

him, the private practitioner; so, as the Chief Surveyor had no assistance, he was forced to accept the plans as given to him. I may remark, standard survey and minor triangulation would have stopped this improper state of things; and I am further of opinion that the cost, under the circumstances, should have been borne by the selector in the first place, if the Government were not able to bear this. It appears clear to me that the private surveyors, in not giving connections and casting the *onus probandi* on the official head, acted unfairly. The least that they should have done would have been to show the bearings and distances, which, if not checked by supervising officers at the time, would stand as a record of *bonâ fide* work, as in doing public work licensed surveyors cannot absolve themselves from all responsibility in the matter.

The effect of this practice was tantamount to strewing cards over the ground without order or arrangement. That the outcome of this can be satisfactory, no one can anticipate.

A synopsis of survey work in the Province of Marlborough stands as follows:—

	Acres.	
Minor triangulation	... 39,000	Mechanically plotted and unreduced.
Block section survey	... 888,000	" "
Spotting ditto	... 5,000	" "
Section surveys in hand	... 200	In three localities 80 to 100 miles apart.

#### NELSON SURVEYS.

I next proceeded to Nelson, commencing my inspection of surveys on the 15th September, and obtaining all necessary information of the present Chief Surveyor, Mr. J. S. Browning, who informed me that there were no data in the office of an initial point having been fixed upon, and whose latitude, longitude, and true meridian had been determined. The various separate surveys in this province have been built up into one map by the assistance of the Admiralty Nautical Surveys. Yet, for the objects of registration, there is an assumed initial point which is in the centre of the Town of Nelson, situated at the intersection of Nile and Trafalgar Streets. Hence this initial point is topographically but not geographically ascertained, and there are no direct connections geographically or geodesically with this and the other points of the province, though indirectly, by traverse and plotting, the connection for registration has been effected. The whole province has been divided into squares of ten miles, plans whereof are constructed on a scale of twenty chains to the inch. The sheets are thus 3' 4" square. The working plans are on a scale of ten chains to an inch, and are of all sizes.

The New Zealand's Company's original actual surveys were executed in rectangles, but exceptionally otherwise where there was detail work. These surveys included an area of 117,000 acres, and many of their field-books have been lost. An instance of loss is in the case of the Town of Nelson, of which there is no record as to how its streets were laid off. It is due to mention that the present Chief Surveyor has only been in charge for six months.

On the disbandment of the New Zealand Company's staff a small establishment was supported; the surveys were then conducted partly by contract, partly by officials. Minor triangulation was executed to the extent of 63,000 acres in Waimea East and South and Suburban North.

There is no safe attached to the office, and the working plans are kept on racks on the walls. The application maps, however, are kept in drawers. Working plans vary in size from 7' x 15' down to a few inches.

The triangulations are based on the magnetic meridian, but the data are not sufficiently recorded for use. The angles are yet in the field-books, nor are the bearings reduced on the meridian and perpendicular.

The practice in section survey has for many years been to use the theodolite, but on different magnetic meridians, building one on the other, and in this there is no mathematical reduction. In the year 1864, the West Coast gold fields broke out, which were administered from Westport, but the records were removed to Nelson in 1875. Here there was no attempt to preserve continuity, so the result was disorganization. From this fact it may be supposed that where surveys meet they overlap and show the greatest non-conformity.

The present land system may be shortly described as follows:—It is an agricultural leasing system, whose terms are for seven or fourteen years, with a purchasing clause inserted giving powers of purchase by leaseholder at any time. Survey before leasing is necessary, but choices extend to any part of the province. The system is therefore one of unrestricted application.

In the Chief Office application maps serve also as Crown grant record ones, and are 3' 4" square. The field-books are mostly in pencil. Those that are not so kept in pencil are mere copies; and all are now carefully kept in the cases, indexed for their districts.

The application maps used by the public are in a bad condition; but the working plans (except the early ones) are in a good state.

Since the accession to office by the present Chief Surveyor, he has commenced a system of mathematically reduced traverses, but, having no standard survey as a guide for true bearing, he has proceeded on the magnetic meridian.

The progress of the surveys have been greatly retarded by the surveyors being connected with Public Works Department.

Regarding the adoption of 10-mile square sheets, of which many have been constructed on a scale of 20 chains to an inch, these should be adopted if possible; but, as they may not be on a true meridian of any position within the province, and, if so, as the province is too large to make a single meridional circuit of it, it is doubtful if new survey districts will not have to replace them. There is the less objection to the latter course as the working plans (the really important part) are not surveyed under the square system, nor are their boundaries coterminous. If they, however, be on a meridian in a longitude of the province, part might be adopted, the rest being reconstructed on the 12½-mile square system. These professional points must be left to the direction of the Geodesical Surveyors. As it is, the 10-mile square sheets of Nelson being merely compiled maps of no professional though of much