IN THE SUPREME COURT)
)
OF PAPUA NEW GUINEA)

CORAM : CLARKSON J.

Friday,
1st December 1972

BETWEEN : ALLAN LANCE CARVEN
Plaintiff

AND : COMMONWEALTH OF AUSTRALIA
Defendant

REASONS FOR JUDGMENT

1972

Nov 20,21,
22, Dec.1.

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Clarkson,J.

The plaintiff was seriously injured by electrocution on 20th October 1969 in the course of his employment with the Commonwealth Department of Works in Port Moresby. He now sues his employer in negligence for damages. His case is put in a variety of ways. It is claimed that the employer was negligent in the control and management of the operation on which the plaintiff was engaged; that the defendant failed to provide a safe system of work; it exposed the plaintiff to unnecessary risk, neglected to provide safe and suitable plant and a safe place of work; and failed to give proper instructions for the safe performance of the work on which the plaintiff was engaged. The defence contains a denial of negligence and sets up in effect that the plaintiff was himself the author of his own misfortune. It alleges that proper instructions to ensure a safe operation were given to but disregarded by the plaintiff who knowingly adopted a dangerous procedure which his fellow employees had warned him not to adopt.

At the time of his injuries the plaintiff was working as a chainman in a surveying team and in order to determine the issues raised it is necessary to know something of the qualifications and experience of at least three of the team.

At the time of the accident the plaintiff was almost 21 years of age. He had lived in Papua New Guinea with his family from about the age of three years and attended school here until he was 12 or 13 years old. He then went to a boarding school in Queensland but because of his family's financial difficulties left boarding school before he had completed two years' study there and before he had taken his Junior examination. He then went to northern Queensland where he worked for some time as a

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yardman and then for 18 months as a labourer. In early 1966 he went to Sydney and worked for a few months in a rope factory and then returned to northern Queensland where, again for a few months, he worked as a fettler. In June 1966 he returned to Papua New Guinea where he was employed in the Post Office for nine months and in about June 1967 commenced employment with the Commonwealth Department of Works. A year later he returned to Queensland and worked as a labourer in a quarry for some months and returned to employment with the Commonwealth Department of Works in October 1968. From May to September 1969 he worked at Madang and was employed in Port Moresby at the time of the accident. He acquired only a limited knowledge of surveying although he had reached the stage where he could use some instruments in simple operations under the supervision of the technical officer in charge of the team. Prior to October 1969 the plaintiff had worked for at least one year as a chainman with the party supervised by the technical officer, Mr. Oehlerich. The work usually undertaken by the team related to surveys necessary for constructions such as roads, sewerage lines and water mains.

The Officer-in-Charge of the party, Mr. Oehlerich, is a technical officer grade II in the Commonwealth Department of Works and although without any academic qualifications in surveying is obviously a man of experience in the work in which his team is usually engaged.

The other expatriate in the team was Mr. Richardson who in October 1969 had completed the third year of an engineering degree in Australia and was employed as a cadet engineer with the Commonwealth Department of Works. At the time of the accident he was 20 years of age. Some surprise was expressed during the hearing at Richardson's lack of knowledge in 1969 as to the dangers associated with high voltage power lines and a method of measuring heights referred to as by triangulation. However, at the time Richardson gave evidence before me he had successfully completed the degree of Bachelor of Civil Engineering and held the further qualification of Master of Traffic Engineering.

Both Oehlerich and Richardson were permanent officers whilst the plaintiff was a temporary officer of the Department. Oehlerich took the view that in his absence Richardson as a cadet engineer and a permanent officer would be in charge of the team but it is clear enough that at least on the day of the accident Richardson did not attempt to exercise any authority over the

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plaintiff and that they carried on whatever work was required after discussions between them. The other members of the team were indigenes.

On 20th October 1969 the team reassembled at 1.00pm after lunch. It was intended Oehlerich would take it to measure the clearance of certain high tension lines which passed over sloping ground on which rock outcrops occurred. The purpose was to check that the high tension lines were at least 18 feet vertically from the ground and 15 feet horizontally from the ground or any outcrop. If clearances were less, it would be necessary to calculate and define the extent of excavations necessary to achieve these clearances. The task was said to be urgent and the members of the team were so informed.

Just as the team was about to leave for the site, Oehlerich was informed that he was required to accompany another officer to another place - an engagement he thought would take about an hour. Rather than leave the team idle in his absence, he explained, as he put it, "on the spur of the moment" the task the team was about to undertake and told the team to go ahead with the job. He explained that the team should first mark two points, some distance apart, each 15 feet away on the uphill side of the nearest high tension line, such distance to be measured from immediately under the high tension line. This would enable a line, parallel with the high tension line, to be marked on the ground 15 feet away from a notional line running immediately under the high tension line.

There is some confusion as to what else was explained by Oehlerich. Something was said by either Richardson or the plaintiff to indicate that the method of determining the vertical heighth of the high tension line above the ground level was not understood. Oehlerich does not claim that he gave any warning as to the danger of working in the vicinity of high tension lines and I am satisfied no such warning was given. Oehlerich was certain that he could rejoin the team before it had completed the first task of marking the line on the rock and in those circumstances considered detailed instructions for the later measurements not necessary. In fact this first line was positioned and marked, apparently without great difficulty. The plaintiff knew that it was then necessary to determine the vertical and horizontal distances of the high tension line from the bank or rocks. He and Richardson arranged between them that Richardson, positioning himself uphill from the high tension line, should use an instrument called a level to obtain a horizontal view of the high tension line nearest to him. The plaintiff was to position a surveyor's staff vertically

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near the high tension line. This would enable Richardson to read on the staff the heighth of the high tension line. The staff was of aluminium and telescopic. When fully extended it is 16 feet long. When the plaintiff held the staff fully extended and vertical its top was some 2 feet or more below the heighth of the high tension line. I accept that Richardson then made some remark to the effect that he could estimate by eye the difference between the top of the staff and the high tension line, but the plaintiff said that they had better make sure. Assisted by one of the indigenous workmen he placed a wooden ranging pole, of about 1 inch diameter and marked off in lengths of 1 foot, upright beside the staff and slid the staff up it to a distance of 1 foot making the top of the staff 17 feet above ground level. The top of the staff was still lower than the high tension line so the plaintiff commenced to repeat the operation to raise the staff by 1 foot. Subsequent measurement showed the high tension line to be slightly over 18 feet from ground level. The evidence does not establish how far, in a horizontal plane, the staff was from the high tension line. When the top of the staff reached a height of 17½ feet or more an electrical current arced from the high tension line to the staff and the plaintiff and the man assisting him both received substantial injuries by electrocution.

The evidence is that a current of the voltage being carried in the high tension line could in existing conditions arc over a distance of 6 inches or thereabouts, so that in an operation of the sort being undertaken by the plaintiff danger lay not only in permitting the staff to touch the high tension line but in permitting it to come within about 6 inches of it.

The plaintiff has an imperfect recollection of events immediately preceding his electrocution but says that he was to hold the staff "behind" (that is in relation to Richardson) the high tension line. In retrospect it can be seen that the problem which confronted the plaintiff in ensuring a reasonably accurate measurement was not as simple as at first appears.

The ultimate purpose was the excavation of rocks to ensure safety clearances. This was agreed to be, in the location concerned, an expensive operation and some degree of accuracy in measurement was therefore desirable. But the natural surface under the high tension line sloped quite steeply. It subsequently appeared that while a vertical clearance of 18 feet existed a horizontal clearance of 15 feet did not. From this it follows that the rise from a point under the high tension line to the rock outcrop was greater than one in one. This is confirmed by the photos of the scene (Ex. E1, 2 and 3). If then the staff was erected six inches uphill or downhill from a point directly under the high tension line the

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vertical measurement as read by Richardson would be incorrect by more than six inches. Yet if the staff were erected even a foot away horizontally from that point, the swaying of the staff which could be expected in all the circumstances could bring the staff to within six inches of the high tension line which was the danger point where an arcing could occur.

But all this was or should have been within the knowledge of the defendant. The technical officer, Oehlerich, had inspected the scene with a qualified engineer and it is to be presumed that Oehlerich and engineers of the Department would have access to all relevant information regarding the potential dangers of high tension lines.

On the other hand I accept that the plaintiff did not know and had not been told of the danger of arcing. I also accept, although it seems a little curious, that Richardson who had just successfully completed the third year of an engineering degree, while familiar with arcing as it occurs in a spark plug did not know that a high voltage current could arc over a distance as big as six inches.

In the circumstances as they existed, the operation as planned by the plaintiff and Richardson was a highly dangerous one. The situation called for a method of measurement which avoided the necessity of the staff being brought into close proximity to the high tension line while at the same time enabling the officer concerned to give an unqualified assurance that the vertical heighth of the high tension line above ground level was not less than 18 feet. A heighth of 17 ft. 6 ins. or 17 ft. 9ins. or even 17 ft. 11 ins. would not have complied with the safety standards to be met.

It was established that at least one such method, by triangulation, was available and known to the technical officer. The exact details of it were not explained to me but it involved a more sophisticated use of a theodolite than those the plaintiff could undertake and the positioning of a 10 ft. staff directly underneath the high tension line with the result that no part of it was within 8 feet of the high tension line. This was in fact the method used by Oehlerich to complete the job so dramatically interrupted by the plaintiff's electrocution. Further, it is clearly a method which involved no risk of arcing and the use of equipment and knowledge readily available.

Basically the position which obtained was that the calling away of Oehlerich when the team was about to leave for the site resulted in the team being unprepared to do safely the unfamiliar task it was set. Oehlerich's instructions were necessarily brief: the task itself emerged clearly enough but the method to be followed did not.

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Oehlerich expected to reach the site before more than the first step, the marking of the line parallel to the line of the high tension line, had been completed. He did not and the team, with no-one really in charge of it, adopted a method worked out on the spot by the plaintiff and Richardson which because of their ignorance was potentially dangerous. When the plaintiff justifiably did not accept Richardson's suggestion that the distance between the top of the staff and the high tension line should be estimated by eye, he pursued the method devised by them to a stage where the situation became one of high danger because he did not know - and it was not suggested that he should have known - that the danger of electrocution lay not merely in chance contact with the high tension line itself, which no doubt he felt able to avoid, but with a column of airspace 12 inches in diameter centred on the high tension line. From this it appears to me that the real criticism of the conduct of those responsible for the defendant's affairs was the failure to give the plaintiff and the other members of the team proper instructions and warnings for the safe performance of the work to be done. The object was sufficiently explained but not the method.

It was clearly foreseeable that conscientious workmen, used to measuring heights by use of the staff, would use their own ingenuity to get on with an urgent job rather than sit and wait for Oehlerich to arrive; and this is what Oehlerich expected them to do. He knew Richardson was a third year engineering student. In his own absence he treated Richardson "strictly speaking" as in charge of the team and expected him to work out any minor problems he encountered by himself. He may have over-estimated Richardson's knowledge and expertise, but on the first occasion on which the members of the team were called on to measure the heighth of power lines carrying 66,000 volts they should have received instruction at least to an extent which would have warned the plaintiff of the danger of adopting any course which involved not only contact with but the placing of the staff in close proximity to the power line. In my view the defendant was negligent.

Because of the conclusion which I have just set out it is unnecessary to consider in detail the other allegations made against the defendant. I should however mention the allegations that the defendant was in breach of its duty to take reasonable care for the plaintiff's safety by failing to arrange for the power to be cut off or for safety appliances including gloves to be issued to the plaintiff. It is clear, however, that if the team had been properly instructed in and had adopted the method of measurement intended to be used and subsequently used by Oehlerich such precautions would be unnecessary because no

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conductor held by the plaintiff nor any part of his body would have come within 8 feet of the high tension line.

I come now to the allegation of contributory negligence against the plaintiff.

I am satisfied that when the plaintiff commenced to raise the staff towards the power line, warnings of the danger were given to the plaintiff by both of the indigenous chainmen James Koren and Ealu Ielegi. The danger they foresaw was of the staff accidentally touching the high tension line. James Koren said that he did not know before this occasion that electricity could "jump" and there is nothing to show Ealu's state of knowledge was any different.

This aspect of the case has caused me no little concern for the plaintiff was warned by two fellow workmen that what he was doing was dangerous; the plaintiff chose to disregard the warning with disastrous results.

It can be said for the plaintiff that while he appreciated as well as the other two chainmen did the danger which would follow if the staff touched the high tension wire, his action in continuing with the procedure adopted was based not so much on a deliberate intent to disregard the warning as worthless as on his confidence that he could so control the staff as to prevent its touching the high tension wire. I think it can also be said that the plaintiff was motivated by a desire to get on with the task allotted which he knew to be urgent. It would have been a simple matter for all members of the team to have sat down and waited for Oehlerich to arrive but as I have said this would have been contrary to Oehlerich's expectations. Further, it should be noted that Richardson was a party to the method adopted and did not suggest any other way of tackling the job.

At this stage of the enquiry I am not concerned whether the plaintiff acted in breach of some duty to the defendant but whether he exercised reasonable care for his own safety and the onus lies on the defendant to show that the plaintiff did not so conduct himself.

I have not found this question an easy one, but I have finally concluded that contributory negligence has not been established. I do not think the plaintiff can be fairly criticized for continuing with the job. It was suggested in argument that some other work could have been done pending Oehlerich's arrival, but nothing particular was identified and I do not see what else there was to do except to measure the heighth of the high tension line above ground level.

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The fully extended staff, held against the round wooden ranging rod, was not completely stable; some swaying due to wind or physical movement of the persons holding the staff and rod was to be expected. I have already explained how the rod was used by the plaintiff and how the top of the staff was raised by one foot and how the plaintiff then ordered it to be raised another foot to 18 feet. Everyone knew there was some doubt whether the high tension line was as high as 18 feet.

If I thought the plaintiff when ordering the top of the staff to be raised to 18 feet had the staff so positioned that it was immediately under the high tension line with the result that if the high tension line were 18 feet or less from the ground direct contact between the staff and the high tension line was inevitable, I would have no hesitation in saying the plaintiff was guilty of contributory negligence. But the defendant has not shown that this is what happened. On the contrary, the plaintiff's reference to the staff being placed "behind" the high tension line in relation to Richardson leads me to accept that the staff was placed in a position downhill from the high tension line; how far is not known.

It is apparent from the evidence of the electrical engineer, Mr. Pearce, that unless the gap between the staff and the high tension line were closed with great speed - presumably as in switches constructed for that purpose - arcing was inevitable whether the staff touched the high tension line or not, if in fact the staff came within 6 inches or less of the high tension line. On all the relevant evidence I conclude that there was no such contact. This allows the likelihood that the plaintiff so positioned the staff that allowing for any swaying the top of it if raised to 18 feet would not in his judgment come closer than approximately 6 inches to the high tension line and if for any reason the staff fell towards the high tension line it would pass under it. If one then adds the mistaken assumption that contact between staff and high tension line was necessary to permit any flow of current, I cannot say the plaintiff's conduct is shown, in all the circumstances, to be unreasonable. He was an uneducated worker, not properly instructed in the danger inherent in the situation, doing his best to complete an urgent job for his employer. He was working to a plan formulated with Richardson whom he knew to be a cadet engineer and who could reasonably be expected to have considerably more relevant knowledge than he. His immediate task as he saw it was to get at least the top of the staff level with the high tension line without of course touching the line. There is no reason to believe that he could not have accomplished this. The critical factor, unknown to him, was the potentiality of the high voltage current to arc in the situation he created.

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I do not think he ought to have known this and in the result all the damage which occurred flowed, in my view, from the failure of those responsible for managing the defendant's affairs to issue appropriate warnings and instructions.

Having found that the defendant was guilty of negligence causing the injuries to the plaintiff it is now necessary to consider the problem of damages. The severe electric shock received by the plaintiff caused horrible burns and charring. He was thrown to the ground and appears to have lost consciousness for a short time. When he recovered consciousness he found his clothes on fire and when he attempted to put the fire out with his right hand found that he had no control over the movement of his arms. It appears that immediately after the electrocution Richardson drove off to obtain assistance but unfortunately the vehicle in which he was travelling overturned. The indigenous members of the team appear to have run away and the plaintiff and a fellow worker, also seriously injured, were left for about half an hour before any assistance arrived. The plaintiff was taken to the Port Moresby Hospital where it was found that he was suffering from burns extending over 60% of his body. The right foot was charred and obviously required amputation. There were extensive burns on the left leg from the hip to the foot with considerable damage to the big toe and second toe. There was a large burn on the back of the forearm and hand of the left arm and some burning to the palm of the right hand. He was extremely ill for some time and suffered considerable pain and distress. He was apprehensive, with considerable justification, of death and developed a condition of fright which the medical evidence indicated is a characteristic symptom of people badly burned.

In the course of the next few weeks the right leg was amputated below the knee as also were the big toe and second toe of the left foot. He was fearful that he might lose his left leg which was extremely painful. In bed he could only lie on his back or on his right side and developed bedsores. A number of skin graft operations were performed. Mr. Clezy, the specialist surgeon who has had the care of the plaintiff since early 1970, told me that the plaintiff underwent eight general anaesthetics for such things as skin grafting, amputations and plastic correction of scar contracture of the left armpit. The amputation of the right leg was unsatisfactory and had to be revised by further operation on 10th September 1971. The plaintiff was continually concerned with incidents which arose in the course of his treatment, often broke down and wept and on one occasion feared for his life when an artery in his badly burnt left armpit ruptured.

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The plaintiff was discharged on crutches for out-patient treatment in February 1970 and because of his state of anxiety and nervousness Mr. Clezy arranged for the plaintiff's transfer to Sydney where his mother resided, for limb fitting. This proved to be a difficult task because the skin on the stump kept breaking down, a condition which led to Mr. Clezy performing the further operation already referred to in September of 1971. Ultimately the plaintiff returned to Port Moresby in September 1970 and was appointed a technical assistant grade I by his employer in the Commonwealth Department of Works. This involves mainly simple drafting work with little field work.

The condition of the plaintiff's injuries as assessed by Mr. Clezy at the time of trial was as follows. The left arm has a full range of movement. There is a scar 10" x 1" on the back of the forearm and hand but otherwise there is no disability to the arm. Similarly there is no disability to the right arm, the small scars on the palm of the hand being insignificant. The stump of the right leg is well healed and well cared for. There is some scarring of the right thigh. The left leg is extensively scarred from hip to foot, with the loss of the two toes already mentioned, much of the instep and the front and outer side of the ankle have been skin grafted and the junction between the graft and the sole is pitted. There is some bowstringing of the toe tendons over the front of the ankle and areas of anaesthesia exist over all skin grafts and the first and second metatarsals.

As a result of his injuries the plaintiff has difficulty in walking up slopes or on rough ground and easily injures the anaesthetized graft areas especially on the outside of the left ankle. The plaintiff complains of excessive sweating on normal parts of the body including the skin on the stump. Mr. Clezy explains that this sweating occurs to compensate for the loss or impairment of sweat glands in the 60% of the skin area which is now scarred. Mr. Clezy expressed the view that the plaintiff's long-term prospects in this country are bad and that it would be preferable for the plaintiff to live in a cooler climate and in an area where care of the left leg would be more easily available.

The injuries to the left leg have resulted in adherent and anaesthetic scars which make the front and outer side of the foot constantly liable to unnoticed injury. For this reason the leg is unsuitable for work on rough ground. The loss of the right leg and the loss of the big toe of the left foot combine to diminish the thrust required in walking and to make uphill walking awkward. Mr. Clezy's opinion is that unremitting care of the left foot will be required for the rest of the plaintiff's life and he estimates the loss of physical

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function of the left leg at 20%.

As a result of the plaintiff's injuries it will be necessary for him to change his former way of life. He was accustomed to and enjoyed outside work and was not qualified for any other type of employment. It will now be necessary for him to avoid any occupation associated with an outdoor life or which involves physical mobility, repeated squatting, kneeling, heavy lifting or nice balance. He may well be forced to seek employment if it is available in a semi-skilled sedentary occupation such as a factory hand or process worker.

The plaintiff himself recognizes that he must change both his occupation and his place of residence. His intention is to take up residence in Australia and to undertake studies with a view to qualifying to leaving certificate standard. His fields of employment with such a qualification would no doubt be wider but one must hold some doubt whether with his previous academic record and his long absence from any form of study he will be able to attain the qualification he seeks.

There are a number of matters which can be conveniently grouped under the general heading of economic loss. For instance he faces recurring expenditure for special aids such as stockings and special powder for the stump of the right leg and a new prosthesis will be required every four or five years. It is likely that the annual cost of the stockings and powder will approximate $90 and the present cost of a prosthesis is $150 to $180. There has been no immediate reduction in wages earned. The defendant has re-employed the plaintiff and in fact promoted him to the position of technical assistant in which position his weekly wage exceeds his pre-accident weekly wage. This however is a position which will not continue for very long. As I have noted, the plaintiff to pursue his own advancement and to comply with medical advice intends to move to Australia. But in any event with the stepped-up programme to "localise" unskilled and semi-skilled jobs in this country he could not have expected to retain employment as a chainman here for very long. Mr. Buick, an employment counselling officer with experience in Australia and Papua New Guinea, expressed the opinion that the plaintiff with his disabilities would find it almost impossible to get outside work in Australia even if, contrary to medical advice, he sought it. He agreed that higher educational qualifications would be desirable and suggested that a rehabilitation course of some six months' duration may be required to adjust the plaintiff to bench or assembly work. If such employment were then obtained he should be able to earn about the same basic amount as he earned in Papua New Guinea before his accident. If the plaintiff, uninjured had in due course obtained employment in Australia as a chainman, it was agreed by the parties that his earnings

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would be greater than those at the bench or in process work by at least a camping allowance in excess of $400 per year. I also note that whether the plaintiff undertakes a rehabilitation course or further studies there is likely to be a period when his earnings are for some time lower than those I have referred to.

The plaintiff is a strong, healthy young man with the function of his upper limbs unimpaired. He could certainly not be described as an "odd lot" but I must accept that he is no longer able to do the work for which he was best suited, namely, outdoor physical labour, and that his low educational qualifications and lack of experience combine with his physical disabilities to limit severely the number of sedentary occupations in which he is likely to find employment. The chances from time to time of his being unemployed have been increased substantially.

There is evidence that the plaintiff was a somewhat quiet and taciturn young man before the accident but that he now occasionally drinks too much and becomes aggressive. I do not find this difficult to accept in view of his harrowing experiences and his uncertain future. But I am not satisfied that this is a permanent condition. The plaintiff has also suffered a substantial loss of what are referred to as the amenities of life. His social activities are restricted, he no longer swims, a sport in which he appears to have been above average, because of the embarrassment caused by his ugly scarring. It is only when he dresses with long sleeves and long trousers that the scarring is not immediately apparent.

Clearly the plaintiff suffered excruciating pain and was put to many inconveniences over a long period as a result of his injuries and their treatment.

In my view a proper award for general damages is $32,000. To this must be added the agreed special damages of $5,372.36 making a total of $37,372.36.

Solicitors for the Plaintiff : Messrs. C. Kirke & Co.
Solicitor for the Defendant : P.J. Clay, Esq.,Crown Solicitor.