certify that MR. \_\_\_\_\_  
S/o. \_\_\_\_\_ has successfully  
passed the eligibility examination conducted by the examiner, appointed by the Federal  
Government on \_\_\_\_\_ as required under Induction rules for Technical  
Personnel 1987 as amended 1998. He is considered competent for shipboard employment  
in the capacity of \_\_\_\_\_

Signature of the holder

Examiner

Date

Issuing Officer  
Signature/Stamp.

CERTIFICATE AS RATING

FORMING PART OF

NAVIGATIONAL / ENGINE ROOM

WATCH - STCW - 95

REQUIREMENTS FOR THE ISSUANCE OF CERTIFICATE AS  
"RATING FORMING PART OF A NAVIGATIONAL WATCH"  
IN COMPLIANCE WITH STCW-78 CONVENTION AS  
AMENDED IN 1995

1. For applicant holding watch-keeping certificate, issued under the provision of STCW-78 Convention and desires replacement of such certificate under the provision of STCW-95 must meet following conditions;
  1. be at least 18 years;
  2. have Medical Fitness certificate, particularly eye sight and hearing;
  3. have approved sea going service of at least 12 months on board vessels of 500 gross tonnage or more during the last five years (in any deck capacity);
  4. have Personal Safety and Social Responsibility Certificate;
  5. have Proficiency in Personal Survival Techniques Certificate;
  6. have Basic Fire Fighting Certificate;
  7. have Elementary First Aid Certificate;

2. CRITERIA FOR ASSESSMENT/ EXAMINATION

1. Candidate who comply with the eligibility requirements as referred in para 1 above is to be examined for his basic knowledge in use of magnetic compass, gyro compass and ability to comply with helm orders also in English language.
2. Candidate who successfully comply with the above requirements is to be issued with the new certificate (i.e. under 1995 amendments ) and his previous certificate is to be withdrawn and cancelled.

3. ALTERNATE OPTION

Ratings associated with navigational watch-keeping duties for a period of not less than one year during 01-02-1992 / 01-02-1997 would be eligible for replacement of their STCW-78 certificates without any additional formalities (a letter from Master or Employer for evidence would be required).

4. FOR FRESH/ NEW APPLICANTS

1. be at least 18 years of age;
2. have Medical Fitness Certificate, particularly Eye Sight and Hearing;

3. have approved sea going service of at least 12 months on board vessels of 500 gross tonnage or more. Three (3) months remission in approved sea going service may be granted if he holds a GP-III certificate issued from any institute approved by Port and Shipping Wing, Karachi. At least 6 months service out of total service required under this para should be associated with navigational watch keeping functions involving performing of duties carried out under the direct supervision of Master or Officer in charge of navigational watch or a qualified a rating;
4. have at least 20 hours, steering certificate;
5. have Personal Safety and Social Responsibility Certificate;
6. have Proficiency in Personal Survival Techniques Certificate;
7. have Basic Fire Fighting Certificate;
8. have Elementary First Aid Certificate;

Candidates who comply with eligibility requirements stipulated in para 4 above will be assessed in accordance with provisions specified in section A-II/4 of the STCW Code and a new certificate as per STCW-95 will be issued.

Note:

1. Ratings who are already in possession of STCW-78 Certificates equivalent to above need not to retake these ancillary courses.
2. The sea service on CDC issued by the countries listed in SRO 100(KB)/98, dated 06 July 1998 may be considered for the assessment of time for examination of Watch keeping Certificate.

## Annex D

### SYLLABUS FOR "VHF COMMUNICATION" ORAL EXAMINATION FOR OFFICERS IN CHARGE OF NAVIGATIONAL WATCH AND FOR MASTERS OF LESS THAN 500 GT ENGAGED ON NEAR-COASTAL VOYAGES

1. Knowledge of switching on and off the VHF set
2. Setting different channels on VHF set
3. Knowledge of distress and DSC channels
4. Knowledge of simplex and duplex channels
5. procedure for sending/receiving distress, urgency and safety calls.
6. Range of VHF frequency and how it varies with the weather conditions



# ASSESSMENT FORM

(Forming Part of Navigational STCW 95 Regulation II/4)

The case of Issuance of Certificate of "RATING FORMING PART OF NAVIGATIONAL WATCH" to

SSB No. \_\_\_\_\_

S/o \_\_\_\_\_

**DOCUMENT REQUIRED (PEMM C.NO. 043)**  
**FRESH/ PARA-I/ ALTERNATE OPTION**

**DOCUMENTS SUBMIT**  
**YES / NO / N.A.**

1. CDC/SSB.

2. SEA SERVICE :

a) More than 1 year during 1-2-1992 to 1-2-1997

b) More than 1 year, preceding the last 5 years

c) More than 1 year.

d) Not less than 9 months, with GP-III Cert. or 1 year service on Passport or Pak. Navy.

3. Previous Navigational Watch Certificate.

4. Company's Certificate/Ships Testimonial.

5. 20 Hours Steering Certificate.

6. MEDICAL FITNESS

a) Physical and Hearing.

b) Eye Sight Test (M.M.D.).

7. Safety Courses under STCW-95.

8. 2 Nos. (1" x 1" size) photographs.

9. Remarks (if any).

Y - M - D

NAUTICAL SURVEYOR

ADMN. OFFICER

UDC/Date

Register Sl. No. \_\_\_\_\_

dated \_\_\_\_\_

**EXAMINATION**

**RESULT**

**FORM VISION**

**COLOUR VISION**

**SIGN. OF EXAMINER**

EYE SIGHT TEST:

DATE OF ORAL EXAMINATION:

CERT. NO. \_\_\_\_\_

CERTIFICATE (RATINGS)



(Forming part of a navigational/engine-room watch)

Certificate No. \_\_\_\_\_

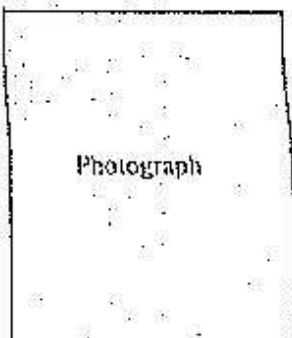
Issued under the provisions of the International Convention on Standards of Training, certification and watch keeping for Seafarers, 1978, as amended in 1995:

The Government of Pakistan certifies that Mr. \_\_\_\_\_

Seaman book/CDC No. \_\_\_\_\_ has been found duly qualified in accordance with the provisions of "Regulation II/4 and Section A-II/4 of the STCW Code/"Regulation III/4 and Section A-III/4 of the STCW Code, and has been examined in accordance with standards laid down in International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended in 1995, to perform Navigational Watch/Engine Room Watch duties.

EXAMINER  
(STAMP)

ISSUING AUTHORITY  
(STAMP)



Photograph

Signature of Seaman \_\_\_\_\_

Date : \_\_\_\_\_

M.M.D. No. \_\_\_\_\_

N.B :— The original of this certificate must be kept available in accordance with regulation 1/2, paragraph 9 of the STCW Convention while serving on a ship.



**SERVICE CERTIFICATE (RATINGS)**

(Forming part of a navigational/engine-room watch)

Certificate No. \_\_\_\_\_

Issued under the provisions of the International Convention on Standards of Training, Certification and watch-keeping for Seafarers, 1978, as amended in 1995.

The Government of Pakistan certifies that Mr. \_\_\_\_\_

Seaman book/CDC No. \_\_\_\_\_ has been found duly qualified in accordance with the provisions of "Regulation I/4 para 4"/"Regulation III/4 Para 4 of the STCW-78 Convention as amended in 1995, to perform Navigational watch duties at the support level/Engine Room watch duties at the support level.

Issued on: \_\_\_\_\_  
(Official seal)

Signature of duly authorized official.

Name of duly authorized official.

Photograph

Signature of Seaman \_\_\_\_\_

Date of birth of the holder of the certificate \_\_\_\_\_

M.M.D. No. \_\_\_\_\_

19 \_\_\_\_\_

N.B :— The original of this certificate must be kept available in accordance with regulation I/2, paragraph 9 of the STCW Convention while serving on a ship.

**ENGINE ROOM WATCH KEEPING CERTIFICATE FOR RATING S.T.C.W.  
1995 REGULATION III/4**

Every rating forming part of an engine room watch on a sea going ship powered by main propulsion machinery of 750 k.w. propulsion power or more, shall be duly certificated as per STCW 1995 regulation III/4 under the following requirements:-

- AGE :- 18 years or more.
- MEDICAL :- Medically fit including Eye sight and hearing .
- SAFETY COURSED:-  
& CERTIFICATE
  - Personal Survival Techniques .... Reg. VI/1-1
  - Fire Prevention and Fire Fighting ... Reg. VI/1-2
  - Elementary First Aid ... Reg. VI/1-3
  - Personal Safety and Social ... Reg. VI/1-4
  - Responsibilities.

- SEA SERVICE :-
  - 12 months sea-going service including 06 months engine room Watchkeeping duties and functions under the direct supervision of a qualified Engineer Officer. OR
  - 09 months sea-going service including 06 months engine room Watchkeeping duties and functions under the direct supervision of a qualified Engineer Officer whilst holding approved GP III training certificate.

**EXAMINATION & CERTIFICATION** :- The candidate who comply with the above requirements will be examined orally for their basic knowledge of minimum standard of competence for ratings as per STCW 1995 Code A. III/4 and will be issued engine room watch-keeping certificate as per S.T.C.W. 1995 Regulation III/4.

**NOTE** :- The ratings already having Engine Room Watch-keeping certificate under S.T.C.W. 1978 Regulation III/6, will be required to submit atleast 06 months sea service without safety courses for the new certificate as per S.T.C.W. 1995 Regulation III/4.

## • SYLLABUS

- Names of machinery and equipment and terms used in Machinery Spaces.
- Engine Room Watch-keeping procedures including handing over and taking over the watch.
- Safe working practices as related to engine room watch-keeping operations.
- Basic knowledge of pollution prevention procedures.
- Ability to distinguish Engine Room alarms.
- Safe operation of boilers.
- Use of internal communications system.
- Knowledge of emergency duties and escape routes.
- Familiarity with the location and use of fire fighting equipment in machinery spaces.

# ASSESSMENT FORM

## ENGINE ROOM WATCHKEEPING RATING STCW 1995 REGULATION III/4

Mr. \_\_\_\_\_ S/o \_\_\_\_\_

CDC No. \_\_\_\_\_ (Previous Cert. No. \_\_\_\_\_) dated \_\_\_\_\_

### DOCUMENTS REQUIRED

### DOCUMENTS SUBMITTED

Yes / No / N.A.

1. SEA SERVICE
  - a) 12 months sea service including 6 months watchkeeping
  - b) 09 months sea service including 6 months watchkeeping with GP III Course.
2. MEDICAL FITNESS CERTIFICATE
3. EYE SIGHT TEST CERTIFICATE
4. SAFETY COURSE
5. 2 NOS. PHOTOGRAPHS
6. REMARKS

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|  |  |
|  |  |
|  |  |

A/O \_\_\_\_\_ U.D.C. \_\_\_\_\_ E&S \_\_\_\_\_

RESULT

SIGNATURE

EXAMINATION

EYE SIGHT TEST

DATE

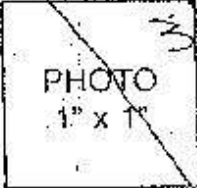
FORM VISION

COLOUR VISION

SIGNATURE



GOVERNMENT OF PAKISTAN



ENGINE ROOM WATCH-KEEPING CERTIFICATE

STCW 1995 REGULATION III/4 (RATINGS)

CERTIFICATE NO. \_\_\_\_\_

The Government of Pakistan certifies that Mr. \_\_\_\_\_

s/o. \_\_\_\_\_ holder of Seaman Book/CDC No. \_\_\_\_\_

has been examined/assessed in accordance with standard laid down as per Section-A III/4 of STCW CODE 1995 and has been found duly qualified to perform Engine Room Watch duties as per Regulation III/4 of STCW 1995.

\_\_\_\_\_  
Signature of Seaman

\_\_\_\_\_  
Date

EXAMINER

\_\_\_\_\_  
ISSUING OFFICER  
SIGNATURE/STAMP

*N.B.* The original certificate must be available while serving on board as per Regulation 1/2 para-9 of STCW 1995.

## ELIGIBILITY FOR EFFICIENT DECK HAND (EDH) CERTIFICATE

### 1. Candidates must:

1. be at least 18 years of age;
2. produce Medical Fitness Certificate, including hearing and eye sight test issued by approved Medical Practitioners;
3. have worked in a relevant capacity in deck department on board vessels of 500 gross tonnage or more, for at least 18 months ( in case of GP Ratings 24 months );
4. hold navigational watch keeping certificate meeting the requirements of regulation II/4 of STCW-78 as amended in 1995 (for ratings only ).
5. Hold steering certificate for at least 20 hours on a vessel of 500 gross tonnage or more.
6. Have evidence of attendance, EDH course from P&S Wing recognized institute.

### 2. In addition to above Candidates must produce following certificates:

1. Personal Survival Techniques;
2. Fire Prevention;
3. Elementary First Aid;
4. Personal Safety and Social Responsibilities;
5. Proficiency in Survival Craft and Rescue Boat;

### Note:

Applicant who are already in possession of certificates issued in compliance with STCW-78 Convention or hold equivalent certificate under earlier practices need not to retake courses mentioned in para 2 above.



SYLLABUS FOR EXAMINATION OF EFFICIENT DECK HAND  
CERTIFICATE.

1. The meaning of common nautical terms.
2. The names and functions of various parts and equipment of a ship, for example deck, bridge, hold; hatch; tank; peaks; D.B.tanks; ballast tanks, bilges, air pipe, strum boxes, anchors; windlass; winches and derricks;
3. Ability to steer a ship on a given course, on a transit or on an instructions from the master or pilot,
4. Ability to maintain an efficient look-out;
5. Marking of the anchor cable.
6. Understanding helm orders, use of magnetic and gyro-compasses.
7. The use of lifesaving and fire fighting appliances.
8. Use and care of ropes and wires;
9. Splicing of ropes;
10. Knots, hitches and bends in common use:-

|                  |                                   |
|------------------|-----------------------------------|
| Reef knot;       | Bowline and bowline on the bight; |
| Timber hitch;    | sheet bend, double and single;    |
| Clove hitch;     | sheep shank;                      |
| Rolling hitch    | round turn and two half hitches;  |
| Figure of eight; | Marlin spike hitch;               |
| Wall and crown   |                                   |
10. To whip a rope's end and seizing on rope and wire.
11. To put a stopper on a rope or wire hawser, and derrick lift.
12. Slinging and over side stage, rigging a bosun's chair, pilot ladder and hoist;
13. Use of different types of blocks and shackles, bottle screws, bull dog grips, thimbles, monkey plates;
14. Precautions to be taken while working overside or at a height and while entering a void space;
15. Identification of commonly-used signal letter flags;
16. Opening and closing of hatches, rigging up derrick, general precautions to be taken before and during the operation of a winch whether used for working cargo or for warping.

17. The use and operation of a windlass in anchor work and in warping. Safe handling of mooring winch self tensioning winches. Precautions to be taken in securing the anchors for sea, back spring, slip wire, rope stoppers and chain stopper;
18. General maintenance with particular reference to wires, blocks and shackles of cargo gear;
19. The safe handling of mechanical hatch covers;
20. Change over from automatic pilot to hand steering and vice versa.
21. Shipboard terms and definitions.
22. Use of appropriate internal communication and alarm systems.
23. Basic environmental protection procedures.
24. Knowledge of emergency duties and alarm signals.
25. Knowledge of pyrotechnic distress signals, satellite EPIRBs and SARTs.
26. Avoidance of false distress alerts and action to be taken in event of accidental activation.
27. Securing in anticipation of rough sea.

FOR OFFICIAL USE ONLY

The applicant has produced satisfactory proof in support of the entries in this form and is eligible to take the qualifying examination.

Dated this ..... day of ..... 198 .....

Principal Officer,  
Mercantile Marine Department,  
Government of Pakistan,  
Karachi District.

TO BE COMPLETED BY THE EXAMINER

Part D.

I have examined the candidate in the syllabus prescribed under the Merchant Shipping (Certificate of Competency is E.D.H.) Regulations, 1952, and he has **\*PASSED\*/\*FAILED\*** in the examination. Delete word not applicable.

Karachi, dated this ..... day of ..... 198 .....

Signature of Examiner  
Port of Karachi.

To,  
The Principal Officer,  
Mercantile Marine Department,  
Karachi.

- (a) The applicant has applied to me for the issue of a Certificate Qualification as Efficient Deck Hand.
- (b) The applicant has applied to me for the issue of a Certificate Qualification as Efficient Deck Hand and the form Exh. 50E is attached herewith.

Dated, this ..... day of ..... 198 .....

To,  
The Principal Officer,  
Mercantile Marine Department,  
Karachi.

Principal Officer,  
Mercantile Marine Department,  
Government of Pakistan,  
Karachi District.

**APPLICATION BY A PERSON DESIROUS OF TAKING THE QUALIFYING EXAMINATION FOR A  
CERTIFICATE OF COMPETENCY AS EFFICIENT DECK HAND**

MERCHANT SHIPPING ACT, 1948

N.B. The applicant must lodge with the Superintendent ;—

- (i) Certificate of discharge or other evidence proving the sea service claimed in part 'B'.
- (ii) One or more certificates showing that, apart from instruction, the applicant has steered a ship (other than a fishing boat) having a gross tonnage of 100 tons or more, for not less than Twenty Hours.

NAME ETC. OF APPLICANT

Part A.

Full Name of the candidate.....  
 Father's name..... date & place of birth.....  
 Nationality..... C.D.C. No.....  
 Present Rating..... Height..... Metres.....  
 Colour of Eyes..... Hair..... Complexion.....  
 Tatto or other marks (if any).....

PARTICULARS OF SERVICES AT SEA IN DECK RATING

Part-B:

Service shown must total not less than 12 months, of which not than three months must be in ship (other than fishing boats) of 100 gross tons or more. Service in ships of under 100 gross tons is counted at half rate, except that service in ships of under 15 tons is not accepted.

| Ship's name | Gross Tonnage | Type of ship (trading) | Particulars of Voyage |      |       | For official use only |
|-------------|---------------|------------------------|-----------------------|------|-------|-----------------------|
|             |               |                        | Rating                | Begn | Ended |                       |
|             |               |                        |                       |      |       |                       |
|             |               |                        |                       |      |       |                       |
|             |               |                        |                       |      |       |                       |

To be construed as including sailing ships having a gross tonnage of 40 tons or more. See The Merchant Shipping (Certificates of Competency as E.D.H.) (Amendment) Regulations, 1953 (S.I. 1953/422).

To be construed as including sailing ships of under 40 gross tons (S.I. 1953/422).

DECLARATION TO BE MADE BY APPLICANT

Part C.

I, hereby declare that the particulars given by me in this form are correct and true to the best of my knowledge and belief, and I apply to take the qualifying examination for Certificate of Competency as E.D.H. at the Port of Karachi.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 198\_\_

Usual Signature of Applicant



**GOVERNMENT OF PAKISTAN**  
**CERTIFICATE OF QUALIFICATION AS AN**  
**EFFICIENT DECK HAND**

Handwritten text: *25 JAN 1974*

Issued by the Government of Pakistan

SERIAL NO. \_\_\_\_\_

| NAME AND DESCRIPTION OF HOLDER |      |               |                            |
|--------------------------------|------|---------------|----------------------------|
| Name in Full                   |      | Date of Birth | Seaman book/<br>C.D.C. No. |
| Colour of                      |      | Complexion    | Distinguishing Marks       |
| Eyes                           | Hair |               |                            |
|                                |      |               |                            |

This is to certify that the above named seafarer was examined on the \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_ by an examiner appointed by Federal Government, and that he proved to the satisfaction of the said examiner that he has been trained as an Efficient Deck Hand in accordance with approved syllabus. The holder also meets the requirements contained in ILO-74, Convention, STCW-78, Convention as amended in 1995, Regulation 1/4 and sec. A-1/4 of the STCW Code.

By order of the Government of Pakistan, this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_

Signature of the holder of the Certificate \_\_\_\_\_



Examiner

**Principal Officer,**  
**Government of Pakistan**  
**Mercantile Marine Department,**  
**Karachi**

**N.B :—** The original of this certificate must be kept available in accordance with regulation 1/2, paragraph 9 of the STCW Convention while serving on a ship.

I N L A N D E X A M I N A T I O N S

U N D E R

I. M. P. V. A C T 1917

Inland examinations conducted under Section 20 and 21 of Inland Mechanically Propelled Vessel Act 1917 under the authority of Government of Sindh vide Notification No.R/2-4/70, dated 1<sup>st</sup> July, 1978.

## QUALIFICATIONS FOR CERTIFICATES OF COMPETENCY AS SERANG

1. Examination in prescribed sight tests:- All candidates for certificate of competency as serang must first be examined in prescribed sight tests.
2. Age:- A candidate for a certificate as serang of an inland vessel must be not less than 21 years of age and must produce satisfactory testimonials of sobriety and intelligence.
3. Qualifications:- Such candidate must have served five years at sea or on inland waters, one year of which service must be as helmsman. He shall be examined viva voce as to his knowledge of the following subjects:-
  - (a) The rule of the road as regards both steam vessels and sailing vessel their regulation lights, fog and sound signals.
  - (b) The marking and use of the lead line.
  - (c) Management of a boat under oars or sail.
  - (d) Steps to be taken in the event of a vessel grounding.
  - (e) Management of small inland steam vessels under all conditions.
  - (f) The provisions of section 3, 29, 32, 52, to 64 of the Inland Steam-vessels Act, 1917 (I of 1917), and the rules or notifications issued under sections 29, 52, 53, 54, 68 and 70 of the Act.
3. Failure:- If a candidate fails in an Examination for a certificate of competency as serang, he shall not be re-examined till he has rendered additional service for three months as helmsman.



1 N.M.P. = 5. E.S. B.M.P.  
50 = 282  
30 = 113

## QUALIFICATIONS FOR CERTIFICATES OF COMPETENCY AS SECOND CLASS MASTER.

1. Examination in prescribed sight tests:- All candidates for certificates of competency as Second Class Master must first be examined in prescribed sight tests.

2. Age:- A candidate for a certificate as second class master of an inland vessel must be not less than 22 years of age and must produce testimonials of sobriety and intelligence.

3. Qualifications:- Such candidate must have served at least six years at sea or on inland water, three years of which service must have been as a helmsman of a vessel of not less than 50 nominal horse-power, or two years as a certificated serang and one year as helmsman of a vessel of not less than 50 nominal horse-power, or three years as serang in charge of a vessel of not less than 20 nominal horse-power. In addition to the qualifications required for the grade of serang, a second class master shall be examined viva voce as to his knowledge of the following subjects:-

- (a) Management of small inland steam vessels and river steamers under all conditions.
- (b) Knowledge of storm and distress signals.
- (c) Knowledge of the chart.
- (d) Knowledge of the compass.
- (e) Legal knowledge of Karachi Harbour, as to anchorages, shoals of buoyage, beacons, lights and other such matters.

4. Failure:- If a candidate fails in an examination for a certificate of competency as Second Class Master he shall not be re-examined till he has rendered additional service for three months as helmsman of a vessel of not less than 50 nominal horse-power or as a serang in charge of an inland vessel of not less than 20 nominal horse-power.

QUALIFICATIONS FOR CERTIFICATES OF  
COMPETENCY AS FIRST CLASS MASTER.

1. Examination in prescribed sight-tests:- All candidates for certificates of Competency as First Class Master must first be examined in prescribed sight tests.

2. Age:- A candidate for a certificate as first class master of an inland vessel must be not less than 25 years of age and must produce testimonials of sobriety and intelligence. 30 NHP  
169 BHP

3. Qualifications:- Such candidate must have served as second class master in charge of a mechanically propelled vessel of not less than 30 nominal horse-power or equivalent brakehorse power for three years, or he must be not less than 22 years of age, hold a certificate of competency as second mate or Mate Home Trade granted under the Merchant Shipping Act and subsequent enactments on the subject of merchant shipping, and have served as mate of an inland mechanically propelled vessel for not less than one year;

Provided that, in the case of a candidate for a certificate as first class master, service as a matter of a self-propelling dredger for one year and as mate of an inland or home-trade vessel or relieving officer or mate of a self-propelling dredger for three years, shall be accepted as sufficient qualification.

4. Additional qualification:- In addition to the qualifications required for the grades of Serang and second class master, a first class master shall be examined viva voce in each of the following subjects:-

- (a) Knowledge of Karachi Harbour and its vicinity, anchorages, sheals, buoyage, beacons, lights, and other such matters; also a knowledge of the tide tables and effects of currents.
- (b) How to turn a steamer short round, bring her to an anchor and get under weight; also how to bring a vessel alongside a jetty, pier or wharf and take her off again and precautions to be taken with regard to engines.
- (c) Steps to be taken with regard to fire.
- (d) Steps to be taken in case a man falls overboard.
- (e) The provisions of the Inland Steam-vessels Act, 1917 (1 of 1917).

5. Failure:- If a candidate fails in an examination for a certificate of competency as First Class Master he will not be re-examined till he has rendered additional service for six months as second class master of an inland steam vessel of not less than 30 nominal horse-power or as mate of a river steamer.



ASSESSMENT FORM

NR.

REQUIREMENTS FOR 2ND CLASS MASTER (INLAND) EXAMINATION:-

| <u>REQUIREMENTS</u>   | <u>CANDIDATE POSSESS</u> |
|---|--------------------------|
| 1. QUALIFICATION (Sea Service)  |                          |
| a) Six Years at Sea or on Inland Water, Three years of which Service must have been as a Helmsman of a Steam Vessel of not less than 50 NHP (382 BHP) OR                      |                          |
| b) Two years as Certificate Serang and One year as Helmsman of Steam Vessel of not less than 50 NHP (282 BHP) OR  |                          |
| c) Three years as serang incharge of a Steam vessel of not less than 20 NHP   |                          |
| d) the above Sea Service must be two Years within last Six Years and Six months within last three years, preceding the date of his application on prescribed proforma of MMD. |                          |
| 2. AGE:- Must be not less than 22 Years.  |                          |
| 3. Character Certificate.   |                          |
| 4. M.I. Card.   |                          |
| 5. Declaration Form.  |                          |
| 6. SYRANG CERTIFICATE NO. AND DATE  |                          |
| 7. SURVEY STATUS FORM IS ALSO ATTACHED.   |                          |

ASSESSMENT FORM

MR. \_\_\_\_\_

REQUIREMENTS FOR 1ST CLASS MASTER (INLAND) EXAMINATION UNDER I.M.P.V. ACT I OF 1917.:-

| <u>REQUIREMENTS</u>  | <u>CANDIDATE POSSESS</u> |
|--|--------------------------|
| 1. <u>QUALIFICATION (Sea Service)</u>  |                          |
| 1) Served as 2nd Class Master in charge of IMPV of not less than 30 NHP (169BHP) for three years. OR                                     |                          |
| ii) Hold a C.O.C. as 2nd Mate or Mate Home Trade and have as mate on an Inland M.P. Vessel for not less One Year                         |                          |
| 2. The above Sea Service must be Six Months within last three years preceding the date of his application on prescribed proforma of RMD. |                          |
| 2. AGE:- Must be not less than 25 years.   |                          |
| 3. Character Certificate.  |                          |
| 4. N. I. C.  |                          |
| 5. Declaration Form.   |                          |
| 6. 2nd Class Master (Inland) C.O.C.  |                          |

DECLARATION

S/o

Resident of

do hereby state, that the following are my personal particulars.

- 1. Date & Place of Birth
- 2. M.I. Card No.
- 3. Academic Qualification
- 4. Nature of previous examinations appeared at Karachi Marine Department, Karachi,
- 5. CERTIFICATE NO. and date

Whatever stated above is true and correct to best of my knowledge.

D E P O S I T

(Name) \_\_\_\_\_  
 S/o \_\_\_\_\_  
 NID No. \_\_\_\_\_

Dated : \_\_\_\_\_





(C)—CERTIFICATE NOW REQUIRED.

| Grade. | Competency. | Mercantile Marine Office to which it is to be sent. |
|--------|-------------|---|
| 17     | 18          | 19  |
|        |             |   |

(D) IF APPLICANT HAS FAILED IN A PREVIOUS EXAMINATION FOR THE CERTIFICATE NOW REQUIRED, HE MUST HERE STATE WHEN AND WHERE, IF HE HAS NOW FAILED, HE MUST STATE SO IN WRITING ACROSS THIS DIVISION:—

| Day. | Month. | Year. | Port. | Subjects in which he failed |
|------|--------|-------|-------|-----------------------------|
| 20   | 21     | 22    | 23    | 24                          |
|      |        |       |       |                             |

(E)—DECLARATION TO BE MADE BY APPLICANT.

(TAKE NOTICE).—Any person who makes, procures to be made or assists in making, any false representation for the purpose of obtaining for himself or any other person a certificate, either of Competency or Service, is for each offence, liable to be punished as for a misdemeanour.

I do hereby declare that the particulars contained in Divisions (A), (B), (C), (D) and (G) of this form are correct and true to the best of my knowledge and belief, and that the papers enumerated in Division (G) sent with this form are true and genuine documents, given and signed by persons whose names appear on them. I further declare that the statement (G) contains a true and correct account of the whole of my service without exception.

And I make this declaration conscientiously believing the same to be true.

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ 197 \_\_\_\_\_

Signed in the presence of the Principal Officer, Mercantile Marine Department, Karachi.

Signature of applicant.

Present address—

(F) PRINCIPAL OFFICER TO EXAMINER.

The Declaration (B) above was signed in my presence and the fee of Rs. \_\_\_\_\_ received by me.

Dated at Karachi, this \_\_\_\_\_ day of \_\_\_\_\_ 197

Principal Officer,  
Mercantile Marine Department, Karachi.

(G) LIST OF TESTIMONIALS & STATEMENT OF SERVICE ON SHORE AND AT SEA.

(The testimonials to be numbered consecutively according to the number given in column 25 below).

| 25<br>No. of Testimonial (if any)                   | 26<br>Where employed or ship's name | IF SERVICE ON BOARDING      |   |                | SERVICE OF APPLICANT       |                           |                               |              |            | 35<br>Remarks | 36<br>Initials of verifier |
|---|-------------------------------------|-----------------------------|---|----------------|----------------------------|---------------------------|-------------------------------|--------------|------------|---------------|----------------------------|
|   |                                     | 27<br>Horse-Power of engine | 28<br>Port of registry and official No. of ship | 29<br>Capacity | 30<br>Date of commencement | 31<br>Date of termination | Time employed in this service |              |            |               |                            |
|   |                                     |                             |   |                |                            |                           | 32<br>Years                   | 33<br>Months | 34<br>Days |               |                            |
|   |                                     |                             |   |                |                            |                           |                               |              |            |               |                            |
|   |                                     |                             |   |                |                            |                           |                               |              |            |               |                            |
| Total service                                       |                                     |                             |   |                |                            |                           |                               |              |            |               |                            |
| Total on shore                                      |                                     |                             |   |                |                            |                           |                               |              |            |               |                            |
| Time served for which certificates are now produced |                                     |                             |   |                |                            |                           |                               |              |            |               |                            |
| Time served for which no certificates are produced  |                                     |                             |   |                |                            |                           |                               |              |            |               |                            |

(H) CERTIFICATE OF EXAMINATION

NOTE—The examiner should fill up divisions (H) and (I), and in all cases as soon as possible forward this paper to the Principal Officer and President, Board of Examiners, with the applicant's testimonials and previous certificate. The new certificate and the testimonials will be delivered to the applicant at the office named in Division (C), column 49.

| DATE AND PLACE OF EXAMINATION |       | INSBRY PASSED OR FAILED IN EACH COLUMN |    |                               | Rank for which passed |
|-------------------------------|-------|--|----|-------------------------------|-----------------------|
| Date                          | Place | In working out the questions           |    | In the viva voce examinations |                       |
| 37                            | 38    | 39                                     | 40 | 41                            |                       |

| (I) PERSONAL DESCRIPTION OF APPLICANT |        |            |  |           |      |  |
|---------------------------------------|--------|------------|--|-----------|------|--|
| Height                                |        | Complexion | Personal mark or peculiarities, if any | Colour of |      |  |
| Feet                                  | Inches |            |  | Hair      | Eyes |  |
| 42                                    | 43     | 44         | 45                                     | 46        | 47   |  |

I hereby certify that the particulars contained in Divisions (H) and (I) are correct.

This form and the testimonials are forwarded to the Principal Officer, Mercantile Marine Department, Karachi.

This \_\_\_\_\_ day of \_\_\_\_\_ 197

To THE PRINCIPAL OFFICER,  
Mercantile Marine Department,  
Karachi.

Signature of Examiner



BY ORDER OF THE GOVERNMENT OF SIND KARACHI

# CERTIFICATE OF COMPETENCY

AS

No. \_\_\_\_\_

FIRST CLASS MASTER OF AN INLAND MECHANICALLY PROPELLED VESSEL, UNDER

ACT 1 OF 1917.

To \_\_\_\_\_

Whereas it has been reported to the GOVERNMENT OF SIND KARACHI that you have been found, after examination, duly qualified to fulfil the duties of FIRST CLASS MASTER of an Inland Mechanically Propelled Vessel under Act 1 of 1917, I do hereby grant you this Certificate of Competency as such First Class Master.

This \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_

NAUTICAL SURVEYOR  
Mercantile Marine Department,  
Karachi District,  
(EXAMINER)

Registered at the Office of the Principal Officer, Mercantile Marine Department, Karachi District.

by endorsement

Beaver  
Date\* and place of Birth showing Village,

Thana and District

Residence, showing Village, Thana and

District

Height

Personal Description, stating particularly any  
permanent marks or scars

Signature

Any Master who fails to deliver up a Certificate which has  
been cancelled or suspended is liable to a penalty not exceeding  
Rs. 500/-.

N.B.—Any person other than the owner thereof, becoming  
possessed of this Certificate, is required to transmit it forthwith  
to the principal Officer, Mercantile Marine Department, Karachi  
District.

Issued at Karachi on the \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_

Principal Officer,  
Mercantile Marine Department, Karachi District.



# CERTIFICATE OF COMPETENCY

AS

No. \_\_\_\_\_

SECOND CLASS MASTER OF AN INLAND MECHANICALLY PROPELLED VESSEL UNDER  
ACT 1 OF 1917.

To

Whereas it has been reported to the GOVERNMENT OF SIND KARACHI that you have been found, after examination, duly qualified to fulfil the duties of SECOND CLASS MASTER of an Inland Mechanically Propelled Vessel under Act 1 of 1917, I do hereby grant you this Certificate of Competency as such Second Class Master.

This \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_

NAUTICAL SURVEYOR  
Mercantile Marine Department,  
Karachi District  
(EXAMINER)

Registered at the Office of the Principal Officer, Mercantile Marine Department, Karachi District.

No. of Certificate \_\_\_\_\_

Bearer \_\_\_\_\_ by caste \_\_\_\_\_

Date\* and place of Birth showing Village, \_\_\_\_\_

Thana and District \_\_\_\_\_

Residence, showing Village, Thana and \_\_\_\_\_

District \_\_\_\_\_

Height \_\_\_\_\_

Personal Description, stating particularly any  
permanent marks or scars \_\_\_\_\_

Signature \_\_\_\_\_

Any Master who fails to deliver up a Certificate which  
has been cancelled or suspended is liable to a penalty not  
exceeding Rs. 500/-.

N. B.—Any person other than the owner thereof, becoming  
possessed of this Certificate is required to transmit it forthwith to  
the Principal Officer, Mercantile Marine Department, Karachi  
District.

Issued at Karachi on the \_\_\_\_\_ day of \_\_\_\_\_ 19 \_\_\_\_\_

Principal Officer.

BY ORDER OF THE GOVERNMENT OF SIND KARACHI  
**CERTIFICATE OF COMPETENCY**

AS  
SERANG OF AN INLAND MECHANICALLY PROPELLED VESSEL UNDER  
ACT I OF 1917.

No. 3

To \_\_\_\_\_  
Whereas it has been reported to the GOVERNMENT OF SIND KARACHI  
that you have been found, after examination, duly qualified to fulfil the duties of  
SERANG of an Inland Mechanically Propelled Vessel under 40 N. H. P. (226  
Brake Horse Power) under Act I of 1917, I do hereby grant you this Certificate of  
Competency as such Serang.

This \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_

NAUTICAL SURVEYOR  
Merchant Marine Department,  
Karachi District.  
(EXAMINER)

Registered at the Office of the Principal Officer, Merchant Marine Department, Karachi District.



No. of Certificate \_\_\_\_\_

Bearer \_\_\_\_\_ by caste \_\_\_\_\_

Date\* and place of Birth showing Village, \_\_\_\_\_

Thana and District \_\_\_\_\_

Residence, showing Village, Thana and \_\_\_\_\_

District \_\_\_\_\_

Height \_\_\_\_\_

Personal Description, stating particularly any  
permanent marks or scars \_\_\_\_\_

Signature \_\_\_\_\_

Any Bearer who fails to deliver up a Certificate which has  
been cancelled or suspended is liable to a penalty not exceeding  
Rs. 500/-

N. B.—Any person other than the owner thereof, becoming  
possessed of this Certificate, is required to transmit forthwith  
to the Principal Officer, Mercantile Marine Department, Karachi  
District.

Issued at Karachi on the \_\_\_\_\_ day of \_\_\_\_\_ 19 \_\_\_\_\_

Principal Officer,  
Mercantile Marine Department, Karachi District

4. MOTOR PERMIT (INLAND)

Age: Not less than 19 Years  
Medical Fitness: Eye sight  
Qualifications: Four Years Service as Greaser.

5. 2<sup>ND</sup> CLASS MOTOR ENGINE DRIVER (INLAND)

Age: Not less than 21 Years.  
Medical Fitness: Eye sight.  
Qualifications: 6 Years service in the Engine Room of the Vessel having Engine of Not less than 40 B.H.P. of which period not less than ONE YEAR as Chief Greaser. OR  
5 Years Service of Vessel in the Engine Room having Engine of Not less than 85 B.H.P.  
Test: Viva Voce examination conducted on every Month.

6. 1<sup>ST</sup> CLASS MOTOR ENGINE DRIVER (INLAND)

Age: Not less than 22 Years.  
Medical Fitness: Eye sight.  
Qualifications: 18 Months service as 2<sup>nd</sup> Class Driver of Vessels having Engine of 226 B.H.P. incharge of Watch on Main Engine.  
Test: Viva Voce examination conducted on every Month.

## S Y L L A B U S .

### CERTIFICATE OF COMPETENCY AS SECOND CLASS ENGINE DRIVER.

15. The candidate must satisfactorily pass a *viva voce* examination on the working of the various types of internal combustion engines and be able to name the principal parts of the machinery.

16. The candidate must 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.

17. The candidate must be able to describe the chief causes which may make the engine difficult to start and to explain how he would proceed to remedy any defects connected therewith; he must also be able to show that he understands the mechanism of the starting and reversing arrangements and that he is competent to deal with defects therein.

18. The candidate must be able to overhaul the engine, to adjust the working parts and to put the engine together again in good working condition. He must also understand how to make good the result of ordinary wear and tear to the machinery and how to correct defects from accidents.

19. The candidate must be familiar with the nature and properties of the various fuel oils used in internal combustion engines. He must understand what is meant by "flash point."

20. The candidate must know the danger resulting from leakage from the fuel oil tanks and must understand the precautions to be taken against explosion. He must also be able to take the necessary precautions to guard against the escape of inflammable vapour from the vaporizer when the engines are stopped. He must know how to deal with fire should it break out.

21. The candidate must also be able, if required, to show his practical knowledge by actually working the engines of a motor-vessel in the presence of the examiner.

22. [Deleted.]

## SYLLABUS.

### CERTIFICATE OF COMPETENCY AS 1ST CLASS ENGINE DRIVER.

27. He must pass a *viva voce* examination similar to that required by rules 15 to 22 for a second-class engine-driver's certificate but of a more advanced character.

15. The candidate must satisfactorily pass a *viva voce* examination on the working of the various types of internal combustion engines and be able to name the principal parts of the machinery.

16. The candidate must 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.

17. The candidate must be able to describe the chief causes which may make the engine difficult to start and to explain how he would proceed to remedy any defects connected therewith; he must also be able to show that he understands the mechanism of the starting and reversing arrangements and that he is competent to deal with defects therein.

18. The candidate must be able to overhaul the engine, to adjust the working parts and to put the engine together again in good working condition. He must also understand how to make good the result of ordinary wear and tear to the machinery and how to correct defects from accidents.

19. The candidate must be familiar with the nature and properties of the various fuel oils used in internal combustion engines. He must understand what is meant by "flash point."

20. The candidate must know the danger resulting from leakage from the fuel oil tanks and must understand the precautions to be taken against explosion. He must also be able to take the necessary precautions to guard against the escape of inflammable vapour from the vaporizer when the engines are stopped. He must know how to deal with fire should it break out.

21. The candidate must also be able, if required, to show his practical knowledge by actually working the engines of a motor-vessel in the presence of the examiner.

22. [Deleted.]

31. He must write a legible hand and have a good knowledge of arithmetic up to and including vulgar and decimal fractions and square root. He must also be able to work out questions relating to spring or lever-loaded safety and relief valves, consumption of oil and stores, capacities of tanks, bunkers, etc., speed of vessels, and other similar problems, and be able to calculate suitable working pressures for air receivers of given dimensions, and the stress per square inch on crank and tunnel shafts and other parts of the machinery when the necessary data are furnished.
32. He must be able to give a clear explanation of the principles on which oil, gas or other internal combustion engines work, including the methods of ignition, to point out the differences between them, and to show by means of illustrative sketches and otherwise that he understands the details of the construction of those in general use.
33. He must be familiar with the various methods of supplying air and fuel to the cylinders in the different types of engines, the construction of the apparatus for carburetting, atomising, or gasifying the fuel, and the means for cooling the cylinders, pistons, etc.
34. He must have a satisfactory knowledge of the process employed in the construction of internal combustion engines in the workshop, and of the methods used in fitting the machinery on boardship.
35. He must know what attention is required by the various parts of the machinery and understand the use and management of the different valves, cocks, pipes and connections.
36. He must be able to state and describe the chief causes which may make the engines difficult to start and to explain how he would proceed to remedy any defects arising therefrom. He must also be able to show that he understands the mechanism of the starting and reversing arrangements, and is competent to deal with defects therein.
37. He must understand how to make good the results of ordinary wear and tear to the machinery, how to test the fairness of shafting, etc., how to correct defects from accident, delay, etc., and how a temporary or permanent repair could be effected in case of derangement or total break-down.
38. He must understand the construction of the pressure gauge, barometer, thermometer, and other instruments used in the engine-room and the principles on which they work.
39. He must understand the construction and working of centrifugal bucket and plunger pumps, and the principles on which they act.
40. He must understand the construction and working of air compressors, gas producers, steering engines, electric light engines and dynamos, electric motors, refrigerating, hydraulic and other auxiliary machinery found on boardship.
41. He must possess a good working knowledge of the construction and management of auxiliary steam boilers and machinery and be familiar with the prominent facts relating to combustion, heat and steam.
42. He must be familiar with the nature and properties of the various oils, etc., generally used in internal combustion engines, must understand what is meant by "flash point," and have knowledge of the explosive properties of gas or the vapour given off by these oils, etc., when mixed with definite quantities of air and be thoroughly conversant with the danger of exposing such gas or vapour to a naked light, or of allowing any leakage from the oil tanks particularly into the vessels' bilges, and unventilated spaces, or from gas producers, pipes, vaporizers, etc.
43. He must thoroughly understand the precautions to be taken against fire or explosion from oil or gas, and know how to deal with fire should it break out. He should also be familiar with the action of wire gauze diaphragms when placed in pipes and connections to oil tanks, etc., for the purpose of preventing the explosion or ignition of oil vapour therein.
44. He must be able to explain the principle construction and arrangement of primary and secondary batteries and induction coils so far as is necessary for the efficient management of an oil engine.
45. He must be able to take off and calculate indicator diagrams and understand the action of the gas in the cylinder as shown thereby.
46. He must be able to make a dimensioned working sketch drawing of some simple part of the machinery.

SYLLABUS  
 CERTIFICATE OF COMPETENCY AS INLAND ENGINEER.

ASSESSMENT FORM FOR ENGINE DRIVER'S.

DOCUMENTS/SERVICE FOR THE EXAMINATION  
OF \_\_\_\_\_

- 1- NAME OF THE CANDIDATE \_\_\_\_\_
- 2- FATHER'S NAME \_\_\_\_\_
- 3- NATIONAL IDENTITY CARD NO. \_\_\_\_\_
- 4- DATE OF BIRTH/AGE \_\_\_\_\_
- 5- DECLARATION OF APPLICANT DATED \_\_\_\_\_
- 6- AFFIDAVIT OF OWNER DATED \_\_\_\_\_
- 7- CHARACTER CERTIFICATE \_\_\_\_\_
- 8- PROGRAMMA OF SERVICE FROM \_\_\_\_\_ TO \_\_\_\_\_
- 9- NAME OF CRAFT. OFF. NO. B.H.P. SERVEY STATUS IDLE PERIOD.

Sir,

The above documents/Service are attached. Submitted for  
orders/assessment for the above examination.

Y. G. S.

1. \_\_\_\_\_ s/o \_\_\_\_\_

Resident of \_\_\_\_\_

do hereby state that the following are my personal particulars.

1. Date & Place of Birth \_\_\_\_\_
2. N.I. Card No. \_\_\_\_\_
3. Academic Qualification \_\_\_\_\_
4. Nature of previous Examinations appeared at Marine Engineering Department, Karachi, \_\_\_\_\_
5. CERTIFICATE NO. and date \_\_\_\_\_

Whatever stated above is true and correct to best of my knowledge.

D E P O N E N T

(Name) \_\_\_\_\_  
s/o \_\_\_\_\_

Dated :- \_\_\_\_\_

# PERMIT

AS

No. 75

ENGINE DRIVER OF AN INLAND MOTOR VESSEL OF 40 BRAKE HORSE POWER AND UNDER  
GRANTED under the first proviso to Section 27 of the Inland Mechanically Propelled Vessels Act 1917 (1 of 1917)

To

Whereas it has been reported to me that you have been found, after examination, duly qualified to fulfil the duties of ENGINE DRIVER of an Inland Motor Vessel, having Engines of 40 Brake Horse Power and under, I do hereby grant you this PERMIT as Engine Driver.

Karachi, dated this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_

ENGINEER AND SHIP SURVEYOR  
Merchant Marine Department,  
Karachi  
(EXAMINER)

Registered at the Office of the Principal Officer, Merchant Marine Department, Karachi District.



No. of Certificate/Permit \_\_\_\_\_

Bearer \_\_\_\_\_ son of \_\_\_\_\_

by caste \_\_\_\_\_

Date and place of Birth showing Village \_\_\_\_\_

Thana and District \_\_\_\_\_

Residence, showing Village, Thana and \_\_\_\_\_

District \_\_\_\_\_

Height \_\_\_\_\_

Personal Description, stating particularly any permanent marks or scars \_\_\_\_\_

Signature \_\_\_\_\_

Any Engine Driver who fails to deliver up a Certificate which has been cancelled or suspended is liable to a penalty not exceeding Rs. 300/-.

*N.B.*—Any person other than the owner thereof, becoming possessed of this Certificate/Permit is required to transmit it forthwith to the Principal Officer, Mercantile Marine Department, Karachi District.

Issued at Karachi on the \_\_\_\_\_ day of \_\_\_\_\_ 19 \_\_\_\_\_

Principal Officer,  
Mercantile Marine Department, Karachi District.

\*If not known exactly must be stated on the best information available.



BY ORDER OF THE GOVERNMENT OF SIND, KARACHI

# CERTIFICATE OF COMPETENCY

AS

No. \_\_\_\_\_

Second Class Engine Driver of an Inland Mechanically Propelled Vessel Under

## ACT 1 OF 1917.

To \_\_\_\_\_

Whereas, it has been reported to the GOVERNMENT OF SIND, KARACHI that you have been found, after examination, duly qualified to fulfil the duties of SECOND CLASS ENGINE DRIVER on an Inland Motor Vessel having Engines of under 226 Brake Horse Power, I do hereby, in pursuance of Act 1 of 1917, grant you this Certificate of Competency as Engine Driver.

This \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_

ENGINEER AND SHIP SURVEYOR  
Merchant Marine Department,  
Karachi District.  
(EXAMINER)

Registered at the Office of the Principal Officer, Merchant Marine Department, Karachi District.

No. of Certificate \_\_\_\_\_

Bearer \_\_\_\_\_ son of \_\_\_\_\_

by caste \_\_\_\_\_

Date and place of Birth showing Village, Thana and District \_\_\_\_\_

Residence, showing Village, Thana and District \_\_\_\_\_

Height \_\_\_\_\_

Personal Description, stating particularly any permanent marks or scars \_\_\_\_\_

Eyes \_\_\_\_\_ Hair \_\_\_\_\_ Compl. \_\_\_\_\_



ADDITIONAL QUALIFICATIONS

Signature \_\_\_\_\_

Any Engine Driver who fails to deliver up a Certificate which has been cancelled or suspended is liable to a penalty not exceeding Rs. 500/-

N.B.—Any person other than the owner thereof, becoming possessed of this Certificate, is required to transmit it forthwith to the Principal Officer, Mercantile Marine Department, Karachi District.

Issued at Karachi on the \_\_\_\_\_ day of \_\_\_\_\_ 19 \_\_\_\_\_

*Principal Officer,*

Mercantile Marine Department, Karachi District.

\*If not known exactly must be stated on the best information or evidence.



BY ORDER OF THE GOVERNMENT OF SIND KARACHI

# CERTIFICATE OF COMPETENCY

AS  
FIRST CLASS ENGINE DRIVER OF AN INLAND MECHANICALLY PROPELLED VESSEL UNDER  
ACT 1 OF 1917.

To

No.

Whereas it has been reported to the GOVERNMENT OF SIND KARACHI that you have been found, after examination, duly qualified to fulfil the duties of FIRST CLASS ENGINE DRIVER on an Inland Motor Vessel having Engines of under 565 Brake Horse Power, I do hereby, in pursuance of Act 1 of 1917, grant you this Certificate of Competency as Engine Driver.

This \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_

ENGINEER AND SHIP SURVEYOR

Mercantile Marine Department,

Karachi District.

(EXAMINER)

Registered at the Office of the Principal Officer, Mercantile Marine Department, Karachi District.

No. of Certificate \_\_\_\_\_

Bearer \_\_\_\_\_ son of \_\_\_\_\_

Date\* and place of Birth showing Village \_\_\_\_\_

Thana and District \_\_\_\_\_

Residence, showing Village, Thana and \_\_\_\_\_

District \_\_\_\_\_

Height \_\_\_\_\_

Personal Description, stating particularly any permanent marks or scars \_\_\_\_\_

No. of Registered Ticket \_\_\_\_\_

Signature \_\_\_\_\_

Any Engine-Driver who fails to deliver up a Certificate which has been cancelled or suspended is liable to a penalty not exceeding Rs. 500/.

N.B.—Any person other than the owner thereof, becoming possessed to transmit it forthwith to the Principal Officer, Mercantile Marine Department, Karachi District.

Issued at Karachi on the \_\_\_\_\_ day of \_\_\_\_\_ 19 \_\_\_\_\_

Principal Officer,

Mercantile Marine Department, Karachi District.

\*If not known exactly, must be stated on the best information or

Ministry of Communications and Works Department  
 Karachi, dated the 1st July, 1978.

No. W/2/1/70  
 In the pursuance of the Proclamation of the 15th day of July 1977 and in exercise of the powers conferred by the laws (Continued in S.O. Order, 1977) and having received the consent of the Federal Government, the Governor of Sind is pleased to entrust:-

- i) the function of the Provincial Government under section 9 of the Inland Navigation (Propelled Vessel) Act, 1917 (hereinafter referred to as the said Act), other than the grant of Survey Certificates to Merchant and Ship Surveyors and Nautical Surveyors of the Mercantile Marine Department;
- ii) the function of granting of Survey Certificates under the said section 9 of the said Act to the Principal Officer of the Mercantile Marine Department;
- iii) the functions of the Provincial Government under section 10 and 21 of the said Act to the Principal Officer of the Mercantile Marine Department.

SECRETARY TO THE GOVERNMENT OF SIND  
 COMMUNICATIONS AND WORKS DEPARTMENT

No. W/2/1/70  
 Karachi, dated the 1st July, 1978.

- A copy is forwarded to:-
1. The Ministry of Communications (Ports & Shipping Wing), Government of Pakistan, Somerset Street, Karachi for information.
  2. The Principal Officer, Mercantile Marine Department, Karachi for information. A monthly progress report should please be communicated to the undersigned.
  3. The Section Officer (Legislation) to Government of Sind, Law Department, Karachi for information with reference to S.O. No. 13, L.O. No. 5(4)/77/1615, dated 15th August, 1977.
  4. The Superintendent, Sind Government Printing Press, Karachi for information with a request to please publish this notification in the next issue of Sind Government Gazette.

Deputy Secretary (Technical),  
 Government of Sind.

Section 9 of the Inland Navigation (Propelled Vessel) Act, 1917  
 A copy is forwarded to the Principal Officer of the Mercantile Marine Department, Karachi for information with reference to S.O. No. 13, L.O. No. 5(4)/77/1615, dated 15th August, 1977.

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 Page B

Handwritten notes and signatures at the bottom left of the page.

SYLLABUS FOR ORAL EXAMINATION TO ISSUE STCW-95 ENDORSEMENT FOR  
2<sup>nd</sup> CLASS MASTER OF AN INLAND MECHANICALLY PROPELLED VESSEL.

A. FUNCTION: NAVIGATION AT THE OPERATIONAL LEVEL  
Competence

1. PLAN AND CONDUCT A COASTAL PASSAGE AND DETERMINE POSITION  
Knowledge and understanding in the following

Navigation

Ability to determine the ship's position by the use of:

1. landmarks
2. aids to navigation, including lighthouses, beacons and buoys

Knowledge of and ability to use navigational charts, tide tables and ships' routing information

Compasses

Knowledge and application of the compass errors

Meteorology

Ability to apply the meteorological information available

2. MAINTAIN A SAFE NAVIGATIONAL WATCH  
Knowledge and understanding in the following

Watchkeeping

Knowledge of content of the Principles to be observed in keeping a navigational watch

3. RESPOND TO EMERGENCIES

Knowledge, understanding and proficiency

Emergency procedures, including:

1. Precautions for the protection and safety of passengers in emergency situations
2. initial assessment of damage and damage control
3. rescuing persons from the sea

4. RESPOND TO A DISTRESS SIGNAL AT SEA


Knowledge and understanding in "search and rescue"

5. MANOEUVERE THE SHIP AND OPERATE SMALL SHIP

Knowledge, understanding and proficiency

Ship manoeuvring and handling

Knowledge of factors affecting safe manoeuvring and handling

  
15/11/06