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Serious career options following High School in 1955 were not very wide ranging; medicine, chemistry, engineering and teaching. UWA only had three faculties, Arts, Science and Engineering. A lot of my year students went into teaching at the teacher training college. Those interested in Medicine started science for year one then transferred to Adelaide to continue. The engineers disappeared to the south end of the UWA campus. I started science with a Geology unit intending to major in that subject however I failed in properly applying myself to a study regime and although being granted a repeat year, was alerted to the surveying option and commenced articles with Russell Taylor of Esperance in 1957.

I can thank a former schoolmate Trevor Middleton for the introduction to surveying. By accident we had met during the Christmas holiday period 1956/57 and he told me of the great life he was experiencing as a cadet surveyor with the State Department of Lands and Surveys and how/where to apply.

The Lands Department had completed its intake of cadets and referred my application to a Surveyor who had recently come from Melbourne to assist the Department under contract on the subdivision of Crown land at Esperance. The sand plain around Esperance had until then been unsuitable for agriculture due to the poor quality of the soil. Recent research results however from the Department of Agriculture had identified missing trace elements which when added to superphosphate fertilizer established the viability of the land for cereal and pasture crops. I am not aware of how American Investors became interested in such a remote area but a land development agreement was entered into between the State Government and the investors, known as the Chase Syndicate, for the Syndicate to develop the land to a standard where parcels could be sold off as workable farms to Australian applicants

I flew to Esperance in a Douglas DC3 aircraft via Kalgoorlie and Norseman where the air strip was on a salt lake and then to Esperance to be met by Surveyor Russell Taylor with his series one short wheel base Land Rover. I stayed overnight in a room attached to his rented house before being taken out to the camp about 30 miles east of Esperance on the old coast road. Esperance was a seaside village in a pretty setting, a holiday destination from the Goldfields and a port for oil supplies transported north by train. The camp comprised a single tent shared by me and two “chainmen” situated on the edge of a paperbark (tree) swamp, seasonally dry. Russell had a caravan for accommodation.

We arrived late in the day and the first job was to take the water tank loaded on a car trailer behind the Land Rover to a nearby well in the swamp and fill the tank by bucket. The water contained tadpoles which were removed if seen. Cooking was over an open fire and the shower was a purposed made bucket with a shower rose under, hoisted over a tree branch. The water flow was controlled by a rope attached to a lever on the bucket attached to a plug in the water feed to the shower rose.

At this stage Russell did the cooking, cereal, bacon, eggs, beans, for breakfast and grilled meat, potatoes and canned vegetables for dinner (tadpoles boiled in with the potatoes as it was getting dark by the time the food was being prepared). There was a fridge in the caravan to hold the meat for the week. Enameled plates and mugs on the knee around the campfire, no tables. Lunch was bread, canned meat and canned vegetables. Dessert was canned fruit. As a result of insufficient fresh vegetables, I developed “barcoo rot” and spent some time in the Esperance Hospital. Following my complaints about this experience I was given the responsibility of arranging the food order to ensure the inclusion of fresh vegetables. This

also meant that the meal preparation was delegated down.

The survey work was the marking out of the boundaries of the new farms, about 2000 acres, more or less depending on the soil type. Long straight lines set out with a theodolite.

Russell used a Kern DKM1 lightweight reconnaissance theodolite which because of its compact size was derided by other surveyors but it was easier on the shoulder when carrying from point to point. Glass circle theodolites were being introduced but the common work piece was the open brass circle Cooke Troughton and Simms (CTS).

The lines were cleared with an axe, spiked every 10 chains (200metres) with trenches (lockspits to t'othersiders) dug either side of each mark placed to indicate the direction of the line. Long lines required an azimuth check at regulated intervals by means of a sun observation. Corners were marked with a 4" square (100mm) wooden post pointed on top, the sides carved with the Location number. Cutting and shaping posts with an axe was the second part of my introduction to the work the day after the water tank filling. The usual timber choice was the paper bark tree which grew in the swamps. The rest of the Esperance sand plain was treeless except for the Christmas Bush *Nyctia Floribunda*. The paper bark was approved for the use under the survey regulations, was available in the area and was easy to work with a sharp axe. However, as a newcomer I didn't know about sharp axes and that first day gave me blisters on my hands,

Travelling in the Land Rover was uncomfortable and dirty, the vehicle bounced on the rough tracks and the back was always open drawing in the dust. Tyre punctures occurred almost daily and had to be repaired each night. On one occasion we removed a rear axle and replaced a bearing at the roadside (sand track).

Surveying subjects were studied at night and weekends, examinations in Perth in December or January. Eric Brook supervised the remote education of survey cadets.

The camp was moved when travelling time became excessive. Sometimes "flying camps" were utilised whereby everything needed for an overnight stay was packed in the Land Rover and stayed there during the working day as the car always moved along with the work.

Russell usually slept? across the front seats of the Landover, if there were more than one assistant we would have a "fly" tent on a rope between trees, if it was only me I would sleep lengthwise in the back of the Landover which required removal of the internal spare wheel and lowering the tailgate.

The scale of the land development required Departmental Staff Surveyors to also be involved in the soil classification and Crown land subdivisions. Ross White was there, and stayed on as a farmer, also Peter van Noort. Eddie McKinnon was a cadet with Ross White and Selby Munsie was there as Draughtsman. Sid Stokes was the Regional Surveyor who would visit from time to time.

Holiday breaks required finding a lift to Perth with someone, and on one occasion when Russell purchased a second Land Rover from Faulls in Subiaco I was dispatched by train to collect it and drive it back. The train comprised a railcar to Coolgardie and then connecting to the "Kalgoorlie Express" train on its return from Kalgoorlie to Perth. The railcar caught on fire on a deserted section and stopped for investigation. Whatever the reason for the fire, it was extinguished and we continued to Coolgardie.

Car engines at the time were considered to require 'running in' when new which meant not

driving faster than 30 miles per hour (50kmh) for the first 1000 miles (1600km) and a very slow return to Esperance. I reached Karalee, east of Southern Cross on the first night and stayed at the hotel. There was little else there except some railway fettlers' houses. Now there is nothing. The hotel liquor licence was transferred to the Karalee tavern at Como.

The legal drinking age was 21 years so entertainment for young people was at the Esperance Picture Theatre, or a dance at the Esperance Hall, or sometimes the dance was at the Dalyup District Hall. Underage drinking was practiced under the cover of night at the dances or private remote houses.

On one occasion, returning to a camp on the Young River after a week end in Esperance we hit a small kangaroo with the Landover and one of the chainmen, a farmer, suggested we take it with us for meat. It was subsequently eaten after roasting in a camp oven.

My introduction to Italian cooking occurred from the invitation of two Italian laborer's working on the development of one of the farm sites we were surveying. Spaghetti of course, with a tomato and meat sauce using canned meat due to the remoteness of the site and lack of refrigeration.

For a job east of Esperance marking the alignment of a proposed road south from Munglinup to the Duke of Orleans Bay the camp was at a particularly attractive part of the coast where a small rocky point was joined to the mainland by a narrow band of white sand. I revisited the site 52 years later was surprised at the change wrought by nature. Sand had continued to be deposited and impenetrable coastal scrub growth established itself to the extent that it was not possible to walk to the point.

Because Russell and his wife were from Melbourne, we returned there for the birth of (some) of his children. Twice coincident with survey congress from where I travelled on for a holiday and one extended period when Russell obtained a contract for the re-survey of old Crown Grants between Uroa and Shepparton which had initially been issued using metes and bounds descriptions.

The first trip east in 1958 was by train. Russell had driven over and was in Melbourne to greet me at Spencer Street Station with the Land Rover. His drive to Melbourne must have been an ordeal for his very pregnant wife Leslie. The train journey was segmented due to different rail gauges in each state. The trains themselves were reaching the end of their vintage life before steel coaches were introduced. It was still steam power to Kalgoorlie with diesel loco's pulling the Commonwealth Railway trains.

On a later visit east his family including wife Lesley and three small children were crammed into a Ford Zephyr station wagon for the trip. Russell and I co-drove around the clock to minimise the time spent on the journey.

After the 1960 survey conference I travelled with a surveyor from Mackay in Queensland in his Volkswagen Beetle via Lakes entrance, Mount Kosciuszko, Sydney, Newcastle, Tweed Heads, Brisbane etc. sleeping in the car except for Sydney where we stayed overnight with one of my relations. From Mackay I flew to Proserpine to spend Easter on South Molle Island on the Great Barrier Reef. After flying back to Melbourne, I joined the Taylors for the return trip to Manjimup in the Ford Zephyr. The trailer we were towing broke an axle in South Australia and it was left there. After returning all to Manjimup I again drove the Landover to South Australia with a new axle for the trailer, replaced it and towed it home.

In 1959 Russell bought the survey practice of Jack Nunn in Manjimup. He moved to a small cottage in town and I initially stayed in a boarding house. More time was spent away in camping conditions than was spent commuting from Manjimup. I had for several years been building a caravan at my parent's house and when finished towed it to Manjimup where it became my home base. The chainman Russell had inherited from the previous surveyor was living in an old farm cottage at a farm on the Deanmill Road. I rented space in the paddock adjoining the cottage to park my caravan. There was an existing bough shed, iron roofed shelter and toilet room from a previous occupant which I could use as an annexe/car port.

Initially Russell allowed me use of a Land Rover to commute as the Chainman also had no car and we could travel in to Manjimup to work together. The caravan had a Kerosene fridge, 12 volt lighting from a battery until the kerosene pressure lamp was lit, a water tank which had to be topped up by carrying water across from the cottage and a pan toilet which I emptied as necessary by carrying the pan across the road and burying the contents in some bushland. The "Tilley" pressure lamp was also very effective at heating the caravan. There was sufficient air leakage through the roof vent to avoid asphyxiation.

From Manjimup we worked within about a 75km radius, Surveyor Frank Thomson looked after the Bunbury region and ? Harley, if he was not already in Busselton, was planning it. Des Considine was based in Narrogin. Russell's caravan was used for accommodation where the roads were good and camping in a tent or fly or in the back of the Land Rover in the bush or forest when not. One of the tent camps south of Nannup was burned out by a bushfire when we were in Manjimup for a weekend.

Interesting and pleasant times were spent at locations along the south coast from Walpole to the Scott River where access was difficult, especially the Scott River job where we were taken down by boat and left for the week. No radio or mobile phones – no emergency plan and considering the off duty practice of swimming out into the ocean with the river flow and back in with the surf, life was at risk. This was accepted without thought. I was given some experience in forestry matters, a course subject, by working for a short period with forestry workers near Walpole where I measured and counted trees and caught marron. One weekend the forestry workers dropped the Department's Jeep into a channel on the beach during an unauthorised excursion. It was left there and I suppose heavy machinery was found to drag it out.

My introduction to Asian food happened through Russell's employment of two Chinese students from Singapore during University vacation. They were accommodated for the period in an empty farm house on a property not far from my caravan site.

At times during 1960/61 Russell arranged for my attachment to Survey Firms based in the city. One period was with Crossland and Hardy, an historic name, proprietors at the time were Sam Bennett, his son Bob Bennett and Wally Johns. Another time was with John Clements and John Keating of City and Rural Surveys. Most jobs were with the senior cadet John Guidice.

With my articles to Russell about to expire, and Russell contemplating a sideways career move into Planning, and relocating in Perth, I started early on looking for further employment. Russell had, early in the relationship, sowed the seed of using the training in surveying as means of finding interesting employment in other parts of the world. The first safe step in this direction came in the form of an offer from the Hydro Electric Commission in Tasmania which wanted surveyors for the further development of its Hydro Electric Scheme ambitions. Following a survey congress in Melbourne in 1960, I flew to Hobart to follow up an interview I

had had in Perth. The weekend I was there exceptional rain caused flooding in Hobart, including the ground floor of the Bristol Hotel at which I was staying. I believe such a flooding event in that City has not occurred again since.

After the annual survey licence examinations early in 1961 I returned to Hobart to a position as engineering surveyor. My car was trucked to Port Augusta from where I drove via the Murray Valley to Melbourne then the car ferry “Princess of Tasmania” to Devonport and down to Hobart. Private boarding accommodation in Newtown within walking distance of the Hydro’ offices was arranged but I later moved to Fern Tree Gully.

John Linton was the Senior Licensed surveyor; others were unlicensed, but extremely capable in geodetic and engineering areas. My first field job was at Snake Creek (location of camp site), out from Mole Creek (a Town). The hotel at Mole Creek could be used for accommodation and to clean up before returning to Hobart and I left my car in the Hotel garage whilst out at camp. The camp, under canvas was reached by forestry roads and finally bush tracks and was within walking distance of the work which was establishing by the old-fashioned method of spirit levelling the difference in height between the top and bottom of a location on the Western Tiers (mountains) where it was proposed to construct a penstock line as part of a new Hydro Electric scheme transferring the water of Lake Mackenzie to a lower level storage site.

After a weekend off and social drinking (by others), the return trip to camp at night was a possum catching event. Those participating would sit on the outside front of the Land Rover until a possum was illuminated by the headlights on the track ahead. The driver would brake to aid the forward momentum of the catcher and any possums caught would be bagged. As far as I remember I think that they were later released. This camp introduced me to the Tasmanian blowfly practice of laying its maggots in the puncture holes in the condensed milk tins if left uncovered (there was no fresh or sterilised milk, and Nestles “Ideal” canned milk was the choice of the cook at that camp).

Visits to Mole Creek were also necessary to communicate with Head Office in Hobart by telephone. Two-way radio reception was not possible from the camp as the mountains were between.

I returned to Mole Creek later in the year as the start point for an expedition over the Western Tiers to Lake Mackenzie again to a tented camp. Less accessible but being higher and above the snow (tree) line was in radio contact with Hobart. It was necessary to “tune” the aerial each night before attempting the radio connection.

The camp was reached by Land Rover as far as it could climb up the Tiers then walking with a back pack. The route was marked with poles as visibility could severely diminish in cloud or snow. The transfer of bulk goods such as the camping equipment was made by a tracked vehicle made by Bombardiere of Canada but travel was extremely rough as the vehicle was designed to travel over clean snow and not heavy enough to flatten the vegetation – large clumps of reedy grass over marshy soil. We worked here until the weather forced us out. Part of the lake, near the outfall, was crossed by pulling oneself across whilst suspended from a steel cable. The tents at this camp were semi- permanent, being left in situ for occupation the next season. For some reason I can’t recall but it was probably due to ground conditions, the last leg of the camp access was across the outlet stream from Lake MacKenzie and it was necessary for each person to pull himself across on a flying fox. My work comprised marking a flume line at a given ‘grade’ from Lake McKenzie to the point which I had previously reached from below, from snake Creek.

Another interesting job involved the stereoscopic photography of a dam site on the lower Derwent River using a Wild Phototheodolite with glass photographic plates. The Upper Derwent was already dammed for Hydroelectricity and it was intended to use the water a second time. The camp here was in 8ft. Square timber huts with, unusually I thought, sheltered entrances. It was very cold here, the start of winter and in a valley. Nights would be spent in the mess hut as it was warm with the kitchen stoves alight. Supper of buttered toast was enjoyed but watched carefully by the cook who had to keep his food bill within a tight budget.

This is where I mention my oft' repeated story of having the (river) water cut off by the upstream dam control whilst I photographed the river bed and then being on the wrong side from the vehicle when it was turned on again. Clothes off, boots on against the rocky bottom and we bounced across. I don't recall feeling as cold as a later similar experience in the Avon River in WA. Thinking back on this, how many people can say that they had the flow of the Derwent River stopped for them.

Aerial Photo control and Trigonometrical survey work from a camp at Ouse was colder, several pairs of trousers were needed and from one observation point- on a hill- the snow was blowing up, not down. We were there to attempt some observations with a Wild T3 theodolite to tie in control points at a dam site. Tellurometer distance measuring equipment was in use but not by me. I recall the Survey Conferences always seemed to have a lot of papers on ground swings and other difficulties with reducing Tellurometer readings.

On one day out setting targets for aerial photos I misjudged the Land Rover's centre of gravity and rolled it sideways down a hill. Despite no seatbelts, and loose axes tumbling around, no one was injured. The Land Rover looked bad after the event but was still driveable as I drove it back to Hobart for repairs. The country around Ouse provided some fantastic field mushrooms.

Later in the year it was even colder when we were working out from Sheffield. It was necessary to scrape the ice off the land rover windscreen in the mornings and chains were needed on the wheels to drive on the icy roads - and the cars had no heaters!

I returned to Perth for Christmas and attending the season's surveyors' drinks party at Steve's Hotel in Nedlands I was approached by Theo Symons and offered a job with the West Australian Government Railways which had just been tasked with constructing a new 'Standard Gauge' railway between Perth and Kalgoorlie, to be on a new alignment and, ultimately allowing a single continuous railway gauge across Australia. As the salary offered was a significant inducement, I needed little persuasion and it brought me closer to my future wife.

I decided to drive home and although the car had survived the gravel roads of south west WA and Tasmania, the road between Port Augusta and Norseman was a more severe test. Rest and provisioning facilities were almost non existent. Careful planning for fuel was necessary and I carried a supply of petrol, water and food. The car chassis, suspension and body survived the road which contained numerous broken up sections known as 'bull dust holes' formed where the surface, which was only earth formed, had been broken up to dust by truck traffic. On settling back, the dust gave the impression of a smooth road surface which could not be distinguished from the normal road surface until you drove into it with the resulting shock to the suspension and loss of vision in the billowing dust.

Although the car survived the road, the motor suffered a broken piston ring and stopped about 300km east of Norseman. Fortunately, the next vehicle along was a 'ute' and the driver had a

rope and offered to tow me to Norseman. This was far from pleasant but managed without further mishap. The car was severely stone damaged across the front but fortunately not the windscreen.

The car was left at a service station at the junction of Eyre Highway and the Coolgardie Esperance Road and I obtained a lift overnight in an interstate truck. In Perth, I had fabricated, a towing frame which utilised the trailer towing ball on the towing car and coupled at two points on the towed vehicle. This triangulation prevented the rear vehicle from wandering and could be towed without a driver. I then drove a borrowed car to Norseman and towed the Triumph to Perth.

I signed on as an 'Assistant Engineer' with the WAGR at the old accounts branch building on the corner of Bridge and Stirling Streets Perth and was directed to present myself to 'Engineer' Charlie Dunlop at Toodyay. The classification 'Engineer' was given to all professional staff regardless of their discipline.

Accommodation at Toodyay for the 'Engineers' who comprised an elderly surveyor C. Dunlop, 'Dig' Gray an instrument hand and myself, was an old VW class railway van fitted with four bunks, a non-functioning shower and the middle section was intended to be the kitchen dining area with a wood burning stove but in fact the van was only used for sleeping. The van was located on a dead-end siding in the old Toodyay Railway Yards opposite the convent. Messing was with the survey hands (chainmen) in a railway employee house which had been allocated for their accommodation also within the old railway yard. Digger undertook to do the cooking.

The work required the marking of the alignment of the proposed new railway through the Avon River valley, Toodyay and re-join the old railway briefly at Northam. Beyond Northam, the requirement for a better gradient than the old narrow gauge railway meant the new work was generally parallel to but on new alignment determined as far as Southern Cross from contour maps produced from aerial photography. Beyond that, after a quick reconnaissance by Theo Symons, the ruling grade of 1:200 was chased on the ground.

From Toodyay, the next camp was at Meckering, again messing in a railway fettler's house with the overflow accommodation in single men's huts in the railway reserve not far from the main track to Kalgoorlie. The X-class Loco's thundered past at night almost as though they were running through the huts.

I didn't work public service hours, reductions and calculations from the day's work were done at night and several times a week I would drive after hours to check on progress of other survey "parties" operating under my direction at several locations, Grass Valley, Bodallin and Carrabin.

A number of chainmen working with me at this time came from Belmont and as we all did, returned to Perth every second weekend. One Monday, Brian Robinson was hung-over and chose to not return to Merredin with his mates. This then lead to an argument with his father. I think they were both inebriated and a shotgun was produced with someone threatening to shoot the other. Neighbours called the police and the Officer attending, Noel Isles, was unfortunately shot and killed by Brian.

Because I insisted on a 'dry' camp, the return trip to Perth after a ten days shift in camp was an opportunity to have frequent drinks at the hotels on the way. I didn't drink so elected to drive in Bill Faulkner's new Holden, EH model very fast and there was no speed limit outside built up

areas. The speedometer indicated about 94mph (150kph) between towns. Bill was a surveyor assisting me.

The camp at Wallaroo Rocks between Koolyanobbing and Kalgoorlie was unique inasmuch as it was at the base of a rock on which had been developed a water catchment and storage by the old wood line operators sourcing timber for the mines. With the use of a long hose we were able to have running water at the camp. There was also the opportunity to swim.

The camps were shifted by dismantling the 2.4 metre square accommodation sheds and carrying the flat sides and roofs on a 30cwt. Bedford truck which was standard equipment for each survey party. On one occasion we had to change a track rod on the truck, in the bush.

In 1962 I had a break from the main line survey and worked on the alignment and construction of the Kwinana to Mundijong Railway which was part of a further connection to Jarrahdale for the purpose of transporting Bauxite ore to an alumina refinery at Kwinana.

One farmer west of Mundijong was not happy to have a railway line through his property and threatened to shoot me but the alignment of the railway was quite remote from his house and he either didn't see me working through or he thought better of his threat. A similar threat was made in the 1980s at Greenough.

Having reached Kalgoorlie with the railway survey, and being employed only for the project it seemed logical to look for further employment and the British Colonial Service had advertised for a Surveyor for Fiji. One of the senior surveyors from Fiji, Eric Walker came over to interview me. The Colonial Women's Corona Society sent some information over for my wife Marilyn to explain life in the colony so we set out on our adventure.

After ascertaining the cost of cars in Fiji and considering only the initial two year contract it was better value to take the Triumph Herald over even though it was dutiable by Fiji Customs. It was sent by truck to Sydney to be placed on a small freighter which serviced Fiji. Despite sending it off well in advance of our departure, changes in shipping schedules saw the car travelling up and down the east coast of Australia before turning east and arriving at Suva several weeks after we did. The long exposure to the ocean as deck cargo and possibly being lifted on and off to allow other loading left it looking quite sad. Also the radio had been stolen. Its poor condition did however lead to a low import value and consequent low duty assessment. Fortunately insurance covered the damage and I had it repainted in its original colours. Despite the bad roads it held together quite well for a light car. I had no trouble selling it when we left after a three year stay.

We flew Sydney to Nadi in a Boeing 707 and after overnight at the Airport Motel, flew to Suva (Nausori Airfield) in a DC3. We were met at Nausori by one of the Senior Surveyors Alan Beautyman and taken to a motel (The Outrigger?) in Suva pending the allocation of a house.

Colonial servants were allocated a standard of house according to their "grade" and houses became available according to the leave roster as "long leaves" allowed for return to England by boat and consequently were about six months in duration. Rather than have the houses vacant for that period of time, they were allocated to the next arrival. I was at the bottom of the grading list and there were no houses available at that grade. We were consequently put into a higher grade house, that of the Harbour Master.

The house was of the old colonial standard in being open planned and spacious but was timber framed, weatherboard clad and curiously unlined inside. All houses came with a garage and

housemaid's accommodation usually a room attached to the rear of the garage. It was known as a Bure (mbooray), the same term for any Fijian's village house.

The outstanding feature of the house was its location on a cliff edge (unfenced) overlooking Suva Harbour. The matter of the lack of a fence and Marilyn's pregnancy was said to have been a factor in relocating us at an early date.

My first impressions of Fiji were the luxuriant foliage and its perfume, the scent of a Gardenia still transports me to Suva. Marilyn noticed the number of people walking; a reflection on the economic conditions where few people had cars. The heat was bearable as it was seldom more than 30° and rained every afternoon. It was humid. New arrivals were allocated a basic household kit, on loan, although I cannot now remember the details of the contents except that Marilyn has often remarked on the heavy cooking pots which we used until our aluminium ones arrived from home. Furniture was supplied but the mattresses were packed with coconut fibre and were very lumpy and uncomfortable. We had not initially arranged for our mattress to be packed and sent prior to departure but wrote home and had Marilyn's Dad forward it. This second shipment of goods cost £47/8/-. A similar lumpy baby's mattress was not used but substituted by our buying a piece of plastic foam and Marilyn making a cover.

The social circle was based on the husbands work associates, we were made to feel welcome and the wives' networks made sure no newcomers were lonely or ostracized. Lands Department staff came from the UK, New Zealand and Australia. Local Fijians, Indians and Chinese who had acquired salaried positions were included in the network. The next larger circle comprised other Australian ex pats working in other Departments and next larger, other Australians in private employment. Coincidentally, a survey chainman of Russell Taylor's, Bob Brown from Esperance but originally from Orange in NSW, was managing one of the island resorts.

The different cultures were interesting to us having no knowledge of anything outside white Christian Australia, the small village clusters of the Fijians, Voi- voi woven huts in the country and a mix of salvaged materials in the urban cluster. The Indians, who were either Hindu or Muslim, generally formed their own urban 'squatter' villages. The Hindus had more frequent and colourful ceremonies, various forms of penance to their gods which included firewalking and forms of body piercing. The Chinese were in the minority. We were invited to several weddings, Hindu and Chinese and were welcome at any of the other celebrations.

I was initially a Staff Surveyor on an annual salary of £1,464, carrying out both country and town subdivisions, re-establishment surveys, road realignments and some photo control marking. The Divisional surveyor was Gordon Adam, an Australian from Sydney.

There was a shortage of technical school teachers and I was asked to lecture at the Suva "Derrick Technical Institute", now the Fiji Institute of Technology, at Samabula, not far from the Harbour Master's house. This was only one night a week (plus preparation, setting and marking exams).

I was also required to take on the correspondence teaching of surveying subjects and the annual examination. Part of the official duties was the testing of private ex-pat surveyors requiring a Licence to practice in Fiji. The teaching paid 20/- hour and the assignment marking 6/- each. A position in Australia at the time may have paid about 20% more but the Colonial Service had the housing, the overseas experience and a generous long leave entitlement after as little as two years which could be paid as a lump sum at the end of the contract. Britain was phasing out of the colonies and permanent Colonial Service positions were not being offered.

The pool of survey assistants allocated to the District Office was a friendly helpful group. There

was only one I would not have been comfortable with during an uprising. There had been an uprising in previous years but I think it was the Fijians objecting to the Indian presence. Everyone appeared to coexist satisfactorily in the City but I sensed the rural Indians were cautious in their attitude towards the Fijians who retained land ownership.

Shortly after arriving one of the Fijian Land Lease inspectors working from the same building invited Gordon Adam, me and several other ex-pats on a hike/climb to a prominent hill on the Suva skyline known as Joske's Thumb. The hike was worse than the final climb, being over an extensive uneven swampy area before we reached the foothills. The non-surveyors in the party, being all the others except Gordon, Qasevakatini (Gus) and me, were not up to it and didn't reach the top. We were late home.

I have since read that I achieved this feat before Sir Edmund Hillary who didn't make it to the top until 1983 on his second attempt, (blaming his ropes).

Whilst we were in the Harbour Master's house, our neighbor Pat MacCassie, a local Businessman originally from New Zealand who was married to a local mixed blood girl and a permanent resident, invited me on the annual Suva to Levuka Launch race. Levuka being the name of the principal town on the adjacent small island of Ovalau. The route to Ovalau ran through narrow channels in the Rewa River Delta before reaching the open sea and the direct run to Levuka. There were Fijian villages scattered across the delta and A river delta by its nature is flood prone and there was evidence of this by the water marks on a church there but it did not flood whilst we were in Fiji and I have not been aware of one since. Pat was later instrumental in setting up the local airline Air Pacific.

Only a small amount of land was acquired from the Fijians by the British Crown. Outside the towns it remained in Fijian ownership but a lot was leased to Indians as it was the only way an Indian could gain an agricultural plot. It was not widely surveyed or Titled. Ownership belonged to the villagers and to pass through it to carry out survey work it was necessary to take the ceremonial Kava and sit and drink a brew with the chief and get his permission and perhaps a guide before proceeding. This sometimes required a small payment. On one occasion the point we needed to access was on the extreme of the village's land and apparently not visited in recent times as my positioning of the boundary based on Departmental records was beyond where our guide thought it was and he was consequently pleased to learn of the additional area. *(This required celebratory Kava on the way back)* Movement through village land was aided by the custom of keri-keri a form of sharing where they would share what they had without question as they would expect the same in turn when required.

On one excursion which required passing through an Indian's farm (on land leased from the Fijians) to and from the survey job, I was surprised on the return through the farm to be offered a meal of curried chicken. This had been arranged by the Fijian chainmen either in Fijian or Hindi without my knowledge and I wonder now if the Fijians had in some way coerced the Indian family into the offer.

On another occasion we (Fijian chainmen) utilised the principal to borrow an unattended dingy to cross the upper Rewa River to get us to a job. I wasn't comfortable with the arrangement in case the boat had been borrowed back by the time we re-emerged from the bush but luckily it was there and we left it as we found it.

Land parcels were marked with small concrete posts or short lengths of water pipe and the Indians had no qualms about moving them to their perceived advantage. It made re-

establishment surveys difficult as it required a lot of calculating to determine which marks were correct. No computers. The Head Office had electric adding machines as they did in Australia, but surveyors were issued a miniature mechanical calculator, brand named Curta, made in Liechtenstein. Back in the office the small Facit calculators were standard as they had been from when I started surveying. Somehow the mechanical actions of the left hand thumb working the tab lever and the right hand rotating the drum handle backwards and forwards towards a mathematical conclusion was very satisfying, especially for reducing sun or stellar observations.

We made one trip to Lautoka, the principal town on the northern side of the main island where the Department's Northern District Office was situated. From that point it was equidistant to return to Suva by completing a "circumnavigation" of the Island. Marilyn and Sean came with me. We were stopped short on the first day by a flooded river and spent the night at a small resort called Tubakoola,

One job was the placing of ground control marks for aerial photography, Eric Walker's department. It had until then been the practice of marking these control points, which had to be clearly visible from 12,000 feet flying height, with a cross formed of white cotton cloth pegged to the ground. I was informed that the marks often disappeared before the photography run was organised as the cloth was taken by the Fijian villagers for clothing. Basically, a wrap-around garment called a Sulu. I suggested the Australian practice of using white painted tar paper which was accepted as a cost saving alternative.

My son Sean, and later daughter Bronwyn, was born at the Morrison Maternity annexe of the Colonial War Memorial Hospital in Suva. The attending Doctor was Doctor Duncan whom we also saw as a GP although as a Public Servant I was entitled to free medical treatment at the CWM. The children were the only white babies in the hospital (*an historical coincident, I was the only white baby when born in the Youanmi Western Australia Hospital in 1939*). The annexe was constructed in the same manner as the Harbour Master's house, unlined timber framed but without the luxury of glazed windows. The window openings were covered by large hinged timber flaps which were propped up for ventilation during the day (and food delivery for the Indian Mums who did not like the hospital food). The cost was 2/6 day, I think that was the Colonial Service rate, private patients were charged much more.

The Suva District Survey Office was located a couple of streets away from the rest of the Lands Department which was in the monumental "Government Buildings". It was in what may have been an old colonial house but was big enough to hold the Mines and Town Planning Departments (small Departments). My office overlooked the outdoor kitchen of the adjacent house occupied by an Indian family. The curry aromas have stayed with me ever since.

The office was ultimately relocated in the main building. I spent some time relieving both the Project Surveyor Tilluk Verma, and District Surveyor Gordon Adam, during their respective leave periods. Apart from the round of private parties and yacht club activities, (I was not in the yacht club), entertainment was limited. Marilyn did however have an almost endless stream of visitors. The women had time to visit as house-girls did the housework and babysitting.

There was one radio station, no television. The Fiji Times newspaper provided limited information. On reflection, this assisted a form of censorship of world events (to keep the natives down) as we found later that we had no knowledge of some things that happened outside the island between 1966 and 1969. Radio Australia and the BBC world service helped keep us informed.

There were several picture theatres mainly showing Bollywood. We went to see "Doctor

Zhivago” and remember feeling cold seeing the snow. The arrival and departure of Tourist ships was an opportunity to listen to either the Police or Military brass bands which alternately welcomed and farewelled the ships. It was also entertaining to watch the tourists whose holiday clothes contrasted with the more staid standards of the resident European population. Weekly on Fridays the Military band would perform 'Beating the Retreat' at the Campbell (Military) Barracks.

Midway through the tour we returned to Perth to visit family, money was tight and I financed the trip with help from Surveyor David Murray who had a Lands Department contract to establish Leveling Bench Marks throughout the South West of the State and gave me a couple of week's work.

This trip was a first in a Boeing 747, impressive with its cavernous interior.

During the last few months of my contract consideration had to be given to extending, renewing, returning to Australia, or looking for new experiences elsewhere. It had however always been my intention to work in the UK and perhaps gain further surveying experience and we headed east across the Pacific on the SS Galileo Galilei. At 27,000 tonnes she was smaller than P and O's "Oriana" which at 50,000 tonnes was then the largest passenger ship on the Australian route.

We were played off the wharf by one of the uniformed bands playing 'Isa Lei" as was the custom.

Alighting in Genoa we toured Italy, trained to Amsterdam and ferried to the UK. In London we stayed at a small private hotel run by an Italian Family in Russell Square, near the Tube Station. This was my first experience of having to put coins in a meter to keep the lights on, and boil the kettle.

I made some enquiries about work but after considering the cost of living and the salary available, decided to move on.

I was aware of a position with the British Colonial Service in Sabah which was still a Crown Colony so we flew via sightseeing stops in Athens. Delhi, Hong Kong and Singapore to Kota Kinabalu.

The last flight leg was in a DeHaviland "Comet", one of which had failed in flight and crashed over the Mediterranean Sea, and which had the disconcerting habit of appearing to fill the cabin with smoke but which was actually condensation during a stage of the climb to altitude.

Kota Kinabalu was very small and the state of development of the country behind even that of Fiji. We were shown around by a local representative of the Colonial Service but the position available required me to be at a Field Station, with Marilyn and the Children staying in Town. I don't remember that Marilyn objected but perhaps it didn't require her to as the proposal didn't appeal and I declined the position.

Back in Perth, I visited the office of the New Works Division of the Civil Engineering Branch of the WAGR to renew acquaintances and was approached to start as a surveyor to locate a new railway from Kalgoorlie to Kambalda. Employment conditions included the provision of a Transportable house at Kalgoorlie.

The initial reconnaissance for the proposed railway to Kambalda was done by light aircraft. After getting that glimpse of where I was supposed to go, the ground work was routine chasing the grade.

We stayed there for about a year. The Kambalda railway was extended through to the Lake Lefroy Salt railway at Widgiemooltha. The Esperance and Leonora branches were also upgraded with deviations. One task, water catchment area surveys, was accomplished by pace and compass traverse alone into the “bush”. Again, work safety issues were not a factor with no radio, phone, GPS or water bottle. The safety issues were absent again when working at a quarry site near Kalgoorlie and the shot firer did not check that we were clear before firing and causing a rain of rocks. Fortunately, there was no damage to personnel but the Land Cruiser was dented and had a window broken.

After a short period in Bunbury surveying the Picton -Inner Harbour railway where we stayed at the Koombana Park caravan park, we returned to stay in Perth.

Another difficult river crossing occurred during this period. During a winter I was working in the Avon Valley, and bogged the Land Rover late in the afternoon. The location had very difficult access to the south side of the river and the mobile 'phone had not been invented. I knew that there was a park ranger living on the other side of the river and thought that I would swim across. It was by now early evening, it was winter and the Avon River was wide at that point. After launching, I was literally shocked by the cold water which gave the impression of compressing my chest and I quickly turned around and abandoned that scheme. My assistant Jaap Bos offered to swim across but I was not willing to take the responsibility of allowing it. We walked down along the railway to Upper Swan locality and phoned home from a store on the great Northern Highway.

Part of 1973 was spent doing a reconnaissance for a possible railway from Tallering Peak north of Mullewa, generally along the Greenough River alignment, to Geraldton using aneroid barometers to determine the gradient. This also was simpler without later restrictive regulation as the base station was monitored by a single person all day in a remote location whilst I traverse alone all day with no radio at either station.

Summer in 1974 saw me at Eneabba which turned out to be a “last straw” for me surveying in summer conditions in a treeless location. The weather was hot, there was no shade and the work was uninspiring. I resigned.

Another “Character” I was working with at this time was a gifted mathematician but introverted with no social skills (who am I to comment). He later became mentally unwell and apparently had resentment against other members of society who displayed wealth. He chose to drive his car to a head – on collision with a Mercedes car. The driver of the Mercedes died.

During the two years 1974 to 1976, I worked for a period at each of the Belmont and Swan Shires. At Belmont I was commissioned to map the river foreshores for that part of the Swan River which passed through the Shire. After that, some road work and building set outs but when it came to counting street trees I moved on.

At Swan Shire the need was for a Surveyor on a drainage project and then for a new road alignment from Muchea westwards towards Wanneroo. The rest of the time was on preliminary surveys to enable the design of new or upgraded roads.

On one 'search' visit to the Lands Department I learned that the Lands Officer from the WA Railways was retiring and believing that I had good background knowledge of Railway land and despite being outside the Public Service, applied for the position.

Late in 1976 I started again with the Western Australian Government Railways which was shortly to become Westrail and later again part of the Public Transport Authority. This start was shortly after the opening of the new Head Office at East Perth on the site of the former Locomotive Depot. The building style of the period has become known as brutalistic. The inside space provided for open planning with work areas defined by moveable partitions known as cheeseboard because they resembled a wedge of cheese.

My work involved the recognition and definition of railway land and its boundaries, maintaining the accuracy of the boundary depiction on all railway plans, arranging and keeping record of acquisition and disposals and advising on the effect and application of Statute Law as it applied to railways.

Surveyors who passed through Westrail, apart from Theo Symons already mentioned, were Don Winnett, Mark Short and Peter Wundercitz. Fred Bray also did some work on the Standard Gauge Railway in the early 1960s, Colin Shipp in the early 2000s and Russell Wellington.

Following my forced retirement from Westrail in 1997, Neil Browne of Crossland and Hardy helped me through a slow patch with some subcontract work leading to continuing “consultancy” work, back with what became the Public Transport Authority. My value to that Authority being my knowledge of the land in the railway network which, due to short sighted Government policies, had not been passed on to subordinates.

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