

BRITISH GUIANA

REGULATIONS

MADE UNDER

THE TRANSPORT AND HARBOURS ORDINANCE, 1931,
(No. 30 of 1931).

UNDER SECTION 37(2) OF THE TRANSPORT AND HARBOURS ORDINANCE, 1931, AS AMENDED BY SECTION 3 OF THE TRANSPORT AND HARBOURS (AMENDMENT) ORDINANCE, 1951, THE FOLLOWING REGULATIONS HAVE BEEN MADE BY THE GENERAL MANAGER WITH THE APPROVAL OF THE GOVERNOR IN COUNCIL:—

1. These Regulations may be cited as the Intercolonial Ships (Masters, Mates and Engineers Certificates) Regulations, 1953. Short title.

2. (1) The General Manager shall, with the approval of the Governor in Council appoint a board of examiners (hereinafter referred to as "the Board"), for the purpose of holding examinations for the award of certificates of competency (hereinafter referred to as "certificates") as master, mate or engineer of an intercolonial ship. Board of examiners.

(2) The Board shall consist of the Harbour Master and such other fit and proper persons the General Manager shall appoint.

(3) The Harbour Master shall be the Chief Examiner at examinations for masters and mates certificates. The General Manager shall appoint a fit and proper person to be the Chief Examiner for engineers certificates.

(4) No person shall be appointed to be a member of the Board unless —

- (a) he has attained the rank of Lieutenant in Her Majesty's Navy; or
- (b) he holds a Master Mariners foreign going certificate of competency issued by the Ministry of Transport or the equivalent certificate issued by or on behalf of the Government of one of Her Majesty's Dominions; or
- (c) he holds an International or home trade certificate issued by or on behalf of the Government of the Colony, or the Government of Trinidad or the Marine Board of Jamaica; or
- (d) he holds a certificate of competency as a first class engineer issued by the Board of Trade or the equivalent certificate issued by or on behalf of the Government of one of Her Majesty's Dominions; or
- (e) he holds an intercolonial or home trade certificate of competency as a first class engineer issued by or on behalf of the Government of the Colony, the Government of Trinidad or the Marine Board of Jamaica.

(5) The General Manager shall appoint a Secretary to the Board.

4. Examinations for certificates shall be held at such times and places as the Chief Examiner shall, by notice published in the Gazette, appoint. Times of examinations.

Applications for examination.

5. (1) Every person who desires to obtain a certificate shall make application in writing to the Secretary 28 clear days before the date of examination and every such application shall be accompanied by the prescribed fee.

(2) Every application shall be accompanied by —

- (a) testimonials as to the applicant's sea service, character and sobriety; one of which must be from the Master of the last vessel he served on;
- (b) in the case of a candidate for a certificate as master or mate, a certificate showing that he has passed the form and colour vision tests from time to time approved by the Ministry of Transport for the examination of masters and mates in the merchant service;
- (c) in the case of a candidate for a certificate as a master, a certificate from a registered medical practitioner that the candidate has passed a proficiency test in first-aid; and
- (d) in the case of a candidate for a certificate as a first class or second class engineer, a certificate of apprenticeship.

Nationality.

6. Every candidate shall produce such proof of nationality as the Board may require. Candidates who are not British subjects may be granted temporary certificates on satisfying the Board that they have a sufficient knowledge of the English language to enable them to perform their duties adequately on a British ship.

Examination fees

7. The following examination fees shall be payable —

- (a) for the master's certificate \$10
- (b) for the engineer's certificate (first class) \$10
- (c) for the mate's certificate \$ 5
- (d) for the engineer's certificate (second class) \$ 5

Syllabus. Schedule.

8. Examinations for certificates shall be governed by the syllabus in the Schedule to these Regulations.

Eligibility.

9. No person may be examined for a certificate —

- (a) as a master or second class engineer before he has attained the age of 23 years; or
- (b) as a mate before he has reached the age of 20 years; or
- (c) as a first class engineer before he has reached the age of 24 years.

Conditions.

10. (1) Every candidate for a certificate as master shall satisfy the Board that he has served 5 years on deck in a foreign going or intercolonial ship and for 12 months of that period he has held a mate's intercolonial certificate and has served as mate for that time. Any such candidate who desires a sailing ship endorsement on his certificate shall satisfy the Board that he has spent at least 3 years of the aforesaid period of 5 years in a foreign going or intercolonial sailing ship and that for 12 months of the period of 3 years he has held a mate's intercolonial certificate with a sailing ship endorsement for that time.

(2) Every candidate for a certificate as mate shall

satisfy the Board that he has served 4 years at sea on deck in a foreign going or intercolonial ship, and every such candidate who desires a sailing ship endorsement on his certificate shall satisfy the Board that he has spent 2 years of the aforesaid period on a foreign going or intercolonial sailing ship.

(3) Every candidate for a certificate as a second class engineer shall satisfy the Board that he has served an apprenticeship of at least 5 years in an engine repair shop, and 2 years at sea as a junior engineer in a foreign going or intercolonial steamship or motor ship. Any candidate who has served in a steamship and who desires a diesel endorsement shall satisfy the Board that he has served an additional 9 months in a foreign going or intercolonial motor ship as a junior engineer, and any candidate who has served in a motor ship and desires a steam endorsement shall satisfy the Board that he has served an additional 12 months as junior engineer in a foreign going or intercolonial steamship.

(4) Every candidate for a certificate as a first class engineer shall satisfy the Board that he has served three years at sea in a foreign going or intercolonial steamship or motor ship, and at least 12 months of such period as a second engineer holding a certificate as such. Any candidate who has served in a steamship and desires a diesel endorsement shall satisfy the Board that he has served an additional 9 months as a junior engineer holding a certificate as a second class engineer in a foreign going or intercolonial motorship, and any candidate who has served in a motor ship and desires a steam endorsement shall satisfy the Board that he has served an additional 12 months at sea as a junior engineer holding a certificate as a second engineer in a foreign going or intercolonial steamship.

11. (1) The Board shall award a certificate to every candidate who, in their opinion, has attained a satisfactory standard in the examination and who has given satisfactory proof of his sobriety, experience, ability and general good conduct on board ship. **Award of certificates.**

(2) Every certificate shall be in duplicate, and the duplicate portion shall be kept by the Harbour Master, together with a record of all certificates granted under these Regulations.

12. Every examiner shall be paid out of the general revenue of the Colony a fee of \$15.00 for each examination for a certificate as master or first class engineer, and a fee of \$2.50 for each examination for a certificate as mate or second class engineer. **Remuneration of examiners.**

13. Where any certificate issued under these Regulations has been lost or destroyed, the Harbour Master may, on the application of the holder, upon being satisfied as to the identity of the applicant and the loss or destruction of the certificate, issue a certified copy of such certificate to the applicant upon payment of a fee of \$1. **Loss, etc. of certificate.**

SCHEDULE

Reg. 8

Chart Examination: Written and Oral.

MASTER AND MATE: INTERCOLONIAL

(A fuller knowledge of the Chartwork syllabus is required for Master).

1. On a chart to find the true course and distance between two points; given compass error, to find magnetic and compass course, and

vice versa: to keep the Dead Reckoning on a chart; to lay off courses allowing for current; to find the set and drift of the current from data supplied.

2. To fix the position on a chart by cross bearings; by bearings of a single object, with run between, allowing for current; by the bearing and vertical angle of a given object; by the bearing of a light when rising or dipping, the height of the light being known.

3. The use of danger angles.

4. Chart abbreviations and symbols.

5. Notices to mariners.

Practical Navigation.

MATE: INTERCOLONIAL

1. To find the time of High Water by the High Water Full and Change constant; the use of tide tables; light lists, sailing directions.

2. To find the true bearing of the sun by azimuth and amplitude tables, and from the compass bearing to obtain compass error.

To have a thorough knowledge of magnetic compass error, deviation and variation.

3. Fix ship's latitude by meridian altitude of the sun.

4. Read a barometer, either in inches or in millibars, read a thermometer, and answer simple questions on these instruments.

5. Be able to use a sextant, both for horizontal and vertical angles, and to understand the adjustments of the sextant.

6. Knowledge of weather conditions and currents which may be experienced in the Caribbean Area; avoidance of the centre of a hurricane.

7. To be able to navigate by dead reckoning (day's work, etc.)

MASTER: INTERCOLONIAL

In addition to Practical Navigation for Mate Intercolonial.

1. To find the true bearing of the sun, a star or planet by azimuth and amplitude tables, and from the compass bearing to obtain the compass error.

2. To fix a vessel's position by observations of the sun, stars, or planets, for both latitude and longitude (any formula may be used).

3. The uses of a marine hydrometer.

Steamship and Nautical Knowledge — Elementary knowledge of ships construction. For Master only: Working knowledge of ship Master's Business.

MASTER AND MATE.

(A fuller knowledge of the Steamship syllabus is required for Master).

A thorough knowledge of the Regulations for preventing collisions at sea (Articles 1 to 31). Candidates will not be required to repeat the Articles word by word.

Distress and Pilot signals, the use of rockets. The marking and use of ordinary lead line, mechanical sounding machine and ships' logs.

Anchor and cables, mooring and unmooring, berthing and unberthing, effect of screw.

Handling of ship in bad weather and when disabled. Management of a ship's boat, construction, equipment.

Knowledge of cargo handling equipment, ropes, purchases, rigging; cargo stowage; trim, ballast tanks, fire extinguishing appliances; knowledge of Load Line.

Working knowledge of International Code Signals; signalling morse flashing or reading up to six words per minute.

Candidates for sailing ship endorsement must answer questions regarding the management and manoeuvring of sailing vessels.

FIRST CLASS ENGINEER.

A Candidate for a Certificate of Competency as First Class Engineer

whether "Steam" or "Motor" is required to write legibly, spell correctly and express himself generally in creditable English.

GENERAL ENGINEERING — SCIENCE

(Six out of nine questions to be attempted).

(Time allowed — 3 hours.)

To show a knowledge of:—

Mass, volume, specific gravity, Areas and solids. Application of Simpson's Rules to areas and volumes. Displacement, linear and angular velocity; Uniform linear and angular acceleration; relative velocity; Vectors. Triangle and parallelograms of velocities or forces. Forces, moments and couples, centre of gravity, conditions of equilibrium. Work and power. Solid friction. Inclined plane; Simple machines, velocity ratio, mechanical advantage and efficiency. Centrifugal force, its incidence in machine parts, including the rims of fly wheels. Transmission of power by gearing. Elementary hydrostatics and hydraulics. Principle of Archimedes; Basic ideas of fluid pressure and fluid friction. Flow through pipes and orifices. Stress, strain and elasticity. Hook's Law. Moduli of elasticity, simple tension, compression and shear. Bending moment and shearing force diagrams for cantilevers and simply supported beams with concentrated or uniform loading. Strength of beams. Torsion strength and stiffness of round shafts and power transmitted. Thin cylindrical and spherical shells. Strength of single, double and treble riveted lap and butt joints, welded joints. Stresses and strains in single members due to change of temperature.

HEAT AND HEAT ENGINES.

(Six out of nine questions to be attempted).

(Time allowed — 3 hours.)

Temperature scales and their conversion. Linear and volumetric expansion or contraction due to change of temperature. Co-efficient of expansion. Specific heat. Resulting temperatures of mixtures at different temperatures. Conduction, convection and radiation of heat. Boyle's Law and Charles' Law and their combination. Relations between specific heat at constant pressure and constant volume. Adiabatic expansion and compression $p.v. = a \text{ constant}$. Change of state. Sensible heat, latent heat and super heat. Energy, methods of measurement of energy and work. Mechanical equivalent of heat. Fuels and the generation of heat by combustion. Calorific value of fuels. Generation of steam. Dryness fraction of steam. Condensers and vacuum, advantages of using steam expansively. Elementary principles and cycles of operation of steam and internal combustion engines and air compressors. Calculation of work done with hypothetical pressure-volume diagrams with constant steam pressure and with expansion according to the law $p.v. = a \text{ constant}$. Mean referred pressure. Cylinder volume ratios. Heat balance with reference to engine and boiler trials. Results to be expected from the application of high pressure steam of compounding, super-heating and steam jacketing. Valve diagrams for steam engines. Cam diagrams for internal combustion engines. Elementary principles of the steam turbine. Efficiency of refrigerating machinery. Boilers and evaporators. Thermal, mechanical and overall efficiencies.

ELECTROTECHNOLOGY AND ELEMENTARY NAVAL ARCHITECTURE.

(Four out of six questions to be attempted.)

(Time allowed — 2½ hours.)

The effects of an electrical current — chemical, magnetic and heating primary cells and accumulators. Electrolysis. Simple magnetic and electromagnetic phenomena.

Application of electromagnetic induction phenomena to the generator. Practical electrical units. (D.C.) Ohms law. Laws of resistance. Effects of temperature on resistance. Grouping of resistances. Mechanical and heat equivalents. Modes of current distribution for lighting and power purposes. Displacement, wetted surface, block or prismatic co-efficients of fineness of displacement, co-efficients of fineness of water plane. Tons per inch immersion. Alteration in draught owing to change in density of the water. Shift of centre of gravity by adding, removing, shifting or consuming fuel, cargo or ballast. Relation between speed of vessel and fuel consumption. Action of propeller, slip, thrust and power. Admiralty and fuel co-efficients. Simple problems on strength and structural members to resist liquid pressure.

ENGINEERING KNOWLEDGE.

(Six out of nine questions to be attempted.)

(Two papers — Time allowed — 3 hours each)

The engineering knowledge to be shown by candidates is that which is required for the use, operation and maintenance of the machinery, equipment and ship structure usually in the charge of the engineer. A knowledge of the methods of manufacture of the various components is also required.

Candidates for certificates and endorsements are required to take a written examination followed by an oral examination. Candidates may be required to illustrate their answers by means of freehand sketches.

To be familiar with the physical characteristics of the metals, other materials commonly used by sea-going engineers.

To have a creditable knowledge of the facts relating to steam, heat, combustion and the formation of smoke.

The use, constructional details and principles involved in the action of the pressure gauge, volt meter, ammeter, thermometer, pyrometer, barometer, salinometer, hydrometer and other meters commonly used by engineers on board ship.

The causes, effects and usual remedies for incrustation and corrosion.

Feed water and blow densities and scale formation.

The methods of dealing with wear and tear of machinery and boilers.

Alignment of machinery parts including shafting, the correction of defects due to corrosion, flaw or accidents, and how a temporary or permanent repair could be effected in the event of derangement or total breakdown.

To understand the constructional details and principles of action of centrifugal, bucket and force pumps. The general requirements concerning feed fuel, bilge and ballast pumping systems.

To understand the constructional and working of steering engines and gears, refrigerating machinery, hydraulic machinery, and such steam and internal combustion engines as are used for emergency and auxiliary machinery on board ship.

The lay out and working of electric light and power circuits; single wire; two wire, three wire and ring main systems.

Use of the megger.

Application of the indicator, calculation of mean pressure and horse power. Fluctuation of pressure in the cylinder as shown by indicator diagrams.

Precautions against fire or explosives due to oil or gas. Flash point. The danger of leakage from oil tanks, pipes, etc., particularly in bilges or other unventilated spaces. The action of wire gauze diaphragms. Spontaneous combustion of coal. Ventilation and storage of coal. Fire detection, methods of dealing with fire; action or maintenance of fire extinguishers. The maintenance in good working order of any machinery or other appliances which may be placed in his charge, how to provide against defects and breakdowns; carrying out or direction of any repairs or renewals that may be required.

A Candidate for steam Certificate of Competency must also understand:—

The various designs of marine steam engines (including turbine) now adopted, the functions of each important part and the attention required by the different parts of the machinery on board ship. The methods of testing and altering the setting of the steam admission and exhaust valves and the effect produced in the working of the engines by definite alteration of the valves setting.

The constructional details and working of evaporators, feed water, heaters and feed water filters.

Marine boilers of various modern designs; the manner of staying them and also the prevention of movement of boilers when vessels are pitching or rolling. The determination by calculation of suitable working pressures for boilers of given dimensions. The use and management of boiler fittings and mountings with special reference to water gauges and safety valves.

Precautions necessary when raising steam and operating stop valves with particular reference to the danger arising from water hammer action.

Constructional details, operations and maintenance of installations generally employed for assisting draught, superheating steam and burning coal and oil fuel.

A Candidate for "Motor" Certificate of Competency must also understand:—

The principles underlying the working of internal combustion engines. The difference between various types of engines, constructional details of internal combustion engines in general use.

The methods of supplying air and fuel to the cylinders of engines of different types; the construction of the apparatus for carburetting, atomising or gasifying the fuel; the means of cooling the cylinders of pistons, constructional details and operation of air compressors. The attention required to be paid to the various parts of the machinery and the use and management of the different valves, pipes and connections.

Starting and reversing arrangements and the remedy of any troubles arising therefrom.

The attention required for the operation and maintenance of the various parts of machinery. The use and management of valves, pipes, connections and safety devices employed.

Enumeration and description of defects arising from working of machinery and the remedy for such defects.

Construction and management of auxiliary steam boilers and machinery.

ORAL EXAMINATION.

The oral examination will be largely based upon the practical knowledge subjects of the examination and will include questions on the management of engines and boilers at sea; the duties of a watch keeping engineer; the work to be done to engines, boilers and auxiliary machinery in port, the periodical examination of working parts and how machinery and boiler casualties, which may occur at sea, may be prevented and remedied.

DRAWING.

Choice of two drawings.—(Time allowed—6 hours).

Candidates will be tested in their ability to apply the principles of projection and will be asked to draw a plan, elevation or section or a combination of these views of a piece of marine machinery from information supplied.

All the required information for the completion of the drawing will be given in the question paper.

Second Class Engineer.

A candidate for a Certificate of Competency as a Second Class Engineer whether "Steam" or "Motor" is required to write legibly, spell correctly, and express himself generally in creditable English.

GENERAL ENGINEERING SCIENCE.

(Six out of nine questions to be attempted.)

(Time allowed — 3 hours.)

To show a knowledge of:—

- Mass, volume specific gravity. Areas and solids.
- Application of Simpson's Rule to areas and volumes.
- Displacement. Triangle and parallelograms of forces.
- Forces, centre of gravity.
- Work and power. Inclined plane; simple machines, velocity ratio, mechanical advantage and efficiency.
- Centrifugal force.
- Transmission of power by gearing.
- Elementary hydrostatics and hydraulics. Principle of Archimedes.
- Flow through pipes and orifices.
- Stress, strain and elasticity. Hook's Law. Moduli of elasticity, simple tension, compression and shear.
- Bending moment and shearing force diagrams for cantilevers and simply supported beams with concentrated or uniform loading.
- Strength of beams.
- Thin cylindrical and spherical shells. Strength of single, double and treble riveted lap and butt joints.

HEAT AND HEAT ENGINES.

(Six out of nine questions to be attempted.)

(Time allowed — 3 hours.)

- Temperatures scales and their conversion.
- Specific heat. Resulting temperatures of mixtures at different temperatures. Conduction, convection and radiation of heat.
- Boyle's Law and Charles' Law and their combination.
- Change of state. Sensible heat, latent heat and super heat.
- Energy, methods of measurement of energy and work.
- Mechanical equivalent of heat. Fuels and the generation of heat by combustion. Caloric value of fuels. Generation of steam.
- Condensers and vacuum, advantages of using steam expansively.
- Elementary principles and cycles of operation of steam and internal combustion engines and air compressors.
- Cylinder volume ratios. Results to be expected from the application of high pressure steam of compounding, superheating and steam jacketing.
- Elementary principles of the steam turbine.
- Efficiency of refrigerating machinery.
- Boilers and evaporators.
- Thermal, mechanical and overall efficiencies.

ELECTROTECHNOLOGY AND ELEMENTARY NAVAL ARCHITECTURE.

(Four out of six questions to be attempted.)

(Time allowed — 2½ hours.)

- The effects of an electrical current — chemical magnetic and heating.
- Primary cells and accumulators. Electrolysis.
- Simple magnetic and electromagnetic phenomena.
- Application of electromagnetic induction phenomena to the generator.
- Practical electrical units. (D.C.) Ohms Law. Laws of resistance.
- Effects of temperature on resistance. Grouping of resistances.
- Mechanical and heat equivalents. Modes of current distribution for lighting and power purposes.

Displacement, wetted surface, block or prismatic co-efficients of fineness of displacement, co-efficients of fineness of water plane.

Tons per inch immersion. Alteration in draught owing to change in density of water. Shift of centre of gravity by adding, removing, shifting or consuming fuel, cargo, or ballast. Relation between speed or vessel and fuel consumption. Action of propeller, slip, thrust and power. Admiralty and fuel co-efficients. Simple problems on strength and structural members to resist liquid pressure.

ENGINEERING KNOWLEDGE.

(Six out of nine questions to be attempted.)

(Two papers — Time allowed — 3 hours each.)

The Engineering knowledge to be shown by candidates is that which is required for the use, operation and maintenance of the machinery, equipment and ship structure usually in the charge of the engineer.

A knowledge of the methods of manufacture of the various components is also required.

Candidates for certificates and endorsements are required to take a written examination followed by an oral examination.

Candidates may be required to illustrate their answers by means of freehand sketches.

To be familiar with the physical characteristics of the metals; other materials commonly used by seagoing Engineers.

To have a creditable knowledge of the facts relating to steam, heat, combustion and the formation of smoke.

The use, constructional details and principles involved in the action of the pressure gauge, volt meter, ammeter, thermometer, pyrometer, barometer, salinometer, hydrometer, and other meters commonly used by engineers on board ship.

The causes, effects and usual remedies for incrustation and corrosion.

Feed water and blow densities and scale formation.

The methods of dealing with wear and tear of machinery and boilers.

Alignment of machinery parts including shafting the correction of defects due to corrosion, flaws or accidents, and how a temporary or permanent repair could be effected in the event of derangement or total breakdown.

To understand the constructional details and principles of action of centrifugal, bucket and force pumps. The general requirements concerning feed fuel, bilge and ballast pumping systems.

To understand the construction and working of steering engines and gears, refrigerating machinery, hydraulic machinery, and such steam and internal combustion engines as are used for emergency and auxiliary machinery on board ship.

The lay out and working of electric light and power circuits; signal wire, two wire, three wire, and ring main systems.

Use of the meggar.

Application of the indicator, calculation of mean pressure and horse power. Fluctuation of pressure in the cylinder as shown by indicator diagrams.

Precautions against fire or explosives due to oil or gas. Flash point bilges or other unventilated spaces. The action of wire gauze diaphragms. Spontaneous combustion of coal. Ventilation and storage of coal. Fire detection methods of dealing with fire; action or maintenance of fire extinguishers.

The maintenance in good working order of any machinery or other appliances which may be placed in his charge, how to provide against defects and breakdowns; carrying out or direction of any repairs or renewals that may be required.

A candidate for steam Certificate of Competency

must also understand:—

The various designs of marine steam engines (including turbine) now

adopted, the functions of each important part and the attention required by the different parts of the machinery on board ship.

The methods of testing and altering the setting of the steam admission and exhaust valves and the effect produced in the working of the engines by definite alteration of the valves setting.

The constructional details and working of evaporators, feed water, heaters and feed water filters.

Marine boilers of various modern designs; the manner of staying them and also the prevention of movement of boilers when vessels are pitching or rolling. The determination by calculation of suitable working pressures for boilers of given dimensions.

The use and management of boiler fittings and mountings with special particular reference to the danger arising from water hammer action.

Precautions necessary when raising steam and operating stop valves with particular reference to the danger arising from water hammer action.

Constructional details, operations and maintenance of installations generally employed for assisting draught, superheating steam and burning coal and oil fuel.

A candidate for "Motor" Certificate of Competency must also understand:—

The principles underlying the working of internal combustion engines.

The difference between various types of engines, constructional details of internal combustion engines in general use.

The methods of supplying air and fuel to the cylinders of engines of different types; the construction of the apparatus for carburetting, atomising or gasifying the fuel; the means of cooling the cylinders of pistons, constructional details and operation of air compressors.

The attention required to be paid to the various parts of the machinery and the use and management of the different valves, pipes and connections.

Starting and reversing arrangements and the remedy of any trouble arising therefrom.

The attention required for the operation and maintenance of the various parts of machinery. The use and management of valves, pipes, connections and safety devices employed.

Enumeration and description of defects arising from working of machinery and the remedy for such defects.

Construction and management of auxiliary steam boilers and machinery.

ORAL EXAMINATION.

The oral examination will be largely based upon the practical knowledge subjects of the examination and will include questions on the management of engines and boilers at sea; the duties of a watch keeping engineer; the work to be done to engines, boilers and auxiliary machinery in port and the periodical examinations of the working parts and how machinery and boiler casualties, which may occur at sea, may be prevented and remedied.

DRAWING.

Choice of two drawings. Time allowed — 3 hours.

Candidates will be tested in their ability to apply the principles of projection and will be asked to draw a plan, elevation or section or a combination of these views of a piece of marine machinery from information supplied.

All the required information for the completion of the drawing will be given in the question paper.

Made by the General Manager this 10th day of March, 1953.

A. J. F. BUNNING,
General Manager.

Approved in Council this 22nd day of April, 1953.

J. C. MALONE,
Acting Clerk to the Executive Council.

(M.P. 114|49).