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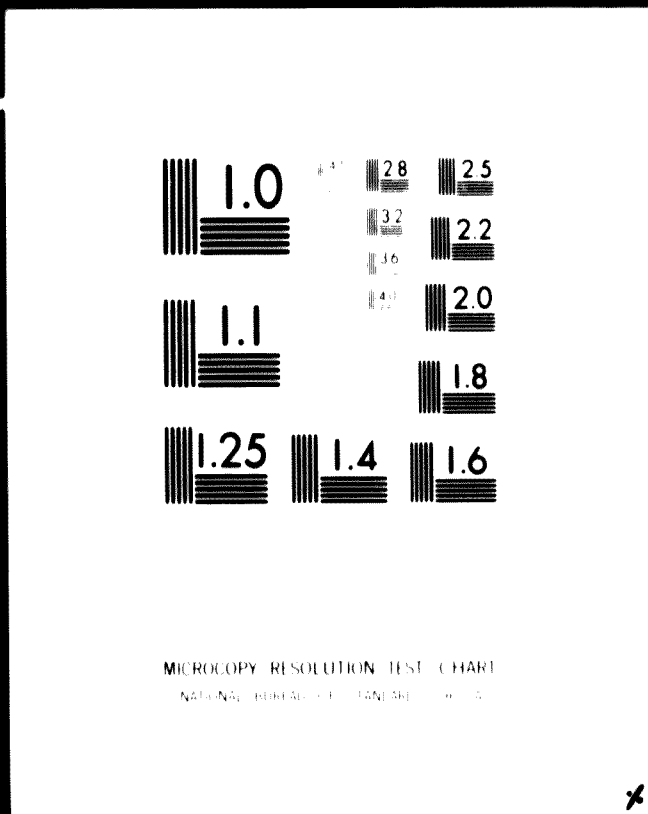
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United Nations Industrial Development Organization

PROJECT INFORMATION SHEET

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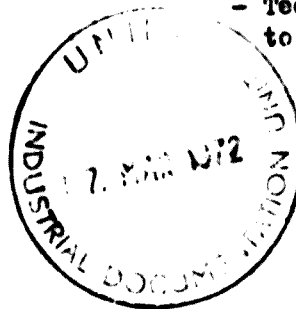
SECOND ASIAN MEETING TO
PROMOTE INDUSTRIAL PROJECTS^{1/}

SINGAPORE, 3-11 November 1971

01021

THICK WALL BI-METAL AND
TRI-METAL BEARINGS

COUNTRY	India
PROJECT	Expansion of manufacturing facilities for thick wall, bi-metal and tri-metal bearings
FOREIGN CONTRIBUTION REQUIRED	<ul style="list-style-type: none">- Equity- Loan/Suppliers Credit- Technical know-how (left open to negotiation)



^{1/} Sponsored by: The Economic Commission for Asia and the Far East (ECAFE)
The United Nations Industrial Development Organization (UNIDO).

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IMPORTANT NOTICE

The basic purpose of this meeting is to provide an Exchange or Market Place for the initiation of contacts on specific industrial projects between their proponents from the Asian countries and potential suppliers of capital, finance, equipment or know-how, as the case may be, from the industrialized countries.

This Project Information Sheet has been prepared as a basis for such contacts. Its purpose is not to present detailed information about the project but to provide the recipient with an outline sufficient to determine tentative interest in principle. Any further available information on the project will be furnished on request to interested parties at the Meeting.

Experience has shown that industrialists frequently prefer to carry out their own further investigations in detail into projects in which they are interested, but assistance from UNIDO in these matters can be rendered to the Asian country concerned on request.

This Information Sheet contains only the information supplied to UNIDO by the proponent of the Project. UNIDO can therefore take no responsibility for its accuracy.

THICK WALL BI-METAL AND
TRI-METAL BEARINGS

I. INTRODUCTION

. The project

This project is for the expansion of an existing and well-established plant to enable it to increase the variety and quality of bi-metal and tri-metal bearings.

. Foreign Contribution Required

The nature of foreign contribution will be left open for discussion between the proponent and foreign parties who may be interested in this project and it may be in the form of equity participation, loan and/or suppliers credit in addition to the supply of know-how on a royalty basis.

. Government Attitude

Since there is a very large market in India for bearings and allied products in such field as dockyards, railways, automobiles, tractors, compressors and diesel engines, the Government of India puts emphasis on the manufacture of bi-metal and tri-metal bearings. At the same time the Government gives strong protection to local manufacture by prohibition of imports and issuance of its letter of intent to each increase of production with an allocated productive capacity in order to prevent over-production by the local manufacturers.

II. COMMERCIAL EFFECTS

- There is a very large market in India for bearings and allied products in such fields as dockyards, railways, automobiles, tractors, compressors and diesel engines.
- So far the proponent company have concentrated on bi-metal bearings for diesel engines and automotive applications. In the field of heavy bearings, they have concentrated on re-metalling and to a smaller extent, on manufacturing new bearings for replacements

or new equipment according to original designs. This work covers refiner bearings, power station bearings for generators, cross heads, cross head bearings, traction motor bearings and self-aligning bearings.

- Over the years they have developed many hundreds of types of items and they are being supplied to several original equipment manufacturers, and to the replacement market. They also supply specialized items to industry, the railways and defence organizations.
- It has been estimated that the domestic demand for bi-metal bearings is in the region of Rs. 60 to 80 million (\$ 10 to 12 million approximately). This estimate is restricted to the demand for automotive type of applications; the demand for heavy duty bearings cannot be estimated with any degree of accuracy just now, but it is certainly very large and steadily increasing.
- Current sales are around Rs. 6 million per annum, on a one shift basis. This is expected to increase to Rs. 30 million once the projected expansion has taken place.

III. OTHER RELEVANT INFORMATION

a) The Proponent

The proponent of the project is:

Fr. R.V. Madhavi
Managing Director
Gleitlager (India) Pvt. Ltd.
Manu Mansion
16 Old Customs House Road
Worli, Bombay -4

The proponents of the project - Gleitlager (India) Pvt. Ltd. - have been producing thick wall bi-metal and tri-metal bearings for the domestic market since 1955. Their factory was started in 1962 in technical collaboration with Gleitlagerfabrik and Metallgiesserei Herzberg, G.m.H. West Germany who also invested Rs. 100,000 in the equity of the company. This collaboration agreement expired in 1967 and has not been renewed.

The German collaborators' set-up at home is rather small, and their two chief technicians who were responsible for the setting-up and initial running of the Indian plant died in an air-crash some time ago. As a result, the Indian company found that these collaborators are **not now** in a position to assist them in the expansion they contemplate and for which they have obtained a letter of intent from the Government of India. In view of this they are seeking the assistance and collaboration of **reputable** manufacturers of bearings abroad who have already achieved a high standard of excellence on their own and who are in a position to give the local company the know-how and the design of specialised equipment required for improving the quality of their products and expanding their range.

b) Existing Facilities and Activities

The present manufacturing activities of the proponent company are as follows:

- Sleeve bearings and bushes for use in various types of internal combustion engines, compressors etc. wherever thick wall application is required. The manufacturing process consists of the centrifugal bonding of the bearing layer inside the shell produced from (mainly imported) seamless steel pipes. By this process about 3000 bearings are produced per month on a single-shift basis.
- A large range of non-ferrous bushes from cast bush pipes made in own foundry. Average monthly production of these is 8000 bushes on a single shift basis.
- Various types of heavy bearings for use in larger types of internal combustion engines, and specialised bearings used in process machinery and chemical plants. Due to lack of heavy equipment these items are limited to those weighing around 1000 kgs.
- Re-retelling and repair of refiner bearings, power stations, bearings for generators, cross heads, cross head bearings traction motor bearings, self-aligning bearings etc.

In the above fields the proponents have a good reputation and their brand name "GHI" is well-known in Indian industrial circles.

They have a modern non-ferrous foundry for the manufacture of all types of sand and centrifugal castings. All non-ferrous requirements of bearing shells and lining material are manufactured in their own foundry giving them complete control over quality. They also make specialised-application centrifugal castings in the range of 50 to 600 C.D. up to 1500 C.D. and lengths of 500 mm. They are made in phosphor bronze, tin bronze, leaded bronze, aluminium tin, aluminium bronze, manganese bronze etc.

c) Desired Expansion

Although the proponents have succeeded in developing a large number of items and obtaining their acceptance in the Indian market, they are not satisfied with the excellence of their products. They wish to improve their quality to bring it up to international standards and their range of products in order to be able to supply more areas in the domestic market and possibly enter the export market.

To achieve this they expect to install additional machines and also procure know-how and technical assistance from a reputable foreign manufacturer of bearings who has achieved a high standard of excellence in their production.

For this purpose they have been issued a letter of intent by the Government of India for the expansion of their existing unit to manufacture 1 million sets of thick-walled bearings and bushes annually.

d) Financial

The proponents are a private limited company with an issued capital of Rs. 2.7 million (approx. \$ 370,000). Their current sales are around Rs. 6 million per annum. It is expected that sales will increase to Rs. 30 million per annum once the proposed expansion has been completed.

The finance needed for the expansion programme including foreign exchange costs will be raised locally through an increase in equity and borrowings from development and commercial banks. However, arrangements may be made to receive financial participation from the foreign collaborator by way of equity, loan or suppliers' credit as part of an over-all package.

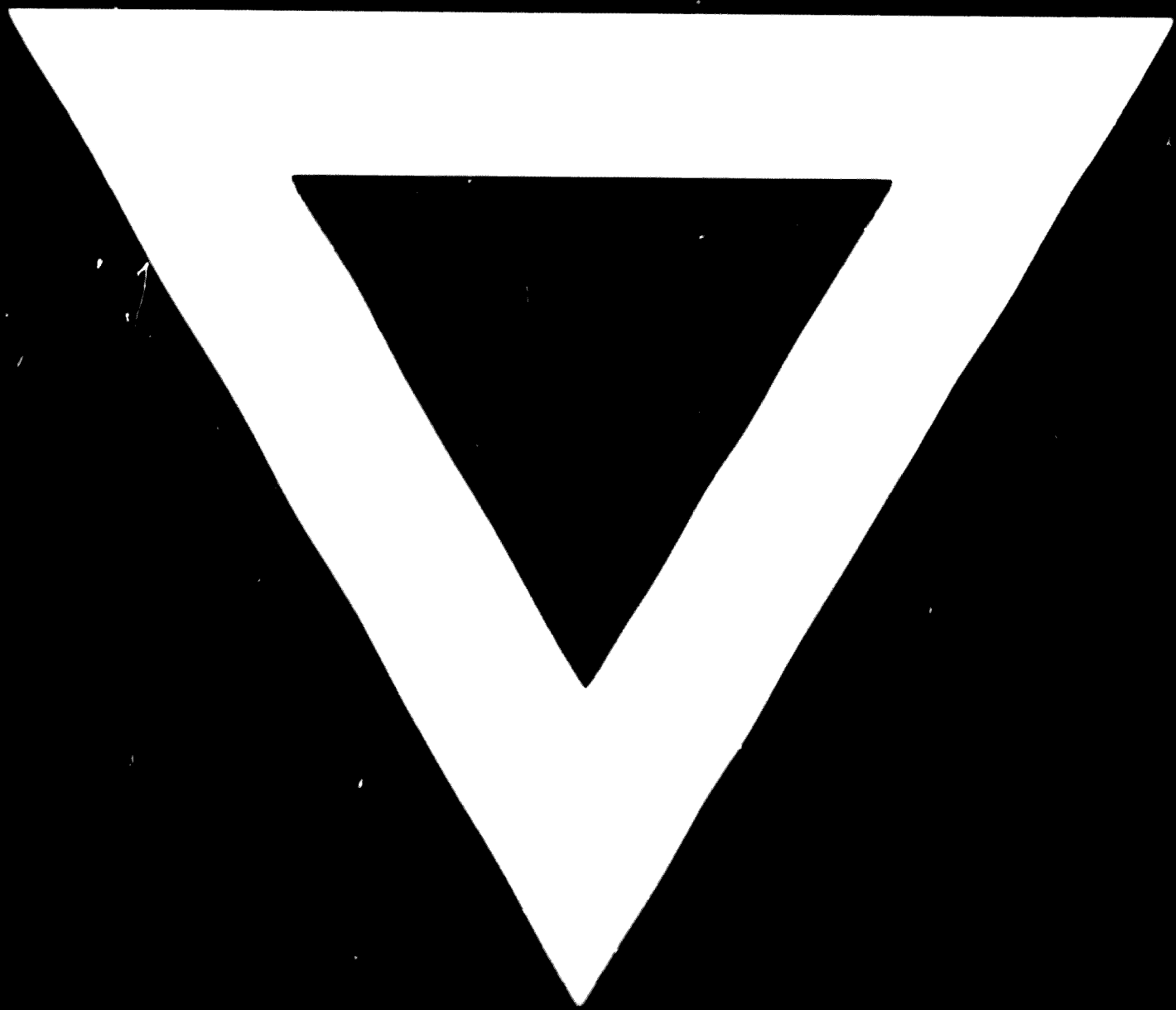
e) The Nature of Collaboration

The nature of collaboration has been left open for discussion between the parties concerned, and it may take the form of equity participation, loan and suppliers' credit in addition to the supply of know-how on a royalty basis.



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