Α. Γ. ΑΔΑΜΙΔΗΣ

REPUBLIC OF CYPRUS

MINISTRY OF COMMUNICATIONS & WORKS

ANNUAL REPORT

OF THE

DEPARTMENT

OF

ELECTRICAL AND MECHANICAL SERVICE

FOR THE YEAR

1975

BY

PH. E. HECTORIDES

Director of the Department of
Electrical & Mechanical Service

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CHAPTER I

GENERAL

1.1. Introduction

The Department of Electrical & Mechanical Service began functioning as a separate Department as from Ist January, 1975 and it comes under the Ministry of Communications and Works. Before it was a Section of the Public Works Department. It is responsible for the formulation to a great extent and for the implementation of the Government's overall policy on electrical and mechanical matters. In short, the Department has the responsibility for the planning, design, execution and maintenance of all Government electrical and mechanical engineering projects and for the management and efficient utilisation of the pooled Government mobile engineering plant and vehicles.

In this Annual Report every effort has been made to analyse the achievements of the Department during the first year of its operation. These results, described under the activities of the three Divisions of the Department, are compared to the ones of the previous years.

It could be said that the Department has succeeded in its basic objectives and that the results of the first year of its functioning could be claimed as satisfactory.

In real terms, during the year 1975, the Department produced a net saving in the region of £650,000. This sum includes a saving of £137,000. that has been brought about due to the better utilisation of the monthly paid employees.

In addition, during 1975, Government saved the sum of £84,584. due to the fact that Government operated its own plant and vehicles.

It should also be emphasised that the operation of the Department resulted in the realistic costing and the better planning of the development projects and the collection of all those statistical data so necessary and important to enable Government arrive at sound and documented decisions, regarding technoeconomic issues.

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Generally speaking, it can be stated that because of the establishment of the Department of Electrical & Mechanical Service, Government managed not only to achieve financial benefits in the electromechanical field as compared to the past but also to create the necessary service, which could exercise effective control over the purchasing, operation, maintenance, utilisation and disposal of its mobile and stationary plant and machinery, the cost of replacement of which is estimated to be around twelve million Cyprus pounds.

1.2. Historical background and reasons for the creation of the Department

Officially the Department began functioning on the 1st January, 1975. The Department was created by the pooling, under a unitary authority, of all the electromechanical services of the Government and particularly by the pooling of all the engineering plant and vehicles and the unification of all the workshops that were scattered in the different Government Departments. The Government of the Republic inherited from the Colonial Rule an unsatisfactory situation, on electromechanical matters, that almost immediately after the creation of the Republic, a number of Government committees were set up to study, analyse and improve on the then prevailing situation.

When Cyprus was proclaimed a Republic, all government mechanical plant and vehicles were found dispersed in the different Departments and under their ownership, whilst mechanical workshops existed at the Department of Public Works, the Department of Water Development, the Department of Agriculture, the Department of Forests and at the various District Administration offices, the services of which were sought by all the Departments that executed development projects. The executing Departments, however, having their own plant and vehicles, were, quite naturally, rather reluctant in releasing their own plant and vehicles to other requesting Departments which in the circumstances had to apply to the private sector for their needs. Furthermore, the owning Departments, were not obliged to pay any charges for the use of their own machinery, but were simply required to pay the running expenses of the machinery i.e. wages of hourly paid drivers

and the cost of fuel and lubricants. Consequently, this meant, that the fixed expenses of the machinery i.e. interest on the investment, depreciation and maintenance were not charged to the project. As a result of this arrangement, Government had no knowledge of the real cost of the projects, executed by Departments using Government machinery.

The workshops situation presented a similar picture. Since they belonged to different Departments, the workshops were staffed and equipped for peak loads with the consequent result that more people and machinery were employed, than if the workshops were united under one establishment.

The different committees established by Government to study the problem of pooling of Government machinery and workshops, suggested major changes in the organisation and management of Government machinery and workshops. For this and in order that a final decision on this problem could be taken, Government invited in the year 1969 Messrs. P. E. Consulting Group, a firm of Management Consultants, to study the problem from every angle and suggest ways of improving the situation. Government studied carefully the Consultants recommendations, which, in short, were the pooling of all mobile government plant and vehicles, payment of hiring rates for their use and the unification of all Government workshops, and, as a result, decided to create the Department of Electrical & Mechanical Service.

The Department took over the management of the pooled machinery and unified workshops, over and above the responsibilities and duties of the Senior Electrical & Mechanical Engineer's section of the Department of Public Works, the personnel of which were totally absorbed by the new Department.

1.3. Departmental Organisation

The Department, for the smooth and efficient carrying out of its duties and responsibilities, has been divided into three Divisions. The Divisions are further subdivided into sections according to specialisations.

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These Divisions are:

I) Division of Machinery/Workshops
II) Division of Mechanical Services
III) Division of Electrical/Electronic Services

1.3.1. Division of Machinery/Workshops

The Division of Machinery/Workshops is broadly responsible for the following sectional work:

a) Management and allocation of pooled Government Plant and Vehicles.
b) Management and operation of the pooled Government mechanical workshops in Nicosia and Districts.
c) Maintenance of Government Marine equipment and installations.
d) Transport matters and Tender work.

1.3.2. Division of Mechanical Services

The Division of Mechanical Services is responsible for the following sectional work:

a) Planning and design of all Government mechanical projects.
b) Execution of mechanical services installations.
c) Maintenance of stationary plant, equipment and plumbing installations in Government buildings.

1.3.3. Division of Electrical/Electronic Services

The Division of Electrical/Electronic Services is responsible for the following sectional work:

a) Planning and design of all new Government electrical projects.
b) Execution and maintenance of electrical installations.
c) Maintenance of all electronic and electromedical equipment owned by Government.
d) Statutory work related to the Electricity Law and Regulations.

1.4. District offices and workshops

Apart from Nicosia the Department maintains district offices and workshops based in Limassol, Larnaca and Paphos. These offices and workshops are staffed with

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technical and office personnel, so that the work of the three divisions of the Department are also carried out at district level.

1.5. Staff

During 1975, the responsibilities and duties of the Department were carried out by 650 employees. Amongst these and constituting the senior technical staff, were 15 fully qualified Electrical and Mechanical Engineers, whose educational backgrounds covered a great variety of specialisations. In addition there were 68 specialised Technical Assistants and Foremen, most of whose educational background was not lower than the standard of a Technical School. Some of the Technical Assistants possessed post-secondary college diplomas.

A list of the Senior Technical Staff is given on table 1.1, page 11.

1.6. Utilisation of monthly paid employees

On table 1.2 and diagram 1.1, pages 12, 13 an analysis may be seen, in a percentage form, of the relative magnitude of each activity as compared to the total work of the Department and of the percentage increase in 1975 of each activity, as compared to the year 1973.

As it can be seen from the same table, in 1975 on the average, the activities of the Department were two and half times more than the activities of 1973, the last normal year before 1975.

In spite of the 151% increase in the average level of activities of the Department in the year 1975, the number of the monthly paid employees assigned to the Department was only increased from 76 in 1973 to 96 in 1975 i.e. an increase of 26%.

Assuming that the increase of staff should be of the same order as the increase in the volume of work and considering that the total emoluments of the employees in question in 1975 amounted to £138,000., it can be seen that for 1975 there was a net saving for Government of £137,000., as shown below:

$$£138,000 \times \left(\frac{251}{126} - 1\right) = £137,000.$$

This theoretical saving in the emoluments of monthly paid employees was brought about through the better utilisation of staff in 1975.

TABLE 1.1

SENIOR TECHNICAL STAFF

No.	Name	Post	Qualifications
1.	Phidhias E. Hectorides	Director	M.Sc.(Birmingham), B.Sc.(Eng.)(London), C.Eng., M.I.E.E M.I.Mech.E.
2.	Andreas Kyriakides	Mechanical Engineer I	B.Sc. (London), Postgraduate Diploma in Environmental Engineering and Design.
3.	Renos A. Ioannides	Mechanical Engineer I	B.Sc. (Eng.)(London), C.Eng., M.I.Mech.E., M.I.Plant E
4.	Constantinos Middleton	Mechanical Engineer I	Diploma of the National Technical University of Athens Member A.S.H.R.A.E.
5.	Athanasios Kyriakides	Mechanical Engineer II	B.Sc. (Surrey).
6.	Andreas Akkelides	Mechanical Engineer II	M.Sc. (Moscow).
7.	Antonios Adamides	Mechanical Engineer II (daily paid)	Diploma of the National Technical University of Athens
* 10.	Georghios Christodoulides	Electrical Engineer I	B.Sc. (Sheffield)
11.	Panikos Lymbouris	Electrical Engineer II	B.Sc. (Surrey).
12.	Stavros M. Othonos	Electrical Engineer II	M.Sc. in Control Systems, B.Sc. (Eng.) (London), D.I.C., A.C.G.I.
13.	Michael Hadjiroussos	Electrical Engineer II	Ph. D., M.Sc., B.Sc. (Birmingham)
14.	Lazaros S. Savvides	Electrical Engineer II	Ph. D. (Manchester), M.Sc. in Control Systems, B.Sc.(E (London), D.I.C., A.C.G.I.
15.	Charalambos Illambas	Electrical Engineer II (daily paid)	B.Sc. (Eng.)(London).
16.	Doros Droushiotis	Electrical Engineer II (on contract)	B.Sc (London)
8	Kypros Kyprianou	Mechanical Engineer II (daily paid)	M.Sc. (Moscow) Diploma of the National Technical University of Athens
9	Michael Patatokos	Mechanical Engineer II (on contract)	

TABLE 1.2

Comparative table of the activities of the Department of Electrical & Mechanical Service

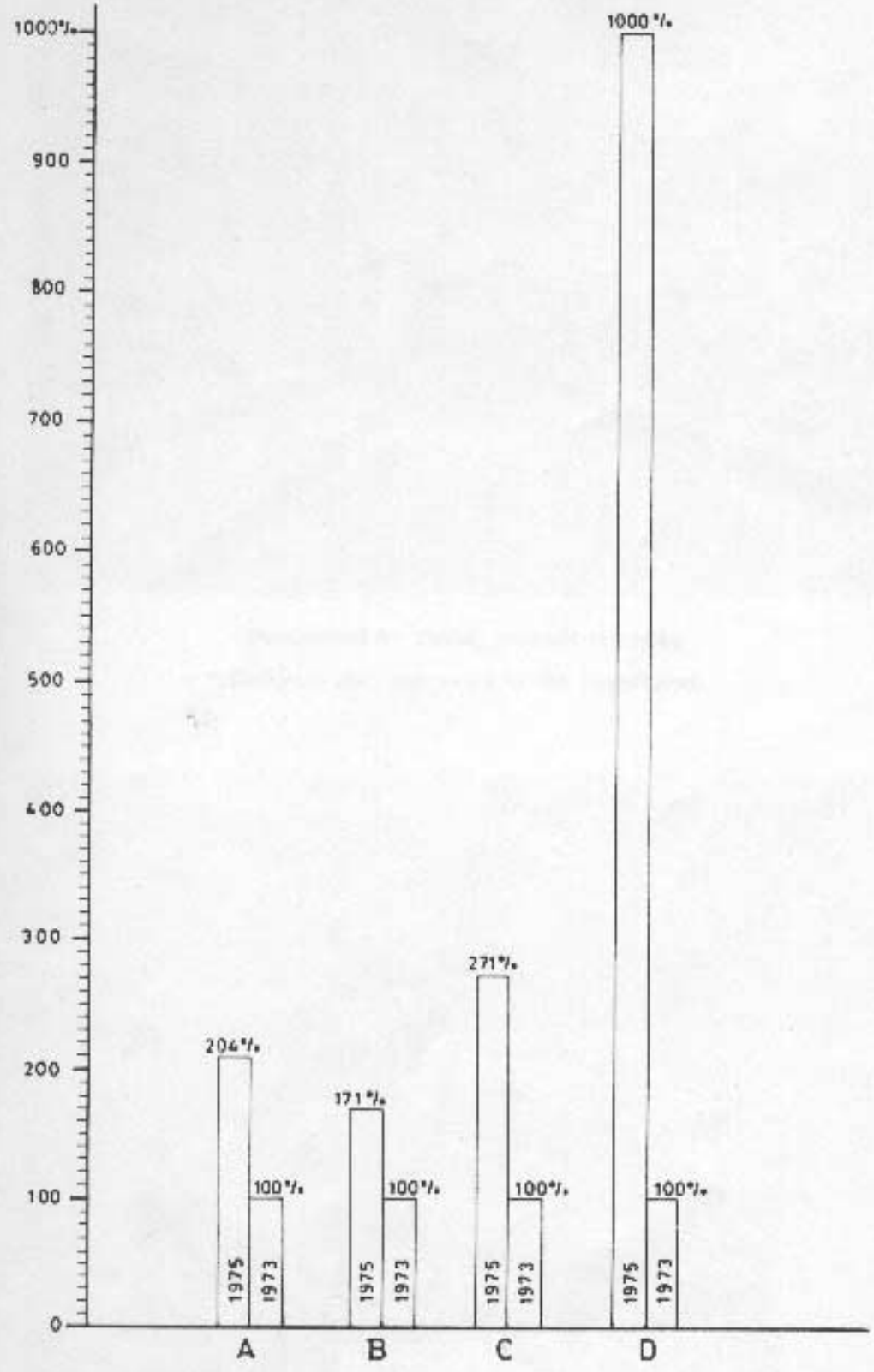
Activity	Description of Work	Percentage of the Work carried out by the monthly paid employees	Percentage incre during 1975 a compared to 19
1.	Work carried out by the Nicosia, Limassol, Larnaca & Paphos Workshops	40%	104%
2.	Planning, Design, Administrative duties etc.	30%	71%
3.	Mobile Plant and Machinery	25% (Management and Utilisation)	171%
4.	Stationary Plant and Machinery	5% (Management and Utilisation)	900%

$$\text{Weighted average increase} = \frac{(40 \times 104) + (30 \times 71) + (25 \times 171) + (5 \times 900)}{100} = 151\%$$

On the average the activities of the Department in the year 1975 had an increase of 151% i.e. they were 251% of the 1973 year level.

DIAGRAM 1.1

Comparative table of the activities of the Department of Electrical and Mechanical Service

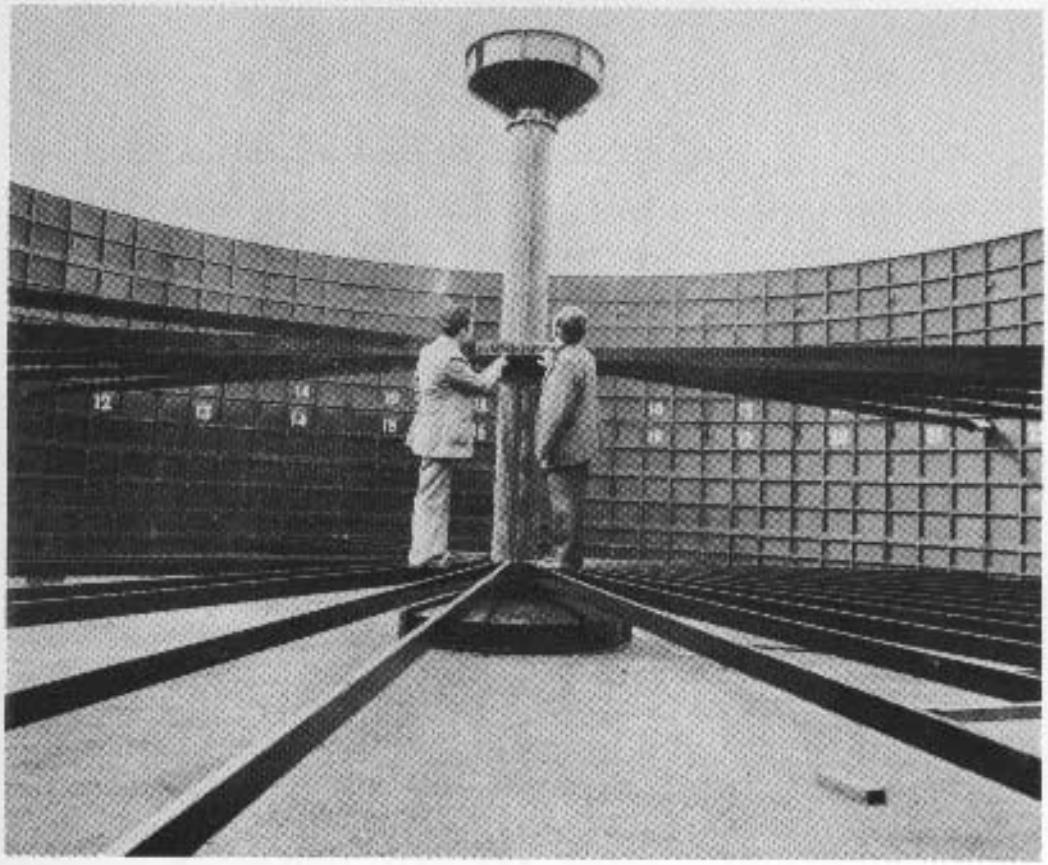


A = Work carried out by the Nicosia, Limassol, Larnaca and Paphos Workshops

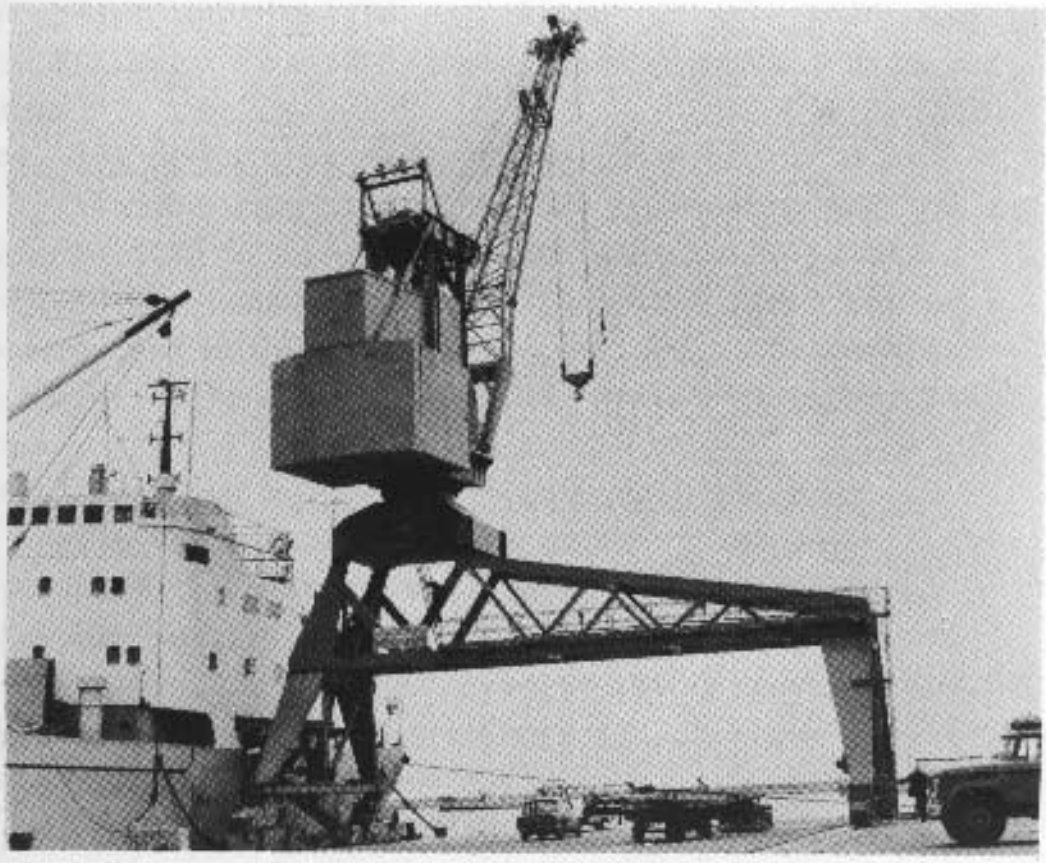
B = Planning, Design, Administrative duties etc.

C = Mobile Plant and Machinery

DIVISION OF MACHINERY/WORKSHOPS



Steel mould for casting concrete reservoirs
(Designed and constructed by the Department)



35/5 Ton Luffing Crane for handling containers at Limassol Harbour

(iv) Spare parts

The Division encountered serious problems in the procurement of spare parts. This problem was encountered in the past also, but with the pooling of all plant and vehicles under the new Department and the observed decrease of spare parts stocks in the private sector, due to the Turkish invasion and the subsequent political uncertainty, it became very acute.

The activities and responsibilities of the four sections of the Division in 1975 were as follows:

2.1. Management and allocation of pooled Government plant/vehicles Section

This section was responsible for the management and maximum utilisation of the pooled Government plant/vehicles, the replacement value of which amounted in 1975 to about £4,213,000. Details of the value of this fleet by category are shown in diagram 2.1, page 78.

The primary task of the section was:

(a) to ensure the maximum possible utilisation for the pooled Government plant and vehicle fleet at the lowest possible overall cost, and

(b) to collect and process data enabling the decisions for the purchase of new plant/vehicles and the condemnation of old ones, to be based on sound technoeconomic criteria.

The section succeeded in 1975 in achieving both the above aims thus reducing the amount paid in the form of hiring rates by Government to the private sector.

2.1.1. Utilisation of plant/vehicles

The manner in which the total possible working days for all Government pooled plant/vehicles were allocated in 1975 is shown in diagram 2.2, page 79.

As it can be seen from this diagram the two main issues, which need commenting upon, are: (a) the idleness of machinery at the place of work, which amounted to 13.3

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of the total available machine days and (b) the time during which machinery was idle due to repairs amounting to 8.6% of the total available machine days.

Issue (a) above is not due to any fault of this Department. The idleness of the machinery may be limited if better organisation at the place of work of materials, machinery and personnel by the project executing Departments is exercised.

With regard to the second issue every effort should be made to reduce the percentage of time during which machinery is under repair. It should be appreciated however that this is closely related to certain inherent difficulties such as standardisation, spare parts, age of machinery, etc. which made the issue rather complicated to resolve.

The weighted average utilisation factor for all Government plant/vehicles in 1975 was 72.3% as it can be seen from table 2.1, page 47. This is an increase of 22.6% over the year 1974 and 13.3% over the year 1973 which was the last normal year before the Turkish invasion (diagram 2.3, page 80 refers).

It should be pointed out here, that the weighted average utilisation factor for Government plant/vehicles during the year 1966-1968 and 1968 was, according to data from the feasibility report of the Management Consultants, only 42% and 39.5% respectively, as it can be seen from table 2.2, page 53 and diagram 2.3 page 80.

The achieved increase in the 1975 utilisation factor of pooled plant/vehicles of 13.3% over the year1973, resulted in savings amounting to about £144,588. not including operating expenses, as it can be seen from table 2.1, page 47. This sum would have been paid by Government in the form of hiring rates, not including costs of fuel/lubricants and operators wages, for plant hired from the private sector.

Furthermore, the improvement of the utilisation factor of Government plant & vehicles resulted in an additional saving of £59,017. which would have been paid to the private sector in the form of wages for the operators for13,115 working days, (table 2.1, page 47 refers). The average operators' daily wage amounts to about

£4.500 mils.

Consequently, the actual total benefit which resulted due to the increase in the utilisation factor of plant and vehicles amounts to £203,605. (i.e. £144,588. + £59,017).

The year 1975 was the first year during which Departments paid hiring charges for the plant/vehicles and therefore the development projects executed, bore the true cost of plant and vehicles used. The hiring charges prevailing in 1975 were as shown on table 2.3, page 54 .

The total hire charges with which the various Departments were charged in 1975 amounted to £368,527. as shown on table 2.4, page 57 . Diagram 2.4, page 81 shows the distribution of these hire charges over the year 1975 on a monthly basis. Although this sum covers the real owning costs for plant/vehicles belonging to Government, yet Departments, would have had to spend £453,111. if they were to hire all the plant/vehicles needed from the private sector as it can be seen from table 2.1, page 47.

The difference between the sum of £453,111. and the sum of £368,527. i.e. £84,584. is partly due to the fact that:

(i) Government hiring rates are in general lower than those prevailing in the private sector, and mainly due to the fact that

(ii) The level of plant/vehicles hiring rates prevailing in the private sector are based on supply and demand. It can easily be observed that when there is scarcity of a certain type of plant for which there is great demand, the hiring rate charged for that plant is very high.

2.1.2. <u>Comprehensive data, purchases of plant/vehicles, reduction in hiring rates paid to the private sector</u>

One of the main criteria, on which all new purchases of plant/vehicles were based, was the information collected from the requests in plant/vehicles by the

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various Departments. The collection of data was started by the Consultants in 1969 and was put into effect at the beginning of 1975 when the Department came into existence. All the purchases of plant/vehicles were therefore made having in mind the co-ordinated needs of Government as a whole and the categories of equipment for which the market hiring rates were high.

In 1975, for example three (3) loader/diggers were purchased and their utilisation factor reached 87% i.e. 25% higher than the average utilisation factor of Government plant vehicles.

It is therefore no surprise to see that in 1975 the Government expenditure for plant/vehicles hired from the private sector was drastically reduced.

If a close study is made on the Consultants' feasibility report, part of which is attached as table 2.5, page 59,it can be seen that for the first 8 months of 1969, the sum of £350,602. was spent for the hire of plant/vehicles from the private sector, which if projected for the whole year, amounts to about £526,00●. From the same table, it can be observed that the expenditure for the hire of plant/vehicles showed a constant increase for the years 1966 to 1969.

The data of table 2.5, page 59 have been used for the extrapolation of the curve shown on diagram 2.5, page 82 . If this curve is used, it can be deducted that the expenditure for 1975 should have risen to about £730,000.

A figure of the same order can be arrived at, if it is considered that the ratio of the amount spent for hiring plant/vehicles from the private sector during 1966 to 1969 to the total Development expenditure of the corresponding years is 6.05%. Since the Development expenditure in 1975 was £11,894,869. the amount that Government would spend for the hire of plant/vehicles from the private sector should have been £719,639.

From records kept by the section and compiled from information supplied regularly by the Departments, it was found that in 1975 the expenditure for hiring plant/vehicles from the private sector was only about £237,000. as it is shown on table 2.6, page 60 i.e. a reduction of £482,639. occurred from the calculated sum of £719,639.

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The reduction of £482,639. is due to:

(i) The increase in the utilisation factor for a sum of £203,605. as explained above,

(ii) The calculated cost of fuel/lubricants amounting to £45,000. used for the Government plant/vehicles during 27,366 working days due to the increased utilisation,

(iii) The purchases of new plant/vehicles being based on technoeconomic criteria, (e.g. scarcity of plant and high hiring rates), the better control on hirings, and the better planning on behalf of the machinery using Departments amounting to the sum of £234,034.

It is worth mentioning that diagram 2.6 page 83 shows the distribution of the hire charges paid to the private sector for hiring plant over the year 1975 on a monthly basis. If this diagram 2.6 is superimposed on diagram 2.4, page 6 then diagram 2.7, page 84 is arrived at which gives the total hire charges paid by Government Departments both to this Department and to the private sector on a monthly basis. It is evident from the diagram 2.7 that there is very much scope for improvement in the planning of the execution of Government development projects by project executing Departments, so that a more even distribution of work, over the whole year, may be attained, seasonal peak loads thus being eliminated.

During 1975 the section kept comprehensive data for the running and maintenance cost as well as for the utilisation of each pooled plant/vehicle operated by Government. By processing this data, the section was in a position to advise Government on all matters appertaining to its mobile mechanical equipment.

In this respect the tendency of Departments to purchase land-rover type vehicles, which let it be noted cost about £3,000. each, was also investigated and it was

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found out that the purchase instead of double cab pick-ups costing £1,350. each would serve equally or even better the needs of the Departments. Eleven of these vehicles have already been ordered resulting in a saving of about £18,000.

The compiled information was in general used in deciding

1. whether old equipment should be condemned or not,
2. the type of plant/vehicles to be purchased, and
3. whether hiring rates were in line with actual costs or in line with prevailing market hiring rates, etc.

In addition to the above works, the section managed the plant operators and drivers of the pooled Government plant/vehicles, who in 1975 were of the order of 150 persons, calculated hiring rates for new plant, revised existing hiring rates, prepared contracts for the hire of plant/vehicles to the private sector etc. and purchased pooled mobile machinery worth £198,800. as shown on table 2.7, page 61.

2.2. Management and operation of the pooled Mechanical Workshops Section

Workshops were operated in Nicosia, Larnaca, Limassol and Paphos.

The workshops were undoubtedly the backbone of all operations of the Department, since the actual execution of the work whether construction, installation or maintenance was carried out by workshop staff, either in the workshop buildings or in the field.

With the pooling of all Government workshops under this Department, the work increased by 104% over 1973 and by 68% over 1974 as it can be seen from table 2.8, page 62.

One of the primary aims of the pooling of workshops was the reduction in the cost of maintaining pooled Government plant/vehicles. This aim has been achieved in 1975 since there was a saving of £44,164. representing a reduction of 17% as explained in appendix 2.1, page 45

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The workshops were responsible for the maintenance and repair of all Government plant and vehicles, irrespective of whether they were pooled or not (i.e. plant and vehicles of Department of Posts, Civil Aviation, Ministry of Health etc), for the maintenance and repair of cranes and for all metal constructions and installations.

The average total workforce of the workshops in Nicosia and Districts was 376 as shown on table 2.9, page 63 whilst the average yearly earnings for each worker amounted to £878.

The actual complexity of the work involved in the workshops cannot be described. An idea can however be formed, if it is borne in mind, that Government mobile plant and vehicles are of over 350 types from more than 120 manufacturers whilst over 41% of the mobile plant is over 10 years old and over 56% of vehicles are over 5 years old. Construction, on the other hand, involves such variety as roof trusses, bridges, hot asphalt sprayers, wheel barrows, huge water tank moulds, spare parts, smoke chimneys and many others.

The various expenditures involved for the workshops operations are shown on diagrams 2.8 and 2.9 pages 85, 86.

During the year relations with the Trade Unions and Workers Labour Committee were smooth and all labour problems were discussed and solved in a spirit of co-operation, mutual understanding and respect.

2.3 Maintenance of the Government Marine Equipment and Installations Section

The section was responsible for the running and maintenance of lighthouses in the free part of the island, the demarkation of swimmers areas through the positioning of proper buoys, the planning of repairs to marine craft such as dredging craft, buoys and tug-boats, belonging either to the Department or the Ports Organisation the replacement value of which is about £500,000.

Due to the Turkish invasion, a great percentage of the marine installations and machinery were lost i.e. lighthouses, tug-boats, dredging craft, buoys, etc and consequently the work of the section was relatively reduced in 1975.

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In addition to the above, the section was responsible for the planning of the maintenance of cranes at Limassol and Larnaca Harbours, as well as for the order of spare parts for the repairs of these cranes. The replacement value of the cranes is estimated to be in the region of £526,000.

Details of expenditure for the various marine works are shown on diagram 2.9, page 86 .

2.4. Transport Matters & Tender Section

2.4.1. Transport matters

The section was responsible for (a) studies and advice on subjects dealt by various Government committies such as busfares, gasdriven vehicles etc. (b) advice on difficult or special cases regarding vehicle registration (c) consultations regarding the renewal of vehicles by Government employees (d) estimating damages occurring in accidents between Government vehicles and civilian vehicles (e) the condemnation of equipment belonging to Government Departments and (f) the repair and maintenance of Government vehicles attached to Ministers or Directors-General.

In 1975, the section was consulted on 12 cases dealing with the registration of fuel tankers, on 67 cases dealing with the renewal of vehicles, on 145 cases regarding accidents and involving damages totaling £16,726. whilst more than 7,000 items were inspected for the purpose of condemnation.

2.4.2. Tender work

The Director of the Department of Electrical and Mechanical Service is the Chairman of the General - Electrical and Mechanical Committee on tenders. This work is undertaken by the section and it involves the drawing up of specifications or the scrutiny of such specifications in cases they are submitted by Departments, and the study of tenders after their submission.

The variety and complexity of the equipment involved is enormous and it ranges from cranes to dental equipment, film projectors to refrigerators, X-ray apparatus to agricultural tractors or mowers.

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In 1975 more than 150 specifications were approved, whilst more than 770 tenders were scrutinised for the purchase of items costing over £550,000.

2.5. Achievements of the Division

From what has been said above it is not a simple matter to evaluate the work carried out by all four sections of the Division especially those of the sections for the Maintenance of Marine equipment and installations and for Transport matters and Tenders and to a great extent those of the Workshops section.

It can nevertheless be said that the Division has managed to secure for Government the following financial benefits.

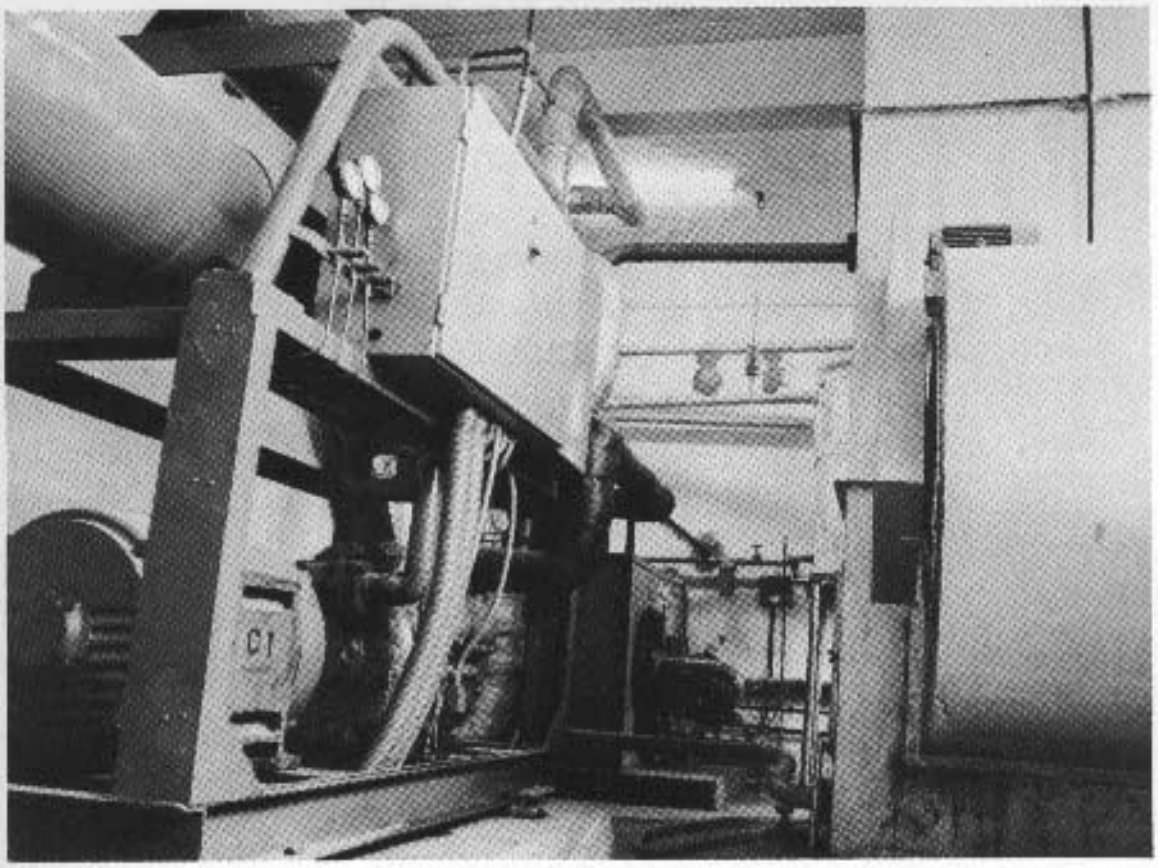
(a) Saving of the sum of £203,605. due to the improvement in the utilisation factor of plant/vehicles by 13.3% (pages 16,17,18) .. £203,000.

(b) Saving of the sum of £234,034. due to the purchase of the really needed plant and the better planning of works by Department due to the control exercised by the Division on the hirings from the private sector (this sum is based on the assumption that for the year 1975 the mechanical work executed by machinery hired from the private sector is 6.05% of the total Development expenditure for the year 1975, as stated on page 2●) i.e. about £234.000 .. £234,000.

(c) Saving due to the utilisation of data as stated on pages 20,21. .. £ 24,000.

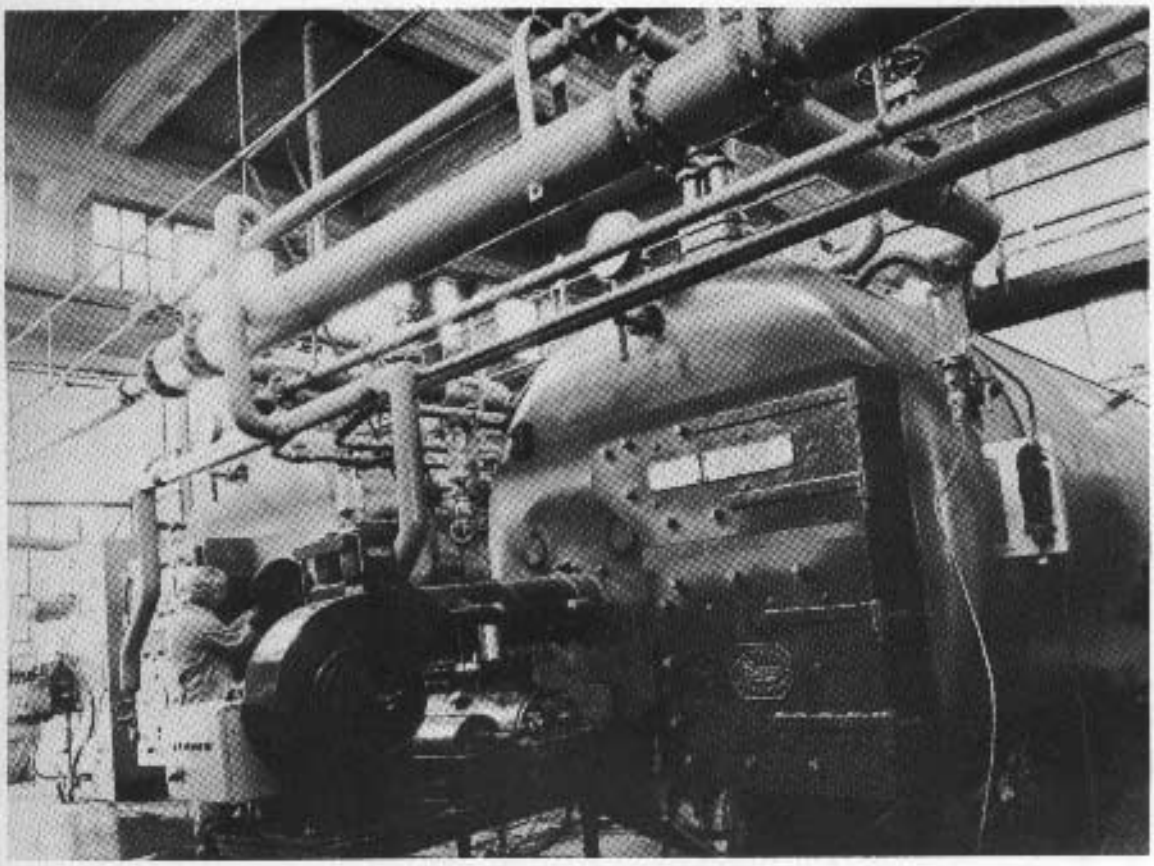
(d) Reduction in maintenance costs for pooled plant/vehicles as shown in appendix 2.1 page 45. .. £ 44,000.

£505,000.



Plant room at the New Analytical Laboratory, Ministry of Health, Nicosia

(Designed, operated and maintained by the Department)



Boiler room of the Nicosia General Hospital

(Installed, operated and maintained by the Department)

C H A P T E R III
DIVISION OF MECHANICAL SERVICES

The Division of Mechanical Services is subdivided into three sections as outlined in sub-paragraph 1.3.2 on page 9.

Due to the acute shortage of personnel in this Division, the engineer in charge of the Division undertook directly most of the design work, especially the one related to central air conditioning installations, the tender work of the Division, as well as the statutory work and technical advice to other Departments.

The difficulties met were enormous and it was only due to the hard work and experience of the personnel involved that the Division functioned satisfactorily.

3.1. Duties and Activities of Sections

The duties and activities of each section are summarised as follows:

3.1.1. Planning and Design Section

a. Advising all Government Departments on Mechanical Services matters.

b. Preparation of technoeconomic studies relating to the choice of the most economic way of heating.

c. Design of the mechanical services installations of all new Government offices, new medical centres at various hospitals, UNFICYP military camps etc. These include central air conditioning systems, central heating and hot water systems, plumbing installations, drainage systems to the nearest manhole, conveyor belts and metal construction works, fire fighting systems etc.

d. Preparation of estimates, tender documents and specifications for the invitation of tenders for the execution of mechanical services works by the private sector. These include such work in harbours, airports, refugee camps and houses, schools, law courts etc.

e. Supervision and taking over of all mechanical services installations given by Government to the private sector.

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f. Inspection of all the mechanical services works carried out by direct labour outside the workshops area.

g. Revision of the Petroleum Regulations.

During the year, this section undertook about 200 studies concerning works estimated to cost about £426,000. The most important studies are shown on table 3.1, page 65. It is worth noting that if Government were to employ a private consultancy firm to carry out the activities of the section, the sum of £21,300. representing a minimum 5% fee for the activities of the section, would have to be paid for their services. In fact the total emoluments of the personnel assigned to the section, including their 13th salaries, amounted only to £7,320. This difference means that the personnel of the section carried out their duties efficiently and that Government theoretically, had achieved a 191% net saving.

During 1975 this section had to supervise the execution of the mechanical installations in the refugee camps which in their largest part were designed during the previous year.

3.1. 2. Execution of Mechanical Services Installations Section

a. Execution of the work either by direct labour or by contract.

b. Supervision of all the works carried out by direct labour outside the workshops area.

c. Preparation of specifications and invitations of tenders for the purchase of all mechanical equipment, such as boilers, pumps, heaters, pipes, fittings, etc.

The execution work was carried out:

i. by direct labour

ii. by contract

The cost of works falling in category (1) above amounted during the year to about £55,000. Table 3.2 on page 66 lists some of the most important of these works.

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On the other hand works amounting to about £400,000. were given out for execution by contract. Table 3.3, page 67 lists works executed by contract of over £1,000. Some of the most important works were the installations in the refugee camps and the air conditioning system of the Limassol Law Courts at the cost of about £50,000.

3.1.3. Maintenance of stationary plant, equipment and plumbing installations in Government Buildings Section

The main responsibilities of this section are:

(i) to maintain all stationary mechanical plant in full working order in the most economical manner.

(ii) to operate the installations efficiently.

In more detail the duties of this section are:

a. Supervision and control of the Institutional Foremen based all over Cyprus at different hospitals etc.

b. Preparation of specifications and invitation of tenders for the purchase of spare parts and equipment for the repair of the installations.

c. Execution of all plumbing works and cesspit emptying of all Government Buildings. These include Government houses, Government offices, camps, hospitals, etc.

d. Operation and Maintenance of the Central Sewage Plant of Nicosia General Hospital and Central Prisons.

e. Execution of minor works in UNFICYP camps, different Go ernment institutions, hospitals, etc.

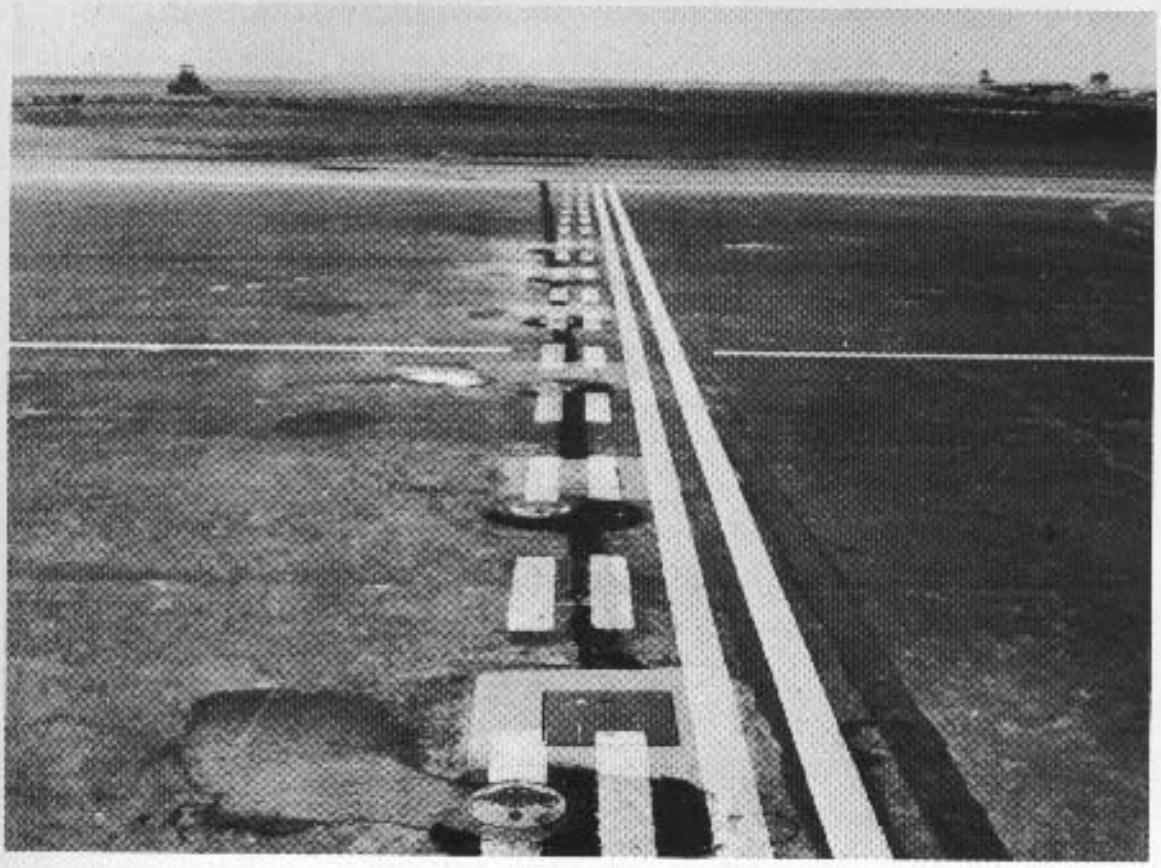
f. Ordering of spare parts connected with the maintenance work of the section.

In the case of major overhauls great relevant help was given by the central workshops.

It should be emphasised that the cost of replacement of the stationary mechanical plant installed in the different Government buildings is in excess of £2,000,000. as shown on table 3.4, page 68.

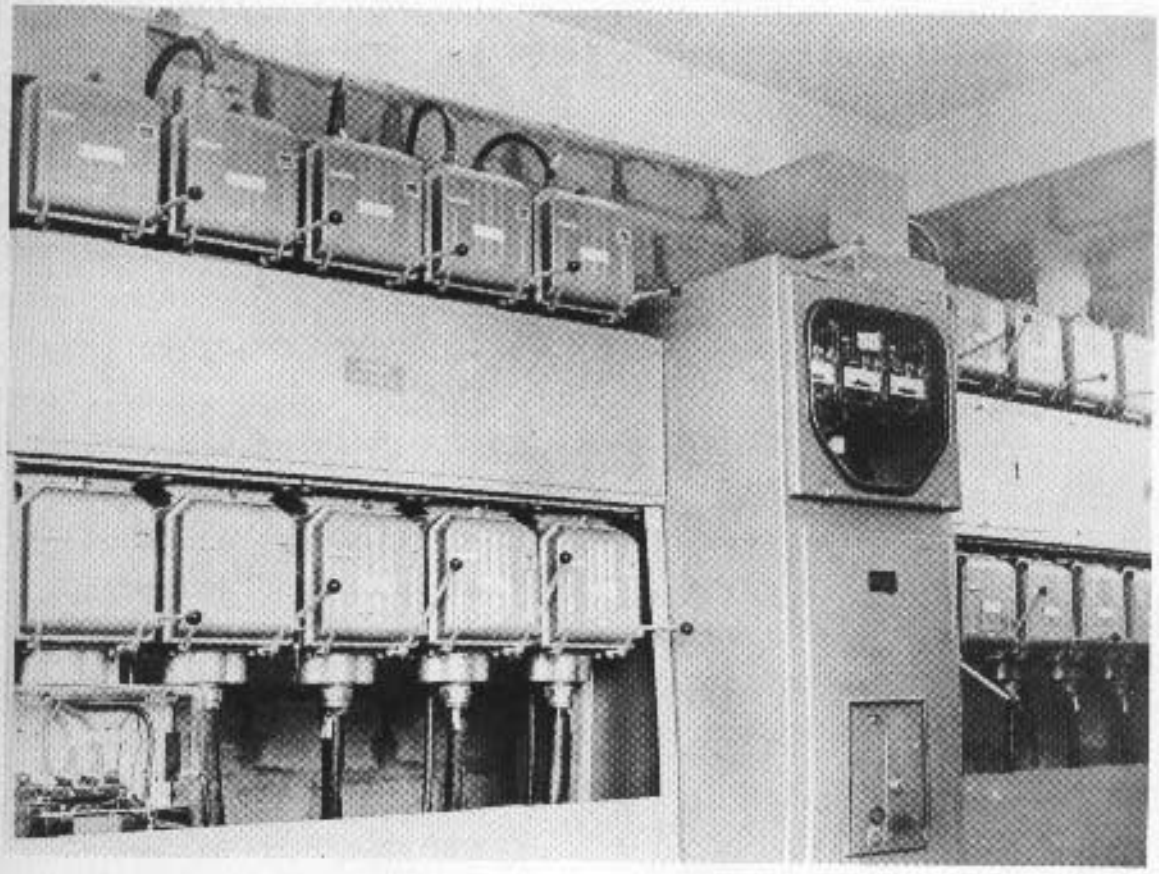
A record of expenditure incurred during the year for the maintenance of each one of the institutions is shown on the attached table 3.5, page 69.

Diagram 3.1 on page 87 shows the expenditure incurred in each District for the Maintenance of Buildings and Works during 1975. These funds were given to the different District Offices of the Department by the respective District Engineer of the Department of Public Works in order to carry out maintenance work in the mechanical installations of the different Government buildings in each district.



Aviation Ground Lighting (AGL) fittings at Larnaca International Airport

(Designed, operated and maintained by the Department)



Electrical Installations at Limassol Harbour

(Operated and maintained by the Department)

C H A P T E R IV

DIVISION OF ELECTRICAL/ELECTRONIC SERVICES

The Division of the Electrical/Electronic Services is subdivided into four sections as outlined in sub-paragraph 1.3.3 on page 9.

4.1. Duties and Activities of Sections

The duties of each section and the respective activities during 1975 could be summarised as follows:

4.1.1. Planning and Design Section

a. Advising all Government Departments on electrical matters.

b. Preparation of technoeconomic studies relating to the choice of the best applicable tariff for the consumption of electrical energy, power factor correction equipment and other topics.

c. Design of the electrical services installations of all new Government offices, new medical centres at various hospitals, UNFICYP military camps, silos etc.

e. Supervision of all Government electrical installations executed by private electrical contractors.

f. Preparation of illumination studies (floodlighting, street lighting, etc).

g. Inspection of all the works carried out by the electrical workshops.

The Government's decision to initiate certain projects in order to revitalise the economy of the island had a strong influence on the number of projects carried out by the section.

The projects can be divided into three broad categories.

i. Projects carried out by direct labour at the cost of £51,503.

ii. Projects carried out by private electrical contractors on contract under the supervision of the section at the cost of £254,797.

iii. Projects that were not implemented during the year in question due to various reasons at the cost of £74,988.

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Table 4.1 on page 70 shows in detail the projects included in category (i). These are divided in three groups related to the total estimated cost of each individual project. Table 4.2 on page 71 is very similar to table 4.1 but deals with the projects in category (ii). Table 4.3 on page 72 deals exclusively with the projects in category (iii).

It must be emphasised that the projects described in tables 4.1, 4.2 and 4.3 above, do not take into consideration the studies and designs carried out during the previous years at the cost of £136,460. and which were still being executed in 1975, under the supervision of the officers of the section and at the cost of £129,769. Table 4.4 on page 73 shows in detail the projects falling into this category. Table 4.2 and 4.4 take also into consideration the cost of the work executed during 1975.

In diagram 4.1 on page 88 the activities of the section in 1975, are presented and compared to the ones of the previous years 1972 - 74. It can be seen very clearly that the total cost of the activities of the Planning and Design section were increased by 296.8% over the cost of the activities of the anomalous year 1974 and by 92% over the previous best year 1973.

It should be emphasised that the total load of work was carried out successfully by the same number of Engineers and Technical Assistants as were employed in previous years. It is also worth noting that if Government were to employ a private consultancy firm to carry out the activities of the section, the sum of £24,960. representing a minimum 5% fee for the activities of the section totalling £499,210., would have to be paid for their services. In fact the total emoluments of the personnel assigned to the section, including their 13th salaries, amounted only to £11,650. This difference means that the personnel of the section carried out their duties officiantly and that Government theoretically, achieved a 53.3% net saving.

During the past year 1975, ten technoeconomic surveys were completed by this section. This figure is high compared to the number of surveys carried out during previous years, but still it fails to reveal the true story

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behind each techneeconomic survey and the effort put into it.

During 1975, three illumination studies for area lighting, apron floodlighting, street lighting etc. were carried out. The illumination studies for installations in buildings were not included in the above figure, because these studies do not present the particular problems encountered in the studies for area lighting.

4.1.1.1. Larnaca International Airport Project

One project that is listed under categories (i) and (ii) above is the Larnaca Airport project. Due to its nature, this project overshadows all the other projects tackled during 1975 because, amongst other things, it emphasises the close cooperation that exists between the different sections of the Division and other Government Departments.

In view of the fact that the Turkish invasion brought about the closure of Nicosia International Airport and the suspension of its operation, meant the total isolation of Cyprus by air transport, Government decided to reactivate an old airstrip near the city of Larnaca.

For the first time, therefore, this Department had to tackle problems that until then were always left to Consultants i.e. design the electrical installations of an Airport within the requirements of a limited budget. Against many odds and even though there was a very short time limit, the Planning and Design Section undertook the job and in conjunction with the Electricity Authority of Cyprus - the Execution section was then totally involved with the erection of Refugee Camps - completed the initial electrical installations of the airport in the record interval of two months and in time for the official opening on the 8th February, 1975.

The project however was not finished; in fact it only just started. The facilities had to be expanded to satisfy the continuing increase in passengers and cargo. Again, the Planning and Design Section in cooperation with the other sections of the Division and the Department of Public Works undertook the project.

This involved:

1. Preparation of estimates, tender documents and specification for the invitation of tenders for

a. An Aviation Ground Lighting System comprising:-

i. High Intensity Runway Lighting System.

ii. High Intensity Simple Approach Lighting System.

iii. Medium Intensity Taxiway Lighting System.

iv. Runway End Identification Lights.

v. Fully automatic control system to control i - iv above.

vi. Lighting of the aircraft parking apron.

b. The electrical installations of:-

i. The new Passengers' Terminal Building.

ii. The new Air Traffic Control Tower.

iii. Other buildings for other services.

c. A fully automatic 3-phase standby generating set 100 KVA.

d. An airport location beacon.

2. Preparation of complete tender drawings for all the items of sub-paragraph 1.

3. Supply electricity to the V.O.R./D.M.E. facility of the airport.

All the above works were completed in the record time of three months.

The cost of the project in 1975 was in excess of £150.000.

4.1.2. Execution and Maintenance of electrical installations Section

a. Supervision of all the works carried out by the electrical workshops.

b. Maintenance of the electrical installations of all Government buildings, UNFICYP military camps.

c. Preparation of specifications and invitation of tenders for the purchase of all electrical equipment such as cables, electrical fittings etc. other than the ones falling into the category of electromedical and electronic equipment.

The result of the section in 1975 are best presented in diagram 4.2 on page 89. It can be seen that the activities of the section i.e. execution of new works and maintenance of existing ones, have exceeded by 39.1% the level of the previously best year 1972, even though the number of projects concerned have decreased. The

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average number of electricians employed by the section was slightly higher than 1972, because the new works executed by the section were situated all over Cyprus and the proper staffing of the electrical workshops demanded that personnel be stationed permanently in the district offices of the Department.

Part of the new works are shown in table 4.1 on page 70 which has already been described under the Planning and Design section. The most important of the remaining new works are the electrical installations of the refugee camps at Lefkaritis plots, Veroclini, Ormedhia (Archbishopric and Vattena plots)which were design by the Planning and Design Section in 1974.

The tender work carried out by the section is shown on table 4.5 on page 74.

4.1.3. Maintenance of electronic and electromedical equipment Section

a. All the electronic and electromedical equipment installed or to be installed in any Government offices, institution or hospital are maintained by the Officers of this section. A short list of this kind of equipment is shown below:

i. X-ray units (portable or otherwise) and X-ray film processors.

ii. All the equipment falling in the category of electronic and electromedical in the various hospitals, such as artificial kidney machines, cobalt units, scanners etc.

iii. The electronic equipment of the laboratories of the Departments of Health and Agriculture.

iv. The cobalt and radioisotope units of the Agriculture Research Institute.

v. The electronic machines of the Department of Finance used for the Government lottery.

vi. The equipment belonging to the Public Information Office.

vii. The simultaneous interpretation system at the Hotel and Catering Institute and House of Representatives.

viii. The airconditioning units installed in various Government offices, operation theatres, cold stores, the V.I.Ps lounge and aircraft control tower at Larnaca Airport etc.

b. Preparation and invitation of tenders for the electronic and electromedical equipment, traffic lights and lifts to be purchased by Government.

c. Planning and supervision of the installation of traffic lights, lifts and airconditioning units.

d. Preparation and invitation of the annual tenders for the repair of the electrosubmersible pumps belonging to the Department of Water Development. The supervision of the repairs is also undertaken by the section.

In 1975 the activities of the section have been increased in relation to the previous years because:

1. New categories of equipment such as the cardiographs of the various hospitals, the electronic calculating machines of different Government Departments and the electronic equipment of the Aviation Ground Lighting (AGL) system installed at Larnaca Airport have been included in the long list of equipment already maintained by the section.
2. The number of the existing equipment already maintained by the section has itself been increased.

It is worth noting that the cost of replacement of the electronic and electromedical equipment maintained by the section is more than £1,000,000.

The tender work of the section is shown on table 4.6 on page 75. It should be pointed out however that the information given on the table 4.6 corresponds to tenders invited directly by the section and does not include the numerous tenders invited by other Government Departments and with which the section assisted first in the formulation of the specifications and secondly in the recommendation of awards.

It is worth mentioning here that the variety and complexity of the electronic and electromedical

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equipment owned by Government has created the need for specialised personnel. This is shown very clearly on table 4.7 on page 76 where the time spent by the personnel in percentage form on the various types of equipment maintained by the section is presented. It can easily be seen that each Technical Assistant was specialised in the maintenance of certain categories of equipment, whilst the Engineer in charge of the section was mainly occupied with the planning and supervision of the installation and maintenance of the equipment in question.

4.1.4. Statutory Section

a. Enforcement of the provisions of the Electricity Law Chapter 170 and Electricity Regulations 1941 to 1964

According to these Regulations, in cases of electrical accidents or fires, the inspectors of this section investigate the reasons of the accident or fire and report their findings to the Ministry of Communications and Works, the Police Authorities and the Office of the Attorney-General of the Republic.

b. Examination of all Cyprus or foreign made electrical appliances

The Electricity Law and Regulations state that all electrical appliances and cables before their connection to electrical installations should satisfy the relevant British Standard Specifications (B.S.S.). Many domestic appliances and cables, however, originate from countries other than the United Kingdom or are locally manufactured, so investigations are carried out by the personnel of the section to ensure compliance with B.S.S.

c. Approval of the Electricity Authority's plans on HV, LV distribution systems and ground mounted substations

According to the Law and Regulations mentioned in sub-paragraph (b) hereinbefore, before the commencement of any works, the Electricity Authority of Cyprus should present the relevant plans for approval by the Department. In cases of disagreement amongst the Muni-

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cipalities, Government Departments or other Semi-Government Organisations and the Electricity Authority, the officers of this section act as arbitrators.

d. Approval of Generating Sets

All the applications for generating electricity for private purposes are again investigated by this section. All the disputes between individuals and the Electricity Authority of Cyprus concerning the Authority's terms and conditions for affording supply of electricity to their premises are studied and suggestions are made on whether a permit should be issued or not.

Consultations are also made with the Ministry of Commerce and Industry in order to control the imported generating sets.

Before any generating permit it issued, the electrical installations of the building, where the generating set is to be installed, have to be examined by the officers of this section.

e. Registration and examination of electrical engineers, electrical contractors, wiremen and chargemen

According to the Electricity Law and Regulations all the above, should be registered with the Licensing Authority for the issue of the relevant certificates of competency. The officers of the section study and investigate all the applications and report their findings to the Licensing Authority. In cases of equivalent academic qualifications, special studies are carried out comparing the above with qualifications of recognised institutions in consultation with an appropriate sub-committee.

The officers of this section are responsible for the yearly examinations (oral and written) that have to be taken by the electrical contractors, wiremen etc., in order to improve their status within their

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profession. The preparation of the examination papers and the marking of these papers is also undertaken by the engineers of this section in association with the other electrical engineers of the Division.

The officers of the section are also responsible for the relevant investigations whenever the section is notified either by the Electricity Authority of Cyprus or anyone else that any electrical installation has been executed by a non-holder of the certificate of registration mentioned above.

f. Investigation of the electrical installations of Hotel and Public Buildings

According to the Hotels and Municipalities Laws there should be annual checks of the electrical installations of all the hotels, public buildings and buildings for entertainment i.e. cinemas, theatres, discotheques, cabarets, bars, restaurants etc.

After the necessary tests, the officers of this section are responsible for the issue of the certificate of electrical worthiness.

g. Representation in Technical Committees

The engineer in charge of the section represents the Department in all Technical Committees responsible for electrical matters.

As it can be observed from the figures tabulated on table 4.8 on page 77, in 1975 the activities of the Statutory section were still low compared to the years before 1974. This decrease in the number of activities could be attributed to:

a. The decrease in the activities of the Electricity Authority of Cyprus and the world of commerce, especially with respect to imports of electrical switchgear and equipment.

b. The loss of many hotel complexes and places of entertainment as a result of the occupation of the invading Turkish forces of the most important tourist attractions of the Republic.

It should be emphasised however that the figures presented on table 4.8 do not give the complete picture of the load of work involved during the execution of the duties of the section.

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It can be seen from table 4.8 that in 1975 the number of applications for the issuing of new certificates of competency to engineers, chargemen, wiremen and electrical contractors was only 35. This figure however does not give a clear picture of the effort and amount of work put into the investigations preceding every application by the personnel of the statutory section. In fact some of the applications were from graduates of Universities and Polytechnics whose qualifications were not recognised by the Licensing Authority, as equivalent to the ones stated by the Electricity Regulations. The syllabi, the lecture notes, the examination papers and the laboratory work carried out by the respective applicants at their Universities and Polytechnics were extensively investigated by the section. Relevant reports were prepared and submitted to the Licensing Authority for study and decision. It is worth noting that in the United Kingdom, the scrutiny of the standard of electrical engineering degrees and diplomas is carried out only by the Institution of Electrical Engineers who employ specialised people working solely on this subject. It should be pointed out that at present, 2,318 electrical engineers, electrical contractors, chargemen and wiremen are registered with the Department. A detailed analysis by category of the above number is given on diagram 4.3 on page 90.

Finally it must be stated that during the year, in addition to his normal duties in enforcing the application of the Electricity Law and Regulations, the Engineer in charge of the section was responsible for the preparation of the necessary documents for the amendment of the Electricity Regulations 1941 - 1964.

C H A P T E R V

GENERAL REMARKS

5. 1. Herebelow some general remarks concerning the overall performance in 1975 of the Department and its targets are given.

5. 1.1. Performance:

In this Annual Report of the Department of Electrical & Mechanical Service, an account is given of the historic development of the Department, its main functions, its structure and its accomplishments during the year 1975, its first year of operation.

On the whole it may be stated that the overall results can be considered as satisfactory, especially in view of the facts that:

a. The year in question was the first year of functioning of the new Department.

b. The year in question was the first year after the Turkish invasion of Cyprus and its catastrophic consequences on its economy, and

c. During the year in question, the Department started off its operations, with extremely restricted manpower resources, when its volume of work expanded to more than two and a half times, as compared to the past.

The operational results of each Division of the Department are given in great detail in its respective chapter in this Annual Report.

Nevertheless in order to secure at a glance, an eyebird's view of the magnitude of the operations of the Department and its performance results for the year 1975, a "Reference Chart" has been prepared, which appears next page.

This quick "Reference Chart" gives those necessary figures and data, which in effect contain, in a condensed form, the extent and results of the operations of the Department.

The Electromechanical Service of the Ministry of Communications & Works is that Government Department which is entrusted with the handling of all electromechanical matters. In more detail this Department is

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REFERENCE CHART

Summary of activities of Department in 1975

MANAGEMENT AND EXPOITATION OF: All Government pooled machinery valued at	£4,200,000.
PLANNING/DESIGN OF: Elec. & Mech. Works valued at	£ 800,000.
MAINTENANCE OF:	
(i) Government pooled machinery valued at	£4,200,000
(ii) Remaining mobile Government machinery	£3,000,000.
(iii) Marine and Harbour machinery and equipment	£1,000,000.
(iv) Stationary plant at Hospitals, Larnaca International Airport, Limassol & Larnaca Harbours, Hotel and Catering Institute, Agriculture Research Institute etc.	£4,000,000
Total	£12,200,000.
DAILY OPERATION OF: Stationary plant valued at	£4,000,000.
WORKSHOPS TURNOVER	£ 614,900.
TENDER WORK: Scrutiny of 450 specifications and 770 tenders for machinery valued at	£ 556,000.
REVENUE FROM: Hirings of pooled machinery	£ 368,000.
STATISTICAL DATA:	
(i) Number of personnel employed by Dept.	650
(ii) Registration of Electrical Engineers, Contractors, Chargemen etc. (persons)	2,346
(iii) Number of items inspected for condemnation	7,000
(iv) Investigation of 445 traffic accidents involving damages of	£ 16,726
(i) Funds under direct control of Dept.	£ 371,452.
(ii) Funds received from other Government Depts.	£ 734,453.

Prices quoted for machinery represent today's estimated replacement cost

entrusted with the:

(i) Economic exploitation of all Government pooled machinery.

(ii) Planning and design work on all electro-mechanical issues.

(iii) Maintenance work of all Government mechanical and electrical machinery and equipment, and

(iv) Construction work of electrical and mechanical nature.

On examining the Reference Chart or on looking, in more detail, at the operational results of each Division, one can see that the Department has managed to attain a satisfactory standard of performance in all the above four categories of work, when judged either by absolute standards, as in the case of planning and design work, or by relative performance standards for the other categories of work.

5.1.2. Targets

The target of the Department is to offer to the various Government Departments and to Government as a whole the best possible service in the electromechanical field at the lowest possible cost.

It is evident, from what has already been mentioned in this Annual Report that the work performed by the Department is very important, because any sluggishness on its part would have detrimental repercussions and hinder considerably the smooth operation of the Government project executing Departments and also of those Departments, which offer essential services to the public such as hospitals, harbours, airport etc.

The speed with which the Department offers its services and the standard of these offered services, outline the range of obligations and targets of the Department. Combined with the above, it cannot be overemphasised that the constant increase in the activities carried out by the Department, the variety of the work undertaken by the Department and the continuous evolutionary developments occuring internationally in the electromechanical field, dictate not only the immediate recruitment of technical staff in order to overcome the present staff shortage but also the continuous improvement in the educational background of its personnel, if the Department is to

continue offering its services and achieve its targets.

5.2. Finally it should be mentioned that the ~~first~~ second year of operation of the Department has also revealed certain difficulties and weaknesses, the foremost of which is the problem of understaffing and training and which will gradually have to be overcomed.

* leaving of staff to T.C.A. + abroad

It is hoped that in the near future Government will find its way to help in this direction especially in overcoming the acute problem of staff shortage.

*

APPENDIX 2.1

Reduction in the cost of maintaining pooled mobile plant/vehicles

The total cost of maintaining pooled mobile plant/vehicles in 1975 amounted to £174,860.

The mobile plant/vehicles in the hands of the section during 1975 was 81% of those existing in 1973 (about 19% was lost due to the Turkish invasion). Consequently if this machinery was not lost, the proportional amount which would have been spent would amount to £215,876. i.e.

$$\left(\frac{£174,860 \times 100}{81} = £215,876\right)$$

The sum of £215,876. should be compared to the 1973 expenditure of 146,700 after it is appropriately increased to accommodate the following factors:

(1) Difference in the cost of spares from 1973 to 1975 by 64.49% (£56,764)

The calculation of the increase in the prices of spares is shown on table 2.0 page 64 which shows the prices of spares at the Government Stores during 1973 and 1975 respectively for four representative categories of Government plant/vehicles.

In view of the fact that out of the total expenditure of £146,700. the cost of spares represents 60%, the difference amounts to £56,764.

$$\left(\text{i.e.}\ \frac{£146,700 \times 60 \times 64.42}{100 \times 100} = £56,764\right)$$

(ii) Difference in labour costs (1973- 1975) by 8% (£4,694)

In view of the fact that of the total cost of £146,700. the cost of labour represents 40%, the difference in question amounts to £4,694.

$$\left(\text{i.e.}\ \frac{£146,700 \times 40 \times 8}{100 \times 100} = £4,694\right)$$

(iii) Maintenance of additional mobile plant/vehicles (£9,000.)

This sum is due to the increase of plant/vehicles between 1975 and 1973 by 29 land-rovers, 2 graders, 6 tipper lorries, 2 tankers, 16 saloon vehicles, 2 compressors and 10 concrete mixers the cost of which amounted to £300,000. The cost of maintenance is estimated to about 3% of the purchase price i.e. £9.000.

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A P P E N D I X 2.1 (contd)

(iv) Increased maintenance due to increased utilisation factor

Due to the increase in the utilisation factor by 13.3% there was an increase in the maintenance cost of pooled plant/vehicles.

(v) Wages of idle plant operators and drivers (£14,000)

The wages of idle plant operators and drivers which are charged on the votes for the maintenance of plant/vehicles, amounted, in 1975 to about £21,000. Out of this sum an amount of only about £7,000 can be considered as being utilised for maintenance due to the fact that operators and drivers are not skilled technicians, whilst the remaining sum of £14,000 was spent not productively but for the purpose of keeping the said operators and drivers at their posts during periods at which plant/vehicles were idle.

(vi) Irregular charges for maintenance in the past

Several maintenance works were in the past charged on works votes by the various Departments e.g. purchase of grader tyres by P.W.D., whilst now the cost of all maintenance works are charged on the appropriate maintenance votes.

In view of paragraphs (i) to (v) above, the cost of maintaining the pooled plant/vehicles during 1975 should amount to £260,040.

(i.e. $\left(\frac{113.3}{100} \times (146,700 + 56,764 + 4,694 + 9,000) + 14,000\right)$
$= £260,040$)

It is obvious from the above that in 1975 the sum of £260,040. should have been spent theoretically whilst a sum of only £215,876. was actually spent i.e. a saving of £44,164 occurred representing a reduction in the maintenance costs of 17% (i.e. $\frac{44,164 \times 100}{260,040} = 17\%$)

TABLE [illegible]

CALCULATIONS OF (i) AMOUNT SAVED DUE TO THE IMPROVED UTILISATION FACTOR OF PLANT/ VEHICLES (ii) AMOUNT WHICH GOVERNMENT WOULD SPEND FOR THE HIRING OF THE PLANT / VEHICLES FROM THE PRIVATE SECTOR, NOT INCLUDING OPERATIONAL EXPENSES and (iii) EVALUATION OF WEIGHTED AVERAGE UTILISATION FACTOR

Type of Plant / Vehicle	Number of Plant/ vehicles in 1975	Number of available working days in 1975	Days plant/ vehicles worked	Utilisation factor in 1975	Utilisation factor in 1973 or the last known	Fluctuation of the 1975 Utilisation factor over 1973 (+ or −)	Days gained or lost due to the fluctuation of the utilisation factor (+ or −)	Market hire rate excluding operational expenses £ mils	Amount which Government would spend for the hire of private plant/ vehicles	Amou[nt] save[d] due the impr[oved] utili[sa]tion fact[or]
Land-rovers, saloons, estates, buses	265	61,718	53,820	87.2%	74%	+ 13.2%	8,147	2.000	£107,640	£16
Trucks up to 6 tons	13	3,224	1,786	55.4%	59%	− 3.6%	− 116	3.200	5,715	−
Trucks over 6 tons	19	4,484	3,466	77.3%	75%	+ 2.3%	103	3.900	13,517	
Tankers	19	4,646	3,152	67.8%	61%	+ 6.8%	316	4.200	13,238	1
Wheel tractors up to 50h.p	13	3,224	2,027	62.9%	42%	+ 20.9%	674	3.600	7,297	2
Wheel tractors 51-50h.p	20	4,571	2,811	61.5%	42%	+ 19.5%	891	7.910	22,235	7

[illegible].1 (contd)

Type of Plant / Vehicle	Number of plant/ vehicles in 1975	Number of available working days in 1975	Days plant/ vehicles worked	Utilisation factor in 1975	Utilisation factor in 1973 or the last known	Fluctuation of the 1975 Utilisation factor over 1973 (+ or –)	Saving/loss due to the fluctuation of the utilisation factor (÷ or –)	Market hire rate excluding operational expenses £ mils	Amount which Government would spend for the hire of private plant/ vehicle	A[illegible] sav[illegible] to [illegible] imp[illegible] uti[illegible] fa[illegible]
Wheel tractors, loaders, diggers over 50h.p	20	4,960	3,982	80.3%	42%	+ 38.3%	1,900	15.050	59,929	28,
Track loaders up to 75 h.p	3	774	333	43%	46%	– 3%	– 23	11.430	3,806	–
Track loaders 76-100h.p	1	248	116	46.8%	46%	+ 0.8%	2	21.050	2,442	
Track loaders 101-125h.p	1	248	202	81.5%	46%	+ 35.5%	98	23.000	4,646	2,
Bulldozers up to 50h.p	4	992	403	40.6%	12%	+ 28.6%	284	9.050	3,647	2,
Bulldozers 51-100h.p	8	1,984	1,176	59.3%	12%	+ 47.3%	938	15.000	17,640	14,

TABLE 2.1 (contd.)

Type of Plant / Vehicle	Number of Plant/ vehicles in 1975	Number of available working days in 1975	Days plant/ vehicles worked	Utilisation factor in 1975	Utilisation factor in 1973 or the last known	Fluctuation of the 1975 Utilisation factor over 1973 (+ or -)	Days gained or lost due to the fluctuation of the utilisation factor (+ or -)	Market hire rate excluding operational expenses £ mils	Amount which Government would spend for the hire of private plant/ vehicle	Amo... savi... to ... imp... utili... f...
Bulldozers 101-160 h.p.	12	2,976	1,220	41%	12%	+ 29%	863	16.050	19,581	13
Bulldozers over 160h.p	2	496	256	51.6%	12%	+ 39.6%	196	36.450	9,331	7
Excavators eMIH 21, RB198122, B.AW-KNOX	5	1,240	297	24%	9%	+ 15%	186	22.370	6,644	4
Rollers up to 8 tons	23	5,704	3,680	64.5%	35%	+ 29.5%	1,683	3.600	13,248	6
Rollers over 8 tons	32	7,936	5,841	73.6%	35%	+ 38.6%	3,063	4.240	24,766	12
Graders	10	2,084	1,738	83.4%	60%	+ 23.4%	488	14.100	24,506	6
Compressors up to 110 cu.ft	2	496	129	26%	43%	- 17%	- 84	2.400	310	-

APPENDIX 1 (contd.)

Type of Plant / Vehicle	Number of Plant/ vehicles in 1975	Number of available working days in 1975	Days plant/ vehicles worked	Utilisation factor in 1975	Utilisation factor in 1973 or the last known	Quantification of the 1975 Utilisation factor over 1973 (+ or -)	Days gained or lost due to the fluctuation of the utilisation factor (+ or -)	Market hire rate excluding operational expenses & nils	Amount which Government would spend for the hire of private plant/ vehicle	Amount saved due to improved utilisation
Compressors up to 300 cu.ft.	13	3,224	2,027	62.9%	43%	+ 19.9%	642	4.825	9,780	3,
Compressors up to 400 cu.ft.	3	744	441	59.3%	43%	+ 16.3%	121	6.600	2,911	
Compressors up to 600 cu.ft.	4	992	222	22.4%	43%	- 20.6%	-204	5.600	3,463	-3,
Concrete Mixers up to 6 cu.ft	62	15,376	9,025	58.7%	25%	+ 33.7%	5,182	1.300	11,732	6,
Concrete Mixers up to 7/5 cu.ft.	12	2,976	1,526	51.3%	25%	+ 26.3%	783	1.500	2,289	1,
Concrete Mixers 10/7 cu.ft	9	2,232	787	35.3%	25%	+ 10.3%	230	3.000	2,361	
Concrete Mixers 14/10 cu.ft.	1	248	32	12.9%	25%	- 12.1%	- 30	4.200	134	-

TABLE A.1 (cont.)

Type of Plant/ Vehicle	Number of Plant/ vehicles in 1975	Number of available working days in 1975	Days plant/ vehicles worked	Utilisation factor in 1975	Utilisation factor in 1973 or the last known	Fluctuation of the 1975 Utilisation factor over 1973 (+ or -)	Days gained or lost due to the fluctuation of the utilisation factor (+ or -)	Market hire rate excluding operational expenses £ mils	Amount which Government would spend for the hire of private plant/ vehicle	Amount saved due to the improved utilisation factor
Concrete Mixers 21/14cu.ft	5	1,240	343	27.7%	25%	+ 2.7%	33	6.000	2,058	19
Tar boilers 500 gal	18	4,464	3,111	69.7%	59%*	+10.7%	478	2.000	6,222	95
Tar boilers 600 gal.	3	656	329	50.2%	59%*	- 8.8%	- 58	2.600	855	-15
Tar boilers 1000 gal	2	408	318	77.9%	59%*	+18.9%	77	5.200	1,654	40
Percussion drills 22RW	10	2,450	1,810	73%	59%	+14%	347	13.200	23,892	4,58
Percussion drills 60RL	1	248	195	79%	59%*	+20%	49	18.000	3,510	8
Rotary drills 500 ft	3	744	456	61.3%	59%*	+ 2.3%	17	21.600	9,550	5

ANNEX [illegible]

UTILISATION FACTORS OF PLANT / EQUIPMENT

Type of Plant/ Vehicle	Standard Utilisation according to P.E.'s feasibility report, Appendix XII %	Average Utilisation for the years 1966-1968 according to P.E.'s feasibility report, Appendix XII %	Utilisation for the year 1968 according to data from P.E.'s fasibility report, Appendix XIII %	Utilisation for the year 1973 %	Utilisat for the 1975 %
Rollers	60	50	47	35	69.8
Compressors	60	32	41	34.5	51.7
Track Loaders	75	45	46	42	52
Bulldozers	75	46	52	12	47.4
Excavators	75	11	0.6	9	24
Tractors	60	34	26	48	69.1
Loaders	60	23	32	45.6	69.1
Graders	75	68	79	60	83.4
Tippers	75	60	54	67	77.3
Dumpers	60	32	32	72	90
Weighted average utilisation of plant vehicles considering their number during the respective years	-	42	39.5	59	72.3

TABLE 2.3

GOVERNMENT HIRING RATES
VALID FOR 1975

TYPE OF PLANT/VEHICLE	HIRING RATE PER DAY excluding operator's wages, fuel and lubricants
Land-Rovers, Saloons, Estates Buses, e.t.c.	£1.500 mils
Trucks upto 6 tons	2.200 "
Trucks over 6 tons	3.250 "
Tankers	3.250 "
Concrete vibrators	0.500 "
Wheel tractors 20-30 h.p.	3.000 "
(Agricultural tractors, loaders, excavators, combine harversters, e.t.c.)	
31-50 h.p.	4.000 "
Over 50 h.p.	6.000 "
Track loaders upto 75 h.p.	10.000 "
" " 76-100 h.p.	12.000 "
" " 101-125 h.p.	14.000 "
Bulldozers upto 50 h.p.	8.000 "
" 51-100 h.p.	12.000 "
" 101-150 h.p.	16.000 "
" over 150 h.p.	22.000 "
Excavators (or cranes, e.t.c.) RB10	15.000 "
Smith 21, Blaw Knox, RB19 & 22	18.000 "
Rollers, Static upto 8 tons	3.000 "
" " over 8 tons	3.500 "
Rollers : Vibrating	4.500 "
Towed vibrating	10.000 "
Towed Static	1.200 "
Graders	12.000 "
Compressors upto 100cu.ft./min.	2.000 "
" from 100-150cu.ft./min.	3.000 "

TABLE 2.3 (cont'd)

TYPE OF PLANT/VEHICLE	HIRING RATE PER DAY excluding operator's wages, fuel and lubricants
Compressors over 350 cu. ft./min.	£13.000 mils
Concrete mixers 5/3.5cu. ft.	0.800 "
" 7/5 cu. ft.	1.000 "
" 10/7 cu. ft.	2.500 "
" 14/10 cu. ft.	3.500 "
" 21/14 cu.ft.	5.000 "
Isr boilers 300 gal.	1.500 "
" 600 gal.	2.000 "
" 1000 gal.	4.000 "
Bitumen distributors	6.000 "
Water pumps upto 3" dia.	0.500 "
" upto 4" dia.	1.000 "
" over 4"dia.	4.000 "
Premix plant (Parker, Bristows)	10.000 "
Paver finishers	10.000 "
Percussion drills 22RW	11.000 "
" 60RL	15.000 "
Rotary drills 500 ft.	18.000 "
" 1500 ft.	26.000 "
" 3000 ft.	65.000 "
Vehicles with crane :	
(wheel skidder, cockuns 85HP)	12.000 "
Vehicles with grab (Scania 7 ton)	6.750 "
Dumpers (13hp and 18hp)	1.200 "
Mobile crane KL22, 2 ton	2.000 "
Crushers (a) 14" X 7"	1.000 "
(b) 16" X 9"	1.850 "
Granulators 24" X 6"	8.000 "
Conveyor belts 16" X 20' 2.5HP	0.350 "
" 16" X 40' 5HP	0.700 "

TABLE 2.3 (cont'd)

TYPE OF PLANT/VEHICLE	HIRING RATE PER DAY excluding operator's wages, fuel and lubricants
Drills Overburden type	£3.500 mils
Mobile and core drills	2.500 "
Mobile generators 60-75 K.V.A.	1.500 "
Vehicle with crane (Unipower type)	2.700 "
Vehicle with crane (W.D.D.149)	4.400 "
Hopper Barge 50 cu. yds.	4.500 "

TABLE 2.4

Amount Charged to Departments per month representing hire charges for Plant/Vehicles used in 1975

Departments	January £	February £	March £	April £	May £	June £	July £	August £	September £	October £	November £	December £	TOTAL £
...lic Works Depart-...t	7703	5817	5641	7758	6242	7295	7232	7302	9627	10383	11341	11502	97843
...artment of Agri-...ture	3348	3348	3348	3348	3348	4183	4691	5037	6238	5840	5347	5113	53189
...est Department	4898	3882	3310	3705	2736	3305	5332	4433	5629	5617	4754	4501	52102
...logical Survey ...artment	4918	4892	4131	4883	4152	4643	4449	3925	3656	4120	3327	2215	49311
...artment of Water ...velopment	3781	3226	2705	2962	3270	3624	2817	2932	4126	3862	3532	4113	40950
...terinary Services	981	960	1080	1008	949	879	943	1045	1311	1345	1267	1209	12977
...hers	1155	1039	1143	1116	1083	835	879	1022	966	1026	812	705	11781
...strict Administra-...on Limassol	707	229	462	830	823	1199	1289	1193	1210	1203	1254	877	11276
...ricultural Research ...stitute	976	930	930	976	693	658	796	721	1175	1076	1068	896	10895
...strict Administra-...on Paphos	267	301	352	766	800	998	766	598	785	468	297	214	6612
...strict Administra-...on Larnaca		90	258	461	537	635	751	610	689	762	645	567	6005
...strict Administra-...on Nicosia	116	139	210	307	509	729	861	755	711	589	359	356	5709

TABLE 44 (Cont'd)

		January £	February £	March £	April £	May £	June £	July £	August £	September £	October £	November £	December £	T
13.	Department of Electromechanical Service	389	328	338	380	438	578	417	391	502	520	451	430	
14.	Fisheries Development	93	109	93	112	190	228	232	226	289	284	234	229	
15.	District Administration Famagusta	6		85	150	228	210	220	208	220	250	239	250	
16.	Meteorological Service	31	30	30	33	25	21	24	25	33	27	25	30	
	TOTALS	29369	25320	24122	28855	26023	30020	31899	30421	37167	37372	34952	33207	36

TABLE 2.5

SUMMARY OF SUBCONTRACTING EXPENDITURE

Type of Plant	1966	1967	1968	1969 (8 months)
	£	£	£	£
Heavy Plant and Machinery				
Motor Rollers	8,559	11,213	13,565	8,233
Compressors	800	4,629	3,410	10,289
Traxcavators	32,223	43,866	89,042	71,931
Bulldozers	24,789	79,691	86,716	58,810
Excavators	1,269	1,420	5,786	32,741
Hot Sprayers	410	925	320	130
Tar Boilers	3,571	4,071	3,617	839
Graders	1,735	3,220	8,211	5,150
	73,356	149,035	210,667	188,123
Light Plant and Machinery				
Tractors	24	-	2,020	8,488
Loaders	171	1,321	1,681	946
Concrete Mixers	708	390	416	644
Boring Machines	2	300	899	826
	905	2,011	5,016	10,904
Vehicles				
Water Sprinklers	663	2,107	1,354	2,243
Tipper Lorries	55,738	46,481	80,213	70,480
Specially Designed Lorries	-	883	-	-
Land Rovers	-	-	1,611	4,040
Motor Cars	-	-	356	168
Buses	2,728	472	3,001	2,374
	59,129	49,943	86,535	79,305
Miscellaneous				
Complete Contracts	4,609	36,726	110,680	71,758
Towing Boat	-	315	325	482
	4,609	37,041	111,005	72,270
TOTALS	£137,999	£238,030	£413,233	£350,602

TABLE 26

Amount paid by Government Departments for the hire of Plant/Vehicles from the Private Sector during 1975

/Vehicle	P.W.D. Nicosia	P.W.D. Limassol	P.W.D. F/sta	P.W.D. Larnaca	P.W.D. Paphos	WDD	Forests	D.Adm. Nicosia	D.Adm. Limassol	D.Adm. Fa/sta	D.Adm. Larnaca	Geolog.	ARI	TOTAL
ers	9,079	4,650	3,069	4,216	1,829	11,150	40,981	19,006	13,415	2,354	3,626		212	113567
ks	19,924	7,741	1,509	5,087	1,746	10374	1,116	2,033	1,544				170	49244
ers	2,474	2,166	490	3,547	243	19903	861		13					29697
dozers		355	452	1,822	1,109		52	439	10,434		125			14788
lers		899	1,871	2,146	161		496	5,766	837		119			12295
ressors		45				4727		353						5125
Rovers						1,318						1,473		2791
Boilers				109				2,182						2291
ers								2,111			96			2207
es						2176								2176
tors				834		382								1216
rators						916								916
s		258					24							282
rete-mixers		67			47	2			126		7			249
ers						234								234
r Tankers				194										
LS	31,477													

TABLE 2.7

Purchase of pooled plant/vehicles during 1975

Number	Description	Approximate Value
		£
4	Angling Bulldozers	87,500
29	Land Rovers	69,000
8	Trucks (6 No.) and Water Sprinklers (2 No.)	31,000
6	Saloon Cars	3,550
1	Boom for Smith	1,800
2	Station Wagon Vehicles	1,400
1	Diesel Engine	1,250
1	Threading Machine	1,200
6	Air Hammers	950
4	Motor Cycles	500
1	Steam Cleaner	350
1	Circular Saw	300
	TOTAL	£198,800

TABLE 2.8

COMPARATIVE TABLE OF EXPENDITURE OF THE
DEPARTMENT OF ELECTRICAL AND MECHANICAL SERVICE

DISTRICT	Maintenance Works				Contract & Manufacturing Works				Contract, Manufacturing and Maintenance Works			
	1972 £	1973 £	1974 £	1975 £	1972 £	1973 £	1974 £	1975 £	1972 £	1973 £	1974 £	1975 £
Nicosia	143,784	213,191	192,126	260,187	127,705	106,585	186,442	319,810	271,487	319,776	378,568	579,997
Limassol	14,050	19,646	21,667	45,605	173	1,937	6,995	33,490	14,223	21,583	28,662	79,095
Famagusta and Larnaca	26,366	22,229	23,680	62,649	1,130	-	4,279	10,440	27,496	22,229	27,959	73,089
Paphos	10,821	12,113	16,560	29,849	65	112	3,583	3,764	10,886	10,225	20,143	33,613
Grand Total	195,021	267,179	254,033	298,290	129,071	108,634	201,299	367,504	324,092	375,813	455,332	765,794

T A B L E 2.9

Labour force in Nicosia and District Workshops during 1975

Categories of Labour force	Average number directly employed	Prevailing rates of pay (mils per hour)		
		Lowest	Highest	Average
Artisans and skilled labour	337	251	504	377
Unskilled labour and semi-skilled	12	218	251	235
Apprentices & learners	27	124	251	188

Total average employed : 376

Total wages paid : £330,000.

Average annual wages : £878.-

TABLE 2.10

Calculation of the mean increase in spare parts prices based on Government Stores prices

Spare parts Description	Price 1973	Price 1975	Percentum Increase
	£	£	
A. Land Rover			
1. Contact point	0.180	0.285	
2. Oil filter	0.275	0.350	
3. Sparks	0.142	0.154	
4. Crown wheel with pinion	20.087	25.938	
5. Rear axle shaft	4.447	5.670	
6. One piston ass.	1.951	3.039	
7. Synchronizing gear	7.558	12.000	
8. Rims	4.000	10.000	
9. Tyre covers	4.115	6.362	
10. Battery 12 volts 9 plates	3.700	7.308	
TOTAL	£46.445	£71.106	53%
B. Roller Aveling Barford			
1. Nozzle (Ruston)	7.708	10.588	
2. Ball bearing	5.544	13.710	
3. Connecting Bearing	7.391	11.132	
4. Radiator	70.000	125.855	
5. Clutch ass.	30.000	63.707	
6. Clutch facing	13.783	33.311	
TOTAL	£134.426	£258.303	92.1%
C. Caterpillar D6			
1. Roller assembly	3.512	5.222	
2. Gasket	1.979	5.365	
3. End Bit	15.111	23.745	
4. Hup	159.205	227.925	
5. Champer	5.401	11.644	
TOTAL	£185.208	£273.901	47.9%
D. Greder Aveling Barford			
1. Hose hydraulic	3.117	5.135	
2. End Bit	2.847	4.265	
3. Wheel cylinder	5.250	10.175	
4. Cutting edge	19.000	29.000	
TOTAL	£30.214	£48.575	60.7%
Mean percentum increase	£396.299	£651.885	64.49%

TABLE 3.1

Designs for mechanical installations for the year 1975

Item No	Description of Works	Amount
1.	Refugee camps for Nicosia, Larnaca and Limassol Districts	£ 3,000.
2.	Refugee houses for Aradippou	130,000.
3.	Solar heaters for refugee houses at Aradippou	110,000.
4.	New laboratory at Nicosia General Hospital	12,000.
5.	Nicosia General Hospital skin deseases section	700.
6.	Nicosia General Hospital anticancer centre	1,300.
7.	Nicosia General Hospital, cardiological section	22,000.
8.	Limassol and Larnaca Hospital prefabricated constructions	6,000.
9.	Larnaca Hospital, new surgery building	4,000.
10.	Central heating at the prefabricated buildings of Limassol and Larnaca Hospitals	5,000.
11.	Psychiatric Unit at Athalassa, administration building	5,000.
12.	Psychiatric Unit at Athalassa, new building	5,000.
13.	Limassol Harbour shed	15,000.
14.	Larnaca Airport, new passenger's terminal building	4,000.
15.	Larnaca Airport, additional prefabricated buildings	3,000.
16.	New fire brigade station at Strovolos	11,000.
17.	Limassol new fire brigade	8,000.
18.	Typical police stations	5,000.
19.	Mist house at Athalassa	20,000.
20.	Central heating of No.2 fire brigade, Nicosia	2,500.
21.	Central heating at Red Cross new building	5,000.
22.	Central heating at Apeyhitos School at Agros	5,000.
23.	Veterinary Clinic at Athalassa	25,000.
24.	Installations of fuel pump at Stavros Psokas	2,700.
25.	Various other smaller works amounting about	15,000.
	TOTAL ..	£426,200.

T A B L E 3.2

List of Works executed by Direct Labour over £500.

Item No.	Description of Works	Amount £
1.	Nicosia General Hospital, additional works to kitchen (a) plumbing works and cold storage room	1,700.
2.	Refugee camps at Nicosia, Larnaca and Limassol Districts (a) plumbing works	14,000.
3.	New laboratory at Nicosia General Hospital (a) plumbing works	12,000.
4.	Nicosia General Hospital (a) plumbing works	700.
5.	Nicosia General Hospital, anticancer centre (a) plumbing works	1,300.
6.	Psychiatric Unit at Athalassa, administration building (a) central heating	2,000.
7.	Larnaca District, administration offices (a) plumbing works	600.
8.	Ministry of Agriculture (a) plumbing works	600.
9.	Psychiatric Unit at Athalassa (a) central heating	15,000.
10.	Limassol Hospital, hydrotherapy pool (a) mechanical works	3,705.
	TOTAL	£51,605.

T A B L E 3.3

Works executed by Contract over £1,000.

Item No.	Description of Work	Amount
		£
1.	Larnaca Harbour	
	(a) installation of fire fighting fighting equipment	5,500.
2.	Refugee camps for Nicosia and Larnaca Districts	
	(a) plumbing works	70,000.
3.	Refugee Houses at Aradippou	
	(a) plumbing works	130,000.
4.	Limassol and Larnaca Harbour prefabricated constructions	
	(a) plumbing works	6,000.
5.	Larnaca Airport additional prefabricated buildings	
	(a) plumbing works	3,000.
6.	Installation of central heating at Apeyhitos school at Agros	5,000.
7.	Solar heaters for Refugee houses at Aradippou-Larnaca District	110,000.
8.	Larnaca Hospital cold storage rooms	1,000.
9.	Limassol Law Courts	
	(a) installation of central air-conditioning system	48,324.
10.	Mist house at Athalassa	20,220.
11.	Ministry of Commerce and Industry	
	(a) plumbing works	1,000.
	T O T A L	£400,044.

T A B L E 3.4

Cost of replacement of Government mechanical Stationary Plant

Item No	Description	Amount
1.	Nicosia General Hospital	£ 520,000.
2.	Nicosia General Hospital (Sewage Plant)	220,000.
3.	Psychiatric Institution	180,000.
4.	Limassol Hospital	160,000.
5.	Kyperounda Sanatorium	68,000.
6.	Larnaca Hospital	50,000.
7.	Paphos Hospital	80,000.
8.	Analytical Laboratory	45,000.
9.	New Government offices	60,000.
10.	Agricultural Research Institute	90,000.
11.	Typewriters and Duplicators	205,000.
12.	Hotel & Catering Institute	160,000.
13.	Larnaca Airport	4,000.
	TOTAL	£2,162,000.

TABLE 3.5

Maintenance of Stationary Plant Mechanical Works

Item No	Description	Expenditure
		£
1	Typewriters	2,403
2	Nicosia General Hospital	11,936
3	Psychiatric Institution	4,315
4	Limassol Hospital	443
5	Kyperounda Sanatorium	656
6	Larnaca Hospital	118
7	Paphos Hospital	356
8	Analytical Laboratory	642
9	Hotel&Catering Institute	1,481
10	Airports	9,880
	TOTAL	£32,230

T A B L E 4.1

Projects designed by the Planning and Design Section and carried out b Direct Labour

Item No.	Description of Works	No. of Works	Estimated cost 0 - £500	No. of Works	Estimated cost £501 - £2,000	No. of Works	Estimated c £2,001 & ab
1.	Electrical Installations of various Camps	14	£ 2,805.	3	£ 3,997.	3	£ 6,474
2.	Electrical Installations of various Government Buildings including Hospitals, Fire Brigade Stations etc.	32	£ 5,934.	16	£13,989.	-	-
3.	Larnaca Airport Project	-	-	-	-	8	£18,304
		46	£ 8,739.	19	£17,986.	11	£24,778.

Total Number of Works 76

Total cost of designed projects £51,503.

A N N E X 4.2

Projects carried out by private Electrical Contractors on Contract and supervised by the Planning and Design Section

Item No.	Description of Works	Estimated Cost / Cost of Works executed during 197		
		0 - £500.	£501.- £2,000.	£2,001. & above
1.	The Electrical Installations for the 5/35 Ton Luffing Crane at the New Limassol Harbour			£ 3,497/£699.
2.	Electrical Services Installations required by the Cyprus Grain Commission at the New Limassol Harbour			£17,473/£874.
3.	Electrical Installations of 1049 Houses in the Refugee Villages at Aradippou			£70,000/£14,00
4.	Electrical Installations at Yermasoyia Dam		£ 1,500/£1,500.	
5.	Electrical Installations of the Limassol New Law Courts*			£11,846/£1,42
6.	Electrical Services Installations at Larnaca Airport			£90,481/£....
7.	Electrical Installations in various Government Buildings			£60,000/£45,0
	T O T A L	-	£ 1,500/£1,500.	£253,297/£61,9

Total Cost of designed projects £242,951.
Total Cost of Works supervised £254,797.
Total Cost of Works executed £ 63,495

*This Project was not designed by the Planning and Design Section

T A B L E 7.3

Projects designed by the Planning and Design Section but not executed during 1975

Item No.	Description of Works	Estimated Cost					
		No. of Works	0. - £500.	No. of Works	£501. - £2,000.	No. of Works	£2,0
1.	Electrical Installations of various Camps	6	£2,326.	3	£ 2,260.	6	£
2.	Electrical Installations of various Government Buildings including Hospitals, Fire Brigade Stations etc.	5	£1,307.	3	£ 3,663.	3	£
3.	Larnaca Airport Project	-	-	-	-	1	£
	T O T A L	11	£3,633.	6	£ 6,283.	10	£

Total number of Works 27

Total Cost of not executed projects £74,988.

T A B L E 4.4

Projects designed before 1975 but still being executed

Item No.	Description of Works	Cost of projects / Cost of Work executed in 1975		
		0 - £ 500.	£501. - £2,000.	£2,001. & above
1.	Electrical Installations of Refugee Camps in Nicosia, Larnaca, Famagusta and Limassol Districts			£115,252/£109,
2.	Electrical Services Installations of Transit Shed No.2 (100m X 40m) at the New Limassol Harbour			£ 4,978/£ 4,
3.	Installations of a Fire Alarm System on Transit Shed No.2 at the New Limassol Harbour			£ 2,225/£ 1,
4.	Electrical Services Installations including installation of a Fire Alarm System in the Extension of Transit Shed No.2 at the New Limassol Harbour			£ 4,950/£ 4,
5.	Electrical Services Installations in the Transit Shed, Produce inspection Shed and Inflammable Store at Larnaca Harbour			£ 9,055/£ 9
	T O T A L	-	-	£136,460/£129

TABLE A.5

Number of Verbal, Departmental and Main Tenders invited by the Execution & Maintenance of Electrical Installations Section during the years 1973 - 1975

	1973	1974	1975
No. of tenders	7	8	6
Total Cost	£2,550.	£2,908.	£5,100

T A B L E A.6

Number of Tenders being Invited by the Maintenance of Electronic and Electromedical Equipment Section during 1973-1975

	1973	1974	1975
Number of tenders	9	7	12
Cost of tenders	£9,821.	£4,302.	£14,430.

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TABLE 4.7

Time spent by the officers of the Maintenance of Electronic and Electromedical Equipment Section

Item No.	Description of Works	Engineer	Senior Technical Assistant	Technical Assistant 1	Technical Assistant
1.	Maintenance of X-Ray Units		90%		
2.	Preparation and invitation of tenders	30%			
3.	Planning of Maintenance	30%			
4.	Maintenance of electromedical equipment	10%		40%	
5.	Maintenance of other electronic equipment	10%		60%	
6.	Installation and maintenance of Air-Conditioning Units	5%			90%
7.	Installation and Maintenance of electrical equipment other than the one specified in 4 and 5 above	5%	10%		10%
8.	Various meetings	10%			

T A B L E 4.8

Comparison of Work carried out by the Statutory Section during 1971-1975

Item No.	Description of Works	1971	1972	1973	1974	1975
1.	Inspection of electrical equipment and spares	28	48	28	11	9
2.	Inspection of Public Buildings	226	208	253	154	86
3.	Approval of E.A.C. plans	970	1070	1227	891	452
4.	Applications to generate electricity	40	67	33	10	19
5.	Investigation of electrical accidents	-	-	-	-	5
6.	Examination of applications for issuing certificate of competency to qualified engineers, contractors, wiremen and chargemen.	-	-	-	-	35

NB During the years 1971 - 1974 no detailed information was kept for items 5 and 6.

DIAGRAM 2.1

Graphical representation of the replacement cost of Plant/Vehicles by category in 1975
Total replacement value £4,213,000 (excluding cranes and marine craft)

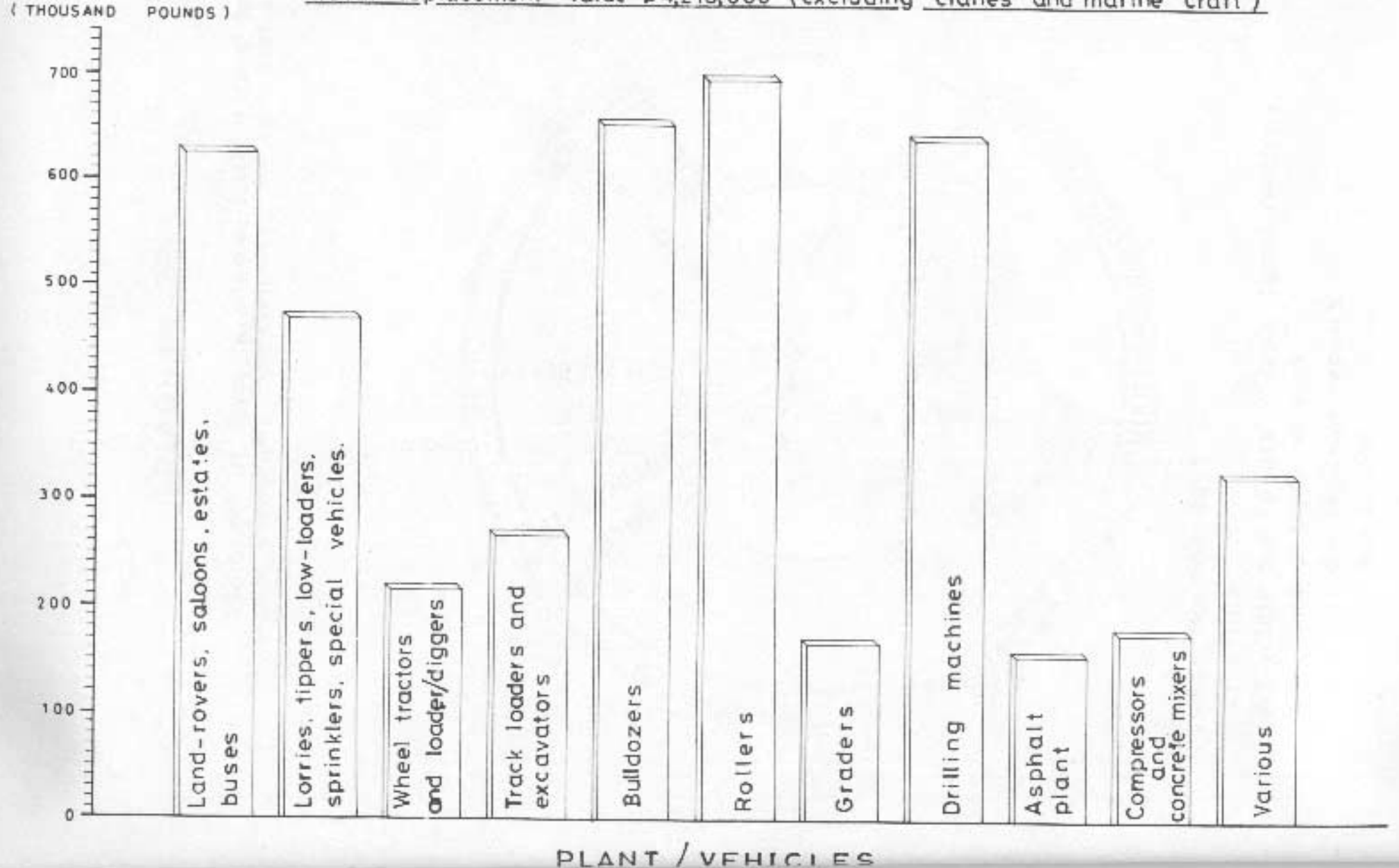
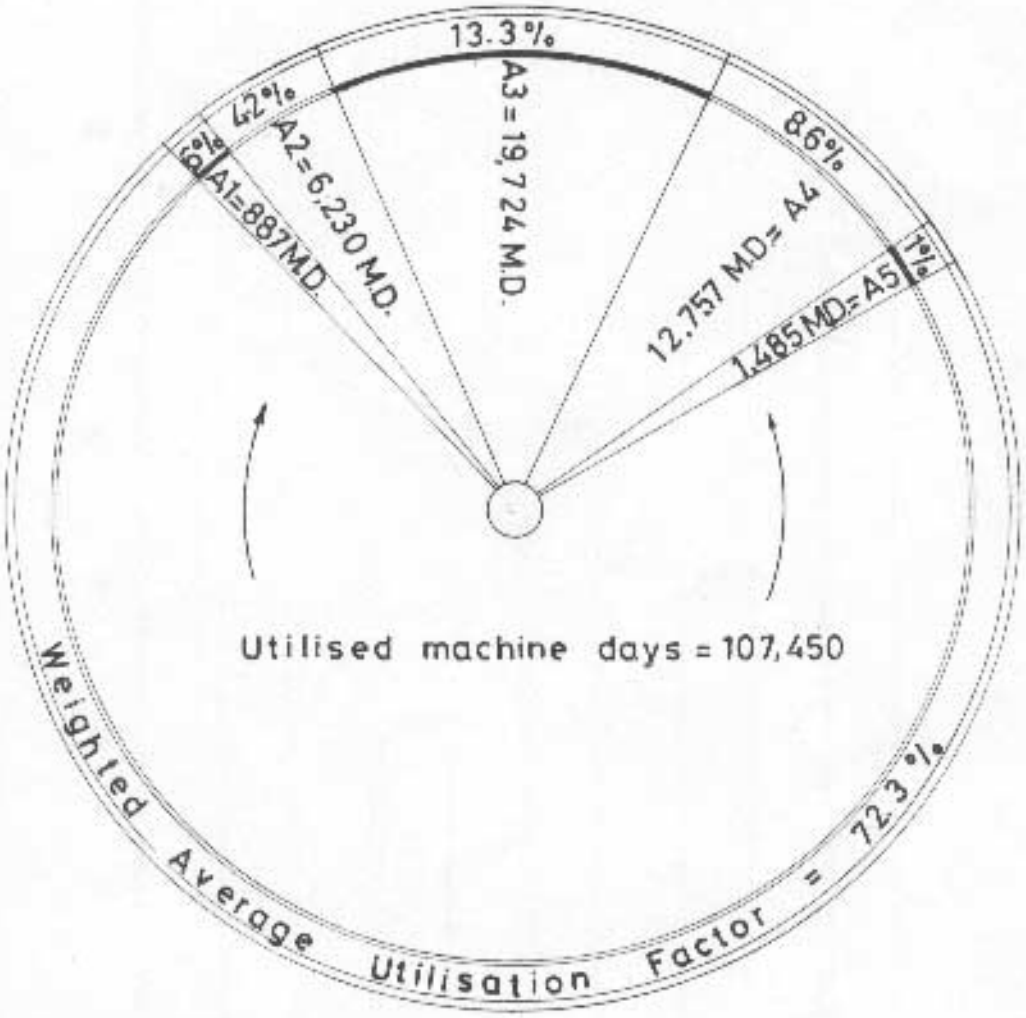


DIAGRAM 2.2

Allocation of total available machine days for all pooled Government Plant/Vehicles for the year 1975.



M.D. = Machine days
A1 = Idle
A2 = Idle due to lack of work (after repairs)
A3 = Idle at place of work
A4 = Idle due to under repairs
A5 = Idle due to bad weather

DIAGRAM 2.3

Graphical representation of the weighted average utilisation factor of plant/vehicles for the years 1966 - 68, 68, 73, 74, 75

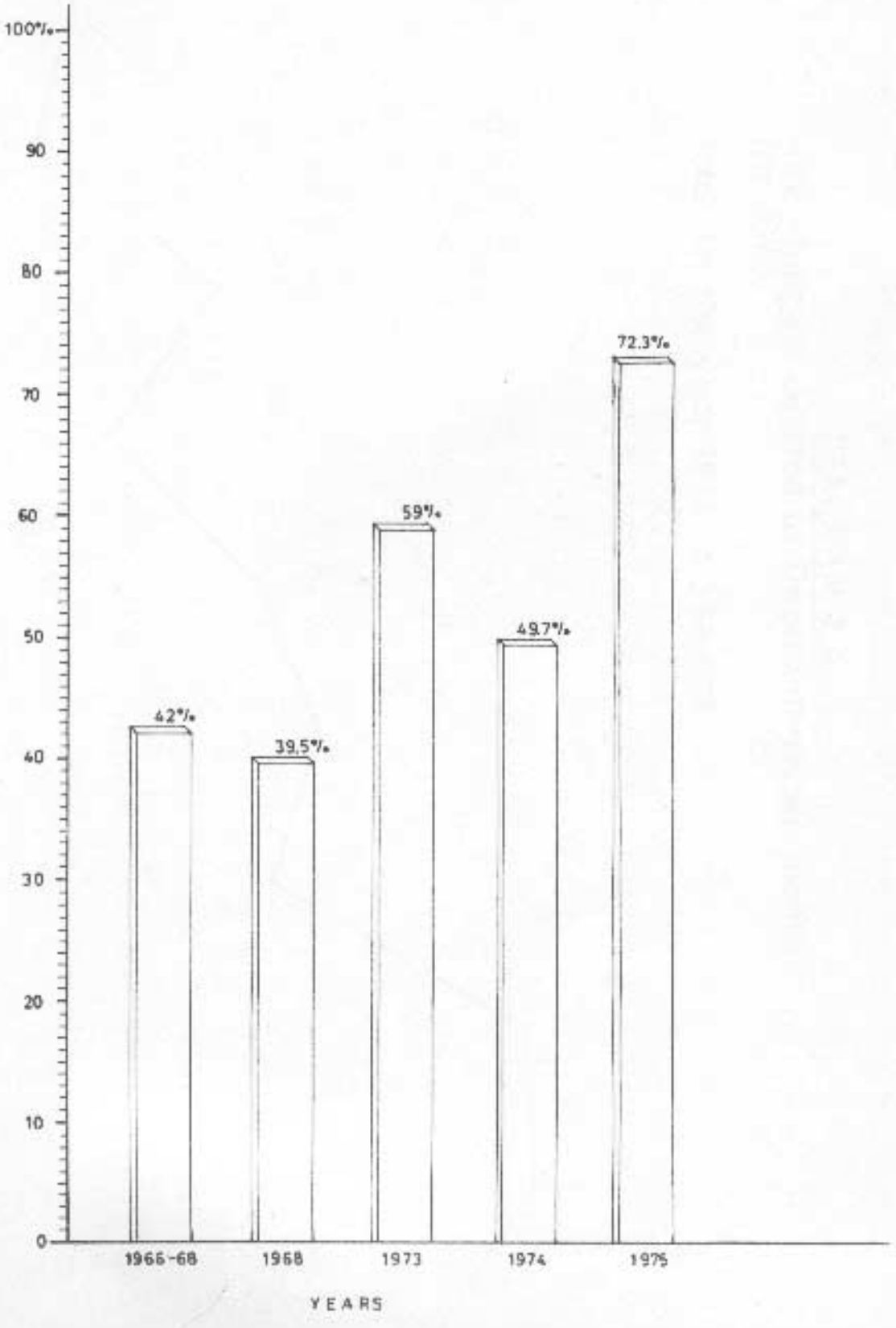


DIAGRAM 2.4

Hire charges debited to Departments per month for 1975.

Total for the year 1975: £ 368,527.

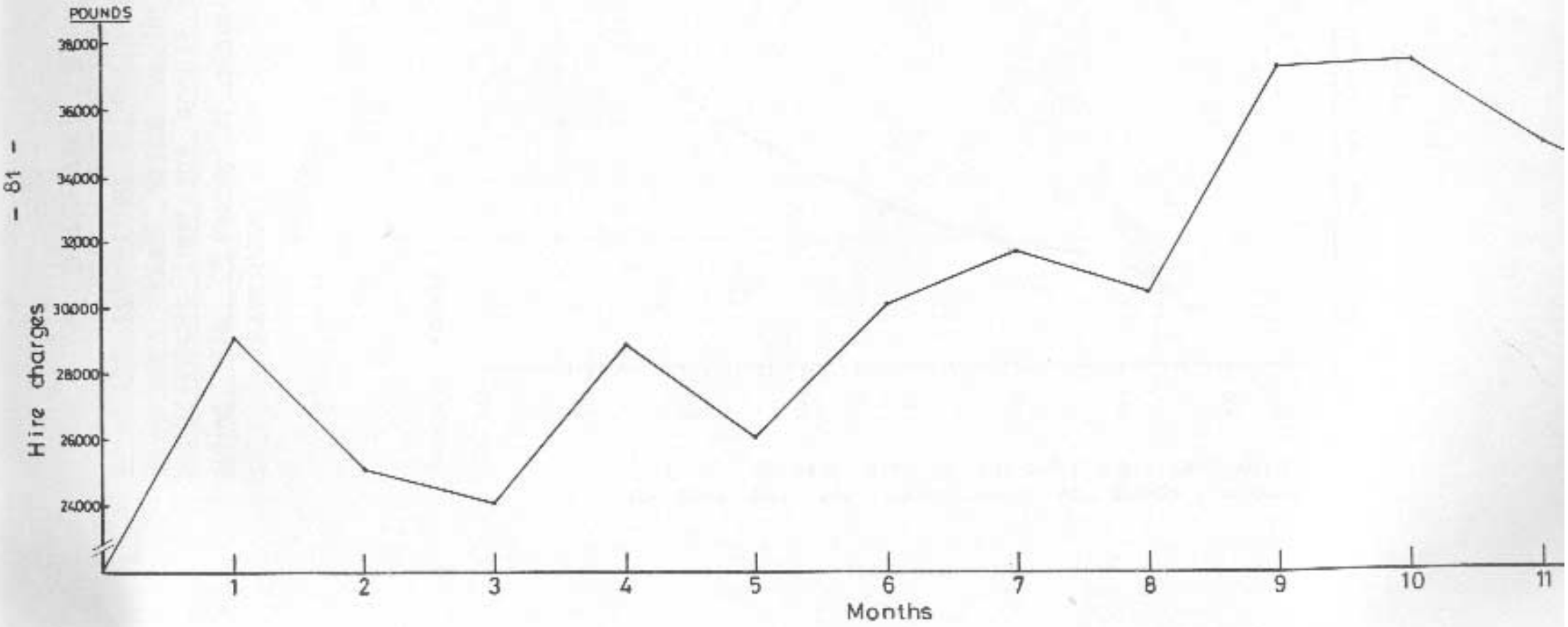


DIAGRAM 2.5

Graphical calculation of the sum which Government would spend for the hire of plant/vehicles from the private sector during 1975 (if pooling of plant/vehicles had not taken place)

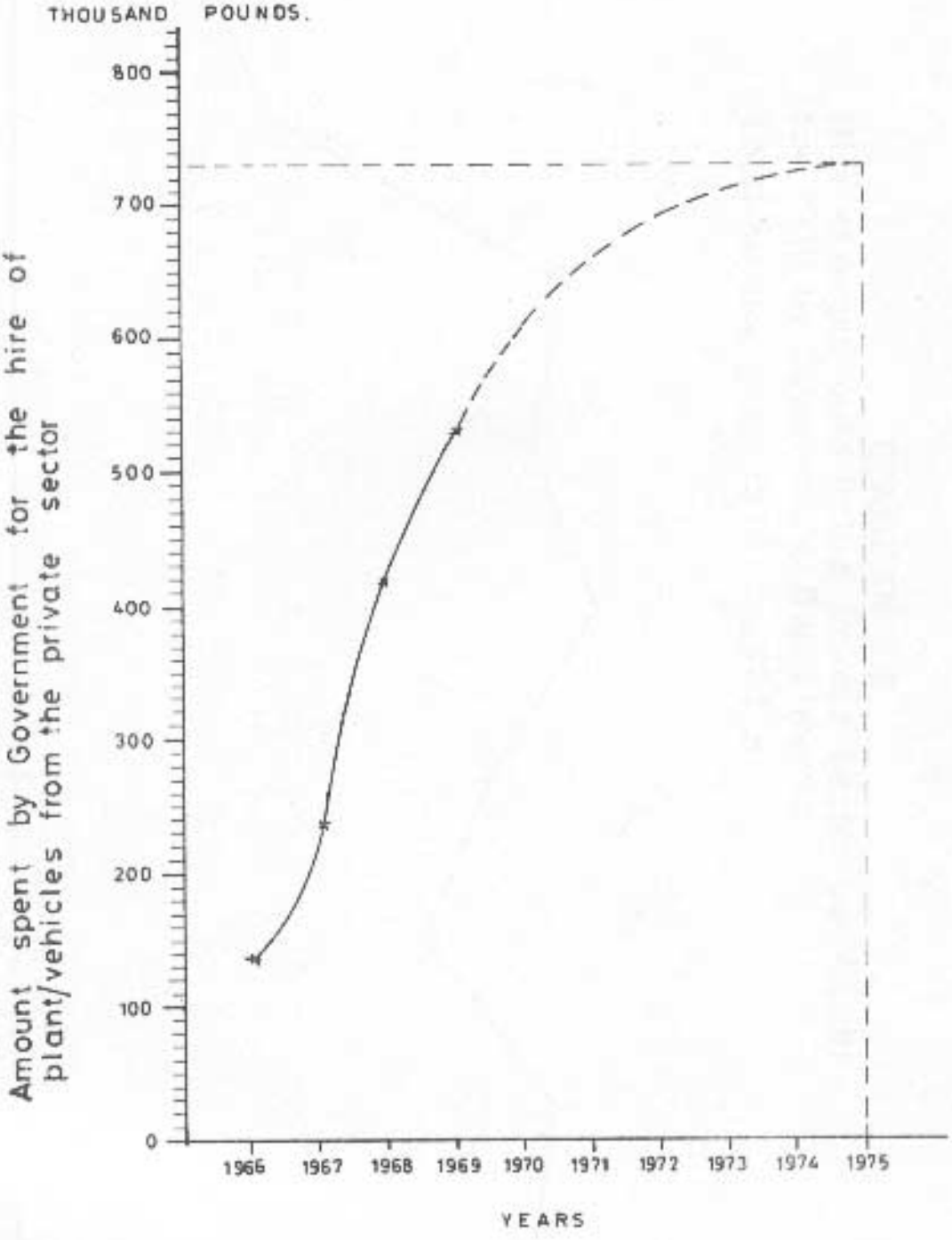


DIAGRAM 2.6

Hire charges paid to the private sector per month for 1975 by Government Departments

Total for the year 1975 : £ 237,178.

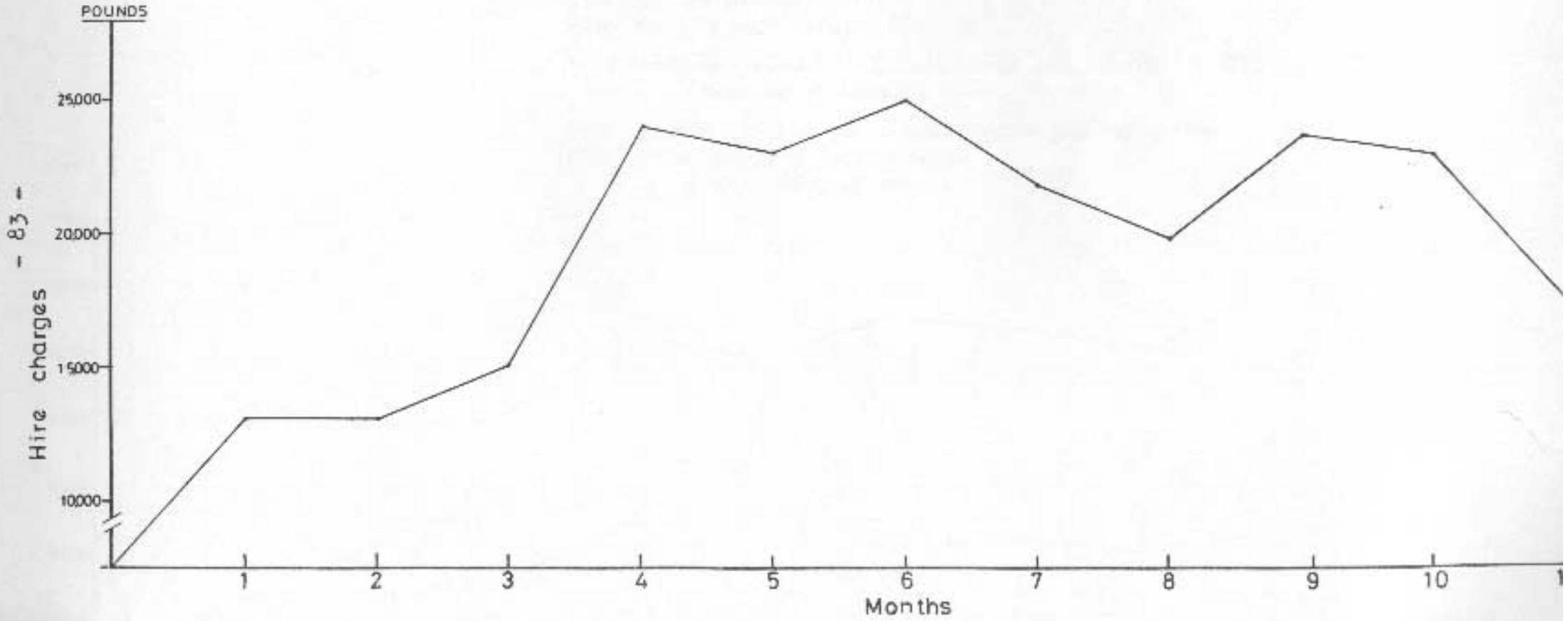


DIAGRAM 2.7

——— Total hire charges paid by Government Departments either to the Department of Electrical and Mechanical Service or the private sector
Total for the year 1975: £ 605,705

– – – Hire charges debited to Departments per month for 1975 (also see diagram 2.4)

— — Hire charges paid to the private sector per month for 1975 by Government Departments (also see diagram 2.6)

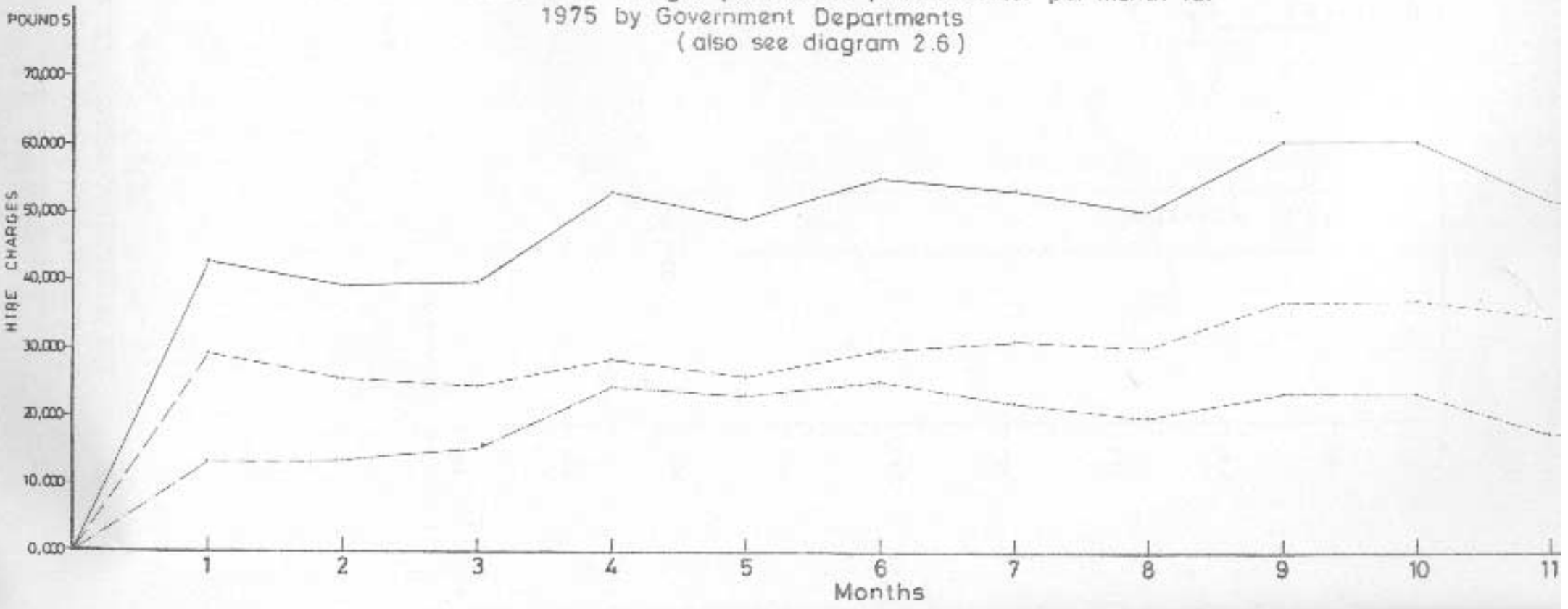


DIAGRAM 2.8

Total value of works carried out by the Mechanical workshops during 1975/6

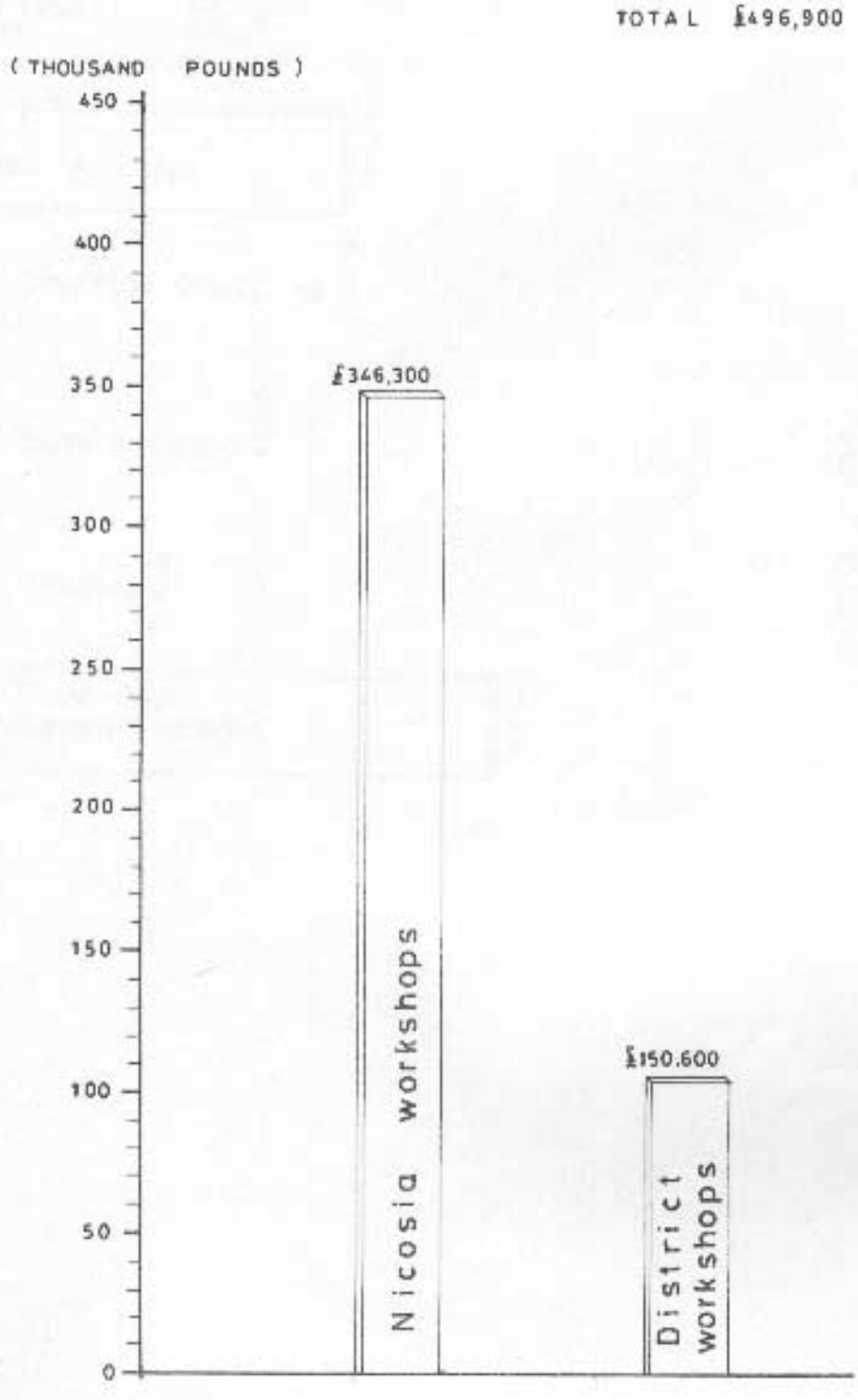


DIAGRAM 2.9

Analysis of Major Maintenance Works in Nicosia & Districts during 1975

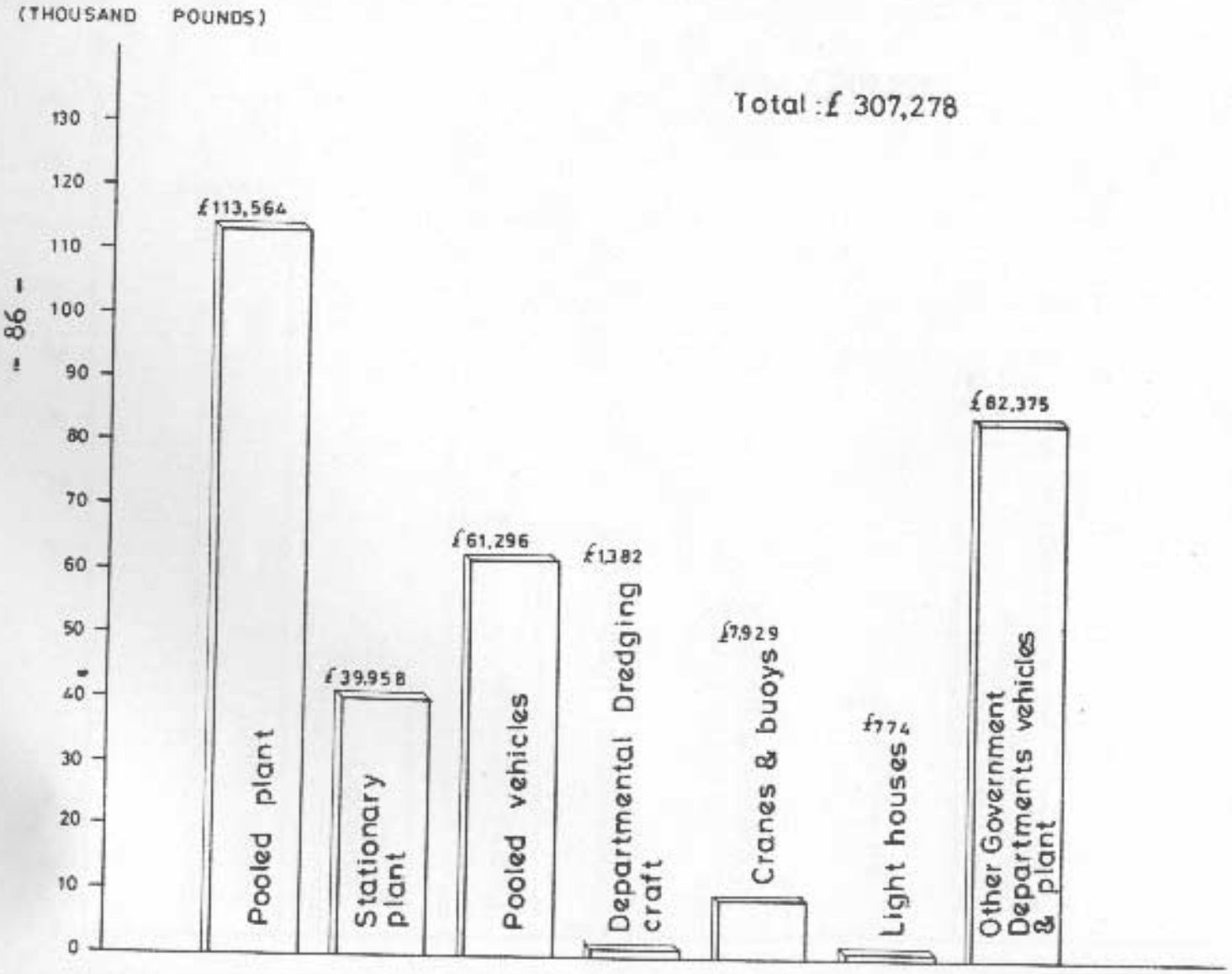
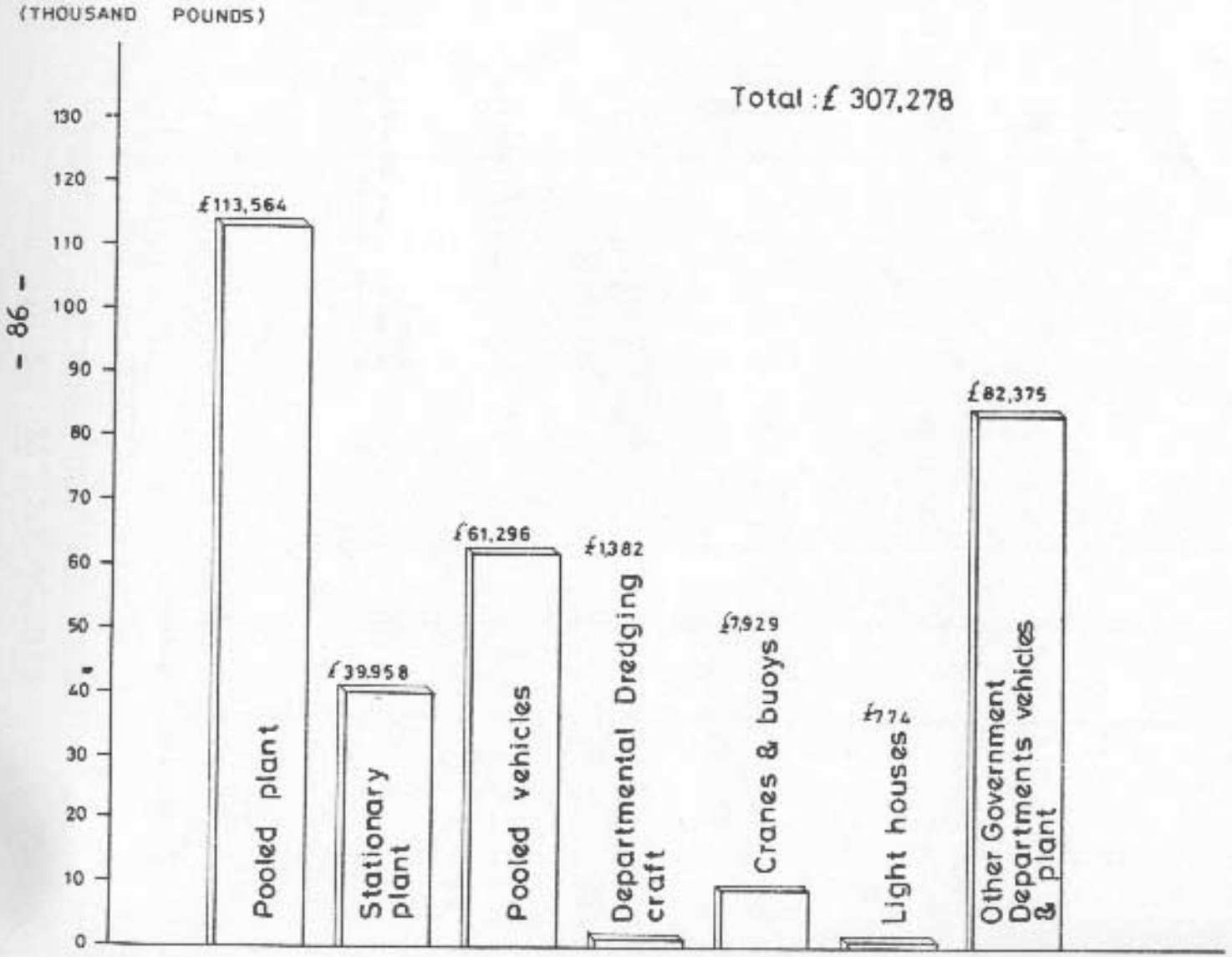
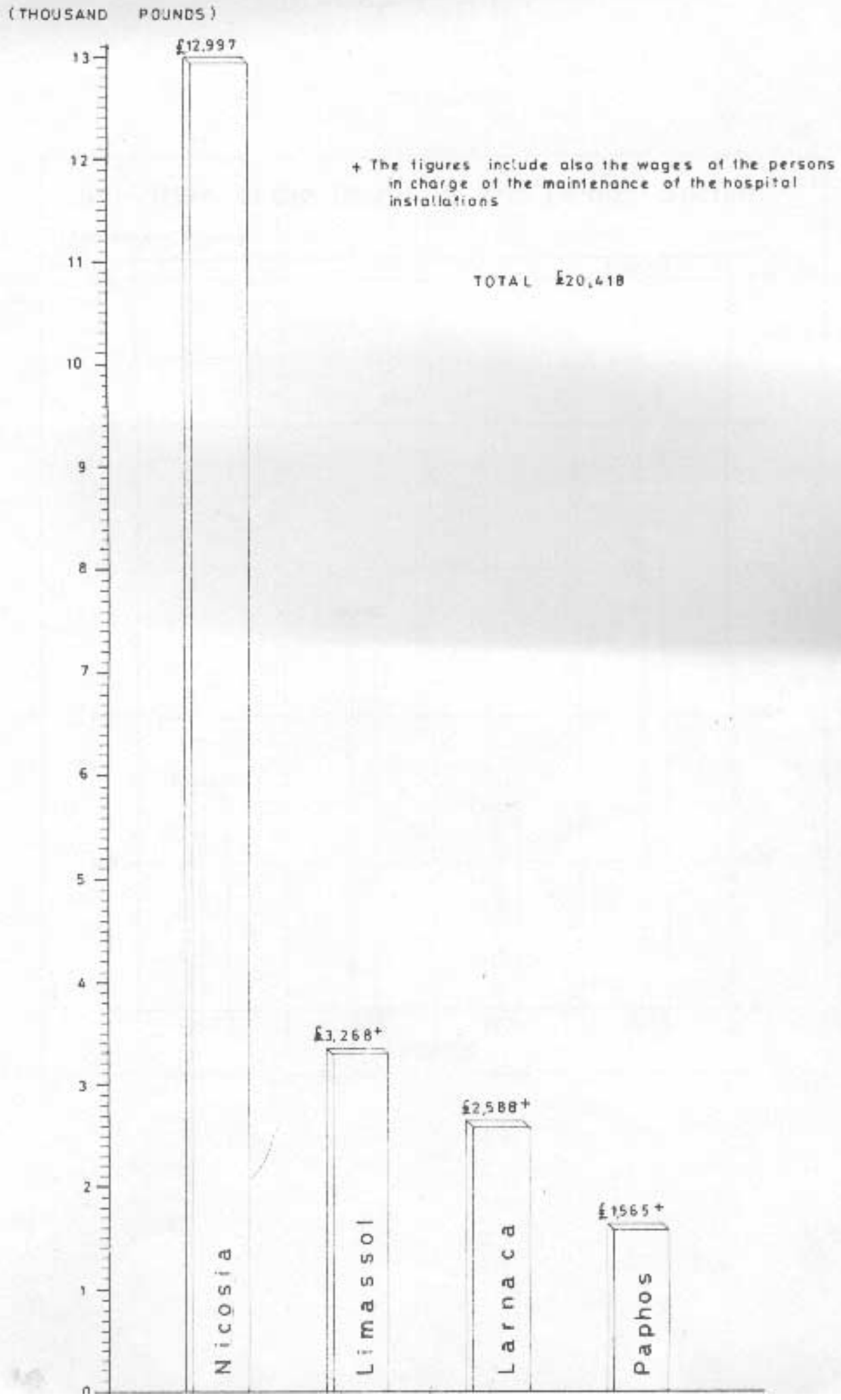


DIAGRAM 2.9

Analysis of Major Maintenance Works in Nicosia & Districts during 1975



Expenditure on Maintenance of Buildings and Works by District in 1975



+ The figures include also the wages of the persons in charge of the maintenance of the hospital installations

TOTAL £20,418

DIAGRAM 4.1

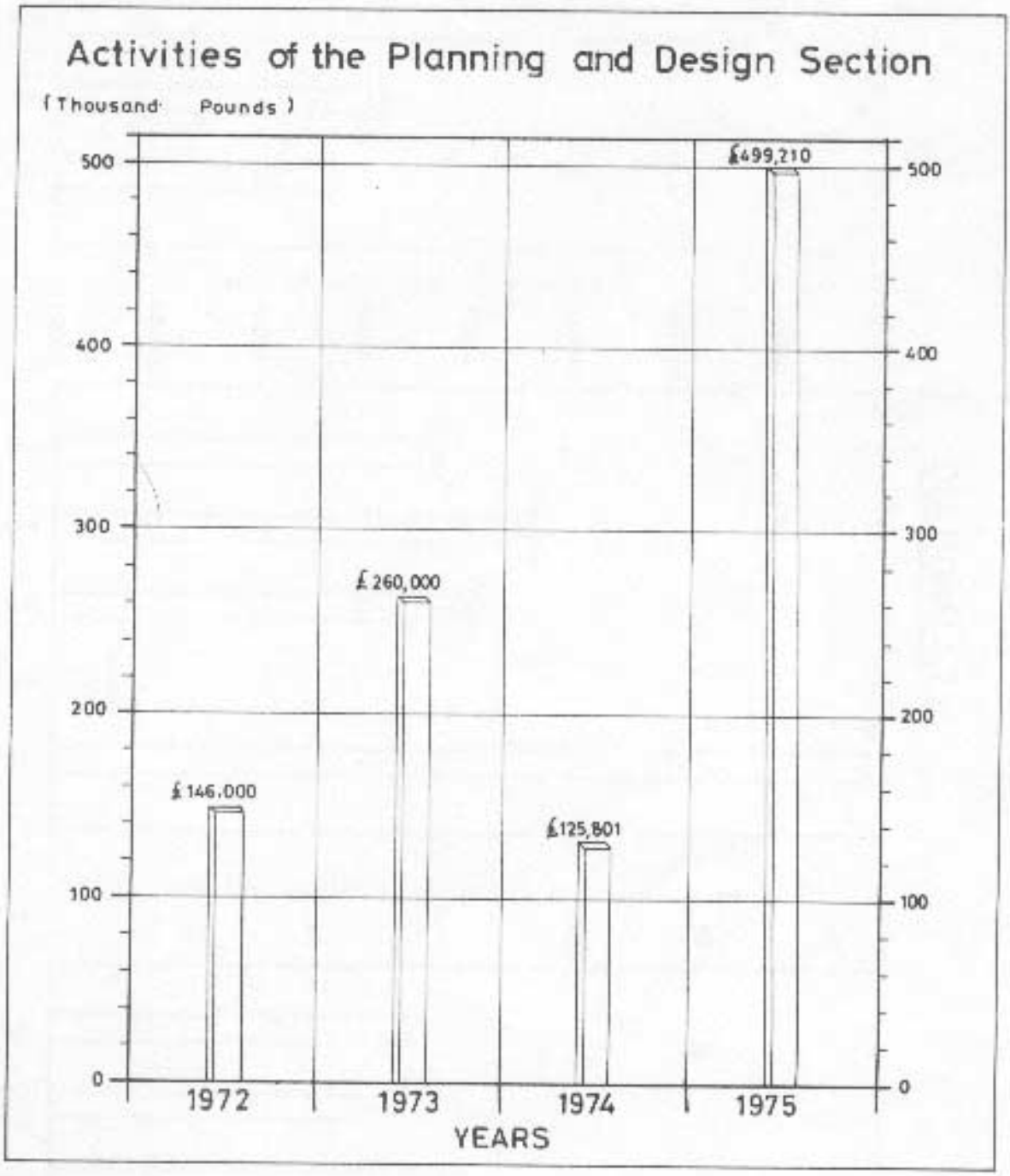
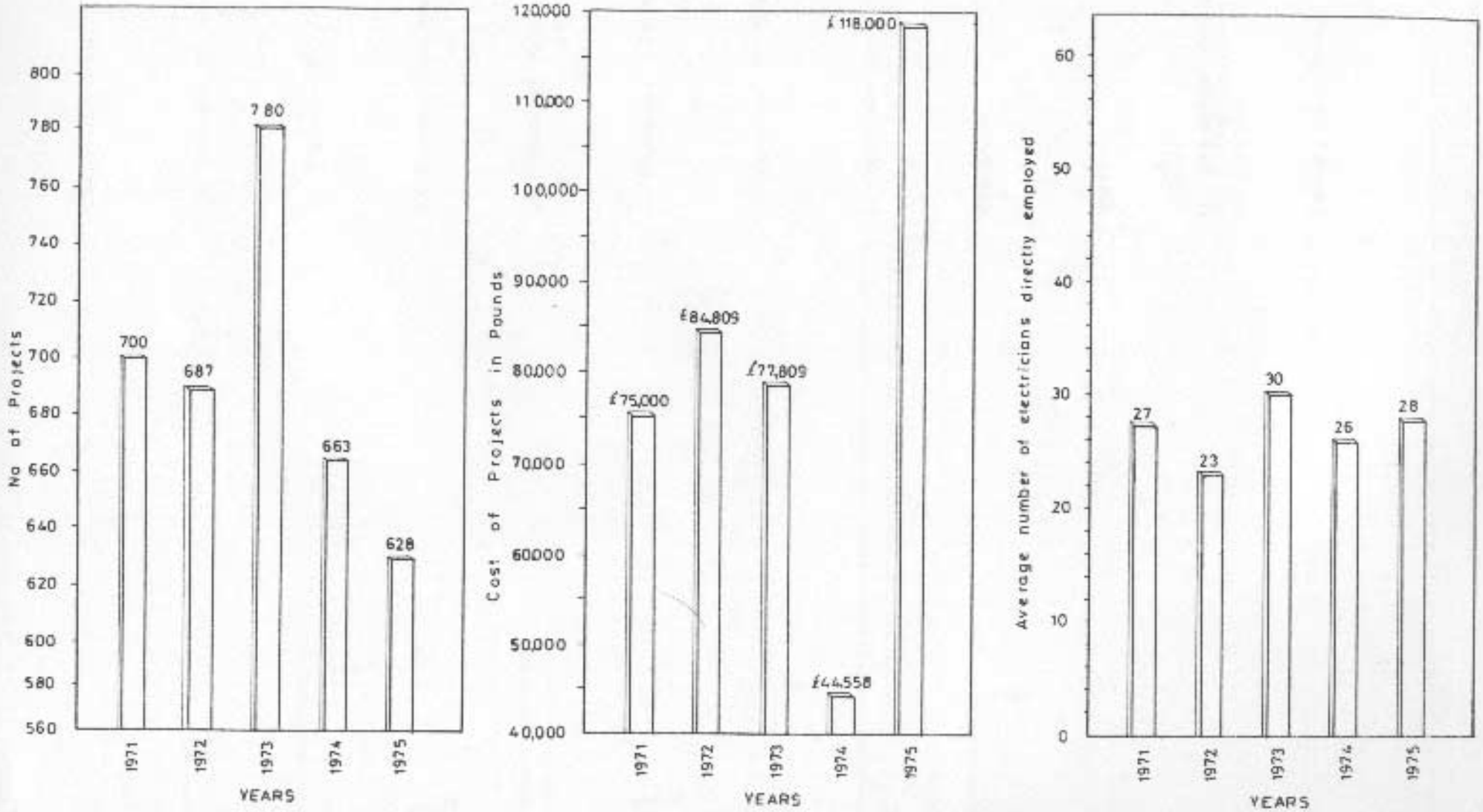

Activities of the Planning and Design Section
(Thousand Pounds)
500
400
300
200
100
0
£146,000
£260,000
£125,801
£499,210
1972
1973
1974
1975
YEARS

DIAGRAM 4.2



Works carried by the Electrical Workshops at Nicosia, Limassol, Larnaca and Papi during 1971-1975

DIAGRAM 4.3

Registered Electrical Engineers, Contractors, Chargemen and Wiremen