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Director  
Economic  
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for Latin America  
and the Caribbean  
Buenos Aires

THE STATE OF THE ECONOMY OF

PERU  
ANNUAL REPORT 1967

by

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Mechanical Engineer

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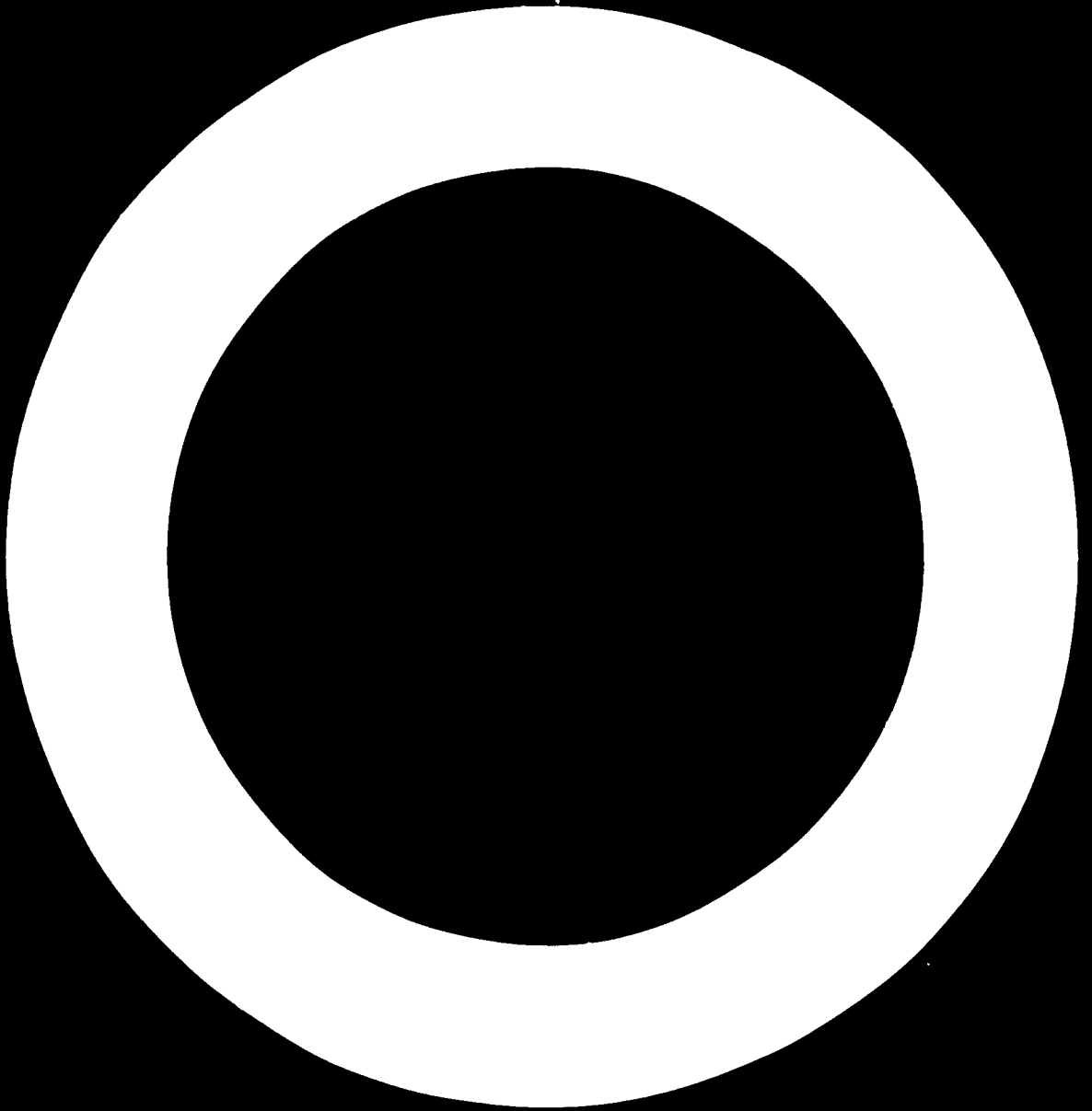


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PREFACE

The Government of the Republic of the Philippines requested the United Nations Industrial Development Organization (UNIDO) to provide expert assistance to the Board of Investments (BOI) following the recommendations of a UNIDO survey team which visited the Philippines in September-October 1967.

This final report covers the author's one-year assignment with the Board of Investments from February 1971 to February 1972. The original objective of the mission was to assist and advise the members of the Board in the mechanical engineering area in connection with the fulfillment of the Board's manifold responsibilities enumerated in the Terms of Reference.

Upon the author's arrival at the duty station on 10 February 1971, the mission was re-oriented insofar as it was then decided by Board Chairman Vicente T. Paterno and Dr. Antonio T. Arizabal that the author's services should be concentrated on the preparatory work for the materialization of the UNIDO project proposal for establishing a Technical Centre for the Maintenance and Repair of Agricultural, Earth-Moving, Road-Building and Automotive Equipment.

This decision was made although the Board of Investments is not directly involved in matters concerning heavy agricultural and construction equipment which falls under the jurisdiction of the Department of Public Works and the Bureau of Public Highways and five other government agencies.<sup>1/</sup> The Board has, however, fringe association herewith insofar as the development and the promotion of the local industry and investments for the domestic manufacture of spare parts, machine components, plant machinery and facilities are concerned.

The President of the Republic, Ferdinand E. Marcos, gave particular emphasis to the manufacture of parts and components of machinery and pointed out that the manufacture hereof includes industrial, agricultural, automotive, construction, mining and transport equipment and will successively lead to the complete manufacture of the named equipment.<sup>2/</sup>

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1/ (1) Bureau of Public Highways (2) Bureau of Public Works (3) National Irrigation Administration (4) Land Authority (5) Civil Aeronautics Administration and (6) Armed Forces.

2/ President Ferdinand E. Marcos in his Proclamation No. 404 of 1st June 1968, announcing the approval and effectivity of the first Investments Priorities Plan under the Investments Incentives Act.

The mission was re-oriented and the terms of reference accordingly changed upon consultations with the United Nations Industrial Field Adviser and the approval of the UNDP Resident Representative and UNIDO Headquarters.

The author's activities were right from the beginning of his mission almost entirely geared towards the realization of the UNIDO project proposal. Jointly initiated and arranged by the Board of Investments, the Bureau of Public Highways and the Infrastructure Operation Centre,<sup>1/</sup> the author undertook surveys throughout the country in order to study and to identify the particular problems and requirements. He availed himself of a general view of the overall situation and the conditions in respect to heavy equipment and its ancillary services.

Discussions were held with workshop personnel, with workshop chiefs and mechanics alike, with drivers and equipment operators in order to determine their technical know-how and professional capabilities. Particular emphasis was given to the inspection of workshops, equipment depots and spare parts stores and to the available repair and maintenance facilities. Discussions were also held with private contractors and their executives in order to find out what problems

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<sup>1/</sup> The Infrastructure Operation Centre (IOC) reports directly to the President and has the following functions: (1) to monitor infrastructure projects (2) to serve as central repository for project progress reports and other information on the status of projects and (3) to serve as the Technical Staff of the Executive Committee.

and particular difficulties exist in the private sector. Construction sites and construction material preparation plants were inspected with the intention to observe the handling of the equipment and its maintenance in the field.

Very fruitful discussions were held with ranking officials of the various government agencies on the existing problems and the possible approaches to their solutions. It was to observe that all discussions reflected a strong interest in the UNIDO project proposal and a confident hope for obtaining the essential assistance from the United Nations for its realization. These hopes arose particularly through Mr. Knepell's report and his recommendation for UNDP Special Fund assistance<sup>1/</sup> and through the author's newly exploratory survey and his penetrating studies towards this end.

Although in United Nations' services, the author gives in this report his personal views and opinions which do not necessarily concur with those of UNIDO or any United Nations body. The author invites and would appreciate any critical comments from competent persons and further suggestions in order to find optimal solutions to the various problems.

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<sup>1/</sup> Curt P. Knepell, Industrial Development Officer, Report on Mission to the Republic of the Philippines between 9 and 13 February 1970



ACKNOWLEDGEMENTS

The author refers his sincerest gratitude to Board Chairman Vicente T. Paterno, to Vice Chairman Tordesilla, to the Governors and Directors of the Board of Investments, particularly to Dr. Antonio V. Arizabal, Director of the Board's Metals and Mining Department, and to all the Philippine authorities who extended their help and support for the successful implementation of the mission. He expresses his particular thanks to all workshop chiefs and field authorities for the warm welcome and valuable co-operation he received during his field trips.

The author remembers in personal friendship and thankfulness Mr. Epitacio Attayan, Deputy Chief, Equipment Section, Bureau of Public Highways, who accompanied him on three field trips.

Thanks and acknowledgements are likewise expressed to Mr. William M. Harding, UNDP Resident Representative, as well as to all other United Nations authorities and the personnel who granted valuable assistance to the author for the accomplishment of this mission in the Philippines.

The author was assisted by two counterparts, Mr. Odilao, Chief Mechanical Engineer, from the Board of Investments and Mr. Sergio Palat, Senior Equipment Engineer, from the Office of the Secretary for Public Works. The co-operation was excellent.

## INTRODUCTION

The Republic of the Philippines is presently accomplishing its four-year development programme which gives emphasis to the improvement of the infrastructure and the construction and reconstruction of roads and highways. The advantage and benefit yielding from the use of heavy construction equipment and sophisticated machinery for construction work is often extensively reduced due to various shortcomings and deficiencies. Difficulties and losses of valuable equipment arise mainly due to lack of regular preventive maintenance, lack of adequate maintenance facilities and due to obsolete workshops with inadequate repair facilities. The principal problem, however, is the scarcity of qualified and well trained personnel for the operation of the sophisticated equipment and the proper performance of maintenance and repairs.

Improper operation of equipment and omission of its maintenance cause premature depreciation and breakdowns and necessarily an extremely high demand of spare parts. The scarcity of foreign exchange is partly, not chiefly, a reason for the unsatisfactory spare part supply. The coincide of the manifold problems and difficulties earmarks the actual dilemma in more or less all developing

countries, not excluded those which have, like the Philippines, reached a relatively high standard of technical development and industrialization.

The reasons for this lie primarily within the developing countries themselves because it is after all their responsibility to take appropriate measures and to make efficient arrangements to meet the requirements and to prevent losses. Developing countries have various possibilities to avail themselves of technical assistance from co-operating developed countries and aid-giving international agencies, especially in training of technical and managerial personnel, in organizing and establishing regular preventive maintenance, in planning, designing and establishing repair and maintenance shops, in the field of spare part supply and their possible domestic manufacture and many things more. It is in most instances merely a question of taking appropriate action and exploiting the various sources.

As far as the Philippines are concerned, it was found that the problems are of a very similar nature as they exist in other developing countries, even in those with a lower stage of industrial development and a smaller potential. On the other hand, however, it must be recognized that the Philippines are confronted with additional inherent problems arising from their geographical location and the dismemberment into a multitude of mountainous islands. The frequency of heavy storms and typhoons, torrential rains, floods, landslides, etc. cause extensive damages and destructions of roads and highways. Funds originally assigned for infrastructure

projects have often to be deviated for calamity relief measures. No other country is as much affected and threatened by disastrous weather conditions as the Philippines are.

Internal financial difficulties aggravate the situation and have led to slowing down and extensive delays in the implementation of the road building and road rehabilitation programme. Large portions of roads and highways are in urgent need of reconditioning, some are becoming totally impassable during the wet season. A systematic road maintenance network does obviously not exist.

The most significant project is the Pan-Philippine Highway, otherwise known as the Philippine-Japan Friendship Highway, which will have a total length of some 1,400 kilometers from the top north of Luzon to Davao City in the south of Mindanao. According to the plans of the Bureau of Public Highways, 927 kilometers will be made of concrete, 500 kilometers of asphalt. The project includes the construction of 229 bridges and the establishment of two ferry services. The project is partly financed with a \$ 30 million commodity loan from the Japanese Export-Import Bank, out of which \$ 16 million have been used for the procurement of construction equipment, vehicles and plant machinery. The estimated cost for the project almost doubled after two years, from 386 million Pesos in 1969 to 731 million Pesos in 1971, an increase of about 90 per cent. The overall accomplishment of the project

is estimated at only 3,27 per cent. Officials said the whole project is still in the take-off stage, the delay is primarily caused by lack of funds.

Besides funding problems, many projects are delayed due to equipment and materials problems in form of non-availability of equipment, bad distribution, lack of transportation facilities, breakdown of equipment and, after all, due to lack of spare parts and repair facilities. Adverse weather conditions further contribute to the delays in the implementation of projects.

#### HEAVY ROAD-CONSTRUCTION EQUIPMENT

##### (1) Overall Assessment

According to estimates of the Infrastructure Operation Centre, the national equipment for infrastructural construction work, including heavy and light vehicles, represents an approximative value of not less than 500 million Pesos.<sup>1/</sup> This figure, however, may be misleading insofar as it includes obsolete, super-annuated and totally outworn and cannibalized equipment which cannot be economically repaired and be put into service again. A portion hereof represents only scrap value. Reliable records on the status of the equipment or life records on each individual item do not exist.

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<sup>1/</sup> 6.4 Pesos approximately equivalent to 1.0 US\$

It may be estimated that equipment in the value of 300 million Pesos can be considered new, which means less than 5 years of age and/or less than 10,000 working hours.

The total number of major construction equipment inventoried in the six government agencies is summarized as follows: <sup>1/</sup>

	<u>New</u>	<u>Old</u>	<u>Total</u>
Total number of items	6,968	3,387	10,355
Serviceable	5,667	1,212	6,879
Not serviceable	1,301	2,175	3,476
Percentage of not serviceable equipment	19%	64%	34%

It is most significant that almost 20 per cent of the new equipment is already out of order in spite of the recent procurement of new equipment in the value of \$16 million. The procurement of new equipment under the Philippine-Japan loan agreement for the construction of the Philippine-Japan Friendship Highway has strongly shifted upward the percentage of serviceable equipment. It might be estimated that without this acquisition the percentage of unserviceable equipment would have reached the 60 per cent mark which is common in developing countries.

As per now, the unserviceable equipment represents a dead capital of more than 170 million Pesos. The percentage of deadlined equipment has an upward tendency and will further eliab if the new equipment for the Philippine-Japan Friendship Highway is completely put into service.

1/ Source: IOC Report

The Philippine-Japan loan agreement for the Philippine-Japan Friendship Highway project rigidly restricts the use of the equipment procured hereunder. The loan conditions cannot be altered or relaxed with the consequence that large portions of brand new expensive equipment and machines including complete road construction material preparation plants, concrete mixers, asphalt surface finishers, diesel generators, mobile workshops, heavy trucks, low-bed trailers, material handling equipment, etc. are stalled in open-air depots without any protection and without firm prospects to be put in use in the next future.

It appears worthwhile to be mentioned at this point that, as observed during the survey, portions of the imported material, such as mobile and stationary belt conveyors, bucket elevators, silos, concrete mixers, etc. would have been manufactured of the same quality in the country and large amounts of foreign exchange could have been saved. It is much easier than generally supposed to manufacture plant equipment and facilities, not necessarily on the basis of own designs; also developed countries copy their products and learn by watching each other.-

(2) Administration and Managing of Heavy Equipment

In the Philippines, the problems seem to lie more in the administrative and managerial field and less in the technical. The survey shows in many instances deficiencies arising from poor management rather than from lack of qualified technical personnel. There are, as the survey revealed, excellent people in the field with good technical background and experience but they are handicapped by administrative and financial shortcomings.

Of course, technical skills of personnel at all levels need to be upgraded, the potential is available. This, however, would be of only little effect if the administrative set up would not simultaneously be adapted to the needs and requirements of the equipment.

Although the national equipment fleet, allotted to six different government agencies, represents the equivalent of approximately 500 million Pesos, plus all the workshops, machinery, equipment depots, land properties, etc. which might be estimated at another 300 million Pesos, there is no central authority for its administration and management. The bulk of equipment is allotted to the Bureau of Public Highways and is thus placed under the jurisdiction of civil engineering authorities such as the Division, District and City Engineers. Only the seven equipment depots with their adjoining workshops operate directly under the Equipment Section of the Bureau of Public Highways.



The administrative subordination under the jurisdiction of the civil engineering authorities is disadvantageous to the equipment and workshops, particularly in financial aspects. These agencies themselves continuously struggle with fund shortages for the implementation of the projects and are thus not in a position to avail the workshops of the essential funds for their smooth operation and the fulfillment of their assigned functions. Occasionally towards the end of fiscal years, workshops do not even receive sufficient funds for paying wages to the mechanical staff which unavoidably leads to temporary reductions of maintenance personnel and triggers a swift deterioration of the moral. On the other hand, it was occasionally observed that offices seemed to be overstaffed and office personnel not fully occupied.

During periods when funds are not available or not released for the projects, funds are automatically not available for the workshops and the performance of the necessary turnaround maintenance and reconditioning of the equipment which could particularly then be done when the equipment is not needed for work. The result is that the equipment remains idle in the workshop yards or even in the field. There are practically no funds at all available for upgrading the workshops and for procurement of adequate servicing equipment and facilities.

The present administrative set-up particularly affects the supply of spare parts. The procurement of spare parts is a tedious and irksome procedure which impedes the flow of work and causes idle times and additional costs. The absence of a central equipment authority is chiefly the cause for the omission of any standardization of equipment and the many difficulties in the acquisition and the stockkeeping of spare parts.

Moreover, the absence of a central equipment authority most disadvantageously affects the selection and acquisition of construction equipment which seems under the present administrative structure to be done without knowing the real requirements in accordance with the long term road building programme. It would have been, for instance, more economic to concentrate on the rehabilitation and the repair of available equipment and the procurement of essential spare parts instead to procure new equipment which, according to the loan conditions, can only be used for one particular project.

### (3) Maintenance and Repair of Heavy Equipment

In the management of heavy equipment, there is no function more important than regular preventive maintenance. It is only through regular and skillfully implemented maintenance that heavy equipment is preserved from premature depreciation and kept in good working condition. Good and regular maintenance also means low spare part demand and

low operation costs, less downtimes and thus high equipment output. The survey in the Philippines revealed that the heavy equipment does generally not receive the proper care and maintenance it needs and deserves. It was in many instances observed that particularly the equipment in the field remains practically without any maintenance. This explains two things: the extremely high spare part demand and the relatively high quota of unserviceable equipment.

It could not be noticed during the survey that there is a kind of general maintenance programme or schedule, it appears more likely that the equipment is, if at all, only occasionally and then superficially maintained and operated until a breakdown occurs. Particularly heavy trucks were often found in deplorable and neglected conditions. It was frequently noticed, for instance, that the steering system had more than a quarter idle turn because its linkages and gears had obviously never been checked or adjusted. Handbrakes did in many instances not work at all and footbrakes left often much to be desired. Clutches were found not correctly adjusted, and, as most significant, eight out of ten trucks had either none or damaged front and back lights. Air filters are obviously never cleaned with the result that the engines hardly receive the air they need for combustion, their power is strongly reduced and they belch black exhaust fume.

When talking with drivers, they without exception confessed that these things are necessary for safe operation

and that they are to be kept in good order but no answer could be given to the question why they are never checked and repaired if necessary. Significantly, one excuse for the lack of the handbrake was that the truck is not used in mountains.

Truck drivers - and supervisors - have generally very little knowledge of technical functions, most of them do not even know how a compressed air brake, how the handbrake, how the clutch and how an engine works, not to speak about fuel injection pumps, hydraulic and electric systems, etc. Equipment operators have generally gained a certain skillfulness in the operation of the unit and they are generally doing a good job, on the other hand, however, they are not sufficiently familiar with the various technical functions and helpless if anything fails.

Some supervisors were found to be too lax and too lenient in the fulfillment of their obligations which naturally leads to the neglect of the equipment maintenance. Lack of funds is of course a handicap but it cannot be accepted as an excuse for everything.

It has to be mentioned in this report that, on the other side, some other workshops, notably those belonging to the equipment depots, are well managed and organized.

Workshop chiefs and supervisory personnel of these workshops are doing a pretty good job and they are trying to overcome the difficulties and problems posed by fund limitations and administrative shortcomings.

Equipment is frequently hired out to private contractors for the performance of construction and reconstruction projects. There was no occasion during the survey to look into the matter but it is particularly doubtful whether such equipment receives the proper treatment and the regular maintenance as necessary. Workshop chiefs and other officials declared, however, that the private contractors are fully responsible for the proper handling and maintaining of the leased equipment and that this is a particular feature of the lease contract. Whatsoever, it remains particularly questionable whether private contractors are in a position and prepared to meet this obligation in a right manner. Contractors are generally small entrepreneurs who can hardly afford to make large investments for equipment and maintenance facilities.

#### SPARE PART SUPPLY

There are many handicaps and shortcomings under which the workshops operate. but without doubt, the highly insufficient spare part support is one of the most serious constraint. Workshop chiefs and officials concerned throughout the country unanimously complain that the rehabilitation

and the repairs of equipment are delayed for months and even for years due to the non-availability of spare parts.

Workshop yards were found cluttered with unserviceable and irreparable units, many of which are opened and taken apart for inspection and diagnosis, some are cannibalized for spare parts to keep others in operation. A large backlog of repair work has accumulated and it seems highly questionable whether all the repairs will ever be done.

The spare part dilemma is nationwide and does not only affect the heavy equipment, it affects other government and municipal agencies likewise. The Philippine National Railways, for instance, has serious difficulties in keeping a minimum of trains in operation due to the frequent breakdowns of its rolling stock and the lack of spare parts for their repair. Repairshops of the Philippine National Railways are of a very similar condition as described before in this report, they lack modern machinery and facilities. The Philippine National Railway has started a comprehensive rehabilitation programme which will hopefully bring forth the expected results. Garbage trucks, fire-fighting equipment, police vehicles, etc. are to a high percentage out of order and cannot be repaired due to the lack of spare parts.

The reasons for this dilemma may partly lie in budget limitations and the scarcity of foreign exchange for the importation of spare parts. The magnitude of the spare part requirement is due to the accumulation caused by the deficiency in current preventive maintenance and the non-timely replacement of worn parts. Local dealers in equipment and spare parts are unable to supply all essential parts because of import restrictions.

There is a central spare part depot in Manila under the jurisdiction of the Equipment Section of the Bureau of Public Highways with a total spare part stock of estimated to 30 million Pesos. Very often, however, the needed parts are not available in that store. Procurement of spare parts from local dealers is problematic due to present restricted procurement and audit regulations. Moreover, the magnitude of brands and types considerably contributes to the difficulties and problems. Standardization of equipment which would facilitate the spare part supply and the stock-keeping is almost impossible due to the inflexible procurement policy and the present bidding system.

The Infrastructure Operation Centre (IOC) characterized the situation in regard to spare parts as follows:

"The main problems that plague our equipment maintenance, repair and rehabilitation programme are:

- (c) Lack of a positive spare parts support at all repair echelons due to existing restrictions on their acquisitions, insufficiency of supply of the right parts from both government and private sources and a highly centralized supply system.

At another place, the IOC-Report says:

"17.7% of all delay cases among major projects were due to equipment problems. These problems arose more from maldistribution and lack of spare parts and repair facilities at the site than from the actual lack of equipment.

Provided with sufficient spare parts and easily accessible repair facilities, there are enough government equipment to meet construction requirements. The problem is to have these equipment at the site operating when and where they are needed."



## PROPOSED REMEDIAL MEASURES

### (1) General Considerations

In comparison with other countries of the south-east Asia region, the Philippines do not receive any assistance in direct connexion with heavy construction equipment. Thailand, for instance, receives manifold assistance from various sources on bilateral and multi-lateral basis. Australia has set up two highway equipment centres, one in Khonkaen and one in Tak, New Zealand has set up an equipment maintenance and repair centre in Mahasarakham and Japan one in Songkla. Furthermore, the Federal Republic of Germany has established two technical training institutes, one in Khonkaen and the other one in Bangkok for training of metal workers and automotive mechanics. Additional expert assistance is extended by the Asian Highway Transport Technical Bureau of ECAFE in the frame of the Asian Highway project.

In the Philippines, the World Bank has started the Philippines Highway Technical Assistance project which has the following objectives:

- to improve and consolidate the organization of the Bureau of Public Highways
- to improve overall highway planning on the basis of traffic needs and other economic criteria
- to review and revise, as appropriate, the existing specifications and design standards and introduce improved construction planning and techniques
- to prepare and implement improved standards and methods for road maintenance and, in particular, prepare detailed annual and long range maintenance programmes

- to improve the operational efficiency of existing Regional and District workshops and establish necessary additional workshops
- to improve the management and utilization of the mechanical equipment
- to review and introduce necessary improvements to budgeting procedures and to introduce appropriate cost accounting systems
- to assist in staff training schemes and introduce desirable improvements thereto.

This project is most important to the economy of the country as it will improve the administration and operation of the Bureau of Public Highways and, in this way, contribute to the improvement of the roads and highways. The improvement of workshops and the increase of their operational efficiency is accordingly embodied in the programme.

## (2) Establishment of a Technical Equipment Centre

The solution to all the manifold problems in connection with heavy equipment necessitates a very effective instrument and concerted efforts. UNIDO has upon intensive and penetrating studies in developing countries as well as on the basis of the exploratory mission to the Philippines by Curt F. Knopell (9 to 13 February 1970) recommended to establish a Technical Centre for the Maintenance and Repair of Agricultural, Earth-Moving, Road-Building and Automotive Equipment.<sup>1/</sup>

Curt F. Knopell, Industrial Development Officer,  
Report on Mission to the Republic of the Philippines  
between 9 and 13 February 1970

In a conference at the President Economic Staff (PES) on 16 February 1971 under the chairmanship of Mr. L.C. Mariano Jr., Director of the Industrial Programme Office and Coordinator of the National Committee on UNIDO Matters (NCUM) the conferees were informed that the UNIDO project proposal is given priority by the Philippine Government. In view of the importance of the said project, Mr. A.R. Encarnacion from the Infrastructure Operation Centre (IOC) suggested that a team of experts from UNIDO should be deputed to the Philippines to undertake a comprehensive feasibility study.

Mr. William Jones, Senior Industrial Development Field Adviser (UNIDO) made it clear that the expense for such mission can be shouldered by the Special Fund of the UNDP.<sup>1/</sup>

The UNIDO project proposal was strongly supported by the former Secretary of Public Works, E. Syquia, who left the Cabinet of President Marcos. The acting Secretary of Public Works, David M. Consunji, expressed in like manner interest in the project and desired that a team of experts<sup>2/</sup> be assigned to his Department in order to assist in the preparation and implementation of a comprehensive equipment rehabilitation programme.

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<sup>1/</sup> Minutes of the conference at the President Economic Staff (PES) on 16 February 1971

<sup>2/</sup> Job descriptions attached as annexes II, III and IV.

The project was included in the first draft of the UNDP (SF) country programme for 1972 to 1976 but then dropped by the National Economic Council. The author recommends to re-incorporate the project in the revised country programme not at least because of the findings of his survey. The problems and difficulties in connexion with heavy equipment are of such comprehensiveness and complexity that they require a very effective instrument to be lastingly solved.

(3) Domestic Manufacture of Spare Parts

The solution to the spare part problem does definitely not lie in a hasty assembled spare parts manufacture programme. It will have first to be determined what is the real demand for spare parts upon the establishment of an effective preventive maintenance scheme and then to be analysed which particular parts can be economically fabricated without large investments in specialized and sophisticated machinery. Some parts are easy to manufacture others require sophisticated processing which makes the domestic manufacture unremunerative because of the little quantity required.

Within the frame of his assignment with the Board of Investments, the author participated in plant visits and found that the potential for the domestic manufacture is

available although most enterprises would require assistance in the manufacture process and quality control.

It would be among the objectives of the Technical Equipment Centre to undertake research and extensive studies for the manufacture of spare parts and, on the basis of practical experiments and essays, render guidance and advice to local manufacturers. Chairman Paterno from the Board of Investments emphasized that the spare part manufacture programme should not be restricted to the demand of the national heavy equipment but also include the spare parts needed by the Philippine National Railways and other governments and municipal enterprises.<sup>1/ 2/</sup>

The lack of spare parts is one of the most crucial problems which affect the economy of the country as a whole. The author recommends that an expert on the manufacture of spare parts should undertake comprehensive and penetrating studies and elaborate recommendations to be embodied in the feasibility study for the Equipment Centre project. The author does not recommend to segregate the spare part problem from the various other problems because one problem can hardly be solved in separation from the others.

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- 1/ Memoranda from Chairman Paterno to the author of 19 July and 15 October 1971 attached as annexes VI and VII
  - 2/ Minutes of the author's consultations with the acting Secretary of Public Works and other ranking officials on the domestic manufacture of spare parts attached as annex VIII

(4) Establishment of a National Equipment Authority (NEA)

The author recommended the establishment of a national equipment authority endowed with its own budget and with full executive power as the sole government agency responsible for the administration and the management of the entire national equipment, inclusive workshops, equipment depots, spare part stores and auxiliary services.

Under the present administrative structure, the national equipment is allocated to six different government agencies, chiefly to the Bureau of Public Highways, and thus administratively and financially subordinated under the civil engineering authorities. Of this method of administering equipment, one of the chief weaknesses is the lack of sufficient fund allocations to the equipment workshops which consequently contributes to further reduce the workshop's effectiveness and output.

In order to ensure an adequate and continuous fund supply, it appears necessary to segregate the equipment from the financial dependence on the civil engineering authorities and to provide it with its own adequate and effective funding system. It may, indeed, be expected that the segregated funding system will bring forth a better control on the utilization of the allocated funds and permit to detect and to remove weakpoints

The Secretary of Public Works, under which the National Equipment Authority will operate, must remain responsible for general policy matters, but the latter would be fully autonomous in its day to day management. It would be particularly responsible for the correct distribution of equipment on the basis of the real requirements for the project implementation. This would include the interchange of equipment and spare parts among the various government agencies, resulting a better utilization of available equipment capacity and a higher level of productivity.

Selection and procurement of equipment and spare parts will be among the main activities of the new Authority. The author is inclined to believe, however, that no additional equipment needs to be purchased within the next six to eight years if efforts will be concentrated on the repair and the rehabilitation of existing equipment. It will thus be up to the National Equipment Authority to survey and inventory the entire national equipment fleet and to select those items that can be economically repaired and reconditioned. It will then have to determine the real spare part demand and make appropriate arrangements for their acquisition, possibly within the frame of the Philippine-Japan Reparations Agreement which provides for the procurement of commodities upon the choice of the Philippine Government.

In fulfillment of its various functions, the National Equipment Authority would also be responsible for the establishment of an effective preventive maintenance scheme and simultaneously act as supervisory and control organ. In this capacity, it will have to depute equipment inspectors to the workshops and the construction sites for undertaking random audits and controls on the equipment's proper use and maintenance. It would furthermore be responsible for arrangements and co-ordination of training of mechanics and operators availing itself of the various possibilities to obtain assistance from bilateral and multilateral sources.

In any case, the establishment of the National Equipment Authority will necessitate comprehensive studies and the elaboration of a proper concept to be submitted to the President and Congress for approval.

(5) Assistance from bilateral sources

Any bilateral assistance must be integrated in the national development strategy and should be, wherever possible, coupled with United Nations projects of similar aims and objectives. The coupling of bilateral and multilateral projects will bring forth a more intensive exploitation of available resources and enhance the effectiveness of the development aid. United Nations and bilateral projects should be coordinated already in their planning stage.



A German economic mission visited the Philippines in May 1971 in order to affirm with the Philippine Government certain bilateral loan agreements and to analyse and identify possibilities of intensifying further co-operation and relations. In the course of the discussions, the author recommended that the Federal Republic of Germany might render assistance in the field of training and technical education which is, in the light of the industrialization programme, of particular need. The author emphasized that the scarcity of qualified and well trained personnel created a bottleneck to all efforts for technical development; assistance in this field would therefore be of great help to the country to meet the requirements.

The author is now in continuous consultation with the authorities of the Federal Ministry of Economic Co-operation and is informed that the Federal Government would favourably consider the extension of technical assistance if an official request with a reasonable conception would be submitted. In the light of the similar objectives of a possible German assistance project in the technical-educational field and the UNIDO project proposal, the author recommends the association of the two projects. He suggested the creation of a joint UNIDO/FRG mission to be sent to the Philippines for discussions with Philippine authorities and outlining the terms of reference, aligning the objectives and drafting the conception for the joint project.

(6) Regional Co-operation

The best approach for starting regional co-operation is through pooling and sharing research, development and training institutions. The technical equipment centre as proposed by UNIDO would provide an excellent opportunity to practise regional co-operation. ECAFE and other United Nations organizations sponsor regional co-operation and it is to believe that they will not deny their broad assistance for any joint regional venture.

ECAFE has already made a study on the feasibility of establishing a regional or subregional pool of heavy road-building equipment, including the manufacturing and pooling of spare parts, as recommended by the Transport and Communications Committee at its fifteenth session in 1966.<sup>1/</sup>

The author recommended that the Board of Investments and the respective agencies in the other ASEAN countries might establish sections for regional co-operation and coordination. Their heads should frequently meet and outline the frame for regional co-operation and elaborate recommendations to their respective governments. Such panel could possibly constitute the permanent ASEAN secretariat as the competent authority for all matters concerning regional development and co-operation.

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<sup>1/</sup> ECAFE Report on the Possibility of Establishing a Regional Pool of Heavy Road-Building Equipment and Machinery. Document E/CH.11/TRANS/Sub.2/L.44

ASSISTANCE TO THE BOARD OF INVESTMENTS (HOI)<sup>1/</sup>

Assistance to the Board of Investments is an on-going UNDP Special Fund project executed by the World Bank which has appointed W.D.Scott & Co. from Sydney for providing essential expert services.

Apart from its original objectives to act as the executing agency of the Investments and Export Incentives laws, the Board of Investments has assumed and performs numerous additional functions not specifically assigned to it but which may be considered to be within the spirit of these laws. The Board has particular responsibilities in development planning and, on the basis of extensive studies, identifies and evaluates industrial development projects. The Board also participates in the study of fiscal and financial policies and the budgeting foreign exchange requirements. Within the frame of these responsibilities, the Board also exercises supervision and control functions over foreign investments and business activities in the country.

Due to the re-orientation of his mission and his engagement in the preparation for the materialization of the Equipment Centre project, the author was only fringely associated with the Board's day to day assign-

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<sup>1/</sup> For the period 1971 to 1974, approved UNDP inputs are 803,000.- Estimated government contribution for the same period are L.C.U. 2,500,000.-

ments, exclusively with the Metals and Mining Department under Director Dr. Antonio V. Arizabal. The author participated in plant visits and meetings with executives which gave him the opportunity to avail himself of a broad oversight of the situation in the Philippine Industry.

Manufacturing industry has been geared towards the production of consumer goods to serve domestic demand as import substitution. There is little room for productive expansion after existing domestic demand is filled and chances for export of manufactured products are modest. Many enterprises operate below their capacity and are confronted with serious difficulties in supplying essential basic materials. Shortage of foreign exchange leads to considerable import restrictions not only for raw materials but also for capital equipment and spare parts.

The dependence on the import of important raw materials, particularly iron and steel, and the low level of productivity are principal causes for relative high prices of outputs. These factors and, in some instances, the low level of quality hamper all efforts towards export and consequently lead to a stagnation of industrial growth.

As far as the output of manufactured products and their export is concerned, the Philippines are lagging behind the achievements of other countries of the Far East region. This may be, apart from the described circumstances, also due to the reservedness and the hesitation of foreign investors to invest in the Philippines. It seems, therefore,

appropriate to recommend a general review of the existing foreign investment laws as they are, compared with other southeast Asia countries, not as favourable and attractive as they should be to attract foreign investors, particularly from European countries. The Board of Investments has started a comprehensive foreign investment study and established an Investment Promotion Centre which will highlight the country's development measures and attract foreign investments. It appears questionable, however, whether this campaign will bring forth the expected results as long as the foreign investment rules and regulations remain unchanged, particularly in exploration and exploitation of mineral and natural resources.

Although the author was not involved in development planning during his one-year assignment, he is of the opinion that the strengthening and intensifying of the exploration and exploitation of mineral and natural resources should be given priority over the development and the promotion of the manufacturing industry which will hardly find markets for its products. The author is furthermore of the opinion that more emphasis should be given to the improvement of the agriculture, the infrastructure and the planning and selection of priorities in public works projects, notably for electrical power and irrigation. This change of development strategy will simultaneously generate new employment opportunities and contribute towards the solution of the dramatic unemployment and social problems, particularly in rural areas.

In his initial report of March 1971, the author emphasized the necessity to study the possibilities for iron ore exploitation and the construction of a steel plant in order to meet the growing demand for iron and steel. It is to believe that the United Nations and developed countries will contribute assistance for the exploration of iron ore deposits and their exploitation.

Many problems could be much easier solved and industrial growth accelerated if the countries of the southeast Asia region would be ready to constructively co-operate. Many industrial projects, only to mention the petrochemical complex and steel production would be easier feasible and more beneficial if undertaken on a joint regional basis. The author recommends the establishment of a permanent secretariat of the Association of South East Asia Nations (ASEAN) as a regional planning body which would have to identify and evaluate regional projects and to elaborate plans for their feasibility. It is to believe that the United Nations will be ready to provide essential expert services if requested.

LIST OF ANNEXES

- I Tentative list of proposed Workshop Equipment and its cost
- II Draft letter to the Secretary of the Expert in Levy on the cost of Transport and Automotive Equipment
- III Draft letter to the Secretary of the Expert in Levy on the cost of Plant Machinery and equipment
- IV Draft letter to the Secretary of the Expert in Levy on the cost of Spare parts
- V Press release to the effect of investments
- VI Memorandum from the Board of Investments, to the Author of 17 July 1971
- VII Memorandum from Chairman, Board of Investments, to the Author of 15 October 1971
- VIII Minutes of the Author's Consultations with the Secretary of Public Works and other Government officials

Tentative List of proposed Workshop Equipment

(1) Special machines for engine rebuild

- Crankshaft grinding machine for crankshafts up to a length of 1800 mm, diameter of grinding wheel 800 mm, hp of motor, 10
- Flame spray equipment for metallizing crankshaft journals
- Cylinder block and head grinding machine with a maximum grinding length of 1.00 m, hp of motor, 4
- Cylinder boring and honing machine, with a boring and honing capacity with up to 180 mm, hp of motor, 2.5
- Transportable cylinder boring and honing machine
- Valve reconditioning tools and devices for producing accurate and concentric valve seats, valve cone refacer with a stem diameter of up to 16 mm and a head diameter of up to 80 mm (type "Hunger")
- Complete Engine testing stand with dynamometer.

(2) Undercarriage rebuild equipment for track-type units

- Automatic submerged arc-welding equipment to rebuild track links and shoes, rollers, idlers, etc.
- Roller/idler press for bushing dis-assembly and assembly
- Roller/idler grinder for grinding surfaces and flanges
- Double-end track hydraulic press to dis-assemble and assemble crawler tracks with ram capacity of 150 ton per ram
- Track kicker to move a string of track forward or backward across the press.



(3) General equipment

- Ramps in heavy steel construction for construction units and trucks (can be made in the street)
- Steam cleaner and high pressure washing installation
- Lubrication installation with compressed air lubrication, pneumatic grease guns
- Oil-draining system for these reels with flow meters, water separator, waste oil drainage
- Tyre repair and inflation inflator guns and valves
- Brake drum turning and grinding machine, turning and grinding up to 600 mm
- Brake lining grinding machine, brake lining grinder
- Hydraulic strapping devices, 100/150 ton, and "David" hydraulic power units with various tools and devices
- Machine tools, lathes, milling machines, drilling machines, grinding machines, plate shears, shapers, etc.
- Electric welding generator 400 A and spot welding machine with various devices
- Autogenous welding and cutting equipment
- Forge
- Air compressor
- Work benches with drawers, parallel vices, general hand tools, portable tool kits, cutting tools, electric tools
- Lifting devices, hydraulic jacks, garage jacks, axle stands
- Workshop standard crane 10,000 kg
- Testing equipment for hydraulic and electric systems of construction units

- Universal electric test bench for testing dynamos, ignition dynamos, dynastarts, starters, distributors and automatic spark advance regulators, batteries, collectors, spark timing, spark plugs, etc.
- Injection pump adjustment and test bench, nozzle tester
- Battery charger
- Painting facilities
- First aid and medical facilities, sanitary and fire fighting facilities
- Platform Scale
- Gear Hobbing machine
- Gear grinding machine
- Induction heating (heat treatment) machine
- Electric hardening furnace
- Electric tempering furnace
- Sand blasting equipment

(4) Mobile equipment

- One low-bed semi-trailer with 40 ton pay-load and three-axle traction unit with all-wheel drive, (equipped with a ten- to fifteen ton winch behind the driver's cab to haul the defective equipment on the trailer) winch ropes and pulleys, rear-loading ramps
- One break-down truck with rotary crane mounted on a three-axle and all-wheel driven chassis for heavy on-and-off the road operations, towing load at hook 10 to 12 ton, with front and rear winch
- One ambulance with first-aid and emergency equipment
- One field service unit with mobile lubrication station

DRAFT ONLY

ANNEX II

Request from the Government of the Republic of the Philippines  
- Department of Public Works and Communications -

JOB DESCRIPTION

<b>POST TITLE</b>	Mechanical Engineer (Expert in heavy road construction and automotive equipment)
<b>DURATION</b>	Two years, with possibility of extension
<b>DATE REQUIRED</b>	As soon as possible, but not later than 1st July 1972
<b>DUTY STATION</b>	Manila
<b>PURPOSE OF PROJECT</b>	The Government of the Republic of the Philippines is initiating a comprehensive programme for repair and rehabilitation of heavy road building and automotive equipment. Realizing the crucial importance of preventive maintenance and the availability of adequate repair and maintenance facilities, the Government will also upgrade the repair and maintenance workshops and arrange for training of mechanics and other technical personnel.
<b>DUTIES</b>	The expert will assist the Government in the preparation and implementation of the programme, notably:  (i) to assist in surveying and inventorying the national equipment and selecting those that can be economically repaired and rehabilitated.  (ii) to assist in establishing an effective preventive maintenance programme.

- (iii) to assist in upgrading repair and maintenance workshops and in acquisition of adequate facilities.
- (iv) to assist in making arrangements for training of mechanics and operators, and
- (v) to assist in reviewing the organizational structure and to make recommendations for reorganization.

**QUALIFICATIONS**

Mechanical Engineer with broad background and experience in maintenance and repair of heavy earth-moving, road-building and automotive equipment and with practical experience in workshop operation. University degree.

**LANGUAGE**

English fluently

**BACKGROUND INFORMATION**

In its accelerated programme of expanding activities in construction and reconstruction of roads, highways and the implementation of its infrastructure programme, the Philippines has an increasing demand for heavy construction and transport equipment.

Large amounts of foreign exchange are spent for their acquisition but considerable losses of valuable machinery occur due to inadequacy of repair and maintenance facilities, shortage of spare parts and inadequately trained personnel. Life span of equipment is considerably reduced and workshops and motor pools are filled with out-of-order equipment items.

The project follows a UNIDO survey and is in line with its recommendations.

DRAFT ONLY

ANNEX III

Request from the Government of the Republic of the Philippines  
- Department of Public Works and Communications -

JOB DESCRIPTION

POST TITLE	Mechanical Engineer (Expert in design and construction of plant machinery and equipment)
DURATION	Two years, with possibility of extension
DATE REQUIRED	As soon as possible, but not later than 1st July 1972
DUTY STATION	Manila
PURPOSE OF PROJECT	The government of the Republic of the Philippines is initiating a comprehensive programme for repair and rehabilitation of heavy road-building and automotive equipment, including the improvement of existing and the set up of new preparation plants for road construction materials. The programme gives emphasis to the domestic fabrication of such machinery.
DUTIES	The expert will assist the Government in the preparation and implementation of the programme, notably:  (i) to assist in surveying existing material exploitation and preparation plants and advise in their improvement and the increase of the output.  (ii) to assist in design and layout of mobile and stationary preparation plants, including mechanical handling equipment, belt conveyors, elevators, excavators, etc.)

- (iii) to assist and advise local manufacturers in design and construction of such machinery.

#### **QUALIFICATIONS**

Mechanical Engineer with broad background and experience in machine building, design and construction of stationary and mobile preparation plants and equipment for road-construction material, such as crushers, vibratory screens, belt conveyors, including asphalt and concrete preparation machinery.

#### **BACKGROUND INFORMATION**

For its accelerated programme of expanding activities in construction and reconstruction of roads, highways, bridges and the implementation of its infrastructure programme, the Philippines has an increasing demand for construction equipment and machinery, notably for plants and machinery for the exploitation and preparation of raw materials.

In order to save foreign exchange for the importation of the latter machinery and equipment, the government has included in its programme to manufacture these items domestically.

DRAFT ONLY

ANNEX IV

Request from the Government of the Republic of the Philippines  
- Department of Public Works and Communications -

JOB DESCRIPTION

POST TITLE

Mechanical Engineer  
(Expert in fabrication of spare parts)

DURATION

Two years, with possibility of extension

DATE REQUIRED

As soon as possible, but not later than  
1st July 1972

DUTY STATION

Manila

PURPOSE OF PROJECT

The Government of the Republic of the Philippines is initiating a comprehensive programme for repair and rehabilitation of heavy road-building and automotive equipment. Realizing the crucial demand for spare parts, the Government will involve in its programme the manufacture, as far as possible, of spare parts, not only to save foreign exchange for importation but also to ensure an uninterrupted supply.

DUTIES

The expert will assist the Government in the preparation and implementation of the programme, notably:

- (i) to assist in surveying and identifying the spare part requirements and in setting up spare part list, determining those that can be manufactured by domestic industries, and to assist in the acquisition of those that have yet to be imported.
- (ii) to assist in undertaking practical experiments and research, casting, machining, heat treatment and hardening, and

(iii) to advise local manufacturers of spare parts and arrange for obtaining technical assistance and support and, if necessary and possible, licences from developed countries.

**QUALIFICATIONS**

**Mechanical Engineer with broad background and experience in fabrication of spare parts, notably for heavy earth-moving, road-building and automotive equipment. University degree.**

**LANGUAGE**

**English fluently**

**BACKGROUND INFORMATION**

**In its accelerated programme of expanding activities in construction and reconstruction of roads and highways, and the implementation of its infrastructure programme, the Philippines has an increasing demand for heavy construction and transport equipment.**

**Large amounts of foreign exchange are spent for their acquisition but considerable losses of valuable machinery accrue due to inadequacy of repair and maintenance facilities and inadequately trained personnel. The repair and rehabilitation of the equipment is extensively hampered due to the lack of spare parts.**

**The project follows a UNIDO survey and is in line with its recommendations.**



## Gov't is mulling training center for mechanics

The Philippines will probably have the first center in Asia for training mechanics, operators and supervisory personnel for heavy road construction, a u t o motive, transport and agricultural equipment and machinery.

The request is now being considered by the Presidential Economic Staff and the National Economic Council and will be submitted to UNDP for approval after review and approval of the UNDP Special Fund's country program.

The need for upgrading skills of technical personnel and for regular training arose from the growing demand of heavy construction and transport equipment, on the one hand and the scarcity of qualified people on the other.

The urgent need for regular training at all levels of technical and managerial personnel has been highlighted in the UNIDO report prepared by Karl H. Oberhuber, UNDP consultant to the Board of Investments on heavy equipment and road construction, in his country-wide survey on existing equipment depots and workshops.

Along with training, the center will serve the needs in many other ways, not only for public services but also for private enterprises throughout the country.

The center will look extensively into the possibility of manufacturing spare parts, machine components and some plant machinery which are currently being imported.

According to Oberhuber, poor spare parts supply, limitation of funds and inadequate training are the most serious handicaps under which the workshops operate so that their output is considerably limited. Oberhuber said the center will be equipped with the most modern machinery and facilities for performing all kinds of repair and overhaul for heavy equipment and heavy diesel engines.

Oberhuber expressed confidence that the center will start operating in the second half of 1972. The center will probably be located close to Greater Manila.

BOARD OF INVESTMENTS

MEMORANDUM

TO : Mr. Karl H. Oberhuber

FROM : The Chairman

DATE : July 19, 1971

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Thank you for the opportunity to comment on the draft of request for UNDP/SF assistance for Technical Centre for Heavy Earth-Moving, Road Construction, Transport, Automotive and Industrial Equipment.

It is my understanding that the Centre would be concerned primarily with equipment involved in the construction of infrastructure projects. In order to make this clear, I would suggest that "Automotive and Industrial" categories be deleted from the proposed name.

As a further suggestion, consideration might be given to having the Philippine National Railways (PNR) and the National Ship-yards and Steel Corporation (NASSCO) designated as agencies with which the Centre would closely cooperate. Both these agencies are understood to have fabrication and repair facilities, which may be utilized for spare parts manufacture and/or repair of heavy equipment. In addition, the PNR also suffers from inadequate maintenance of its own equipment, and might benefit from having technical assistance in this line.

I would be happy to provide a letter of introduction to the Administrator, Office of Economic Coordination, if you should wish to explore the possible participation of NASSCO and PNR in the Centre's activities.

  
VICENTE I. PATERNO

BOARD OF INVESTMENTS

MEMORANDUM

TO : MR. KARL H. CHERUBER  
UNIDO Consultant

FROM : THE CHAIRMAN

DATE : OCTOBER 15, 1971

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During our discussion today with respect to the suggested programme for spare parts and machine components, it was agreed that the following actions are required:

(1) The provision of assistance by your goodself to the Department of Public Works to assist in a survey and inventory of government equipment and selecting those which can be economically repaired and rehabilitated, as well as the establishment of an effective repair and rehabilitation programme, including preventive maintenance.

(2) Assistance to the government agencies concerned in obtaining the assistance and support from developed countries and UN bodies for the spare parts and machine components manufacturing programme and possible regional cooperation.

I have advised you that I shall make representations with the Secretary of Public Works and other agencies of the governed concerned with this matter to institute the necessary arrangements so that this important matter can be attended to immediately.

I shall also suggest to the Secretary of Public Works that with respect to the repair and maintenance programme for government equipment, a new UNIDO mission be requested starting in February, 1972 to conduct the work that you will start and that it would probably be more efficient and effective if you were specifically requested to carry out this programme.

*Vicente J. Paterno*  
VICENTE T. PATERNO

Draft Only

**Chairman Paterno**

Minutes of my consultations with (1) the Secretary of the Department of Public Works, David M. Corson, (2) the Commissioner of the Bureau of Public Highways, (3) the Chairman, Board of Investments, Vicente T. Paterno, and (4) Dr. Antonio T. Arizabal, Director, Metals and Mining Department.

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The steadily growing demand for spare parts and the scarcity of their supply considerably affects the development process of the nation and restrains the implementation of vital projects. Therefore, we urge to the Board of Investments to initiate a programme for the domestic manufacture of spare parts.

It is understood that the spare part programme has to be studied, prepared and implemented by concerted actions of all those who need spare parts.

It is furthermore understood that the spare part programme must go on in hand and coincide with the inauguration of an effective preventive maintenance system.

This thinking led to initial discussions with the above indicated authorities.

The minutes are as follows:

- (1) Dr. Antonio T. Arizabal, Director of the Board's Metals and Mining Department and Director of the Metal Industry Development Center (MIDC) ✓ pointed out that the MIDC's facilities could be made

✓ MIDC is a UNDP (SF) sponsored project to assist the metal industry with technical advisory services and management and technical training and providing the government with guidance for policy formulation in the metals industry sector. UNDP input for 1972 and 1973 amounts to US\$200,000. The Government contribution is not yet fixed.

available for implementation, practical experiments and essays for the manufacturing of spare parts, especially of those that require sophisticated casting or which require special treatment. (The MIDC itself will not generate spare part requirements. This will be done by the local industry). Dr. Anzabal participated in the meeting with the Secretary representing the Government of MIDC.

(2) Secretary of the Government of the UNIC should be requested to provide as soon as possible details of its repair and maintenance program, the services of two experts and charged Army, Antonio B. Escalante, Head Executive Assistant, to make the proper arrangements.

(a) The services of an expert in spare parts to perform the following duties:

- (i) to assist in inventorying and identifying the spare part requirements and in setting up spare part lists, determining those that can be economically manufactured and to assist in the acquisition of those that have yet to be imported.
- (ii) to assist in conducting practical experiments and essays and in selecting raw materials, casting, machining and heat treatment by using the MIDC's facilities and testing equipment, and
- (iii) advise local manufacturers of spare parts and arrange for obtaining technical assistance, support and, if necessary and possible, licenses from developed countries.

(b) The services of an expert in heavy earth-moving, road-building and transport equipment to perform the following duties:

- (i) to assist in surveying and inventorying the national equipment and selecting those that can be economically repaired and rehabilitated.

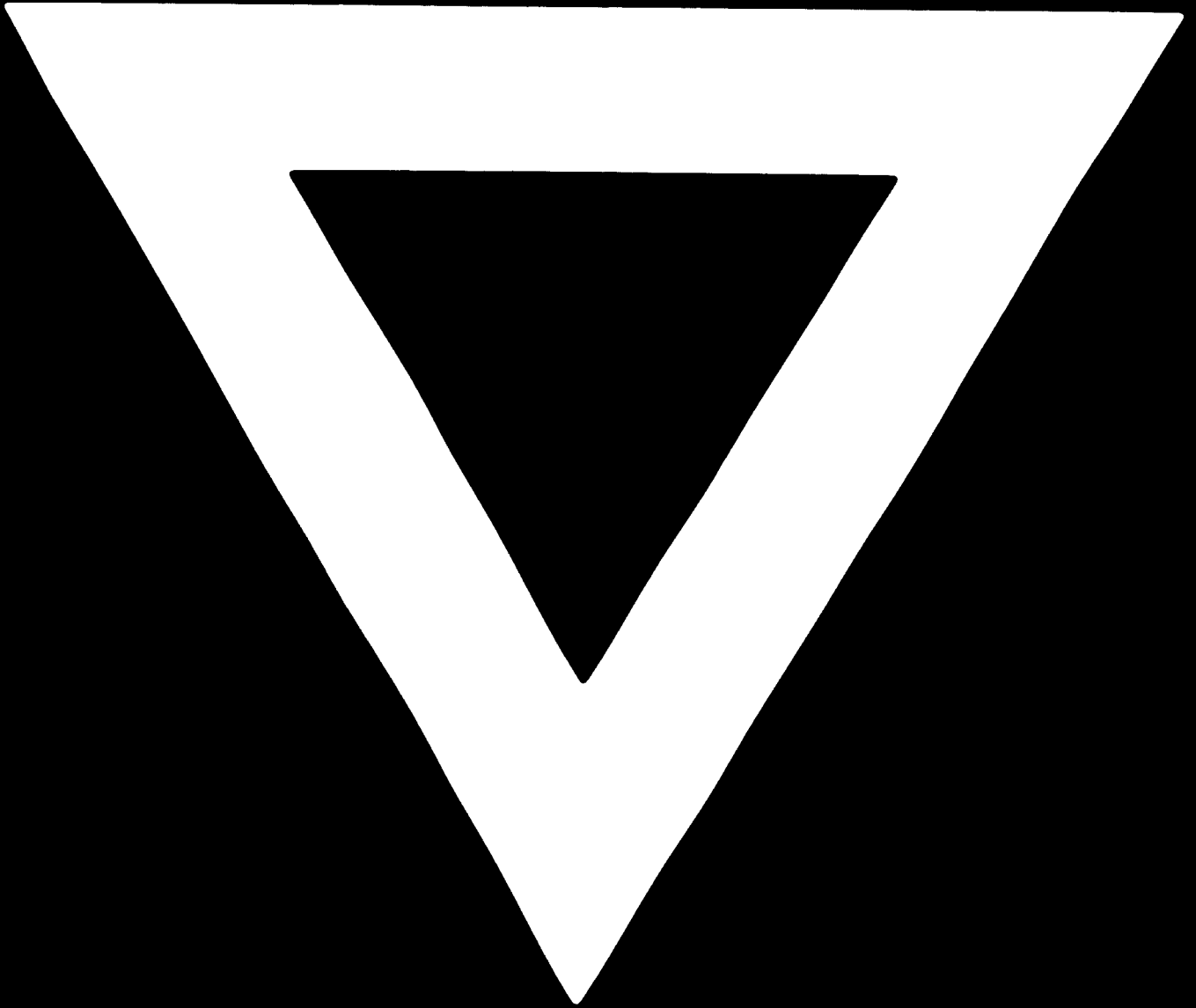
- (ii) to assist in establishing and implementing an effective repair and rehabilitation programme as well as an effective preventive maintenance scheme.
  - (iii) to assist in making arrangements for the training of mechanics and operators and for obtaining assistance and support from other UN bodies (ILO, ICAFE, etc.) and developed countries.
  - (iv) to assist in reviewing the organizational structure and to make recommendations for reorganization.
- (3) The two experts should act as one team, the spare part expert would preferably be assigned with the Metal Industry Development Centre (MIDC) whereas the equipment expert with the Department of Public Works. Both the experts will closely cooperate with the Board of Investments, preferably with the Metals and Mining Department, and furnish the essential data to enable the Board to take appropriate measures for promoting and supporting the local spare part industry and for putting spare part items in the Investment Priorities Plans.
- (4) Talking about the UNIDO project proposal for establishing a Technical Centre for Heavy Earth-Moving, Road Building and Transport Equipment, the Commissioner of the Bureau of Public Highways pointed out that this would create a duplication of work. The World Bank group (composed of Metra & Sauti and Kampsax) has, according to him, started a work programme with similar objectives. A copy of the said work programme of Kampsax was then handed to me and is attached as annex 1. I explained the different characteristics of the two projects but it has to wait for whether and what action will be taken upon.

- (5) Chairman Paterno endorsed the proposals as well and will get in touch with the Secretary requesting him to make the formal requests to UNIDO. The Chairman agreed that my services would be made available, on request of the Secretary, for formulating the requests and the job descriptions for the two experts and for doing any preparatory work that might accelerate the start of the missions. The idea is to have these two experts early next year.
- (6) General agreement is reached on the fact that the long-term solution lies in a close regional co-operation of the countries of the Southeast Asia region. Whereas each individual country should develop and promote its own programme, the individual national programmes should be coordinated, involving the exchange of personnel, informations and experiences between the Board of Investments and the counterpart agencies in the other member countries of ASEAN.
- (7) UNIDO, in cooperation with ECAFE, might be jointly requested to undertake a regionwide survey and to prepare proposals and constructive recommendations on the possibilities and the extent of regional cooperation.
- (8) Some very large manufacturers of trucks, buses, tractors, automobiles and marine diesels got in touch with me expressing interest to cooperate and participate in joint regional ventures.

(9) I recommended that the Board of Investments and the respective agencies in the other ASEAN countries might establish Sections for Regional Cooperation and Coordination. Their heads should frequently meet and outline the frame for regional co-operation. Such a forum would be the right partner for discussions with local and foreign enterprises interested in regional ventures and for submitting recommendations to their respective governments.







**76. 02. 13**