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[No. 1642.

GOEWERMENSKENNISGEWINGS

DEPARTEMENT VAN FINANSIES.

No. R. 99.]

[27 Januarie 1967.

DIE NATALSE GENOOTSKAP VAN REKENMEESTERS.

[GEINKORPOREER KAGTENS WET No. 35 VAN 1909 (REKENMEESTERSWET, 1909) (NATAL), SOOS GEWYSIG.]

Kragtens die bepalings van artikel *een-en-twintig* van genoemde Wet word die volgende wysiging van die Verordeninge van die Natalse Genootskap van Rekenmeesters, soos aangekondig by Goewermenskennisgewing No. R. 652 van 1 Mei 1964, hierby aangekondig.

A. Die vervanging van die bestaande verordening 38 (b) deur die volgende:—

„Tensy en tot tyd en wyl daar anders besluit word, is die jaarlikse ledegeld verskuldig op die eerste dag van Januarie in elke jaar en moet gedurende genoemde maand betaal word en bedra die som van—

- (i) vyf rand in die geval van lede wie se name in die Lys van Elderswonende Lede verskyn en wat nie volle lede van een van die ander Suid-Afrikaanse Genootskappe is nie;
- (ii) drie rand in die geval van lede wie se name in die Lys van Elderswonende Lede verskyn en wat volle lede van een van die ander Suid-Afrikaanse Genootskappe is;
- (iii) twintig rand vir alle lede: Met dien verstande dat vir die eerste vyf jaar nadat vir lidmaatskap kragtens verordening 35 (a) gekwalifiseer is, die ledegeld tot tien rand verminder word.”.

B. Die vervanging van die bestaande voorbehoudbepaling in verordening 52 deur die volgende:—

„Met dien verstande dat, ten opsigte van klerke wat as ongeskrewe klerke wil dien by lede van die Genootskap, wat 'n openbare praktyk beoefen in gebiede buite die Republiek en Suidwes-Afrika, die Raad geheel en al volgens sy eie goedgunstige goedkeuring aan sodanige leerkontrakte kan heg.”.

GOVERNMENT NOTICES.

DEPARTMENT OF FINANCE.

No. R. 99.]

[27 January 1967.

THE NATAL SOCIETY OF ACCOUNTANTS.

[INCORPORATED UNDER ACT NO. 35 OF 1909 (ACCOUNTANTS ACT, 1909) (NATAL), AS AMENDED.]

In terms of the provisions of section *twenty-one* of the above-mentioned Act, the following amendment to the By-laws of the Natal Society of Accountants, as promulgated under Government Notice No. R. 652 of the 1st May, 1964, are hereby promulgated.

A. The substitution of the following for existing By-law 38 (b):—

“Unless and until otherwise so determined the annual subscription shall be due on the first day of January in each year and payable during that month and shall be the sum of—

- (i) five rand for those members on the Absentee List who are not full members of one of the other South African Societies;
- (ii) three rand for those members on the Absentee List who are full members of one of the other South African Societies;
- (iii) twenty rand for all other members: Provided that for the first five years after becoming eligible for membership in terms of By-law 35 (a) the subscription shall be reduced to ten rand.”.

B. The substitution of the following for the existing proviso in By-law 52:—

“Provide that in respect of clerks wishing to serve articles with members of the Society in public practice in territories outside the Republic and South West Africa, the Council may in its absolute discretion authorise such articles.”.

## DEPARTEMENT VAN DOEANE EN AKSYNS.

No. R. 101.] [27 Januarie 1967.  
DOEANE- EN AKSYNSWET, 1964.—WYSIGING  
VAN BYLAE No. 1 (No. 1/86).

EK, THEOPHILUS EBENHAZER DÖNGES, Minister van Finansies, handelende kragtens die bevoegdheid my verleen by artikel 48 van die Doeane- en Aksynswet, 1964, wysig hierby Bylae No. 1 van genoemde Wet in die mate in die Bylae hiervan aangetoon.

T. E. DÖNGES,  
Minister van Finansies.

## DEPARTMENT OF CUSTOMS AND EXCISE.

No. R. 101.] [27 January 1967.  
CUSTOMS AND EXCISE ACT, 1964.—AMEND-  
MENT OF SCHEDULE No. 1 (No. 1/86).

I, THEOPHILUS EBENHAZER DÖNGES, Minister of Finance, acting in terms of the powers vested in me by section 48 of the Customs and Excise Act, 1964, hereby amend Schedule No. 1 to the said Act to the extent set out in the Schedule hereto.

T. E. DÖNGES,  
Minister of Finance.

## BYLAE.

I Tariefpos	II Statistiese Eenheid	III IV V Skaal va Reg		
		Algemeen	M.B.N.	Voorkeur
83.06 Deur na subpos No. 83.06.10 die volgende in te voeg: „ 83.06.20 Ornamente van plaat- of fynplaatkoper, nie met edelmetaal geplateer nie	getal	20% ”		

OPMERKING.—Spesifieke voorsiening, teen 'n skaal van reg van 20%, word gemaak vir ornamente van plaat- of fynplaatkoper, nie met edelmetaal geplateer nie.

## SCHEDEULE.

I Tariff Heading	II Statistical Unit	III IV V Rate of Duty		
		General	M.F.N.	Pre- ferential
83.06 By the insertion after subheading No. 83.06.10 of the following: “ 83.06.20 Ornaments of plate or sheet copper, not plated with precious metal	no.	20% ”		

NOTE.—Specific provision, at a rate of duty of 20%, is made for ornaments of plate or sheet copper, not plated with precious metal.

No. R. 113.] [27 Januarie 1967.  
DOEANE- EN AKSYNSWET, 1964.—WYSIGING  
VAN BYLAE No. 6 (No. 6/12).

EK, THEOPHILUS EBENHAZER DÖNGES, Minister van Finansies, handelende kragtens die bevoegdheid my verleen by artikel 75 van die Doeane- en Aksynswet, 1964, wysig hierby Bylae No. 6 van genoemde Wet in die mate in die Bylae hiervan aangetoon.

T. E. DÖNGES,  
Minister van Finansies.

No. R. 113.] [27 January 1967.  
CUSTOMS AND EXCISE ACT, 1964.—AMEND-  
MENT OF SCHEDEULE No. 6 (No. 6/12).

I, THEOPHILUS EBENHAZER DÖNGES, Minister of Finance, acting in terms of the powers vested in me by section 75 of the Customs and Excise Act, 1964, hereby amend Schedule No. 6 to the said Act to the extent set out in the Schedule hereto.

T. E. DÖNGES,  
Minister of Finance.

## BYLAE.

I Item	II Tariefitem en Beskrywing	III Mate van Korting	IV Mate van Terug- betaaling
609.17.20 Deur paragraaf (a) van tariefitem 117.05 deur die volgende te vervang: „ (a) Geen paragraaf ”			

OPMERKING.—Die voorsiening vir 'n korting op reg op motorkarre in die Republiek vervaardig en met 'n inhoud, volgens gewig, van onderdele submontasies en materiale goedgekeur as in die Republiek vervaardig, van meer as 25% maar hoogstens 30%, word ingetrek.

## SCHEDULE.

I Item	II Tariff Item and Description	III Extent of Rebate	IV Extent of Refund
609.17.20	By the substitution for paragraph (a) of tariff item 117.05 of the following: “(a) No paragraph”		

NOTE.—The provision for a rebate of duty on motor cars manufactured in the Republic and having a content of parts, sub-assemblies and materials approved as being manufactured in the Republic, by weight, of more than 25% but not more than 30%, is withdrawn.

## DEPARTEMENT VAN POS-EN-TELEGRAAFWESE.

No. R. 102.] [27 Januarie 1967.  
WYSIGING VAN TELEFOONREGULASIES.

Dit het die Staatspresident behaag om, kragtens die bepalings van artikel 2 (4) en van artikel 3 van Wet No. 44 van 1958, sy goedkeuring te heg aan onderstaande wysiging van die Telefoonregulasies:—

*Regulasie 18 (ii).*

Vervang die bestaande regulasie deur die volgende nuwe regulasie:—

„18. (ii) Die Posmeester-generaal kan na goedvindé 'n sentralelyn na 'n kantoor van 'n nie-telefoonhuuder binne dieselfde gebou as dié waarin die hoofdiens bestaan, asook na 'n nie-telefoonhuuder wat 'n filiaal is van die huuder van die hooftelefoon diens en kantore in 'n ander gebou as die telefoonhuuder okkuper, laat verleng teen die voorgeskrewe tariewe vir bylyne, mits die persele waar sodanige verlenging verlang word binne dieselfde sentralegebied as die hooftelefoon diens is en mits daar voldoen word aan die voorwaardes vir gesamentlike gebruik, soos voorgeskryf by Telefoonregulasie 22.

Vir die toepassing van hierdie regulasie berus die besluit of 'n onderneming 'n filiaal van die telefoonhuuder is uitsluitlik by die Posmeester-generaal.”

*Regulasie 22.*

Vervang die bestaande regulasie deur die volgende nuwe regulasie:—

„22. *Gesamentlike gebruik van telefoon dienste.*—Na goedvindé van die Posmeester-generaal kan enige nie-telefoonhuuder wat in dieselfde gebou as 'n telefoonhuuder kantore okkuper, asook 'n nie-telefoonhuuder wat 'n filiaal is van 'n telefoonhuuder en wat kantore in 'n ander gebou as die telefoonhuuder okkuper, met die toestemming van die telefoonhuuder van sy telefoon diens gebruik maak. Die telefoonhuuder is vir alle telefoongelde en -koste op rekening van die gesamentlike gebruiker aanspreeklik en moet aan die Posmeester-generaal 'n medegebruiksgeld van R2 per jaar by gesprektariefsentrales en R4 per jaar by vastetariefsentrales betaal. By gesprektariefsentrales betaal die telefoonhuuder aan die Posmeester-generaal, bo en behalwe die medegebruiksgeld van R2 per jaar en die voorgeskrewe bylynhuur, 'n bedrag van R0.50 per jaar ten opsigte van elke bylyn met interkommunikasiefasilitete wat by 'n sentralelyn aangesluit is en ten opsigte van elke bylyn wat by 'n private taksentrale of private outomatiiese taksentrale aangesluit is.

Vir die toepassing van hierdie regulasie berus die besluit of 'n onderneming 'n filiaal van die telefoonhuuder is uitsluitlik by die Posmeester-generaal.”

No. R. 108.] [27 Januarie 1967.

Dit het die Staatspresident behaag om, kragtens artikel 3 van Wet No. 44 van 1958, sy goedkeuring daaraan te heg dat die Tarieflys vir die Internasionale Teleksdiens

## DEPARTMENT OF POSTS AND TELEGRAPHS.

No. R. 102.] [27 January 1967.  
AMENDMENT OF TELEPHONE REGULATIONS.

The State President has been pleased, under the provisions of section 2 (4) and of section 3 of Act No. 44 of 1958, to approve of the following amendments to the Telephone Regulations:—

*Regulation 18 (ii):—*

Replace the existing regulation by the following new regulation:—

“18. (ii) At the discretion of the Postmaster General, an exchange line may be extended, at the prescribed tariff for extensions, to offices of a non-telephone subscriber within the same building as that in which the main service exists as well as to an affiliated body of the renter of the main telephone service which is not a telephone subscriber and which occupies offices in a different building as the telephone subscriber, provided the premises where such extension is required are within the same exchange area as the main telephone service and provided the conditions for joint use are complied with as prescribed by Telephone Regulation 22.

For the purpose of this regulation the decision as to whether an undertaking is an affiliated body of the telephone subscriber, rests exclusively with the Postmaster General.”

*Regulation 22.*

Replace the existing regulation by the following new regulation:—

“22. *Joint Use of Telephone Services.*—At the discretion of the Postmaster General any non-telephone subscriber occupying offices in the same building as a telephone subscriber as well as a non-telephone subscriber who is an affiliated body of a telephone renter and who occupies offices in a different building as the telephone subscriber may with the permission of the telephone subscriber, be allowed to use his telephone service. The telephone subscriber shall be responsible for all telephone fees and charges incurred by the joint user, and shall pay to the Postmaster General a joint-use fee of R2 per annum at message-rate exchanges and R4 per annum at flatrate exchanges. At message-rate exchanges, the telephone subscriber shall pay to the Postmaster General, in addition to the joint-use fee of R2 per annum and the prescribed extension rental, a fee of R0.50 per annum in respect of each extension with intercommunication facilities connected to an exchange line and in respect of each extension connected to a private branch exchange or private automatic branch exchange.

For the purpose of this regulation the decision as to whether an undertaking is an affiliated body of the telephone subscriber, rests exclusively with the Postmaster General.”

No. R. 108.] [27 January 1967.

The State President has been pleased in terms of Section 3 of Act No. 44 of 1958 to approve that the Tariff List for the International Telex Service published under

afgekondig by Goewermentskennisgewing No. R. 1790 van 11 November 1960, soos gewysig, verder gewysig word deur die invoeging van die volgende besonderhede in alfabetiese volgorde:—

Land van bestemming.	Minimum koste vir drie minute.	Elke bykomende minuut.	Verslag-koste.
Bolivia.....	R 8.55	R 2.85	R 0.50

## DEPARTEMENT VAN GESONDHEID.

No. R. 107.] [27 Januarie 1967.  
REËLS BETREFFENDE DIE WERKWYSE VAN DIE SUID-AFRIKAANSE APTEKERSKOMMISSIE EN ANDER SAKE.

Die Minister van Gesondheid het in die uitoefening van die bevoegdheid hom verleen by artikel 94 (4) van die Wet op Geneeshere, Tandartse en Aptekers, 1928 (Wet No. 13 van 1928), sy goedkeuring geheg aan die wysiging van die reëls betreffende die werkwyse van die Suid-Afrikaanse Aptekerskommisie en ander sake, wat deur die Suid-Afrikaanse Aptekerskommisie kragtens artikel 94 (2) van genoemde Wet opgestel is en by Goewermentskennisgewing No. R. 673 van 10 Mei 1963, soos gewysig by Goewermentskennisgewing No. R. 812 van 27 Mei 1966, afgekondig is, soos volg:—

Deur die vervanging van „R8.40” in subrèl (2) van rèl 22 deur „R10”.

## DEPARTEMENT VAN ARBEID.

No. R. 91.] [20 Januarie 1967.  
WET OP VAKLEERLINGE, 1944, SOOS GEWYSIG.

### STAATSVAKLEERLINGSKAPKOMITEE.

### VOORGENOME INTREKKING EN VOORSKRYWING VAN LEERVOORWAARDES.

Ek, MARAIS VILJOEN, Minister van Arbeid, handelende kragtens artikel *sestien* van die Wet op Vakleerlinge, 1944, soos gewysig, is voornemens om—

- (i) Goewermentskennisgewing No. R. 1812 van 19 November 1965, soos toegepas by Goewermentskennisgewing No. R. 32 van 7 Januarie 1966, in te trek;
- (ii) ondergenoemde ambagte as ambagte waarop die bepalings van die Wet van toepassing is, aan te wys vir Staatsondernemings in die Republiek van Suid-Afrika ten opsigte waarvan die Staatvakleerlingskapkomitee by Goewermentskennisgewing No. 1738 van 19 Oktober 1923 ingestel is:—

1. Bankwerker en Draaier..... (14)
2. Dieselwerkligkundige..... (9)
3. Elektriën..... (11)
4. Elektro-meganikus..... (12)
5. Elektrotegniese passer..... (10)
6. Gereedskapvervaardiging..... (32)
7. Gieter..... (18)
8. Industriële Elektronika-werkligkundige..... (15)
9. Ingenieursgrosfmid..... (13)
10. Ketelmaker..... (4)
11. Kopersmid..... (7)
12. Letterskilder..... (31)
13. Loodgieterswerk..... (23)
14. Maker en Hersteller van Wetenskaplike Instrumente..... (29)
15. Messelwerk..... (5)
16. Modelvervaardiger..... (20)
17. Motorelektrisiën..... (2)
18. Motormasjién- en paswerk..... (3)

Government Notice No. R. 1790 of the 11th November, 1960, as amended, be further amended by the insertion of the following particulars in alphabetical order:—

Country of Destination.	Minimum Charge for Three Minutes.	Each Additional Minute.	Report Charge.
	R	R	R
Bolivia.....	R 8.55	R 2.85	R 0.50

## DEPARTMENT OF HEALTH.

No. R. 107.] [27 January 1967.  
RULES RELATING TO THE CONDUCT OF BUSINESS OF THE SOUTH AFRICAN PHARMACY BOARD AND OTHER MATTERS.

The Minister of Health, in the exercise of the powers conferred on him by section 94 (4) of the Medical, Dental and Pharmacy Act, 1928 (Act No. 13 of 1928), has approved the amendment of the rules relating to the conduct of business of the South African Pharmacy Board and other matters, made by the South African Pharmacy Board under section 94 (2) of the said Act and published under Government Notice No. R. 673, dated 10th May, 1963, as amended by Government Notice No. R. 812, dated 27th May, 1966, as follows:—

By the substitution for “R8.40” in sub-rule (2) of rule 22 of “R10”.

## DEPARTMENT OF LABOUR.

No. 91.] [27 January 1967.  
APPRENTICESHIP ACT, 1944, AS AMENDED.

### GOVERNMENT APPRENTICESHIP COMMITTEE.

### PROPOSED WITHDRAWAL AND PRESCRIPTION OF CONDITIONS OF APPRENTICESHIP.

I, MARAIS VILJOEN, Minister of Labour, acting in pursuance of section 16 of the Apprenticeship Act, 1944, as amended, propose to—

- (i) withdraw Government Notice No. R. 1812 of the 19th November, 1965, as applied by Government Notice No. R. 32 of the 7th January, 1966;
- (ii) designate for Government Undertakings in the Republic of South Africa for which undertakings and area the Government Apprenticeship Committee was established by Government Notice No. 1738 of 19th October, 1923, the undermentioned trades as trades to which the provisions of the Act shall apply:—

1. Armament Fitter..... (32)
2. Automobile Electrician..... (17)
3. Automotive Machining and Fitting..... (18)
4. Boilermaker..... (10)
5. Bricklaying..... (15)
6. Carpentry and Joinery..... (30)
7. Coppersmith..... (11)
8. Construction Plant Mechanic..... (33)
9. Diesel Mechanic..... (2)
10. Electrical Fitter..... (5)
11. Electrician..... (3)
12. Electromechanician..... (4)
13. Engineering Blacksmith..... (9)
14. Fitting and Turning..... (1)
15. Industrial Electronics Mechanician..... (8)
16. Marine Fitter..... (25)
17. Motor Mechanic..... (19)
18. Moulder..... (7)

19. Motorwerkuitkundige.....	(17)
20. Pleisterwerk.....	(22)
21. Pyppasser.....	(21)
22. Radiotrixién.....	(25)
23. Radiowerktuigkundige (Kommunikasie).....	(24)
24. Seilmaker.....	(28)
25. Skeepsasser.....	(16)
26. Skeepstimmerman.....	(30)
27. Skilder.....	(19)
28. Sweiwerk.....	(33)
29. Takelwerk.....	(27)
30. Timmerwerk en Skrynwerk.....	(6)
31. Verkoelingswerkuitkundige.....	(26)
32. Wapenmonteur.....	(1)
33. Werkuitkundige (aanlegmasjienerie).....	(8)

- (iii) die voorwaardes hieronder gemeld, as leervooraardes ten opsigte van die ambagte aangedui in paragraaf (ii) hiervan, voor te skryf ten opsigte van Staatsondernemings en die gebied waarvoor die Staatsvakleerlingskapkomitee ingestel is; en  
(iv) te bepaal dat die bepalings van klosules 3, 4, 5, 6 en 7 van die leervooraardes hieronder gemeld, vanaf die datum van voorskrywing daarvan van toepassing is ook op vakleerlinge wat in diens is in 'n ambag wat 'n aangewese ambag is of was in Staatsondernemings en die gebied ten opsigte waarvan genoemde Komitee ingestel is.

#### VOORWAARDES.

1. *Kwalifikasies vir begin van vakleerlingskap.*—Die minimum leeftyd en opvoedkundige kwalifikasies vir die begin van vakleerlingskap is 16 jaar en Standerd VII of 'n verklaring van prestasie uitgereik deur of namens die skool wat deur die voornemende vakleerling besoek is, waarin gemeld word dat hy op die Standerd VII-peil geslaag het in die vakke Afrikaans, Engels, Rekenkunde of Algemene Wiskunde en minstens een ander vak.

2. *Leertyd.*—Die leertyd is vyf jaar vir alle aangewese ambagte.

3. *Besoldiging.*—(a) 'n Werkewer moet 'n vakleerling maandeliks 'n besoldiging betaal teen minstens die skaal hieronder gespesifieer:—

Per jaar	R
Eerste jaar.....	840
Tweede jaar.....	930
Derde jaar.....	1,020
Vierde jaar.....	1,110
Vyfde jaar.....	1,200

(b) (i) 'n Werkewer met die besoldiging voorgeskryf in subklosule (a) ten opsigte van elke vakleerling wat in besit is van of wat enigeen van die opvoedkundige kwalifikasies in die lys onder subklosule (b) van klosule 6 gemeld, verwerf, of wat die Nasionale Diploma besit of verwerf, aanvul met minstens die bedrag hieronder genoem:—

Per maand.	R
Groep I.....	3.00
Groep II.....	4.00
Groep III.....	6.50
Groep IV.....	8.50
Groep V.....	10.50
Na verwerwing van die tweede jaar van die Nasionale Diploma.....	13.50
Na verwerwing van die derde jaar van die Nasionale Diploma.....	15.00
Nasionale Diploma.....	17.50

(ii) Enige bedrag waarop 'n vakleerling ingevolge paragraaf (i) hiervan geregtig is, moet, waar die betrokke sertifikaat gedurende sy leertyd verwerf is, betaal word vanaf die datum van uitreiking daarvan.

(c) Indien 'n werkewer en 'n voornoemde meerderjarige vakleerling, voordat hulle 'n vakleerlingkontrak aangaan, ooreenkoms dat 'n hoër besoldiging betaal moet word as die wat in subklosule (a) voorgeskryf word, moet sodanige hoër besoldiging in die kontrak gemeld en aan die vakleerling betaal word.

4. *Tegniese studies.*—(a) 'n Vakleerling wat nie alredays ten opsigte van vakke wat betrekking het op die ambag waarvoor hy ingeskryf is, in besit van die sertifikaat of die alternatiewe kwalifikasie wat in subklosule (b) van hierdie klosule voorgeskryf word, is nie, moet tegniese klasse bywoon wat met sodanige ambag in

19. Painting.....	(27)
20. Pattermaking.....	(16)
21. Pipe Fitter.....	(21)
22. Plastering.....	(20)
23. Plumbing.....	(13)
24. Radiomechanic (Communication).....	(23)
25. Radiotrician.....	(22)
26. Refrigeration Mechanic.....	(31)
27. Rigging.....	(29)
28. Sailmaker.....	(24)
29. Scientific Instrument Maker and Repairer.....	(14)
30. Shipwright.....	(26)
31. Signwriting.....	(12)
32. Toolmaking.....	(6)
33. Welding.....	(28)

- (iii) prescrie the conditions set out hereunder as conditions of apprenticeship in respect of the trades specified in paragraph (ii) hereof in respect of Government Undertakings and the area for which the Government Apprenticeship Committee was established; and  
(iv) determine that the provisions of clauses 3, 4, 5, 6 and 7 of the conditions set out hereunder shall from the date of prescription thereof also apply to apprentices who are employed in any trade which is or was a designated trade in Government Undertakings and the area in respect of which the said Committee was established.

#### CONDITIONS.

1. *Qualifications for Commencing Apprenticeship.*—The minimum age and educational qualifications for commencing apprenticeship shall be 16 years and Standard VII or a statement of attainment issued by or on behalf of the school attended by the prospective apprentice reflecting a pass at Standard VII level in the subjects Afrikaans, English, Arithmetic or General Mathematics and at least one other subject.

2. *Period of Apprenticeship.*—The period of apprenticeship shall be five years in all designated trades.

3. *Remuneration.*—(a) An employer shall remunerate an apprentice monthly at not less than the rates specified hereunder:—

Per Annum.	R
First year.....	840
Second year.....	930
Third year.....	1,020
Fourth year.....	1,110
Fifth year.....	1,200

(b) (i) An employer shall supplement the remuneration prescribed in sub-clause (a) by an amount of not less than that indicated hereunder in respect of every apprentice who is in possession of or attains any of the educational qualifications scheduled in sub-clause (b) of clause 6, or who possesses or attains the National Diploma:—

Per Month.	R
Group I.....	3.00
Group II.....	4.00
Group III.....	6.50
Group IV.....	8.50
Group V.....	10.50
After attainment of the second year of the National Diploma.....	13.50
After attainment of the third year of the National Diploma.....	15.00
National Diploma.....	17.50

(ii) Any amount to which an apprentice is entitled in terms of paragraph (i) hereof shall, where the relevant certificate is attained during apprenticeship be payable as from the date of issue thereof.

(c) If an employer and a prospective major apprentice agree, before entering into a contract of apprenticeship, that remuneration shall be paid at rates higher than those prescribed in this clause, such higher rates of remuneration shall be recorded in the contract and shall be paid to the apprentice.

4. *Technical Studies.*—(a) An apprentice who is not already in possession of the certificate or the alternative qualification prescribed in sub-clause (b) of this clause, in subjects related to the trade in which he is indentured, shall attend technical classes, relevant to such trade and in accordance with the syllabuses prescribed by the Depart-

verband staan, en sodanige klasse moet gegee word ooreenkomsdig die leerplanne wat deur die Departement van Onderwys, Kuns en Wetenskap voorgeskryf word vir die Nasionale Tegniese Sertifikaat, Deel I en II, en moet bygewoon word by die naaste tegniese inrigting wat uitsluitlik of gedeeltelik uit openbare fondse in stand gehou word; met dien verstande dat waar daar geen fasilitete vir die bywoning van klasse in enige kursus of 'n gedeelte daarvan binne 12 myl vanaf die vakleerling se woning of binne 12 myl vanaf sy werkplek beskikbaar is nie waar daar van hom vereis word om klasse gedurende die gewone werkure by te woon, hy in plaas van sodanige bywoning 'n korrespondensiekursus mag volg wat deur die Witwatersrandse Tegniese Kollege vir genoemde kursus of 'n gedeelte daarvan gegee word.

(b) 'n Vakleerling moet tegniese klasse bywoon of korrespondensiekursusse volg totdat hy in die eksamen vir die Nasionale Tegniese Sertifikaat, Deel II, geslaag het; met dien verstande dat 'n vakleerling wat in die eksamen vir genoemde sertifikaat druipt maar wat wel slaag in die ambagsteorie wat betrekking het op die ambag waarvoor hy ingeboek is, nie verdere klasse hoeft te woon of verdere korrespondensiekursusse hoeft te volg nie, na gelang van die geval.

(c) Gedurende die eerste jaar van die gewone leertyd geskied die bywoning van tegniese klasse gedurende die gewone werkure op vyf dae van die week vir die tydsduur van enige aanenlopende studiekursus wat deur die betrokke tegniese inrigting aangebied word of waar 'n aanenlopende studiekursus nie beskikbaar is nie, so naby doenlik vir—

(i) of agt uur op een dag per week;

(ii) of vier uur op elkeen van twee dae per week,

maar in geen geval mag bywoning later as 7.15 nm. duur nie. Die verpligte bywoning van klasse gedurende die tweede en enige daaropvolgende jaar van die vakleerlingskap geskied buite die gewone werkure; met dien verstande dat, as 'n vakleerling 'n sertifikaat van die betrokke tegniese inrigting toon waarin gemeld word dat hy bevedigend punte vir ywer en vordering behaal het, hy nog die klasse gedurende werkure moet bywoon op die grondslag soos vir die eerste jaar voorgeskryf.

(d) 'n Vakleerling wat 'n korrespondensiekursus ooreenkomsdig die bepalings van subklousule (a) en (b) volg, moet, waar die Registrateur van Vakleerlinge 'n studieplek vir sodanige korrespondensiekursus bepaal het, by sodanige plek studeer, en die bepalings van subklousule (c) is *mutatis mutandis* op sodanige vakleerling van toepassing.

(e) Ondanks die bepalings van subklousule (b), word daar nie van 'n vakleerling wat, nadat hy twee jaar lank klasse bygewoon het of 'n korrespondensiekursus gevog het, nie 'n Nasionale Tegniese Sertifikaat, Deel I, met die teorie van die ambag waarvoor hy ingeboek is, as een van die vakke waarin daar geslaag is, behaal nie, vereis om, na gelang van die geval, verdere klasse by te woon of verdere korrespondensiekursusse te volg nie.

(f) Van 'n vakleerling wat, as gevolg daarvan dat hy militêre opleiding ingevolge die Verdedigingswet (No. 44 van 1957), soos gewysig, moet ondergaan, nie in staat is om tegniese klasse by te woon vir die tydsduur van enige aanenlopende studiekursus, of om tegniese klasse by te woon of 'n korrespondensiekursus te volg vir minstens die helfte van enige akademiese jaar nie, na gelang van die geval, word daar nie vereis om sy studies gedurende sodanige jaar voort te sit nie.

(g) Die bepalings van subklousule (c) en (d) is *mutatis mutandis* van toepassing op 'n vakleerling wat voldoen het aan die bepalings van subklousule (b) of wat reeds in besit is van 'n hoër tegniese kwalifikasie en vrywilliglik sy studies in verband met die ambag waarvoor hy ingeboek is, voortsit.

**5. Betaling van klas- of kursus- en eksamengelde.**—'n Werkewer moet die klas- of kursus- en eksamengelde voorskiet wat aan die tegniese inrigting betaalbaar is deur 'n vakleerling van wie daar vereis word of wat kragtens subklousule (g) van klousule 4 verkies om klasse by te woon of korrespondensiekursusse te volg of vir 'n eksamen in te skryf, en die werkewer moet sodanige gelde aan

ment of Education, Arts and Science for the National Technical Certificates, Parts I and II, and conducted by the nearest technical institution maintained wholly or partly from public funds; provided that where facilities for class attendance in any course or part thereof do not exist within 12 miles of the apprentice's residence or within 12 miles of his working place where attendance is required of him during ordinary working hours, he may in lieu of attendance take a correspondence course conducted by the Witwatersrand Technical College for the said course or part thereof.

(b) An apprentice shall attend technical classes or take correspondence course until he passes the examination for the National Technical Certificate, Part II; provided that an apprentice who fails in the examination for the said certificate but obtains a pass in the trade theory relevant to the trade in which he is indentured, shall not be required to attend further classes or take further correspondence courses, as the case may be.

(c) During the first year of the normal period of apprenticeship, attendance at technical classes shall take place during the ordinary working hours on five days per week for the duration of any continuous course of study conducted by the technical institution concerned, or where a continuous course of study is not available, as nearly as practicable either—

(i) for eight hours on one day per week; or

(ii) for four hours on each of two days per week;

but in neither case shall attendance extend beyond 7.15 p.m. Compulsory attendance of classes during the second or any subsequent year of apprenticeship shall be outside ordinary working hours; provided that if an apprentice produces a certificate from the technical institution concerned that he has obtained satisfactory marks for diligence and progress, he shall continue to attend classes during working hours on the basis prescribed for the first year.

(d) An apprentice taking a correspondence course in terms of sub-clauses (a) and (b) shall, where the Registrar of Apprenticeship has determined a place for the study of such a correspondence course, study at such place and the provisions of sub-clause (c) shall *mutatis mutandis* apply to such apprentice.

(e) Notwithstanding the provisions of sub-clause (b), an apprentice who after two years class attendance or after taking a correspondence course for two years, has not attained a National Technical Certificate, Part I, with one of the subjects passed being the theory of the trade in which he is indentured, shall not be required to attend any further classes or take any further correspondence courses, as the case may be.

(f) An apprentice who as a result of having to undergo military training in terms of the Defence Act (Act No. 44 of 1957), as amended, is unable to attend technical classes for the duration of any continuous course of study, or to attend technical classes or follow a correspondence course for at least half an academic year, as the case may be, shall not be required to pursue his studies during such year.

(g) The provisions of sub-clauses (c) and (d) shall *mutatis mutandis* apply to an apprentice who has complied with the provisions of sub-clause (b) or who is already in possession of a higher technical qualification and voluntarily pursues studies relevant to the trade in which he is indentured.

**5. Payment of Class or Course and Examination Fees.**—An employer shall advance the class or course and examination fees payable to the technical institution by an apprentice who is required, or who in terms of sub-clause (g) of clause 4 elects, to attend any classes or follow correspondence courses or enter for any examination, to

die betrokke tegniese inrigting betaal en mag die volle bedrag aldus voorgeskiet, van die loon van die vakleerling aftrek in gelyke maandelikse paaimeente gedurende die kalenderjaar of die res van die kalenderjaar ten opsigte waarvan die voorskot gemaak is, na gelang van die geval; met dien verstande dat—

- (i) indien die vakleerling 'n sertifikaat van die betrokke inrigting toon waarin verklaar word dat hy bevredigende punte vir ywer en vordering behaal het en, behoudens gemagtigde afwesigheid, beide in sy eie tyd en gedurende gewone werkure minstens 90 persent van die moontlike getal klasse bygewoon het of, in die geval van 'n korrespondensiekursus, minstens 90 persent van die volle getal vraestelle gedurende daardie kalenderjaar voltooi het, die bedrag wat ten opsigte van klas- of kursusgelde afgetrek is, deur die werkewer aan die vakleerling terugbetaal moet word;
- (ii) indien 'n vakleerling bewys lewer dat hy in 'n eksamenvak geslaag het, die eksamengeld wat ten opsigte van sodanige eksamenvak van sy besoldiging afgetrek is, deur die werkewer aan die vakleerling terugbetaal moet word.

6. *Ambagstoetse.*—(a) 'n Vakleerling moet so kort moontlik voor die einde van sy tydperk van vakleerlingskap 'n ambagstoets, wat deur die Departement van Arbeid en die Departement van Onderwys, Kuns en Wetenskap afgeneem word, aflu in die praktyk van die ambag waarvoor hy ingeboek is.

(b) 'n Vakleerling wat die onderwyskwalifikasies wat in onderstaande lys gemeld word of gelykwaardige kwalifikasies verwerf het, mag 'n kwalifiserende ambagstoets vrywillig ondergaan in 'n stadium wat nie vroeër mag wees nie as dié in die lys hieronder gemeld. 'n Verdere vrywillige toets of toetse mag onderneem word op 'n datum of datums wat deur die Departement van Arbeid en die Departement van Onderwys, Kuns en Wetenskap bepaal word.

Opvoedkundige kwalifikasies behaal voor of gedurende vakleerlingskap.	Toets mag vrywillig afgelê word.	Educational Qualifications attained prior to or during Apprenticeship.	Test may be taken voluntarily.
<b>GROEP I.</b> (i) St. IX- of gelykwaardige sertifikaat, met Wiskunde as een van die vakke waarin geslaag is (ii) Matrikulasiel- of gelykwaardige sertifikaat sonder Wiskunde as een van die vakke waarin geslaag is (iii) Nasionale Senior Sertifikaat (nie-tegnies) sonder Wiskunde as 'n vak waarin geslaag is	na 4½ jaar	<b>GROUP I.</b> (i) Std. IX or equivalent certificate with Mathematics as one subject passed (ii) Matric or equivalent certificate without Mathematics as one subject passed (iii) National Senior Certificate (non-technical) without Mathematics as one subject passed	after 4½ years.
<b>GROEP II.</b> (i) Matrikulasiel- of gelykwaardige sertifikaat, met Wiskunde as een van die vakke waarin geslaag is (ii) Nasionale Senior Sertifikaat (nie-tegnies) (Matrikulasiervrystelling), met Wiskunde as een van die vakke waarin geslaag is (iii) Ambagsteorie waarin daar op die peil van Nasionale Tegniese Sertifikaat, Deel II, geslaag is	na 4 jaar	<b>GROUP II.</b> (i) Matric or equivalent certificate with Mathematics as one subject passed (ii) National Senior Certificate (non-technical) (Matric exemption) with Mathematics as one subject passed (iii) Trade Theory pass at National Technical Certificate, Part II, level	after 4 years.
<b>GROEP III.</b> (i) Nasionale Ambagskoolsertifikaat..... (ii) Nasionale Junior Sertifikaat (Tegnies), met Werkwinkelpraktyk as een van die vakke waarin geslaag is (iii) Nasionale Tegniese Sertifikaat, Deel II..... (iv) Nasionale Intermediêre Sertifikaat (Tegnologie) sonder Werkwinkelpraktyk as een van die vakke waarin geslaag is	na 3½ jaar	<b>GROUP III.</b> (i) National Trade School Certificate (ii) National Junior Certificate (Technical) with Workshop Practice as one subject passed (iii) National Technical Certificate, Part II (iv) National Intermediate Certificate (Technology) without Workshop Practice as one subject passed	after 3½ years.
<b>GROEP IV.</b> (i) Nasionale Tegniese Sertifikaat, Deel III..... (ii) Nasionale Intermediêre Sertifikaat (Tegnologie), met Werkwinkelpraktyk as een van die vakke waarin geslaag is (iii) Nasionale Senior Sertifikaat (Tegnologie) sonder Werkwinkelpraktyk as een van die vakke waarin geslaag is	na 3 jaar.	<b>GROUP IV.</b> (i) National Technical Certificate, Part III (ii) National Intermediate Certificate (Technology) with Workshop Practice as one subject passed (iii) National Senior Certificate (Technology) without Workshop Practice as one subject passed	after 3 years.
<b>GROEP V.</b> Nasionale Senior Sertifikaat (Tegnologie), met Werkwinkelpraktyk as een van die vakke waarin geslaag is	na 2½ jaar	<b>GROUP V.</b> National Senior Certificate (Technology) with Workshop Practice as one subject passed	after 2½ years.

(c) 'n Bedrag van R6 is deur 'n vakleerling betaalbaar ten opsigte van die tweede of enige daaropvolgende poging om in 'n kwalifiserende ambagstoets te slaag wat op 'n vrywillige grondslag kragtens hierdie klousule onderneem word.

(d) 'n Vakleerling wat 'n ambagstoets ingevolge hierdie klousule ondergaan, moet ten opsigte van die tydperk wat bestee word in verband met een vrywillige ambagstoets en die verpligte ambagstoets, sy gewone besoldiging deur sy werkgever betaal word ten opsigte van sodanige tydperk van afwesigheid van werk.

(e) 'n Tydperk van afwesigheid van werk vir die doel om 'n ambagstoets ingevolge subklousule (a) en (b) van hierdie klousule te ondergaan, word nie geag verlore tyd te wees nie.

7. *Opleidingskursusse.* — 'n Werkgever moet 'n vakleerling die praktiese opleiding in die ambag waarvoor hy ingeboek is, gee volgens en, vir sover prakties moontlik, in die volgorde vervat in die Bylae van hierdie klousule. 'n Vakleerling moet, vir sover prakties moontlik, opgelei word onder die gereelde toesig van 'n ambagsman wat bevoeg is om hom op te lei in die ambag waarvoor hy ingeboek is.

#### BYLAE.

Simbole toegewys vir doeleindeste van vakleerling se logboek.	Praktiese opleiding.
	<b>AMBAG: BANKWERKER EN DRAAIER (14)</b>
	<b>EERSTE 18 MAANDE.</b>
1.	Veiligheidsmaatreëls wat in werkinkel nagekom moet word.
2. (a)	Hantering, regte gebruik en versorging en bankgebruik van gereedskap en uitrusting, insluitend:—
(b)	vylwerk,
(c)	saag-, skraap- en boorwerk;
(d)	ruimwerk;
(e)	skroefdraadsny;
(f)	lemmate, mikrometers (binne en buite), wysemeters en silindermeters;
(g)	planne lees en die toepassing daarvan; en
(h)	hantering en versorging van alle werkgereedskap.
3.	Versorging en gebruik van slypstene, bore en gepunte beitels met besondere aandag aan snyhoeke en vry ruimtes.
4.	Elementêre draaiwerk.
	<b>19DE MAAND TOT VIERDE JAAR.</b>
5.	Paswerk van onderdele.
6.	Vervaardiging van onderdele van plan af.
7.	Pas van spye en sleutels.
8.	Pas van laers en busse.
9. (a)	Algemene opleiding in:—
(b)	aanmekaarsit;
(c)	herstel; en
	onderhou van masjinerie en mekaniese toerusting.
10.	Gevorderde draaiwerk op senterdraibank met inbegrip van—
(a)	binne- en
(b)	buiteskroefdraad sny;
(c)	opstel van werkstukke;
(d)	vasstel van spesiale prosedure; en
(e)	vlakskyf werk.
11. (a)	Binne- en
(b)	buite draaiwerk.
12. (a)	Draai van busse; en
(b)	voerings, vir druk, pers en krimp passings.
	Algemene pypwerk, lâe- en hoë-drukypssisteme.
	<b>VYFDE JAAR.</b>
	Algemene hersiening en selfstandige werk.
	<b>AMBAG: DIESELWERKTUIGKUNDIGE (9).</b>
	<b>EERSTE 18 MAANDE.</b>
1.	Veiligheidsmaatreëls wat in werkinkel nagekom moet word.
2.	Sorg vir voertuie.

(c) A fee of R6 shall be payable by an apprentice in respect of the second or any subsequent attempt at a qualifying trade test undertaken on a voluntary basis in terms of this clause.

(d) An apprentice undergoing a trade test in terms of this clause shall in respect of the period spent in connection with one voluntary trade test and the compulsory trade test be paid his ordinary remuneration by his employer in respect of such period of absence from work.

(e) A period of absence from work for the purpose of undergoing a trade test in terms of sub-clauses (a) and (b) of this clause shall not be deemed to be lost time.

7. *Courses of Training.* — An employer shall provide an apprentice with the practical training in the trade in which he is indentured in accordance with and, as far as practicable, in the sequence listed in the schedule to this clause. An apprentice shall as far as practicable be trained under the regular supervision of an artisan qualified to train him in the trade in which he is indentured.

#### SCHEDULE.

Symbols allocated for purposes of apprentice's log book.	Practical training.
	<b>TRADE: ARMAMENT FITTER (32).</b>
	<b>FIRST 18 MONTHS.</b>
1.	Safety measures and first aid generally applicable to the trade.
2.	Use and care of hand tools.
3.	Basic instruction in fitting including filing, sawing, cutting, threading (internal and external), of various metals and drilling.
4.	Marking off.
5.	Machining on lathe and planing.
	<b>19TH MONTH TO FOURTH YEAR.</b>
6. (a)	Checking and repair of armament including; breech mechanisms; journals; and gearboxes and racks.
(b)	Repairing and servicing of:—
(c)	(a) depth-bomb droppers;
(d)	(b) mortar breech mechanisms; and
	(c) remote control valves.
7.	Repairing and servicing of armament casing on board and on test bench.
8.	Checking, repairing and servicing of armament including torpedo tubes, sights and depth-discharge gear.
9.	Repair and maintenance of armament hydraulic and pneumatic systems.
10.	Repair and maintenance of armament mechanical equipment, propulsion motors and gearboxes.
11.	Repair and maintenance of electronic remote control equipment <i>under supervision of special artisans</i> .
12.	Experience in general functioning of pneumatic and hydraulic torpedo equipment (not less than 3 months).
	<b>FIFTH YEAR.</b>
	Revision and independent work.
	<b>AUTOMOBILE ELECTRICIAN (17).</b>
	<b>FIRST 18 MONTHS.</b>
1.	Handling, correct use and care of tools and equipment.
2.	Safety precautions to be observed in workshop, and protection of upholstery and paint work.
3.	Mixing of electrolyte.
4.	Fitting of batteries, battery and starter cables.
5.	Soldering cable terminals, lugs and jointing.
6.	Removal and replacement of electrical components.
7. (a)	Battery maintenance:—
(b)	servicing, charging, testing, sealing;
(c)	diagnosis and internal examination; and fast chargers; effect of temperature.
8.	Uses of and precautions in connection with electrical measuring instruments.
9.	Overhauling and testing of starter motors and drives.
10.	Spark plugs: servicing and testing.
11.	Use of torque wrench.

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
3.	Veilige bestuurgewoontes.		19TH MONTH TO FOURTH YEAR.
4.	Uitken, hanteer, regte gebruik en versorging van gereedskap, uitrusting en alle tipes sleutels, insluitende:—		Servicing, testing and timing of magnetos. Overhauling, testing and polarising of generators.
(a)	die wringsleutel;	12.	Care and operation of equipment used in diagnosis
(b)	ponse en dryfysters;	13.	and testing of automotive electrical components.
(c)	bore, ruimers, stok en snymoere en snytappe;	14.	Battery and coil ignition systems; testing coil and
(d)	staalliniale, verdeelpassers, meetpassers en kraspenne;	15.	condensor and ballast resistance.
(e)	metaalsae;	16.	Distributor:—
(f)	lemmate, mikrometers (binne en buite), wysermetters en sitindermeters;	(a)	Checking shaft, bushes and cam for wear; and
(g)	hidrouliese domkrage, bokke rolmatte (kruipers) en hystoestelle;	(b)	installation of bushes; servicing and aligning
(h)	kompressors;	17.	contact points; checking dwell and synchronising points.
(i)	slypmasjene; en	18.	Setting ignition timing and adjusting for engine
(j)	sluittoestelle.	(a)	condition and altitude.
5.	Waar geriewe bestaan—in sleep, gewoon en met takelwa.	19.	Use of:—
6.	Smeer van en diens gee aan voertuie:—	(b)	timing lights; tachometer; and
(a)	(a) gebruik van verskillende grade en soorte olies en ghries;	(c)	vacuum gauge.
(b)	(b) metodese van aftap, uitspoel, diens gee aan en volmaak van enjinoliebakke, ratkaste en agter-asomhusele; en	20.	Rewiring of motor vehicle and reading wiring diagrams.
(c)	(c) diens gee aan battery: elektroliet opvul, battery-kas, aansluitpenne en kabels skoonmaak.	21.	Trouble shooting: checking for open circuits, short circuits, earths, resistance and voltage drop.
7.	Onderrig in generatrlaalstelsels.	(a)	Testing, servicing, repair and adjustment of:—
8.	Ondersoek en vasstelling van slytasie:—	(b)	cut-outs; regulators;
(a)	(a) in silinders;	(c)	centrifugal governors;
(b)	(b) aan krukasse;	(d)	solenooid switches;
(c)	(c) hoof- en grootkopastappe;	(e)	vacuum controls;
(d)	(d) nokas-tappe;	(f)	panel instruments;
(e)	(e) nokvolgers;	(g)	circuits, switches, lamps and horns;
(f)	(f) kleppe en leiers;	(h)	heater fans;
(g)	(g) suiers en suierpenne; en	(i)	relays;
(h)	(h) tuimelaars en asse.	(j)	rheostats;
9.	Ontkool; inslyp van kleppe; terugsit van silinderkop (met gebruik van wringsleutel en regte vasdraai-volgorde); en stel van klepsspeling.	(k)	traffic indicators;
10.	Padw tele: afhaal en terugsit van wiele, buite- en binnebande; rotasie van wiele.	(l)	windshield wiper motors;
11.	Afhaal en terugsit van—	(m)	electrical fuel pumps;
(a)	(a) koppelaars;	(n)	transmission electrical controls; and
(b)	(b) ratkaste;	(o)	alternators and regulators.
(c)	(c) dryfasse en kruiskoppelings;	22.	Focusing of headlights.
(d)	(d) vere en hangers;	23.	Tune-ups.
(e)	(e) vooras-samestelle;	24.	Lashing valves.
(f)	(f) agteras-samestelle;	25.	Checking cooling systems.
(g)	(g) skokbrekers en dempstelsels;	26.	Where facilities exist—maintenance and testing of cold starting devices.
(h)	(h) enjinsamestelle;	27.	Diagnosing of faults.
(i)	(i) enjintoebiore;		
(j)	(j) stuurkaste en skakelings;		
(k)	(k) veringeenhede;		
(l)	(l) remskoensamestelle; en		
(m)	(m) uitlaateenhede.		
12.	Enjineenhede: uitmekhaarhal en volledige inmekar- sit van enjin, insluitende opknapping en insit van suiers, ringe en suierpenne; hoof- en grootkoplaers;		
(a)	(a) klepleiers en kleppe—vernuwing van beddings en kleplakkie; klepvere vir spanning nagaan;		
(b)	(b) suierstange (waar geriewe bestaan—nagaan en in lyn bring); en		
(c)	(c) vliegwielkranse.		
13.	Tydreëling—		
(a)	(a) kleppe; en		
(b)	(b) ontsteking.		
14.	Koelstelsels—		
(a)	(a) nagaan vir lekke en verstoppings; verkoelers en enjinblokke skoonmaak; nuwe verkoeler-slangie aansit; termostate nagaan;	6.	Simple lathe work.
(b)	(b) waterpompe opknap; en	7.	Reboring cylinders and fitting sleeves.
(c)	(c) waaiervande vir toestand en spanning nagaan.	8.	Line and conrod boring.
(d)		9.	Valve seat and valve refacing; making and fitting or valve seat inserts.
15.	19DE MAAND TOT VIERDE JAAR.	10.	Fitting of valve guides and valves.
Opkn apping, bepaling van slytasie, weer inmekarsit en stel waart nodig.		11.	Assembling of sub-assemblies.
(a)	(a) koppelaars;	12.	Piston grinding.
(b)	(b) ratkaste;	13.	Piston pin fitting.
(c)	(c) dryfasse;	14.	Resizing and alignment of conrods.
(d)	(d) einddryf-samestelle;	15.	Grinding crankshafts and camshafts.
(e)	(e) agteras-samestelle;	16.	Where facilities exist:—
(f)	(f) vooras-samestelle;	(a)	operation of equipment for balancing engine components;
(g)	(g) kompressoreenheide; en	(b)	crack detection; and
(h)	(h) veringstelsels.	(c)	dynamometer testing.
16.	Remstelsels: Herstel en opknap van onderdele—		
(a)	(a) vakuumkrag; en		
(b)	(b) hidroulies.		

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book	Practical training.
17.	Toets, diagnoseer en herstel van foute met nadruk op stel en herstel van eenhede en onderdele.		
18.	In stand hou en herstel van brandstofpompstelsels.		
19.	Voorstelverbetering; wielbalans; bandfoute.		
20.	Raamrigting.		
21. Waar (a)	geriewe bestaan— in stand hou en opknapping van brandstofinspuitsels;	1.	BOILERMAKER (10).
(b)	toets, diagnoseer en herstel van foute in krag-aangedrewe eenhede en outomatische transmisie; en	2.	FIRST 18 MONTHS.
(c)	in stand hou en opknap van alternatorlaastelsels.	3.	First aid and safety precautions applicable to the trade.
		4.	Marking off.
		5.	Shearing.
		6.	Punching and other routine work.
			Simple lay-outs.
			Oxy-acetylene cutting.
			Use and application of universal and line oxy-acetylene cutting machines.
			19TH MONTH TO FOURTH YEAR.
	Hersiening.	7.	Dimensional drawings:—
	AMBAG: ELEKTRISIËN (11).	(a)	interpretation;
	EERSTE 18 MAANDE.	(b)	application to plating; and
1.	Veiligheidsbeginsels wat normaalweg aanvaar word as van toepassing te wees op die ambag.	(c)	application to angle work.
2.	Gebruik en versorging van handgereedskap.	8.	More advanced lay-outs and developments.
3.	Algemene basiese paswerk met inbegrip van— (a) vylwerk; (b) saagwerk; (c) skroefdraadsny met stok en snymoere en snytappe; en (d) beginsels van afmerk, boorwerk en soldeerwerk.	9.	Template lay-outs.
4.	Eenvoudige installasies— (a) dryfwerk (chasing); (b) bepyping en aansit van skakelaars, proppe en ligte; (c) bedrading en diagramme; (d) beveiliging met gronddraad; (e) enkel- en tweerigting skakelaars; en (f) klokkieëns en aanwysers (beide gelyk en wisselstroom). Samestellings en installering van verdelingsborde. Bedrading van skakelaars (three heat) en thermostaat en instandhouding en herstel van huishoudelike toestelle.	10.	Angle and iron smithing.
5.		11.	Electric welding of mild steel.
6.		12.	Boilers—repairing and new boilers.
			FIFTH YEAR.
	19DE MAAND TOT VIERDE JAAR.		Revision and independent work.
7.	Kontinuïteit, isolasie en gronddraadtoetsing.		BRICKLAYING (15).
8.	Gebruik van Megger.		FIRST 18 MONTHS.
9. (a)	Kragverdelingsborde;		
(b)	meetinstrumente;		
(c)	pasmaakwerk;		
(d)	skakelborde; en		
(e)	opbou van meters en kontroletoerusting.		
10. (a)	Instalering en onderhoud van gelyk- en wisselstroom-motors;	1.	First aid.
(b)	ontwikkellaars;	2.	Safety precautions applicable to the trade.
(c)	herleiers;	3.	Use, upkeep and storage of tools.
(d)	reostaat;	4.	Handling of and properties of materials including cement, limes, sands, aggregates, bricks.
(e)	skakelaars;	5.	Preparation of mortars.
(f)	aansitters;	6.	Use of different bonds.
(g)	druknop afstand- en nabijbeheerskakelaars;	7.	Joints of brickwork.
(h)	versorging en instandhouding van batterye.	8.	Simple scaffolding.
11.	Bedrading van bostaande van en na verdelingsbord.	9.	Reading of drawings and technical terms.
12.	Afmaak van kabels.		
13.	Grondkoppeling van skakelborde en materiaal wat gebruik word.		19TH MONTH TO FOURTH YEAR.
14.	Toets van installasies en motors.		
15.	Foute opspoor en herstel.	10.	Setting out from plans.
16.	Werk volgens diagramme en rekening.	11.	Mixing of mortars and concretes for different purposes such as:—
17.	Transformator en hoogspanningskakeling-installasie en onderhoud.	(a)	footings;
18.	Beginsels van ankerwikkeling.	(b)	foundations; and
19.	Oprigting van hoog en laagspanningslyne.	(c)	brickwork.
		12.	Building in of:—
		(a)	window frames; and
		(b)	door frames.
		13.	Laying of concrete floors.
		14.	Facebrick work.
		15.	Piers.
		16.	Reinforced concrete construction.
		17.	Coping and sill tiling.
		18.	Arch construction.
		19.	Fireplaces, furnaces and flues.
		20.	Methods of cleaning down facebrick work.
		21.	Brickwork, quantities and measurements of.
		22.	Plastering of walls, ceilings and skirtings.
		23.	Lay down, screed and finish granolithic floors.
		24.	Rough cast plastering and pebble dashing.
		25.	Wall tiling.
		26.	Underpinning, screeding and granolithic work.
		27.	Fixing precast concrete and reconstructed stone blocks.
		28.	Laying of:—
		(a)	paving;
		(b)	slabs;
		(c)	large-diameter pipes; and
		(d)	storm-water drains.
		29.	Building of manholes.
		30.	Random stone walling.
			FIFTH YEAR.
	Hersiening en onafhanklike werk.		Revision and independent work.
	AMBAG: ELEKTRO-MEGANIKUS (12).		CARPENTRY AND JOINERY (30).
	EERSTE 18 MAANDE.		FIRST 18 MONTHS.
1.	Veiligheidsmaatreëls en eerstehulp normaalweg op die ambag van toepassing.	1.	
2.	Basiese opleiding onder toesig van geskikte persone in die volgende:	2.	
(a)	Elektrisien (5 maande) (Slegs handgereedskap): (i) Gebruik van handgereedskap wat nie by elektriese werk gebruik word nie. (ii) Sakte- en harde soldeerwerk. (iii) Las van drade.		
			First aid.
			Safety precautions applicable to the trade.

Simbole toegewys vir doeleindes van valkleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
(iv)	Werk in verband met spoele, weerstande en samstellende onderdele van aansitters; relays en kontakte.	3.	Hand tools:— knowledge, care and use of; and sharpening and maintenance of.
(v)	Kennis en gebruik van geleiers en isoleerders in algemene gebruik.	4.	Knowledge of and use of various timbers, plywood and composition boards.
(b)	Paswerk (5 maande) ( <i>Slegs handgereedskap</i> ):	5.	Defects in timber.
(i)	Afmerkwerk.	6.	Measuring up timber by hand.
(ii)	Vylwerk en skraapwerk.	7.	Trueing timber by hand.
(iii)	Splinter- en saagwerk.	8.	All types of simple joints:— setting out; and making.
(iv)	Gebruik van meetinstrumente.	(a)	Glueing.
(v)	Skroefdraadsny—binne en buite.	(b)	Nailing.
(vi)	Basiese paswerk.	9.	Screwing.
(vii)	Kennis en gebruik van verskillende materiale wat algemeen gebruik word.	10.	Glass-papering flat surfaces and mouldings.
(c)	<i>Algemeen:</i>	11.	Making and fixing concrete shutterings.
(i)	Algemene ondervinding in instandhoudingswerkinkel met inbegrip van lees van tekenings (4 maande).	12.	Reading drawings.
(ii)	Algemene ondervinding in elektriese werkinkel (4 maande).	13.	Technical terms.
	19DE MAAND TOT VIERDE JAAR.	14.	
3. (a)	Instandhouding;	15.	
(b)	oprigting; en		19TH MONTH TO FOURTH YEAR.
(c)	installering van masjinerie (meganies) met inbegrip van hyskrane.		Machine tools:— knowledge, care and use of; and sharpening and maintenance of.
4. (a)	Instandhouding;	16.	Making:—
(b)	oprigting; en	(a)	window frames;
(c)	installering van bewegende en beheertoerusting (elektries) met inbegrip van hyskrane.	(b)	doors;
5.	Algemene elektriese werk.	(c)	sashes; and
6.	Intensiewe opleiding onder toesig in die—	(d)	cupboards.
(a)	Instandhouding van alle soorte beheertoerusting; en	(e)	Panelling and better class joinery.
(b)	leesen toepassing van beheertoerustingdiagramme* 70 per sent van die tyd moet, waar moontlik, aan elektriese werk gewy word.	18.	Working from setting-out rods.
	VYFDE JAAR.	19.	Working from drawings.
	Hersiening en onafhanklike werk.	20.	Setting out of work from drawings.
	AMBAG: ELEKTROTEGNIESE PASSER (10).	21.	Taking out quantities and preparing cutting lists.
	EERSTE 18 MAANDE.	22.	Assembling, fitting and fixing moulding.
1.	Veiligheidsmaatreëls en eerstehulp normaalweg op die ambag van toepassing.	23.	Sandpapering.
2.	Basiese paswerk met inbegrip van vylwerk, saagwerk, beitelwerk met besondere aandag aan koperen brons.	24.	Woodwork: Internal and external finishing of buildings.
3. (a)	Skroefdraadsny (binne en buite); afmerkwerk; en	25.	Laying wood floors.
(b)	alle tipes soldcerwerk.	26.	Fitting and fixings:—
(c)	Eenvoudige draaiwerk met verskillende metale.	(a)	door frames;
4.	Laers soos gebruik by elektriese motors en die uit-haal en terugsit daarvan.	(b)	window frames;
5.	Herstelwerk aan dryfmeganismes met inbegrip van bandwiele en direkte koppelings.	(c)	picture rails;
6.	Eenvoudige herstelwerk aan elektriese toerusting op skepe.	(d)	skirtings;
7.	Herstel en instandhouding van verwarmers.	(e)	architraves and mouldings;
8.		(f)	furniture; and
9.	19DE MAAND TOT VIERDE JAAR.	(g)	fittings and ironmongery.
10.	Oordoen, herstel en instandhouding van waaiermotor-aansitters, M type motors; met inbegrip van wikkeling van spoele (field, solenoid and coil).	28.	Hanging:—
11.	Uitmekaarhaal, herstel en montering van gelyk- en wisselstroommotors.	(a)	doors; and
12.	Gebruik en sorg van ampèremeters, voltmeters, ohmmeters en meggameters.	(b)	window sashes.
13. (a)	Herstel en toets van radar lugdrade en -kabels.	29.	Setting out and erecting:—
(b)	Installasie en instandhouding van skeepsbeligting; en	(a)	wood and iron structures; and
14.	instandhouding van skeepskabels.	(b)	all types of roofs.
15.	Installasie van ontwikkelkartoerusting by dieselaafdelings	30.	Fixing corrugated roofing materials and weather-boarding.
16.	Installasie van hoofkragstelsels. Bedrading van masjienkamer en ketelkamers op skepe.	31.	Building repairs; renovations and alterations.
17.	Installasie van klankversterkingstoerusting.	32.	Erecting all types of scaffolding.
18.	Installeren en bedrading van radiokamers, sonar toerusting en kapteinskwartiere op skepe.	33.	Measuring up for order of materials required.
19.	Installeren van rigters en toerusting by wapentuig.	34.	Heavy timber structures: Construction and main-tenance.
	Afmaak, versiening en instandhouding van MF., HF., VHF. en UHF. geleiers op toerusting en lug-drade.		FIFTH YEAR.
	Installeren van gyro kompas en alle verwante beheertoerusting.		Revision and independent work.
	VYFDE JAAR.		COPPERSMITH (11).
	Hersiening en onafhanklike werk.		FIRST 18 MONTHS.
		1.	Safety precautions and first aid normally applicable to the trade.
		2.	Identification, use and upkeep of hand tools.
		3.	Reading of drawings.
		4.	Instruction in the methods of:— soldering; brazing; and tinning.
		5.	Knowledge and use of materials.
			19 MONTHS TO FOURTH YEAR.
		6.	Developing and making of simple sheet-metal shapes.
		7.	Methods of flanging, pipe bending and manufacture of copper branch pieces.
		8.	Methods of oxy-acetylene and electric welding.
		9.	Methods of laying of pipework by use of wires and moulds.
		10.	Learning use of all machines in coppersmith's workshop.

Simbole  
toegewys  
vir  
doeleindes  
van  
vakleerling  
se logboek.

Praktiese opleiding.

- AMBAG: GEREEDSKAPVERVAARDIGING (32).**
- EERSTE 18 MAANDE.**
1. Onderrig in veiligheidsmaatreëls normaalweg op die ambag van toepassing.
  2. Name van gereedskapstukke.
  3. Gebruik en versorging van gereedskap.
  4. Gebruik en versorging van meetinstrumente.
  5. Bankwerk met besondere aandag aan—
    - (a) vlywerk;
    - (b) saagwerk;
    - (c) skraapwerk;
    - (d) boorwerk;
    - (e) ruimwerk;
    - (f) skroefdraadwerk; en
    - (g) kapsnywerk.
  6. Lees van planne en toepassing daarvan.
  7. Sterkte en kwaliteit van materiale.
  8. (a) Elementêre paswerk;
  - (b) Elementêre masjiwerk; en
  - (c) Elementêre afmerk wat deel uitmaak van die vervaardiging van gereedskap, setmate, skoorstukke en meters.
- 19DE MAAND TOT VIERDE JAAR.**
9. (a) Onderrig in werk op alle klasse masjiengereedskap en bankwerk, met inbegrip van die maak van—
    - (b) meters; en
    - (c) gevorderde afmerkwerk wat gewoonlik deel uitmaak van vereistes i.v.m. die gereedskapkamer.
  10. Hitte-behandeling van metaal en kennis van eieskappe van materiaal.
  11. Lees en toepassing van tekenings.
  12. Inspeksie van proses en van klaargemaakte artikel.
  13. Gebruik van spesiale masjiene wat nie voortdurend in die ambag gebruik word nie.
- VYFDE JAAR.**
- Hersiening en onafhanglike werk.
- AMBAG: GIETER (18).**
- EERSTE JAAR.**
1. Eerste hulp.
  2. Veiligheidsmaatreëls gedurende—
    - (a) vorm;
    - (b) giet;
    - (c) afskuim; en
    - (d) voer.
  3. Eenvoudige kerns—
    - (a) maak;
    - (b) luggate maak;
    - (c) swart maak; en
    - (d) droog.
  4. Versorging van kernbakke.
  5. Gebruik van gereedskap, toestelle en materiaal.
  6. Meng van kernsand.
  7. Vorming van kernwapening.
  8. Maak van eenvoudige "groen" of natsandgietvorms en plasing van kerns en afsluiting daarvan.
  9. Maak van eenvoudige gietysterkernysters.
- TWEEDE TOT VIERDE JAAR.**
10. Maak van meer gevorderde tipes vorms uit nat en droë sand, waarby vereis word—
    - (a) afsny van gietnate;
    - (b) vasklem;
    - (c) kern; en
    - (d) afsluit en giet.
  11. Meng van giet sand.
  12. Versorging van patronie.
  13. Ondervinding by smelteinhoude.
  14. Opleiding op gietmasjiene (hoogstens 4 maande).
  15. Gevorderde kernmaak- en gietwerk insluitende—
    - (a) skelet;
    - (b) afskyf; en
    - (c) leemvorms.
  16. Maak van gietysterkernysters.
  17. Onafhanglike gietwerk op algemene werkvlouer.
  18. Oksiasetileensnywerk soos van toepassing op die ambag.
  19. In gieterye met meer as een afdeling, d.w.s.—
    - (a) yster;
    - (b) staal; en
    - (c) gielkoper.
- (Vakleerling moet 6 maande in een of meer van die ander afdelings gedurende 3de leerjaar deurbring).

Symbols  
allocated for  
purposes of  
apprentice's  
log book.

Practical training.

11. Learning of methods of tinning and metalling of bearings.
  12. Manufacture of complicated sheet-metal shapes.
  13. Specialised training in the welding of ferrous and non-ferrous metals.
- FIFTH YEAR.**
- Revision and independent work.
- CONSTRUCTION PLANT MECHANIC (33).**
- FIRST 18 MONTHS.**
1. Safety precautions and first aid normally applicable to the trade.
  2. Care of vehicles and equipment.
  3. Use and care of all hand tools.
  4. Where facilities exist, the towing and recovery of vehicles.
  5. Lubrication and ordinary servicing of vehicles and equipment.
  6. Maintenance and repair of—
    - (a) generators; and if possible; alternators.
  7. Dismantling and assessment of wear on parts viz:—
    - (a) cylinders;
    - (b) crankshaft;
    - (c) bearings;
    - (d) mainshaft bearings;
    - (e) push rods;
    - (f) valves and guides; and
    - (g) pistons and gudgeon pins.
  8. Decarbonising; grinding of valves; replacing cylinder head with special attention to specifications and use of torque wrench and adjusting valve clearances.
  9. Removal and replacement of wheels including puncture repairing and replacement of tyres and tubes.
  10. Removal and replacement of—
    - (a) clutches;
    - (b) gearboxes;
    - (c) differentials;
    - (d) driving shafts;
    - (e) rear axle system;
    - (f) front axle system;
    - (g) engine parts;
    - (h) engine units;
    - (i) steering systems;
    - (j) braking systems;
    - (k) exhaust systems;
    - (l) hydraulic units; and
    - (m) "power take-off", systems.
  11. Engine units—petrol and diesel—dismantling and assembling thereof after complete repair of all parts including—
    - (a) pistons, rings and gudgeon pins;
    - (b) all bearings;
    - (c) valve guides and valves, valve springs and valve seats;
    - (d) connecting rods;
    - (e) ring gears; and
    - (f) timing gears.
  12. Sparking and opening sequence of valves and ignition system.
  13. Complete servicing, repair and maintenance of cooling systems including oil cooling.
  14. Engine tune-up without instruments.
- 19TH MONTH TO FOURTH YEAR.**
- Complete repairing of, assessment of wear, mounting and alterations to—
15.
    - (a) clutches;
    - (b) transmissions;
    - (c) propeller shafts and joints;
    - (d) rear axle units;
    - (e) front axle units;
    - (f) steering units;
    - (g) suspension units;
    - (h) brake systems;
    - (i) petrol pumps;
    - (j) carburetors;
    - (k) ignition systems;
    - (l) hydraulic systems; and
    - (m) wheel balancing systems.
  16. Check and adjust—
    - (a) toe-in;
    - (b) castor;
    - (c) camber;
    - (d) king pin inclination; and
    - (e) toe-out.

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
	VYFDE JAAR.  Hersiening en onafhanklike werk.  AMBAG: INDUSTRIËLE ELEKTRONIKA-WERKTUIGKUNDIGE (15).  EERSTE 18 MAANDE.		
1.	Veiligheidsmaatreëls en eerstehulp normaalweg op die ambag van toepassing.	17.	Elementary gas and electrical welding; brazing and soldering.
2.	Versorging en regte gebruik van gereedskap en toerusting.	18. (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m)	Testing, fault diagnosis and remedying of:— ignition faults; fuel faults; engine faults; clutch faults; gearbox faults; propeller shaft faults; differential faults; brake faults; steering faults; suspension faults; electrical faults; faults in engine components; and faults in power take-off systems.
3.	Boorwerk, afmerkwerk en aanmekaarpas van samestellende onderdele.	19.	Electrical equipment:— battery servicing and charging; generator (bushes, bearings, brushes and cleaning of commutator); starter motor (same as for generator).
4.	Soldeerwerk—bedrading en gedrukte stroombane met inbegrip van semigeleiergeleerde werk.	20.	Correct use of:— compression tester; vacuum gauge; ammeter and voltmeter; tachometer; fuel pump pressure gauge; timing light; exhaust gas analysers; condenser and coil testers; and spark plug cleaners and testers.
5.	Gebruik van eenvoudige toetsuitrusting (multimeters, R.F. seingenerators, ens.)	21.	Handling and use of lifting equipment.
6.	Versorging en instandhouding van W.S. en G.S. breukperdekrakmotors.		
7.	Weeraflieding soos van toepassing.		
8.	Lees van diagramme en interpretasie van diensinstruksies.		
9.	Herstel, verstelling en instandhouding van kontroles, skakelaars en relaise.		
10.	Kragvoorsiening (gereguleerde en ongereguleerde).		
	19DE MAAND TOT VIERDE JAAR.		FIFTH YEAR.
11.	Beskerming van toerusting teen oorspannings, spanningsdeining, abnormal temperature, vogtigheid, meganiese spannings, veral in draagbare toerusting. Foutnaspeuring in elektroniese toerusting en sistematiese metode moet beklemtoon word.		Revision and independent work.
12.	Kennis en gebruik van elektronika apparaat soos ossiloskoop, suins vierkantige en komplekse golfontwikkelaars, brûe en elektroniese voltmeters; en die gebruik van bogenoemde apparaat in stroombaananalise en foutnasporing.		DIESEL MECHANIC (2).
13. (a)	Notering van seine (data) d.m.v. magnetiese band.		FIRST 18 MONTHS.
(b)	Gebruik en toets van buise en semigeleertoestelle; en ontwikkeling van gedrukte stroombane en metodes van vervaardiging.		
14.	W.S. en G.S. versterkers; en meting van fisiese eienskappe bv. tyd, deformasie, diktedrukking, aantal, ens.		
15. (a)	Elementêre gebruik van en werk aan— tweeledige gekodeerde stelsels;	1.	Safety precautions to be observed in workshop.
(b)	geslotte stroombaan televisie;	2.	Care of vehicles.
(c)	berekenaars;	3.	Safe driving habits.
(d)	stralingskakelaars;	4.	Identification, handling, correct use and care of tools, equipment and all types of spanners, including:—
(e)	Geiger-Muller buise;	(a)	torque wrench;
(f)	stralingsbronne; en	(b)	punches and drifts;
(g)	magnetiese versterkers.	(c)	drills, reamers, stocks and dies and taps;
16.	Gebruik van magnetiese, kapasitiële en induktieve benaderingstoestelle.	(d)	steel rules, dividers, calipers and scribes;
17.	Impulsolators en Osilatorstroombane.	(e)	hacksaws;
18.	Elementêre werk aan en kennis van— relais- en skakelstroombane;	(f)	feeler gauges, micrometers (inside and outside),
19.	foto-elektriese toestelle;	(g)	dial gauges and cylinder gauges;
20. (a)	elektromagnetiële toestelle;	(h)	hydraulic jacks, trestles, creepers and hoists;
(b)	vaste staat skakeltoerusting met inbegrip van monostabiele en bistabiele toestelle;	(i)	compressors;
(c)	deurskakelaars;	(j)	grinding machines; and
(d)	tiratronbeheer van motore;	5.	locking devices.
(e)	wipskakeling ophefstroombane;	Where facilities exist—towing and recovery of vehicles.	
(f)	sinkron- en servostelsel;	6.	Lubrication and servicing of vehicles:—
(g)	R.F. verwarmingstoerusting;	(a)	uses of different grades and types of oils and greases;
(h)	direk-uitlesende tellers en meters;	(b)	methods of draining, flushing, servicing and filling engine sumps, gearboxes and rear axle housings; and
(i)	eenvoudige geheuestsels.	(c)	battery servicing; top-up electrolyte, clean battery case, terminal posts and cables.
	VYFDE JAAR.	7.	Instruction in generator charging systems.
	Hersiening en onafhanklike werk.	8.	Inspection and assessment of wear:—
	AMBAG: INGENIEURSGROFSMID (13).	(a)	in cylinders;
	EERSTE JAAR.	(b)	on crankshafts;
1.	Eerste hulp en veiligheidsmaatreëls soos van toepassing op die ambag.	(c)	main and big-end journals;
2.	Vure in oop herde maak en aan die gang hou.	(d)	camshaft journals;
3.	Steenkool, kooks en klinkers sorteer.	(e)	cam followers;
4.	Oonde reguleer.	(f)	valves and guides;
5.	Regte manier om te slaan.	(g)	pistons and gudgeon pins; and
6.	Gebruik van— voorhamers;	(h)	rockers and shafts.
(a)	saals; en	9.	Decarbonising; grinding-in valves; replacing cylinder head (using torque wrench and correct tightening sequence) and adjusting valve clearances.
(b)	vormysters.	10.	Road wheels: Removal and replacement of wheels, tyres and tubes. Rotation of wheels.
(c)		11.	Removal and replacement of the following:—
		(a)	clutches;
		(b)	gearboxes;
		(c)	propeller shafts and universal joints;
		(d)	springs and hangers;
		(e)	front axle assemblies;
		(f)	rear axle assemblies;

Simbole toegewys vir doelindes van vakleerling se logboek.	Praktiese opleiding .	Symbols allocated for purposes of apprentice's log book.	Practical training .
7. 8. 9. 10. 11. (a) (b) (c) (d)	Maak van eenvoudige smidsgereedskap en smeestukke. Onderskei tussen yster, staal en gietyster volgens korrel-en breuk. Kennis van ferrometale en hul eienskappe. Lees van tekenings.  TWEDE TOT VIERDE JAAR. Maak van klein smeestukke soos— pypklampe; U-boute; haakspykers (spoorspykers); en vloerpenne. Onderrig oor regte temperatuur vir smee- en vuursweiswerk, klein smeestukke en smeework oor die algemeen. Werkstukke temper op grond van kleurwaarneming. Oksiasetileensnywerk. Stoom- of kraghamers hanter en daar mee smee. Buig van— staalpipe; en stawe. Berekening van hoeveelhede materiaal wat nodig is. Alle aanbeeldwerk, lig en swaar. Wielbande aankrimp en soortgelyke werk met onderrig oor regte spelings. Maak en temper van gereedskap soos— rotsbeitels; beitels; en byle. Snelgereedskap en allooistaal smee en temper waar beheerde temperatuur nodig is.	(g) (h) (i) (j) (k) (l) (m)	shock absorbers and damper systems; engine assemblies; engine accessories; steering boxes and linkages; suspension units; brake shoe assemblies; and exhaust units. Engine units: Dismantling and complete assembling of engines, including overhauling and fitting of the following parts:— pistons, rings and gudgeon pins; main and big-end bearings; valve guides and valves—recondition seats and valve faces; check valve springs for tension; connecting rods (where facilities exist—check and align), and flywheel ring gears.
12. 13. 14. 15. 16. (a) (b)	Onderrig oor regte temperatuur vir smee- en vuursweiswerk, klein smeestukke en smeework oor die algemeen. Werkstukke temper op grond van kleurwaarneming. Oksiasetileensnywerk. Stoom- of kraghamers hanter en daar mee smee. Buig van— staalpipe; en stawe. Berekening van hoeveelhede materiaal wat nodig is. Alle aanbeeldwerk, lig en swaar. Wielbande aankrimp en soortgelyke werk met onderrig oor regte spelings. Maak en temper van gereedskap soos— rotsbeitels; beitels; en byle. Snelgereedskap en allooistaal smee en temper waar beheerde temperatuur nodig is.	(a) (b) (c) (d) (e)	Set timing:— valve; and ignition.
17. 18. 19. 20. (a) (b) (c)	Hersiening en onafhanglike werk.  AMBAG: KETELMAKER (4).  EERSTE 18 MAANDE.	(f) (g) (h)	Cooling systems:— check for leaks or blockages; cleaning radiators and engine blocks; fit new radiator hoses; check thermostats; overhaul water pumps; and check fan belts for condition and tension.
21. 22. 23.	VYPDE JAAR. Hersiening en onafhanglike werk.		19TH MONTH TO FOURTH YEAR.
1. 2. 3. 4. 5. 6.	Eerste hulp en veiligheidsmaatreëls soos van toepassing op die ambag. Afmerk. Afknip. Pons- en ander roetinewerk. Eenvoudige ontwerpe. Oksiasetileensnywerk. Gebruik en aanwending van universele en lyn-oxi-setileensnymasjiene.		Overhaul, assess for wear, reassemble and adjust where necessary:— clutches; gearboxes; propeller shafts; final drive assemblies; front axle assemblies; rear axle assemblies; compressor units; and suspension systems.
7. (a) (b) (c)	Maattekenings— uitleg; toepassing op plaatwerk; en toepassing op hoekwerk. Meer gevorderde ontwerpe en ontwikkeling. Patroonontwerpe. Hoek- en ystersmidswerk. Elektriese sveising van sagte staal. Stoomketels—herstelwerk en nuwe ketels.	(a) (b) (c)	Brake systems: repair and overhaul of component parts:— vacuum power; and hydraulic.
8. 9. 10. 11. 12.	19DE MAAND TOT VIERDE JAAR.		Testing, diagnosis and rectification of faults with emphasis on adjustment and repair of units and component parts.
7. (a) (b) (c)	VYFDE JAAR. Hersiening en onafhanglike werk.		Maintenance and repair of fuel pump system.
AMBAG: KOPERSMID (7).	EERSTE 18 MAANDE.		Front end correction; wheel balancing; tyre faults.
1. 2. 3. 4. (a) (b) (c)	Veiligheidsmaatreëls en eerstehulp normaalweg op die ambag van toepassing. Die uitkennings, gebruik en instandhouding van hand-gereedskap. Sketsje lees. Onderrig in die metodes van— soldeerwerk; swissoldeerwerk; en vertinning. Kennis van en die gebruik van materiale.	1. 2. 3. (a) (b) (c)	Frame alignment. Where facilities exist:— maintenance and overhaul of fuel injector system; testing, diagnosis and rectification of faults on power operated units and automatic transmission; and maintenance and overhaul of alternator charging systems.
5.	19DE MAAND TOT VIERDE JAAR.	4. 5. 6. 7. 8.	FIFTH YEAR.
6. 7. 8.	Eenvoudige plaatmetaalvorms ontwerp en maak. Metodes van omflensing, pypbuiging en die maak van kopertakstukke. Metodes van las met 'n oksi-setileenvlam en elektrisiteit.	9. 10. 11.	Revision and independent work.
			ELECTRICAL FITTER (5).
			FIRST 18 MONTHS.
			Safety measures and first aid generally applicable to the trade.
			Basic fitting including filing, sawing, chiseling, paying particular attention to copper and bronze.
			Threading (internal and external); marking off; and all types of soldering.
			Simple turning of various metals.
			Bearings used in electrical motors and removing and replacing bearings.
			Repairing driving mechanisms including belt pulleys and direct coupling.
			Simple repairs to electrical equipment on ships.
			Repair and maintenance of heaters.
			19TH MONTH TO FOURTH YEAR.
			Overhauling, repairing and maintenance of fan motor starters, M.-type motors, including winding of coils (field and solenoid).
			Dismantling, repairing and assembling direct and alternating current motors.
			Use and care of ampmeters, voltmeters, ohmmeters and megammeters.

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleidieg.	Symbols allocated for purposes of apprentice's log book.	Practical training.
9. 10. 11. 12. 13.	Metodes van pypaanleg deur die gebruik van drade en vorms leer. Gebruik van alle masjiene in die kopersmidswinkel aanleer. Metodes van verbinding en metallisering van laers leer. Ingewikkeld plaatmetaalvorms maak. Gespesialiseerde opleiding in die sveis van ferro- en nie-ferrometale.	12. 13. (a) 14. 15.	Repair and testing of radar aerials and cables. Installation and maintenance of ship's lighting; maintenance of ship's cables. Installation of generating equipment in diesel sections. Installation of mains systems. Wiring of ship's engine and boiler rooms. Installation of sound amplification systems. Installation and wiring of ship's radio rooms, sonar equipment and captain's quarters. Fitting of sighting fixtures and other equipment on armament. Marking off, servicing and maintenance of MF, HF, VHF and UHF conductors on equipment and overhead wires. Installation of gyro compass and all related control equipment.
	VYFDE JAAR. Hersiening en onafhanklike werk.	16. 17. 18. 19.	FIFTH YEAR. Revision and independent work.
	AMBAG: LETTERSKILDER (31).		ELECTRICIAN (3).
	EERSTE 18 MAANDE.		FIRST 18 MONTHS.
1. 2. 3. 4. (a) (b) (c) 5. 6.	Eerstehulp en veiligheidsmaatreëls op die ambag van toepassing. Gebruik en versorging van gereedskap en materiaal. Bereiding van oppervlaktes. Gebruik van kleurstowwe; gebruik van verdunners; en gebruik van droogmiddels. Hoe om verf aan te sit. Ou verf afhaal.	1. 2. 3. (a) (b) (c) (d) (e) (f) (g)	Safety measures and first aid generally applicable to the trade. Use and care of hand tools. General basic fitting including: filing; sawing; threading by means of stocks and dies and taps; and principles of marking off, drilling and soldering. Simple installation:— chasing; conduits and fixing of switches, plugs and lights; wiring and diagrams; protection by means of earthing; one- and two-way switches; and bells and indicators (both direct and alternating current). Construction and installation of distribution boards. Wiring of switches (three-heat) and thermostats and maintenance and repairs to domestic appliances.
7. 8. 9. 10. 11. 12. 13.	19DE MAAND TOT VIERDE JAAR. Verf meng en aansit. Primäre en sekondäre kleure. Alle soorte oppervlaktes verf en vernis. Gevorderde verfwerk. Vernis en kleurvermenging en algemene kennis van skilder. Alle soorte letters afmerk en vorm, met inbegrip van bladgoudwerk. Oprig van steiers en lere.	5. 6.	19TH MONTH TO END OF FOURTH YEAR.
	VYFDE JAAR. Hersiening en onafhanklike werk.		Continuity, insulation and testing of earths. Use of megger. Power distribution boards; measuring instruments; fitting; switch boards; and construction of meters and controlling equipment. Installation and maintenance of direct and alternating current motors; generators; convertors; rheostat; switches; starters; push-button remote and proximity control switches; and care and maintenance of batteries. Wiring of the above from and to distribution board. Making-off of cables. Earthing of switch boards and materials used. Testing of installations and motors. Tracing of faults and repairs. Working according to diagrams and calculations. Transformers and high-voltage switch gear, installation and maintenance. Principles of armature winding. Erection of high- and low-tension lines.
1. 2. 3. 4. 5. 6. (a) (b) 7. 8. 9. (a) (b) 10. 11. 12. 13. 14. 15.	EERSTE 18 MAANDE. Eerste hulp. Veiligheidsmaatreëls soos van toepassing op die ambag. Versorging en gebruik van gereedskap. Materiaal en masjiene. Plaatmetaalwerk—elementêr. Gebruik van— pyptoebore; en verskillende soorte wasters en pakings. Eenvoudige patrone uitsny. Type afsny en skroefdraad insny. Maak van— geute; en geuttype. Van planne af werk. Soldeer. Vertin. Klink. Gebruik van smeltmiddels. Tegniiese terme.	7. 8. 9. (a) (b) (c) (d) (e) (f) (g) (h)	FIFTH YEAR.
16. (a) (b) (c) (d) 17. (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) 18. 19. 20.	19DE MAAND TOT VIERDE JAAR. Type— afsny; skroefdraad insny; las; en lē. Aansit— afsluitkranie; kleppe; uitdylasse (uitsitvoë); koperpype; mors- en uitlaatpype; spelder (stanksluiters); lugpype; geute; geuttype; en oorslaglasse. Instalering van warmwaterstelsels. Beginsels van rioolstelselontwerp. Verskillende soorte rioolpype lē en las.	17. 18. 19. (a) (i) (ii)	Revision and independent work.
	AMBAG: LOODGIETERSWERK (23).		ELECTROMECHANICIAN (4).
	EERSTE 18 MAANDE.		FIRST 18 MONTHS.
	1. 2. 3. 4. 5. 6. (a) (b) 7. 8. 9. (a) (b) 10. 11. 12. 13. 14. 15.	1. 2. 3. (a) (b) (c) (d) (e) (f) (g) (h) 11. 12. 13. 14. 15. 16. 17. 18. 19.	Safety measures and first aid generally applicable to the trade. Basic training under the supervision of suitable persons in the following: <i>Electrician (5 months): (Hand tools only).</i> <i>Use of hand tools not used in electrical work.</i> <i>Soft soldering and brazing.</i>

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding	Symbols allocated for purposes of apprentice's log book.	Practical training.
21. (a) (b) (c)	Instalering van— gemak- en urinaalstelle; spoelbakke en spreders; en gietysterwerk (algemeen).	(iii) (iv)	Jointing of wires. Work in connection with coils, resistances and component parts of starters; relays and contactors.
22.	Lees van planne en spesifikasies.	(v)	Knowledge and use of conductors and in- sulators in general use.
23.	Praktiese toepassing van munisipale regulasies, waar van toepassing.	(b)	Fitting (5 months): (Hand tools only); Marking off; filing and scraping; splintering and sawing; use of measuring instruments; threading (internal and external); basic fitting; and knowledge and uses of various metals in general use.
24.	Gevorderde plaatmetaalwerk.	(i)	
25. (a) (b)	Meters— aansit; en lees.	(ii) (iii) (iv)	(ii) use of measuring instruments; threading (internal and external); basic fitting; and knowledge and uses of various metals in general use.
26.	Gebruik van oksiasetileenuitrusting.	(v)	
27.	Sweissoldeer.	(vi)	
28.	Swais.	(vii)	
29.	Loodpype las en lë.	(c)	General:—
30.	Verdikking van plaatlood.	(i)	General experience in maintenance workshop including reading of drawings (4 months).
31. (a) (b)	Putriole (septiese tenks)— instalering; en instand hou.	(ii)	General experience in electrical workshop (4 months).
32.	Bou van instygskagte.		
33.	Loodlaswerk.		
VYFDE JAAR.			
Hersiening en onafhanglike werk.			
<b>AMBAG: MAKER EN HERSTELLER VAN WETENSKAPLIKE INSTRUMENTE (29).</b>			
EERSTE 18 MAANDE.			
1.	Eerstehulp en veiligheidsmaatreëls normaalweg op die ambag van toepassing.	3. (a) (b) (c)	Maintenance; erection; and installation of machinery (mechanical) including cranes.
2.	Of onder toesig van 'n instrukteur of onder toesig van 'n ambagsman die— gebruik, hanteer en versorging van meetinstru- mente;	4. (a) (b) (c)	Maintenance; erection; and installation of moving and control equipment (elect- rical) including cranes.
(a)	gebruik en slyp van bore; vylwerk; en	5.	General electrical work.
(b)	sagte- en harde soldeerwerk.	6. (a) (b)	Intensive training under supervision in— maintenance of all kinds of control equipment and reading and applying of equipment diagrams. 70 Per cent of training time to be devoted to electrical work where possible.
3.	Gebruik van die bandsaag.		
4.	Ligte draaiwerk.		
5. (a)	Kennis van die sterkte- en gebruik van verskillende soorte materiale.		
(b)	Lees van tekenings.		
19DE MAAND TOT VIERDE JAAR.			
6.	Gebruik en slyp van gereedskap.	1.	
7.	Draaibankwerk.	2.	
8.	Vormgee.	3.	
9. (a)	Freeswerk; en	4.	
(b)	grafeerwerk.	5.	
10.	Handsoldeer.	6. (a) (b) (c)	Regulating furnaces. Correct way of striking. Use of:— sledge hammers; swages; and shaping irons.
11.	Rat- en wormwiele maak.	7.	Making simple blacksmith's tools and forgings.
12.	Versilwering.	8.	Distinguishing between iron, steel and cast iron according to grain and cleavage or rupture.
13.	Lakvernis en verfsputwerk.	9.	Knowledge of ferrous metals and their properties.
14.	Vervaardiging en herstelwerk van en aan— elektriese;— optiese; en alle ander wetenskaplike instrumente.	10.	Reading of drawings.
(a)			
(b)			
(c)			
15.	Reguit en ronde graadindelings.		
16.	Tekenings van sketse af maak.		
VYFDE JAAR.			
Hersiening en onafhanglike werk.			
<b>AMBAG: MESSELWERK (5).</b>			
EERSTE 18 MAANDE.			
1.	Eerste hulp.	11. (a) (b) (c) (d)	Making of small forgings such as:— pipe brackets; U-bolts; dog spikes; and floor spikes.
2.	Veiligheidsmaatreëls soos van toepassing op die ambag.	12.	Instruction in correct temperatures for forging and forge welding, small forgings and forging in general.
3.	Gebruik, instandhouding en bêre van gereedskap.	13.	Tempering on basis of colour observation.
4.	Hantering en eienskappe van materiaal, met inbegrip van kalk, sand, aggregate; stene en voglaag.	14.	Oxy-acetylene cutting.
5.	Bereiding van dagha.	15.	Handling and forging with steam or power hammers.
6.	Gebruik van verskillende verbande.	16. (a) (b)	Bending:— steel pipes; and bars.
7.	Voegstrykwerk.	17.	Calculation of quantities of materials needed.
8.	Eenvoudige steierwerk.	18.	All types of light and heavy work on anvil.
9.	Lees van tekenings en tegniese terme.	19.	Shrinking on tyres and similar work, with instruction regarding correct tolerances.
19DE MAAND TOT VIERDE JAAR.			
10.	Van planne af werk.	20. (a) (b) (c)	Making and tempering tools such as:— stone-breaker's chisels; chisels; and axe heads.
11.	Dagha en beton vir verskillende doeleindes meng, soos vir— voetlae; fondamente; en	21.	Forging high-speed tools and alloy steels and tem- pering where controlled temperatures are necessary.
(a)	steenwerk.	22.	Annealing and normalising.
(b)		23.	Drop-forging.

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
12. (a) (b)	Inbou van— vensterkosyne; en deurkosyne.		FIFTH YEAR. Revision and independent work.
13.	Lê van betonvloere.		FITTING AND TURNING (L).
14.	Siersteenwerk.		FIRST 18 MONTHS.
15.	Pylers.		Safety precautions to be observed in workshop.
16.	Gewapende betonbouwerk.		Handling, correct use, care and use of tools and equipment, including:
17.	Deklae en drumpelteëlwerk.		filing;
18.	Gewelf bouwerk.		sawing, scraping and drilling;
19.	Vuurherde, oonde en rookgange.		reaming;
20.	Metodes om siersteenwerk skoon te maak.		screwing;
21.	Steenwerk; hoeveelhede en metings.		blade measurements, micrometers, dial meters and cylinder meters;
22.	Pleister van mure, plafonne en vloerlyste.		reading of drawings and application thereof; and handling and care of all tools.
23.	Granolitiese vloere lê, aflatik en afwerk.		Care and use of grindstones, drills and tipped tools with special emphasis on cutting angles and clearances.
24.	Rofkaspleister- en grintstrooiwerk.		Elementary turning.
25.	Muurbeteëling.		19TH MONTH TO FOURTH YEAR.
26.	Onderstutting, aflatikking en granolitiese werk.		Fitting of parts.
27.	Voorafgegiet beton- en fineerklipblokke vassit.		Manufacturing of parts from drawings.
28. (a) (b) (c) (d)	Lê van— platteie; platblokke; grootdiametertyppe; en waterolie.		Fitting of keys and keyways.
29.	Bou van mangate.		Fitting of bearings and bushes.
30.	Lappiesklipmure bou.		General training in:
			assembly; repair; and maintenance of machinery and mechanical equipment.
			Advanced turning on centre lathe, including:
			internal; external screwing; setting up of work; determination of special procedures; and face plate work.
			Internal; and external turning.
			Turning of bushes; and linings for push, press and shrinking fits.
			General pipework. Low- and high-pressure pipe systems.
			FIFTH YEAR.
			Revision and independent work.
			INDUSTRIAL ELECTRONICS MECHANICIAN (8).
			FIRST 18 MONTHS.
			Safety measures and first aid generally applicable to the trade.
			Use and care of tools and equipment.
			Drilling, marking off and assembling of component parts.
			Soldering wiring and printed circuits including semiconductors.
			Use of simple testing equipment (multimeters, RF signalling generators etc.).
			Care and maintenance of AC and DC fractional HP motors.
			Lightning conductors as applicable.
			Reading of diagrams and interpreting of service instructions.
			Repair, adjustment and maintenance of controls, switches and relays.
			Power supply (regulated and unregulated).
			19TH MONTH TO FOURTH YEAR.
			Protection of plant and equipment against overvoltage, voltage fluctuations, abnormal temperatures, dampness, mechanical stresses, especially in portable equipment.
			Tracing of faults in electronic apparatus such as oscilloscopes, oblique square and complex wave generators, bridges and electronic voltmeters; and the use of the above-named apparatus in circuit analyses and tracing of faults.
			Tracing of faults in electronic equipment and systematic methods should be stressed.
			Recording signalled data by means of magnetic tape.
			VYFDE JAAR.
			Hersiening en onafhanklike werk.

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
	<b>AMBAG: MOTORELEKTRISIËN (2).</b> <b>EERSTE 18 MAANDE.</b> 1. Hantering, regte gebruik en versorging van gereedschap en uitrusting. 2. Veiligheidsmaatreëls wat in werkinkel nagekom moet word en beveiliging van stoffeer- en verfwerk. 3. Meng van elektroliet. 4. Insiit van batterye, battery- en aansitterkabels. 5. Soldeer van kabelaansluiters, -ore en -lasse. 6. Verwydering en terugsit van elektriese onderdele. 7. In stand hou van batterye— (a) diens gee, laai, toets, verseël; (b) diagnose en inwendige ondersoek; en (c) vinnige laaiers; uitwerking van temperatuur. 8. Gebruik van en voorsorg i.v.m. elektriese meetinstrumente. 9. Opknap en toets van aansitmotors en -aandrywings. 10. Voinkproppe: diens gee en toets. 11. Gebruik van wringsleutel.  19DE MAAND TOT VIERDE JAAR. 12. Diens gee aan, toets, en tydrexeling van magneto's. 13. Opknap, toets en polariseer van generators. 14. Versorging en bediening van uitrusting wat in diagnose en toets van motor-elektriese onderdele gebruik word. 15. Battery- en spoelontstekingsstelsels; toets van spoelen kondensator- en ballasweerstand. 16. Verdeler— (a) as, busse en nok vir slytasie nagaan; en (b) installering van busse; diens gee aan en in lyn bring van kontakpunte; nagaan van rus en punte sinchroniseer. 17. Ontstekingsystyd stel en vir enjintoestand en hoogte verstel. 18. Gebruik van— (a) tydrexellige; (b) tagometer; en (c) vakuummeter. 19. Herbedraging van motorvoertuig en lees van bedragsdiagramme. 20. Foute soek; nagaan vir oop kringe, kortsluitings, aarding, weerstand en spanningsval. 21. Toets, diens gee, herstel- en verstelwerk aan— (a) uitskakelaars; (b) reëlaars; (c) sentrifugale reëlaars; (d) solenoiedskakelaars; (e) vakuumkontroles; (f) paneelinstrumente; (g) kringe, skakelaars, lampe en toeters; (h) verhitterwaaiers; (i) relës; (j) reostate; (k) rigtingwyzers; (l) ruitveermotors; (m) elektriese brandstofpompe; (n) elektriese transmissiekontroles; en (o) alternators en reëlaars. 22. Instel van koplampe. 23. Instelling. 24. Klepspeling gee. 25. Nagaan van koelstelsels. 26. Waar geriewe bestaan—onderhou en toets van koudaansittoestelle. 27. Diagnoseer van foute.  <b>VYFDE JAAR.</b> Hersiening. <b>AMBAG: MOTORMASJIEN EN PASWERK (3).</b> <b>EERSTE 18 MAANDE.</b> 1. Hantering, regte gebruik en versorging van gereedschap, uitrusting en motorenjinonderdele. 2. Veiligheidsmaatreëls wat in die werkinkel nagekom moet word. 3. Enjins uitmekbaarhaal. 4. Eenvoudige werk met eendoelmasjiene. 5. Hermetalliseer van laers en suierstange.  19DE MAAND TOT EINDE VAN VIERDE JAAR. 6. Eenvoudige draaibankwerk. Herboring van silinders en insit van hulse.	15. (a) (b) 16. (a) (b) 17. (a) (b) (c) (d) (e) (f) (g) 18. 19. 20. (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k)	Use and testing of tubes and semi-conducting apparatus; and development of printed circuits and methods of manufacture. AC and DC amplifiers; and measuring physical properties e.g. time, distortion, thickness, pressure, number, etc. Elementary use and operating of: Double-coded systems; Closed circuit television; Computers; Radiation switches; Geiger-Muller tubes; sources of radiation; and magnetic amplifiers. Use of magnetic, capacitive and inductive approximation apparatus. Impulse oscillators and oscillator circuits. Elementary work on and knowledge of: relay and switching circuits; photo-electrical apparatus; electromagnetic apparatus; solid state switching devices including monostable and bistable apparatus; switches; thyatron control of motors; flip-flop counter circuits; synchronous and servo-systems; RF heating equipment; direct reading counters and meters; and simple memory devices.
			<b>FIFTH YEAR.</b> Revision and independent work. <b>MARINE FITTER (25).</b> Safety measures and first aid generally applicable to the trade. Use and care of hand tools and bench work including splintering, filing, sawing, scraping, drilling, reaming and threading including marking off. Reading and application of plans. Use and care of measuring instruments. Grinding of bits and tipped chisels including cutting angles and clearances. Simple turning. Simple component part making and fitting keys and keyways.
		1. 2. 3. 4. 5. 6. 7.	<b>19TH MONTH TO FOURTH YEAR.</b> Preparing bearings after remetalling. Servicing boiler mountings, valves and piping. Advanced turning including— (a) internal and external threading; and conical turning. Practical work with workshop machinery generally used in fitting. Instruction in repair and maintenance of main and auxiliary motors (turbine and reciprocal). Lubricating systems and maintenance of equipment and filtering systems. Methods of determining top and bottom dead centre on piston motors and determining of piston tolerances. Adjustment of all types of valves especially steam inlet and outlet valves. Dismantling and servicing steam and water packing glands. Servicing of steering and telemotor systems. Fitting of fire fighting and hull pumps and fresh water pumps and flooding equipment. Servicing insulating valves in air conditioning systems. Servicing remote control equipment in connection with valves, driving shafts and side gear systems. Servicing underwater valves and equipment. Removing and replacing sonar hull systems; servicing stabilisers; servicing hydraulic systems; and servicing rudder and steering gear. Complete servicing of winches and capstans. Complete repair of all internal combustion engines used (diesel, 2- and 4-stroke). Assembling and servicing gear boxes. Servicing turbine cooling fans. Knowledge of rusting of metals and rust preventive measures.

**Simbole  
toegewys  
vir  
doeleindes  
van  
vakleerling  
se logboek.**

**Praktiese opleiding.**

8. Lyn- en suerstangboorwerk.
  9. Hervlakkning van klepbeddings en kleppe maak en insit van klepinlaatbeddings.
  10. Insit van klepleiers en kleppe.
  11. Inmekaarsit van subsamestelle.
  12. Suiers slyp.
  13. Suierpenne insit.
  14. Herbepaling van grootte en in lyn bring van suier-stange.
  15. Slyp van krukasse en nokasse.
  16. (a) Waar geriewe bestaan— bediening van uitrusting om enjinonderdele te balanseer;  
(b) barste opspoer; en  
(c) dinamometers toets.
- VYFDE JAAR.**
- Hersiening.
- AMBAG: MOTORWERKTUIGKUNDIGE (17).**
1. EERSTE 18 MAANDE.
  2. Veiligheidsmaatreëls wat in die werkinkel nagekom moet word.
  3. Versorging van voertuie.
  4. Veilige bestuursgewoontes.
  5. Uitkenning, hanteer, regte gebruik en versorging van gereedskap, uitrusting en alle soorte sleutels insluitende—  
(a) die wringsleutel;  
(b) ponse en dryfysters;  
(c) bore, ruimers, stok en snymoere en snytappe;  
(d) staalliniale, verdeelpassers, meetpassers en kras-penne;  
(e) metaalsae;  
(f) lemmate, mikrometers (binne en buite), wyser-meters en silinderimeters;  
(g) hidrouliese domkrakte, bokke, rolmatte (kruipers) en histoestelle;  
(h) kompressors;  
(i) slypmasjiene; en  
(j) sluittoestelle.
  6. Waar geriewe bestaan—insleep, gewoon en met takel-wa.
  7. Smeer van en diens gee aan voertuie—  
(a) gebruik van verskillende grade en soorte olie en ghries;  
(b) metodies van aftap, uitspoel, diens gee aan en volmaak van enjinoliebakke, ratkaste en agter-asomhulseis; en  
(c) diens gee aan batterye: elektroliet opvul, battery-kas, aansluitpenne en kabels skoonmaak.
  8. Onderrig in—  
(a) generatormaaistelsels; en  
(b) waar geriewe bestaan—alternatormaastelsels.
  9. Inspeksie en bepaling van slytasie—  
(a) in silinders;  
(b) aan krukas;  
(c) hoof- en grootkopastappe;  
(d) nokas-astappe;  
(e) nokvolgers;  
(f) kleppe en leiers;  
(g) suiers en suierpenne; en  
(h) tuimelaars en asse.
  10. Ontkool; inslyp van kleppe; terugsit van silinderkop (met gebruik van wringsleutel en regte vasdraai-volgorde) en stel van klepspel.
  11. Padwiele: afhaal en terugsit van wiele, buite- en binne-bandie; rotasie van wiele.
  12. Afhaal en terugsit van—  
(a) koppelaars;  
(b) ratkaste;  
(c) dryfasse en kruiskoppelings;  
(d) vere en hangers;  
(e) vooras-samestelle;  
(f) agteras-samestelle;  
(g) skokbrekers;  
(h) enjinsamestelle;  
(i) enjintoebohore;  
(j) stuurkaste en skakelings;  
(k) veringeenhede;  
(l) remskoensamestelle; en  
(m) uitlaateenhede.
  13. Enjineenhede-uitmekaarhaal en volledig inmekaarsit van enjin, insluitende opknapping en insit van—  
(a) suiers, ringe en suierpenne;  
(b) hoof- en grootkoplapers;  
(c) klepleiers en klep-vernuwing van beddings en kleplakkie; klepvere vir spanning nagaan;

**Symbols  
allocated for  
purposes of  
apprentice's  
log book.**

**Practical training.**

- FIFTH YEAR.**
- Revision and independent work.
- MOTOR MECHANIC (19).**
- FIRST 18 MONTHS.**
1. Safety precautions to be observed in the workshop.
  2. Care of vehicles.
  3. Safe driving habits.
  4. Identification, handling, correct use and care of tools, equipment and all types of spanners, including— torque wrench; punches and drifts; drills, reamers, stocks and dies and taps; steel rules, dividers, calipers and scribers; hacksaws; feeler gauges, micrometers (inside and outside), dial gauges and cylinder gauges; hydraulic jacks, trestles, creepers and hoists; compressors; grinding machines; and locking devices.
  5. Where facilities exist—towing and recovery of vehicles.
  6. Lubrication and servicing of vehicles:—  
(a) uses of different grades and types of oils and greases;  
(b) methods of draining, flushing, servicing and filling engine sumps, gearboxes and rear axle housings; and  
(c) battery servicing: top-up electrolyte; clean battery case, terminal posts and cables.
  7. Instruction in—  
(a) generator charging systems; and  
(b) where facilities exist—alternator charging systems.
  8. Inspection and assessment of wear—  
(a) in cylinders;  
(b) on crankshaft;  
(c) main and big-end journals;  
(d) camshaft journals;  
(e) cam followers;  
(f) valves and guides;  
(g) pistons and gudgeon pins; and  
(h) rockers and shafts.
  9. Decarbonising; grinding-in valves; replacing cylinder head (using torque wrench and correct tightening sequence) and adjusting valve clearances.
  10. Road wheels: removal and replacement of wheels, tyres and tubes; rotation of wheels.
  11. Removal and replacement of the following:—  
(a) Clutches;  
(b) gearboxes;  
(c) propeller shafts and universal joints;  
(d) springs and hangers;  
(e) front axle assemblies;  
(f) rear axle assemblies;  
(g) shock absorbers;  
(h) engine assemblies;  
(i) engine accessories;  
(j) steering boxes and linkages;  
(k) suspension units;  
(l) brake shoe assemblies; and  
(m) exhaust units.
  12. Engine units—Dismantling and complete assembling of engine, including overhauling and fitting of the following parts:—  
(a) Pistons, rings and gudgeon pins;  
(b) main and big-end bearings;  
(c) valve guides and valves—recondition seats and valve faces; check valve springs for tension;  
(d) connecting rods (where facilities exist—check and align); and  
(e) flywheel ring gears.
  13. Set timing:—  
(a) Valve; and  
(b) ignition.
  14. Cooling systems:—  
(a) Check for leaks or blockages; cleaning radiators and engine blocks;  
(b) check thermostats;  
(c) overhaul water pumps; and  
(d) check fan belts for condition and tension.
  15. Carry out minor tune-ups.

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**Praktiese opleiding.**

- (d) sierstange (waar geriewe bestaan—nagaan en in lyn bring); en vliegwielaanpassing.  
 13. (e) Tydreeëling— kleppe; en ontsteking.  
 14. (a) Koelstelsels— nagaan vir lekke en/of verstoppings; verkoelers en enjinblokke skoonmaak;  
 (b) termostate nagaan;  
 (c) waterpompe opknap; en  
 (d) waaiervanje vir toestand en spanning nagaan.  
 15. Kleiner instellings uitvoer.  
 VAN 19DE MAAND TOT VIERDE JAAR.  
 16. Opknapping, bepaling van slytasie; weer inmekaaarsit en stel waar nodig— kopelaars; ratkasse; dryfasse; einddryf-samestelle; vooras-samestelle; agteras-samestelle; stuurbaste en skakelings; hangeenhede; remstelsels; brandstofpompe; vergassers; en ontstekingsstelsels.  
 17. Nagaan en stel van— toesporing; nasporing; wielvlug; krikspilhelling; en uitsporing.  
 18. Uitvoer van— grootinstellings; en wielbalansering.  
 19. Toets, foutdiagnosering en verbetering van— ontstekingsfout; brandstoffout; enjinfout; koppelaarfout; ratkasfout; dryfasfout; ewenaarfout; einddryffout; remfout; stuurfout; veringfout; en elektriese fout.  
 20. Elektriese uitrusting:—  
 (a) Battery: Toets met hidrometer en hoëtempo ontlaaitoets; battery laai;  
 (b) generator: Borsels, laers en busse terugsit; kommutator skoonmaak; en aansitmotor; borsels, busse, bendix- of koppel-laaraandrywer terugsit; kommutator skoonmaak.  
 21. Regte gebruik van— vakuummeter; druktoetser; ammeter en voltmeter; tagometer en rusmeter (waar geriewe bestaan); brandstofpompdrukmetier; tydreeëllige; uitlaatgasontleders (waar geriewe bestaan); kondensator- en spoeltoetser (waar geriewe bestaan); vonkpropskoonmakers en -toetser; en Ossiloskoop en ander toerusting (waar geriewe bestaan).  
 VYFDE JAAR.  
 Hersiening en onafhanklike werk.  
 AMBAG: PLEISTERWERK (22).  
 EERSTE 18 MAANDE.  
 1. Veiligheidsmaatreëls en eerstehulp soos op die ambag van toepassing.  
 2. Gebruik en sorg van gereedskap.  
 3. Hanteer en eienskappe van materiaal soos cement, kalk en sand.  
 4. Daga aanmaak.  
 5. Eenvoudige steierwerk.  
 6. Tekening lees en tegniese terme.

**Symbols  
allocated for  
purposes of  
apprentice's  
log book.**

**Practical training.**

- 19TH MONTH TO FOURTH YEAR.
16. Overhaul, assess for wear, reassemble and adjust where necessary—  
 (a) clutches;  
 (b) gear boxes;  
 (c) propeller shafts;  
 (d) final drive assemblies;  
 (e) front axle assemblies;  
 (f) rear axle assemblies;  
 (g) steering boxes and linkages;  
 (h) suspension units;  
 (i) brake systems;  
 (j) fuel pumps;  
 (k) carburetors; and  
 (l) ignition systems.  
 17. Check and adjust—  
 (a) toe-in;  
 (b) castor;  
 (c) camber;  
 (d) king pin inclination; and  
 (e) toe-out.  
 18. Carry out—  
 (a) major tune-ups; and  
 (b) wheel balancing.  
 19. Testing, fault diagnosis and remedying of—  
 (a) ignition faults;  
 (b) fuel faults;  
 (c) engine faults;  
 (d) clutch faults;  
 (e) gearbox faults;  
 (f) propeller shaft faults;  
 (g) differential faults;  
 (h) final drive faults;  
 (i) brake faults;  
 (j) steering faults;  
 (k) suspension faults; and  
 (l) electrical faults.  
 20. Electrical equipment:  
 (a) Battery: testing with hydrometer and high-rate discharge tester; battery charging;  
 (b) generator: replace brushes, bearings and bushes; clean commutator; and  
 (c) starter motor: brushes, bushes, bendix or clutch drive; clean commutator.  
 21. Correct use of—  
 (a) vacuum gauge;  
 (b) compression tester;  
 (c) ammeter and voltmeter;  
 (d) tachometer and dwell meter (where facilities exist);  
 (e) fuel pump pressure gauge;  
 (f) timing lights;  
 (g) exhaust gas analysers (where facilities exist);  
 (h) condenser and coil testers (where facilities exist);  
 (i) spark plug cleaners and testers; and  
 (j) oscilloscope and other equipment (where facilities exists).  
 FIFTH YEAR.  
 Revision and independent work.  
 MOULDER (7).  
 FIRST YEAR.  
 1. First aid.  
 2. Safety precautions during—  
 (a) moulding;  
 (b) casting;  
 (c) skimming; and  
 (d) feeding operations.  
 3. Simple cores:—  
 (a) Making of;  
 (b) venting of;  
 (c) blackening of; and  
 (d) drying of.  
 4. Care of core boxes.  
 5. Use of tools, appliances and materials.  
 6. Mixing of core sands.  
 7. Shaping of core reinforcements.  
 8. Making of simple green sand moulds and coring and closing thereof.  
 9. Making of simple cast iron core irons.  
 SECOND TO FOURTH YEAR.  
 10. Making more advanced types of moulds in green and dry sands requiring—  
 (a) cutting of joints;  
 (b) hooking;

Simbole toegewys vir doleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book	Practical training.
7. (a) (b)	19DE MAAND TOT VIERDE JAAR. Leer om alle soorte pleisterwerk— wat vir <i>mure</i> en <i>plafonne</i> nodig is aan te sit, met inbegrip van <i>kroonlyste</i> en <i>spatlyste</i> , en dit goed af te werk. Beton-, granolitiese of komposisievloere gelykmaak en afwerk. Spesiale komppleister, akoestiek en mosaïek. Gevorderde pleisterwerk. Materiaal vir die beste resultate meng. Profiële, giertvorms en giertvorms maak vir en die giert van kunsklippwerk. Draagbare slyp- en ander masjiene bedien. Planne, spesifikasies en hoeveelhede vir pleisterwerk.	(c) (d)	coring; and closing and casting thereof. Mixing of moulding sands. Care of patterns. Experience on melting units. Training on moulding machines (for a period not exceeding four months). Advanced core making and moulding including— skeleton; strickle; and loam moulding. Making of cast iron core irons. Independent moulding on general jobbing floor. Oxy-acetylene cutting applicable to the trade. In foundries with more than one department i.e.— iron; steel; and brass. (Apprentices must spend six months in one or more of the other departments during third year of apprenticeship).
8.	VYFDE JAAR. Hersiening en onafhanklike werk.	11. 12. 13. 14. 15. (a) (b) (c)	FIFTH YEAR.
9. 10. 11. 12. 13. 14.	AMBAG: PYPPASSER (21).  EERSTE 18 MAANDE. Veiligheidsmaatreëls en eerstehulp normaalweg op die ambag van toepassing. Gebruik en versorging van handgereedskap en masjiene op die ambag van toepassing. Uitken en uitsoek van regte materiaal en herstel van pype vir verskillende dienste in skepe en skeepsverf. Uitken en gebruik van materiaal, plaatmetaal en legering wat gebruik word by die vervaardiging van artikel op die ambag van toepassing. Sorg by die hantering van gesmelte materiaal soos lood, witmetaal en hars en witmetaling van laers. Sorg by die hantering van oksiasetileenuitrusting. Uitken en gebruik van sage soldeersels en smelt- middels vir soldoor en vertin van metale. Huishoudelike pype meet en sny en gebruik van pyp- toebhore en verbindings. Gebruik van verskillende soorte kraanwassers en pakkingsmateriaal vir warm- en kouwaterstelsels. Tegniese terme wat in die ambag gebruik word.	16. 17. 18. 19. (a) (b) (c)	Revision and independent work.
1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	19DE MAAND TOT VIERDE JAAR. Vervaardiging van staal-metaalplate vir lê van pyp- lyne in skepe. Uitsoek van regte vulmiddel vir gebruik by buig van verskillende materiale. Buig van koper-, kopernikkkelgegalvaniseerde en swart- metaalpype deur die toepassing van die volgende metodes:—  (a) Masjiene—Mandrel en ander. (b) Masjiene—Hidrouliese buigpers met straalvor- mers vir pype met groot deursnee. (c) Warm- en koue buiging. (d) Buig op blok. 14. Doel van installering van die verskillende afsluitkrane, kleppe, toebehore, en uitsilvermoe. 15. Installering van skeepsurinaalstelle, wasbakke, bad- dens, vuilwattertregters, vuilwaterventilasie- en sluk- pype, spoelkleppe wat die plek neem van skeeps- spoelbakke, storthokkiemuurmeublement en warm- en kouwatermengklep. 16. Gebruik van oksiasetileenuitrusting vir hardsoldeer, silwersoldeer, sveis,loodlaswerk en hertin. 17. Gebruik van argon-boogsweising vir aluminium en vlekrystaal en elektriese sveistoerusting. 18. Elektriese- en oliewarmwaterstelsels installeer. 19. Vervaardiging, herstel en installering van pype vir die volgende stelsels:—  (a) Stoom—hoë- en laedruk. (b) Verkoelend—hoë- en laedruk. (c) Hidroulies—hoëdruk. (d) Saamgeperste lug—hoë- en laedruk. (e) Soutwater—brandhoofpype en masjienvarkoel- lingsdienste. (f) Varswater—huishoudelik en masjienvarkoelings- dienste. (g) Smeerolie—hoof- en hulpmasjiën van skepe. (h) Sanitasie op skepe—vuil en spoel. (i) Kim—suig en afvoer. (j) Dieselmasisjen—uitlaatpype en waterverkoelde omhulde uitlaatpype.	1. 2. 3. 4. 5. 6. 7. (a) (b) (c) 8. 9. 10. 11. 12. 13. 14.	PAINTING (27). FIRST 18 MONTHS.
20.	Vervaardiging van verskillende hoekige takpype van koper, kopernikkkel, yster en staal. Koppeling van een pyp aan 'n ander en afwerkning deur sveis- soldeer, silwersoldeer en elektriese sveising. Planne en spesifikasies lees.	15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30.	First aid. Safety precautions applicable to the trade. Staining. Lining. Metal surfaces: preparing of and painting. Varnishing. Advanced colour mixing. Decorative painting. Plastic paintwork. Knowledge of working quantities and working measurements. Frosting, wood graining. Paperhanging. Elementary signwriting—where facilities exist. Stencilling. Bridge painting. Uses of—  (a) long ladders; (b) duck ladders; (c) boatswain's chairs; and (d) suspended scaffolding.
21.	VYFDE JAAR. Hersiening en onafhanklike werk.	(a) (b)	FIFTH YEAR.
		1. 2. 3. 4. 5.	Revision and independent work.
			PATTERNMAKING (16).
			FIRST 18 MONTHS.
			First aid. Safety precautions applicable to the trade. Tools:— Use of; and sharpening and upkeep of. Use of various types of timber, plywoods and hard- woods. Timber defects.

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
	<b>AMBAG: RADIOTRISIËN (25).</b>		
	<b>EERSTE 18 MAANDE.</b>		
1.	Veiligheidsmaatreëls en eerstehulp normaalweg van toepassing op die ambag.	6.	All types of joints and their uses.
2.	Name en gebruik van handgereedskap.	7.	Glueing.
3.	Versorging en instandhouding van werkinkeltoerusting.	8.	Nailing.
4.	Bymekaargroepeer van onderdele.	9.	Screwing.
5.	Beginsels van afwerkwerk.	10.	Dowelling.
6.	Boor- en soldéerwerk.	11.	Varnishing of— patterns; and coreboxes.
7.	Gebruik van eenvoudige volt—OHM Meters.	12.	Storing patterns.
8.	Oprigting en instandhouding van luggrade en weerligafleiers.	13.	Dressing metal patterns.
9.	Lees van stroomkringdiagramme en interpretasie van diensiinstrukses.	14.	Runner sticks:— Cutting of; and making of.
10.	Herstel en instandhouding van wysterplaat dryfttoerusting.	15.	Sandpapering.
11.	Kennis van stroomkringbane gebruik by frekwensie beheer.	16.	Applying wax and leather fillets.
12.	Lees van planne en spesifikasies.	17.	Reading drawings.
	<b>19DE MAAND TOT VIERDE JAAR.</b>	18.	Use of woodworking machines (after first six months).
13.	Opspoor van foute.	19.	General woodworking and joinery.
14.	Praktiese toepassing van wisselstroom- en gelykstroomteorie.	20.	<b>19TH MONTH TO FOURTH YEAR.</b>
15.	Gebruik en instandhouding van verhinderingsboë (impedance bridges), buistoetsapparaat, elektroniese voltmeters, ossiloskoop en instrumente vir die herstel van radio-ontvangstelle.	(a)	Calculating allowances for— contraction; warping;
16.	Herstel en instandhouding van motors in ontvangstelle en seinstelle.	(b)	machining; and prevention of cracking in casting.
17.	Herstel en instandhouding van audioklankversterkers.	(c)	Making working drawings from samples and blueprints.
18.	Lynrigting van ontvangs en oorsendstelle en die gebruik van ossiloskoop by die lynrigting van stroomkringdiagramme.	(d)	Instruction in the use of— strickles;
19.	Kennis van toerusting gebruik in en by ontvangstelle, outomatiese frekwensie beheertoerusting en steuringsdempers.	(e)	platemoulding; skeleton work;
20.	Algehele versiening van ontvangs en oorsendstelle en instandhouding daarvan.	(f)	pattern construction;
21.	Kennis en werk volgens planne en diagramme.	(g)	coreboxes; chills; and boxing-up.
22.	Kennis van installering en instandhouding van frekwensieversterkers.	23.	Training in moulding (for at least three months).
	<b>VYFDE JAAR.</b>	24.	Repair and maintenance of patterns and coreboxes.
	Hersiening en onafhanglike werk.	25.	Estimating.
	<b>AMBAG: RADIOWERKTUIGKUNDIGE (KOMMUNIKASIE) (24).</b>		<b>FIFTH YEAR.</b>
	<b>EERSTE 18 MAANDE.</b>		Revision and independent work.
1.	Veiligheidsmaatreëls en eerstehulp normaalweg op die ambag van toepassing.	1.	<b>PIPE FITTER (21).</b>
2.	Radio-installasies, instandhouding van radioskermleidings, skakelaars en relais.	2.	<b>FIRST 18 MONTHS.</b>
3.	Gebruik van eenvoudige toetsuitrusting en die gebruik van sekondêre celle.	3.	Safety measures and first aid normally applicable to the trade.
4.	Benaming van elektriese- en radio-onderdele, gebruik en ligging in die toerusting en installasies.	4.	Use and care of hand tools and machines applicable to the trade.
5.	Instandhouding van eenvoudige ontvangoestelle en senders sowel as mikrofone, koptелефone, wipklemme en proppe.	5.	Identifying and choosing of correct materials for the repair of pipes for the different services in ships and shipyard.
6.	Lees en vertolkning van radiokringtekening.	6.	Identifying and use of materials, sheet metal and alloys used in the manufacture of articles applicable to the trade.
(a)	Gebruik en begrip van handboeke oor kommunikasietoerusting.	7.	Precautions in handling melted materials such as lead, white metal and resin and white-metalling bearings.
(b)	Pas van verbindingsklemme aan lugdraadtoevoerkabels en veelarge buigsame kabels.	8.	Precautions in handling oxy-acetylene equipment.
7.		Identifying and use of soft solders and fluxes for soldering and tinning of metals.	
8.	19DE MAAND TOT VIERDE JAAR.	9.	Measuring and cutting pipes for domestic use and use of pipe fittings and connections.
(a)	Nagaan en toets van kragvoorsieningstoerusting:— Radio-generatoreenheid; en afstandbeheereenhede.	10.	Uses of different types of tap washers and packing material for hot and cold water systems.
(b)		11.	Technical terms used in the trade.
9.	Nagaan en toets van bedrading, verbinding, ens. in M.F., H.F. en B.H.F. toerusting.	12.	<b>19TH MONTH TO FOURTH YEAR.</b>
10.	Gebruik van toetsuitrusting:— seingerators. Leweringmeters. Universelmeters. Ossiloskope. Meetbrûe. en ander dergelike toerusting.	13.	Fabricating steel metal plating for pipe laying in ships.
(a)		14.	Selecting of right type of filling for use in bending various materials.
(b)		15.	Bending of copper, copper nickel (cupronickel galvanised and black metal) pipes by application of the following methods:— machine, mandrel and other methods; machine, hydraulic bending press with radial shapers for large cross-section pipes; hot and cold bending; and bending on block.
(c)			Purpose of fitting various types of stop cocks, valves, fittings and expanding capacity.
(d)			Installation of ship's urinal sets, wash basins, baths, slop hoppers, ventilation of waste and sludge pipes, flushing valves installed in the place of ship's flushing cisterns, shower cubicle wall fittings and hot and cold water mixing valves.
(e)			
(f)			
11.	Uitvoer van diensbaarheidstoets en nagaan van alle M.F. en H.F. toerusting wat vir radiokommunikasie gebruik word.		

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
12.	Toets en opknap van alle H.F. en B.H.F. ontvangstelle en uitsenders en stelselmatige toetsmetodes moet beklemtoon word.	16.	Use of oxy-acetylene equipment for hard soldering, silver soldering, welding, lead jointing and retinning.
13.	Gebruik en begrip van handboeke en toetsspesifikasie-data.	17.	Use of argon arc welding for aluminium and stainless steel and electrical welding equipment.
14.	Toets en opknapping van alle verwante toerusting, insluitende antenas, U.H.F. toerusting (waar van toepassing).	18.	Installation of electrical and oil heating water systems.
15.	Elementêre werk op toevoerstelsels (lyn, koaksiaal en golfgleier).	19.	0 Fabricating, repair and fitting of pipes for the following systems:—
16.	Onderrig met betrekking tot die uithaal, opknapping, toets herinstallering en toetsbediening van alle radio-onderdele.	(a)	Steam—high and low pressure;
17.	Nagaan van toets- en metingtoerusting in algemene gebruik en akkuraatheidspelke (akkuraatheid van frekwensiometring en instelling moet beklemtoon word).	(b)	refrigeration—high and low pressure;
18.	Basiese radarwerk (vermoë om van handleiding gebruik te maak om eenvoudige basiese toets te voer).	(c)	hydraulic—high pressure;
		(d)	compressed air—high and low pressure;
		(e)	salt water—fire fighting mains and refrigeration systems;
		(f)	fresh water—domestic and engine cooling systems;
		(g)	lubricating oils—ship's propelling and auxiliary machinery;
		(h)	ship's sanitary systems—soil and flushing;
		(i)	bilge—suction and discharge; and
		(j)	diesel engines—exhaust pipes and water cooled cased exhausts.
	VYFDE JAAR.	20.	Fabricating of various angle branch pipes of copper, copper nickel, iron and steel. Coupling of pipes and finishing by means of brazing, silver soldering and electrical welding.
	Hersiening en onafhanglike werk.		
	AMBAG: SEILMAKER (28).		
	EERSTE 18 MAANDE.		
1.	Veiligheidsmaatreëls en eerstehulp normaalweg op die ambag van toepassing.		
2.	Handnaaiwerk.		
3.	Die gebruik van tou en palmstukke vir— omsoomwerk; lassie; soorte nate; takelgaring; en die algemene gebruik van tou, knope, gate en kouse.		
4.	Klein seiloortreksels en matte sny en ontwerp.		
	19DE MAAND TOT VIERDE JAAR.		
5.	Swaar naaimasjiene gebruik.		
6.	Skeepstele, ens., maak en afwerk, splits en seis.		
7.	Seiloortreksels en tente vir skepe meet en ontwerp.		
8.	Bootselle en skeepstele, geweerontreksels, windasoorstreksels, vlotskerms, ens.— afmeet; teken; en uitsprei.		
9.	Kennis opdoen i.v.m. seinvlae en beskermd kleding.		
	VYEDE JAAR.		
	Hersiening en onafhanglike werk.		
	AMBAG: SKEEPSPASSER (16).		
	EERSTE 18 MAANDE.		
1.	Veiligheidsmaatreëls en eerstehulp wat normaalweg op die ambag van toepassing is.		
2.	Gebruik en versorging van handgereedskap en bankwerk met inbegrip van splinterwerk, vlywerk, saagwerk, skraapwerk, boorwerk, ruimwerk en skroefdraadsny asook afmerkwerk.		
3.	Planne lees en toepassing daarvan.		
4.	Gebruik en versorging van meetinstrumente.		
5.	Slyp van bore en gepunte beitels met inbegrip van snyhoekse en vryruimtes.		
6.	Eenvoudige draaiwerk.		
7.	Eenvoudige onderdele vervaardig en spye- en sleutelspaswerk.		
	19DE MAAND TOT VIERDE JAAR.		
8.	Voorbereiding van laers na hermetaalproses.		
9.	Versiening van ketelmonterings, kleppe en bepyping.		
10.	Gevorderde draaiwerk met inbegrip van— binne en buite skroefdraad; en koniese draaiwerk.		
(a)	Praktiese werk op werkinkelmasjinerie normaalweg in gebruik vir paswerk.		
(b)	Opleiding in die herstel en instandhouding van die Hoof en Bystandsmotore (Turbine en bewegende (reciprocal) motore).		
11.	Smeeroliestelsels en toerusting en filtrerstelsels in stand hou.		
12.	Metodes om presiese bo- en onderdraaipunte op suier motore te bepaal en bepaling van suier-rekruiertes.		
13.			
14.			

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
15.	Verstelling van alle tipes kleppe met aandag aan binne-of uitlaat van stoom.	16.	19TH MONTH TO FOURTH YEAR. Pipes:— Cutting; threading; jointing; and laying.
16.	Uitmekaarhaal en versiening van stoom en water pakkingbuste (glands).	(a)	17. Fitting and fixing— stop cocks; valves; expansion joints; copper piping; waste and outlet pipes; traps; vent pipes; guttering; down pipes; and flashings.
17.	Versiening van stuurmotore en telemotorstelsels.	(b)	18. Installation of hot water systems.
18.	Paswerk aan vuur- en romppompe en varswaterpompe en oorstromingstoerusting.	(c)	19. Setting out drainage systems.
19.	Isoleerkleppe in lugverversingstelsel versien.	(d)	20. Laying and jointing various drain pipes.
20.	Afstandbeheertoerusting versien t.o.v. kleppe, aandrywingsaste en sytandratsels.	(e)	21. Installation of— Closet and urinal suites; cisterns and traps; and cast iron pipe work (general).
21.	Onderwaterkleppe en toerusting versien.	(f)	22. Reading of plans and specifications.
22. (a)	Afhaal en terugpas van sonarrompstelsels;	(g)	23. Practical application of municipal regulations, where applicable.
(b)	Kanteldempers en stabiliseerders versien;	(h)	24. Advanced sheetmetal work.
(c)	hidrouliese stelsels versien;	(i)	Meters:— Fitting; and reading.
(d)	roer- en stuuroerusting versien;	(j)	25. Use of oxy-acetylene equipment.
23.	Algehele versiening van windaste en kaapstanders.	(a)	26. Brazing.
24.	Algehele herstelwerk aan alle binnebrandmotore in gebruik (diesel, 2- en 4-slag).	(b)	27. Welding.
25.	Ratkaste pas en versien.	(c)	28. Jointing and laying of lead piping.
26.	Turbine verkoelerblasers versien.	(d)	29. Bossing up of sheet lead.
27.	Kennis opdoen van roes van metale en teenmaatreëls.	(e)	30. Septic tanks:— Installation; and maintenance.
28.	Versiening van brandstofspuitstelsels.	(f)	31. Building of manholes.
		(g)	32. Lead burning.
		(h)	
		(i)	
		(j)	
			FIFTH YEAR.
			Revision and independent work.
			RADIOMECHANIC (COMMUNICATION) (23).
			FIRST 18 MONTHS.
1.	Gebruik en versorging van alle houtbewerkings-handgereedskap, beide hout- en staalwerk.	1.	Safety measures and first aid generally applicable to the trade.
2.	Kennis en gebruik van houtsoorte by gebruik in bootbouwerk.	2.	Radio installation, maintenance of radio grid conductors, switches and relays.
3.	Afhaal, gereedmaak vir herstel en vasmaak van kielplanke, kalfplanke, teenwerkplanke -en houtwerk.	3.	Use of simple testing equipment and use of secondary batteries.
4.	Opleiding in afmerk en vormgee van maste, sperboom, spanribbe en takelblokke.	4.	Naming of electrical and radio component parts, use and position in the equipment and installation.
5.	Eenvoudige sjabloonwerk.	5.	Maintenance of simple receivers and transmitters as well as microphones, headpieces, monostable trigger terminals and plugs.
		6. (a)	Reading and interpreting of radio circuit drawings; use and understanding of manuals on communication equipment.
		(b)	7. Fitting connecting lugs to aerial supply cable and multicore flexible cables.
			19TH MONTH TO FOURTH YEAR.
			Checking and testing of power supply equipment:— Radio generating units; and remote control units.
1.	Eerste hulp.	8.	Checking of wiring, connections, etc., in MF, HF and VHF equipment.
2.	Veiligheidsmaatreëls soos van toepassing op die ambag.	(a)	10. Use of testing equipment:— Signal generators; supply meters; universal meters; oscilloscopes; measuring bridges; and other similar equipment.
3.	Versorging en gebruik van materiaal en gereedskap.	(b)	11. Conducting serviceability tests and checking of all MF and HF equipment used for radio communication.
4.	Bereiding van oppervalkte, en roeswering.	9.	12. Testing and overhauling all HF and VHF receivers and transmitters, and systematic testing should be stressed.
5.	Onderlae aansit.		
6.	Gebruik van kleurmiddels, verdunners en droërs.		
7.	Metodes om die volgende aan te sit:— (a) Verf (roeswêrende verf); (b) witkalk; en (c) distemper.		
8.	Ou verf afhaal.		
9.	Eenvoudige steierwerk.		
10.	Elementêre meng en versnyding van verf.		
11.	Sindelheid.		
12.	Tegniese Terme.		
13.	Gebruik en versorging van verfspuituitrusting.		
14.	Ruite insit.		

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
	<b>19DE MAAND TOT VIERDE JAAR.</b>		
15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30.	Meng, bereiding en aansit van verf. Verskillende metodes om vlekke uit te haal. Beits. Strepe verf. Metaalvlakke—bereiding daarvan en verf. Vernis. Gevorderde kleurmenging. Sierverfwerk. Plastiese verfwerk. Kennis van werkhoeveelhede en werkafmetings. Matmaak, houtgreinering. Muurplakwerk. Elementêre letterskilderwerk—waar fasilitete bestaan. Stensilwerk. Brûe verf. Gebruik van—  (a) lang lere; (b) trapplanke; (c) hangstoel; en (d) hangsteiers.	14. 15. 16. 17. 18.	Testing and overhauling all related equipment, including aerials, UHF equipment (where applicable). Elementary work on supply systems (line, coaxial and wave conductors). Instruction in connection with removing, overhaul, testing, replacing and testing of all radio component parts. Checking of testing and measuring equipment in general use and accuracy limits (accuracy of frequency measurement and alignment should be stressed). Basic radar (ability to use manuals in order to carry out basic tests).
	<b>VYFDE JAAR.</b>		
	Hersiening en onafhanklike werk.		
	<b>AMBAG: SWEISWERK (33).</b>		
	<b>EERSTE 18 MAANDE.</b>		
1. 2. 3. 4. 5. 6. 7. 8. 9.	Eerste hulp en veiligheidsmaatreëls soos van toepassing op die ambag. Winkelroetine. Gebruik en vorsoring van handgasvlamsnyer. Algemene snywerk met oksiasetileen. Eenvoudige sveiswerk op sage staal. Algemene sweiswerk van eenvoudige gefabriseerde werk op sage staal. Sveis—  (a) plat; (b) hoek; (c) stuik; en (d) oorslag. Algemene werk op profielsnymasjiene. Lees van tekeningen.	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Safety measures and first aid generally applicable to the trade. Names and care of hand tools. Care and maintenance of workshop equipment. Grouping together of component parts. Principles of finishing off. Drilling and soldering. Use of simple volt-ohm-meters. Erection and maintenance of aerials and lightning conductors. Reading of circuit diagrams and interpreting service instructions. Repair and maintenance of dial drive mechanisms. Knowledge of circuits used in frequency control. Reading of plans and specifications.
10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	19DE MAAND TOT VIERDE JAAR.	13. 14. 15. 16. 17. 18. 19. 20. 21. 22.	19TH MONTH TO FOURTH YEAR.
	Sveis—  (a) vertikaal; en (b) oorhoofs. Elektriese boogsweisning. Sweissoldeer van verskillende metale. Swaar profiele sny. Uitgloeiing. Materiaal uitsit om vervorming te voorkom. Sweis van gefabriseerde pyptoebehore. Elektriese swiesing van—  (a) sage staal; (b) gietyster; (c) gietstaal; (d) aluminium en sy allooie; (e) koper en koperallooi; en (f) vlekvrye staal. Oksiasetileenweisning van—  (a) sage staal; (b) gietyster; (c) gietstaal; (d) aluminium en sy allooie; en (e) koper en koperallooi. Sweis van laagdrukhouers. Gevorderde werk met spesiale verwysing na beheer van voorverhittingstemperature. Ontspanning.	22.	Tracing of faults. Practical application of AC and DC theory. Use and maintenance of impedance bridges, tube testing apparatus, electronic voltmeters, oscilloscopes and instruments for repair of radio receivers. Repair and maintenance of motors in receivers and signalling apparatus. Repair and maintenance of audio sound amplifiers. Alignment of receiving and transmitting sets and use of oscilloscope in alignment of circuit diagrams. Knowledge of equipment used in and in connection with receiving sets, automatic frequency control equipment and interference suppressors. Complete servicing of receiving and transmitting sets and maintenance of same. Knowledge and work according to plans and diagrams. Knowledge of installation and maintenance of frequency amplifiers.
	<b>VYFDE JAAR.</b>		
	Hersiening en onafhanklike werk.		
	<b>AMBAG: TAKELWERK (27).</b>		
	<b>EERSTE 18 MAANDE.</b>		
1. 2. 3. 4. 5.	Eerste hulp. Veiligheidsmaatreëls soos van toepassing op die ambag. Versorging en gebruik van—  (a) gereedskap; (b) oksiasetileenvlamsnyer; (c) katrolblokke;	1. 2. 3. 4. 5. 6. 7. 8. (a) 8. (b) 8. (c)	FIFTH YEAR.
			Revision and independent work.
			<b>REFRIGERATION MECHANIC (31)</b>
			<b>FIRST 18 MONTHS.</b>
			Safety measures and first aid generally applicable to the trade. Fire prevention and use of fire extinguishers. Use and care of hand tools including filing, sawing, scraping, drilling, reaming and threading. Lapping of reed valves and crankcase seals for compressors. Reading drawings and marking off. Use and care of marking-off instruments, internal and external calipers, micrometers and verniers. Strength and qualities of metals.
			19TH MONTH TO FOURTH YEAR.
			Refrigeration circuit; qualities and uses of refrigerants and refrigerating oil; and repairing and servicing all types of refrigerating apparatus, water cooled systems, freezing rooms and freezing units, including domestic and commercial refrigerators and heavy equipment used in large refrigerator rooms and air conditioning systems.

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
(d) (e) (f) (g) (h)	kettingblokke; wenasse (hand en krag); domkrage (skroef en hidroulies); kraanarms (hand en krag); en krane (bobaan en mobiel).	9. (a) (b) (c)	General lubricating; welding and hard soldering; and properties and uses of soldering materials.
4. (a) (b) (c) (d) (e)	Oprigting van— steiers; steierwerk; hangstoel; driepote (katrolblokke); en laairome en pale.	10. (a) (b) (c)	Pipe fitting in refrigeration plants. Use and adjusting of instruments used in testing and tracing of faults.
5. (a) (b) (c) (d) (e) (f)	Gebruik en versorging van— ketting- en touslingers; veseltoue; staaldraadtoue; ankertoue; ankers; en harpe (sluitskakels) en oogboute.	11. (a) (b) (c) (d) (e) (f)	Tracing and repair of faults in refrigerating systems. Installation, maintenance and repair of air conditioning plant including— fans; air cleaners and filters; pumps; evaporating condensors; cooling towers; heaters; self-contained air conditioning units; and dampers.
6.	Toue vasmaak.	12. (a) (b) (c) (d) (e) (f)	Construction and servicing of automatic regulators; e.g.:— expanding valves; solenoid valves; thermostats; and servo-motors.
7.	19DE MAAND TOT VIERDE JAAR.	13. (a) (b) (c) (d) (e) (f)	Electrical work, viz.:— checking of circuits; adjusting and minor repairs to motors; starters; heaters and regulators; electrostatic filters and fittings; and reading of electric diagrams.
7. (a) (b) (c)	Knope en splitslasse:— Staaldraadtoue; en veseltoue; en bedekking van splitslasse.	14. (a) (b) (c) (d) (e) (f)	NOTE.—Not less than six months of the third year of apprenticeship should be devoted to item 14 and three months practical experience gained in fitting and turning workshop.
8.	Hystoestelle en vasmaak-toepassing van veiligheidsmaatreëls.		
9.	Hake en verbinding-redes vir uitgloeiing.		
10. (a) (b)	Toue (vir hys- en trekwerk):— Versorging en inspeksie; en in stand hou, smeer en beskerming.		
11. (a) (b) (c) (d) (e) (f)	Hystouwerk:— behoorlike opdraai aan hystromme; katrolskywe in stand hou; verwydering van kinkels; algemene hantering van hystoue; bereiding van toetsmonsters; en verskynsels en oorsake van verslegting van toue. Touverbindings en -aanhegtings.		
12.	Lusringe.		
13.	Outomatiese ontkoppelhake.		
14.	Hernuwing van hystoue; insluitende pas vir lengte aan— koniese tromme; en parallele tromme.		
15. (a) (b)	Slinger en hanteer van swaar vragte. Maak en oprigting van bootmanstoel. Maak van skutplate en veiligheidsnette. Takelwerk op skepe met inbegrip van die spoor van maste.		
16.	VYFDE JAAR.		
17.	Hersiening en onafhanklike werk.		
18.	AMBAG: TIMMERWERK EN SKRYNWERK (6).		
19.	EERSTE 18 MAANDE.		
1.	Eerste hulp.	1.	
2.	Veiligheidsmaatreëls soos van toepassing op die ambag.	2.	
3. (a) (b)	Handgereedskap:— Kennis, versorging en gebruik; en skerpmaak en in stand hou.	3. (a) (b) (c) (d) (e) (f) (g) (h)	
4.	Kennis en gebruik van verskillende soorte hout, laaghout en komposisiebord.	4. (a) (b) (c) (d) (e)	
5.	Defekte in hout.	5. (a) (b) (c) (d) (e) (f)	
6.	Hout met die hand meet.	6.	
7.	Hout met die hand haaks maak.		
8. (a) (b)	Alle soorte eenvoudige lasse— afmerk; en maak.		
9.	Lymwerk.		
10.	Spykerwerk.		
11.	Skoefwerk.		
12.	Plat vakke en lyste met glaspapier skuur.		
13.	Betonbekisting maak en aansit.		
14.	Tekenings lees.		
15.	Tegniese terme.		
16. (a) (b)	19DE MAAND TOT VIERDE JAAR.		
17. (a) (b) (c)	Masiengereedskap:— Kennis, versorging en gebruik; en skerpmaak en in stand hou.		
17. (a) (b) (c)	Maak van— vensterkosyne; deurkosyne; deure;	7. (a) (b) (c)	
		8.	
		9.	
		10. (a) (b)	
		11. (a) (b) (c) (d)	

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
(d)	vensterrame; en rakkaste.	(e)	preparation of test specimens; and symptoms and causes of rope deterioration.
(e)	Paneelwerk en beter klas skrynwerk.	(f)	Rope attachments.
18.	Van uitlêplanke af werk.	12.	Thimbles.
19.	Van tekenings af werk.	13.	Automatic detaching hooks.
20.	Werk van tekenings af ontwerp.	14.	Renewal of winding ropes including matching for length on:-
21.	Hoeveelhede opmeet en snylyste opstel.	15.	conical drums; and parallel drums.
22.	Lyste inmekarsit, pas en aansit.	(a)	Slinging and handling of heavy loads.
23.	Met skuurpapier skuur.	(b)	Making and erecting boatswain's chairs.
24.	Houtwerk: Buite- en binne-afwerking van geboue.	16.	Making guard plates and safety nets.
25.	Houtvloere insit.	17.	Rigging on ships including aligning of masts.
26.	Pas en aan- of insit van—	18.	
	deurkosyne;	19.	
(a)	vensterkosyne;		
(b)	prentlyste;		
(c)	vloerlyste;		
(d)	kosynlyste en lyste;		
(e)	meubelst en		
(f)	toebehore en ysterware.		
28.	Hang van—		
	deure; en		
	vensterrame.		
29.	Ontwerp en oprig van—		
	hout- en ysterbouwerk; en	1.	
	alle soorte dakke.	2.	
30.	Gegolfde dakkemateriaal en waterslagplanke aansit.	3.	
31.	Geboue: Opknap, hernuwe en verander.	(a)	
32.	Alle soorte steiers opsit.	(b)	
33.	Vir die nodige materiaal opmeet.	(c)	
34.	Swaar houtbouwerk: Maak en in stand hou.	(d)	
35.	Opleiding in tekenkantoor.	(e)	
		4.	
			Cutting and designing small canvas covers and carpets.
	VYFDE JAAR.		
	Hersiening en onafhanglike werk.		
	AMBAG: VERKOELINGSWERKTUIGKUNDIGE (26).	5.	
		6.	
	EERSTE 18 MAANDE.	7.	
1.	Veiligheidsmaatreëls en eerstehulp soos op die ambag van toepassing.	8.	
2.	Brandyvoorsorg en gebruik van brandblusser.	(a)	
3.	Gebruik en versorging van handgereedskap met inbegrip van vylwerk, saagwerk, skraapwerk, boorwerk, ruimwerk en skroefdraad sny.	(b)	
4.	Fynslip van klepplaatjies en krukasafsluitings vir lugperspompe.	(c)	
5.	Tekenings lees en werk afmerk.	9.	
6.	Gebruik en versorging van afmerkinstrumente, binne- en buitespermate, mikrometers en verniers.		
7.	Sterkte en eienskappe van metale.		
	19DE MAAND TOT VIERDE JAAR.		
8. (a)	Die verkoelingskringloop.		
(b)	eienskappe en gebruik van koelmiddels en verkoelingsolie.		
(c)	Alle soorte koeluitrusting—waterverkoelstelsels, vrieskamers en vriesseenhede herstel en versien met inbegrip van huishoudelik en handelskoelkaste en swaar uitrusting wat in groot koelkamer- en lugvervoerstelsels gebruik word.		
9. (a)	Algemene smering.		
(b)	Sweis en hardsoldeer.		
(c)	Eienskappe en gebruik van soldeermiddels.		
10.	Pypgaswerk in koelininstallasies.		
11. (a)	Gebruik en instelling van instrumente benodig vir toetswerk en opspoor van foute.		
(b)	Opspoor en herstel van foute in koelinrigtings.		
12. (a)	Installeren en instandhouding van en herstelwerk aan lugreëlingsinstallasies met inbegrip van—		
(b)	waaters;	6.	
(c)	lugreinigers en filters;	7.	
(d)	pompe;	8.	
(e)	verdampingskondensators;	9. (a)	
(f)	koeltorings;	(b)	
(g)	verwarmers;	10.	
(h)	selfstandige lugreëlingseenhede; en	11.	
(i)	bevochtigers.	12.	
13.	Konstruksie en bediening van outomatiese reëlaars bv.—	13.	
	uitsetkleppe;	14.	
	solenoidkleppe;	(a)	
	termostate; en	(b)	
	servo-motors.	(c)	
		15.	
		16.	
			Straight and circular graduation.
			Making drawings from sketches.

Simbole toegewys vir doelendes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
14. (a) (b) (c) (d) (e) (f)	<p><b>Elektriese werk nl.—</b> nasien van kringlope; stel van en kleiner herstelwerk aan motors; aansitters; verwarmers en reelaars; elektrostatische filters in toebehore; en lees van elektriese diagramme.</p> <p>Nota.—Minstens 6 maande van die derde jaar van vakleerlingskap moet aan item 14 afgestaan word en drie maande praktiese ondervinding moet in pas- en draaiwinkel opgedoen word.</p> <p style="text-align: center;"><b>VYFDE JAAR.</b></p> <p>Hersiening en onafhanklike werk.</p> <p><b>AMBAG: WAPENMONTEUR (1).</b></p> <p><b>EERSTE 18 MAANDE.</b> Veiligheidsmaatreëls en eerstehulp normaalweg op die ambag van toepassing. Gebruik en versorging van handgereedskap. Basiese onderrig in paswerk met inbegrip van vylwerk, saagwerk, beitelwerk, skroef- en moerdraadnsy in verskeie metale en boorwerk. Afmerkwerk. Masjieneerwerk op draaibank en skaaf.</p> <p><b>19DE MAAND TOT VIERDE JAAR.</b> Nagaan en herstel van vuurwapens met inbegrip van— agterstukmeganismes; astappe; en ratkaste en- rakke. Herstel en versiening van— diepte bomwerpers; mortieragterstukmeganismes; en afstandskleppe. Herstel en versiening van wapenmonteer-kokers (casing) aan boord en op toetsbank. Nagaan, herstel en versiening van wapentoerusting met inbegrip van torpedobuise, visiere en dieptetoerusting. Herstel en instandhouding van wapen-hidrouliese- en lugdrukstelsels. Herstel en instandhouding van meganiese toerusting, aandrywingsmotore en ratkaste van wapentuig. Herstel en instandhouding van elektroniese afstandbeheertoerusting onder toesig van spesiale ambagslui. Ondervinding in die algemene werking van lugdruk- en hidrouliese torpedotoerusting. (Minstens 3 maande).</p> <p style="text-align: center;"><b>VYFDE JAAR.</b></p> <p>Hersiening en onafhanklike werk.</p> <p><b>AMBAG: WERKTUIGKUNDIGE (AANLEG-MASJINERIE) (8).</b></p> <p><b>EERSTE 18 MAANDE.</b> Veiligheidsmaatreëls en eerstehulp normaalweg op die ambag van toepassing. Versorging van voertuie en toerusting. Gebruik en versorging van alle handgereedskap. Waar fasiliteite bestaan, die insleip van voertuie. Smering en gewone diens aan voertuie en toerusting. Onderhoud en herstel van— ontwikkelaars; en waar moontlik alternators. Uitmekaarhaal en bepaal van slytasie op onderdele nl.— silinders; krukas; laers; nokaslaers; nokassstange; kleppe en- leiers; en suiers en-penne. Ontkool, slyp van kleppe, terugsit van silinderkop met besondere aandag aan spesifikasies en gebruik van wringsleutel en stel van klepopeninge. Afhaal en terugsit van wiele met inbegrip van lekhersel en vervanging van bande en binnebande. Afhaal en terugsit van— koppelaars; ratkaste; ewenaars; dryfaste; agterveerstelsels;</p>	1. 2. 3. 4. 5.	<p style="text-align: center;"><b>FIFTH YEAR.</b></p> <p>Revision and independent work.</p> <p style="text-align: center;"><b>SHIPWRIGHT (26).</b></p> <p style="text-align: center;"><b>FIRST 18 MONTHS.</b></p> <p>Use and care of all hand tools (both wood and steel). Knowledge and use of woods used in boat building. Removing, preparing for repairs and fixing keelboards, caulking boards, thwart-boards and woodwork. Instruction in marking off and shaping of masts, booms, frame ribs and tackle. Simple stencilling.</p> <p style="text-align: center;"><b>19TH MONTH TO FOURTH YEAR.</b></p> <p>Instruction in various pressed shapes and soft steel plates used in ship building; and special attention to riveting systems and their uses in ship building. Fabricating from simple drawings. Instruction and training in developing, marking off and making general shapes from steel including ventilating trunks, bending in round, square and conical pipes. Preparing work from drawings. General welding applicable to the trade. Practical training on board in building and alterations to rooms with special attention to waterproofing. Making of wood, aluminium and steel lockers. Making and installing steel items in rooms. Testing of water and oilproofed rooms on board. Use of hand caulking tools. Three months' training in drawing office.</p> <p style="text-align: center;"><b>FIFTH YEAR.</b></p> <p>Revision and independent work.</p> <p style="text-align: center;"><b>SIGNWRITING (12).</b></p> <p style="text-align: center;"><b>FIRST 18 MONTHS.</b></p> <p>First aid and safety precautions applicable to the trade. Use and care of tools and materials. Preparation of surfaces. use of pigments; use of thinners; and use of driers. Methods of applying paint. Cleaning off old paint.</p> <p style="text-align: center;"><b>19TH MONTH TO FOURTH YEAR.</b></p> <p>Mixing and applying paints. Primary and secondary colours. Painting and varnishing of all types of surfaces. Advanced painting. Varnishing and colour mixing and general knowledge of painting. Setting out and shaping of all types of lettering, including gold-leaf work. Erection of scaffolding and ladders.</p> <p style="text-align: center;"><b>FIFTH YEAR.</b></p> <p>Revision and independent work.</p> <p style="text-align: center;"><b>TOOLMAKING (6).</b></p> <p style="text-align: center;"><b>FIRST 18 MONTHS.</b></p> <p>Safety measures generally applicable to the trade. Names of tools. Use and care of tools. Use and care of measuring instruments. Bench work, particular attention being paid to:— filing; sawing; scraping; drilling; reaming; threading; and cutting. Reading of drawings and application of drawings. Strength and qualities of materials.</p>
1. 2. 3. 4. 5. 6. (a) (b) 7. (a) (b) (c) (d) (e) (f) (g) 8. 9. 10. (a) (b) (c) (d) (e)		1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	<p style="text-align: center;"><b>FIFTH YEAR.</b></p> <p>Revision and independent work.</p> <p style="text-align: center;"><b>SHIPWRIGHT (26).</b></p> <p style="text-align: center;"><b>FIRST 18 MONTHS.</b></p> <p>Use and care of all hand tools (both wood and steel). Knowledge and use of woods used in boat building. Removing, preparing for repairs and fixing keelboards, caulking boards, thwart-boards and woodwork. Instruction in marking off and shaping of masts, booms, frame ribs and tackle. Simple stencilling.</p> <p style="text-align: center;"><b>19TH MONTH TO FOURTH YEAR.</b></p> <p>Instruction in various pressed shapes and soft steel plates used in ship building; and special attention to riveting systems and their uses in ship building. Fabricating from simple drawings. Instruction and training in developing, marking off and making general shapes from steel including ventilating trunks, bending in round, square and conical pipes. Preparing work from drawings. General welding applicable to the trade. Practical training on board in building and alterations to rooms with special attention to waterproofing. Making of wood, aluminium and steel lockers. Making and installing steel items in rooms. Testing of water and oilproofed rooms on board. Use of hand caulking tools. Three months' training in drawing office.</p> <p style="text-align: center;"><b>FIFTH YEAR.</b></p> <p>Revision and independent work.</p> <p style="text-align: center;"><b>SIGNWRITING (12).</b></p> <p style="text-align: center;"><b>FIRST 18 MONTHS.</b></p> <p>First aid and safety precautions applicable to the trade. Use and care of tools and materials. Preparation of surfaces. use of pigments; use of thinners; and use of driers. Methods of applying paint. Cleaning off old paint.</p> <p style="text-align: center;"><b>19TH MONTH TO FOURTH YEAR.</b></p> <p>Mixing and applying paints. Primary and secondary colours. Painting and varnishing of all types of surfaces. Advanced painting. Varnishing and colour mixing and general knowledge of painting. Setting out and shaping of all types of lettering, including gold-leaf work. Erection of scaffolding and ladders.</p> <p style="text-align: center;"><b>FIFTH YEAR.</b></p> <p>Revision and independent work.</p> <p style="text-align: center;"><b>TOOLMAKING (6).</b></p> <p style="text-align: center;"><b>FIRST 18 MONTHS.</b></p> <p>Safety measures generally applicable to the trade. Names of tools. Use and care of tools. Use and care of measuring instruments. Bench work, particular attention being paid to:— filing; sawing; scraping; drilling; reaming; threading; and cutting. Reading of drawings and application of drawings. Strength and qualities of materials.</p>
		1. 2. 3. 4. 5. (a) (b) (c) (d) (e) (f) (g) 6.	<p style="text-align: center;"><b>FIFTH YEAR.</b></p> <p>Revision and independent work.</p> <p style="text-align: center;"><b>SHIPWRIGHT (26).</b></p> <p style="text-align: center;"><b>FIRST 18 MONTHS.</b></p> <p>Use and care of all hand tools (both wood and steel). Knowledge and use of woods used in boat building. Removing, preparing for repairs and fixing keelboards, caulking boards, thwart-boards and woodwork. Instruction in marking off and shaping of masts, booms, frame ribs and tackle. Simple stencilling.</p> <p style="text-align: center;"><b>19TH MONTH TO FOURTH YEAR.</b></p> <p>Instruction in various pressed shapes and soft steel plates used in ship building; and special attention to riveting systems and their uses in ship building. Fabricating from simple drawings. Instruction and training in developing, marking off and making general shapes from steel including ventilating trunks, bending in round, square and conical pipes. Preparing work from drawings. General welding applicable to the trade. Practical training on board in building and alterations to rooms with special attention to waterproofing. Making of wood, aluminium and steel lockers. Making and installing steel items in rooms. Testing of water and oilproofed rooms on board. Use of hand caulking tools. Three months' training in drawing office.</p> <p style="text-align: center;"><b>FIFTH YEAR.</b></p> <p>Revision and independent work.</p> <p style="text-align: center;"><b>SIGNWRITING (12).</b></p> <p style="text-align: center;"><b>FIRST 18 MONTHS.</b></p> <p>First aid and safety precautions applicable to the trade. Use and care of tools and materials. Preparation of surfaces. use of pigments; use of thinners; and use of driers. Methods of applying paint. Cleaning off old paint.</p> <p style="text-align: center;"><b>19TH MONTH TO FOURTH YEAR.</b></p> <p>Mixing and applying paints. Primary and secondary colours. Painting and varnishing of all types of surfaces. Advanced painting. Varnishing and colour mixing and general knowledge of painting. Setting out and shaping of all types of lettering, including gold-leaf work. Erection of scaffolding and ladders.</p> <p style="text-align: center;"><b>FIFTH YEAR.</b></p> <p>Revision and independent work.</p> <p style="text-align: center;"><b>TOOLMAKING (6).</b></p> <p style="text-align: center;"><b>FIRST 18 MONTHS.</b></p> <p>Safety measures generally applicable to the trade. Names of tools. Use and care of tools. Use and care of measuring instruments. Bench work, particular attention being paid to:— filing; sawing; scraping; drilling; reaming; threading; and cutting. Reading of drawings and application of drawings. Strength and qualities of materials.</p>

Simbole toegewys vir doeleindes van vakleerling se logboek.	Praktiese opleiding.	Symbols allocated for purposes of apprentice's log book.	Practical training.
(f) (g) (h) (i) (j) (k) (l) (m)	voeveertelsels; enjinonderdele; enjineenhede; stuurstelsels; remstelsels; uitlaatstelsels; hidrouliese eenhede; en “power take off”-stelsels.		
11.	Enjineenhede—petrol en dieseluitmekhaarhaal van hele eenheid en terugmontering na algemene herstel van alle onderdele met inbegrip van— suiers, ringe en suierpenne; alle laers; klepleiers en kleppe, klepvere en klepbeddings; suerstange (conrods); tandrat (ring-gear); en kleptydrate.	8. (a) (b) (c)	Elementary fitting; machining; and marking off which forms part of tool making templates, gauges and meters.
12. 13.	Vuur- en openingsorde van kleppe en ontstekingstelsel. Algemene versiening, herstel en instandhouding van verkoeleerstelsels met inbegrip van olieverkoeling. Instel van enjin sonder instrumente.	9. (a) (b) (c)	19TH MONTH TO FOURTH YEAR. Training in work on all types of machine tools and bench work, including the making of; meters; and advanced marking off which ordinarily forms part of requirements in connection with tool room. Heat treatment of metal and knowledge of properties of materials.
14.		10.	Reading and application of drawings. Inspection of manufacturing process and of finished article.
15.	19DE MAAND TOT VIERDE JAAR. Algemene herstelwerk aan, bepaling van slytasie, montere en verstellings aan— koppelaars; kragoorbrengingstelsels (transmission); dryfaste en koppellings; agterasseltelsels; voorasseltelsels; stuurstelsels; veerstelsels; remstelsels; petrolpompe; vergassers; vonkstelsels; hidrouliese stelsels; en spoerbandstelsels.	11. 12. 13.	Use of special machines not continuously used in the trade.
16.	Nasien en verstel van— toesporing; nasporing; wielvlug; krinbspilhelling; en uitsporing.	1.	FIFTH YEAR.
17.	Elementêre gas- en elektriese sveiswerk, hardsoildeer en soldeerwerk.	2.	Revision and independent work.
18.	Toets, diagnose en instelling van— foutie in vuurstsel; foutie in brandstofstelsel; foutie in enjin; foutie met koppelaars; foutie met kragoorbrenging; foutie met dryfaste; foutie met ewenaar; foutie met remstsel; foutie met stuurstsel; foutie met veerstsel; foutie met elektriese toerusting; foutie met enjinkomponente; en foutie met kragafneemeenhede.	3. 4. 5. 6.	WELDING (28).
19.	Elektriese toerusting:— Battery nasien en herlaai; ontwikkelaar (borsels, busse, laers en skoonmaak van anker); en aansitter (dieselde as vir ontwikkelaar).	7. 8. 9.	FIRST 18 MONTHS.
20.	Regte gebruik van— druktotsmeter; suigdrukmeter; ampère- en voltmeter; tachometer; brandstofpomp- drukmeter; tydreëllig; uitlaatgasontleders; kondensator en spoeltoetsers; en vonkpropkoonmakers en- toetsers. Hantering en gebruik van hystoerusting.	10. (a) (b)	First aid and safety precautions applicable to the trade. Shop routine. Care and use of hand torch. General oxy-acetylene cutting. Simple welding work on mild steel. General welding—of simple fabricated work on mild steel. Welding:— flat; fillet; butt; and lap.
		11. 12. 13. 14. 15. 16. 17.	General work on profile cutting machines. Reading of drawings.
		18. (a) (b) (c) (d) (e) (f)	19TH MONTH TO FOURTH YEAR.
		19. (a) (b) (c) (d) (e)	Welding:— vertical; and overhead. Electric arc welding. Brazing of different metals. Heavy profile cutting. Annealing. Setting out material to prevent distortion. Welding of fabricated pipes fittings. Electric welding of:— mild steel; cast iron; cast steel; aluminium and its alloys; copper and copper alloys; and stainless steel.
		20. (a) (b) (c) (d) (e)	Oxy-acetylene welding of:— mild steel; cast iron; cast steel; aluminium and its alloys; and copper and copper alloys.
		21.	Welding of low pressure vessels. Advanced work with special reference to pre-heating temperature control. Stress relieving.
			FIFTH YEAR.
	VYFDE JAAR. Hersiening en onafhanglike werk.		Revision and independent work.

Kragtens artikel 16 (4) van die Wet op Vakleerlinge, 1944, soos gewysig, word alle belanghebbende persone wat beswaar teen bogenoemde voorneme het, aangesê om die besware binne 30 dae vanaf die datum van publikasie hiervan skriftelik in te dien by die Sekretaris, Staats-vakleerlingskapkomitee, Posbus 393, Pretoria.

M. VILJOEN,  
Minister van Arbeid.

In terms of section 16 (4) of the Apprenticeship Act, 1944, as amended, all interested persons who have any objections to the above proposals are called upon to lodge the objections, in writing, with the Secretary, Government Apprenticeship Committee, P.O. Box 393, Pretoria, within 30 days of the date of publication hereof.

M. VILJOEN,  
Minister of Labour.

No. R. 114.] [27 Januarie 1967.  
**WET OP NYWERHEIDSVERSOENING, 1956.**  
**MOTORNYWERHEID, REPUBLIEK VAN SUID-AFRIKA.**  
**VERLEGGING VAN HOOFOOREENKOMS.**

Ek, MARAIS VILJOEN, Minister van Arbeid, verleng hierby kragtens artikel 48 (4) (a) (i) van die Wet op Nywerheidsversoening, 1956, die tydperke vasgestel in Goewermentskennisgewings No. 600 van 26 April 1963, No. R. 1663 van 25 Oktober 1963, No. R. 248 van 21 Februarie 1964, No. R. 618 van 24 April 1964, No. R. 1487 van 25 September 1964, No. R. 2128 van 24 Desember 1964, No. R. 432 van 26 Maart 1965, No. R. 609 van 30 April 1965, No. R. 1698 van 29 Oktober 1965, Nos. R. 432, R. 433 en R. 434 van 18 Maart 1966, No. R. 657 van 29 April 1966 en No. R. 1479 van 30 September 1966 met 'n verdere tydperk van drië maande wat op 30 April 1967 eindig.

M. VILJOEN,  
Minister van Arbeid.

No. R. 114.] [27 January 1967.  
**INDUSTRIAL CONCILIATION ACT, 1956.**  
**MOTOR INDUSTRY, REPUBLIC OF SOUTH AFRICA.**

**EXTENSION OF MAIN AGREEMENT.**

I, MARAIS VILJOEN, Minister of Labour, hereby, in terms of section 48 (4) (a) (i) of the Industrial Conciliation Act, 1956, extend the periods fixed in Government Notices No. 600 of the 26th April, 1963, No. R. 1663 of the 25th October, 1963, No. R. 248 of the 21st February, 1964, No. R. 618 of the 24th April, 1964, No. R. 1487 of the 25th September, 1964, No. R. 2128 of the 24th December, 1964, No. R. 432 of the 26th March, 1965, No. R. 609 of the 30th April, 1965, No. R. 1698 of the 29th October, 1965, Nos. R. 432, R. 433 and R. 434 of the 18th March, 1966, No. R. 657 of the 29th April, 1966 and No. R. 1479 of the 30th September, 1966, by a further period of three months ending on the 30th April, 1967.

M. VILJOEN,  
Minister of Labour.

**INHOUD.**

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