

Serial Number 1948/133



THE SURVEY EXAMINATION REGULATIONS 1948

B. C. FREYBERG, Governor-General
ORDER IN COUNCIL

At the Government House at Wellington, this 11th day of
August, 1948

HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL

PURSUANT to the Surveyors Act, 1938, His Excellency the Governor-General, acting by and with the advice and consent of the Executive Council, and on the recommendation of the Survey Board established by that Act, doth hereby make the following regulations.

REGULATIONS

PART I.—PRELIMINARY

1. These regulations may be cited as the Survey Examination Regulations 1948.
2. These regulations are arranged as follows :—
 - Part I.—Preliminary.
 - Part II.—Articles.
 - Part III.—Exemption from Service under Articles.
 - Part IV.—Conduct of Examinations.
 - Part V.—Subjects of Examination.
 - Part VI.—Order of Examination.
 - Part VII.—Examination Credits.
 - Part VIII.—Fees.
3. These regulations shall come into force on the day following notification in the *Gazette* of the making thereof.
4. In these regulations, if not inconsistent with the context,—
 - “The Act” means the Surveyors Act, 1938 :
 - “Articles” includes—
 - (a) Any indenture, deed, or other writing containing a contract or agreement for tuition in land surveying made between a registered surveyor and a person seeking to qualify himself for registration as a land surveyor ; or
 - (b) Any written notification from the Surveyor General to the Secretary of the appointment of a survey cadet or survey cadets in any Department of State.

“The Board” means the Survey Board constituted under the Act :

“Pupil” means a person who is serving under articles :

“The Real Property Acts” includes all Acts containing provisions relating to the subdivision of freehold lands, together with all regulations thereunder for the time being in force, and in particular includes the Deeds Registration Act, 1908, the Land Transfer Act, 1915, the Land Act, 1924, the Coal-mines Act, 1925, the Mining Act, 1926, the Town-planning Act, 1926, the Public Works Act, 1928, and the Maori Land Act, 1931, and the respective regulations thereunder for the time being in force :

“Reciprocating Board” means the body in any reciprocating State having powers and duties corresponding to those of the Board :

“Reciprocating State” means any State, dominion, colony, or other territory within His Majesty’s dominions or under His Majesty’s control, protection, or mandate with which reciprocal arrangements for the recognition of the status of surveyors have been made as herein provided and are for the time being in force :

“Register” means the Register of Surveyors directed to be kept pursuant to the Act :

“Registered surveyor” means any person for the time being registered as a surveyor under the Act, and includes any person for the time being registered by or at the direction or with the approval of a reciprocating Board as a “licensed,” “qualified,” “registered,” “authorized,” or “certificated” surveyor or land surveyor, or by any other corresponding title in any reciprocating State :

“Secretary” means the Secretary of the Survey Board :

“University” includes (a) the University of New Zealand ; (b) any university in a reciprocating State recognized by the reciprocating Board of that State ; (c) any university elsewhere than in a reciprocating State recognized by the Board for the purpose of these regulations.

5. The Survey Examination Regulations 1943* are revoked.

6. All registrations of articles or transfers and the passing or partial passing of any examination, and all certificates, applications, and generally all documents, matters, acts, and things and all periods of time which originated or had effect under the rules hereby revoked and are of continuing effect at the time of coming into force of these regulations shall enure for the purposes of these regulations as if they had originated under these regulations, and shall, where necessary, be deemed to have so originated.

PART II.—ARTICLES

7. Subject to the exemptions set out in Part III hereof and the provisions as to order of examination set out in Part VI hereof, no person shall be accepted as a candidate for examination unless he has served professionally under articles (registered as hereinafter provided) with a registered surveyor or surveyors for a period of not less than four years, three of which must be in professional service in the field.

* Statutory Regulations 1943, Serial number 1943/195, page 421.

8. No articles shall be accepted for registration unless before entering into articles the pupil has passed the Entrance Examination of the University of New Zealand or an examination prescribed or required by a reciprocating Board, or an examination accepted by the Survey Board as equivalent to either of the two examinations aforesaid, or has been duly accredited for admission to the University of New Zealand.

9. All articles shall be forwarded for registration by the surveyor who is party to the articles to the Secretary duly completed and accompanied by evidence that the applicant has attained the educational requirement prescribed in Regulation 8 hereof and accompanied by the registration fee hereinafter prescribed, and all articles shall be so forwarded for registration within three months after the commencement of the term of the articles.

10. (1) The Board may refuse to register any articles if, in the opinion of the Board,—

- (a) Such articles do not sufficiently provide for instruction and training of the pupil ; or
- (b) The surveyor who is a party to the articles or to whom the articles are being transferred has another registered pupil serving under articles with him with less than two years' service :

Provided that, in special cases, the Board may register an additional pupil for a period not exceeding six months ; or

- (c) The surveyor who is a party to the articles is not considered competent to provide the pupil with the requisite training and experience as a surveyor.

(2) Notwithstanding anything to the contrary in clause (1) of this regulation, the Board may until 31st December, 1951, register as an extra pupil a person who produces evidence satisfactory to the Board that he enlisted or was called up for service in the Armed Forces of Australia or New Zealand. No surveyor shall at any one time have more than three registered pupils.

11. Any transfer of articles shall be forwarded for registration to the Secretary within three months after the date of the transfer, accompanied by the transfer fee hereinafter prescribed.

12. Subject to Regulations 9 and 10 hereof, the Secretary shall forthwith register all articles and transfers duly forwarded to him as aforesaid.

13. In any special case arising in the opinion of the Board from inadvertence or inevitable accident, the Board may authorize registration of articles or transfers forwarded after the expiration of the respective periods of three months hereinbefore prescribed.

14. The teaching surveyor shall submit to the Secretary on or before the 1st day of September in each year a certificate in the form numbered 1 in the Schedule hereto, signed by himself and by the pupil, setting out the experience gained by and the training given to every pupil in his employ for the period ending on the 30th day of June in that year.

15. If the Board, after reviewing the report submitted under the last preceding regulation, considers that any pupil is not receiving the requisite training and experience, it may require the transfer of the articles to some surveyor approved by the Board.

16. (1) Unless within three months from the date of receipt by the surveyor and the artiled pupil of a written notice from the Secretary setting out a requirement of the Board made under the last preceding regulation the Board receives satisfactory evidence that the articles have been transferred to a surveyor approved by the Board, the Board may direct registration of the articles to be cancelled.

(2) Service under articles outside New Zealand by any pupil registered with a reciprocating board may be accepted, provided that that Board forwards a certificate in form No. 2 in the Schedule hereto, together with a detailed statement of the class of work upon which the pupil has been engaged, signed by both the surveyor and the reciprocating Board.

PART III.—EXEMPTION FROM SERVICE UNDER ARTICLES

17. If a candidate produces documentary evidence to the satisfaction of the Board that he possesses the qualifications detailed hereunder, he may be entitled to the respective exemptions hereinafter set out from service under articles as required by Regulation 7 :—

(a) A field experience of not less than twelve months with a civil engineer approved by the Board.

Exemption : Six months' professional service in the field.

(b) A certificate or diploma in surveying satisfactory to the Board granted after examination of a standard approved by the Board or by the reciprocating Board of the State where the examination is held and at which a person appointed or approved by the Board or such reciprocating Board is a co-examiner.

Exemption : Nine months' office experience.

(c) A certificate granted by a university upon the passing of a special course in surveying.

Exemption : Nine months' office experience.

(d) A degree or diploma granted by a university upon completion of a course which, in the opinion of the Board, necessitates sufficient training in surveying.

Exemption : Twelve months' professional service in the field and twelve months' office experience.

(e) A degree or diploma granted as described in paragraph (d) hereof by a university in which a person appointed or approved by the Board or a reciprocating Board is a co-examiner in surveying.

Exemption : Eighteen months' professional service in the field and twelve months' office experience.

(f) For the purposes of this regulation " office experience " means service under articles other than professional service in the field.

18. No person shall be entitled to claim the benefit of an exemption under more than one of the paragraphs contained in the last preceding regulation.

PART IV.—CONDUCT OF EXAMINATIONS

19. The Board shall conduct examination of candidates for Certificates of Competency as Land Surveyors in the month of September in every year.

20. The Board may also conduct the like examinations at such other times as it deems necessary.

21. The Board shall appoint examiners and supervisors and make all necessary arrangements for the conduct of examinations.

22. The Board shall from time to time fix the date and place of every examination and give not less than six weeks' previous notice thereof by notice published in the *New Zealand Gazette*.

23. Every candidate shall, at least fourteen days before the date fixed for commencement of the examination, make application in writing to the Secretary for permission to present himself for examination, and shall before the commencement of the examination pay the prescribed examination fee.

24. Each candidate shall provide himself with a book of mathematical tables approved by the Board, a planimeter, a complete set of the usual scales, a parallel ruler (a 15 in. ruler being regarded as the most suitable), a protractor, and all other necessary appliances for plan-drawing except paper. Traverse tables may be used. Calculating-machines other than slide rules shall not be allowed in the examination-room.

PART V.—SUBJECTS OF EXAMINATION

25. Each subject of written examination shall be comprised in one paper, for answering which a specified maximum time shall be allowed.

26. The subjects of written examination shall be the following:—

No. 1.—Engineering Surveying (A)

Elementary theory of hydraulics ; hydraulic terms and constants ; determination of mean tidal levels ; barometric measurement of heights ; gauging of streams, rivers, and other waterways ; use of current meters for determining velocity of current and discharge of rivers ; use of pipe, channel, and mean flow velocity formulæ ; calculation of run-off and flood discharge, determination of waterways for bridges and culverts ; simple problems relating to irrigation, reclamation and land drainage.

No. 2.—Computations (A)

Problems regarding standardization of steel tape, determination of working tension, sag, and temperature corrections ; reduction of traverses and co-ordinates ; calculation of areas by double longitudes ; calculation of offset areas ; calculations in connection with areas and dimensions of plane figures having rectilinear or curved boundaries ; calculations for setting out circular and parabolic curves and road secants ; mensuration of surfaces and solids.

No. 3.—Town and Country Planning (A)

The principles governing regional-planning and town-planning ; zoning ; communications and transport ; the design of open spaces and recreational areas ; by-laws ; public services ; amenities ; preparation of civic survey ; town-planning schemes ; details of town design ; design of suburban, industrial, and country lands ; subdivisions, access, reservations for public needs and amenities.

No. 4.—Astronomy

Spherical trigonometry, azimuth, altitude, hour angle, time, right ascension and declination, and the relation between them; use of the "Nautical Almanac"; corrections to star or sun observations; effect of errors of adjustment of instruments; determination of azimuth, latitude, and time.

No. 5.—Aerial Surveying and Photogrammetry

Flying specifications, flight maps, scales, weather conditions, lighting; aerial camera, types of cameras, photographic materials; geometry of the aerial photograph, scale relationships, coverage, perspective qualities, relief and tilt displacements; photogrammetric optics, lenses, prisms, mirrors, filters; principles of stereoscopy, including parallax measurements; graphic triangulation, Arundel method of minor control plotting, ground control; stereoscopic plotting methods, absolute and differential parallax, knowledge of principles involved in the rectifying and enlarging camera, epidiscopes, stereocomparator, multiplex projector autograph or other comparable plotting-machines; preparation of mosaics.

No. 6.—Land Classification and Utilization

A general knowledge of elementary geology; classification of areas of land according to geological formation and topography; types and properties of soil; types of pasture; distribution of native timbers and scrubs; economic values of timber; principles of afforestation; effect of river control and water conservation in land development; conservation and reclamation of land; effect of climatic conditions on soils and pastures; water supply and reticulation for farm development; productive capacity (agricultural and pastoral); economic farm unit; economics of land subdivision for development; existing and potential land uses; land drainage and irrigation; farm planning.

No. 7.—Computations (B)

Computations connected with plane surveying, three-point and similar problems, calculation of heights and distances; stadia surveying; calculations in connection with mine surveying; adjustment of discrepancies in surveys; problems connected with the setting-out of areas.

No. 8.—Engineering Surveying (B)

Levelling, including precise levelling, contouring stadia surveying, tacheometry and preparation of relevant plans and sections; calculation of quantities; locating, grading, and setting out of roads, railways, irrigation works, drainage and water-supply channels; setting out of banks, cuttings, and other earthworks; setting out circular, vertical, and transition curves.

No. 9.—Laws and Regulations affecting Surveys

The Acts and regulations relating to—

- (a) Surveys of land for purposes of title; the subdivision of land; opening and closing roads and rights-of-way; the taking of land for special purposes;
- (b) Surveys of mines, both surface and underground;
- (c) Town-planning and regional-planning.

No. 10.—Geodesy

Figure of the earth ; reduction of length to sea-level, corrections for curvature and refraction ; trigonometrical heights of stations ; spherical excess ; calculations for geodetic latitude and longitude, reverse azimuth and convergence of meridians ; laying down parallels of latitude ; elements of map projection, with special emphasis on the Transverse Mercator and Lambert's Conformal projections ; calculations for co-ordinates of the Transverse Mercator and Lambert's Conformal projections from latitudes and longitudes, and *vice versa* ; zoning and the scale factors involved.

Principles of and general procedure for first order, second order, and minor triangulations, including reconnaissance, observing, beaconing, and permanent marking ; field-book practice, summaries and strength of figures ; visibility of stations ; base nets ; resections ; computations connected with triangulation ; and the use of tables of radii and curvature.

Special formula in geodesy and map projection will be given.

No. 11.—Town and Country Planning (B)

The preparation of a design of an urban or rural area, or a design for the intensive development of a specified area, with explanatory notes of the particular project.

No. 12.—Land Valuation

A general knowledge of definitions ; stock-carrying capacity ; cost of development of various types of country ; methods of valuing all improvements ; valuation of buildings, roads, drains, clearing, and earth works ; Acts and regulations affecting valuations ; influence of existing laws on land values ; methods of estimating compensation for land acquired or resumed by statutory authorities ; valuation of the fee-simple of urban and rural property and of interests less than the fee-simple ; relationship of location, site, and climatic condition ; farm costs and returns ; depreciation and obsolescence.

27. The subjects of oral and practical examination shall be the following :—

No. 13.—Adjustment and Use of Instruments

(a) The principles of construction and practical tests in the adjustment and use of all instruments required in modern practice and office work.

(b) A practical test in the use of the stereoscope for field examination of aerial photographs, at the discretion of the Board.

No. 14.—Field Practice

The practice of surveying, with a knowledge of the Acts and regulations bearing on same ; survey of an area as for title purposes, including the preparation of a plan from the field notes thereof, made under the supervision of the Board ; this survey may take the place or be additional to either of the plans required under Regulation 31 (e) (i) or 31 (e) (ii) hereof.

No. 15.—Practical Levelling

Practical levelling of a section of at least 20 chains in length.

No. 16.—Practical Field Astronomy

Practical determination of not less than two of the following :
Azimuth, time, latitude.

PART VI.—ORDER OF EXAMINATION

28. Before being permitted to present himself for examination in any of the subjects a candidate must have passed or been accredited with the subjects of mathematics and heat and light of the University Entrance Examination, or passed the subjects of mathematics and heat, light and sound of the School Certificate Examination of the Education Department ; in the case of ex-servicemen of the Armed Forces the Board will judge the standard in individual cases.

29. (1) Before being permitted to present himself for examination in any one or more of the subjects numbered 1 to 3 in Part V hereof a candidate shall have completed, to the satisfaction of the Board, not less than one year of his term of articles, less any deduction to which he may be entitled under Part III hereof.

(2) Before being permitted to present himself for examination in any one or more of the subjects numbered 4 to 6 in Part V hereof a candidate shall have completed to the satisfaction of the Board, not less than two years of his term of articles, less any deduction to which he may be entitled under Part III hereof.

(3) Before being permitted to present himself for examination in any one or more of the subjects numbered 7 to 12 in Part V hereof a candidate shall have completed, to the satisfaction of the Board, not less than three years of his term of articles, less any deduction to which he may be entitled under Part III hereof.

30. No candidate shall be permitted to enter for more than seven written subjects at any one examination, nor shall he be credited in the oral and practical subjects until he has obtained a credit for a pass in each of the written subjects.

31. Before being permitted to present himself for examination in the subjects numbered 13 to 16 in Part V hereof, a candidate shall have—

- (a) Produced to the Board a certificate in the form numbered 2 in the Schedule hereto signed by the surveyor to whom the candidate was articulated, or if the articles were served successively under more surveyors than one, then certificates as aforesaid signed by each of such successive surveyors setting out the matters indicated in the said form :

Provided that the Board may in any case where such certificate or any of such certificates is unobtainable accept the certificate of some other person having knowledge of the facts :

- (b) Produced evidence to the satisfaction of the Board by means of the aforesaid certificates or otherwise that he has served under articles for a full period of four years less any exemption to which he may be entitled under Part III hereof :
- (c) Produced evidence to the satisfaction of the Board by means of the aforesaid certificates or otherwise that he has had—
- (i) Except in the case of a person to whom paragraph (d) of Regulation 17 applies, at least two years' training and practical experience in land-boundary definition ;

(ii) In the case of a person to whom paragraph (e) of Regulation 17 applies, at least eighteen months' training and practical experience in land-boundary definition ;

(iii) Training and practical experience in rural surveying for a period of or periods aggregating at least six months ; and

(iv) Training and practical experience in urban surveying for a period of or periods aggregating at least six months ;

(d) In any case where, notwithstanding such evidence as aforesaid, the Board considers that the candidate has not received sufficient training and practical experience in the profession of surveying, produced evidence to the satisfaction of the Board that he has undergone, and, if the Board so requires, served under articles, such further training and practical experience as the Board in its discretion for such particular case prescribe :

(e) Submitted to the Board satisfactory field notes and plans drawn therefrom by himself—

(i) Of the survey of a country area of not less than 80 acres, two of the boundaries of which coincide with and shall be reinstated from previous surveys and one of the remaining boundaries of which is a watercourse or other natural feature or an irregular road, together with essential calculations relevant thereto ;

(ii) Of the survey of a town lot with buildings on or near the boundaries, together with the technical description thereof as made for the purpose of an application under the provisions of the Real Property Acts ;

(iii) Of a proposed road, railway, or drainage work not less than 20 chains in length with requisite longitudinal and cross sections thereof ;

(iv) Of a base line not less than 80 chains in length connected by a series of at least three triangles with the triangulation of the district ; and

(v) Of a topographical survey of hilly country showing contour lines at height intervals appropriate to the scale and purpose of the survey, but such plan shall not be less than 64 square inches.

Each plan shall bear the following certificate signed by the candidate :—

“ I hereby certify that this survey was made by me personally between the day of, 19..., and the day of, 19..., and that this plan and the accompanying field notes are entirely my own work.

“ *Signature* : ”

(f) Submitted to the Board such additional information with regard to his professional service and his field notes and plans as it may require.

32. No candidate shall present himself for examination in any of the subjects numbered 13 to 16 until he has received a credit for a pass in all of the written subjects prescribed in Regulation 26.

PART VII.—EXAMINATION CREDITS

33. The maximum number of marks allotted to each subject shall be one hundred.

34. To receive credit for a pass in any subject the candidate must obtain not less than sixty marks in that subject.

35. No candidate shall be credited with a pass in the B section of any subject prior to completing the A section of such subject :

Provided, however, that where a candidate sits for the A and B papers in a subject at the same examination and obtains pass-marks in the B paper but not in the A paper, he shall not be credited with a pass in the B paper unless he obtains pass-marks in the A paper of such subject at the next subsequent examination. In the case of illness, absence from the country, or other exceptional circumstances the Board may vary the provisions of this clause.

36. A candidate who submits a degree or diploma granted by a university upon completion of a course which in the opinion of the Board necessitates sufficient training in surveying and in which a person appointed or approved by the Board or a reciprocating Board is a co-examiner in surveying shall, without examination therein, receive credit for a pass in such of the written subjects as he has qualified in for the purposes of such degree or diploma :

Provided that a candidate who submits evidence of a pass at a recognized examination in any subject or subjects that, in the opinion of the Board, are equivalent to any one or more of the written subjects of the examination may, at the discretion of the Board, receive credit for a pass in such subject or subjects.

37. Subject to Part VI hereof and to this regulation, a candidate may sit for any subject and shall be given credit for any subject in which he passes, provided that—

- (a) A candidate passing in any subject or subjects before the completion of his articles shall retain every such credit (whether obtained before or after the completion of such articles) until the expiration of the period of five years next succeeding the completion of such articles or agreement, but no longer :
- (b) A candidate not passing any subject or subjects before the completion of his articles shall retain every such credit until the expiration of the period of five years next succeeding the date when he first sat for the examination after completing his articles :
- (c) Any candidate who has received a notification from the Secretary advising him that he has failed in any subject at the examination may, within one month from the date of such notification, appeal to the Board to review his paper in such subject, and the Board, at its discretion and upon the receipt of the prescribed fee, may allow such review. In the event of the candidate succeeding in his appeal, the Board shall refund the fee.

38. Any candidate failing to qualify under the provisions of the last preceding regulation may take the whole examination again, but shall be required to pass in the whole of the subjects within five years from the first date on which he again sits.

39. Each candidate who has received credit for a pass in all the subjects numbered 1 to 16 inclusive, shall be entitled to receive from the Board a Certificate of Competency as a surveyor under the hand of the Secretary in the form numbered 3 in the Schedule hereto.

PART VIII—FEES

40. The following fees shall be payable to the Board in respect of the matters hereinafter referred to :—

	£	s.	d.
(a) Registering articles	0	5	0
(b) Registering transfer of articles	0	5	0
(c) Entry of candidate for whole examination	5	5	0
(d) Entry of candidate for part examination	3	3	0
(e) Entry of candidate for each subsequent part of examination	2	2	0
(f) Review of examination paper, each subject	0	10	6

SCHEDULE

Form No. 1

Survey Board of New Zealand
 CERTIFICATE OF EXPERIENCE AND TRAINING
 (Regulation 14)

File No.....

Reg. No.....

I, A. B., registered surveyor, of X, Y., hereby certify that C. D., registered cadet in my employ, has had for the twelve-month period ending 30th June, 19.., a training and experience in the profession of surveying as set out hereunder.

A. B.,
 Registered Surveyor.

		Period employed (in Days).
(1) Office training—		
Computations		
Plotting and draughting		
Searching		
Other work		
(2) Field experience—	Capacity * employed.	Period employed (in Days).
Land-boundary surveys—		
Urban		
Rural		
Miscellaneous surveys—		
Engineering		
Mining		
Topographical		

* Indicates : C=chainman or linesman ; I=instrument-man.

(3) Studies and progress—

(a) What course of study is cadet taking to prepare himself for the profession ?.....

(b) State subject of examination (if any) :.....

(c) Is the cadet, in your opinion, making satisfactory progress ?.....

(4) Any further comments :.....

I agree that the foregoing is a correct statement of my training and experience during the period specified.

C. D.,
 Registered Cadet.

Survey Board of New Zealand

Form No. 2

CERTIFICATE OF SERVICE UNDER ARTICLES

I, A. B., registered surveyor, do hereby certify as follows :—

- (1) C. D. has been professionally and continuously employed under articles with me in the practice of land surveying from to— that is to say, for a period of years and months.
- (2) During the said period he has for (a period of) (periods aggregating) years and months received training from me and practical experience in land-boundary definition.
- (3) During the said period he has for (a period of) (periods aggregating) years and months received training from me and practical experience in rural surveying.
- (4) During the said period he has for (a period of) (periods aggregating) years and months received training from me and practical experience in urban surveying.

Dated at, this day of, 19..

A. B.,
Registered Surveyor.

I certify that in my opinion the said C. D. is fully competent to effect surveys on his own responsibility.

Dated at, this day of, 19..

A. B.,
Registered Surveyor.

Form No. 3

Dominion of New Zealand
The Surveyors Act, 1938

CERTIFICATE OF COMPETENCY

No.....

THESE are to certify that Mr....., of, has duly passed the examinations prescribed by the Survey Board for admission to the profession of a land surveyor.

Dated this day of, 19..

.....
Secretary to the Survey Board.

[SEAL OF THE BOARD.]

T. J. SHERRARD,
Clerk of the Executive Council.

Issued under the authority of the Regulations Act, 1936.

Date of notification in *Gazette* : 12th day of August, 1948.

These regulations are administered in the Department of Lands and Survey.