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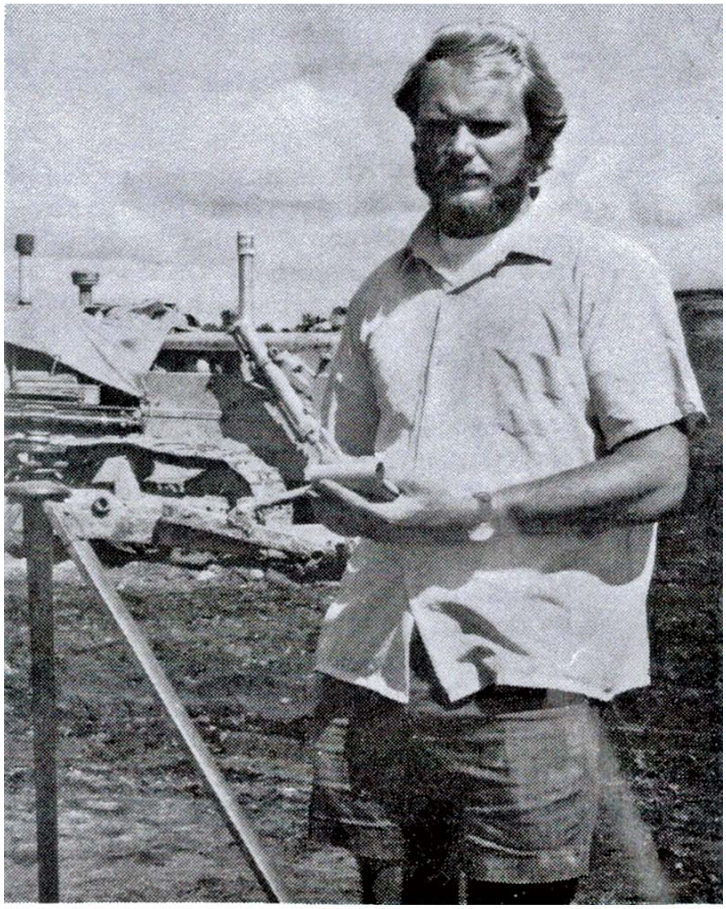
HYDRO-ELECTRIC POWER PIONEER LOOKS BACK

Four Generations Spanned - By MAX AVERY,TAURANGA



W. L. Mandeno . . . carrying on the family tradition.

THE young Mr Mandeno has stowed his shining new BE (civil) gown in the wardrobe, taken up his slide rule and set foot in the field.

Blue-eyed, fair-bearded William Lloyd (Willy) Mandeno is a fourth generation engineer. Son of W. H. Mandeno, grandson of the famous Lloyd Mandeno, great-grandson of another W. H. Mandeno.

Whether he follows in his grandfather's footsteps and builds hydroelectric power schemes all over the country remains to be seen.

He well could, for the coincidence that he is the only grandson to be given the name Lloyd has been followed by the coincidence that he is cutting his engineering teeth on the Mangapapa hydro-electric scheme his grandfather designed.

Aged 24, "Willy's main interest outside of engineering is motor-racing. He drives a Morris Minor van which is capable of performances which almost literally leaves production models of the vehicles standing. He plays squash and he likes to keep his hand and eye in at clay bird and duck shooting, using an old $5 single-barrel hammer gun.

The young Mr Mandeno decided to take up engineering when he came to the conclusion he was not cut out for farming. Even then he was no stranger to his grandfather's engineering projects, having visited them with his father.

"I didn't exactly tag along behind granddad everywhere he went, but I've always been interested in engineering," he said.

"Like most small boys I was fascinated with water and used to dam up the creek on the farm."

Today the young Mr Mandeno has a chance to dam up creeks on a much grander scale. On the Mangapapa hydro-electric project working for "the old firm" of Mandeno, Chitty and Bell, he has been given the responsibility for quality control on the earth dams and canal systems.

He spends a great deal of his time checking levels and ensuring earthwork compaction, moisture content and density meet the required standards.

In this the firm is using some of his special knowledge because he opted for advanced soil mechanics, together with construction and management, in his final year at the Auckland University school of engineering.

He spent two of his university years working part time in the Auckland office of Mandeno, Chitty and Bell, and hopes to stay with the firm and participate in the design and supervision of later stages of the Mangapapa power project.

In engineering Willy hoped he would find an interesting outdoor life in which he could create something. In the Kaimai ranges, beside the Mangapapa River, he has found just that.

Link with Tauranga

Lloyd Mandeno has recorded the engineering history of his family at the request of this correspondent:

"It is true, as you have been told, that four generations in our family have been connected with engineering; but one should be clear — in the case of two of us, engineering was to some extent not their main interest throughout their careers.

"Neither my father nor my son have been professionally trained as engineers, although it so happens that all four of us have been associated with engineering at some part of our lives.

"That fact combined with the fact that each of us has been identified in some degree with the development of the Tauranga district, would probably make our story in some degree unique. So if you are looking for records that is as close as I can take you toward one.

"My father's interests were primarily in pioneering the land, but as a youth he obtained some experience in building construction, being apprenticed for a time as a builder, and I believe he assisted his elder brother, who undertook the contract for the erection of a number of block houses along the northern boundary of the King Country shortly after the Waikato War.

"'However, early in the 1870's he took up land in its virgin state between Tauranga and Katikati and broke in two well-known farms, the first being the Lockhead property at Te Puna, the second the Kenneth-Morton property at Aongatete. While at Aongatete he became director of a company that established the first dairy factory in the Bay of Plenty.

"In the early '80's he took up a 240- acre property three miles from Te Awamutu, the farm being very intimately associated with Maori history, and because of its importance to the Maoris it actually became the scene of the first engagement in the Waikato War, Colonel Nixon, whose monument is a prominent feature on the Great South Road near Otahuhu, was among the killed in that engagement.

"I was born on the farm, and well remember coming across leaden bullets and the remains of fire-arms when the fields of our farm were being cultivated.

Waipa County Chairman

"My father came into engineering in that he became chairman of the Waipa County Council, and in those days supervision of road works devolved largely on councilors, there being no professional county engineers. His involvement in this class of work gradually increased until the council decided he should become a paid servant and he assumed the role of county supervisor.

"At that time there were no metalled roads in the Waipa county, but before he retired from the office of county supervisor all main roads and many side roads had been metalled, all the metal being imported from quarries outside the county. The preparation of the roads for metalling involved a considerable amount of earthworks, but as the work had to be done with horse scoops and tip drays, the scale of the work was naturally limited compared with what is possible nowadays with modern earth moving machinery.

"From an early age I assisted him in the surveys for these works and in the design of culverts and bridges. He early saw that my interests were in engineering rather than farming and I became one of the first two students from the Auckland Province to go south to attend the Canterbury College school of engineering, from which I graduated in 1909.

Practical Experience

"A young engineer naturally seeks as early as possible to obtain varied experience in the practical application of engineering, and mine included a period in the locomotive repair shops of the NZ Railways, which at that time were located at Newmarket.

"Then there was a year or two with an electrical contracting firm. This work included the layout of industrial motive power installations and also electric elevators. Touching on the latter, it is of interest to recall that up to about 1910 the Auckland railway yards and the main railway platform terminated at the Queen Street frontage, but were cut back to allow the erection of the existing main post office building. My work included the layout of the post office electrical elevators in the position where they remain to this day.

"There followed a period on the erection of the electrical plant of the hydroelectric power station at Hora Hora, which at that time was being erected on the Waikato River by the Waihi Gold Mining Company. Although this station is now submerged, by the erection of the Karapiro dam, it was at the time of its commissioning the largest power station in New Zealand, and transmitted its output at 50kv, which was then the highest transmission pressure in the country.

"A year or two as a borough electrical and civil engineer in the borough of Frankton, now forming part of Hamilton City, was followed by my appointment as borough electrical engineer at Tauranga. My 12 years residence at Tauranga was full of interest — also a little work.

"It was in 1926 that I left Tauranga to commence consulting practice at Auckland. That was not a very favourable period, as it turned out, to commence consulting practice, as it was shortly to be followed by the slump of the '30s when engineering activities largely ceased.

"However, a compensating factor was a resurgence of mining activity and my association with this took me into almost all parts of the South Island and many parts of the North. As an example of what this involved, I spent three months in camp in the dead of winter in a gorge of the Shotover River six miles from Skippers on the construction of a dam across that river. Temperatures would sometimes remain below freezing point for over a week, sometimes being 40 degrees below.

"However, with the lifting of slump conditions the pursuit of engineering activities improved and as an example of the changed circumstances it may be of interest to mention that whereas during my period at Canterbury University there were only 30 engineers in the whole school of engineering, there are nowadays well over 1500 undergoing university training in New Zealand.

Overseas Service

"As previously indicated, the connection with engineering of Willie's father was to some extent indirect. As a school boy he camped with me at McLaren Falls (Tauranga) and assisted in the regional survey of that hydroelectric project. After our move to Auckland he attended the Auckland Grammar School and on leaving there he got practical experience in farming in the Waikato and Hawkes Bay and Southland. By that time he was beginning to think of acquiring a farm of his own, but in 1937 it appeared that war was imminent and possibly not a good time for a young fellow to start on the land.

"He therefore came onto my staff and carried out load surveys of the King Country power district, and then in the far north he carried out for me load surveys and also a certain amount of power line surveys.

"When the war broke out in 1939 he enlisted in the New Zealand Engineers and after training at Waiouru he left with a small party whose task it was to prepare for the arrival of the main body of New Zealanders in Egypt.

"His company of engineers formed part of the rearguard in the retreat from Mount Olympus down to the Corinth Canal, his duties being to demolish bridges and bring down falls of rock where the road traversed mountain sides. In carrying out the demolition of the bridge across the Corinth Canal his company was cut off from further retreat by the descent of German paratroops, this being the first occasion on which paratroopers took part in any war.

"He evaded capture by hiding in the mountains of the Peleponosus Peninsula, where the villagers fed and aided him. After a time he was able to join up with the remnants of other units and a small party of them crossed the sea to Crete, where they were being returned to Egypt for the reforming of their units.

"He was with the engineers in the Western Desert when at the battle of Minquar Quam the New Zealand Division was surrounded, and he became a prisoner of the Italians, after being severely wounded.

“After being posted as missing for almost a year he was reported to be at a military hospital in Northern Italy.

"Early in 1943 he was one of a number of British prisoners who were exchanged in the port of Smyrna for an equivalent number of Italian war amputees from Egypt.

“He arrived back in New Zealand in July, 1943 with the rank of lieutenant, having been commissioned in the field. After a period in hospital he attended Massey University and gained his degree in agriculture and was then posted as consulting officer to the Dairy Board in the Bay of Plenty district.

“In that capacity he became familiar with the problem and progress of many of the dairy farmers in the Tauranga county. He is at present farming in the Te Awamutu district.”

Leads the Field

That then, is the story of the engineering Mandenos. Undoubtedly, Lloyd Mandeno stands out as the greatest engineer of them all. Indeed, he stands head and shoulders above New Zealand engineers as a pioneer in the development of hydro-electric power in this country.

He has proved that he still leads this particular field by his recent designing of the 33 megawatt three-station Mangapapa complex for the Tauranga Joint Generation Committee.

Many local bodies throughout the country have cause to be grateful to Mr Mandeno for his engineering economics, his ability to gain a maximum of units from a minimum of water.

We are privileged to have his assistance in setting this record of his family’s engineering history down on paper.

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