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**HISTORY
OF THE
STATE VERMIN BARRIER FENCES**

(Formerly known as Rabbit Proof Fences)

By: JS Crawford

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I INTRODUCTION

1. Background

There is evidence of rabbits arriving in Australia as far back as 1788, and it is well known that others were liberated on islands around the coast, including some off the coast of Western Australia. However, they remained localised and it is now generally accepted that the rabbits which did spread originated from a small shipment of the wild type brought on the Clipper “Lightning” in 1859. They were released on “Barwon Park”, the property of Thomas Austin, near Geelong in Victoria, and within three years, had reached pest proportions.

Twenty years later, rabbits had crossed the South Australian and New South Wales (NSW) borders. By May, 1886, after travelling at 70 miles a year, they were in Queensland. The westerly branch which reached South Australia (SA) by 1880, had crossed to the other side of that State in 12 years. They were on the border, with some probably in Western Australia (WA) some 2 years later. Thus, thirty five years after the initial release near Geelong, they had spread to the border of WA, a distance of approximately 1,300 miles (on a direct course), having advanced at a rate of thirty seven miles a year.

On the figures here it works out at 37 miles a year, but Ratcliffe 1959, ‘Rabbit in Australia’, “The spread from SA across WA accomplished at comparable speed to that across NSW, ie 70 miles per year.”

During the years referred to above the rabbits had proved such a menace in NSW, that the Government of the day offered a reward of £25,000 (\$50,000) to any person who could rid the country of them. The unhappy experiences in the Eastern States from plagues of rabbits was to some degree exercising the thoughts of some people in WA. The Parliament of the day passed the “Destruction of Rabbits Act 1883” followed by the “Destruction of Rabbits Amendment Act 1885”. In 1895, the “Rabbit Question” was administrated by the Minister of Lands, who in turn delegated it to the Chief Inspector of Stock in December, 1897.

In June, 1896, Surveyor Mason (Lands Department), left on an expedition to investigate the rabbit position. He travelled generally north easterly from Kalgoorlie via Kurnalpi to Boundary Dam, some 450 miles. Here, his camels, most of his stores and water were stolen by aboriginals and he and his hired hand, were forced to walk 160 miles south to Eucla, suffering acute privations enroute. The season was singularly favourable, and in describing the country traversed, Mason reported as follows: *“the flora, grasses, herbage, simply magnificent, almost beyond description.....crossed hundreds of miles of country like farms.....but water almost completely absent.”*

From Eucla, where he found rabbits becoming noticeable, Mason ventured a little way into SA where he found them in great numbers in the sand hills. The furthest west he saw rabbits (two) was in the vicinity of Madura Pass about 20 miles in from the coast.

On the completion of his expedition, Mason recommended that a rabbit proof fence, about 2/300 miles be constructed along the State boundary and a second fence be constructed some 230 miles west of the border, thus fencing in the rabbits. This was to be followed up by liberating a few hundred cats to clean up the rabbits therein.

A further two expeditions were sent out in an endeavour to determine what advances had been made by the rabbits. These were made on the instruction of the Chief Inspector of Stock. A Mr Page carried out a six months expedition in January, 1898. His recommendation was that a fence be constructed for 150 miles north from Rocky Point, just east of Israelite Bay. However, as rabbits were known to be west of this point, it was not considered feasible. (A Mr White was appointed Stock and Rabbit Inspector in 1899). In January, 1900, White left Perth "to investigate the rabbit position and see if it had made any headway." White was well versed in the rabbit problem in the Eastern States, having been at one time, Chairman of the Rabbit Proof Fence Commission in SA.

In the report on his findings, Mr White established that along the coast the rabbits had reached no further than Thomas River, about 65 miles east of Esperance. However, north of Norseman rabbits were fairly numerous, Mr White having seen 500 to 1,000 along 20 miles of the track. Rabbits were also well in evidence at the north end of Lake Cowan, some 30 miles east of Widgiemooltha. Mr White recommended that a rabbit proof barrier fence be constructed, starting from a point some 5 miles west of Esperance on the south coast, and thence northerly to pass some 5 miles west of Coolgardie. Mr White strongly maintained that a barrier fence was imperative to stay the invasion of rabbits from over running the balance of the State.

2. Royal Commission – 1901

The penetration of the rabbits into the State must have been disturbing many people who, presumably, brought pressure on sufficient politicians with the result that a Royal Commission to “Enquire into the Rabbit Question” was appointed in February, 1901. The Commission consisted of seven members, and in March of that year, held seven meetings, during which eleven witnesses gave evidence.

The Commission in its findings was:

- a) satisfied that there was evidence of rabbits in many places and that they were frequently being found in fresh localities. Also that they will continue to increase, and that the rodents were in thousands, possibly to the extent of millions around Eucla and westward for some miles.
- b) very critical of the apathy of responsible authorities, and their utter want of appreciation of the danger the State was incurring through the ascertained progress of the rabbit invasion.
- c) compelled to advocate the construction of a fence 500 miles west of the State border. As a consequence, millions of acres of pastoral country would be left open to the ravages of rabbits. *“This national loss would, in all probability have been obviated had steps been taken in reasonable time to check the incursion in its early stages”.*

The Commission had been supplied with a map of the State on which was shown a proposed line for the construction of a rabbit proof fence. The starting point on the Southern Ocean was shown as Fitzgerald’s Inlet, with the fence going in a northerly direction to pass adjacent to Southern Cross, continuing north just east of Lake Barlee, skirting the Gibson Desert and ending at Cape Bossuf, south of Le Grange Bay on the Ninety Mile Beach (now Eighty Mile Beach). Should the Kimberley districts later be threatened a separate fence would have to be constructed.

Seized with the urgency of the situation, the Commission suggested in the following words *“.....that the 400 miles of fence between Fitzgerald Inlet and the Survey mark NB49 (north west of Lake Barlee about 60 miles), be at once undertaken; and to ensure rapidity of construction, the contractor be bound to simultaneously start operations with one party working north from the railway line (Perth-Kalgoorlie line) another party working south from the railway line, a third party working north from Fitzgerald Inlet, and other parties from any other convenient starting points.”*

3. Survey of No. 1 Fence

The reaction of Parliament to the Report of the Royal Commission was sufficient for the instigation of moves towards the building of a rabbit proof fence, as recommended. The Surveyor General, (Mr HF Johnson), did not favour Fitzgerald Inlet as the southern starting point for the fence. After discussions it was agreed that the fence line should go east of the Ravensthorpe Hills. The Surveyor General also suggested that the fence line should go south from Carrabin Siding; some 12 miles east of Burracoppin. Surveyor AW Canning was put in charge of a party to carry out an examination of the country to the south.

Around the end of July, 1901, Surveyor Canning, accompanied by Stock and Rabbit Inspector, White, set out not from Carrabin Siding, but from Burracoppin, and travelled through to Starvation Boat Harbour (now Bedford Harbour), on the south coast, completing the trip by about the 9th August, 1901. Surveyor Canning reported very favourably on the line he had taken.

In September, 1901, the Rabbit Department was formed as a Sub-Department of the Department of Agriculture. In charge was a Secretary (Mr Wilson), who took over from the Chief Inspector of Stock. At the same time Inspector White and five sub-inspectors were transferred from the Stock Branch to the Rabbit Department.

On the completion of the permanent survey (of 25 miles south and 30 miles north of Burracoppin, carried out between 8th October and 20th November) Surveyor Canning then carried out an examining trip for a continuance of the fence line, north from the 30 mile, to the Kimberley ranges, some 340 miles further north. This he completed in January, 1902. While Surveyor Canning was away on this trip, Secretary Wilson wrote to the Lands Department requesting that Surveyor Canning complete the permanent survey south to the ocean, continuing on from the already permanent survey to the 25 mile peg. This request was made because of Inspector White's report of rabbits working along the south coast, and Secretary Wilson's desire to call tenders for construction of the fence, commencing at the coast end.

The Surveyor General in his instructions, to Surveyor Canning had emphasised "*paying particular attention to any spots where natural waters existed or may be obtained, and recommend reserves and suitable boundaries to embrace such localities*". Surveyor Canning commenced the permanent survey south from the 25 mile peg in February, 1902 and completed the work on reaching Starvation Boat Harbour in late June or early July: the fence line from Burracoppin to the coast being 215 miles.

Based on Surveyor Canning's observations, Secretary Wilson records – "*The result showed a practical route for such a fence, well ahead of the rabbits; the route chosen proving to be the best that could possibly be selected for the purpose, when natural features of the country are considered. It has the advantage of being the shortest route possible, it avoids difficult country which elsewhere exists; it is well away from the lines of traffic, and appears to be good sinking almost throughout. It was by far the best watered, there being numerous, well spaced rock outcrops along much of the route. The chief draw back is the scarcity of suitable timber for fencing purposes, necessitating the use of iron standards for about 160 miles of the central portion.*"

Surveyor Canning was not to be permitted much “time-off” from field activities. At the beginning of August, he proceeded with the permanent survey of the fence line north from the already established survey line to the 30 miles peg. He was to be engaged on this survey until March, 1903 reaching the Peak Hill – Wiluna road, being the 369 mile peg, north of Burracoppin.

The difficulties encountered by Canning and his party, during the carrying out of this survey, and his views regarding some of the problems that the fence construction contractors would be likely to encounter, are geographically set out in an interview he gave to the Press on his return from the Wiluna area. (This press report is reproduced in detail in Appendix I). Canning was subsequently to carry on and complete the survey of, what was to be known as the No. 1 Rabbit Proof Fence. This stretched from Starvation Boat Harbour on the south coast to Cape Keraudren at the south end of the Eighty Mile Beach (north of Port Hedland and on the Indian Ocean) a distance of 1,139 miles then being the longest unbroken fence in the world. Unfortunately, the file(s) dealing with the survey of the remaining 555 miles have not been sighted. However, the fence line continued north from the Kimberley Range, passing through pastoral country to Lake Nabberu. North from here, the fence line separated the pastoral areas from the semi desert country lying to the east, which to this present day still remains unalienated.

II CONSTRUCTION OF THE NUMBERS 1, 2 & 3 FENCES

1. Commencement of Construction of No. 1 Fence Under Rabbit Department Supervision.

Shortly after his appointment in September (1901), Secretary Wilson made an inspection of the northern portion of the fence line to obtain some idea of the timber available for fence posts, to enable specifications to be prepared. On the trip he learnt that the rabbits had reached Southern Cross along the railway line and adjacent to the Kalgoorlie pipe line, from which water seeped at numerous points. Following his visit, Wilson called separate tenders for the construction of the fence; one for 25 miles north and the other 25 miles south of the Goldfields railway line. Twelve tenders were received for the Southern Section and six for the northern section; the lowest tender for the former being £41 per mile, and for the latter £63.9.0. The lowest tender for the southern section was accepted, and it was decided to recall tenders for the northern section. About the 21st December, 1901, the first work of erection (clearing) was begun. The recalling of tenders was delayed until the 11th April, (1902) because netting supplies were not available. Mr H Cocking was the successful tenderer, his price being £44.19.0 per mile and work of clearing was commenced immediately.

At the end of the financial year 1901/02 the position of the fence works was as follows:

Contract 1: Burracoppin south 25 miles:- All cleared and 4 wires run for most of this distance.

Contract 2: North 25 miles:- 14 miles cleared and 2 miles of strainer posts delivered on the line. In addition a barrier pit was dug under the rail line where the fence crossed. Wells were sunk at about the 37 mile and 78 mile (King Rocks), and a rock catchment tank excavated around the 93 mile peg (Emu Rock).

Tenders were called on the 18th October, 1901 for the supply of netting for the 50 miles of fencing to be erected under the two contracts referred to above. Because of shipping troubles, the netting did not arrive until about the 8th July, 1902.

In November, 1901, Secretary Wilson received instructions to prepare details of fencing materials likely to be required for the erection of a rabbit proof fence to protect the southern portion of the State. (This embraced fencing from Starvation Boat Harbour in the south, to a point 150 miles north of Burracoppin, making a total distance of 365 miles.) Also, included with the fencing materials was to be an estimate of probable Settlers requirements. In the Government Gazette of 4th March, 1902, tenders were called for 483 miles of rabbit netting, 70,500 iron standards and about 133 tons of plain wire. The successful tenderers were – Lysaught Bros & Co. for the netting. J Barre Johnston for iron standards and George Wills & Co for the plain wire. Prices were not recorded.

The Royal Commission had suggested that 1½” mesh netting should be used. However, Wilson was able to have the mesh reduced to 1¼”, contending that very young rabbits could get through the 1½” mesh, and pointing out that the fence in question was to be a State Barrier Fence.

Of the five men transferred to the Rabbit Department from the Stock Branch, two were dispensed with almost immediately, leaving Inspector White and three sub-inspectors. With the emphasis on fence construction, White was primarily concerned with supervision of the fence contracts and inspecting the fence line south of Burracoppin – preparatory to other tenders for construction being called. Under the supervision of White, the three sub-inspectors were principally engaged in looking for water supplies and favourable sites for wells etc, along the fence line. Late in June, 1902, White sent a telegram from Ravensthorpe stating that an isolated colony of rabbits had been located at Emu Rocks and that he was endeavouring to eradicate them.

2. Advance of Rabbits

We have seen from Inspector White's report in 1900, that rabbits were then established in numbers north of Norseman and east of Widgiemooltha. During 1901, they were reported from Coolgardie, Broad Arrow and Southern Cross. Then in 1902 and up to the middle of 1903, there were substantiated reports of rabbits in such places as far apart as Nannine (then the head of the railway line in the Lower Murchison) to Smith's Mill in the Darling Ranges, not far from Perth. Unconfirmed reports of rabbits being in evidence referred to Moora, Watheroo, Mingenew and even south of Perth in the Bibra Lake area. Further, Inspector White reported that they were showing up in increasing numbers along the fence line from half way between the railway line and Starvation Boat Harbour.

Secretary Wilson, viewing with grave concern, the advance of the rabbits onto the southern portion of the fence line, suggested to the Minister of Lands (C Sommers), that the fence be erected much further westward of the original Survey Line, thus putting it well ahead of the rabbits. No suitable alternative line which would be clear of settled areas could be found.

Early in 1903, the question arose regarding the possibility of rabbits infesting the Kimberleys. Advice from South Australia indicated that in that State, they had not penetrated much above the 26th parallel. Therefore, it seemed improbable that the Kimberleys would be menaced by the rabbit for many years.

3. Progress of the Fence

By August, 1903, the 215 miles of fence was completed from the south coast to the Goldfields Railway Line, and for a further 100 miles north. Thus, the south western portion of the State was closed against the invading rabbits. The construction of the fence to this stage was not without its problems and difficulties, and I shall leave Secretary Wilson to describe some of them by quoting extracts from his Annual Report for 30th June, 1903:

"The calling of tenders for the netting required for the continuance of the work from, and towards, the sea end, which was requisitioned as early as 8th November, 1901, did not arrive until 1st October, 1902".

Owing to the absence of suitable timber for posts in places, the style of fencing varied. Between the railway line and the Sea (south), three different styles had to be adopted, viz, 45 miles of all wooden posts (Burracoppin south to the 45 mile peg), 25 miles with one wooden post to every four standards (from the 190 mile peg to the coast ie 215 mile peg) and 145 miles of all iron standards except for strainer posts (being from the 45 mile peg to the 190 mile peg). The bulk of the iron materials and other requisites for the fence were railed to Burracoppin and delivered there to the contractors. Materials for the coastal 80 mile section were landed to "Starvation Boat Harbour" (by lighter). Delivery at the Harbour where settlement existed, entailed a good deal of trouble, owing to obtaining shipping from Albany or Fremantle within reasonable time of landing of the materials at those ports. The one or two schooners trading around the south coast affording the only means of reaching the Harbour at anything like a reasonable cost.

The inhospitable nature of the country through which the fence passed and the exaggerated reports circulated as to the prevalence of poison along the routes, were responsible for a good deal of trouble in the matter of carriage of materials (drawn by horse or camel teams) and for some delays in the completion of the barrier fence between the railway and the sea (south).

The reluctance of contractors to venture upon this work of rabbit proof fencing, and their various ideas of what it is worth to do so, is shown in the difficulty that has existed at times in getting people to tender, and by the figures put in by those who have eventually sent tender in. Thus, for clearing the line of the fence, tenders ranged from £6 to £32 per mile. For erecting a four wired fence, the prices tendered were from £29 to £72.10.0 per mile. For Coastal Contract No. 2, 25 miles complete rabbit proof fencing, three tenders were received, the lowest (an Afghan) being £48.10.0, the highest £108.0.0. The calling of fresh tenders resulted in prices from £75.10.0 to £84.10.0. The third calling of tenders for this section produced offers from £43 to £64.15.0 per mile. For Contract No. 3 – 145 miles of iron standard fencing, tenders had to be called twice before any offer could be recommended for acceptance, the lowest then forthcoming being £59.19.0 per mile, being exceedingly high. But the advance of the rabbits permitted no further delay. Contract No. 4 – 125 miles (of fencing complete) tenders had to be called thrice, the first calling resulted in no tenders being received; in the second tender prices were too high and on the third occasion it was let for £66.10.0 per mile.

The fence line has been permanently surveyed (by Canning) to the 369 mile peg (about 5 miles north of the present day Meekatharra/Wiluna Road). North of the Goldfield Railway Line, work is now proceeding to establish permanent water supplies along the fence line to this point. To date, the mileage surveyed from the southern coast to the 369 mile totals 584 miles.

On the 20th December, 1902, Parliament assented to the Rabbit Act, 1902. The provisions of this Act more realistically met the needs of the rabbit problems of the day, than did the earlier "Destruction of Rabbits Act, 1883," and the "Destruction of Rabbits Amendment Act, 1885," which were repealed at the same time. These two Acts had been formulated at a time when rabbits were only a potential threat to the State. The ever increasing reports of the advance of the rabbits into various parts of the agricultural areas, the established fact that rabbits were becoming increasingly thick along the west of the rabbit proof fence, eventually led Parliament to authorise the construction of a second rabbit proof fence. So we have the Eastern barrier fence later to be known as the No. 1 Rabbit Proof Fence and reference to an Inner Fence subsequently to be the No. 2 Rabbit Proof Fence.

4. Survey of No. 2 Fence

The Surveyor General (Mr HF Johnston) sent instructions to Surveyor JP Camm (later to become Surveyor General) to survey a line for the No. 2 Rabbit Proof Fence, from Cunderdin south to a point somewhere between the Pallinup and Gairdner Rivers on the coast. Equipped with two camels and 20 horses, Camm left Cunderdin on Christmas Day, 1903 and completed the survey to Point Anne, some ten miles east of the Gairdner river around the 20th April, 1904. It is interesting to note that Camm was camped at Cunderdin with horses, awaiting the arrival of camels. When they arrived, the horses stampeded and took days to recover. Some were lost. The survey party almost perished from hunger and thirst in the Mort thickets east of Jerramungup.

While Surveyor Camm was proceeding southwards, a Survey party under Surveyor M Terry was working north from Cunderdin. Owing to the alleged presence of rabbits in the Yalgoo district, it was originally intended that the line of the No. 2 fence should swing more to the westward, crossing the Murchison Railway at Pindar, some 17 miles east of Mullewa. Subsequently a deviation from the original survey was made, from Warra Warra (now known as the Junction some 28 miles north of Yalgoo) crossing the railway line six miles west of Yalgoo and proceeding south to join the original survey at Jibberding some 25 miles north east of Wubin. This deviation and another in the vicinity of Nannine shortened the length of the fence by 126 miles and offered a better and cheaper route thus saving an estimated £18,000. There were, as far as I can establish, other surveyors besides M Terry working on the No. 2 fence, one being Surveyor FS Brockman, who subsequently surveyed the line for the eventual construction of the No. 3 Rabbit Proof Fence. From Warra Warra, the fence line proceeds in a general north-easterly direction, and later easterly, to cross the main road some 15 miles south of Meekatharra and continue on to join the No. 1 fence at the 323 mile peg north of Burracoppin. The total distance of the accepted survey line from the south coast to Gum Creek is given as 724 miles. (Actually the correct mileage is 712 miles, as there is a break in the No. 2 fence of 11 $\frac{3}{4}$ mile where the No. 3 fence commences, east of the "Junction".)

5. Unsatisfactory Supervision of Fence Construction

The first 465 miles of the No. 1 Rabbit Proof Fence, from the south coast northwards to the 250 mile peg, was erected by contractors, under the supervision of the Rabbit Department. From here northwards to the Indian Ocean, a further 674 miles, the Public Works Department (PWD) assumed responsibility for the erection of the fence. (The PWD was also responsible for the construction of the Nos. 2 and 3 Rabbit Proof Fences). From Mr A Arnold, when Chief Inspector of Rabbits, I learnt that the move away from contractors was brought about by high contract prices, inferior work, sharp practices etc, which were consistently encountered. I have not sighted any records giving clear cut specifications, which must have been prepared for the respective contracts. Nor is any particular reference made to the contract carried out north of the 25 mile peg immediately north of Burracoppin. This contract was the second one awarded and was commenced around April, 1902. The last contract in connection with the first 465 miles of the No. 1 Rabbit Proof Fence constructed by private contractors, was completed by the 2nd May, 1904.

6. Specifications for Fencing by Contract

As already indicated, no record of specific detailed specifications have been sighted. However, some general reference has been made in reports, to the building of the fence, but none in regard to clearing the fence line. What particulars are known are mentioned in Appendix II.

Some idea of the type of clearing that was actually carried out is revealed in a Press release around June, 1904 following an inspection made by the Acting Director of Agriculture, (Mr A Crawford) earlier in the year. He tackled on a motor bike – much to his sorrow, the first 100 miles of the southern portion of the No. 1 fence. I quote – *“In clearing the 12 feet width along the fence, the scrub was simply cut down, and all the roots and large timber were left there, whilst in many places the suckers have grown to a height of two or three feet. The result is that it is utterly impossible to see either the track or the roots. I got through a little over 100 miles, when my machine broke down, and I had to complete the journey on horseback and in a Sulky”.*

7. Public Works Department Responsible for Fence Construction

Thus the clearing along the No. 1 fence from Burracoppin south had to be re-done, the roots being grubbed out by hand. Also modifications had to be carried out over the 145 mile section which had only iron standards between the timber strainer posts. It was found that kangaroos and emus upon hitting the fence during the winter months, when the ground was soft, bent the iron standards with the result that in places, the top of the fence was only 18 inches above the ground. Two extra wooden posts were added between the strainers, which at the time, was considered adequate strengthening.

Early in 1904, the Construction Vote was formally handed over to the Public Works Department. An inspection was at once made of the works in progress, and also of those supposed to be completed. In April of that year, Mr RJ Anketell was appointed Superintendent and a separate branch formed under his direction.

8. Eastern (No. 1) Rabbit Proof Fence (PWD Supervision)

By May, 1904, private contractors had completed the construction of the Eastern (No. 1) Rabbit Proof Fence from the south coast to 250 miles north of Burracoppin. Mr Anketell was appointed as Superintendent in April of that year, but it was not until the 20th August the first gang continued the fence construction further north. The No. 1 fence was finally completed by the 20th September, 1907, and during construction four gangs were involved. The distance from Starvation Boat Harbour on the south coast to Cape Keraudren on the south end of the Ninety Mile Beach took about 5 years and 10 months to construct.

How many of us can, in any way, envisage the privations the men on the job must have experienced. Working in such out-back areas with little or no contact with the outside world, no radios, no refrigerators, no motor vehicles etc, and dependant on teams of camels travelling about 10-12 miles a day. An average of 115 miles from the nearest rail head or coastal point the longest haul was from Nannine, the then rail head, northwards a distance of 290 miles. What of the incessant presence of flies, constant heat of summer, the biting easterly winds and frosts of winter and spring, the inter re-action of human emotions and relationships after weeks, months, of unbroken association with one another. Only those who have had some taste of such conditions could have any real comprehension of what the men lived through in their daily lives in those far off days. In a Press Interview, Mr Anketell gives a resume of interesting facts, some of the problems encountered and overcome etc, during the construction of the No. 1 fence. (See Appendix III). In the Journal of Agriculture in 1908 he also gives some interesting notes on camels. (See also Appendix III).

9. Inner (No. 2) Rabbit Proof Fence

As mentioned previously, the survey of the fence line was commenced north and south from Cunderdin. As soon as sufficient survey was completed, work on the construction of the fence was started about the 23rd March, 1904; one gang working north and another south. Because of the established fact that the rabbits were in numerous areas west of the No. 1 fence, high priority was given to the erection of the No. 2 fence. The importance attached to this fence is highlighted by the fact that eight gangs were dispersed along the line, and by about the 22nd July, four months after commencement, the 724 miles of the No. 2 fence, from Point Anne on the south coast, through to the 323 mile peg north of Burracoppin, was completed.

Included herein is a copy of information apparently extracted from a PWD file No. 3269/08 probably compiled around 1908. (See Appendix IV). This Appendix contains interesting particulars of the fence sections as constructed, and shows such headings as – which fence, the section concerned, the name of the foreman in charge of the various gangs, date the section was started and completed, the cost per mile, when handed over to the Rabbit Department etc.

10. Fence Reserves

Reserves were required for various purposes such as for water conservation and sinking of wells, camel and horse breeding purposes, stop over hut sites etc. Along the 1,139 miles of the No. 1 fence there were some 83 surveyed reserves, ranging in areas from 4 to 33,000 acres at Dromedary Hills, held for camel and horse breeding purposes. No. 2 fence of 713 miles had 77 reserves which varied in extent from 3 to 2,420 acres. At one time there were two reserves; one of 1,600 acres east and one of 262 acres west, of Burracoppin. These were cropped for chaff to feed the animals, used in teams, and for pulling the boundary riders carts. No.3 fence of 171 miles had approximately 14 reserves ranging in areas from 9 to 999 acres. One such large reserve being the camel paddock west of Ajana. Many of these reserves have since reverted to the Lands Department.

11. Specifications of the Nos. 1 & 2 Rabbit Proof Fences

In Appendix V is given a broad outline of the specifications which were taken from the original printed specifications compiled by PWD, and dated "May 1904", a copy of which is to be found on the Departmental file – 891/66.

12. No. 3 Rabbit Proof Fence Surveys

In his Annual Report to the Hon. Minister for Lands for the year ended 30th June, 1905, the Acting Under Secretary for Agriculture (Mr A Crawford) reported that the No. 2 fence was completed from the coast to Gum Creek. However, he went on to advise, that it was definitely established that rabbits had worked west of the Survey line and point of construction of the No. 1 fence well north, and were working down south, but to the west of the No. 2 fence. Mr Crawford recommended the immediate construction of a fence running west from Beedeinna (cannot locate) to the coast, to protect the northern agricultural areas. He went on to say, that it was quite possible that a second east-west fence may be found necessary, running through Watheroo, as was originally intended.

The mention of Watheroo brings up two interesting side lights. From Lands and Survey file 13189/03 appears the following extract of a Memo dated 07/01/1904, from the Surveyor General to Chief Inspecting Surveyor, FS Brockman, part of which reads:- *"A rabbit fence was proposed to run from the coast, crossing the Midland Railway near Watheroo, and extending east to the second line of fence now being surveyed by Mr Terry and I wish you to carry out the marking of this east-west line as soon as practical."* Apparently the survey was made. In his Annual Report for year 1912/13, the Chief Inspector expresses regret that a fence was not constructed along the original surveyed line going through Watheroo. (Also, on another Lands and Survey files, the number of which I failed to record, is reference to Mr Brockman surveying a line from a point near the 212 mile peg (about 5 miles south of Mt. Magnet) on the Geraldton – Cue railway line, to the 219 mile peg on the No. 1 fence. This survey was completed by Mr Brockman on the 9th January, 1904. Nothing further was done about this survey either). From a passing reference in "Cartography of Western Australia", I learnt that Brockman surveyed the line for this fence, which runs westerly for 171 miles, from a point some 11¾ miles east of Warra Warra, to terminated at Bluff Point, about 70 miles north of Geraldton, on the Indian Ocean. (This fence is often quoted as being 160 miles, which in actual fact is incorrect). I surmise the Survey was made around June 1906.

13. No. 3 Rabbit Proof Fence Construction

In the records available, the No. 3 fence is referred to as being of lighter construction than the other two fences. From a plan recently unearthed, the difference between the specifications is revealed, the main points of difference being:- the fence posts were 18' apart, two and not three plain wires were used, one being at 18 inches above the ground, one 18 inches above that, with the barbed wire 12 inches above that, thus making the fence 4 feet high and not 3' 10", as with the other two fences. How many posts were to be erected between successive strainers is not known. The yard traps were of similar dimensions, otherwise all other details appear to be similar to the other fences. The construction of the fence commenced around 16th November, 1906, and was completed about 30th September 1907, a matter of about 10 months. Only one gang was employed on this fence.

14. Costs of Construction of the Nos. 1, 2 & 3 Fences

Quoting from an extract from the Annual Report of the Public Works Department 1907/8:- *"Fence Nos 1, 2 and 3 have been completed, water provided for maintenance purposes, and areas of land reserved at suitable localities for the depasturing of maintenance animals. The total length of the fences is 2,023 miles and the total cost has be £337,941"*. This figure included £11.6.0 per mile for water supplies, and the average cost per mile was £167.1.0. The fences were completed between December, 1901 and 30th September, 1907. Actually the overall costs of the fences was much greater than that quoted above, which omits, the costs of surveying the lines, the subsequent erection of cottages, sheds, stables etc, at four depots, numerous boundary riders huts and a number of two roomed quarters along the fences. Also, profiting by experience, modifications such as flood gates, which were later incorporated in the PWD specifications, had to be installed where necessary along the 465 miles of fence constructed under the supervision on the Rabbit Department.

15. Mileages of the Three Fences and their Division for Maintenance Purposes

Throughout the records, various mileages of the length of the respective fences are quoted. However, I think the following are as near accurate as practical. With the mileage is also given other relevant information on each of the fences:-

i) No. 1 Rabbit Proof Fence

1,139 miles long. For maintenance purposes, it was divided into two sections, with Depots established as headquarters. Section 1 comprised No. 1 fence from Starvation Boat Harbour to Lake Nabberu, 426 miles north of Burracoppin and totalling 641 miles. Headquarters at Burracoppin. Section 4 extended north from 641 mile peg, to Cape Keraudren on the south end of the Eighty Mile Beach, north of Port Hedland, thus totalling 498 miles. Headquarters were at Jigalong, about the 623 mile peg.

ii) No. 2 Rabbit Proof Fence

713 miles long. There were two sections connected with this fence. Section 2 ran from Point Anne on the south coast, to the 140 mile peg north of Cunderdin, making the total mileage 392. Headquarters were adjacent to the Goldfields Railway and about three miles east of the township of Cunderdin. Section 3 continued north from the 140 mile to Gum Creek where it joined onto the No. 1 fence at the 227 mile peg, a total distance of 321 miles. Section 3 also included the No. 3 Rabbit Proof Fence.

iii) No. 3 Rabbit Proof Fence

171 miles long. This extended from "00" a point about 11¾ miles east of "0", at which point the No. 2 fence, north from Cunderdin ended, with its continuance north-easterly from "00". The overall total mileage for Section 3 was 492 miles. Headquarters were at Yalgoo, which is about six miles east of the fence along the Mullewa – Mt Magnet road. No. 3 fence commences some 28 miles north of Yalgoo.

16. Early Maintenance on the Three Fences

The whole of the fence systems had been taken over by the Department by the end of 1907. In 1908, the staff for the fences comprised four sub-inspectors and many boundary riders, an approximate number cannot be determined from the conflicting remarks in various reports. Many of the boundary riders used camels. Those working in the far north travelled in pairs, because of the possible danger from aboriginals. Those using camels had patrol lengths of about 70 miles, which were covered every sixth day. Other boundary riders used specially sprung bicycles, fitted with 3 speed gears, and their lengths averaged around 30 miles, and were covered twice a week.

Huts or water sheds were constructed at frequent intervals along the fences. Chained to one of the upright posts of such structures, would be a galvanised iron drum about 2' across and 5' high, having a hinged lid and hasp and staple riveted on, for locking up purposes. In these drums were stored the boundary rider's stores, groceries, etc, for safe keeping. Supply wagons travelled the fences about every two months, bringing out supplies, clothing etc, which had been ordered on the last trip. The teamster would leave a predetermined amount of such goods at the respective huts or water sheds. Men using camels, often riding camels, and bicycles could not be expected to cart supplies with them to cover a number of days. As a safety measure, the boundary riders were to meet each other at the end of their respective lengths on pre-determined dates. If they did not meet, then the boundary rider arriving at the appointed place would continue on until the other man was contacted.

17. Gascoyne Vermin Board : Private Rabbit Proof Fence

As a matter of passing interest, mention is made of the construction of a rabbit proof fence for a local authority. It was established that, before the No. 1 fence had proceeded well north, the rabbits had penetrated west and well north of the No. 3 fence, to and around the Gascoyne Junction. It was feared that they would spread out and menace the pastoral areas in the Gascoyne District. This stimulated the Vermin Board to have a rabbit proof fence erected, in an endeavour to exclude the rabbits from their area. It was completed early in 1911.

The Fence ran from a point about 10 miles south of Long Point in the Wooramel, where it went some 45 miles east, to turn and run in a generally northerly direction, to meet the ocean at Ciralia Bay, near the bottom end of Exmouth Gulf. From what traces remain on the maps, the length of the fence was in the vicinity of 270 miles. The landholders were unable to meet the rates required to repay the Government loan, and in 1915 the Minister for Agriculture suspended the Vermin Board and took over the fence, which by then through neglect, was down in many places. Ultimately the fence was sold to the adjoining stations.

III THE PROBLEMS OF MAINTENANCE ON THE RABBIT PROOF FENCE SYSTEMS

1. The Difficulties of Maintenance

As sections of the fences were completed and handed over to the Department, so too the more serious problems to be faced quickly manifested themselves; problems which were to extend down the years, and to varying degrees some still persist. The main problems fall under the following headings – floods, sand drifts, bush fires, gates, landholders, hunters (and I could add the judiciary and politicians, to a lesser degree). A brief comment on each of the headings given, may give an indication as to the real nature of the difficulties encountered:-

i) Floods

The pastoral areas are subjected to drought, and during these periods the leaves of trees and scrub dry and fall to the ground. Much of these areas are practically flat. When the floods came they carried accumulated debris along, to bank up against the netting, with the ultimate result that the fence was being pushed down flat or completely washed away. Often these floods extended for miles over the almost flat country side. In the southern areas, the many creeks and water ways caused havoc to the fences during floods. The extent of the flood areas developed with the increasing clearing of the land east of the (No. 2) fence.

ii) Sand Drifts

Much trouble was experienced in the far north, where the fence had to be constructed over or near sand dunes. Also the coastal end of the No. 3 fence was subjected to severe sand drifts, which at times caused 2 and 3 fences to be constructed over a period, one on top of the other. Much sand drift damage resulted from over cultivation of light, sandy soils in the paddocks adjacent to the fence in the agricultural areas.

iii) Bush Fires

Over the years much damage to the fences has resulted from bush fires, a preponderance of which originated from settlers burning off, perhaps many miles away from the actual fences. From time to time, serious bush fire damage is still experienced, but danger from this source has been largely reduced through a policy of progressively constructing firebreaks 30 feet or more wide.

iv) Gates

These had to be erected in the fences. They were spaced not more than 10 miles apart and in some sections, such as in the more developed areas, 5 miles apart. More gates had to be added as local authorities opened up new roads. Gates proved a tremendous weakness in the fence systems, as the big majority of the people using them – the travelling public, the local inhabitants who found the shutting of gates bothersome, and so on, – left them open. In the northern areas, some of the gates were broken when both aboriginal adults and particularly the piccaninnies, discovered that swinging on the gates was “*plurry good fun*”.

v) Landholders

In the early days when the rabbits literally in hundreds, were coming up against the fences, particularly the No. 2 fence, they banked back onto the adjoining farm properties situated to the east of the fences. To ease the pressure it was established that often these settlers had lifted the netting out of the ground and thus enabled the rabbits to move westwards through the fence. Often the settlers, who were short of water for their stock, would raid the water shed tanks and empty them. A boundary rider under such circumstances, faced serious trouble on arriving to the camp during the night only to find the water gone. As a consequence he would be forced to proceed on his bike until he found water, sometimes as much as 24 miles further on. The fences would be damaged through settlers illegally using the fence tracks for carting materials or dragging farm machinery along. This resulting in smashed posts, torn netting and badly rutted tracks, or leaving morasses where vehicles had been dug out of bogs etc.

vi) Hunters

These “gentry” were responsible for much damage to the fences caused by big game, such as kangaroos and emus smashing into the netting and wires and tearing or breaking them. Also, the bullets fired along the fences would often miss the intended mark and rip the netting. Naturally the vehicles used under such circumstances were far from being under control and often ended up by sidling into the fence and ripping the netting, breaking the wires and posts.

Did I mention the judiciary? When, on the rare occasions and of the aforementioned people (or any other type of person) were in the early days apprehended along the fences and legal action taken. Such offenders were indeed penalised on being convicted by being fined 1/-, 2/- or costs were never awarded as high as 2/6d; costs were never awarded.

However, there is another and brighter side which I cheerfully record. With 2,023 miles of rabbit proof fencing to look after, and during State wide good seasons, the fences would come in for a lot of damage over a large area from flood waters. Or perhaps the areas would be confined to the southern agricultural, where, in both cases many miles of fencing would be flattened. How grateful the officers were and continued to be over the years, for the ready help of a very big majority of the adjoining farmers or pastoralists in propping up the fences until they could be properly repaired by the Department’s men. It is a simple fact that rarely did any of these people put in a claim for wages, either for themselves or for their employees.

2. The No. 1 Fence and Dingoes & Foxes

In the first instance the fences had just the one barbed wire above the netting. Landholders, if they were running cattle and using the fence as a boundary, were permitted to run an extra barbed wire below the standard one.

Around 1911/12 it was reported that foxes had been seen around Esperance. Also, dingo ravaging of sheep was increasing on properties to the west and it was alleged the animals were getting over the No. 1 fence. The Chief Inspector promptly recommended that two extra barbed wires be added above the netting on the No. 1 fence from the south coast and to a point about 600 miles north of Burracoppin. The addition of these wires was to prevent the incursion of foxes into the inner areas. The extra wires were added over a considerable period.

3. The Great War – 1914-1918

On the 4th August, 1914, War was declared and shortly three sub-inspectors and 23 employees of the Rabbit Department had enlisted. During the war years, both the Chief Inspector and Assistant Chief Inspector (Mr A Arnold) did what they could to off-set the shortage of officers and men. Furthermore, metals were being diverted to war need, consequently the availability of fencing materials became practically nil. The scarcity of materials was to continue for a long time after the war ended. Consequently the fences suffered considerably as proper repairs and renewals could not be made following floods, bushfires etc.

4. Select Committee of The Legislative Assembly

This committee sat during February and March, 1918. Before proceeding further in respect to the fences, it is most important to be aware of the broad situation existing so far as the rabbit problem is concerned.

Just prior to hostilities commencing in 1914, many young men were opening up farm lands in the Lakes areas including Lake Grace, Newdegate, and generally north and south of those areas. Many of these young men enlisted and their partially developed properties were literally turned over to the rabbits. During the war years, the rabbits multiplied into millions over these and other areas. To meet the situation, the Government sanctioned the employment of as many as 60 men to operate poison carts (The "IXL": and State (made) poison carts). These operations, with the number of poisoners fluctuating, carried on for a matter of some years – they had commenced operations before war ceased.

So back to the Select Committee. It was formed to consider the best means of combating the rabbit pest. The report revealed that rabbits were then established in thousands inside the No. 1 fence, to such an extent that the suggestion was made that the No. 1 fence should be removed and the netting distributed amongst the settlers. The Committee could not accept that suggestion pointing out that....."*A tremendous wave (of rabbits) is at present approaching*" (the eastern side of No. 1 fence).

So we have, firstly – the fence systems suffering from the lack of men and materials over a period of years; secondly, the rabbits are established in millions and many men constantly employed by the Rabbit Department in poisoning operations. Now let us take a look at some “Annual Votes” to the Rabbit Department over a period of a few years:-

<u>1910/11</u>	<u>1911/12</u>	<u>1912/13</u>	<u>1913/14</u>	<u>1914/15</u>	<u>1915/16</u>
£16,868	£17,204	£15,250	£15,064	£13,500	£12,000

1916/17
£9,000

So we have from the Committee’s report, the following:- *“The reduced votes were made in the face of continued appeals by the Chief Inspector for more money.....”*. It is indeed simple arithmetic to gauge the very small allocation of money directed to fence maintenance. This situation was to continue for many years to come, and embraced the whole of the Rabbit Departments activities.

5. Miscellaneous Fence Factors

The first official acknowledgment that the fences were showing the strain of years was contained in the assistant Chief Inspector’s annual report for 1923/24 when he pointed out that *“The fences are 20 years old.....showing signs of decay in places, the posts deteriorating and replacements becoming harder to obtain”*.

So we move on the world wide financial mess of the 1930 Depression years. Money just was not available and the number of fence employees was reduced to the barest minimum. So, the deterioration of the fences could be slightly retarded, but certainly not held. Skeleton staff capable of doing little else other than patrolling the fences, repairing odd broken posts, patching odd holes in the netting and other comparatively minor repairs. The men working along the fences had little or no pride in the work they were doing.

The success achieved at Wiluna in extracting gold from low grade ore led to a revival of the derelict Big Bell Mine. As a result the No. 2 fence had to be diverted well to the west, around the mining activities. The deviation left the main fence at about the 66 mile peg (easterly from “00”) and rejoined it at about the 72 mile peg. The deviation itself was actually about 7 miles in length. A gang employed by the Rabbit Department constructed the fence.

6. Abandonment of Northern End of No. 1 Fence: 493 Miles

The northern 498 miles of the No. 1 fence, from Lake Nabberu to the coast on the Eighty Mile Beach, was the most inaccessible and difficult portion of the fence system. Boundary riders were well away from civilisation on isolated lengths. Not surprisingly great difficulty was experienced in obtaining the services of boundary riders, required for bare maintenance purposes. Consequently, the fence became badly in need of repairs and this situation was heightened during World War II with the labour position more acute than ever. It was estimated that it would cost somewhere around £35,000 to put this section of the fence in a satisfactory condition. The cost of maintenance could be about £4,000 per year. There was very serious doubt that such an outlay and continued annual expense could be justified in view of its limited use as a vermin fence. This was not overlooking the fact that adequate staff would be difficult to obtain and hold.

Because of the unavoidable general deterioration of the northern end of the No. 1 fence, there was considerable adverse criticism from the pastoralists concerned. Some maintaining that the fence was and had been for a long time, practically useless. The proposed abandonment of the fence was made known to the Vermin Boards and Pastoralists Association. This was to obtain their considered views to assist the then Vermin Advisory Board in arriving at a decision on the future of this 498 miles of fence, for submission to the Hon. Minister of Agriculture for his consideration. It was proposed that the fence be sold to the stations where it acted as a boundary fence. The best of the remaining netting and barbed wire was to be removed and sent south for use in the fences: the netting and barbed wire having stood the test of time in a most remarkable manner. There was only about 51 miles of this section used by pastoralists paying rent and officially "joined" onto the fence: the rent collected being in the vicinity of £58 per year. However, the fence formed the eastern boundary of several cattle stations, not officially "joined" on to it. The station people concerned were also given the opportunity to purchase.

In 1948, Section 4 of the No. 1 fence ceased to be maintained. A number of the pastoralists purchased portions of the fence. Of that not purchased, a contractor removed as much as possible of the netting and barbed wire which was carted to Meekatharra and railed south to be stored, in the first place, at the Depot, Burracoppin.

7. Mechanisation – A Beginning

During the 1940's the buck board, drawn either by horses or camels, had given way to a 30 cwt motor vehicle for the use of the sub-inspectors with headquarters at Burracoppin, and Yalgoo. Later this was followed up with a 30 cwt truck for each of the gangs employed on the fences under Section 1 (Burracoppin) and Section 3 (Yalgoo). Section 2 (Cunderdin), covering the fence from the south coast to the 140 mile peg north of Cunderdin, had now come under the supervision of the sub-inspector stationed at Burracoppin. A few of the boundary riders had purchased their own vehicles for use in patrolling their lengths. In such cases an extra £1 a week was paid to them as a vehicle allowance. Under these conditions the boundary riders lengths varied from 100 to 200 miles, and usually took about a month for the round journey.

8. Advent of the Agriculture Protection Board

Following two consecutive extraordinarily State wide good seasons, particularly in 1942, the vermin situation generally was so acute that it precipitated a “Royal Commission into the Vermin Act”. Arising from the findings of the Commission was the establishment of the Agriculture Protection Board, which officially came into being on the 1st March, 1951, and became responsible for formulating overall policy in dealing with all aspects of vermin in the State. At its inception, the Board consisted of five public servant members and four appointed to represent the farming and pastoralists interests (the membership now consists of eleven members, of which only three are public servants). With the monies allotted to it each year, the Protection Board was able to establish real progress in vermin control. This included drastic decisions regarding classing sections of the fences redundant, up-grading those which were regarded as still vital, the construction of new Vermin Barrier Fences (a change in name from Rabbit Proof Fences). The fences now had very little bearing on the control of the movements of rabbits and there were millions more of the pest to the west of both Nos 1 and 2 fences.

9. Further Fence Maintenance

Stemming from the 1940's a major problem has been to obtain reasonable types of labourers and truck drivers to work on the fences. The life is hard and the men have to be away from civilisation with its amenities, for lengthy periods of time. The boundary rider was becoming an unsatisfactory and out-dated institution. More satisfactory results were being achieved with having mobile gangs of men equipped with trucks. Efforts were made to interest the men in carrying out “piece-work”, as weekends “outback” were largely a dead loss – this met with no response at all.

In 1952 after the Protection Board had come into being, a Fordson wheel tractor was purchased along with a trailer type grader-ditcher, scoop and disc plough. With this plant some headway was made with improving the condition of the fences controlled from Burracoppin. In 1958, a Chamberlain wheel tractor, equipped with a rear mounted ripper, mid-mounted grader blade and a dozer blade was obtained for use along the fences controlled from Yalgoo. Then in 1962, to replace the Fordson, a similar Chamberlain tractor was obtained for Burracoppin. Four wheel trailers were also obtained. A large one was used for moving the plant used in conjunction with the Fordson tractor to the respective job sites. Later, light four wheel trailers were used with the Chamberlain tractors for carrying oils, fuel, etc. Accommodation of sorts was also erected on them in an endeavour to develop a self-sufficient mobile unit for working along the fences. However, over a period it became abundantly clear that no real progress was being achieved in restoring the fences, which were around 50 years old. It was realised that nothing but a bold, all embracing rehabilitation program would be of any substantial use. But before this point was reached, much had been happening in other spheres of the Vermin Fences.

IV THE LAKE MOORE EMU FENCE

1. Introduction

Submitted to the Emu and Grasshopper Advisory Committee for its consideration late in 1951 was the suggestion that an emu proof fence be constructed east and west between the Nos. 1 and 2 Fences, north of agricultural lands. This Committee had been formed to advise the Agriculture Protection Board on the matters pertaining to its title. The submission for an emu fence to be constructed was the outcome of the heavy damage to crop, fences etc sustained by landholders from the heavy invasion of emus from the northern pastoral areas in dry periods onto the farm lands to the south. It was contended that the fences accentuated the problem by causing emus to accumulate along them and then work south to the agricultural areas. The committee sought from those vitally concerned, some supporting evidence that emus did, in fact, cause serious damage. The damage estimated to have been suffered by fringe farmers in the then Road Boards of Dalwallinu, Koorda, Mr Marshall and Mukinbudin for the year 1950/51 was given as £32,660. At that period the estimated cost to construct an emu fence was quoted at £52,000. The committee recommended that such an emu fence should be constructed and submitted the matter to the Agriculture Protection Board for consideration. The up-shot was that with the erection of an emu fence from about the 138 mile peg (No. 2 Fence) north of Cunderdin, to go generally easterly to the 80 mile peg on the No. 1 Fence, it was considered that in a few years time the No. 2 Fence south of the Emu Fence would become redundant. This then could be sold to the adjoining farmers. At the same time it was realised that because of high intensity development of agriculture along much of the No. 2 Fence south of Cunderdin, it too was now redundant. It was decided to dispose of the fence from Nyabing (148 mile peg) to Cunderdin and north to the 138 mile peg, where the Emu Fence would join onto it. It was estimated that the sale of the fence would realise around £25,000. The basis for the cost to the adjoining farmers was £120 per mile, the fence being viewed as a stock fence and not a vermin fence. Deductions were made for damaged posts, netting, etc. The sale of the 284 miles of fencing, less road and other reserves, amounted to £26,176. The 35 feet inner side of the fence reserve was included in the price of the fence to the farmer.

2. Construction of the Fence

The construction of the fence commenced on the 11th March, 1957, and was completed two years one month later on the 10th April, 1959.

A Mr S Smith was the first contractor. His price for constructing the fence, including installations and clearing of the line was £23,906, being £172 per mile. Mr Smith completed 34 miles of fencing, which included crossing Lake Moore and Lake Monger, and 52 miles of clearing, the installation of three motor traffic passes and four gates at a cost of £7,368. He could not carry on and had to forfeit the contract. Time taken was nine months. Contractor Gaujers completed the Emu Fence from No. 2 Fence to the west side of Lake Moore, a distance of 18 miles, 60 chains, plus the installation of three water catchment units at a cost of £4,133, being £217.10.6 per mile. The clearing of the fence line having been carried out by the former contractor. This contract was completed in four months – on 3rd July 1958.

A clearing contract for 64 miles 70 chains was let to Messrs OE and EM Garland. The contract price was £1,672 being £25 per mile. Owing to an unusually wet winter, the plant was immobile for weeks and the clearing took four months to complete.

Messrs Gaujers and Radzobs were the successful tenderers for the construction of the final 64 miles 70 chains of fencing east of Lake Moore. Construction commenced on 6th October, 1958, and was finished on 10th April, 1959 – a period of 27 weeks. The cost of construction of the fence and installations was £16,020, being £234 per mile. The Emu Fence crossed Remlap Station and when completed, cut off two vital stock watering points from the station paddocks. The necessary materials, piping, tanks, etc cost £579; the owner agreeing to carry out the laying of the water pipes and erection of the additional tanks etc.

The length of the Lake Moore Emu Fence is 120 miles 30 chains long, and goes westerly from the 80 mile peg, north of Burracoppin, to join the No. 2 Fence at the 138 mile peg. In Appendix VI is an analysis of the various costs involved in the construction of the fence, and it will be seen that the grand total of £62,032.14.9, being £515.6.7 per mile.

3. Specifications of the Fence

The Emu Fence differs from the other fences in one important aspect. The netting is placed at ground level and rises three feet six inches above that. Brief details of the specifications are given in Appendix VII.

V THE GAIRDNER RIVER BARRIER FENCE

1. Introduction

The War Service Land Settlement Board erected a vermin fence along the east and part of the south boundary of the Gairdner River Land Project. The southern boundary runs east and west adjacent to the north side of the Albany-Bremer Bay road, with the coast line only a further four to five miles away to the south. The vermin fence caused a funnel, with the ocean, along which wild dogs, kangaroos and emus could travel westwards from the open areas well to the east. It was suggested to the Agriculture Protection Board that the construction of a short vermin fence from the south boundary fence of the Land Project to the coast, would prevent the ingress of vermin from the east.

The proposed fence was agreed to, and the WSLB Board which had contractors carrying out fencing in the area, had the fence constructed on behalf of the Protection Board. It was built to the specifications of the existing vermin fence around the boundaries of the project. This was carried out in 1956. Clearing and erection of the fence cost £799.3.5, with materials amounting to £1,171.6.0.

2. Specifications

The reserve is assumed to be a chain wide. The fence is constructed about a foot to the east of the survey line. The clearing is about 10 feet wide on the west (inner) side and 8 feet on the east side. The fence is about 4½ miles in length and ends at a high precipitous rock formation at the coast.

i) Netting

42" x 1¼" x 17 gauge, hung to reach 3ft above ground level and 6ins below.

ii) Wires

Two plain, one at 18ins and the other at 3ft, above the ground. Above the netting were run three barbed wires spaced 5ins, 6ins and 7ins respectively. The barbed wires were laced in three equal distance spacings between the posts with spiral droppers.

iii) Posts

Jam, many of very light diameter were used, being spaced 12ft apart and sunk to a depth of 22ins. Details of strainer posts are not available, but inspections revealed they were not much thicker than the average ordinary posts. The number of posts counted between strainers varied considerably.

Because of extensive land development to the east along the coastal strip, the usefulness of this fence practically ceases to exist at the present time (1967).

VI THE AJANA EMU BARRIER FENCES

1. Introduction

In 1956, Mr Porter, then a member of the Agriculture Protection Board, made a suggestion that an emu fence be constructed north from the No. 3 Fence to reach the Murchison River. The object was to stop emus migrating westwards from the pastoral areas, travelling along the No. 3 Fence and overrunning the farmlands north of the fence in the Ajana area.

The Protection Board referred the proposal to the Emu and Grasshopper Advisory Committee, who, in turn, investigated the matter. Their enquiries elicited the information that the estimated loss to eight farmers concerned in the proposal over a three year period was £2,905. This figure was made up of grain losses, vehicle hours in hunting the birds, ammunition, poison for water and man hours. The upshot of the enquiries by the Emu and Grasshopper Advisory Committee resulted in a plan. The farmers concerned were to reinforce their boundary fences adjacent to the Murchison River, and running westerly, and eventually turning south to meet the No. 3 Fence, well to the west of Ajana. The Protection Board agreed to finance the cost of an emu fence on a 50/50 basis, with the eight landholders concerned. This fence to proceed north from the 123 mile 30 chain peg on the No. 3 Fence, to join the reinforced boundary fence of Mr Porter's property, a distance of 12 miles 24 chains. The repayment period is 20 years, with the annual repayments amounting to about £300, necessitating the rating of the properties at about 3½d in £ on the UCV. The original amount was £2,800 to be repaid.

2. Construction and Costs

It was not until July, 1958, that the clearing was commenced. The fence was completed by January, 1959. The contractors for both the clearing and erection of the fence were Messrs Ross and Smith of Yuna. The cost of materials, railage, cartage etc amounted to £3,182.12.3; clearing the fence line £431.10.0 and erection of the fence and installations £2,214.11.3, making a total of £5,828.13.6, the cost per mile being £473.18.0.

VII THE YILGARN VERMIN FENCE

1. Introduction

Back in September, 1955, the Emu and Grasshopper Advisory Committee wrote the Protection Board, advising of a suggestion which had come from the then Westonia and Yilgarn Road Boards. The suggestion was that an emu proof fence be built to protect the agricultural interests of these districts. The fence to run east from about the 64 mile peg, north of Burracoppin, running generally easterly, then proceeding southerly near Ghooli Pumping Station, past Marvel Loch and rejoining the No. 1 Fence at about the 65 mile peg, Burracoppin, south. In support of this idea the estimated loss to settlers through the ravages of emus was given: Westonia, 1953/54 = £8,610 and Yilgarn 1954/55 = £25,660. The estimated cost submitted with the proposition of erecting the proposed fence of about 170 miles in length was £67, 500: the fence was to be similar in construction to the Lake Moore Emu Fence.

Ultimately the Protection Board decided to build a vermin fence and not an emu fence, as wild dogs roamed the areas to the north. However, the Agriculture Protection Board insisted that the now Shires of Westonia and Yilgarn share to some extent in its cost. The Westonia Shire Council are committed to pay about £5,417, with Yilgarn Shire Council up for about £10,883. Also, it was decided that the No. 1 Fence, for 64 miles north and 65 miles south of Burracoppin, to be left where it stood for five years. At this time it would come up for an evaluation as an effective vermin fence, because in the meantime, much vermin might be enclosed south of the Yilgarn Fence, and time would be needed for it to be reduced to a minimum.

2. Original Surveys and Costs

The original survey for the fence line was intended to start at 65 mile peg on No. 1 Fence South and finish at the 64 mile peg on No. 1 Fence North. In fact, it finished at 65 mile 1 chain north and covered a distance of 162 miles 42 chains. Surveying was carried out by a private surveyor, Mr AJ Symons under contract to the Lands Department, acting on behalf of the Agriculture Protection Board.

Work commenced on 1st November, 1959 and was completed in January, 1961. The line was then cleared and made ready for the fence construction, but in September 1962, a meeting of interested parties at Westonia decided that the alignment of the fence be altered to include potential agricultural land east of Southern Cross. This was approved by Cabinet in November, 1962, and a re-survey of portion of the line became necessary. In order to preserve the fence at its original length (and original estimated cost) it now became a wing, as opposed to an enclosing fence, and ending at a point 52 miles south of the Great Eastern Highway. Only that portion of the first survey line from 162miles 42 chains to 90miles 40 chains to zero mile was undertaken by the Lands Department. Mr Pownall, of that Department, commenced work in February, 1963, and despite heavy rains, had completed it in June of this year.

i) Survey Costs

1. Original Survey:

Distance	162 miles 42 chains
Total Cost	£5,150.00
Per Mile	£ 31.14.0

2. Re-Survey:

Distance	90 miles 40 chains
Total Cost	£3,611.19.0
Per Mile	£ 39.18.0

3. Clearing

Tenders for clearing the line from 162 mile 42 chain to 112 mile were called in January, 1962. A contract was let to FK Kanny and Sons of Manjimup at a cost of £2,298 or £45.8.0 per mile, and work started at the 162 mile on 2nd March, 1962. It was completed by the end of the month. A further contract for clearing from 0 mile to 112 mile was let in March, 1962, to the same contractor at a cost of £5,096 or £45.10.0 per mile, and this work commenced immediately the first contract finished. The second contract was considerably hampered by rain, but clearing was completed by 21st May 1962.

In both of these contracts, the machinery accepted for the work was not entirely suited to leaving the line in the desired condition. For this reason, it was arranged with the contractor that a large part of the portion between 0 mile and 112 mile be ploughed. Because of weather conditions this was delayed and was not completed until December, 1962. Following re-alignment of the survey line, a further tender for the clearing of the new portion from 0 mile to 90 mile 40 chain was first let to Service Contractors of Cannington in July, 1963, at a cost of £4,000 or £44.4.0 per mile. Work commenced in October, 1963, and, although the machinery used was more versatile it was in poor order, and the contract was not fully completed until 13th January, 1964. The result of this work was however very satisfactory.

During the course of the second clearing contract (Kanny) it was necessary to cross Lake Seabrook at about the 97 mile. A causeway 420 feet long and 21 feet wide was constructed at this point on an hourly basis. The cost of this was £225. (22½ hours at £10.) It was later found that weather conditions were badly affecting the causeway, and it became necessary to provide timber protection against severe erosion. Accordingly a contract was let to E Coward of Southern Cross for the timbering of the causeway at a cost of £427.5.0. This was started in May, 1963, and complete by November.

4. Construction

The first tenders for the erection of the fence were called in November, 1962, and were for the portion 90 mile 40 chain to 126 mile 50 chain. Because it was essential to have the work finished within the financial year, this section was divided into two contracts: No. 1 from 126 mile 40 chains to 162 mile 50 chains and No. 2 from 90 mile 40 chains to 126 mile 40 chains. Messrs S & V Scorda of Osborne Park were able to show that they could handle the complete job and they were awarded both contracts, at a cost of: No. 1 - £9,283 or £254.6.7 per mile; No. 2 - £9,114 or £253.3.4 per mile.

Work commenced on 15th December, 1962, and continued until 16th February, 1963. On this day the contractors and their employees left the line and subsequently asked for a release from the contracts. This was granted. The total amount paid to the Scordas for partially completed work was £3,074.5.9.

After the failure of the first constructor, an agreement (Gaujers No. 1) for the completion of partly done work and for new work from 122 mile 40 chains to 162 mile 50 chains was entered into with V Gaujers of Northam on 8th March, 1963. The cost of this work was £8,632.12.9 or £215.2.3 per mile. This figure per mile is rather misleading in view of the broken nature of the work. Gaujers commenced work on 15th March, 1963 and was finished by June of this year. A further contract (Gaujers No. 2) to complete the original contracts let to Scorda was let to Gaujers on the 5th August, 1963. This was for the portion from 90 mile 40 chains to 115 mile 20 chains at a cost of £6,612.5.11 or £268.3.6 per mile. Gaujers No. 2 contract was commenced in June, 1963 and completed by November.

In November, 1963, tenders were called for the construction of the final section, ie from 0 mile to 90 mile 40 chains. Mr Gaujers was again successful and tendered £21,030.18.0 or £232.7.8 per mile. Extras to this contract included three further gates, a Motor Traffic Pass at 70 mile, a Machinery Pass at 98 mile, amounting to £335.0.0. Work on this contract (No. 3) commenced in January, and was completed by August, 1964.

5. Rail Crossings

A vermin proof cattle stop was installed by the WAGR on the Eastern Goldfields Railway line at Koorarawelyee (272½ mile). This occurs at the 52 mile 55 chains fence mileage. Total cost of this installation was £452.16.6. In addition, a level crossing was installed immediately west of the above by the WAGR for £73.

6. Supervision

Supervision, by Ministerial instruction, was constant and was provided by the employment of a Supervising Officer and an assistant. The assistant was in the first instance Mr H Mills, who was employed during March, 1963; he was followed by Mr A Muter during April and May; Mr J Haines then took over and remained until the completion in August, 1964. Total cost of this supervision was (including vehicles and allowances) £3,778.4.1 or £23.5.0 per mile.

7. Statistics and Cost of Yilgarn Fence

Details of the construction, specifications and materials used are to be found in Appendix VIII. A summary of the costs and details of the various surveys for the fence are included in Appendix IX.

VIII DISCONTINUED MAINTENANCE AND REHABILITATION OF FENCES

1. Discontinued Maintenance of No. 2 Fence (Nyabing South to the Coast)

It was decided to retain for a further few years, the 104 miles of fence from Nyabing south to the coast. Severe storms were encountered over a period resulting in long lengths of the already deteriorated fence being, in actual fact, wrecked. Late in 1959, the Protection Board decided to cease maintaining this section and offered the lengths adjoining properties to the landholders. It was estimated that to put the fence in reasonable repair would cost around £8,200 and this did not include annual maintenance costs.

The basic price was fixed at £100 per mile, less deductions for damage to the fence, ie broken posts and wires, damaged netting etc. Because of the need for road closures, there was a hold up of over two years, which necessitated a revaluation of the original prices submitted to the respective occupiers. The distance actually sold is about 56 miles, which was disposed of to 26 farmers, with the total amount to be paid to the Protection Board being £5,066.

2. Discontinuing Maintenance of:

No. 1 Fence: 80 Mile - 426 Mile Burracoppin North

Part No. 2 and 3 Fences: Gum Creek - Junction

In spite of mechanisation being introduced wherever possible to step up the efficiency of fence maintenance, no real progress was possible. In fact ground was being lost annually and ultimately the Protection Board had to decide whether the fences were to be retained or let go. Estimates were prepared as to the costs of rehabilitating the fences. This, in turn, called for a close scrutiny of each Section of the fence system in relation to the present day vermin position, and the real need for the retention of some lengths of the fences.

To justify large sums of money being spent to restore them two fences queried were: the No. 1 Fence North of the Lake Moore Emu Fence at the 80 mile, to the 426 mile at Lake Nabberu. Also the No. 2 Fence from its junction with the No. 1 Fence at Gum Creek, to "00", and the No. 3 Fence from "00" to "0" (The Junction). A Committee, with the Chief Vermin Control Officer, Mr R Tomlinson as Chairman, the Pastoralists representative, Mr Hardie, the Treasury representative Mr H Hewitt, all members of the Agriculture Protection Board and the Assistant Chief Vermin Control Officer, Mr Crawford, was formed to investigate the degree of usefulness of these Fences, etc in relation to vermin control, the cost of renovating them and making recommendations accordingly. The first meeting took place at Head Office on 21st December 1960. Meetings were held in the Murchison to meet pastoralists, who were strongly against letting either of the Fences go.

3. Estimated Costs of Rehabilitation

Some of the figures presented to the first meeting of the Committee in 1960 by the Chief Vermin Control Officer were as follows: Dealing with the No. 1 Fence it was estimated that ordinary maintenance was around £40 per mile a year. To put the Fence in first class order would work out around £200 per mile for the 346 miles of fence involved. Altogether, if this section of the fence was let go, it would save about £72,000 per annum.

It was recognised that some wild dogs did work in onto both extremities of the Fence. These came from the unoccupied country extending out and around Lake Barlee and in the vicinity of Lake Nabberu in the north, from the vast expanses of country to the north east. But these problem spots were not sufficient to justify such a heavy capital outlay.

In respect of the No. 2 Fence, this 206 miles of Fence was by far in the worst condition of any of the Fences. For many years it had been subjected to severe damage from extensive floods, the waters of which ran parallel with the Fence, causing havoc with fence posts, netting and washing out the patrol tracks. To put this Section in order, it was estimated it would cost £78,000, and no annual maintenance costs could be given owing to the extent of damage likely to occur at any time. The only vermin along the Fence were periodical movements of kangaroos and emus, which, in fact, abounded in varying seasons in similar numbers on both sides of the Fence.

The pastoralists adjacent to the inner side of No. 1 Fence were so sincere in their belief as to the need for the retention of the Fence, that the “Murchison Regional Vermin Council” was constituted on 13th December, 1963. This comprised the Shires of Meekatharra, Sandstone, Cue, Mt Magnet and Yalgoo. This section of the No. 1 Fence was handed over without cost and came under the jurisdiction of the Council in July, 1964. The Protection Board in the initial stages agreed to match £ for £, the Council’s annual expenditure on the Fence, up to a limit of £5,000.

Much of the 194 miles of the No. 2 Fence and 12 miles of the No. 3 Fence was in extremely poor shape. In this case, it was decided to hand over the Fence to the adjoining stations without charge, the Fence in many instances being a boundary fence with other stations. The conditions imposed were more or less a formality.

4. Rehabilitation of the Fences

At its meeting of November, 1960 the Agriculture Protection Board approved the Rehabilitation Program embracing the following fences:-

- No. 1 Fence: North, from 65 mile peg (Yilgarn Fence) to the 80 mile peg (Lake Moore Fence). Burracoppin South, from the 54 mile peg to the coast, 215 mile peg.
- No. 2 Fence: South from the Junction to the 138 mile peg (other end of Lake Moore Emu Fence).
- No. 3 Fence: West from 12 mile (Junction to the coast).

The estimates submitted to the Protection Board at its meeting were:- Total repairs, renewals, maintenance over the next 5 years would be £158,000 or average £31,600 per year. In addition, capital expenditure to the extent of £8,000 would be required for new buildings, replacement of vehicles, etc. Also the sum of £5,000 to be set aside to offset the costs of emergency repairs following floods and bush fire damage. The Rehabilitation Program commenced early in 1961 and was completed by May, 1965.

The rehabilitation of the remaining original fences involved the letting of twenty contracts, nine for Section 1 and eleven for Section 3. Details are as follows:- Section 1: the nine contracts covered 174 miles 68 chains of fencing, with labour costs amounting to £18,277.8.9 and materials a further £11,903. Section 3: The 11 contracts covered 273 miles, with labour costs at £22,320 and materials £18,618.10.0. The totals were – 424 miles of fencing rehabilitated at a cost of £40,597 for labour and £30,521 for materials. (Details of the costs of the rehabilitation of the various sections are given in Appendix X).

Four contracts were let to repair flood damage, involving 27 miles 63 chains of fencing. The total costs were – labour £4,738 and materials £3,438.

5. Specification Modifications

The fences now have the top wire at 4 feet above ground level. Where the Fences run through the agricultural areas most of them have three wires above the netting, two barbed and a plain wire. The top wires are laced with two spiral droppers to each 12 foot panel. The netting remains 3 feet above and 6 inches below ground level and still has three supporting plain wires.

In the pastoral areas where the netting needs to be renewed it is being hung with the top selvage 3 feet 4 inches above ground level, with the bottom 2 inches of the netting left slightly turned outwards from the fence. In these areas rabbits are practically non-existent and the higher hung netting contributes more to holding back emus and kangaroos. Also, floods occur more often and are much more severe than in other areas. The netting being free at ground level gives way and allows the debris, etc. to pass through.

Flood gates are not swung from a cable and lightly tied at the bottom. In this way they have proved more effective than those which were originally tied at the bottom, and were supposed to fall flat when scrub, etc. banked up against them. Originally the posts along the No. 3 Fence were 18 feet apart, now they are 15 feet apart. On these posts three spiral droppers are used.

6. Miscellaneous Projects

i) Contracts

Prior to the commencement of the Rehabilitation Program, the first tenders were called for Maintenance Works to be carried out; the first two were for Sections No. 1 Fence, North. The first one was for various repairs to be done on a 13 mile broken stretch, between the 188 mile and 202 mile pegs. A Mr TJ Elliott was the successful tenderer, his price being £1,872.6.0. He commenced on the 4th February, 1960, but was forced to seek exemption from his contract by 15th April as he could not carry on. The major causes of his downfall were, the repeated heavy thunder storms experienced and which immobilised his men. The other reason was inexperience; he had men on wages instead of engaging them on a piecework basis. To get men, high wages were offered and when Mr Elliott was absent, the men slackened off on the job. The Fence Gang finished the works not completed. Mr Elliott had completed and estimated three fifths of the contract and the Protection Board paid him £1,216 for the work done.

The next tender was for maintenance work on a Section of Fence well north in the 300 mile area. What few tenders were received were inordinately high and were rejected. Tenders were not recalled as by now there was some talk of this section of the Fence not being maintained in the near future.

7. Motor Traffic Passes – Protection Board Policy

As already mentioned, gates proved a serious weakness in the fence system. With the growing “Motor Age”, the Protection Board decided on a policy around the mid 1950’s, to provide finance to enable three motor traffic passes to be installed during each financial year. The passes, in the first place, were to go in the Fences intercepted by the more important roads, and work downwards to the lesser roads. With only an odd period missed through change of inspectors, this policy has been and continues to be followed at the present time. The result is that now passes are going in on quite minor roads. A further innovation in recent years has been the replacement of many 16ft gates, with 24ft gates or Machinery Passes. These comprise two 12ft gates and were made necessary with the rapid development of farms well beyond the Fences and into areas which only a relatively few years ago were not given a thought as being suitable for such enterprises.

i) Firebreaks

With increased agricultural development caused mainly by burning off activities, bush fires have continued to cause such damage to the fences in the farming areas. Ploughing kept the fence clearing fairly clean of scrub, but plant – Chamberlain tractors with light dozer blade, could not take on clearing trees to widen the clearings, so certain works were done by contract.

The first contract was for widening the clearing on both sides of the No. 1 Fence, South, from the 65 mile peg (where the original line for the Yilgarn Fence commenced) to the 186 mile. The tender called for widening whatever clearing existed, by 12ft. Messrs Kanny and Sons were the successful tenderers, the price being £2,420 for the 121 miles (both sides of the fence widened) being £20 per mile.

A further contract was let to the same successful tenderers, Kanny and Sons, to widen the clearing on the outside of the No. 2 Fence, from the 50 mile South of the Junction, to the 138 mile (Lake Moore Fence). This included practically the whole of the Lake Moore Fence to the No. 1 Fence and along that Fence south from the 80 mile to the 65 mile (where the Yilgarn fence joins on), a total distance of 249 miles (the price was £2,988, being £12 per mile).

8. Experimental Emu Trap: 53 Mile Peg No. 3 Fence

In 1963, an Emu Trap was constructed on the No. 3 Fence. The trap consists of a 150 yards square holding yard immediately adjacent to and south of the fence, and constructed of 72" link mesh and plain wire on a cypress pine posts 6ft 3ins above ground level. A 12ft gate way provided in the fence, forms the entrance to a rabbit netted funnel into the holding yard. From the gate way a wing fence is constructed eastwards and at an angel of 30° to the No. 3 Fence. Two gates are provided, one at the funnel entrance so erected as to close off the funnel or the track on the north side of the No. 3 Fence as required, and one at the bottom corner of the holding yard. Subsequently a small "killing" pen with gates was constructed in the corner. The posts are not less than 4" at the small end and were set 3ft in the ground. Holes were bored at: - one a ground level, 14ins, 28ins, 42ins, 46ins, 50ins, and 54ins respectively. Four lines 10 guage fencing wire supported the netting and 3 lines of barbed wire were used at the top of the fence. This emu trap was erected by Messrs Radzobs and Bolde, the price being £550.0.0. Materials and rail-age came to £382.

Since its erection there has not occurred a heavy influx of emus along the No. 3 Fence. But reports from Mr. Jensen who watches the trap when functioning, indicates that emus readily go into it. He has liquidated quite a few over the intervening years.

i) Water Catchment Units

The original rock-tanks have not proved satisfactorily because of the constantly re-occurring growths and slime that develops. Other original water supplies have given out as well. There has been, during the past two years, a program of installing the "Butterfly roof" type water catchment units along the original fences. These are similar those used at 15 mile intervals, on Lake Moore and Yilgarn Fences. Also the number of 400 gallon tanks to each unit, is progressively being brought up to the full complement of two.

9. Discontinued Maintenance of No. 1 Fence – 65 Miles North : 54 Miles South of Burracoppin

The 119 miles of the No. 1 Fence, as described previously, was not included in the Rehabilitation Program, as its future was definitely limited. It was patrolled and routine work carried out but only to a minor degree. Local authorities, particularly to the north, bulldozed the fence away to put through roads. No protest was made by the Vermin Control Branch to such treatment of the fence. If the fence could remain in such a condition, with no complaints from the inside farmers about vermin getting through, then it was fairly evident that such portions of the fence had become redundant. Also the Yilgarn Fence had been completed.

On the 18th February, 1966, the Agriculture Protection Board decided that as from the 1st July of that year, it would discontinue the maintenance of the 119 miles of the No. 1 Fence. It would be offered for sale to those farmers, who use it as one of their boundary fences. However, here again, long delay in finalising the sale is likely over the closure of certain surveyed but undeveloped roads. There the matter must rest for the time being.

X IN CONCLUSION

1. What Fences Remain?

Working from the northern areas to the south coast:

- No. 3 Vermin Fence: Junction to the coast to the west 160 miles
- Ajana Emu Fence: Going north from the 123m 30chn 12m 24chn
- No. 2 Vermin Fence: Junction south to the 138 mile 127 miles
- Lake Moore Emu Fence: Leaves No. 2 fence at the 138 mile peg
and joins No. 1 fence at 80 mile peg
120m 30 chn
- No. 1 Vermin Fence: 65 mile to 80 mile, north & 54m
to 215 mile south of Burracoppin 176 miles
- Yilgarn Vermin Fence: (Wing Fence) 62m 42chn
758m 16 chn
- Gairdner River Barrier Fence: Now almost redundant 4m 40 chn
762m 56 chn

2. Influence of the Original Three Fences on the Rabbit Problem

Were the fences worthwhile economically? I make no pretence at providing an answer to that question. However, the following points I find both interesting, and for me, answer the question in the affirmative.

The rabbits travelled from Geelong (1859) to the Western Australian border by 1894, a distance of some 1,300 miles, direct measurements, in 35 years, or at 37 miles per year.

From the WA border to the No. 1 fence survey line by 1902 and in 20 years the pest had travelled about 570 miles, averaging 28 miles a year.

So, in 43 years, the rabbits had travelled roughly some 2,000 miles, from Geelong to the survey line of the No. 1 fence.

From the No. 1 fence survey line to Manjimup would be around 170 miles. The first rabbits reported near Manjimup were four, killed in 1922. In this case, it took 20 years for the rodents to travel the 170 miles, an average of 8 miles a year.

It was not until the 1930's that rabbits were to develop seriously in this locality.

To me it is significant how the No. 2 fence held back the rabbits for many years. They were held back to such an extent that the Government Scheme for supplying rabbit netting by extending long term loans, never applied to farmers west of that fence. The farmers between the two fences suffered from the ravages of the rabbits for many years, before they bred into plague form to spread out over the agricultural districts to the west of the No. 2 fence.

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APPENDIX I

CHECKING THE RABBITS

SURVEY OF THE FENCING LINE **INTERVIEW WITH SURVEYOR CANNING**

An Interesting Report

Mr AW Canning, of the Lands and Surveys Department, has just returned from an eleven months' survey trip in marking out the line which the rabbit-proof fence will follow. He was accompanied by six men, and the whole trip had to be made on camel-back. Mr Canning, on being interviewed by one of our representatives yesterday, said:-

"I went first from Burracoppin to Starvation Boat Harbour, on the south coast, just east of Ravensthorpe. The line I marked out there was 215 miles in extent. I then went north for 369 miles to a point opposite the Kimberley Ranges, on the stock route, and permanently marked the line for the rabbit-proof fence all through. On the southerly portion the line is a very excellent one for fencing, considering the country right through, the great obstacles being the want of permanent water and of food, fencing timber. To a great extent there will be trouble with regard to the water on the northern portion. For 60 miles north of Burracoppin there are sufficient wells to enable the fence to be erected without any great trouble, but thence onwards for 230 miles there are no wells at all, and the contractors have to depend for water on the rockholes. On a great deal of that country wells could be got by sinking, but probably in parts the water would only be struck at a considerable depth. There would certainly be a great difficulty in getting permanent water at all. Some of the rock holes are the finest I have ever seen. We had some difficulty in making the survey, as water had to be found, and as the weather was very dry many of the rock holes had dried up. However, by searching continually, I managed to get through without any great hardship."

"From the White Well, on the Lawlers-Magnet road, there are wells for a short distance, but thence for 80 miles I found no water, although there would be no difficulty in getting it by sinking. There are also some very good rock holes there, but they had dried up owing to the extremely hot weather. That part was fairly difficult to negotiate for at times we had to send 40 miles back for water. We managed to get through without being stopped, and never lost a day, as when the camels went back for water we continued working on. Running from Brown's Soak in a north easterly direction towards the Kimberley Ranges, we came to the Gum Creek well, on the Nannine-Lake Way road. There was excellent water there, as there was also at Brown's Soak. The line runs quite close to these wells. Thence up to the stock route for some 47 miles there is no surface water, but I do not think that even there there would be difficulty in getting supplies. On the stock route the water is very shallow; at a place where it is only 4 ft deep we saw stockmen watering 3,000 sheep and about 400 bullocks. After being emptied the soak fills again when left for a quarter of an hour. There is excellent country there both for cattle and sheep."

“On all the northern trip we found a very fair supply of timber for fencing purposes, especially for the last 230 miles, where there is ample timber quite close to the line. It is the mulga which I regard as the best of all timbers for the work, even better than the jam wood. We passed through a good deal of poor country in the first 200 miles, but after that it improves. Although the land is patchy, there is some good country. Right through I have endeavoured to keep just on the edge of the squatting country and have avoided the sand dunes”.

“To show the difficulty we had to encounter owing to the lack of water, on one occasion the camels went for 14 days on three buckets of, water apiece and they all lived through it. Some of the camels were poisoned with ‘poison bush’ and one of the animals went completely mad, but they all recovered after a time. We could never get a spell, as we had to push on in case the water gave out. On one occasion we went for about three weeks with only the merest wash. The larder was not replenished much with fresh food. We got a few kangaroos and turkeys, but there is very little game through the country, this being probably due to the lack of water. Indications which had been left by the blacks, evidently many years ago, were the means of our finding water on many occasions. I learnt to know these indications, which were piling up of stones, and in every case I saw them we eventually found water in the direction towards which these pointed.”

“I saw no rabbits on the trip at all, and on the northern route I do not think there are any near the line. The farthest place north we heard of them was at Leonora, and I was told that several had been caught there. There is nothing to stop rabbits from getting up in that country, especially in a north westerly direction, where there is a good quantity of pastoral country, much of which has been taken up lately. There are patches of desert, but in between them there is the pastoral country. I think that the fence will be such a check to the rabbits that they will not get through in any great numbers, and if they push on with the fence they can stop the rabbits now.

“We came across very few blacks, and, in fact, I could not get one to accompany the party. All of them have gone into the mining towns, and we did not go far enough north to find them in any numbers. The heat while we were in the north was terrific. During the last two months it has ranged from 110 deg to 118 deg in the shade. We have not had any rain during the last three months. The carriage of the material for the fencing will be pretty difficult, for the nearest railway station to the line is distant 60 miles. The line for a considerable distance runs along a sort of valley between the cliffs, and I think I have gone about the best route. The northern part of the country is broken considerably.”

“With regard to the extension of the line further north, I think that it should be pushed on with as soon as possible, for the barrier will have to be put up right along, at all events within the next few years, if the rabbits are to be kept out. To protect the Gascoyne and North-West it will be absolutely necessary to fence that country. The authorities must not wait until the rabbits get round the top end of the fence before continuing it. There seems no reason to me why the rabbits should not thrive there. Indeed the country is particularly suitable for them.”

In conclusion, Mr Canning said that the trip had been a distinctly trying one, but he was glad to say that, with the help of an excellent lot of men, they had got through without any mishap.

(The eleven months mentioned would be from August 1901, when a preliminary survey was made from Burracoppin south to Starvation Boat Harbour (now Bedford Harbour) (215 miles) until eleven months later Canning reached the 369 mile peg, Burracoppin north. This did not complete the survey of No. 1 Fence).

APPENDIX II

SPECIFICATIONS FOR FENCING BY CONTRACT

NETTING:

42" x 1½" x 17 gauge. The bottom of the netting to be 6" below ground level, with 3' above. Three plain wires to support the netting, the spacings of same are not mentioned, but presumably the top plain wire would be at 3' to allow the netting selvage to be attached to it.

BARBED WIRE:

This to be at 3' 10", being 10" above the top of the netting.

Ordinary fence posts to be 12' apart. Iron standards to be spaced the same as wooden posts. No reference is made to the spacings of strainer posts.

APPENDIX III

“THE RABBIT INVASION”

Extract from Journal of Agriculture, 1907: No. 15 Anketell’s Report

The first line of defence against the invasion of the settled portions of Western Australia by rabbits is the pest-proof fence which commences on the south coast at Starvation Boat Harbour and extends for a thousand miles north. This fence is to debouch on the coast at Banningarra, a lonely post on the block Ninety Mile Beach near Condon. The work of six years will be completed in July, when the remaining section will be finished and the State will then be divided by a line of netting, which must materially check the incursion of the pest. Through the southern portions of Western Australia the fence was comparatively easy of construction. There was an abundance of timber, no great transport difficulties, and the construction gangs had fairly inviting country in which to work. Through the little-known Nor'-West, however, the work has been handicapped in many ways, and when the bill is presented to the taxpayers it will probably be found that the last section is the most expensive of all.

Some idea of the nature of the work in the North-West is supplied by Mr RJ Anketell, an officer of the Public Works Department, who has just returned to Perth after superintending the construction from the Oakover River, 697 miles north of Burracoppin, where the railway line crosses the fence, to the 840 mile, where the gangs are now at work. Mr Anketell states that in the North-West the fence is erected on angle iron standards with wood posts as strainers, the two reasons for this being the absence of sufficient suitable timber and the white ants.

Naturally this means that all the material has to be transported from the coast – a task of some magnitude. All the netting and the iron is landed at Condon, and at present is being carted 250 miles to the fence. Forty camel teams, each wagon having 14 animals, are being used, and it takes anything up to two months for a team to carry 5 tonnes of material from the coast to the fence, the camels travelling from 10 to 12 miles a day. For this the Government has to pay 2 shilling per ton per mile – about £25 a ton! Over the sand dunes, through the spinifex and out along the fringe of the desert, these teams have been crawling along for the last two years, dragging hundreds of tons of expensive materials with which the State is fighting the mild-eyed rabbit. The camel is no epicure – fortunately and unfortunately. He is quite capable of feeding himself from whatever grows along his track, but he swallows young spinifex, which is good, and the narrow leaf poison, which isn't with a total disregard for their respective stomachic properties. When he fills himself up with poison he resigns his mission on the fence. If he is caught in time with only a modicum of poison in him, he waits for a dose of permanganate of potash, which the driver pours into him to the accompaniment of many oaths, while the beast froths at the mouth and looks as sick as only a poisoned camel can.

“We used to lose a lot of camels this way”, said Mr Anketell, “Until Mr Mann, the Government Analysts, discovered that permanganate of potash was a good antidote for the poison. Up there we have to be very careful still. The country is covered with poison bush. We hand feed the horses, but we have to tie the camels up at night and muzzle them by day when we are working along the fence where there is poison. That cure is a great thing though, and lately we have not lost a beast. I have tried it in horses, too, and it has cured every time.

We have 400 camels on the job, in addition to 150 horses, 50 donkeys and 5 bullock teams – enough to stock a station. The natives? There are hundreds up there, but they never interfere with us. We have as many as 80 or 100 men in the camps and there’s not likely to be any danger. No, the native’s don’t hurt this fence and I have never heard of any cases of wanton destruction, so that’s one trouble we haven’t to contend with”.

It is pleasing to learn from Mr Anketell that the rabbits are not making much headway into the pastoral country. “I did not hear of any of them being about”, he said, “and the first traces I saw were at the Oakover River. No, the rabbit has made very little progress along the fence to the north during the last twelve months.”

“The only difference in the construction of the fence up there and the sections lower down”, added the superintendent, “is that we use the iron standards and over the sand ridges we use 48 inch netting and sink it a foot in the sand. The fence is not stable as the timbered sections – it has more elasticity, but it will last longer, I think”. (How prophetic).”

“The present is the best season the pastoralists in the North-West have ever had,” said Mr Anketell in reply to a concluding question. “Right through the country, so the reports say, there is plenty of feed, and even out in the desert the spinifex is six and eight feet high. There is plenty of water about, and that is one thing we have never been troubled about. There are wells all along the fence at intervals of about 12 miles, and good water is being drawn from an average depth of 50 feet.”

JOURNAL OF AGRICULTURE NO. 16: 1908

CAMELS IN AUSTRALIA

Ex: RJ Anketell, Superintendent Fence Construction

1. Australian breed camels proved by far the better animal for all purposes – riding, team, pack. These (Australian) camels were in the early 1900’s bred in South Australia by Sir Thomas Elder.
2. Consensus of opinion – Over all, white men teamsters proved better than Afghans.
3. 14 camels in wagon teams could haul 7 tons per team along bush tracks.
4. Northern section of fence, poison plants thick so camels fed on compressed fodder (oaten): each camel’s allowance 25lbs per day. Thrived well on this, but consumed more water than would be the case if on green feed.

APPENDIX IV

RABBIT-PROOF FENCING PARTICULARS OF SECTIONS AS CONSTRUCTED

Extracted from PWD File No: 3269/08

Fence	Section	Foreman or Inspector	Date Commenced	Date Completed	Length <u>MILES</u>	Cost Per Mile	Date Taken Over by Dept Agriculture	Average Period of Maintenance by PWD <u>MONTHS</u>	Nature of Transport	Base of Supply	Average Lead of Cartage <u>MILES</u>
No. 1	First 465 miles erected by Contract under Supervision by Dept of Agriculture	(Contracts)	1901	02/05/04	465	£143/2/11	(As constructed)	-	Contractors' own teams	Magnet, Burracoppin and South Coast	85
	White Well	EH Watson	20/08/04	15/05/05	112	£155/19/5	01/10/06	21	Dept camels & horses & contract teams	Magnet & Nannine	90
	Gum Creek	J McCarthy	05/10/04	12/11/04	11	£138/4/-	01/10/06	23	Dept camels & horses	Nannine	75
	Northern	H Tallock	16/03/05	15/07/06	312	£189/9/3	01/10/06	12	Dept camels & horses; also all available contract teams on the Murchison. Total 350 camels, 210 horses, 41 donkeys = 34 teams	Nannine	290
	North Coast	AW Johnson	16/07/06	30/09/07	239	£253/12/9	01/12/07	10	Dept camels & horses; also all available contract teams in the North West	Condon	160

Fence	Section	Foreman or Inspector	Date Commenced	Date Completed	Length <u>MILES</u>	Cost Per Mile	Date Taken Over by Dept Agriculture	Average Period of Maintenance by PWD <u>MONTHS</u>	Nature of Transport	Base of Supply	Average Lead of Cartage <u>MILES</u>
No. 2	South Coast	D Fitzgerald	01/11/04	30/04/05	71	£186/2/4	01/10/06	20	Dept camels	Port Anne & Bremer Bay	52
	Narrogin	J Newman	01/08/04	30/04/05	95	£134/17/11	01/10/06	22	Dept horse teams & contract teams	Katanning Wagin & Narrogin	56
	Cunderdin South	H Tallock	23/03/04	28/02/05	85	£139/6/3	01/10/06	24	Dept camels & horses	Cunderdin & Pingelly	50
	Cunderdin North	D Murphy	22/03/04	31/05/05	90	£183/11/4	01/10/06	23	Dept camels & horses	Cunderdin & Goomalling	40
	Watheroo	E Mudge	30/06/04	22/07/05	90	£189/0/3	01/10/06	20	Dept camels & contract teams	Watheroo & Moora	110
	Yalgoo	J Toohey & L Keenan	01/08/04	31/05/05	90	£160/13/8	01/10/06	21	Dept horses	Yalgoo	48
	Warra Warra	P O'Meara	09/05/04	20/06/05	123	£116/9/9	01/10/06	24	Dept horses	Yalgoo & Nannine	80
	Mount Lulworth	J McCarthy	05/10/04	30/04/05	80	£121/7/2	01/10/06	20	Dept camels & Contract teams	Nannine	45
No. 3	No. 3 Fence	P O'Meara	16/11/06	30/09/07	160	£126/0/0	01/10/07	6	Dept horses & contract teams	Yalgoo, Pindar, Mullewa, Northampton	60
					2,023 miles	£167/1/-			12.6 months	Average Lead of Cartage	115.3 miles

APPENDIX V

SPECIFICATIONS OF NOS. 1 & 2 RABBIT PROOF FENCES, MAY 1904

ALIGNMENT:

The fence to be erected 2 feet on the eastern side of the pegged line. The fence reserve was one chain wide.

FENCE POSTS:

Timber: Mulga, jam, white gum, blood wood, cypress pine or black oak. Ordinary Posts, not less than 4 inches diameter of solid wood at the small end and sawn square, top and bottom. Posts 4 feet above ground level and 1'9" below, except in loose sand when depth to be 2' 6". Posts to be bored at 4" above the ground, 16" above that, 16" above that and 10" above that; the last hole for tying the barbed wire (3'10" above ground level). However, the top wire of the No. 2 Fence, south Cunderdin was a plain one, except where cattle were run on adjoining properties.

STRAINING AND ANGLE POSTS:

Not less than 8" diameter of solid wood at the small end, and sawn square at top and bottom. To be 8' long, 4' above ground level and 4' below. All strainer posts shall be charred or dipped in hot coal tar up 4'6" from the bottom; to be 32 posts between successive strainer posts.

STAYS:

All angles to be stayed with at least 6 ply wire. The supporting stump pile to be 3' in the ground, sunk at a batter of 1 in 6 away from the fence. The top of the pile being level with the ground, and 8' clear of the angle post.

NETTING:

To be 42" x 1¼" x 17 gauge having two ply selvage and breaking strain of not less than 200lbs. Netting to be hung perpendicularly, 3' above ground level and 6" below except in loose sand when extra netting shall be attached to make it one foot below ground level. Over rock outcrops the netting to be turned to lay flat and stone or ballast packed over it. The netting to be dipped to a height of 18" from the bottom selvage in a hot solution of two parts coal tar to one part kerosene. Joins of netting to overlap 6" and to be laced with the wire in and out of each mesh, up one side and down the other. All cut ends of the meshes to be well hooked and twisted in.

PLAIN WIRE:

To be 12½ gauge galvanised steel wire, with breaking strain not less than 1,000lbs.

BARBED WIRE:

Two ply 14 gauge galvanised steel wire, having four barbs every 3 inches.

TYING WIRE:

Tough pliable 16 gauge galvanised wire.

CLEARING:

Full width 20 feet, with 14 feet on the east side of the pegged line, to be cleared and grubbed to at least 6 inches below ground level and all holes filled and rammed. The western 6 feet to be cleared of all trees and other growths, including ant heaps, down to a height of not more than 6 inches from the ground, etc.

TRAPS:

One to be erected on the eastern side of the fence not less than 5 miles apart. The traps were 12' long, 7' wide and 3'6" high, and entirely enclosed in rabbit netting, including the bottom. A panel of the main fence formed one side of the trap. At each end, and hard up against the main fence, wire netting funnels 6" diameter and 21" long lead into the trap. Leading out from the funnels at each end of the trap and at 45° angle to the main fence were two wing fences, each 60 feet long.

TOP ATTACHMENTS:

Where from any cause such as depressions or rises in the ground, the top plain wire is less than 3 feet above ground level, a strip of netting shall be attached to the barbed wire and meet the top plain wire. For one panel on each side of each gate and for one panel along the main fence and one panel of the wing fence on each side of each trap, the netting shall be carried up (by a strip) and attached to the barbed wire.

GATEWAYS:

Gateways to be placed at least every 10 miles. The gates 11' 10" long and 4' 2" wide overall, and covered with netting were made of 1¾" x 1¾" x 5/16th angle iron and riveted, with bar type latches. Gate posts were 9'6" in length and not less than 9" in diameter at the small end. The posts were sunk 4' below ground level, with the hinge post being silled and structured four ways at the base and the other gate post two ways. The gates to be open on the east side only. The main fence post on either side to be a strainer post. The netting to extend past the strainer posts and be fastened securely by staples to the gate posts.

FLOOD GATES:

The frames of the gates to be made of five continuous twisted fence wires, and stayed with five vertical twisted wires the same as the frames. The gates were 12' long and 3' wide, attached with five fly hooks of tie wire to the top plain wire. A five wire twisted cable to be stretched from post to post, level with the surface of the ground, and on the down stream side. To this the floodgates were secured. When under the pressure of debris laden flood waters, the fly hooks were supposed to straighten out, thus allowing the gates to fall flat down on the bed of the water course, and permit unrestricted passage of the flood waters.

APPENDIX VI

ANALYSIS OF COSTS: LAKE MOORE EMU FENCE – 120 MILES 30 CHAINS

Materials	Quantity	Cost (including freight etc)
Rabbit Netting	2,192 rolls	
Plain Wire 12½ gauge	827 coils (41 tons 7cwt)	
Barb Wire “Iowa”	462 coils (23 tons 2 cwt)	£21,550.0.0
Spiral Droppers	136,000	2,409.9.4
Gerrard Clips	1,428,000	662.9.6
Grids (Motor T Passes)	7	369.7.3
Gates	11 EF 3 SF	249.19.9
Water Catchment Units	6	423.3.4
Water Tanks – 400 gallons	6	180.0.0
<u>Total cost</u> of fencing materials, installations, freight, etc (per mile £214.14.0)		£25,844.9.2
<u>Total cost</u> of construction of Emu Fence and installations – length 120 miles 30 chains (£242.10.0 per mile)		<u>£29,193.5.2</u>
<u>Total Cost</u> of materials, erection, installations etc (£457.4.0 per mile)		£55,037.14.4
<u>Total Cost</u> of tanks, water fittings, materials supplied to L Longman, Remlap Station to compensate for stock water cut off at two sites because of Emu Fence construction – Materials £512.0.3 : Railage £35.0.0 : Road Cartage £32.10.0		£579 10.3
Supervision = SVCO’s salary and allowances £2,400 : Vehicle costs £505		<u>£2,905.0.0</u>
Land & Survey Department Survey Costs		£2,250.10.2
Hire by above Department of tractor & transportation etc		£1,260.0.0
GRAND OVERALL COST OF EMU FENCE:		<u>£62,032.14.9</u>
		<u>Cost per mile = £515.6.7</u>

APPENDIX VII

SPECIFICATIONS OF LAKE MOORE EMU FENCE

NETTING:

42" x 1½ x 17 gauge of galvanised steel wire. Bottom selvage at ground level and rising above to 3 ft 6 inches. Netting fastened with Gerrard, 14 gauge galvanised wire clips to each wire at top, bottom and centre - 12 clips at top and bottom and 9 clips to the centre, in each panel.

ORDINARY POSTS:

Of Cypress pine: 4 ft 9 inches above ground; 3" at smaller end, exclusive of bark, "Vee" topped, sunk in ground 18" in loam etc soils, 12 inches in solid rock and 24 inches in loose sandy soils etc, posts 15 ft apart, centre to centre.

At all gates and motor traffic passes, posts to be 7 ft 6 inches apart for 60 ft on either side.

STRAINER AND ANGLE POSTS:

Of Cypress pine. 4 ft 9 inches above ground level and in loam etc, 30 inches, solid rock 24 inches and in loose earth, etc 36 inches. "Vee" topped and not less than 6 inches at smaller end, exclusive of bark.

STAYS:

Angle posts to be stayed with 6 ply 12½ gauge galvanised fencing wire, duly twisted to form a cable. Stump pile 3 ft in the ground, sunk at an angle of 1 in 6 away from the fence. The top of the pile to be level with the ground and 8 ft clear of the angle post.

WIRE HOLES:

Bored with ½ inch bit, to receive wires as follows:-

One bore at ground level, one 21 inches above that, one 21 inches above that, one 4 inches above that, one 4 inches above that (at right angles to the others; this to take a barbed wire), one 4 inches above that ie, Ground level, 21 inches, 42 inches, 46 inches, 50 inches (barbed wire) and 53 inches above ground level.

DROPPERS:

Between the posts the three top wires (two plain and one barbed) shall be tied by three, 10 gauge galvanised steel spiral droppers, extending down into the netting in such a manner as to fasten the selvage of the netting against the supporting top plain wire. Droppers spaced 3 ft 9 inches apart in each 15 ft panel.

MOTOR TRAFFIC PASS & GATE COMBINATIONS:

Seven units installed. The motor traffic passes were single lane and to the plan prepared by the Main Roads Department. The gates were of 16 ft span, having concrete sills in which were embedded a section of railway line the full span between each set of gate posts.

GATES:

In addition to the above, there were a further four gates installed in the Emu Fence, and three placed in the station property fences that were intercepted. Further details – posts of cypress pine, hinge post of 9 inches diameter at smaller end, exclusive of bark, rounded tops, 4 ft below ground level and 6 ft 6 inches above. Latch posts – 3 ft in ground and 4 ft 8 inches above. Sills of concrete as described above.

WATER CATCHMENT UNITS:

Six units of the “Butterfly” roof type were installed, being about 20 miles apart. They had two concrete bases for taking two x 400 gallon tanks, but at the time of construction, only one tank was installed, the remaining opening having a temporary plug in it.

FENCE RESERVE:

The full width of the reserve was one chain wide. The fence was constructed 2 ft off the centre survey line to the south.

CLEARING:

The full width of the clearing was 24 ft of which 8 ft was to be to the north of the pegged line and 16 ft to the south of it.

APPENDIX VIII

STATISTICS OF YILGARN FENCE

1. CONSTRUCTION

LENGTH OF FENCE:

162 miles of chains from a point 52 miles 34 chains south of the Great Eastern Highway at Koorarawelyee (approx) to the 65 mile 08 chains peg on No. 1 Vermin Fence North.

WIDTH OF FENCE LINE:

The fence line is cleared throughout to a width of 30 feet, being 12 feet on the northern or eastern (outer) side of the fence and 18 feet on the inner. The fence itself is constructed two feet on the inner side of the survey line.

TYPE OF FENCE:

Throughout is a 42" x 1½ x 17 gauge galvanised rabbit netting buried vertically to a depth of 6" and hung on the northern or eastern (outer) face of the fence.

Four 12½ gauge HT steel fence wires at 6", 21", 36" and 44" above ground and threaded through all posts and strainers.

Two 12½ gauge "Iowa" barbs at 40" and 48" above ground and tied to all posts by 14 gauge galvanised tie wire.

Netting is tied to plain wires by a combination of 16 gauge tie wires and "Gerrard" clips.

Posts – in the section 0 miles to 52 miles 34 chains (south of the Great Eastern Highway) a ration of four star steel standards to one native pine post at 12' spacings are used with strainers at 5 chain intervals.

In the section 62 mile 34 chains to 162 miles to 42 chains native pine posts at 15' spacings are used.

The top three wires (two barb and one plain) are tied by 16" spiral droppers and pins to the top of the netting; 3 per panel in 15' spacings and two per panel in 12' spacings.

Roads crossed – a total of nine roads are crossed by the fence. The survey is so arranged that all are crossed at right angles. On each a vermin proof motor traffic pass (MTP), single or double, according to importance, is provided; in addition, a 16' gate is erected to one side to permit passage of stock or machinery. The roads in question are:

1. 12 mile 35 chains	Marvel Loch/Mt Day Road	Single MTP
2. 62 mile 34 chains	Great Eastern Highway	Double MTP
3. 70 mile 66 chains	Karalee North Woodcutter's Road	Single MTP
4. 80 mile 52 chains	Yellowdine North – Gypsum Road	Single MTP
5. 91 mile 47 chains	Koolyanobbing Road	Double MTP
6. 114 mile 64 chains	Evanston Road	Single MTP
7. 140 mile 52 chains	Mt Jackson Road	Single MTP
8. 143 mile 20 chains	Currajong Road	Single MTP
9. 162 mile 42 chains	Junction with No. 1 Fence	Single MTP

Gates – in addition to the gates provided at roads, service gates are installed at 15 miles (approx) intervals. There are also two for use by PMG and PWD employees, and two in the boundary fences of the only farming property traversed by the fence. Total number of gates installed is 24.

Water supply – Ten butterfly roof water catchment units are installed, one every 15 miles approximately. Each is fitted with a 400 gallon tank and provision is made for another of each.

2. MATERIALS USED

A total of 395 tons of fencing and auxiliary materials (exclusive of concrete supplied by contractors when installing MTP and of timberposts, etc) was used in the construction. These were made up as follows:-

MATERIALS	COST
2,925 rolls rabbit netting	£24,972.3.9
905 coils 12 ½ gauge plain wire	3,435.15.0
1,045 barb wire	4,508.7.9
148 tie wire 14 gauge	309.17.6
58 tie wire 16 gauge	105.2.3
162,500 16" droppers	3,128.2.6
1,680,000 clips	689.0.0
7 set Grids – Single MTP	810.0.0
2 set grids – Double MTP	595.0.0
24 gates 16'	388.1.0
10 tanks 400 gallons	533.10.0
10 Water Catchment Units	786.0.0
18,600 Steel posts	3,642.10.0
60' Hume pipes 12"	19.15.0
Punching steel posts	775.0.0

	£44,716.4.9
	=====
Timber posts used	£42,400.0.0
Timber strainers	£ 2,600.0.0

(Timber posts and strainers not included in materials lists as these were supplied by contractors as part of contract).

APPENDIX IX

YILGARN VERMIN FENCE – SUMMARY OF COSTS - 162 MILES 42 CHAINS

	TOTAL		PER MILE		PER CHAIN	
*Survey	£5,278	(\$10,556)	£32.9.8	(\$64-97)	8.1.44	(81.44 cents)
*Clearing	£7,299	(\$14,598)	£44.18.4	(\$89-83)	11.2.75	(\$1-12.56)
Construction	£41,963	(\$83,926)	£258.4.8	(\$516-47)	3.4.6.7	(\$6-45.7.)
Materials	£44,720	(\$89,440)	£275.4.0	(\$550-40)	3.8.9.6	(\$6-88.6)
Freight	£2,842	(\$5,684)	£17.9.8	(\$34-97)	4.4.46	(43.46 cents)
Supervision	£3,778	(\$7,556)	£23.5.0	(\$46-50)	5.9.75	(58.75 cents)
	£105,880	(\$211,760)	£651.11.4.	(\$1,303.13)	8.2.10.7	(\$16.30)

***NOTE:** The cost of the “Survey” and “Clearing” of the 90½ miles of the original, but subsequently abandoned fence line, are not included in these totals. These costs were additional = Survey = £3,483 (\$6,966). Clearing = £4,095 (\$8,190).

1. Original survey of 162 miles 420 chains commenced November, 1959; completed January, 1961. Private contractors, Surveyor Symons.
2. Survey or re-aligned 90½ miles commenced February, 1963; completed June, 1963; Surveyor Pownall of Lands and Surveys.
3. Clearing of original fence line; commenced January, 1962 and completed may, 1962. Contractors Kanny and Sons, Manjimup.
4. Clearing of re-aligned 90½ miles; commenced October, 1963 and completed January, 1964. Contractors Service Contractors, Cannington.
5. Lake Seabrook Causeway; 420 feet long and 21 feet wide. Cost £225 (\$450) = £10 (\$20) per hour; 22½ hours to construct. Contractors Kanny and Sons. Logging sides of Causeway to prevent erosion cost £427 (\$854). Contractor E Coward, Southern Cross.
6. Construction: Three contractors involved. Contractor Scorda secured the first two contracts and commenced erection of fence on 15th December, 1962. Could not carry on and pulled out on 15th February, 1963. Contactor V Gaujers eventually took over both contracts, and obtained the third contract.

NO. 1 CONTRACT: 47 miles 22 chains (115M 20 Chs – 162M 42 Chs) completed 13th June, 1963.

NO. 2 CONTRACT: 24 miles 60 chains (90M 40Chs – 115M 20Chs) completed 21st October, 1963.

NO. 3 CONTRACT: 90 miles 40 chains (0M – 90M 40Chs) completed 24th August, 1964.

APPENDIX X

REHABILITATION
FENCE MAINTENANCE BY CONTRACT
LABOUR & MATERIALS FOR CONTRACTS COMPLETED
NO. 1 SECTION

CONTRACT	MILEAGE	LABOUR	MATERIALS
No. 2	14M 56Chns	£2,236.4.6	£1,535.14.0
No. 3	30M 26Chns	2,713.18.3	1,640.4.0
No. 4	20M	1,992.12.9	1,149.2.0
No. 5	36M 04Chns	3,659.1.3	1,949.5.0
No. 6	20M	1,018.10.0	533.8.0
No. 7	10M	1,233.10.0	1,462.5.0
No. 8	19M 52Chns	2,218.10.0	1,658.7.0
No. 9	5M	554.5.0	266.10.0
No. 10	19M 10Chns	2,650.17.0	1,708.5.0
TOTALS	174M 68 Chns	£18,277.8.9	£11,903.0.0

REMARKS

Labour/Mile = £104.0.0

Materials/Mile = £68.0.0

Total/Mile = £172.9.0

APPENDIX X (CONTINUED)

REHABILITATION
FENCE MAINTENANCE BY CONTRACT
LABOUR & MATERIALS FOR CONTRACTS COMPLETED
NO. 3 SECTION

<u>CONTRACT</u>	<u>MILEAGE</u>	<u>LABOUR</u>	<u>MATERIALS</u>
No. 1	9m 60 Chns	£496.8.9	£890. 9.10
No. 2	14m 20 Chns	1,424.15.0	919.11. 9
No. 4	25m 76 Chns	1,203.4.0	1,211.13.0
No. 5	30m 56 Chns	4,008.13.0	2,730.16.0
No. 6	48m 04 Chns	1,684.18.0	1,838.13.6
No. 7	46m 38 Chns	3,859.16.3	3,401.11.0
No. 9	3m	370.17.1	262.15.5
No. 10	11m	2,233.11.0	2,374.11.0
No. 12	23m 38 Chns	2,642.15.0	1,902.18.6
No. 13	20m 06 Chns	1,467.14.2	1,127.10.0
No. 14	40m 39 Chns	2,927.8.2	1,958.0.0
TOTALS	273M 17 Chns	£22,320.0.5	£18,618.10.0

REMARKS

Labour/Mile = £86.5.0

Materials/Mile = £68.3.0

Total/Mile = £154.8.0

<u>CONTRACT</u>	<u>MILEAGE</u>	<u>LABOUR</u>	<u>MATERIALS</u>
No. 3	11M 30Chns	£1,438.10.0	£1,873.15.0
No. 8	3M 55Chns	478.3.0	207.13.4
No. 11	11M 08Chns	2,473.10.0	1,032.19.6
No. 15	1M 50Chns	348.1.2	324.0.0
TOTALS	27M 63Chns	£4,738.4.2	£3,438.7.10

REMARKS

Labour/Mile = £170.10.0

Materials/Mile = £123.15.0

Total/Mile = £294.5.0

