HOURLY TRACTOR COSTS IN NEW SOUTH WALES COASTAL DISTRICTS.

By P. C. Druce, B.Ec.

Economics Branch.

The use of tractors on farms in New South Wales has increased with great rapidity during the past twenty years. In 1930 when the first tractor census was taken there were 6,242 tractors in use; sixteen years later 17,530 tractors were being operated, an increase of nearly 200 per cent. This increase would have been even greater had not World War II seriously interfered with the manufacture and supply of tractors in Australia, and it is expected that several years will elapse before the present demand is fully satisfied. Tractors have largely eliminated the use of horse teams in wheat-growing areas; only a few isolated farmers now rely on horsepower to cultivate, sow and harvest their wheat crops. This change from horse to tractor power has not proceeded so rapidly in other agricultural industries, largely because of the heavy initial outlay necessary to purchase a tractor and the comparatively small areas cultivated. Nevertheless, the use of tractor power in the dairying, vegetable and fruit-growing industries is steadily increasing, and the recent introduction of comparatively cheap, "general purpose" low-horsepower tractors with specialised equipment will accelerate this tendency as soon as supplies are again freely available. In districts where there are numerous small farms on which the area cropped does not justify the capital expenditure required for the purchase of a tractor, there will usually be found private contractors or co-operative machinery pools which use tractor power to carry out most cultural, sowing and harvesting operations for farmers on a contract basis.

However, despite the comparatively rapid increase in the use of tractor power during the past twenty years, there is no reliable information available regarding tractor operating costs. Yet it is becoming increasingly important to have detailed and accurate knowledge of such costs. Not only is this knowledge invaluable to the farmer when deciding whether the area he expects to crop will warrant the purchase of a tractor, and of great help in deciding what size and type of tractor he should purchase in any particular case, but it is indispensable when fixing charges for custom work or when machinery is operated on a co-operative basis.

The co-operative use of farm machinery has increased rapidly during the past three years in New South Wales under the influence of the Government Mechanisation Scheme.* And one of the chief difficulties which has been encountered in administering this Scheme has been the lack of reliable information regarding tractor operating costs.

* For a history and details of the N.S.W. Government's Farm Mechanisation Scheme readers are referred to the author's article: "The N.S.W. Farm Mechanisation Scheme: Its History and Future Possibilities," which appeared in the "Review of Marketing and Agricultural Economics," January 1945.

Realising the urgent need for reliable information on tractor costs and operations, the Division of Marketing and Agricultural Economics saw in the Mechanisation Scheme an opportunity to obtain some such figures. With this in view a cost system was prepared and a number of the pools operating under the Scheme agreed to keep the detailed records required.

The obtaining of reliable cost figures of this nature is necessarily a lengthy process; it is a process which is, as yet, by no means complete; nevertheless, sufficient information has now been obtained to make it possible to issue a tentative set of costs for tractors of various sizes and which are used for varying annual periods. In view of the complete lack of any authoritative figures relating to tractor costs in New South Wales, it is thought desirable to issue such a statement now, although of only a tentative nature, rather than to wait for several years until figures more definite in regard to some of the component costs are obtained.

This article is concerned primarily with the hourly costs incurred by New South Wales Machinery Pools in operating tractors and implements as it was from these pools that all the figures upon which costs are based were obtained. However, some attention will be paid to acreage costs and in a final section an attempt will be made to apply the costs as ascertained at Machinery Pools to privately-owned, farm-operated tractors.

In addition to the ordinary type of tractor the rotary hoe is being used extensively by machinery pools and its operating costs are being recorded. As yet, however, insufficient information has been obtained to warrant the publication of even tentative cost figures for this implement.

In estimating the value and reliability of the figures which follow and in making use of them in any way it is desirable that the following points be continuously kept in mind:—

(a) The figures apply to coastal districts only.

(b) In so far as they include allowances for depreciation and repairs, which allowances at this stage are tentative only, they are subject to revision.

(c) Estimates of the economic life of tractors and implements, and of their residual value, are those of this Department's machinery experts. Their estimates are based on their wide practical experience with all types of farm machinery, used under Australian conditions, backed by the recorded working lives of machines used in the United States and Great Britain.

(d) Unless otherwise stated, costs are based on the average prices ruling in New South Wales coastal districts within a radius of 100 to 150 miles of Sydney during the twelve months ended 30th June, 1946.

(e) Costs throughout refer to average coastal working conditions. Actual operating costs will vary considerably depending on the type of country being worked.

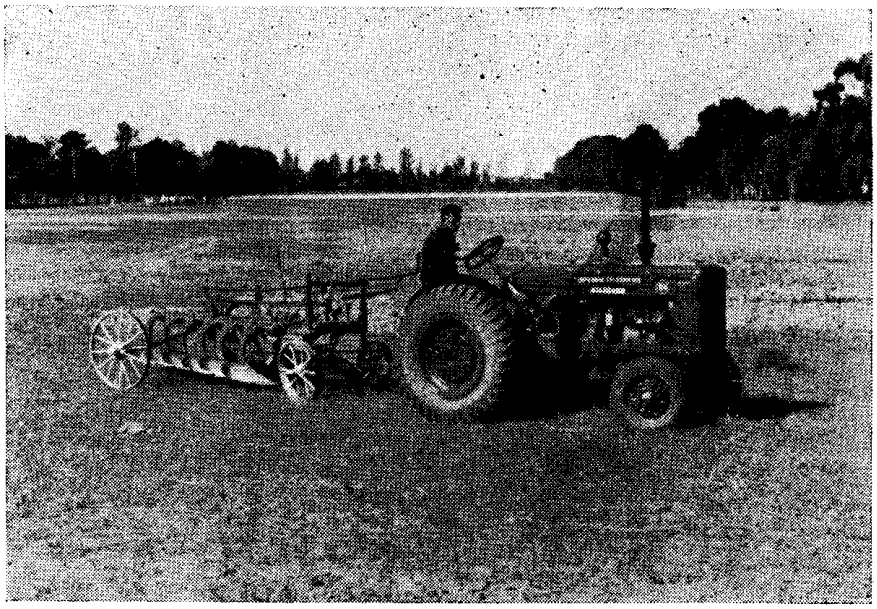
HOURLY COST OF OPERATING TRACTORS AT NEW SOUTH WALES MACHINERY POOLS.

Tractor Size.

All the tractors used at pools where cost details have been recorded may be divided into three distinct groups according to their rated horsepower. Throughout this article tractors are therefore classified as "Small," "Medium" and "Large." The average drawbar rating† of the three groups of tractors is as follows:—

Small Tractors	.. ..	17 horsepower.
Medium „	.. ..	25 „
Large „	.. ..	33 „

The "small" and "medium" tractors are most commonly used by the coastal pools, "large" tractors are under most circumstances too big and are uneconomic for coastal work. It should be noted that various makes of smaller tractors with a maximum of from 6 to 12 drawbar horsepower are now on the market but such tractors have not yet been used by any of the machinery pools.



A "Medium" Sized Tractor and Mouldboard Plough.

Annual Use.

It will be readily realised that hourly costs will vary considerably, depending upon total annual use. Without exception it has been found that the cost of operating tractors falls appreciably as annual hourly use increases. At none of the pools where costs have been examined has average annual use exceeded 1,200 working hours, but this figure has been attained in some instances. More usually units work from 800 to 1,000 hours per

† Seventy-five per cent. of the maximum drawbar horsepower as disclosed in Nebraska tractor tests, or approximate equivalent.

annum. This may seem a low figure. Operations, however, are frequently affected by adverse weather conditions, which often prevent tractor work for weeks on end. To demonstrate the effect on operating costs of variations in total annual use, cost figures are given in three groups for each tractor, assuming: (a) 800 working hours per annum; (b) 1,000 working hours per annum; and (c) 1,200 working hours per annum.

All figures are for four-wheeled tractors, as distinct from "general purpose" tractors; however there is no reason to believe that the cost of operating this latter type of tractor would vary significantly from the figures given. The hourly cost given is for tractors equipped with rubber tyres and is the average hourly operating cost during the economic life of the tractor. It is not the hourly cost at any particular point of time in the tractor's life.

Total hourly operating costs, under conditions of varying annual use, for three sizes of tractors, are given in Table I. These costs are set out in detail in Tables III to V.

TABLE I.

Hourly Tractor Operating Costs.

Tractor Size.	Annual Use.		
	800 hours.	1,000 hours.	1,200 hours.
	s. d.	s. d.	s. d.
Small	14 8	13 8	12 3
Medium	16 2	15 2	13 9
Large	18 1	17 0	15 6½

The Implements.

While many pools carry out numerous operations in addition to ploughing and disc harrowing, most of the pools at which cost records have been kept have confined their work to those two operations, some using disc ploughs, some mouldboard ploughs and others both types of plough. Information in regard to the cost of using other implements is, at present, too scanty to enable figures to be given and the costs quoted in this article are therefore confined to three types of operations; namely, disc ploughing, mouldboard ploughing, and tandem disc harrowing.

Implement costs are based on the assumption that each tractor is equipped with a disc plough, a mouldboard plough and a tandem disc harrow, and that each of these implements is used an equal number of hours annually. However it should be noted that any variation from this assumption is of little importance as it would affect insurance costs only; these costs form only a very small proportion of the total implement costs.

Naturally the size of the plough or harrow used depends on the power of the tractor drawing it. The combined hourly tractor and implement costs which are given in Table II apply to the size of implement usually used in coastal districts with the particular tractor concerned.

The figures in Table II include trailer costs in addition to tractor and implement costs. At every pool where cost records have been kept a trailer is now attached to each tractor. This trailer is used to transport implements and fuel to the scene of operations, and its use has effected a material reduction in operating costs.

TABLE II.

Hourly Working Costs.

Size of Tractor.	Type of Operation.	Annual Use.		
		800 hours.	1,000 hours.	1,200 hours.
		s. d.	s. d.	s. d.
Small	Disc ploughing	16 10½	15 9½	14 4½
Small	Mouldboard ploughing ...	18 2½	17 1½	15 8½
Small	Tandem disc harrowing ...	16 11½	15 10½	14 5½
Medium	Disc ploughing	18 9	17 8	16 3
Medium	Mouldboard ploughing ...	20 5½	19 4½	17 11½
Medium	Tandem disc harrowing ...	18 10	17 9	16 4
Large	Disc ploughing	20 11½	19 9½	18 4
Large	Mouldboard ploughing ...	22 4½	21 2½	19 9
Large	Tandem disc harrowing ...	21 0	19 10	18 4½

TABLES III TO V.

Details of Hourly Operating Costs.

TABLE III.

Small Tractor—Hourly Costs.

Item.	Annual Use. 800 hours.	1,000 hours.	1,200 hours.
	s. d.	s. d.	s. d.
Tractor—			
Wages	7 0	6 5	5 4
Depreciation	0 11	0 11	0 11
Tyre Allowance	0 8	0 8	0 8
Repairs	0 10½	0 10½	0 10½
Insurance and Registration	0 3	0 2½	0 2
Kerosene (1.5 gals.)	2 1½	2 1½	2 1½
Kerosene used in travelling	0 3	0 2½	0 2
Oil	0 6	0 6	0 6
Benzine	0 3	0 3	0 3
Grease	0 1	0 1	0 1
Office and Administrative Expenses	1 6	1 2½	1 0
Housing	0 3	0 2½	0 2
Total	14 8	13 8	12 3
Trailer—			
Depreciation	0 1½	0 1	0 1
Repairs	0 2	0 2	0 2
Insurance and Registration	0 2½	0 2	0 2
Total	0 6	0 5	0 5
Implements—			
(*a*) 3 Furrow Disc Plough—			
Depreciation	1 1	1 1	1 1
Repairs (incl. disc replacements)	0 7	0 7	0 7
Insurance	0 0½	0 0½	0 0½
Total	1 8½	1 8½	1 8½
(*b*) 3 Furrow Mouldboard Plough—			
Depreciation	1 1½	1 1½	1 1½
Repairs (incl. share replacements)	1 10½	1 10½	1 10½
Insurance	0 0½	0 0½	0 0½
Total	3 0½	3 0½	3 0½
(*c*) Depreciation	0 10	0 10	0 10
Repairs (incl. disc replacements)	0 11	0 11	0 11
Insurance	0 0½	0 0½	0 0½
Total	1 9½	1 9½	1 9½

TABLE IV.

Medium Tractor—Hourly Costs.

Item.	Annual Use. 800 hours.	1,000 hours.	1,200 hours.
	s. d.	s. d.	s. d.
Tractor—			
Wages	7 0	6 5	5 4
Depreciation	1 1½	1 1½	1 1½
Tyre Allowance	0 10	0 10	0 10
Repairs...	1 1	1 1	1 1
Insurance and Registration	0 3	0 2½	0 2
Kerosene (2.0 gals.)	2 10	2 10	2 10
Kerosene used in travelling	0 3½	0 3	0 2½
Oil	0 7	0 7	0 7
Benzine	0 4	0 4	0 4
Grease	0 1	0 1	0 1
Office and Administrative Expenses ...	1 6	1 2½	1 0
Housing	0 3	0 2½	0 2
Total	16 2	15 2	13 9
Trailer—			
Depreciation	0 2	0 1½	0 1½
Repairs...	0 2	0 2	0 2
Insurance and Registration	0 2½	0 2	0 2
Total	0 6½	0 5½	0 5½
Implements—			
(*a*) 4 Furrow Disc Plough—			
Depreciation	1 3½	1 3½	1 3½
Repairs	0 8½	0 8½	0 8½
Insurance	0 0½	0 0½	0 0½
Total	2 0½	2 0½	2 0½
(*b*) 4 Furrow Mouldboard Plough—			
Depreciation	1 4½	1 4½	1 4½
Repairs	2 4	2 4	2 4
Insurance	0 0½	0 0½	0 0½
Total	3 9	3 9	3 9
(*c*) 7 feet Tandem Disc Harrow—			
Depreciation	0 11	0 11	0 11
Repairs	1 2	1 2	1 2
Insurance	0 0½	0 0½	0 0½
Total	2 1½	2 1½	2 1½

TABLE V.

Large Tractor—Hourly Costs.

Item.	Annual Use. 800 hours.	1,000 hours.	1,200 hours.
	s. d.	s. d.	s. d.
Tractor—			
Wages	7 0	6 5	5 4
Depreciation	1 6	1 6	1 6
Tyre Allowance	1 0	1 0	1 0
Repairs...	1 5	1 5	1 5
Insurance and Registration	0 3½	0 2½	0 2
Kerosene (2.5 gals.)	3 6½	3 6½	3 6½
Kerosene used in travelling	0 5	0 4	0 3
Oil	0 8	0 8	0 8
Benzine	0 5	0 5	0 5
Grease	0 1	0 1	0 1
Office and Administrative Expenses ...	1 6	1 2½	1 0
Housing and Administrative Expenses ...	0 3	0 2½	0 2
Total	18 1	17 0	15 6½
Trailer—			
Depreciation	0 2	0 1½	0 1½
Repairs...	0 2	0 2	0 2
Insurance and Registration	0 2½	0 2	0 2
Total	0 6½	0 5½	0 5½
Implements—			
(*a*) 5 Furrow Disc Plough—			
Depreciation	1 5½	1 5½	1 5½
Repairs (incl. disc replacements) ...	0 10	0 10	0 10
Insurance	0 0½	0 0½	0 0½
Total	2 4	2 4	2 4
(*b*) 4 Furrow Mouldboard Plough—			
Depreciation	1 4½	1 4½	1 4½
Repairs (incl. share replacements) ...	2 4	2 4	2 4
Insurance	0 0½	0 0½	0 0½
Total	3 9	3 9	3 9
(*c*) 8 feet Tandem Disc Harrow—			
Depreciation	1 0	1 0	1 0
Repairs (incl. disc replacements) ...	1 4	1 4	1 4
Insurance	0 0½	0 0½	0 0½
Total	2 4½	2 4½	2 4½

This Tractor Drawing Tandem Disc Harrows is Typical of Many Used by Machinery Pools.

Some comment on most of the individual items which comprise total operating costs, and which are given in detail in Tables III to V, is necessary. However, before proceeding to this it is desirable to draw attention to several estimates and assumptions which have been made in ascertaining the aforementioned costs.

Estimates and Assumptions.

The economic life of tractors and implements has never been recorded under Australian conditions. It has therefore been necessary to make an estimate of their useful life. The figures used are, in the opinion of the Department's machinery experts, the average number of hours which tractors or implements may be expected to work under pool conditions, assuming that an efficient job is always performed. Ploughs and harrows can be used longer than is here estimated under almost any conditions, but they won't perform a satisfactory job.

The repairs figures are also estimates, based on recorded figures to date, but adjusted to cover the estimated working life of the tractor. Repairs figures are directly related to the estimated life of the machinery and would rise so as to more than offset reduced depreciation rates if machines were used for a longer period than is here estimated.

The economic life of tractors and implements is estimated as follows:—

Tractors	7,500 hours.
Ploughs	1,500 ,,
Tandem Disc Harrows ..	1,000 ,,
Trailers	10 years.

In arriving at these estimates and at the cost figures already quoted it is assumed that tractors will travel for 120 hours per annum irrespective of the number of hours actually worked. This assumption is in line with the observed data which indicates that travelling time varies very little with the amount of work done; in other words the proportion of travelling to working time falls rapidly as the number of hours worked per annum increases.

After working for the times given above it is estimated that the average sale value of the various items, expressed as a percentage of their original value, will be:—

	per cent.
Tractors	15
Implements	10
Trailers	—

This residual value must be allowed for in arriving at the hourly rate of depreciation.

The working life of tyres, which are treated separately and are not included in the hourly charge for depreciation, is based on observed data at the machinery pools keeping records.

The Individual Items Comprising Costs.

(a) *Wages.*

Wages costs are based on a wage of £6 1s. 0d. per week of 48 hours. This is the usual wage paid tractor operators; a number of pools, however, pay by the hour, and consequently are usually able to effect a substantial reduction in hourly wages costs.

Hourly wages costs increase as annual hourly use falls. However, this increase is not always as great as might at first sight be expected. When annual use falls below 1,000 hours per annum it is usually possible to "put off" operators for periods or alternatively to find other, temporary, means of employment for them. For this reason an hourly wages rate above 7s. is seldom encountered. It should be noted that the hourly wages rate includes the cost of routine repairs and servicing, which is usually performed by the operator.

(b) *Depreciation.*

The capital expenditure upon which depreciation costs are based is the average of prices quoted by several of the leading distributors. Figures are as follows:—

	£
Tractors:	
Small Tractor	500
Medium „	600
Large „	800
Disc Ploughs:	£
3 furrow	85
4 furrow	102
5 furrow	115
Mouldboard Ploughs:	
3 furrow	90
4 furrow	108

Tandem Disc Harrows:	£
5 foot cut	40
7 foot cut	47
8 foot cut	51

Trailers:

The capital cost of trailers varies from about £25 to £75, depending upon their size and construction.

(c) *Tyre Allowance.*

The life of tractor tyres naturally varies considerably, depending upon the type of country in which the tractor is working. The figures used are recorded averages of several tractors working in different coastal districts. They are:—

Back: 2,500 hours each set.
Front: 4 sets in 7,500 hours.

(d) *Repairs.*

As has already been pointed out, the repairs figures are partly estimates based on recorded repairs in the earlier part of the life of several machines. Tractor repairs are usually almost negligible in the first 500 working hours, and remain low during the next 500 to 1,000 work hours, but after this generally increase rapidly. It is estimated that repairs to the average tractor which works for 7,500 hours will amount to two-thirds of its original cost. This figure excludes minor adjustments and servicing which it is assumed are carried out by the operator.

The figures given for repairs to ploughs and harrows include the cost of replacing discs and in the case of mould board ploughs the cost of sharpening and replacing shares. These disc and share costs are based on their observed life and assume that discs and shares are kept in such a condition that efficient work will always be performed.

(e) *Insurance and Registration.*

All tractors travelling on roads must be registered, and in the terms of the advance made by the Rural Bank to Machinery Pools, all tractors must be insured. The costs here given for insurance are based on half the original capital outlay for the machine concerned, and not on the full cost of the machine.

(f) *Fuels.*

Hourly kerosene consumption may on first sight apepar a little high. This is due to the fact that it takes into account losses due to evaporation, wastage in pouring from the drums to the tractor, and from other causes; such losses are often quite appreciable. Undoubtedly individual tests over a short period would show a lower rate of kerosene consumption than is here indicated, but to base costs on such a figure would be misleading.

The price of kerosene used here was the average price ruling within 100-150 miles radius of Sydney during June 1946.

(g) *Office and Administrative Expenses.*

At pools where costs have been recorded office and administrative expenses have varied more than any other item of cost. In some few instances they are almost negligible, due to the fact that all administrative work is done on an honorary basis; in other instances where this is not the case they exceed 3s. per hour. One

fact which stands out is that total administrative costs vary very little with the amount of work carried out. The costs given here are considered reasonable and should provide fair, but not excessive, remuneration for any administrative work necessary.

THE COST PER ACRE.

Throughout this article costs have been given on an hourly basis and pools now invariably charge on an hourly basis, although at the commencement of the Scheme some pools charged by the acre. They adopt this course because, while hourly costs vary but little, acreage costs show considerable variation due to the differing times taken to cover the same area under different circumstances and in different types and conditions of soil. However, in spite of this, it may be useful to give the average recorded times of ploughing and discing one acre with different sized tractors, together with the average cost per acre. The average recorded times taken to work one acre are given in Table VI.

TABLE VI.

Time Taken to Work One Acre.

Tractor Size.	Type of Operation.	Time Taken.
		Hours.
Small ..	Ploughing	1.9
Small ..	Disc harrowing	0.7
Medium ..	Ploughing	1.2
Medium ..	Disc harrowing	0.5
Large ..	Ploughing	1·2
Large ..	Disc harrowing	0.5

It will be noted that the average time taken to work one acre was the same with large as with medium tractors. This was due to the fact that the large tractors were working in areas which were too small for their economic use. Such tractors are not suited to coastal conditions, and in New South Wales are used primarily by the wheat farmer who crops large areas. Because the working times recorded for these tractors are not indicative of the work which such tractors are capable of doing their acreage costs have been omitted from Table VII, in which average acreage costs, varying with annual hourly use, are given.

TABLE VII.

Acreage Costs.

Tractor Size.	Type of Operation.	Annual Use.		
		800 hours	1,000 hours	1,200 hours.
		s d.	s. d.	s. d.
Small ...	Disc ploughing ...	32 1	29 10	27 4
Small ...	Mouldboard ploughing	34 7	32 6	29 9
Small ...	Tandem discing ...	11 10	11 1	14 5
Medium ...	Disc ploughing ...	22 6	21 2	19 6
Medium ...	Mouldboard ploughing	24 7	23 3	21 7
Medium ...	Tandem discing ...	9 4	8 10	8 2

OWNER-OPERATED FARM TRACTORS.

Knowledge of the costs of operating farm-owned tractors is naturally of more interest and of more value to the general farming community than is knowledge of operating costs incurred by machinery pools where there are numerous expenses that are not applicable to farm-owned tractors. The costs as ascertained at machinery pools have therefore been adapted so as to be applicable to the farm-owned tractor and these costs, for three sizes of tractors, all of them working for various annual periods, are given in Tables VIII to X. Due to the vastly different conditions and circumstances which affect the use of implements such as ploughs and harrows no attempt is made here to estimate implement costs.

Farm-owned tractors will, as a rule, be used less than pool tractors, and the costs given are therefore based on less annual use, viz.: 300, 600 and 800 working hours per annum. This and the fact that the private owner must make an allowance for interest in arriving at his operating costs tends to increase such costs; this increase is, however, more than offset by the fact that the privately-owned tractor might reasonably be expected to last longer than the pool machine and also because the farm operator pays no registration, does not use any kerosene in travelling and has no office or administrative expenses. Costs as given here assume that the owner operates his own tractor and does his own routine servicing, and therefore incurs no labour costs.

TABLES VIII TO X.

Hourly Costs of Operating Farm-owned Tractors.

TABLE VIII.

Small Tractors.

Item.	Annual Use. 300 hours.	600 hours.	800 hours.
	s. d.	s. d.	s. d.
Interest	0 10	0 5	0 4
Depreciation	1 9	0 10½	0 9
Tyre Allowance	0 9	0 7½	0 7½
Repairs	0 10½	0 10½	0 10½
Insurance	0 4	0 2	0 1½
Housing	0 8	0 4	0 3
Kerosene	2 1½	2 1½	2 1½
Oil	0 6	0 6	0 6
Benzine	0 3	0 3	0 3
Grease	0 1	0 1	0 1
Total	8 2	6 3	5 11

TABLE IX.

Medium Tractor.

Item.	Annual Use. 300 hours.	600 hours.	800 hours.
	s. d.	s. d.	s. d.
Interest	1 0	0 6	0 4½
Depreciation	2 1	1 0½	0 11
Tyre Allowance	0 10½	0 8	0 8
Repairs	1 1	1 1	1 1
Insurance	0 4½	0 2½	0 2
Housing	1 8	0 4	0 3
Kerosene	2 10	2 10	2 10
Oil	0 7	0 7	0 7
Benzine	0 4	0 4	0 4
Grease	0 1	0 1	0 1
Total	9 11	7 8	7 3½

TABLE X.

Large Tractor.

Item.	Annual Use. 300 hours.	600 hours.	800 hours.
	s. d.	s. d.	s. d.
Interest	1 4	0 8	0 6
Depreciation	2 10	1 5	1 3
Tyre Allowance	1 1	0 10	0 10
Repairs	1 5	1 5	1 5
Insurance	0 5	0 2½	0 2
Housing	1 8	0 4	0 3
Kerosene	3 6½	3 6½	3 6½
Oil	0 8	0 8	0 8
Benzine	0 5	0 5	0 5
Grease	0 1	0 1	0 1
Total	12 5½	9 7	9 1½

Interest is allowed at 5 per cent. on half the original capital cost of the tractor concerned. In arriving at depreciation it is assumed that the privately owned tractors have an economic life of 9,000 working hours, after which they have the same residual value as has already been allowed for pool machines. However, it is not considered that they will be serviceable for more than 15 years irrespective of annual use, and if retained for this period it is considered that they would not be worth more than 5 per cent. of their original cost. Tyres should also last longer, and costs have been adjusted to allow for this.

Considered solely in the light of these costs (in practice other factors must also be considered) if it is expected that a tractor will be used for less than 300 hours per annum it would appear more economical for a farmer to take advantage of the services provided by co-operative machinery pools or private contractors, should such services be readily available, than to purchase a tractor.

SUMMARY OF HOURLY TRACTOR COSTS.

(1) For quick reference total hourly tractor operating costs, for both pool-owned and privately-owned, farm-operated tractors, are given below.

(2) In reading and applying these costs it must be remembered that (a) they are, in some respects, tentative, and (b) they apply to New South Wales coastal conditions only.

TABLE XI.

Total Hourly Tractor Costs.

(a) Pool-operated Tractors.
(Figures include all wages costs.)

Tractor Size.	Annual Use.		
	800 hours.	1,000 hours.	1,200 hours.
	s. d.	s. d.	s. d.
Small	14 8	13 8	12 3
Medium	16 2	15 2	12 9
Large	18 1	17 0	15 6½

(b) Farm-operated Tractors.
(Wages costs are not included.)

Tractor Size.	Annual Use.		
	300 hours.	600 hours.	800 hours.
	s. d.	s. d.	s. d.
Small	8 2	6 3	5 11
Medium	9 11	7 8	7 3½
Large	12 5½	9 7	9 1½

(3) The figures given above are subject to certain qualifications for details of which reference should be made to the text of the article.

(4) Although used by a few machinery pools the "large" tractors, for which figures are given above, are unsuitable for coastal work, and only in exceptionable circumstances would their use by coatal farmers be justified.