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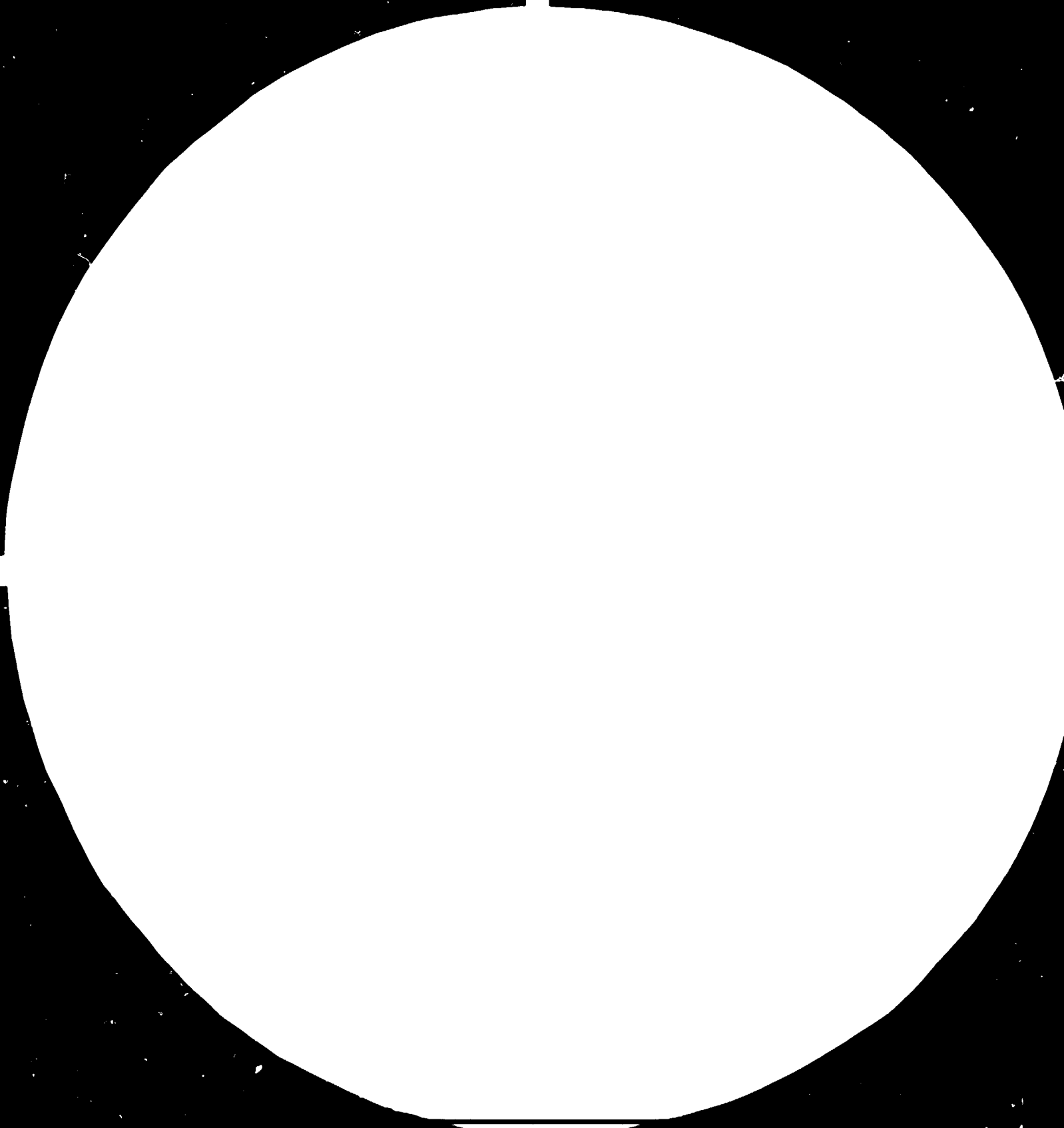
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PLANT LEVEL CO-OPERATION FOR THE TRANSFER OF TECHNOLOGY TO  
SMALL SCALE INDUSTRIES WITH PARTICULAR REFERENCE TO THE METAL  
WORKING AND LIGHT ENGINEERING INDUSTRY COMPANIES IN SWEDEN -  
EGYPT, INDIA, KENYA, SRI LANKA.

Stockholm, Sweden

December 15, 1983

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## 1 BACKGROUND AND JUSTIFICATION OF THE PROJECT

### 1.1 UNIDO'S MOTIVES

The motive of the project is best described by quoting from the UNIDO project proposal, dated in January, 1980.

In this report, it is mentioned that the development of Small Scale Industry in developing countries is important in order to achieve a well balanced economic growth in urban and rural areas and to strengthen indigenous technologies and managerial capabilities for more self-reliance.

It is also noted, that small enterprises in developed countries may prove to be exemplary partners for co-operation with equivalent enterprises in developing countries, whereby they can provide appropriate technologies required for accelerating the industrialization process in such countries.

Quote: "It is within this frame of understanding that this project for co-operation at plant level is launched with the aim of establishing industrial and economic co-operation between small enterprises in Sweden and similar enterprises in selected developing countries on the basis of equitable and mutually beneficial terms. For this first program, it is proposed that it will be restricted to two industrial branches, namely Metal Working and Light Engineering Industries. This will ensure greater impact as well as to check various aspects of the program before contemplating other future programs. For the same reason it is also proposed that this program covers only one developed country (in this case Sweden) and four developing countries, namely Egypt, India (state of Karnataka, Andhra

Pradesh and Tamil Nadu), Kenya and Sri Lanka. The choice of Sweden was made due to its long-standing experience in the metal working industry and the fairly large number of small enterprises actively involved in this sector. The developing countries were selected among those countries which have the potential capabilities for the development of the Metal Working and Light Engineering Industries, particularly at the small enterprise level and whose governments have accorded priority to these sectors."

## 1.2 UNIDO'S IMMEDIATE OBJECTIVES

In the project proposal, quoted above, it is also stated that this project is part of UNIDO's programme for the establishment of rational and operational mechanisms for accelerating the flow of technology for companies in the Small Industry Sector from developed to developing countries.

Among the immediate objectives for the project, the following can be noted:

- o The creation of a mechanism for the transfer of technology on ..... the basis of technological and economic co-operation between small industrial enterprises in Sweden and similar enterprises and organizations in Egypt, India, Kenya and Sri Lanka. The modes for co-operation between the participating enterprises may take forms such as technical co-operation agreements, co-production, subcontracting and licences, including supporting elements, i.e. financing, training, management, marketing, etc.
  
- o The provision of technologies appropriate for Small Scale Industries ..... , thus contributing to increased efficiency in their operation, improved product quality and widening of product range.



- o Adaptation of processes offered by the small industries in Sweden to small scale enterprises in ..... for production in national markets and for anticipated export with due regard to aspects of better utilization of indigenous raw materials, labour and other local conditions prevailing in the developing country concerned.
- o To strengthen the capabilities of Small Scale Industry development and financing institutions in the participating developing countries as intermediates for technology transfer between small industries in their respective countries and sources of technologies abroad.

### 1.3 OUTPUT OF THE PROJECT

In the UNIDO project proposal, it is said that "the project is estimated to provide 10 - 15 viable proposals and/or agreements on a transfer of specific technologies in the sector of Metal Working and Light Engineering Industries from small enterprises in Sweden to their respective partner enterprises in Egypt, India, Kenya and Sri Lanka".

### 1.4 FINANCING OF THE PROJECT

This project has been financed by UNIDO, using funds provided to UNIDO for the purpose by the Swedish International Development Agency, SIDA.

2 ORGANIZATION OF THE PROJECT

2.1 CO-ORDINATING AGENCIES

From the UNIDO project proposal, January, 1980, where this technology transfer project is originally outlined, we quote:

"In implementing this project UNIDO will endeavour to maximize the utilization of existing institutional infrastructure of the participating developing countries, such as small industry development organizations. In each country, one of these institutions will be selected as a co-ordinator for activities."

In the four participating developing countries, UNIDO decided that the following organizations should be appointed co-ordinating agencies:

**Egypt**

Engineering and Industry Design Development Centre - EIDDC,  
Cairo

**Kenya**

Ministry of Industry,  
Nairobi

**India**

Central Government  
Ministry of Industrial Development,  
New Dehli

State of Andhra Pradesh  
Andhra Pradesh Small Scale Industrial Development Co-operation Ltd.,  
Hyderabad

**State of Karnataka**

Karnataka State Small Scale Industries Development Co-operation Ltd.,  
Bangalore

**State of Tamil Nadu**

Directorate of Industries, Government of Tamil Nadu,  
Madras

**Sri Lanka**

Industrial Development Board,  
Moratuwa

**Sweden**

Until 1981: Expolaris AB, Skellefteå

From 1982: Scandiaconsult AB, Malmö and Stockholm

A full presentation of the co-ordinating agencies, their addresses and names of representatives, as per June, 1982, are given in Annex 15.

During the whole project, the overall administration of the project has been handled by UNIDO's Department for Technical Development and Technology Transfer. UNIDO officer responsible for this project has been Mr. Wafa Kamel with assistance from Mr. F. M. Külür.

From the initial start-up of this project, which took place during the later part of 1980, until the end of 1981, Expolaris AB was the Swedish co-ordinating agency. Expolaris is an organization primarily promoting export of products produced by manufacturers in northern Sweden. This organization had offered its co-ordinating services free of charge to UNIDO. During Expolaris time as co-ordinating agency, a mission with representatives of Expolaris and UNIDO was sent to the four developing countries in order to visit potential technology recipient companies in these countries.

From February, 1982, Scandiaconsult AB, a major technical consultant company in Sweden, replaced Expolaris as the Swedish co-ordinating agency.

During the project, formal and informal contacts have also been taken with SIDA, field officers within United Nations' Development Program, UNDP, and SIDFA.

## 2.2 INTERNAL COMMUNICATION

The major part of all correspondence between co-ordinating agencies and the participating companies has been cleared through UNIDO headquarter in Vienna until the Group visit meeting held in Sweden in April, 1983.

3 SCANDIACONSULT'S PROJECT ADMINISTRATION

A step by step presentation

3.1 EXPOLARIS MISSION REPORTS

As earlier mentioned, the technology transfer project had been going on since 1981 (1980)? with Expolaris as the Swedish co-ordinating agency. During spring 1981, two missions had been organized to the participating developing countries. The aim of these two missions was to identify companies in the respective countries, who could be interested in co-operating with and receiving technology from a collaboration partner in Sweden. These missions had primarily an identification and explanatory purpose. Consequently, a very large number of companies and official institutions were visited.

One of the missions went to Egypt and Kenya. Expolaris representative was Mr Bruno Thorfve. UNIDO representative was Mr Ossama A. El-Kholy. The other mission went to India and Sri Lanka. Expolaris representative was Mr Per G. Hånell with Mr Barry Crowston and Mr Johan Cramwinkel as UNIDO representatives. Both these missions documented their findings in special mission reports.

When Scandiaconsult, represented by Mr Thomas Grahn and Mr L. Håkan Sandlund, came into the project in February 1982, we started with studying the reports from the Expolaris' missions. We also met briefly with both Mr Hånell and Mr Thorfve, to have their comments, impressions and suggestions.

From Mr Hånell, who had visited India and Sri Lanka, we got a rather extensive documentation with descriptions of the companies he had visited. From Mr Thorfve, who had visited Kenya and Egypt, we got almost no documentation at all except for the very brief reports he had filed with UNIDO.

### 3.2 SCANDIACONSULT'S ACTIVITY PLANNING

After studying the information received through documentation and interviews with Expolaris personnel, we immediately understood that we should be forced to concentrate on fewer than the 103 companies visited by the Expolaris missions. (Of these 103, 37 were in India, 22 in Sri Lanka, 30 in Kenya and 14 in Egypt).

It was quite clear that a lot of the companies visited by the Expolaris mission were so small that they were really not capable of providing the management resources necessary to handle a future co-operation with a Swedish counterpart.

In order to improve Scandiaconsult's first-hand knowledge of those foreign companies, who were best suited to handle a future co-operation of the kind that this project aimed at, Scandiaconsult decided to recommend UNIDO to launch a second mission to the involved countries. During such a new mission, a deeper analysis should be made of the most promising companies already studied by the Expolaris mission. We should also give the foreign co-ordinating agency a chance to substitute some of the already visited companies, which either were too small or not working within the branches of interest to this project.

We also understood that some of the companies, visited by Expolaris, had been brought into the project not because of their deep interest in acquiring new technology through collaboration with a Swedish partner but because the local co-ordinating agency thought it could be a company suitable for some kind of foreign assistance. This fact told us that we must put a much stronger emphasis on the companies' future plans and managerial capacity. This kind of information was very hard to get from the Expolaris' sources. Therefore, our recommendation to UNIDO to organize a second mission visiting the same countries and selected companies a second time, was very firm.

### 3.3 COMPANY SELECTION PROCEDURE

After getting approval from UNIDO to start planning for another joint UNIDO-Scandiaconsult mission to the four countries, and after having cleared with UNIDO that we should concentrate on those companies who could be anticipated to have the necessary management and financial resources, we started the selection of companies to be further analysed during the mission.

The following were minimum requirements if the company should be represented among those selected for further analysis:

- o clearly defined future plans
- o management capable of handling international business relations
- o sound financial situation
- o specified technology needs

Once we had decided what type of company profile we were looking for, we screened all the 103 companies visited by previous Expolaris mission and consulted with Mr Hånell and Mr Thorfve from Expolaris and with UNIDO. Then some 50 companies, which we thought could be worthwhile to concentrate on in the future, were selected.

A new questionnaire, constructed jointly by Scandiaconsult and UNIDO, was worked out in order to be used as an interview guide during the forthcoming mission.

#### 3.4 PLANNING OF NEW MISSION

All planning of the new joint UNIDO-Scandiaconsult mission in May - June, 1982, was done by UNIDO. UNIDO informed the local co-ordinating agencies that another mission was going to be launched and also the reason for the repeated mission.

Scandiaconsult informed UNIDO what companies we wanted to visit once again. We also strongly stressed that we wanted at least 2 hours with each of the companies and that we also wanted to meet with the top management.

Via letter and telex, details of the new mission were communicated to the co-ordinating agencies and all mission planning was carried out by UNIDO in co-operation with these co-ordinating agencies.

#### 3.5 PRELIMINARY MATCHING BEFORE NEW MISSION

According to the contract between Scandiaconsult and UNIDO, Scandiaconsult had to work out a preliminary matching list. Based on available facts we had from Expolaris' documents, Scandiaconsult should try to find potential co-operation partners in Sweden. The idea was that these Swedish potential partners should be presented and discussed during the forthcoming mission.

Scandiaconsult also tried to undertake such a preliminary matching. See below under 4.5.



### 3.6 SCANDIACONSULT-UNIDO MISSION

During May 14 until June 19, 1982, a second mission visited Egypt, Kenya, India and Sri Lanka. Mission members were Mr F. Mithat Külür from UNIDO and Mr Thomas Grahn from Scandiaconsult. A comprehensive report from the mission, presenting background information, itinerary, memos from meetings with official representatives and companies, etc, has been written by Scandiaconsult, dated August 6, 1982. For details regarding this mission, we refer to that report. The result of the mission is presented in summary below under 4.6.

### 3.7 MATCHING PROCESS AFTER MISSION

Immediately after returning from the mission, reports with details on visited companies were prepared by Scandiaconsult and UNIDO. Based on this information and attached company presentations, brochures, etc, we started a procedure aiming at reducing the 46 visited companies to around 20 projects on which we intended to primarily concentrate our matching endeavours.

This evaluation and selection process was undertaken jointly by Scandiaconsult's personnel and Mr Külür at UNIDO. We set up the following criteria for the selection of the companies/projects to be matched with Swedish collaboration partners:

- o The needs of the recipient enterprise should be focused.
- o The recipient enterprise is a manufacturing industry.
- o The management of the recipient enterprise has expressed an intention to develop the company in a certain direction.

- o The direction of desired development is within or close to the present field of operation so that there is an experience of the market situation and similar technical problems already existing within the recipient enterprise.
- o There are requirements of specific technical assistance which makes it possible to find a Swedish partner with the appropriate technology.
- o The recipient company and its management have the capability to execute the development project.
- o It is expected that there is a possibility to find a suitable Swedish counterpart with the appropriate technology.
- o It is expected that there is a possibility to make an agreement with conditions acceptable to both parties.

With those criteria in mind, the selection procedure started. After ranking the 46 visited companies in A, B and C-grades, where A stated that almost all of the above mentioned criteria were fulfilled, we found that 18 companies had been ranked A.

At that time, a joint decision was taken between Scandiaconsult and UNIDO to concentrate our future resources in trying to find suitable collaboration partners for these 18 companies. If some of the 18 turned out to be very difficult to match with a Swedish counterpart, this company should be substituted with a company ranked B.

Certain endeavours were done in order to secure proper distribution of the selected companies between the four participating countries. Unfortunately, it soon turned out that the Indian companies tended to be over-represented. This fact will further be commented on below.

For each of the selected companies, a matching form was constructed. On that form, all important details of the foreign company were listed. Through personal contacts, official branch information material from Swedish companies, etc, we gathered information on potential co-operation partners in Sweden. These companies and details on them were listed on the matching form and each and every company was thereafter contacted by Scandiaconsult.

During this initial contact with the Swedish company, we gave a brief presentation of the overall project aim, UNIDO's role and Scandiaconsult's position as co-ordinating agency in Sweden. The persons contacted at the Swedish companies were either the General Manager or a Marketing or Technical Director.

The initial personal contact was followed by a letter where we gave more information on both the project and the foreign company we had in mind as a potential co-operation partner. After giving the Swedish company a few weeks to think about our suggestions, the Swedish company was contacted again by Scandiaconsult. Frequently the Swedish company had additional questions and we tried to answer them, based on our knowledge about the foreign company.

During all contacts with Swedish companies, we emphasized that the basic idea behind the project was that we were trying to bring companies in contact with each other so that mutually beneficial business relations, involving transfer of technology from a Swedish company to a foreign company in a developing country, could be established. We were happy to note that this aim of the project was very much appreciated by the Swedish companies. As can be seen in the Case Reports, presented in Annex 1-14, in many cases the first (and hopefully also the best suited) Swedish company contacted also decided to continue with the project.

From the Swedish companies, who had been identified as potential co-operation partners, we requested a thorough company presentation and product information to be evaluated by us.

### 3.8 COLLABORATION PROPOSALS

Being in the possession of rather comprehensive information on both the foreign and the Swedish potential co-operation partners, we could start the process of outlining how the collaboration should be constructed in each project. This work was based upon our thorough knowledge of the foreign company and its wishes and intentions and on rather lengthy discussions with the Swedish companies.

Rather soon it turned out that it was one thing to create interest within the Swedish industry to get together with a foreign company and to start discussing a future co-operation of some kind, and yet another thing to be the third party who should in detail try to outline a co-operation agreement between two parties, whose representatives never had met each other and never had seen each others factories and/or products. Needless to say, the collaboration proposals we could draft had to be rather preliminary. We made special efforts to point out the technology, product and/or market areas to be especially covered in the forthcoming direct discussions between the companies and put slightly less emphasis on trying to outline, at this stage, the methods of implementing the possible future co-operation.

### 3.9 INTER-COMPANY CONTACTS

The collaboration proposal together with the brochures, etc., presenting the Swedish company, was then distributed to the potential collaboration partner in the developing country. This distribution was made through UNIDO in Vienna.

After receiving the proposal, the foreign company was supposed to review the information and indicate to UNIDO and Scandiaconsult whether the proposed collaboration partner seemed to be of interest. If so, the first meeting between the companies should take place during the Group visit planned to take place in Sweden in December 1982 and later postponed until April 1983.

### 3.10 GROUP VISIT

When the collaboration proposals had been distributed to the companies in the four participating countries, and these companies had accepted the proposed collaboration partner, the first organized meeting between personal representatives of the involved companies should take place at a Group visit to Sweden. This visit should be organized by Scandia-consult and UNIDO.

This Group visit meeting should be a forum for company representatives and representatives from the co-ordinating agencies to meet. This Group visit should constitute the end of the matching process and the beginning of the negotiating process on a company to company basis.

The programme for the meeting should not be too ambitious. It should be limited to an overall presentation of the UNIDO project, a short presentation of each participant and his organization and one or two speeches on various forms of collaboration and technology transfer agreements. After a formal programme during half a day or so, the company representatives should start the individual discussions.

Originally the Group visit was planned to take place during November - December 1982. Due to the problem of getting busy business people together at a certain date, and some other planning problems, the date for the Group visit was postponed until April 5 - 8, 1983.

The participation of company representatives and co-ordinating agencies representatives from the four developing countries at the Group visit was supported financially by UNIDO. The Swedish companies have not got any type of remuneration for their participation during this project. The project is based upon an expectation that the business interest shall be enough to motivate the companies to start a co-operation, where technology transfer will be an important element.

### 3.11 NEGOTIATION PROCESS

In the collaboration proposal worked out by Scandiaconsult, it was indicated what type of technology the foreign companies were interested in. The primary aim of the negotiations between the potential collaboration partners has been to find a field of mutual business interest. The whole idea behind this project is that the companies shall co-operate on normal business terms, thereby creating a "tube" through which the required technology can be transferred from the Swedish company to the foreign company. The ideal situation is thereby a deal where the technology transfer is a part of a more far-reaching business relation.

It certainly requires some time to build up the necessary information and trust between the involved parties, before this "technology tube" will be really efficient. Therefore, it should be acceptable with almost any kind of business deal between the involved companies since this constitutes a beginning of the trust building process.

Some of the negotiations (direct contacts) between the companies started already before the Group visit to Sweden. Most contacts were first taken directly between the companies after the Group visit, and a few remaining contacts were not taken until summer 1983 since the companies involved could not participate at the Group visit. Details of when negotiations started and the present status are given in Annex 1-14, where details of the collaboration projects are presented. Information regarding the negotiations and company contacts after the Group visit was gathered by Scandiaconsult through direct contacts with the involved Swedish companies and through letters and memos sent to Scandiaconsult from the foreign companies. These documents are also presented as sub-annex to the case reports in annex 1-14. Some of the negotiation results were presented to Scandiaconsult and UNIDO when representatives of the foreign companies passed through Malmö for a debriefing immediately after their visits to their Swedish collaboration partner during the Group visit April 5 - 8, 1983.

3.12 FINAL REPORT

According to Scandiaconsult's contract with UNIDO, our involvement in this project ends with the presentation to UNIDO of this final report.

In this report, we are presenting the way we have handled the project, our comments and suggestions on how a project like this can be improved and detailed reports on the 14 collaboration projects (cases) which were actively promoted by Scandiaconsult up to the Group visit.

4 PROJECT RESULT AND SCANDIACONSULT'S COMMENTS

4.1 EXPOLARIS MISSION REPORTS

As stated in 3.1 above, the two Expolaris missions visited very many companies within a short time. These brief company visits gave no room for collecting "dynamic" information such as company management capability, long term planning, relations to other companies and to governmental institutions, ability to raise necessary financial funds and governmental permits necessary to undertake expansion projects, etc. The absence of such information and the mere fact that it is always difficult to transfer impressions from one person to another made it clear to us, that a new mission for Scandiaconsult must be organized.

After studying some of the collaboration proposals worked out by Expolaris' personnel, we realized that a completely new working method must be elaborated by us. Expolaris had not done any rating of the foreign companies regarding their capability to handle a technology transfer venture and the matching process seemed to be based on the type of companies that was available in the northern region of Sweden where Expolaris is working. We realized, that in order to find a proper collaboration partner we could not limit the search to the most undeveloped region in Sweden. On the contrary, we were rather convinced that most of the future collaboration partners in Sweden were to be found in the southern and middle region. Thus, we did not find it worthwhile to continue to promote the collaboration proposals worked out by Expolaris.



#### 4.2 SCANDIACONSULT'S ACTIVITY PLANNING

In our contract with UNIDO, it was stated that we should base our work on the information available from Expolaris. Very soon this proved to be difficult for reasons earlier mentioned. Once we realized this, we asked ourselves if it would be worthwhile to try a working method where we both looked for Swedish small and medium-scale companies with interesting technology and at the same time selected (through a new mission) foreign companies with specified needs for new technology which hopefully could be provided by Swedish companies.

Since this project should focus on the needs of the foreign companies, we decided that we should not put ourselves in a position where we maybe would more act as "sales agents" for Swedish technology. The proper way, we said, is of course to investigate in detail specified needs of certain foreign companies and in particular investigate their motives for this expressed need, their capacity to receive the technology and especially the foreign companies' capacity to handle a transfer of technology through an agreement that should be based on normal business principles. We had to make it quite clear that when we select companies, we have to eliminate those only interested in some kind of foreign aid and concentrate on those that had motives and capacity to handle a business relation that hopefully shall go on for years. These insights led us to formulate the criteria list presented under 3.3.

#### 4.3 COMPANY SELECTION PROCEDURE

Once we had realized that a new mission with Scandiaconsult's personnel was necessary, and this had been confirmed by UNIDO, we started to select those foreign companies that should be visited once more. Together with Mr. Hånell, and Mr. Thorfve from Expolaris, we did a rating of the companies that they had visited. Now we concentrated on the capabilities mentioned under 4.2.

The Expolaris mission had visited some 100 companies. Given the budget resources available, we decided that the new mission should visit about 50 companies at the most so that we, after completion of the mission, could select about 20 companies. On these 20 foreign companies, we should primarily concentrate our efforts to find a suitable collaboration partner.

Selection of the 50 companies to be visited by the new joint UNIDO-Scandiaconsult mission was based on information available from Expolaris and UNIDO personnel. We ensured that these companies were working within light engineering och metal working industry, that they had a strong management and that they during the Expolaris mission had expressed specific technology needs. In selecting the companies to be visited again, we tried to distribute the 50 selected evenly over the four participating countries. Unfortunately, already at this stage of the project a slight overrepresentation for India occurred. The reason was primarily that the companies from Egypt, Kenya and Sri Lanka mostly were very small companies, whereas a lot of the Indian companies visited by Expolaris mission were medium-sized companies. With our new requirements on the project participants, it is therefore natural that India became overrepresented. In future projects of this kind, it is essential that the co-ordinating agencies are informed well in advance of the requirements of the participating companies. It is unfortunately not possible for us to comment here on the selection process for the companies that were visited by the Expolaris mission.

#### 4.4 PLANNING OF NEW MISSION

Once it was decided by Scandiaconsult, what companies we wanted to visit during the second mission, the planning of the mission started. Through UNIDO in Vienna, the co-ordinating agencies in the four participating countries were informed that a second mission should take place and what companies this mission wanted to visit. The co-ordinating agencies were informed on the missions' intended itinerary and were then asked to arrange the detailed programme with company visits, visits to official institutions, etc.

In the correspondence with the co-ordinating agencies, it was clearly stressed that enough time had to be allocated to each company visit. The mission needed at least two hours per company in order to cover all subjects of interest and to seek answers on all relevant questions.

#### 4.5 PRELIMINARY MATCHING BEFORE NEW MISSION

As mentioned earlier in this report, the contract between UNIDO and Scandiaconsult was based upon that we should be able to continue where Expolaris had finished its job as co-ordinating agency. This meant that Scandiaconsult should begin its assignment with matching foreign companies, already studied by Expolaris, with Swedish potential co-operation partners. This matching procedure should be followed by a new mission, during which the collaboration proposals, worked out by Scandiaconsult based on Expolaris information, should be presented and discussed with the foreign companies.

Since it was decided rather soon after Scandiaconsult's assignment as co-ordinating agency, that a new mission was needed in order to gather first-hand and more detailed company information, we suggested to UNIDO that the preliminary matching process should be postponed until

after the second mission. The reason for our suggestion was basically the fact that the information, on which Scandiaconsult should base its matching process, was not reliable. Thus, by contacting Swedish companies and trying to match them with a foreign company on which we had only second-hand and incomplete information, Scandiaconsult claimed that we had reasons to expect a rather negative reaction. We realized that in order to get the Swedish companies interested to allocate their resources to an investigation in the co-operation possibilities with a foreign company, the matching process undertaken by Scandiaconsult must involve quite a bit of "selling". This in turn requires that you have a very good knowledge of the "products" you are offering.

At this stage of the project, Scandiaconsult felt that we really did not have the necessary knowledge to undertake an effective matching ("selling") process. However, responsible UNIDO officers insisted that we should make a matching attempt. We did so and our endeavours resulted in 48 preliminary matching reports. These were presented in a special preliminary matching report, issued by Scandiaconsult and dated May 11, 1982.

These preliminary matching reports were distributed by UNIDO, through the co-ordinating agencies to the respective companies. Since a decision at that time had already been taken to send a second mission, the involved companies were informed that these preliminary matchings (preliminary collaboration proposals) should be discussed with the mission members during their forthcoming visit to the country.

Later it has been confirmed that these preliminary matchings in almost all of the 48 cases were based on incomplete or even misleading information. Therefore, the resources used for this preliminary matching were, to a large extent, wasted.

4.6 SCANDIACONSULT - UNIDO MISSION

This second mission to the four participating countries was done during May 14 - June 19, 1982.

The mission members, Mr. Thomas Grahn from Scandiaconsult and Mr. Mithat Külür, were well prepared from studying documentation from previous missions. They could therefore be more specific in discussions with the local co-ordinating agency representatives on how to best utilize the available time. Before the mission left Vienna, a detailed itinerary had been communicated to the involved co-ordinating agencies so that these could arrange company visits, etc.

During the mission, it turned out that frequent changes in the plan had to be done in order to secure that proper time was allocated to each visited company. Now it was more important to return with a thorough and reliable information on each company visited than seeing many companies and only get overall information.

It turned out, that of the around 50 companies visited by this second mission, the major part fulfilled the requirements we had set up for being included in the visit scheme. This fact ensured that we had almost 40 companies to choose among when we should start the matching process after the mission. Of these, we later focused on 18 (see 4.7).

Even though some of the representatives of foreign co-ordinating agencies and companies questioned the need for this second mission, we think all of them understood the need for Scandiaconsult both to have access to first-hand information on the involved companies and to get certain complementary information necessary for the matching process.

## 4.7 MATCHING PROCESS AFTER MISSION

The procedure for selecting the 18 companies which we decided to focus our matching resources on are presented under 3.7.

The selection of the 18 from the 46 possible foreign co-operation partners, that had been visited by the previous mission, was done jointly by Mr. Grahn and Mr. Külür. Here again, we had to use an A, B and C grading procedure in order to be able to concentrate our limited matching resources. We had decided that no more than 20 companies should be included in this priority group. After Mr. Grahn's and Mr. Külür's selection procedure it turned out that 18 companies were found to have an A grade.

These companies were:

<b>Egypt</b>	Tanta Motors Co., Tanta Egyptian Society for Soldering Supplies, Cairo
<b>Kenya</b>	Kenya Castings Ltd., Nairobi T. J. Cottingham & Partners Ltd., Nairobi Dynamic Engineering Ltd., Nairobi
<b>India</b>	Toolcraft, Bangalore Swarna Electricals, Bangalore Maini Precision Products Pvte. Ltd., Bangalore Sonalkar Tool Works, Harihar B. D. K. Valves Pvte. Ltd., Hubli Elmecca Works, Dharwad Fluid Systems Pvte. Ltd., Hyderabad Indo Hacks Ltd., Hyderabad Industrial Valves & Equipment Pvte. Ltd., Madras Systems, Bangalore
<b>Sri Lanka</b>	Jinasena Ltd., Colombo Alpex Engineering and Trading Co., Colombo D. Samson Industries Ltd., Colombo

These companies were all regarded to be qualified for handling a technology transfer based on a normal business relation with a Swedish counterpart.

Out of these 18 companies, it turned out during the matching process that it was unfortunately not possible to find co-operation partners for the following companies:

- o Kenya Castings Ltd., Nairobi, Kenya
- o Industrial Valves and Equipment Pvt. Ltd., Madras, India
- o Jinasena Ltd., Colombo, Sri Lanka
- o D. Samson Industries Ltd., Colombo, Sri Lanka

The reasons for our failure to find collaboration partners in Sweden for these four companies are various. For one of the companies, it turned out that they had an agent in Sweden and the existing agent agreement made it complicated to construct any other business relation than a straight purchase of technology. For two of the other companies, working in the castings and valves manufacturing business, we failed to find interested partners despite serious efforts. One after the other, the contacted Swedish companies declined to continue the project.

Consequently, 14 companies remained as potential co-operation partners. For these 14, Scandiaconsult worked out detailed collaboration proposals. The matching procedure was primarily based on Scandiaconsult's knowledge of the branches and industries in question. We also used business associates with extensive knowledge of the various branches. During this matching process, most of the contacts taken by Scandiaconsult were done by telephone or mail. After identification of Swedish candidate co-operation partners, personal visits to these companies were done more frequently.

During these matching contacts, a clear majority of the contacted companies showed great interest in the project and the top-managers allocated necessary time to get and give information. Many companies voluntarily expressed their satisfaction with the fact that an organization like UNIDO tried to create technology transfer through attempting to build business relations between a company in possession of the technology in question and a company in a country where need for such technology exists. Many companies stated that they could never afford on their own to seek business relations of the kind now proposed to them through this UNIDO project. When the potential co-operation partner was identified and presented to them by UNIDO, it was easier for them to allocate the limited resources necessary to investigate our proposals.

#### 4.8 COLLABORATION PROPOSALS

Since we failed to find collaboration partners for four out of the 18 companies we had focused our matching activities on, we were left with 14 foreign companies, whom we had been able to match with a Swedish counterpart. During the formulation of the collaboration proposals, we have, unfortunately, received information from four Swedish companies that they, for various reasons, cannot continue with the project. In two of these cases it has been possible to find substituting Swedish companies. We have therefore changed the collaboration proposal to include the new co-operation partner.

For two of the 14 companies, the intended co-operation partner has pulled out and it has been impossible for us to find a substituting company. Thus, we have a total of 12 collaboration proposals where the companies concerned are in direct contact with each other and negotiations and discussions on future co-operation and technology transfer are going on.



These 12 viable co-operation projects, together with the two projects where the Swedish partner has declined to continue, are presented in the form of collaboration proposals in annex 1-14 to this report. In sub-annex to all these case-reports, information is given about the companies concerned. Copies of relevant correspondence are attached. A complete list of the company names and addresses and contact persons at each company is presented for each collaboration proposal/case in annex No. 0.

All the collaboration proposals are more or less unique, but there are three main types:

- o Licence agreements
- o Know-how transfer agreements
- o Joint-venture agreements

Within these main types of agreements, there are also elements such as training, special equipment purchase, buy-back agreements, sub-contracting agreements, agency agreements, etc.

We have made an attempt to classify the type of collaboration agreement involved in the 14 cases and the result is presented below:

Case Report No.	Foreign company	Swedish company	Licence	Know-how	Joint Venture	Training	Machinery
1	Toolcraft	Storebro			x		
2	Maini Prec. Prod.	Ullman		x		x	
3	Sonalkar	Skand. Chuckfabrik		x		x	x
4	BDK Valves	Somas	x				
5	Elmeca	Lofab	x				
6	Indo Hacks	Westlings		x		x	
7	Alpex	No-Ha			x	x	
8	Swarna	Backer		x		x	x
9	Dynamics	Kjällströms	x				
10	T. J. Cottingham	Linde-PML		x			
11	Tanta Motors Co.	Kjällströms	x				
12	Systems	Svedala	x				
13	D. Samson Ind.	Trelleborg *)		x		x	x
14	E. S. Soldering S.	Elgasvets *)		x			

\*) Swedish partner has withdrawn from the project (see 4.8).

#### 4.9 INTER-COMPANY CONTACTS

The collaboration proposals, worked out by Scandiaconsult, were distributed through UNIDO and the local co-ordinating agencies to the foreign companies for evaluation. This distribution was done gradually during autumn 1982 and the last collaboration proposals were sent in November, 1982.

After receiving these collaboration proposals, the involved companies all reacted positively. Some of them even took direct contact via letter, telex or even personal visits to the Swedish company immediately after that they learnt about which company in Sweden was selected as their potential collaboration partner. The project plan said that the first contact between the involved companies should take place at the planned Group visit to Sweden.

This immediate response and action from many companies indicates that the supporting project organizations (UNIDO and co-ordinating agencies) in projects like this must be working in a very flexible way so that a mutually created interest between the company in possession of technology and the recipient company can be immediately explored and the risk for loss of momentum will be minimized. In this project, the project plan did not foresee these spontaneous direct contacts before the group meeting and consequently we were not ready to handle them. There was also some confusion among the foreign companies, who wanted to get in touch with their Swedish counterpart, whether they should inform UNIDO in Vienna, co-ordinating agency in Sweden or both regarding their direct contacts.

## 4.10 GROUP VISIT

The second mission took place in May - June, 1982, and originally the Group visit bringing to Sweden representatives for the selected foreign companies and representatives for the co-ordinating agencies was scheduled to take place in early December, 1982. As the project work developed during summer and early autumn 1982, it was clear that a meeting in December was too early. First the date for the Group visit was postponed until early February, 1983. The reason was that Scandiaconsult's matching process and formulation of collaboration proposals had been slightly delayed. Later, the date for the Group visit was postponed another two months until early April, 1983. This delay was mainly caused by UNIDO administrative problems.

The last collaboration proposals were formulated in November, 1982, and the Group visit took place in April, 1983. During this half-year period (and for some companies, that knew about their collaboration partner earlier, an even longer period) Scandiaconsult had problems with explaining to the Swedish counterparts why they had to wait so long before they could meet with their partner. Some Swedish companies said, that since there had been no contact, they were convinced that the foreign company was not interested in the project. We did our best to explain that this was not necessarily true and stressed to the Swedish companies that their foreign potential partner should be brought to Sweden to the Group visit at UNIDO's expense. The foreign companies were therefore prepared to await the formal Group visit meeting since this would minimize their own costs for getting to Sweden. We also stressed, during contacts with the Swedish counterparts, that they were completely free to take direct contacts with the companies selected as their collaboration partner. In some cases, this was also done and personal meetings between representatives for potential collaboration partners took place both in Sweden and at fairs in Europe and USA during 1982 and early 1983. For some of the 14 collaboration cases, the negotiating process had taken some steps forward already when the Group visit was arranged in Malmö April 5-8, 1983.

In planning the Group visit meeting in Malmö, UNIDO handled all invitation and Scandiaconsult handled the practical arrangements at the conference hotel in Malmö. The travel costs for the foreign participants were subsidized by UNIDO.

In annex No. 16, a copy of the aide-memoire for the Group visit meeting is presented. A list of participants at the Malmö meeting is attached as annex 17.

The recipient companies from Kenya and Egypt could not participate at the Malmö meeting. For the Kenyan delegation, a visit to Sweden was arranged in June, 1983. For the Egyptian delegation, a visit to Sweden was scheduled to take place in August, 1983. During these visits, representatives of the recipient company and the co-ordinating agency will meet with the Swedish counterparts. Scandiaconsult assisted in arranging the Kenyan visit.

#### 4.11 NEGOTIATING PROCESS

According to the project plan, the Group visit should be the beginning of the negotiations between the potential collaboration partners. As mentioned above, this negotiating process started in many cases earlier than the Group visit.

In the collaboration proposals, Scandiaconsult had outlined theoretical solutions on how a collaboration including technology transfer could be constructed.

Follow-up contacts that we have had after the Group visit have indicated that the negotiations are well under way in almost all the cases. Scandiaconsult and UNIDO had de-briefings with representatives of the foreign companies just before they left Sweden after the Group visit and negotiations with the Swedish companies in connection with

that meeting. We have also asked all involved companies to keep Scandiaconsult/UNIDO informed on the negotiation process through copies of letters, agreement documents. So far, the companies have been very co-operative in these matters. In sub-annexes to the case reports presented in annex 1-14, copies of documents regarding negotiation results are presented. In the case reports we have also added a presentation of the negotiation situation in each project as per October -83.

5. CONCLUSIONS AND RECOMMENDATIONS

In this chapter, we will use the following abbreviations:

CAR = Coordinating Agency, Recipient Country

CAS = Coordinating Agency, Source Country

RC = Recipient Country

RE = Recipient Enterprise(s)

SC = Source Country

SE = Source Enterprise(s)

We will here present general findings and our conclusions together with recommendations for follow-up activities and modifications in future projects of this kind.

5.1 PROJECT ORGANIZATION

A project of this kind essentially means the establishment of a network of organizations that can assist companies in much the same way as export councils, trade chambers, etc are doing. Here, the key element is technology transfer, which puts certain requirements on the organisations involved. Since the idea is that the technology transfer shall be an element in a lasting business relationship, the relations promoted will certainly involve exports/imports. We can therefore learn a few things from export promotion projects.

Some key ingredients in such projects are:

- Momentum.  
Businessmen want action. Lack of action is often interpreted as lack of interest.
  
- Profitability.  
The ultimate goal for all business events.  
When profitability (in the short and long run) is questioned, demands for subsidies will arise and/or interest in the project will go down.

- Direct contact.  
Businessmen want to "touch and smell" in order to be able to use their ability called intuition.

But businessmen also want assistance in finding good business opportunities, since the management time is maybe the most scarce resources of a company. This is especially true for the small and medium-sized companies.

As soon as an outsider has identified a project, it is of prime importance that the businessman can see the items mentioned above in order to get going. From the moment the promoting organisation has succeeded in "starting" the businessmen, this organisation must adjust its own working speed and methods to the businessmen's, if they want to be effective as promoters.

Given what is said above and our experience from this pilot project, what requirements shall be put on the organisations forming the promotion network in a project of this kind? We assume that there is an initiating organisation and coordinating agencies in each involved country.

#### 5.1.1. Initiating Organisation

Since this project has been a pilot project, UNIDO has had the role of both initiator and central coordinating agency.

All communication between CAR and CAS has been cleared through UNIDO. This can be justified in a pilot project. In future projects, this can be replaced by more direct communication links between CAR and CAS and of course between RE and SE.



UNIDO's (or similar organisation's) role as initiator involves:

- Selection of SC and RC (or RC:s)
- Determination of lines of business to be covered by the project
- Arranging project financing
- Selection of CAR and CAS and formulation of instructions to them
- Supervision of on-going projects
- Assistance with technology transfer specialist during agreement formulation phase
- Collect, evaluate and transfer experience from project to project

The role as central coordinating agency will best be filled by the CAS, provided this organisation is selected properly (see 5.1.2).

#### 5.1.2. Coordinating Agency, Source Country (CAS)

In this project, this role was first filled by Expolaris and later by Scandiaconsult.

The main tasks of a CAS shall be:

- Act as the main coordinating agency (under UNIDO or other initiator) and have full project management responsibility
- Guide CAR in the initial selection of RE:s (see 5.2.)
- Organise matching process and formulate collaboration proposals (see 5.3)
- Promote and support during contacts and negotiations between SE and RE (see 5.4)
- Follow up promoted projects (see 5.5)

These tasks require that the selected CAS has access to people with the following experience to manage the project.

- Knowledge of industrial structure in SC and in particular of the areas covered by the project
- Technology transfer (licensing, etc) and/or trade promotion
- Project management
- Industrial structure and business habits in RC

Although there must be a responsible project manager appointed at CAS, there is no disadvantage if several persons with complementary experience are engaged by CAS in the project. This ensures a certain continuity and also gives room for brain-storming during the matching process.

The best to fill the CAS role is maybe an organisation working with promotion of international contacts, either private or governmentally owned. In Sweden, we would like to point out three governmental organisations we think well suited to be CAS:

1. SWEDFUND.  
Promotes establishment of joint-ventures in developing countries with Swedish companies as one partner.
2. Swedish Export Council.  
Since the transfer of technology in this kind of project shall be based on normal business relations, there is no justification not to use organisations specialised in trade promotions as CAS. They have an existing contact network, which is very valuable.
3. Swedish National Board for Technical Development (STU).  
An organisation with extensive knowledge of and contacts with Swedish small and medium sized industry. STU has an international department and also technology transfer specialist.

Organisation like those above can use and will also get spinn-off information in a project like this. This can maybe motivate them to put in extra internal resources and thus facilitate the project financing. Unimportant effect of a project like this is that you create good personal contacts between responsible officers in the CAS and CAR organizations. During the follow-up phase, it is especially important that the CAR/CAS officer has such close relationship with the companies involved so that he can detect at an early stage upcoming problems that can occur in the negotiation and cooperations process. The build-up of business relations, which in turn shall lead to technology transfer, of

the kind we are aiming at here, definitely demands such continuous support that can help to overcome misunderstandings and other irrational factors that can affect the contacts between the collaboration partners.

Thus, if the CAR and CAS has some kind of official status in their countries, this will help to ensure a certain continuity with the follow-up activities. Hopefully, such activities will then be a natural part of this organization's normal industrial supporting activities. The network of co-ordinating agencies, created by UNIDO for a special project, will thereby continue to live its own life for the mutual benefit of involved countries and companies.

### 5.1.3 Coordinating Agency, Recipient Country (CAR)

Let us first make it clear, it is important to have a CAR in projects like this. Even if it is possible that the CAS can fill part of CAR's role through "remote control" and through cooperation with banks, local consultants, etc., a CAR ensures local knowledge and continuity. The last is very important in technology transfer based on created business relations.

The main tasks for the CAR is:

- Provide general knowledge of the business environment in RC to the project partners (CAS and SE).
- Based on guidelines worked out by CAS, select candidate RE and compile RE presentations to be used in the matching process.
- Assist during planning and carry out of Selection Mission by CAS to RC (see 5.2).
- Assist SE and RE in arranging meetings between these companies (group or individual). (See 5.4.)

- Assist RE in contacts with local banks, authorities, trade promotion organisations, etc (see 5.4. and 5.5).

Of these tasks, the selection of candidate RE and assistance in RE contacts with authorities etc. must be regarded as the most important.

The best suited institutions to handle these tasks are, as we think, a central or regional industrial development organisation. If such an organisation is involved deeply in a project like this, one ensures that the RE selected will get proper assistance. In many countries, a helping hand from such organisations is of key importance. Not only for their ability to get necessary financing, permits, etc. to be able to start a technology transfer project, but and maybe most important, for their ability to utilize the full scope of industrial opportunities that comes along with the transfer agreement. This includes assistance with expansion financing, raw material supply, recruitment, export/import quotas, etc.

Therefore, the best way to raise the probability for success of a technology transfer deal (for the RE and ultimately for the RC) is to involve an industrial development organisation in RC early in the project by appointing it CAR.

## 5.2 SELECTION OF RECIPIENT ENTERPRISE (RE)

Often, technology transfer between a developed and an undeveloped /developing country involves certain amounts of economic subsidies to the SE (and/or RE) from foreign aid and similar organisations.

This project is based upon the idea that such assistance shall be limited to the creation of direct contact between the RE and SE. The rest shall be based on normal business relations.

This means that the requirement on the participating RE must be set in such a manner that the RE, in the eyes of the SE, appears as an interesting business partner.

Our experience from this project has shown that the following requirements must be met by the companies selected as RE:

- o Management capable of handling international relations.
- o Marketing competence
- o Experience from the product market where RE seeks technology
- o Well specified technology needs
- o Defined development plans for product area and total enterprise as a whole
- o Sound financial situation and support from banks and authorities

These requirements conform with what a SE expects from a would-be business partner.

The experience from the product markets where technology is sought is important. Projects where the RE wants to start totally new ventures should be avoided. Without the market knowledge within RE, the alternatives for future business based cooperation (licensing, joint-ventures, subcontracting, etc) will be limited and thereby affect the possibilities to find a good SE. It is also very important that the management of RE is well motivated to enter a project like this.

Preliminary selection of candidate RE shall be done by CAR, based on a check-list worked out by CAS. The CAR shall invite interesting companies in their country/region to compile a company presentation including the following:

- o Enterprise history
- o Products, markets and competitors
- o Production facilities and marketing organisation
- o Management and owners, bank
- o Economic information
- o Employees and skill level
- o Development plan (motives and figures)

- o Technology sought
- o Form of technology transfer/cooperation desired
- o Business opportunities offered for future SE

The CAR shall assist candidate RE in their compilation of this company profile presentation. This material shall then be the base for CAS matching procedure. It is therefore essential that the CAR adds their comments on each proposed RE so that CAS can give it the right priority.

### 5.3 SELECTION OF SOURCE ENTERPRISE (SE) (MATCHING PROCESS)

The CAS shall be responsible for the search of suitable enterprises in SC who has access to the technology sought by RE. This is a time-consuming process, which demands creativity and good knowledge of the industry in SC. It also demands very good information on the RE and their technology needs.

Ideally this matching process by CAS shall be started by a preliminary matching procedure based on RE profiles and comments provided by CAR. The result of such a procedure shall be 2-3 alternative, proposed collaboration partners (technology source enterprises SE) per RE.

In selecting SE, it is important that every candidate can meet the following requirements:

- o Detailed experience of and internal specialists on the technology sought by the RE
- o Serious interest in doing business with a partner in the region /country concerned
- o Management capable of handling international technology transfer based on business principles
- o Sound financial situation

It is important that the candidat SE fully understands that its compensation for participation in this technology transfer project comes out of the possible future business deals that the SE can do with its collaboration partner. Therefore, it is important that the CAS after discussions with the SE and at the earliest possible stage can agree on the formulation of a collaboration proposal to be communicated to the RE. This collaboration proposal will then be a motivator for the SE to continue its allocation of managerial resources to the project.

Our experience from this project leads us to recommend the following matching procedure to be used in a forthcoming technology transfer projects of the same kind:

- A. Compilation of RE information and technology needs, done by RE and with comments by CAR.
- B. Based on A, CAS does a list of 2-3 theoretical collaboration partners, including SE general presentation, per RE.
- C. CAS plans and undertakes a mission to the RC and visits the RE selected by the CAR. CAR assists in planning and participates at CAS visits to SE.
- D. CAS contacts SE of interest to RE and tries to get SE into the project.
- E. When interested SE is found, CAS works out a collaboration proposal, including detailed information on SE and suggested way of creating a business relation/technology transfer.
- F. The collaboration proposals are sent to RE (with copies to CAR and UNIDO). Direct contacts between RE and SE shall be encouraged.

Through the mission under C, the CAS people (2 is recommended to participate) will get to know the candidate RE and their management and at least a bit of the country and its business climate. This will be very valuable during the following discussions with SE. The mission will also bring together the CAR and CAS representatives, thereby easing future contacts.

The result of the mission shall preferably also be a ranking of the RE, regarding their abilities etc. as specified under 5.2. This ranking shall be used by CAS in planning the matching process (available budget, ability to find good SE, etc). CAR shall participate in this ranking process.

#### 5.4 NEGOTIATION PROCESS

The ultimate goal of the matching process is to bring one SE and one RE in personal contact with each other. In this pilot project the first direct contact should take place during a Group Visit to Sweden and all representatives of CAS, CAR, RE, SE and UNIDO should gather in Malmoe. From there each RE would accompany their SE to its plant to start the negotiations.

Since we were dealing with top management in small/medium-sized companies, who normally are very busy people and reluctant to delegate issues of this nature to subordinates, we had to set the date for the Group Visit 4-6 months after the completion of the collaboration proposal. In the meantime, several RE and SE voluntarily got in touch with each other. Some RE even visited their SE in Sweden. A couple of Swedish SE also complained about the long pause in the project. They were eager to see their would-be partner and see what was behind the collaboration proposal.

Our conclusion is that it is important to stimulate and assist in organising direct contact between SE and RE as soon as the collaboration proposal is ready. Such a meeting shall take place either at SE or at RE. The managers involved at both companies want to see what the



would-be partner looks like. At this stage, the "touch and smell" component mentioned under 5.1 above is vital.

We think the best way of organising direct contact is to form small groups of 3-5 companies who, preferably assisted by CAR/CAS, visit the other country and their partners. This will mean several Group Visits within one project, but it also means that no one needs to wait a long time, and loss of momentum is avoided.

The participation of CAR representatives during these small Group Visits is essential. Like CAS, also CAR needs a first hand information on the SC and SE involved in order to be able to give proper assistance to RE during the following carry-out of technology transfer agreements.

We do recommend that the first contacts take place in SC and at the SE. The main reasons are:

- o Many of the selected SE are probably not normally engaged in technology transfer. The motivation to devote management time and money to travel to a developing country to see a company they barely know will most likely be very low. We think it is easier to motivate (and maybe raise subsidies for) the RE to be the first to knock on the door.
- o If the SE shall be the first visitors, they might stress the export part of a possible agreement in order to justify their travel expenditure and thereby risking that the discussions will get a wrong bias from the beginning.

In the formulation of a cooperation agreement between RE and SE, valuable assistance can be provided by CAS and CAR and also UNIDO. Such assistance can take the form of creative speaking partner, advice on agreement formulation, etc. Through continued contact with the involved companies, CAS/CAR can also early detect when something unforeseen happens and get things moving again. These follow-up activities are important.

## 5.5 FOLLOW-UP ACTIVITIES

When this report is written in December 1983, the project has created some 10 substantive SE-RE-relations. Most of these relations are documented in the form of letters of intent or similar. The negotiation process is thus far from ended. Scandiaconsult discussed the negotiation situation with the Swedish companies during September-October 1983. These contacts clearly indicated that the Swedish companies were eager to close some kind of a quick business deal with their new foreign partner. Before investing in more contacts/discussions they wanted to see that the new business relation also can create positive cash-flow.

To us, this is an expression of the fact that the "trust-building process" is very important and that the business relations which ultimately shall lead to technology transfer must be built up step by step. The involved companies must be given time to get to know each other through various kinds of business deals. Therefore, we do recommend that the CAS/CAR-network actively promotes all kinds of business relations between the RE and SE, as long as technology transfer is within sight. Here we like to point out a few things we think are essential in the follow-up activities.

First, most of the Swedish companies have underlined that they want to send a manager to visit their RE as soon as possible. The SE wants to have first hand information on his would-be business partner, if he shall be prepared to invest his own money in the build-up of a future relation. The financing of the visit by an SE manager to RE can be an obstacle and here the CAR/CAS-network should have resources available to support. Such visits can maybe be arranged in the form of group visits. They shall take place 4-6 months after first visit by RE to SE.

As said above, it is important that a business deal can be closed as soon as possible after initial contacts. Type of deals that shall be promoted by the CAS/CAR-network is for example:

- Assistance from SE to RE to improve RE:s plant lay-out, flow of material, etc. Can be done by experienced supervisor sent from SE and paid by RE.
- Assistance from SE in product construction and design, choice of raw material, tool design, etc. Can be done remotely by SE and paid by RE.
- Training of RE personnel at SE plant and/or training instructors sent from SE to RE and paid by RE.
- Transfer of older but still usable equipment from SE to RE. This can be done in a form of gift, loan, rent or purchase. It can also be combined with installation and start-up assistance.
- Marketing of SE products based on an agency agreement. Such a deal can also include build-up of spare part and service organization.
- Extended agency agreement where final assembly is included.

All these types of deals, and others not mentioned above as well, shall be the first step on the road to a cooperation that will lead to substantial technology transfer. It is assumed that services rendered and products delivered shall be paid for according to normal business principles. It is an advantage if, at an early stage, a technology transfer plan in the form a letter of intent can be mutually agreed on by the involved companies. The larger deals, such as royalty-based licencing, joint ventures, sub-contracting agreements, etc. will emerge in a natural way out of the business relations built up as described above. During the follow-up activities, it is important that the CAS/CAR watches the development of the relations and maintains a certain, but positive and constructive, pressure on the involved companies to continue towards the technology transfer goal.

From what has been said above, one can conclude that technology transfer projects like this cannot be labelled success or failure until 3-4 years after start-up. During this period, the network of CAS, CAR and UNIDO shall be kept intact. The level of activity will vary over time but for promotional and follow-up activities, the network shall exist. This must be considered when the budget and allocation of resources are determined.

At two points during the project, the CAS and CAR shall do a formal follow-up of each SE-RE-project.

- o Within two months after first direct contact between SE and RE.
- o 8-10 months after first contact/preliminary agreement between SE and RE.

The CAR shall contact the RE involved and the CAS shall get in touch with the SE. Both CAR and CAS shall thereafter write a document presenting project situation and suggesting follow-up activities. The documents shall be exchanged and also sent to the initiating organisation (UNIDO). Based on these documents, decisions on supporting activities may be taken. Other decisions on project support shall, of course, be taken whenever participating companies requests such support.

Final evaluation of the outcome of each SE-RE-relation cannot be done until 1,5-2 years after direct contact between the companies. If the created company contacts have not resulted in agreements involving technology transfer at that stage, that project can maybe be regarded as a failure. However, we must realize that created contacts may give spin-off effects, which in reality will lead to technology transfer. Such spin-off effects can be hard to track, but the probability is high that they will occur.

## 5.6 FUTURE TECHNOLOGY TRANSFER PROJECTS

### General Comments

The basic idea behind the project is to create contacts between business enterprises in a developed country and similar companies in developing or undeveloped countries. Out of such contacts shall technology transfer develop.

Our experience from this pilot project is that this basic idea is very good. The business enterprises, both in SE and RE, have been very positive to a participation in the project. SE companies of the size we are dealing with here do seldom have resources for opening up contacts with business partners in developing countries. These initial contacts are too costly and risky for such companies. Therefore, most of the Swedish SE we have been in touch with have praised the promoting function undertaken by UNIDO and CAS-CAR-network.

From a Swedish point of view, the selected lines of business (metal working and light engineering) have been a good choice. The likelihood to find a special technology, sought by a company in the developing country, within these fields are high. There are also hundreds of small/medium sized companies to choose among during the matching process.

Other lines of business where Sweden has interesting technology and suitable companies are:

- o Transportation equipment industry (both complete vehicles and vehicle parts)
- o Building material industry (especially wood and concrete based products and systems)
- o Furniture industry (specialty: knocked-down furniture)
- o Electro-mechanical industry (specialty: automatic control systems)
- o Energy industry (products for production and saving)

In the selection of countries to participate in a project like this it is important that the recipient countries can be regarded as commercially interesting by small and medium sized source enterprises in the source country. If such commercial interest becomes too weak, the demand for economic subsidies of various kinds will immediately emerge.

Our experience as coordinating agency in the source country also leads us to recommend that no more than three recipient countries are handled at the same time.

Final Conclusions:

- o UNIDO technology transfer promotion through the build-up of a contact creation network is a very good idea and launching of more, similar projects is recommended.
- o The networks created shall be planned to be operational for a period of 3-4 years with activity varying over time.
- o Working methods of the network must be adjusted to business habits. The network must facilitate direct contacts between source and recipient enterprises.

5.7 USE OF REMAINING RESOURCES IN PILOT PROJECT

To further promote the technology transfer projects created so far (see Annexes) we do recommend that UNIDO uses the remaining economic resources as follows:

- o Economic assistance to RE to cover training for own employees at SE or costs for SE specialists to visit RE.
- o Economic assistance to SE/RE to cover for Swedish managers from SE to visit their new partners for continued negotiations.
- o Continuation of the existing CAS-CAR network for follow-up purposes during another 12-18 months.

In addition to what is mentioned above, resources can also be used to cover costs for adaptation of transferred technology to suit the special RE-conditions and needs. However, we do instead recommend that UNIDO allocates a certain amount of the remaining economic resources to a second round of promotional activities by the existing network. During the ranking process after mission, many interesting companies had to be overlooked. Already compiled information and existing experience within UNIDO/CAS/CAR can now, and for a marginal cost, be used to create additional contacts between source and recipient enterprises. Such additional matching process shall be concentrated on companies mutually selected by CAS and UNIDO.

**ANNEX No. 0**LIST OF COMPANIES IN COLLABORATION PROPOSALSCase Report - Annex No. 1

Mr. B.R. Shivashankar  
Toolcraft  
HMT Industrial Estate  
BANGALORE-560 031      INDIA

Mr. Roy Ivarsson  
Storebro Bruks A  
S-590 83 STOREBRO      SWEDEN  
0492-30160

Case Report - Annex No. 2

Mr. Sudarshan K. Maini  
Maini Precision Products P. Ltd.  
B-59, Functional Industrial Estate  
Tumkur Road, Peenya  
BANGALORE-560 058      INDIA

Mr. F G. Fransson  
Torsten Ullman AB  
S-340 36 MOHEDA      SWEDEN  
0472-70820

Case Report - Annex No. 3

Mr. Ravi C. Sonalkar  
Sonalkar Tool Works Pvt. Ltd.  
P.O. Box 24  
HARIHAR-577 601      INDIA

Mr. Gösta Björk  
Skandinaviska Chuckfabriks AB  
Box 121  
S-282 00 TYRINGE      SWEDEN  
0451-50970

Case Report - Annex No. 4

Mr. S.K. Ladha  
BDK Valves Private Limited  
Kutchi House Jayachamaraj Nagar  
HUBLI-580 020      INDIA

Mr. Göran Andersson  
AB Somas  
Box 107  
S-661 00 SÄFFLE      SWEDEN  
0533-16700

Case Report - Annex No. 5

Mr. Harsh C. Desay  
Elmeca Works  
Post Box No. 17  
DHARWAD-580 007      INDIA

Mr. Bengt Ohlsson  
Lofab Square AB  
Box 16034  
S-200 25 MALMÖ      SWEDEN  
040-945320

Case Report - Annex No. 6

Mr. V.P. Rao  
Indo Hacks Ltd.  
"Satya Tulsi" 1-11-251/4/11/1  
Kirloskar Colony  
Begumpet  
HYDERABAD-500 016      INDIA

Mr. Mats Elfsberg  
Westlings Sägbladsfabrik AB  
S-780 50 VANSBRO      SWEDEN  
0281-11030



Case Report - Annex No. 7

Mr. O.T. Blom  
Alpex Engineering & Trading Co.  
"St. Therese"  
176, Lake Road  
MAHARAGAMA SRI LANKA

Mr. Thomas Ekholm  
Svenska No-Ha AB  
Stora Nyby Gärd  
S-635 19 ESKILSTUNA SWEDEN  
016-110390

Case Report - Annex No. 8

Mr. A.S. Prabhakar  
Swarna Electricals  
14, Subbarama Chetty Road  
Basavanagudi  
BANGALORE-560 004 INDIA

Mr. Jan Hedin  
Backer Elektro-Värme AB  
S-280 10 SÖSDALA SWEDEN  
0451-60500

Case Report - Annex No. 9

Mr. Pravin Lad  
Dynamics Engineering Ltd.  
Enterprise Road  
P.O. Box 18524  
NAIROBI KENYA

Mr. Anders Lindahl  
Kjällströms Mekaniska Verkstad AB  
S-535 00 KVÄNUM SWEDEN  
0512-92400

Case Report - Annex No. 10

Mr. S.W. Ohingo  
T.J. Cottington & Partners Ltd.  
P.O. Box 41826  
NAIROBI KENYA

Mr. Eje Dahlin-Karlsson  
AB Linde-PML  
Box 33  
S-334 00 ANDERSTORP  
0371-16100

Case Report - Annex No.11

Mr. Abed Abou Freihka  
Tanta Motors Company  
P.O.Box 111  
TANTA EGYPT

Mr. Anders Lindahl  
Kjällströms Mekaniska Verkstad AB  
S-535 00 KVÄNUM SWEDEN  
0512-92400

Case Report - Annex No. 12

Mr. Arvind K. Bhide  
Systems Engineering P. Ltd.  
Post Box No. 5828  
1-A, Peenya Industrial Area, Phase II  
BANGALORE-560 058 INDIA

Mr. Roland Wickström  
Svedala-Arbrå AB  
S-233 00 SVEDALA SWEDEN  
040-401100

Case Report - Annex No. 13

Mr. K. Rajapakse  
D. Samson Industries Ltd.  
P.O.Box 778  
97, First Cross Street  
COLOMBO 11                      SRI LANKA

Mr. Bengt Jönsson  
Trelleborg AB  
International Projects Division  
Box 501  
S-231 01 TRELLEBORG      SWEDEN  
0410-51000

Case Report - Annex No. 14

Mr. Saied Iskandar Farag  
Egyptian Society for Soldering Supplies  
P.B. 101  
CAIRO                              EGYPT

Mr. Anders Alfredsson  
Elgasvets AB  
Box 306  
S-443 01 LERUM                      SWEDEN  
0302-11600

**ANNEX No. 1**COLLABORATION PARTNERS

Toolcraft, Bangalore, Karnataka, India  
and  
Storebro Bruks AB, Storebro, Sweden.

SELECTION PROCEDURES

Based on the report from Expolaris (subannex 1:1) and the short briefing by Mr. Hånell, Toolcraft was selected as one of the potential recipient enterprises to be further promoted for collaboration with a Swedish enterprise. The main reasons for the selection were:

- o A positive overall impression of the company.
- o It was said to be a company with a very high technological level.
- o The management was said to be good, although the company is small.
- o A very professional presentation of the company itself, its resources, its present products and marketing channels and also identification of items for transfer of technology etc. was submitted during this phase (subannex 1:2).

After the selection phase an attempt was made to make a preliminary matching with the Swedish enterprise Värnamo Maskin AB (subannex 1:3). They showed interest in the project and submitted information on the company and its products. However, their products were not actually within the present product line of Toolcraft, so this contact was dropped after presentation to Toolcraft.

The impressions from the visit to Toolcraft during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 1:4). The following came out of the visit:

- o It was confirmed that the technical capability is very high, as are the managerial och marketing capabilities.
- o The company is already working with NC technology.
- o Some very specific technical areas were pointed out where Swedish enterprises are able to transfer the requested technology.
- o Ideas on the forms of future collaboration were presented.

After the Mission, there was another screening procedure based on the additional information now available. As most of the criteria for the selection of the projects to be continued were fulfilled, Toolcraft was put in the group of potential recipient enterprises, which should be finally matched with Swedish partners.

#### MATCHING PROCEDURE

As Toolcraft listed their desired technology in order of priority and the first item was NC-lathe technology, it was quite natural to start among the Swedish manufacturers of such equipment. The first company contacted was Storebro Bruks AB, which immediately showed interest in the project. After studying the information available thoroughly and after a meeting with Scandiaconsult, a Collaboration Proposal was worked out.

#### COLLABORATION PROPOSAL

The collaboration proposal is attached (subannex 1:5) and contains the following framework for future collaboration:

- o Toolcraft and Storebro will start a joint venture company for the production of a NC-lathe model for the Indian market.
- o The contribution of Storebro will be all the technical know-how about their NC-lathe type 260 CNC.
- o The contribution of Toolcraft will be the production facilities and the marketing organization in India.
- o Investigations on external financial sources will be made.

#### NEGOTIATIONS

In connection with the Group Visit to Malmoe, Sweden, April 5-8, 1983, Mr. B.R. Shivashankar, Toolcraft, and Mr. R. Ivarsson, Storebro Bruks AB, discussed future collaboration starting with the framework given in the Collaboration Proposal but soon they came into a blind alley and had to find a new approach. The main contents of this are:

- o A technical collaboration initially based on the NC-lathe 260 CNC but in the future also on the 300 CNC model.
- o The main mechanical components will be bought from Storebro. The electronics will be bought in India from Fanuk. Hoods, steel structures and assembly will be made by Toolcraft as per Storebro specifications.
- o For the technology transfer, i.e. drawings, know-how and training, Toolcraft will pay Storebro a lump sum of US \$ 52,000 and a royalty of 3 % per machine of the value added.
- o During the next 18 months Toolcraft will buy from Storebro ten machines knocked down into components, excluding the electronics.

- o The trade mark will be Storebro-Toolcraft.
- o This agreement has to be confirmed by the Indian Government.
- o Toolcraft will draft a contract.

#### PROJECT STATUS JUNE 83

Both parties have expressed their satisfaction with the development of this collaboration so far and the plans they have worked out to implement it.

Toolcraft will work out a memorandum of agreement and a draft contract. They will also arrange all necessary permits from the Indian Government. This may require assistance from the coordination agency in India, Karnataka State Small Industries Development Corporation, KSSIDC.

#### PROJECT STATUS OCTOBER 83

The memorandum of understanding which Toolcraft should write was received by Storebro in early August. Internal evaluation of the project and agreement was ready in late October. Storebro then signed the memorandum, which is enclosed here as Subannex 1:6, with only one addition (cost for assisting in the selection/development of interface; see § 4).

A precondition for signing the agreement, strongly stressed by the labour unions at Storebro during the obligatory discussions with them regarding a contract of this kind, has been that Storebro will get an opportunity to deliver certain parts of complementary products to Toolcraft.

Storebro already plans for the production at Toolcraft of a more modern model than the one covered by the present agreement. Such production can start within 1-2 years at Toolcraft.

During the period up to signing the memorandum, Storebro has discussed with other Indian companies on export of their lathes to India. The difficulties to solve servicing and maintenance of their products on a rather closed market supported the choice of local production through Toolcraft.

#### **Comments**

Mr. Ivarsson of Storebro stressed that they find this type of cooperation, with technology transfer involved, an interesting alternative to straight export. He also stressed that if Storebro shall be prepared to invest considerable amounts in building up a relation with Toolcraft, it is essential that he or his marketing manager can be able to visit Toolcraft in India to see their plant and evaluate the possibilities for future business. He suggested that UNIDO arranges something similar to the Group Visit to Malmoe, but for the Swedish companies to India. It is not necessary for UNIDO to subsidise the travel costs, but it would be an advantage, if the visit was planned and supervised by UNIDO and the Indian Authorities involved.

Name and other identification data of the firm

A Toolcraft  
A-05, HMT Industrial Estate  
Bangalore 560 031

Factory also at: 4-B, Peenya Industrial Area  
Phase I, 2-nd Cross  
Bangalore 560 058

Managing director: B R Shivashankar, B.E.

Tel: 306 19, 305 11, 389 39

Telex: 0845-564

Cable: "Craft"

Established 1961.

Datas about the people employed in the firm

Professional staff: 12

Number of skilled labour: 28

Number of unskilled labour: 8

Annual turnover, equity, profits and economic facts

Turnover 1980: 2 894 000 In R

Orders for 2 414 000 In R spring 1981.

The firm is making good profits.

Product mix

Two- and three-dimensional pantograph engraving machines,  
spark erosion machines, 15-200 amps.

Grinders, drilling machines, machine tool accessories as  
collets, chucks, feed fingers.

Production technology, equipment and other technical information

Complete manufacture of machines from raw materials involving  
artificial ageing, forging, planing, metal cutting, heat treat-  
ment, grinding, assembling and testing.

All relevant equipment for the above processes, including lathes,  
grinders, broaching machines, drilling machines, furnaces,  
testing equipment.

The firm has an advanced technology.

*Bra Sorelas*

Datas about marketing organization etc

In India all products are marketed by Perfect Machine Tools Co Ltd, Bombay.

Overseas marketing is carried out by HMT International Ltd.

The future plans of the firm

The firm is looking for new markets, western Europe among else.

They also plan to strengthen their technology in the actual field, including controlling microdata-technique.

The possibilities of the firm

The company is very qualified and has good possibilities.

Recommendations and proposals

- 1) Marketing contacts should be established with an importing agent in Europe or Sweden.
- 2) The company should be put in contact with a swedish company specialised in NC-technique.

The company don't have much to learn concerning traditional manufacturing (drilling, lathing etc.).



Continuation Sheet Number

C O N T E N T S

<u>Sr. No.</u>	<u>Details:</u>	<u>Page No:</u>
1.	PREAMBLE	1
2.	CHAPTER I : ABOUT TOOLCRAFT AND INFRASTRUCTURAL FACILITIES	3
3.	CHAPTER II: IDENTIFICATION OF ITEMS FOR TRANSFER OF TECHNOLOGY	15
4.	CHAPTER III: IDENTIFICATION OF UNITS IN SWEDEN FOR TRANSFER OF TECHNOLOGY	17
5.	CHAPTER IV: TECHNOLOGY TRANSFER : METHODOLOGY	23





PREAMBLE:

This is a very brief report highlighting the possibility of technology transfer from Sweden.

Machine Tool Industry, with which TOOLCRAFT is presently associated, has fairly well developed in our country, for production of basic machine tools - though there is much to be desired in the method of manufacture adopted and the quality produced. The trend in the manufacture of machine tools in Western Countries is to use more of electronic controls based on numerical control and computerised numerical control systems. The same is yet to be utilised in India though realisation is now setting.

Unlike turn-key projects where the whole project is drawn up from the beginning, in technology transfer to existing units in India, it is very important to study the infrastructural facilities available to absorb such technology transfer by the beneficiary unit. Hence in this report more importance is given to such facilities available in TOOLCRAFT. This could be referred to in Chapter I.



Chapter II & III indentify<sup>s</sup> the different items that could be taken under this technology transfer and the corresponding units in Sweden who are manufacturing these items. Though there are many items so identified it is difficult to say as to how many firms would be interested to provide the transfer of technology.

Chapter IV deals in the methodology and limitation of the technology transfer.

CHAPTER I

ABOUT TOOLCRAFT AND INFRASTRUCTURAL FACILITIES:

Continuation Sheet Number -3-



ABOUT TOOLCRAFT

TOOLCRAFT, a Registered Small Scale Industry was started in the year 1961, by Mr. B.P. Shivashankar, B.E., D.I.I.Sc., as an ancillary to HMT Ltd., Bangalore 560 031, in their Industrial Estate. By then Mr. Shivashankar had put in about 7 years service in HMT Ltd., as a tool design Engineer and had considerable experience in the field.

Initially TOOLCRAFT was functioning mainly as a Centralised heat treatment shop, with a battery of imported furnaces equipped with automatic temperature controllers and connected metrology equipments. TOOLCRAFT, at that time, was not only serving the requirements of other factories situated in the Estate, but also was serving the needs of other factories in and around Karnataka State, since it was the only one such factory in the private sector.

Along with the heat treatment operations, job works of manufacturing of precision machine tool accessories were also being done to HMT Ltd.



Continuation Sheet Number -4-

With the gained experience, manufacture of clamping equipments for Automatics, Capstans, Turrets and milling accessories was taken up and the products became quite popular in a short while. Even now we are the only one manufacturing these clamping equipments in Southern Karnataka. The years that followed are one of rapid development in machine tool building activities.

Advent of 1968, ushered in new era in the activities of TOOLCRAFT. In this year Two-dimensional Pantograph Engraving Machine was manufactured without any outside technical know-how.

During the year 1972, Three-dimensional Pantograph Engraving Machine was brought out, with our own technical know-how, which resulted in the unique distinction of getting the National Award for indigenous design and manufacture. Incidentally, on our starting the manufacture of these machine, Government of India, banned the Import of these into our country.

1973 is a year to remember since for the first time we started exporting our machines to Australia and have since gone a long way in exporting our machines to various countries. The countries to



which we have exported are:

Australia	Burma	Canada
Indonesia	Iran	Malaysia
Phillipines	Singapore	South Korea
West Germany	Tanzania	

With a zest to enter into new avenues, during 1975, with the help of National Aeronautical Laboratory, Bangalore, who gave the know-how for electronics, the first Spark Erosion Machine was manufactured and as of date over 900 machines including Pantograph Engraving Machines are working not only in India but abroad too, to the complete satisfaction of the customers.

During the same year ~~Land of~~ <sup>of land</sup> 1.6 Hectares, for extending the factory was purchased in Peenya Industrial Area and a modern factory with all facilities was put up.

In addition to our participating in the major machine tool exhibitions at home and abroad, it is an achievement to say that we a Small Scale Industry had exhibited our machines in EMO 2, Hannover (W.G.) in 1977.



Continuation Sheet Number -6-

In addition to the machines mentioned earlier, we have been manufacturing Co-ordinate Drilling Machine of 25 mm capacity, Watch Case manufacturing machines and Bench Drilling Machines of 6 mm and 13 mm capacity, 124 of these in Bulk were exported to Indonesia during 1979.

The year 1980 was a land mark in the history of Toolcraft. During the year the biggest ever Spark Erosion Machine of travelling Bridge Type to be built in our country was manufactured and delivered to a Defence Establishment.

As the planning is envisaged it is the desire of Toolcraft, to build machine tools with electronic controls to match the ever increasing needs of industries for such equipments.



INFRA STRUCTURAL FACILITIES:

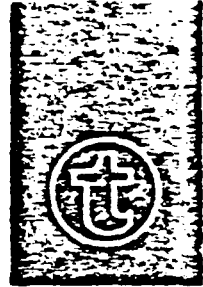
TOOLCRAFT is mainly divided into 4 divisions:

TOOLCRAFT With their factory at 4 (B), Peenya Industrial Area where most of the machine tools are being manufactured. Please refer Sheet No. 10. for details of machines installed.

TOOLCRAFT PROCESS: A service shop located in HMT Industrial Estate, to carryout heat treatment operation of different types of steels. Please refer Sheet No. 11. for details of equipments installed.

TOOLCRAFT ACCESSORIES: Located in M.S.R. Industrial Estate with a complete machine shop for manufacture of machine tool accessories like collet chucks, arbors etc. Please refer Sheet No. 12 for details of machines installed.

TOOLCRAFT SYSTEMS: Located in the premises of 4(B), Peenya Industrial Estate, Peenya I Phase to manufacture electronic controls for machine tools, with plans to produce NC Controls. Please refer Sheet No. 13. for details of equipments available.



Apart from these branches TOOLCRAFT has also a sister concern working as ancillary to them in the name of Precision Engineering Enterprises located at A-09, HMT Industrial Estate where machines like Drill Point Grinders, Drilling machines are being manufactured. Please refer to Sheet No. 14 for details of equipment available and products manufactured.

With regard to technical personnel available to absorb the technical transfer, TOOLCRAFT and its allied firms have 15 Mechanical Engineering Graduates and diploma holders, 5-Electronic engineers and many other trained staff like electricians, wiremen, etc.

The capital outlay of the firm is as follows:

Capital investment in	
Plant and machinery:	Rs. 1.80 million.
Investment on Building	
Electrical Installation etc:	Rs. 1.00 million.
Total corporate sales/ Turnover:	Rs. 7.5 million.
No. of employees in all the branches:	120:





Continuation Sheet Number 9

Products manufactured:

Two-Dimensional Pantograph Engraving Machine:

Three-Dimensional Pantograph Engraving Machine:

Spark Erosion Machines:

Co-ordinate Drilling Machine:

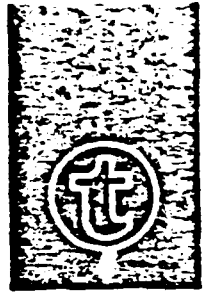
Bench Drilling Machine:

Leaflets enclosed.

T O O L C R A F T

Continuation Sheet Number -10-

**PLANT & MACHINERY INSTALLED**  
**TOOLCRAFT, 4 (B), PEENYA INDL. AREA,**  
**PHASE-I, 2-ND CROSS, BANGALORE-58:**



MACHINERY:

1. Centre Lathe LB, 20/1000 HMT:
2. Milling Machine M2V HMT Make:
3. Milling Machine M4H HMT Make:
4. Vertical Milling Machine FV 3 BFW :
5. Cylindrical Grinder G-9 MyFord:
6. Cylindrical Grinder G-13:
7. WMW Surface Grinder 1000 x 250 mm:
8. Alex Hydraulic Surface Grinder H-208:
9. Slideway Grinder JOF S-3:
10. Hacksaw Cutting Machine-Kirloskar:
11. Radial Drilling Machine 40mm capacity TANSI:
12. Praga Bench Drilling Machine:
13. Petlar Bench Drilling Machine:
14. Bench Drilling Machine -1/2" capacity:
15. Drilling Machine 1/2" capacity WOLF:
16. Drilling Machine 1/4" capacity WOLF:
17. Drilling Machine-Heavy Duty 1/4" capacity:
18. Two Dimensional Pantograph Engraving Machine:
19. Single lip cutter Grinder, SCG-24:
20. Dual Head Pedestal Grinder-National:
21. Potable Grinding Machine 3/4" capacity WOLF:
22. Air Compressor 1-HP KARTIK:
23. Welding Set ORLICON:
24. Petling Machine 6" (Portable grinding M/c) WOLF:



Continuation Sheet Number -11-

TOOL CRAFT PROCESS

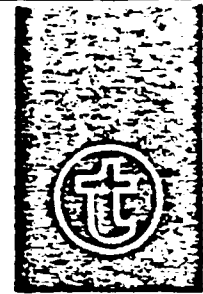
A-05, HMT Indl. Estate,

BANGALORE-31:

PLANT & MACHINERY INSTALLED:

MACHINERY:

1. Degussa Electric Muffle Furnace:
2. Bagsvig Electric Muffle Furnace:
3. Junkar High Temp. Muffle Furnace:
4. Electrode Salt Bath-Bagsvig:
5. AEI/BIRLEC High Temp. Electrode Salt Bath:
6. Bagsvig Electric Tempering Bath:
7. Addison Shot Blast Cabinet 10 HP Compressor:
8. Wilson USA Rockwell Hardness Tester:
9. Hydraulic Shaft Straightening Press-5 Tons:



TOOLCRAFT ACCESSORIES,  
M.S.R. COLLEGE PREMISES,  
BANGALORE-560 054:

PLANT & MACHINERY INSTALLED:

MACHINERY:

1. Centre Lathe LB 17/1000 mm HMT Make:
2. Centre Lathe LB 17/700 mm HMT Make:
3. High Speed Copy Turning Lathe POLISH:
4. Universal Milling Machine FU-1 BFW Make:
5. Milling Machine PRAGA:
6. Universal Cylindrical Grinder G13/800U: HMT:
7. Cylindrical Grinder G-9 HMT:
8. Internal Grinder G-9 HMT:
9. Internal Grinder SOC-100 JOTES:
10. Horizontal Broaching Machine-10 TONS RUSSIAN:
11. Vertical Slotting Machine: WMW:
12. Hacksaw cutting machine COBRA NO.9 KIRLOSKAR :
13. Universal Tool & Cutter Grinder 3A-64 RUSSIAN:
14. Bench Grinder (Dual Head) INDIAN:
15. Two-Dimensional Engraving Machine INDIAN:
16. Buffing Machine Dual Head INDIAN:



TOOLCRAFT SYSTEMS  
4(B), Peenya Industrial Area, Phase I,  
2nd cross, BANGALORE-560 058:

EQUIPMENTS AVAILABLE:

The standard, testing and measuring instruments  
include:

Voltage Standard

Current Standard

Oscilloscope

Pulse Generator

Frequency Counter

- Digital Multimeter

Digital Component Tester

L C R Bridge, etc.



PRECISION ENGINEERING ENTERPRISES,

A.09: HMT INDUSTRIAL ESTATE, BANGALORE 560 031:PLANT AND MACHINERY INSTALLED -DETAILS:

1.	Centre Lathe LB17/1000mm	HMT Make.
2.	Centre Lathe H22/1070mm	HMT Make.
3.	Milling Machine VF3	BFW Make.
4.	Universal Cylindrical Grinder G17/800U	HMT Make.
5.	Universal Cylindrical Grinder G17/500U	HMT Make.
6.	Surface Grinder	PRAGA Make.
7.	Tool & Cutter Grinder	ADDISON Make.
8.	Honing Machine	EIFCO Make.
9.	Hacksaw Cutting Machine Cobra No.9	KIRLOSKAR Make.
10.	Bench Drilling Machine	INDIAN.
11.	Hardness Tester	INDIAN.
12.	Air-Compressor 1 H.P.	INDIAN.

CHAPTER II

IDENTIFICATION OF ITEMS FOR TRANSFER OF  
TECHNOLOGY:

Continuation Sheet Number -15-



Amongst the many areas of technical assistance that could be expected from Sweden, TOOLCRAFT wishes to give priority to the machine tools, accessories and electronic items based on the facility that is available with them. Though it is prudent to prefer items which are of allied nature to what is being manufactured, it is quite possible that what has been identified may not be available for transfer from Sweden. Hence the transfer of technology could be for manufacture of any one of the items given below in the order of priority.

- (i) Items of machine tools - preferably with Electronic controls - namely:
  - (a) NC Lathes (small/medium size).
  - (b) Milling and drilling machines with programme/NC control.
  - (c) Die sinking machines with electronic copying.
  - (d) Any other machine tool required in toolroom.
- (ii) Machine tool accessories such as:
  - (a) Collets - collet chucks.
  - (b) Quick change Milling and Drilling chucks and adapters.
- (iii) Electronic Controls for machine tools:
  - (a) Programme controllers.



(b) Digital readout systems.

(c) Numerical Controls.

The next chapter gives the probable firms in Sweden who are manufacturing similar items against each of the above sub division, who may be contacted for the technology transfer.

If it is not possible to get the know how to manufacture any one of the above items, TOOLCRAFT would be interested to know if it is possible for the firms falling under Machine Tools and Machine Tool Accessories category, in Sweden to provide training for two Engineers in the field of (1) Production Technology and (2) Inspection.



CHAPTER III

IDENTIFICATION OF UNITS IN SWEDEN FOR TRANSFER  
OF TECHNOLOGY:



Continuation Sheet Number -17-

Sweden being very well advanced in Engineering Technology, it may not be difficult to identify firms for the technology transfer. However, it remains to be seen as to how many such firms would be willing to co-operate, in this scheme and to what extent. Though India is now producing almost all types of machine tools, what is lacking most is the capacity to produce machine tools in large quantities, by adopting mass production methods. Hence maximum importance has to be given to the method of manufacture adopted by the firms selected in Sweden and transfer of technology for production of items identified above for manufacture in large quantities in India.

The firms manufacturing items identified are given in the same order with addresses and telephone numbers.

I. MACHINE TOOLS:

<u>Name of the Firms:</u>	<u>Items identified:</u>
1. AB Bofors-UVA 16131 Bromma Johannesfredsvagen 15/17 Tele: (08) 26 27 80 Telex: 19904	Internal Grinding Machine:



<u>Name of the Firms:</u>	<u>Items Identified:</u>
2. Diamantprodukter AB 12653 Hagersten Jakobsdalsvagen 14-16 Tele: (08) 45 27 75 Telex: 12032	Ultrasonic system for finishing and polishing:
3. DOALL Company AB Box 18 S 14301 Varby 1 Tele: (08) 710 02 50 Telex: 10284	Copy Milling Machine
4. Jungner Instrument AB 17125 Solna Box 1295 Tele: (08) 28 90 10 Telex: 19592	Sharpening Machine
5. SAJO AB Box 403 S-33101 Varnamo Tele: (0370) 157 00 Telex: 70 153	Copying Milling Machine



Continuation Sheet Number -19-

<u>Name of the Firms:</u>	<u>Items Identified:</u>
6. STOREBRO Bruks AB S-59083 Storebro Sverige Tele:(04 92) 30160 Telex: 3943	NC Lathes
7. AB Torshallamaskiner P.O.Box 33 S-64400 Toshalla Tele:(016) 35 57 60 Telex: 46068	NC Lathes Copying Milling Machine
8. Wedevag International AB S-71102 Vedevag Tele:(0581) 261 00 Telex: 73 343	Twist drill grinding Machine
II. <u>MACHINE TOOL ACCESSORIES:</u>	
1. Spv AB Svenska Precisionverktyg Fact 13102 Nacka 2, Planlavagen 32 Tele:(08) 71 62 510 Telex: 10839	Accessories for Drilling



Name of the Firms:

Items Identified:

2. Eminent Tool AB,  
Box 404 S-631 06  
Eskilstuna  
Fabriksgatan 6  
Tele:(016) 12 54 40  
Telex:460 34

Quick change chucks  
and  
Quick lock tooling  
systems

3. Oberg Machine Company,  
Box 1 S-631  
Eskilstuna  
Tele:(016) 13 74 60  
Telex: 460 67

High frequency  
grinding spindles

4. Systems 3R International AB  
Sorterargatan 1  
S-16226  
Vallingby  
Tele:(08) 739 00 80  
Telex: 13044

Accessories for  
EDM

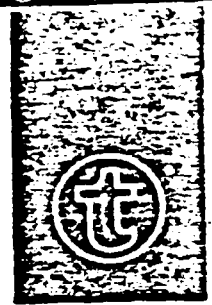
III. ELECTRONICS:

1. Arbogs - Systems  
AB Arboga Mekaniska Verkstad  
73200 Arboga,  
Tele:(0589) 12 720  
Telex: 73318

Automation systems  
for machine tools



<u>Name of the Firms:</u>	<u>Items Identified:</u>
2. ASEA AB Electronics Division 72183 Vasteras Tele:(46 21) 10.00.00 Telex: 40720	Programming system for machine tools
3. Facit AB Dataproducter 10545 Stockholm, Luxbacken 1 Tele:(08) 73 86.000 Telex: 16000	Programming system for machine tools
4. Johansson C.E. AB 613105 Eskilstuna Box 365 Tele:(016) 11 70 00 Telex: 46080	Electronic measuring instruments
5. AB ATEW Box 125, S-642 00 Flen Tele:(0157) 133 30 Telex: 64120 Managing Director: Mr.I.M.Wlassics	Electronic system. for Industrial application.



Name of the Firms:

Items Identified:

6. SATT Elektronik AB  
Box 32 706  
S-126 Stockholm  
Tele:(08)81 01 00  
Telex: 10884  
Managing Director  
Mr.Karl-Emil Werner

N.C.Systems  
for Machine Tools

7. SAAB-SCANIA AB  
S-581 88 Linkping  
Tele:(013) 11 54 00  
Telex: 50040

N.C.Systems  
for machine tools

CHAPTER IV:

TECHNOLOGY TRANSFER : METHODOLOGY:

Continuation Sheet Number -23-



Since no clear indication has been given as to the methodology of technology transfer it is assumed that the same could be:

- 1) Transfer of Technical know how by providing drawings, designs, etc.
- 2) Participation in the manufacture of their items in beneficiary unit in India.
- 3) Providing only training to personnel in specified field in their factories.

The limiting factor in such technology transfer is the finance involved in paying to the firms in Sweden and the cost of balancing equipment to be bought to upgrade the production of selected items. It is also worth investigating if the firms in Sweden would be interested in buying back the items produced under their technical know how and if they would be interested in participating financially in the production of their items. This would help the beneficiary firm to get the required clearance from Government of India for transfer of foreign exchange. TOOLCRAFT wishes to limit such transfer of foreign exchange to about Rs.300,000 to Rs.500,000 (approx.150,000 to 250,000 Skr).



If in case it is not possible to get technology transfer for manufacture of items as identified, TOOLCRAFT would be interested to know if it is possible to upgrade the manufacturing technology by training of two of their Engineers in the firms in Sweden falling under Machine Tools, and Machine Tool Accessories in the field of (1) Production and (2) Inspection.



SCANDIACONSULT

PRELIMINARY

MATCHING

Malmö

1982-05-07

58.0648-01

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RECIPIENT ENTERPRISE

IB2 Toolcraft

CANDIDATE PARTNER ENTERPRISE

Name: Värnamo Maskin AB  
Address: Box 2204, S-33102 VÄRNAMO  
Phone: 0370-11540 Telex: 70049 varnamo s  
Managing director: Lars Lindblad  
Contact person:  
Turnover: 30 M SEK Employees: 135  
Product mix: Milling machines

---

1982-05-04

Phone to Mr. Lars Lindblad

Mr. Lindblad showed interest in the project. The company today has customers all over the world. However, there is not an agent in India at present. The company does not have any licences but they are willing to negotiate about it. Mr. Lindblad will submit some information on the company.

Faktureringen upp 49 procent. Det skriver Värnamo Maskin AB i sitt bokslut 1981 medan många andra verktygsmaskintillverkare kämpar för att hålla sig kvar i ulforsbacken. Värnamo Maskins recept för att överleva har många ingredienser:

- Standardiserade maskiner
- Modulsystem
- Agenturverksamhet som kompletterar egna sortiment.
- Utvecklingsråd som drar upp framtida riktlinjer.

"Hur många verktyg kan köra en högsfistikerad maskin på en hög lönsamhetsnivå? Den maskintillverkare som väljer sofistikerade lösningar reducerar ofta kundunderlaget med toppentaster".

VD Lars Lindblad och hans ledningsgrupp i Värnamo Maskin har valt den enkla vägen. De senaste åren har 10 m ett par påbörjade sofistikerade maskinprojekt helt enkelt lagts ned. Företagets knäfråsar är förstås med billiga, rationella styrt. På CNC-system har leverans från Värnamo Maskin de senaste åren.

"Kunderna ska ju kunna räkna hem sin investeringskalkyl", säger Lars Lindblad. "För de flesta blir det billigare att köpa en enklare maskin och lägga ut mer avancerad produktion på leg."

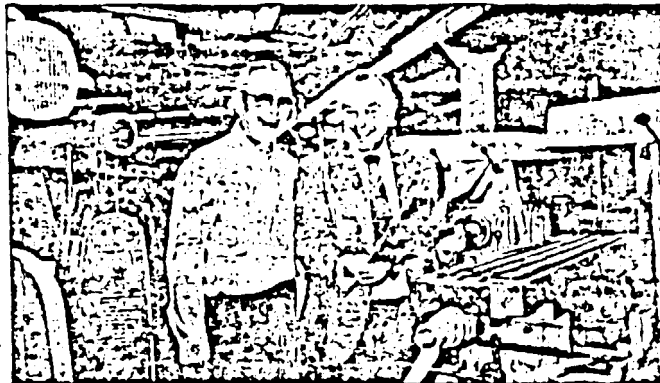
Värnamo Maskin tycks ha valt rätt väg. Försäljningen går lysande. I fjol steg faktureringen från 25,7 till 38,4 Mkr. Under de tre första månaderna i år hade företaget en ordernöjning

# Enkelhet och modulmaskiner ger Värnamo Maskin vinst



Verktygs-

Med relativt enkla maskiner som är lätta att räkna hem för kunderna har marknadschef Börje Waltner, t.v. och VD Lars Lindblad på Värnamo Maskin kunnat summera ihop en 49-procentig faktureringsökning i fjolrets bokslut.



vard 10 Mkr, 47 procent bättre än under samma tid 1981.

Ekonomin ska förbättras ytterligare med den nya generation maskiner Värnamo Maskin nu lanserar. R-630 NC kallas den första produkten. Det är Sveriges första moduluppbyggda fräs. Den ska så småningom få efterföljare genom hela produktprogrammet. Framtidens fräsmaskin sätts ihop av moduler.

Kunderna ska kunna välja mellan olika avancerade styrsystem, från komplett CNC-styrring ned till manuell styrning samt olika bearbetningshuvuden. Framtida tillägg till modulsystemet omfattar rundbord, palltillhållningsutrustning, automatisk verktygsväxling m.m.

"Med modulsystem får vi längre serier, samtidigt som le-

veranstiderna kan hållas korta. Kunderna får själva kombinera ihop maskiner som tekniskt och praxisligt motsvarar deras krav. De kan alltså diskutera re-batter med sig själva och så slipper vi pruta", ler marknadschef Börje Waltner.

### Komplett program

Företagets egna fräsmaskiner backas upp av importmaskiner som säljs på agentbasis.

"Vi försöker marknadsföra ett komplett program inom vårt specifika område fräsning och borrar", säger Lars Lindblad.

Agenturförsäljningen svarar i dag för cirka 7 Mkr - runt 14 procent - av omsättningen. Målet är att öka till runt 30 procent agenturförsäljning.

"Vi vill ha två ben med något så när balans att stå på", säger Börje Waltner.

Rätt sortiment är bara en del bakom Värnamo Maskins framgångar. Många maskintillverkare har bra produkter. Men få har utsatt så hårt på marknadsföring som familjeföretaget i Värnamo. Svenska kunder som har intresse av bredare maskinprogram bearbetas av en speciell agent. Maskintillverkaren har dessutom sex egna försäljare som till största delen jobbar med mindre företag.

"Dålig marknadsföring är troligen orsaken till att många maskintillverkare har så korta serier", säger Lars Lindblad.

Utomlands har Värnamoföretaget de senaste åren byggt upp ett tätt agentnät som den svenska personalen regelbundet besöker. Värnamo Maskin tror på viktigen av personkontakter. Exporten har också ökat från drygt 40 till dagens 70 procent.

Det är ett rådningsprogram med klara linjer som på fem år förvandlat Värnamo Maskin från ett knäföretag till en av landets solidaste verktygsmaskinindustrier. 1976 - då Lars Lindblad tog över VD-skapet - var företaget på väg ut för snabb takt. Han fick omgående börja med att permutera 25 av de 145 anställda.

1978 började det vända. Omsättningen stannade på 16 Mkr. Den går nu mot sin sjunde tredubbling. Fjölrets bokslut visade rekord i alla kolumner. Vinsten blev 13 procent av fakturerade beloppet. Förtroendet på totalt kapital ökade från 9 till 18 procent. Soliditeten stärktes från 10 till 17 procent.

### Idébank och råd

Beställare av specialmaskiner vände sig inte till Värnamo Maskin. Företaget kundanpassar på sitt eget sätt. De senaste åren har konstruktionsavdelningen tillsammans med idébank med förslag och synpunkter från kunder över hela världen. Den är en viktig grund när produktutvecklingen diskuteras.

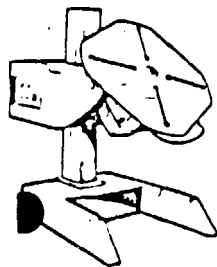
"Vi har övermakt oss själva med att prata om kopierutrustning och CNC-styrring av våra framtida maskiner", säger utvecklingschef Marz Leuner. "Storindustrin vill ha mer produktion med begränsad bemanning. Våra produkter kan i dag inte leva upp till den nivån men vi utvecklar nu maskinerna för att kunna styras enkelt men ändå vara anpassade för mer och mer automatisk tillverkning."

Värnamo Maskiner bildar nu ett regelbrett utvecklingsråd, så kallat framtidsråd. Där ska representanter för kunder, företaget och institutioner i fortsättningen samlas och mer organiserat diskutera utvecklingsfrågor och framtidens maskiner.

MARIANNE STERNER

## Det lönar sig att mekanisera mera

Vill Du mekanisera Din svetsning  
Eller optimera redan befintlig?



Svetsmekaniseringsspecialisten  
**AGA Ljushem AB**

erbjuder Dig kostnadsfri konsultservice eller besök

Ring oss och avtala tid 040-93 58 80

# 203:an, Mecmans nya hydraulcylin 6 dimensioner, 8 slaglängder. Alltid Små inbyggningssmått. ISO-normer. eller högtemperaturtätning. Inget ä

- 
1. GENERAL IB 2
- 1.1 Name and address of enterprise
- Toolcraft  
HMT Industrial Estate  
Bangalore-560031  
Phone: 30618, 30619, 30511  
Telex: 0845-564
- 1.2 Contact person
- Mr B.R. Shivashankar, Managing Partner
- 1.3 Form of ownership
- Private partnership.  
Registered Small Scale Industry.  
There are four divisions of Toolcraft, see attachment.
- 1.4 Invested capital
- |                    |          |
|--------------------|----------|
| Machinery          | 1,8 M RS |
| Land and buildings | 1,0 M RS |
- 1.5 Annual turnover
- Last year 7,5 M RS
- 1.6 Year established: 1961
2. PERSONNEL
- 2.1 Managerial and engineering staff
- |                 |    |
|-----------------|----|
| Managers        | 5  |
| Engineers, grad | 15 |
| Engineers       | 5  |
- 2.2 Clerical staff approx 20
- 2.3 Workers, total approx 80

---

3. PRODUCTION

3.1 Products

Two- and three-dimensional pantograph engraving machines.  
Spark erosion machines.  
Coordinate drilling machines.  
Bench drilling machines.

3.2 Main production processes. -

3.3 Main machinery

Lists of machinery and equipment are available at Scandia-consult.

3.4 Factory premises

Roofed production area -  
Total land area 16 000 m<sup>2</sup>  
Age of buildings 5-15 years

3.5 Production volume. -

3.6 Current collaboration agreements. -

3.7 Quality control. -

3.8 Input materials. -

3.9 Utilities. -

4. MARKETING

4.1 Main market

Local and export

---

4.2 Distribution

In India all products are marketed by Perfect Machine Tools Co Ltd, Bombay.  
Overseas marketing is carried out by HMT International Ltd.

4.3 Competitors. -

4.4 Market demand. -

4.5 Market share. -

4.6 Market surveys. -

4.7 Future plans. -

5. PROBLEMS - DEVELOPING PROJECTS

5.1 Upgrading present products

See attachments.

5.2 New products in present product line

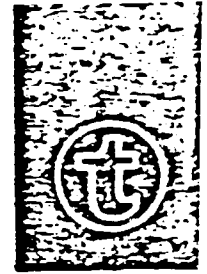
See attachments.

5.3 New products outside present product line. -

5.4 Projected market demand. -

5.5 Projected plant capacity. -

6. COMMENTS



INFRA STRUCTURAL FACILITIES:

TOOLCRAFT is mainly divided into 4 divisions:

TOOLCRAFT With their factory at 4 (B), Peenya Industrial Area where most of the machine tools are being manufactured. Please refer Sheet No. 10. for details of machines installed.

TOOLCRAFT PROCESS: A service shop located in HMT Industrial Estate, to carryout heat treatment operation of different types of steels. Please refer Sheet No. 11. for details of equipments installed.

TOOLCRAFT ACCESSORIES: Located in M.S.R. Industrial Estate with a complete machine shop for manufacture of machine tool accessories like collet chucks, arbors etc. Please refer Sheet No. 12 for details of machines installed.

TOOLCRAFT SYSTEMS: Located in the premises of 4(B), Peenya Industrial Estate, Peenya base to manufacture electronic controls for machine tools, with plans to produce NC Controls. Please refer Sheet No. 13. for details of equipments available.



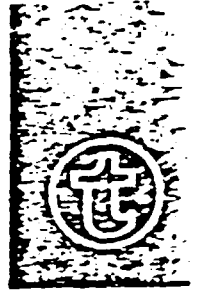
Continuation Sheet Number -8-

Apart from these branches TOOLCRAFT has also a sister concern working as ancillary to them in the name of Precision Engineering Enterprises located at A-09, HMT Industrial Estate where machines like Drill Point Grinders, Drilling machines are being manufactured. Please refer to Sheet No. 14 for details of equipment available and products manufactured.

With regard to technical personnel available to absorb the technical transfer, TOOLCRAFT and its allied firms have 15 Mechanical Engineering Graduates and diploma holders, 5-Electronic engineers and many other trained staff like electricians, wiremen, etc.

The capital outlay of the firm is as follows:

Capital investment in Plant and machinery:	Rs. 1.80 million.
Investment on Building Electrical Installation etc:	Rs. 1.00 million.
Total corporate sales/ Turnover:	Rs. 7.5 million.
No. of employees in all the branches:	120:



Continuation Sheet Number 9

**Products manufactured:**

**Two-Dimensional Pantograph Engraving Machine:**

**Three-Dimensional Pantograph Engraving Machine:**

**Spark Erosion Machines:**

**Co-ordinate Drilling Machine:**

**Bench Drilling Machine:**

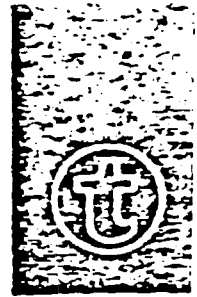
**Leaflets enclosed.**



CHAPTER II

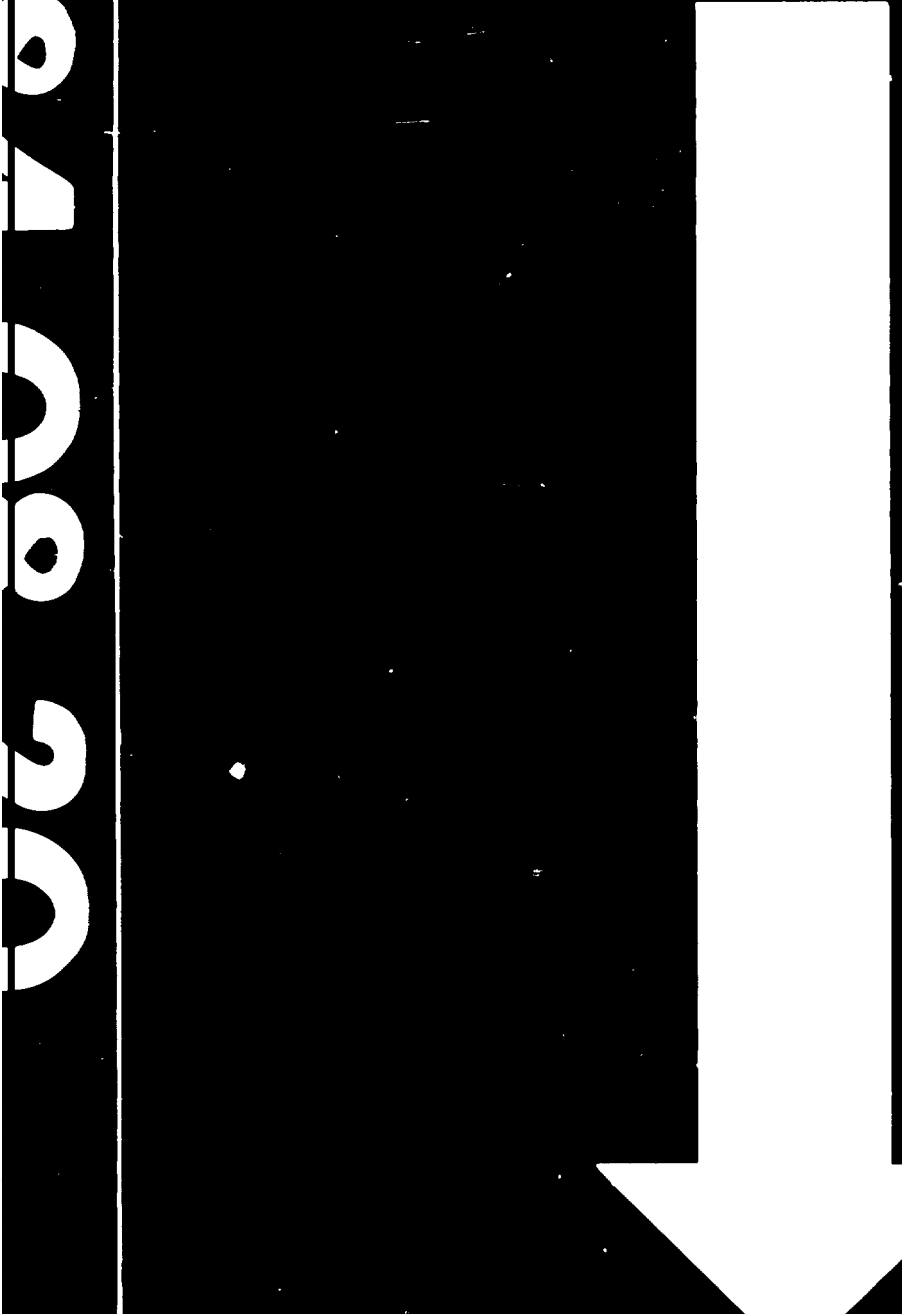
IDENTIFICATION OF ITEMS FOR TRANSFER OF  
TECHNOLOGY:

Continuation Sheet Number -15-

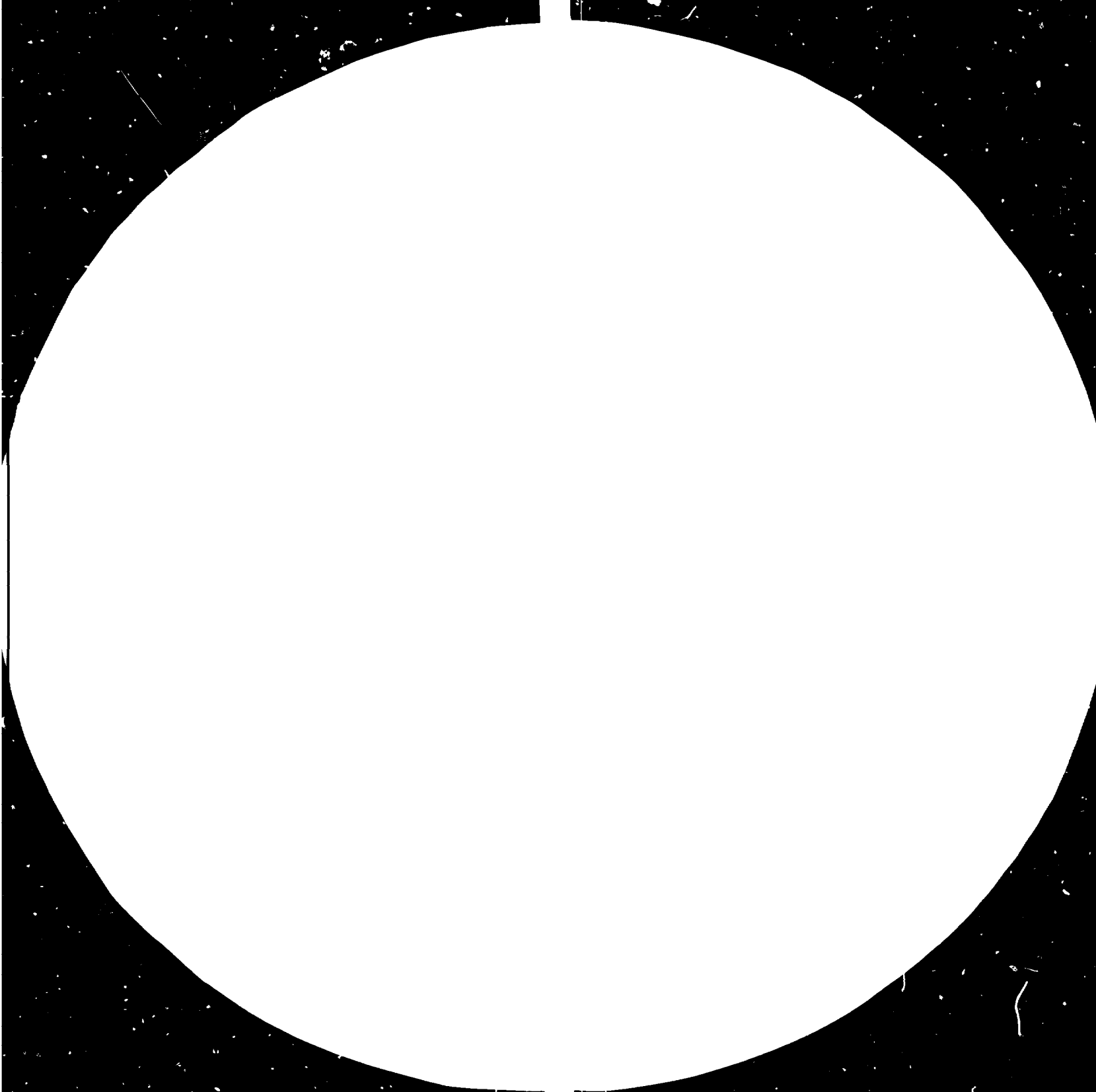


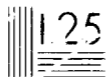
Amongst the many areas of technical assistance that could be expected from Sweden, TOOLCRAFT wishes to give priority to the machine tools, accessories and electronic items based on the facility that is available with them. Though it is prudent to prefer items which are of allied nature to what is being manufactured, it is quite possible that what has been identified may not be available for transfer from Sweden. Hence the transfer of technology could be for manufacture of any one of the items given below in the order of priority.

- (i) Items of machine tools - preferably with Electronic controls - namely:
  - (a) NC Lathes (small/medium size).
  - (b) Milling and drilling machines with programme/NC control.
  - (c) Die sinking machines with electronic copying.
  - (d) Any other machine tool required in toolroom.
- (ii) Machine tool accessories such as:
  - (a) Collets - collet chucks.
  - (b) Quick change Milling and Drilling chucks and adapters.
- (iii) Electronic Controls for machine tools:
  - (a) Programme controllers.



010000





2.5

3.2

4.0

5.0

6.3

8.0

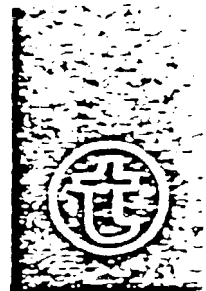
10

12.5

16

20

25



(b) Digital readout systems.

(c) Numerical Controls.

The next chapter gives the probable firms in Sweden who are manufacturing similar items against each of the above sub division, who may be contacted for the technology transfer.

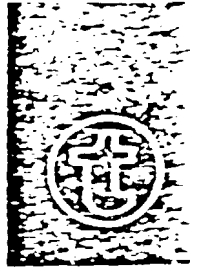
If it is not possible to get the know how to manufacture any one of the above items, TOOLCRAFT would be interested to know if it is possible for the firms falling under Machine Tools and Machine Tool Accessories category, in Sweden to provide training for two Engineers in the field of

(1) Production Technology and (2) Inspection.

CHAPTER IV:

TECHNOLOGY TRANSFER : METHODOLOGY:

Continuation Sheet Number -23-



Since no clear indication has been given as to the methodology of technology transfer it is assumed that the same could be:

- 1) Transfer of Technical know how by providing drawings, designs, etc.
- 2) Participation in the manufacture of their items in beneficiary unit in India.
- 3) Providing only training to personnel in specified field in their factories.

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SCANDIACONSULT

COLLABORATION

Page 1

Malmö

PROPOSAL  
1982-09-06

58.0648-01

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COLLABORATION PROPOSALRecipient enterprise

Toolcraft

HMT Ind. Estate, Bangalore-560031, India

Contact person: Mr. B.R. Shivashankar, Managing Partner

Technological requirements of the recipient enterprise

Technology for the manufacturing of NC lathes of small and medium size.

Partner enterprise

Storebro Bruks AB

S-590 83 Storebro

Contact person: Mr. Roy Ivarsson, Managing Director

Information of the enterprise and its products is enclosed.

Available technology of the partner enterprise

The manufacturing programme of the company consists mainly of:

- o CNC-Lathes.
- o High speed lathes.
- o Milling machines.
- o Surface grinders.
- o Sailing boats and motor cruisers.

The required technology can be found within the first product group, where the company has developed its own technology and its own products.

Proposed general framework for future collaboration

During a visit to Storebro Bruks AB on August 30, 1982, Mr. Roy Ivarsson showed great interest in the project after studying the previously submitted information on Toolcraft. The following sketch on the future collaboration was discussed:

- o A joint venture collaboration will be started.



- 
- o This company will manufacture, market and make service on the machine tools specified for the Indian market.
  - o The contribution to this joint venture company from Storebro Bruks AB will be the complete know-how about the NC lathe type 260 CNC and the standard lathe type 195 GK. This includes all drawings, specifications, manufacturing process and training of personell.
  - o The contribution to this joint venture company from Toolcraft will be the production facilities, like machinery and buildings, personell, management, marketing organisation and working capital.
  - o It will be investigated if there are any possibilities to get financial assistance from Swedfund.
  - o Some part of each machine will be manufactured in Sweden, preferably a unit which requires complicated, special purpose machining. This is necessary to get the permission from the labour unions to get into the joint venture.
  - o To cover the direct costs in establishing the collaboration, Storebro Bruks AB will ask for a certain amount of the estimated value of the know-how as a cash payment and the rest will be considered as share capital in the joint venture company.

Further information requested by the partner enterprise

What does the marketing organisation look like? Will Perfect Machine Tools be involved? If so, please describe this company briefly regarding organisation, ownership, employees, product range etc. Also please explain briefly the content of the contract between Toolcraft and Perfect Machine Tools.

## HISTORY OF STOREBRO FROM 1728

When the widespread wars in the 18th century were ended and king Charles XII had been killed in Norway, Sweden fell upon evil times and token money was used extensively all over the country. But the people rallied and sought to find the power to heal the sores that had afflicted their land - a power possessed by every country when needed. The time of great power was over, the borders of the country had shrunk, but the aim of the people was to regain their lost greatness within their own borders. They started to mine ore on a larger scale than earlier, to build hammer forges and blast furnaces. The result of this was that industrial development went on at a rate greater than ever before.

It was at this time that Wilhelm Mauritz Pauli - a major, forest superintendent and squire - happened to cross the bridge where the highway went over the stream at Sjundevill - the name by which Storebro was known at this time - and he noticed that much water power that could be used was being wasted. In 1726 this man Pauli had built the foundry of Pauliström, which was called after him. In addition to the fact that he found the waterfall worth damming, he also saw that there were large forests all round for charcoal burning and many lakes and marshes with rich resources of bog ore.

Pauli returned to this place, now in company with major Karl Magnus Silfverhielm and Gustaf Oxenstierna, assessor and baron, and on December 9, 1728 they granted the right to erect a hammer with 2 forges. This franchise also included charcoal burning in 8 parishes and the right to take iron ore from 14 lakes. Flour and saw mills were also built. In 1732, after having been granted further rights a second hammer and two forges were installed. In 1736 Pauli owned the mill outright and then obtained the rights for a foundry. Coal houses and sheds were built on islets down the stream.

These big enterprises got beyond Pauli's control and in 1742 he had to mortgage Sjundevill as well as Pauliström for a bigger loan from Rikets Ständers Bank. On 17th December, 1748, as he could not redeem his liabilities, the mill and farms went under the hammer for 220.000 daler "silvermynt". The purchaser was the merchant and squire Jean Hindrik Lefebure in Stockholm.

Lefebure was born in 1708 and in 1736 married his cousin, Charlotta Bedoire. He was a great business man, a Member of Parliament and belonged to "the hat party" (Swedish people were in those days divided into two parts - "the hats and the caps"). He became the manager of the East Indian Company and was knighted. Later he was expelled from the Stock Exchange, condemned to give six million "daler kopparmynt" to the Crown and sent to prison for one month to live on bread and water. He died in 1756. It was at this time the mill started to be called Storebro.

On April 17, 1756 the ownership of Storebro passed into the hands of the famous baron and later major-general Kari-Fredrik Pechlin, the owner of Ålhult and other farms. He had by marriage with Kristina, the daughter of the very rich merchant Tomas Plomgren in Stockholm, become the owner of Ålhult and its subordinate farms, which before had been under the ownership of the family of Plomgren. Pechlin was probably at this time one of the greatest land owners in the province of Småland. The franchise concerning Storebro was extended during the leadership of Pechlin from 67 long tons bar iron annually to 134 tons in 1756 and to 200 long tons in 1757. When Pechlin took over Storebro it was in a deplorable state, but he was an energetic man and soon put the worst defects right.

The quality improved when 25% iron ore was added to 75% bog ore. However, Pechlin too had to mortgage his property and his business fell into disorder; during the political revolution of 1772 he was arrested and forced to spend months under lock and key.

In the middle of 1780 Pechlin sold Storebro to Anna Margareta Hultman in Västervik, the widow of a councillor, and her son Lars Hansson Hultman. This family was very rich and owned a lot of farms in Tjust and a big house in the town of Västervik. The contract of sale was signed on November 8, 1786, the amount paid being 17.600 "riksdaler in specie". The foundry itself was some time later estimated at 8.333 "riksdaler in specie." Lars Hultman died in 1798 and in the inventory Storebro and its farms had the value of 26.000 "riksdaler in banco."

Mr and Mrs Hultman had a daughter, Sara Helena Hultman, born in 1784; in 1806 she married the assessor Claes Fries in Stockholm. Those two took over the ownership of Storebro. Claes Fries was a qualified man and he made a deep impression on the development of the business. A small foundry was set up, at which hearthstones, pendulums, tripods and other light wares were made. New buildings were erected and big peat-mosses were cultivated. Between the years 1821 and 1824 the imposing manorhouse was built, now known as Herrgården. Building-contractor was Nils Olsson from Åkarp in the parish of Lönneberga.

The two sons of Claes Fries, district judges Claes Hampus and Lars August Fries, took over Storebro in 1842. In 1856 Hampus Fries moved away and some time after Storebro and its subsidiaries passed into the hands of squire Johan Tillberg of Falsterbo Bruk. Johan Tillberg seems not to have been long at Storebro. From the time of purchase until the 1860's Johan Tillberg's son, Gustaf Leonard Tillberg, lived in Storebro. He was born in Tuna in 1853 and married Hilma Charlotta Meurling. After him, his brother Christer Herman Tillberg and his wife Laura Bronikowskij lived there and moved in 1865. After the death of the squire Storebro passed into the hands of his heirs, who in 1897 divided Storebro into shares. The manager was the cavalry captain Axel Fredrik Tillberg, who lived in Fredensborg; he was succeeded as president by his son-in-law, major Axel Baltzar Carleson.

In 1897 an electric power station was erected which supplied the village with electric light. As a result of this Storebro had electric lighting even earlier than Stockholm.

The distillation of spirits was carried out on an industrial scale from about 1850 until about 1880 when the factory was converted to the manufacture of cellulose, one of the first of its type in Sweden.

By agreement, on November 4th 1910 captain Axel Tillberg and major Baltzar Carleson sold all 400 shares in Storebro Aktiebolag to a syndicate in Oskarshamn consisting of consul Gustaf L. Wijkström, bank manager A.E. Schyller, manager Theodor W. Jaenson and merchant Karl Karlzén and some others. The sellers retained the right to stay on in the manor house of Storebro and Fredensborg until October 1st 1911, free of charge.

The purchase price was 650.000 Sw.Crs. of which 150.000 Sw.Crs. was paid in cash and the balance deposited in Smålands Enskilda Bank. The purchase was financed by the immediate sale of 150.000 pine trees of 8" and more for Sw.Crs. 300.000 and also 112.000 fir trees of 5" and more for Sw.Crs. 190.000. Furthermore the property was split and the big farms Gissemåla, Tobo with Fredensborg, Kvilla, Sjundevill, Kvafhult and Åkemåla and some other, smaller properties were sold.

The cellulose factory was sold in 1911 to AB Bruzafors-Hällefors in Lönneberga, the present name being Silverdalen, but in 1917 it was sold back and changed to workshop and storerooms.

Since more wooded ground (incl. the farm of Storebro) had been sold to the German company of Stinnes-concern Holzhandelsgesellschaft Wictoria-Mathias, Essen, Ruhr, the only things left from the earlier domains were smaller industrial and dwelling house areas in and around the village of Storebro.

The agricultural industry, which had earlier been the main occupation, had now dropped out and was replaced by the engineering and saw mill industries which dominated the community.

The manufacture of crude oil engines was started as early as in 1909. A few years later an engineer named Eric Schambertz was employed and the engine production developed under this leadership up to the beginning of World War I when a shortage of fuel oil stopped this production.

Now they had to look for other manufacturing outlets and sub-contract manufacture of lathe details was started. By 1915 the workshop was ready for its own production of lathes, a branch of industry that had been particularly favoured by the economic situation during the war. As the capacity of the workshop was insufficient a new installation hall was built in 1915; in addition Olsbergs Gjuteri in Bruzholm was purchased. In 1917 Lambert Bjurström's mechanical workshop in

Västervik, complete with machines, effects and warehouses was bought for Sw.Crs. 250.000. In November 1918 the house with machines and effects was sold to AB Slipmaterial for the sum of Sw.Crs. 175.000. The warehouse, drawings and models were not included. More workshops were taken for subcontract parts.

At the workshop in Storebro, where shifts were worked, employment was provided at this time for 125 men, the production program being six 8" shell lathes per week. The value of the machines produced increased during the years 1915-1919 to 432.000, 1.067.000, 1.856 000, 740.000 and 925.000 Sw.Crs. respectively.

After World War I came the years of depression between 1919 and 1922, with difficulties in selling and strikes, plus a big excess profits tax, which became due three years after demand, as no provision had been made for this. This enterprise, like many other companies at this time went into liquidation of the 31st of July 1922.

Engineer Schambertz became trustee and under his administration the business was carried on up to 1924.

The liquidation was complicated by deeds of houses and mortgage documents being lodged in different Banks. At liquidation the industrial properties were purchased: the mechanical workshop, the foundry, the mill and the electrical power station with lines, Herrgården etc. by Kristdala Kreditkassa, which later let the houses to engineer Schambertz and the bank director N.E. Carlsson. In order to let the business go on these two founded "Storebro Bruksbolag, Schambertz and Carlsson", and from Smålands Enskilda Bank they bought all the mortgages, which had earlier belonged to the business, the house "Sulfitfabriken" and others.

The wooded land which had earlier been owned by "the German Company" was taken over by the County Council in 1917 and administered by "Skogssällskapet" under the name of "Norra Kalmar läns Skogsallmänning".

Under the leadership of Mr Schambertz the manufacture of engines was again developed up to the end of the 1930's. Mr Schambertz died in 1928 and after him came engineer Arvid Ågren. In 1938 Mr Ansgarius Svensson, owner of Gullringens Träförädling, entered the company as a partner.

The houses which were rented by Kristdala Kreditkassa were sold in 1938 to the engineers Erik Fagerholm and Nils Wickman, who started "Föreningen Storebro Kraft". In connection with this the business of the company was moved to a newly built workshop near the station and the old workshop was rented by AB Ljungmans Verkstäder in Malmö, making wing shells for the national defence during wartime.

In 1943 the old workshop was sold and in 1947 the foundry was sold to Aktiebolaget Örnmaskiner. This firm had been started in 1933 by three employees of Storebro Bruksbolag, two brothers Ivar and Sigurd Gustafsson and Georg Larsson.

During the same year Aktiebolaget Storebro Gjuteri was formed to run the foundry, AB Örnmaskiner and Storebro Bruks AB, each owning half the shares.

During the latter part of the 1930's the production of motors and lathes had been carried on side by side, the economy of the Company was strained by the selling of motors on contracts of part payment. Working capital was brought in when Mr Svensson joined as a partner and as World War II approached, inquiries for machine tools increased. Once more the production of motors had to be given up because of the lack of oil and the main production was lathes.

A new object had now entered the production program in the form of producer gas units for cars and trucks. As early as 1936 an agreement had been drawn up with AB Graham-Lundkvist in Stockholm. The firm in Storebro was allowed to carry on some tests and experiments with a newly patented producer gas unit and the company secured the right to produce it. When World War II broke out, there was a fully tested prototype and manufacture could be started immediately. At this time more than 300 taxis in Stockholm ran on producer gas units from Storebro.

After the end of World War II petrol was supplied again. Producer gas units soon became museum pieces and once more production in Storebro had to adjust itself to time. Valuable experience as to thermo-technics and technical equipment left from the producer gas epoch were the assets that were exploited on an optimal scale. This was the beginning of the epoch of boilers. In time the manufacture of welded boilers developed: heat boilers for own houses as well as for large buildings, low pressure boilers for the wood-processing industry and refuse destruction units the annual production attained 700-800 heat boilers.

After the death of Mr Svensson in 1945 his heirs became shareholders and the same thing happens in 1949, when Mr Carlsson dies. In 1950 the shareholders draw up a syndicate agreement, the Board consisting of the following: Mayor Yngve Malmquist, Kalmar, President, lawyers Harald Almer and Verner Bååthe, Stockholm. Managing directors from 1940-1962 were Mr Karl Ericsson, Mr Olof Hermann and Mr Bertil Ankarstrand.

#### AB ÖRNMASKINER

The year 1963 is the beginning of a new era in Storebro. On January 1st, 1963 a purchase contract is signed by AB Örnmaskiner and this company takes over the total stock of shares of Storebro Bruks Aktiebolag and accordingly becomes the sole owner of AB Storebro Gjuteri.

### From errand boy to foundry proprietor

In 1932 all Sweden was afflicted by the depression. In Storebro too, many workers were temporarily discharged and the total manpower at work didn't exceed twenty people. Everybody else was on relief work, which often meant ditching or forest planting.

Since Ivar Gustafsson at the age of 15 was hired as an errand boy at Storebro Bruk he had been playing with the idea of starting a business of his own. He easily got his brother Sigurd and a friend, Georg Larsson, enthusiastic about the idea. Exhausting their funds they managed to raise 6.000 Sw.Crs. acquired the right to manufacture lathes and bought the ancient hammersmiths' stable. This building was turned into the first workshop of Örnmaskiner which gave work to six people, including the owners. Since they worked practically around the clock the company was nicknamed Night and Day Co!

### Boat building

The boat building division came into being in 1945. Refugees from Esthonia were quartered in a quarantine camp at Fredensborg. When these refugees later started to earn their living in their new country AB Örnmaskiner offered them employment in the mechanical workshop but this kind of work was totally new to the most of the Esthonians. When out walking one evening, Ivar Gustafsson noticed the skill with which these Esthonians built boats and this solved the employment problem. A boat building industry took shape. During the first few years the program consisted of rowing-boats and small fishing-boats. But as the interest in boats developed, the scope of the industry gradually increased and so did the size of the boats. The boat building plant is now one of the largest in Northern Europe producing sailing boats and motorboats for leisure purpose.

### Örnmaskiner becomes Storebro Bruks AB

On May 5, 1964 AB Örnmaskiner took over the name of Storebro Bruks AB. The village of Storebro now had developed into a modern industrial community. The company's ambition was primarily to develop a competitive and rational productive apparatus as to face foreign competition. Up to date machinery was bought, the workshop was extended as well as the foundry which was enlarged by a modern mechanized department.

The annual turnover of 1933 was 33.000 Sw.Crs., which sum rose rapidly to 920.000 Sw.Crs. in 1943, 3.071.000 Sw.Crs. in 1963 and to 34 million Sw.Crs. in 1973. In 1980 the figure was about 100.000.000 Sw.Crs.

Because of the increasing influx of orders there were demands for larger space and during the last 30 years the workshop area has increased from 300 m<sup>2</sup> to 30.000 m<sup>2</sup>.

### Bruksherrgården (The Manor-House)

Storebro Herrgård, since 1824 the ancient directors' house, had been turned into an office and administration building in 1912. In 1946, Herrgården was bought by a cooperative association, Storebro Byggnadsförening. Extensively renovated, Herrgården became a great asset to the village. Inside the walls it housed a public library, a school children's refectory, a restaurant with banqueting rooms and a cinema.

In 1968 the circle was completed when Storebro Herrgård was purchased by the company and brought back into use as an office building.

In April 1968 the managing director's office and the departments for buying, sales and book-keeping moved into Herrgården. Parts of the old reception apartment and a few guest rooms have been restored in order to receive customers from far and near.

### Västervik

The boat building division had needed premises on the sea-side for a long time. After negotiations with the town council of Västervik a purchase contract was signed in September 1968. The property consisted of 40.000 m<sup>2</sup> and has by now been enlarged to 75.000 m<sup>2</sup>. About 230 meters of quay was included and some warehouse buildings.

Immediately after this purchase work started on putting the "Västervik-yard" in order. It is used for building boats of certain models and provides winter laying up space and service facilities.

There is also a construction and assembly hall for glassfibre hulls and plastic parts.

### Activities in Storebro

At the boat yard of Storebro the motor cruisers Royal Cruiser 31 and 34 and the sailing yacht Royal 33 are built on line.

Mahogany and teak stocks are brought here to be sawn in the own sawmill in appropriate pieces for planking and above all interior equipment. The company's policy is to maintain a strict control of all incoming parts and accordingly the most are produced within the company. In connection to the boat industry in Storebro there is both a fittings workshop and a shiptailors' department.

Careful manufacture throughout the production has made the boats from Storebro well-known all over the world as for their extraordinary quality, style and seaworthiness.



Today Storebro disposes of an important production of machine tools and keeps the place as Scandinavia's biggest producer of lathes. The program includes also millers, surface grinders, deep-hole-boring machines and other special duty machines, mainly for heavy industry.

Technology has made great progress during the 60 years Storebro has been making machines and all the products are kept at an advanced technical and qualitative level. Storebro also maintains its ancient traditions by producing cast iron at its own foundry. The actual moulding shop is able to handle up to 15 tons respectively 45 feet castings.

Some facts about now

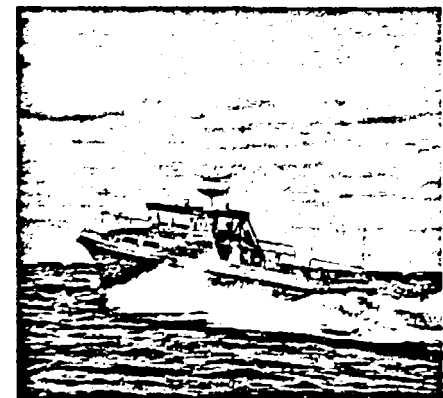
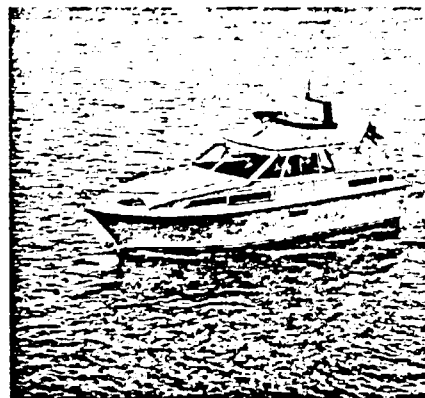
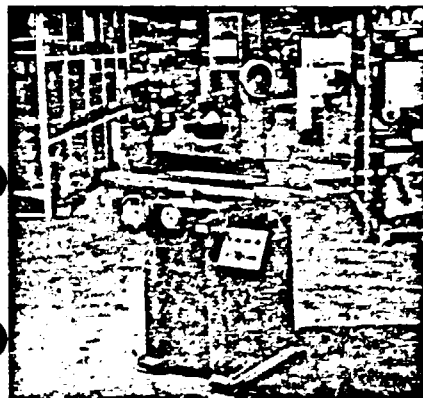
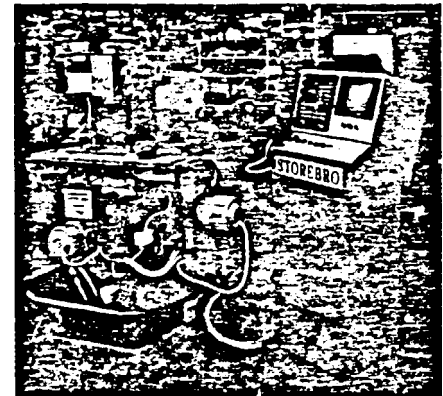
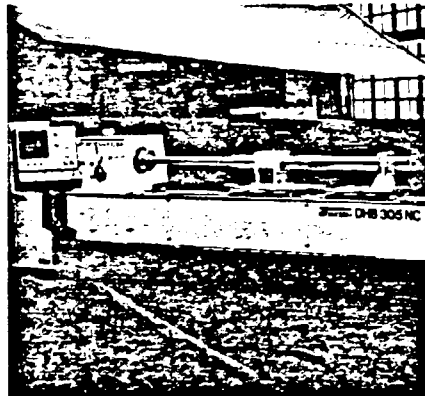
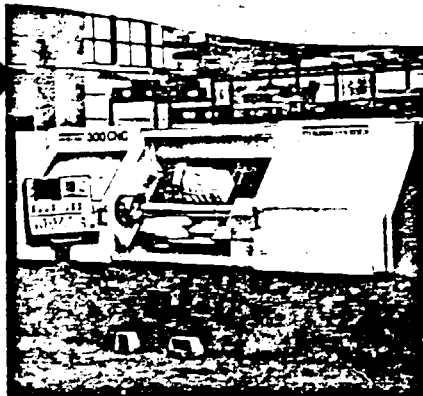
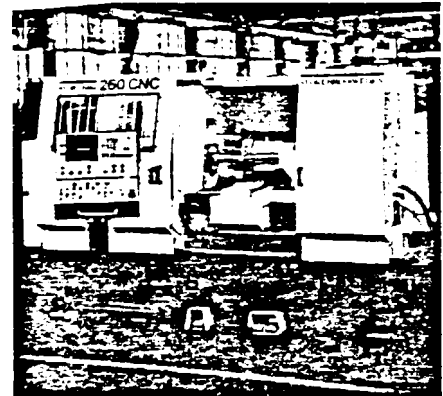
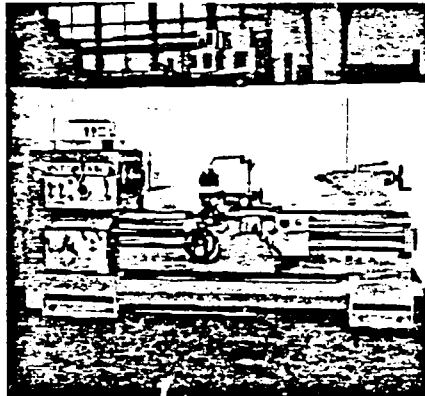
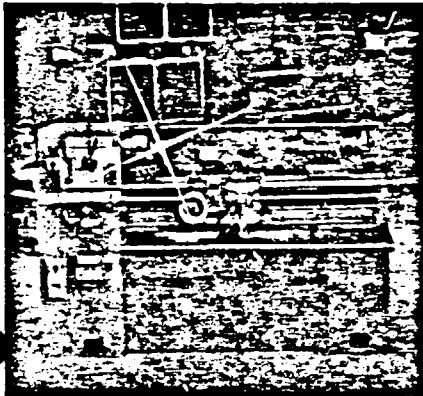
In 1973 Ivar Gustafsson retired from his office as a managing director and was succeeded by his oldest son, Roy Ivarsson, who had already been with the company for a long time. Mr Ivarsson's brother, Lennart Ivarsson was appointed assistant manager. Roy Ivarsson is responsible mainly for the mechanical division while Lennart Ivarsson devotes himself to the boat division.

Shareholders in the company is Roy Ivarsson, Lennart Ivarsson and Mrs. Elsebeth Gustafsson-Furthmair, who holds the function of purchasing manager.

The board consists of Tore Nyberg, President, Roy Ivarsson, Lennart Ivarsson, Elsebeth Gustafsson-Furthmair and representatives of the local unions, István Korán and Per-Inge Carlsson.

The total turnover of the final accounts of 1/5 1979 - 30/4 1980 amounted to about 100 million Sw.Crs. and the number of employees was about 500.

*Storebro produces professional machines  
for mechanical work shops and training, including  
special machines for the oil industry.*



Storebro was founded in the year 1728. Since the beginning of this century the manufacture of machine tools has been the main activity of the company.

Today Storebro is the biggest producer of lathes in Scandinavia. You will find a wide range - all the way from smaller centre lathes up to big machines for the oil industry.

The program also contains horizontal drilling machines for various purposes, as well as

smaller milling machines and surface grinders. These machines are produced with high technology for ultimate performance. Electro-technics and computers are being used more and more, giving increased reliability and efficiency to machine tools from Storebro.

We have about 500 employees working in separate divisions - machine tools and boats. Our pleasure boats are known all over the world for their superb finish. Recently a range of crafts for com-

mercial use has also been introduced.

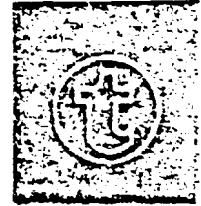
Whenever you are in the market for top quality machines - or boats - turn to us. We welcome your inquiries.

## STOREBRO

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Tel 0492-30160 (nat)  
+46 49230160 (internat)  
Telex 3943 STB S*

# TOOLCRAFT

MANUFACTURERS OF PRECISION MACHINE TOOLS



11.14/1 / 394 / 83

July 27, 1983:

Dear Mr. Roy Ivarsson,

I am indeed very sorry for my belated writing. It was nice meeting you at Malmo and thank you for the courtesy and co-operation extended to me during my visit to your factory regarding technology transfer in respect of Model CNC 260 Lathe, under the aegis of UNIDO under their programme of arranging plant level co-operation for transfer of technology from developed countries to developing countries.

I am enclosing herewith a Memorandum of understanding reached during the discussions and request you to let me have your concurrence of the same to enable me to persue the matter with our Government. I had sent this Memorandum of Understanding to UNIDO and only after their approval, I am sending this to you.

I await to receive an early communication.

With warmest regards,  
Yours sincerely,

*B.R. Shivashankar*  
B.R. SHIVASHANKAR;

Encl:

Mr. Roy Ivarsson,  
Managing Director,  
Storebro Bruks AB,  
S-590 83 Storebro  
Sweden;

copy to:-

Mr. J. Cramwinckel,  
Assoc. Ind. Devlp. Officer, UNIDO,  
Vienna;

✓ Mr. Hakan Sandlund,  
Scandiaconsult AB,  
Stockholm;



MEMORANDUM OF UNDERSTANDING:

The following is the Memorandum of understanding entered into orally during the meeting organised by UNIDO at Malmo, Sweden, between April 5 & 8 th 1983, (now brought down for record) between TOOLCRAFT, represented by Mr. B.R. Shivashankar, Managing Partner, hereinafter referred to as TOOLCRAFT and M/s. Storebro Bruks AG, Storebro, Sweden, represented by its Managing Director Mr. Roy Ivarsson, hereinafter referred to as STOREBRO.

Whereas UNIDO under the scheme of Technology Transfer to developing countries has identified TOOLCRAFT as a potential beneficiary under the scheme and STO EBRO as a possible supplier of know-how for manufacture of NC Lathes Model 260 CNC, and consequent to the discussions in Malmo and subsequently at the factory in STOREBRO, an understanding has been reached on the following points.:

1. The Memorandum of understanding is subject to the approval of the Government of India for issue of licence/approval of technical collaboration for the manufacture of Model 260 CNC Lathes, in India.
2. STOREBRO have agreed to supply the following technical documentation, products and services to TOOLCRAFT.
  - 2.1 Complete set of reproducible manufacturing and assembly drawings, electrical circuit diagrams, Directory of bought out items with addresses of suppliers and the prices of each item, specifications of Raw materials including treatment procedures.



- 2.2 Parts' List
- 2.3 Operation layouts, Jigs & Fixture drawings, Tool drawings etc.
- 2.4 Reproducible copy of Instruction and maintenance manual in English language.
- 2.5 Catalogues in English language.
- 2.6 To provide training for two of TOOLCRAFT personnel for a period of one month each, with free boarding and lodging facilities & daily allowances to meet incidentals.
- 2.7 Notwithstanding training of TOOLCRAFT personnel, STOREBRO, if required by TOOLCRAFT, shall depute expert technicians on terms and conditions to be mutually agreed upon and subject to the approval of Government of India.
- 2.8 STOREBRO shall give TOOLCRAFT all technical information, knowledge, expert advice and assistance concerning the manufacture, assembly, inspection, testing, use and adaptation of Model 260 CNC Lathe. Technical information shall include secret processes, manufacturing secrets, intimation in detail of all design improvements, information regarding special machine or equipment used and the know-how relating to all matters concerning manufacture of Model 260 CNC Lathe.
- 3 In consideration of the above supply & services, TOOLCRAFT have agreed to pay a sum of SW.KR.400,000/- (Swedish Kroner Four hundred thousand only). The payments will be made as under  
1/3 rd after the agreement has been taken on record.  
Next 1/3 rd to be paid on the transfer of documents etc.  
Balance 1/3 rd to be paid at the commencement of production or after completion of 48 months of the signing and acceptance of the agreement.  
In addition to the above, Royalty @ 3% is payable on ex-factory selling price of the product net of excise duties minus the



the cost of standard bought out components and landed cost of imported components.

The above payments are subject to Indian taxes.

4. STOREBRO at present are using Sinumerik CNC Control system for their machines and have suggested to TOOLCRAFT changing over to any other CNC system available in India or from any other country, which has service facilities in India. TOOLCRAFT have agreed to look into this. While TOOLCRAFT has the right to choose the supplier of CNC control system, STOREBRO will assist TOOLCRAFT in the selection and adaptation/interfacing of the system in the final product.
5. STOREBRO have also agreed to TOOLCRAFT buying directly any or all of the items for manufacture of Model 260 CNC Lathe, as per the directory of suppliers furnished by STOREBRO or from any other supplier.
6. The Research & Development Department of TOOLCRAFT will be at liberty to alter the drawings or modify to suit the components indigenously available and STOREBRO have indicated they do not have any objection to this. Any improvements carried out by TOOLCRAFT would be for mutual benefit and should be exchanged with STOREBRO.
7. STOREBRO have agreed to supply the first 10 to 12 sets or more in CKD condition, without the sheet metal items, Electrical wiring, and CNC controls in the first phase of 12 to 18 months, in batches and prices as mutually agreed upon. In the meantime TOOLCRAFT will establish or source out facilities for manufacturing of these items. In the subsequent years only such items that cannot be manufactured by TOOLCRAFT or any outside sources in India, would only be imported from STOREBRO.
8. STOREBRO have agreed to furnish immediately the prices of such CKD & components for approval of TOOLCRAFT.



9. STOREBRO have agreed to give the option to TOOLCRAFT to manufacture the next bigger size of machine i.e. Model 300 CNC or 400 CNC or both on similar arrangement, to be mutually agreed upon at later dates.
10. TOOLCRAFT will be given the exclusive rights to export these machines to South Asian and South East Asian countries. Besides STOREBRO are willing to extend the rights to some of the African countries which would be indicated by them.
11. STOREBRO will permit TOOLCRAFT to technically / commercially associate itself with any other local concern or persons engaged in Electronics or in any other branch of Engineering to achieve the objective of manufacturing of Model 260 CNC Lathe.
12. It is expressly understood that this memorandum of understanding forms the general framework of a formal collaboration agreement between TOOLCRAFT and STOREBRO to be drawn between the parties and approved by the Government of India.
13. The agreement which will be entered into will be in force for a period of five years from the date of signing and approval by the relevant Government of India authorities of such an agreement.

for and on behalf of  
TOOLCRAFT

(B.R.SHIVASHANKAR)  
Managing Partner

for and on behalf of  
STOREBRO

( ROY IVARSSON )  
Managing Director:

**ANNEX No. 2**COLLABORATION PARTNERS

Maini Precision Products P. Ltd., Bangalore, Karnataka, India (MPP)  
and  
Ing. Torsten Ullman AB, Moheda, Sweden (TUAB).

SELECTION PROCEDURES

Based on the report from Expolaris (subannex 2:1), an Enterprise Profile worked out by MPP (subannex 2:2), the short briefing by Mr. Hånell and a letter from MPP to the KSSIDC of March 15, 1982 (subannex 2:3), MPP was selected as one of the potential recipient enterprises to be further promoted for collaboration with a Swedish enterprise. The main reasons for the selection were:

- o A positive overall impression of the company.
- o The management was said to be very good.
- o The requirements on technological transfer were very well described.
- o The company and its products were well described.

After the selection phase an attempt was made to make a preliminary matching with the Swedish enterprise AB Posto (subannex 2:4). They showed interest in the project and submitted information on the company and its products. However, their production processes were not within the areas where MPP requested assistance, so this contact was dropped after presentation to MPP.

The impressions from the visit to MPP during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 2:5). The following came out of the visit:

- o The capability of the management was convincing.
- o The requested technology transfer aims at improving the quality of the present products.
- o This technology could most likely be found in the Swedish automotive industry.

After the Mission there was another screening procedure based on the additional information now available. As most of the criteria for the selection of the projects to be continued were fulfilled, MPP was put in the group of potential recipient enterprises, which should be finally matched with Swedish partners.



### MATCHING PROCEDURE

The main requirements of MPP were listed and compared to the available key words of the Register of Swedish Industry and Commerce, Kompass, through which a couple of potential Swedish enterprises were systematically chosen. The first one contacted was TUAB, which immediately showed interest in the project. After studying the information available thoroughly and after a meeting with Scandiaconsult, a Collaboration Proposal was worked out.

### COLLABORATION PROPOSAL

The Collaboration Proposal is attached (subannex 2:6) and contains the following framework for future collaboration:

- o The transfer of technology will be focused on the quality control system developed by TUAB.
- o TUAB will train some engineers from MPP in this system.
- o A lot of technical information will be submitted during the training, including also areas outside the quality control system.
- o The business deal will be a straight forward purchase of technology.

### NEGOTIATIONS

Already in November 1982, during a business trip to Europe, Mr. S. Maini of MPP visited TUAB for discussions on future collaboration as per Visit Report November 23, 1982 (subannex 2:7). The outcome of this meeting was that:

- o The two companies match perfectly.
- o The quality control system is not the solid foundation to build a future collaboration on.
- o The parties will try to work out some buy back arrangement.
- o MPP will supply TUAB with labour intensive products, which require technical inputs from TUAB. MPP will work out quotations.

The quotation was evaluated by TUAB in a letter dated March 15, 1983 (subannex 2:8) and the conclusion was that MPP's prices on the details in question were not competitive. However, the parties would like to continue to work out some collaboration agreement.

During the Group Visit to Malmoe, Sweden, April 5-8, 1983, the negotiations continued and the result of it is found in the attached memorandum (subannex 2:9). The main contents are:

- o MPP will be a subsupplier of TUAB.
- o TUAB will assist MPP in technology know-how.
- o For some details TUAB will supply the raw material.
- o TUAB will assist MPP in finding second hand machines in Sweden.
- o The remuneration to TUAB for their know-how will be covered by the margins of profit made by TUAB on sales of the products under their brand and manufactured by MPP.

#### PROJECT STATUS JUNE 83

Both parties have expressed their satisfaction with the development of this collaboration so far, even if there have been difficulties to find the proper details for manufacturing in India.

The following inputs from UNIDO in this collaboration project have been suggested:

- o Information to the board members of TUAB about the entire Technology Transfer Project of UNIDO.
- o The travel costs for a person from TUAB to MPP's workshop in India.

#### PROJECT STATUS OCTOBER 83

Initially, TUAB was involved in the technology transfer project to provide MPP with know-how on quality control and training of MPP employees. During the Malmö meeting, TUAB and MPP agreed that TUAB's services to MPP should come out of the margins on products that MPP should produce as a subcontractor to TUAB.

However, after this agreement TUAB's board has decided that the use of Indian subcontractors is too risky for TUAB. They are not prepared to put TUAB's goodwill among European automotive industry and other customers at stake. TUAB has also made more detailed calculations and found out that the short and long run profitability in a project of this kind is too low.

TUAB has informed MPP in a letter in October that they are no longer interested in a technology transfer where their compensation comes out of a subcontracting agreement. They are prepared to transfer know-how on quality control and train MPP employees but for a fixed fee. According to Mr. P-G Fransson of TUAB, Mr. Maini of MPP is not likely to be interested in discussing such an agreement. From the beginning Mr. Maini's interest has been to find another market channel for his production.

**Comments**

The cooperation between TUAB and MPP seems difficult to promote. TUAB now lacks the business interest, which was the base for the initial collaboration agreement.

UNIDO is recommended to contact MPP and evaluate their real interest in transfer of quality control know-how. If such interest really exists, there might be a possibility to find another Swedish company with this knowledge and with an interest to use MPP as a subcontractor.

Name and other identification data of the firm

A Maini Precision Products Private Ltd  
B-59 Functional Industrial Estate  
Tumkur Road, Peenya  
Bangalore 560 058

Telex: 84 28 255 MPP IN

Phone: 388 46, 388 47, 387 14

Managing director: Sudarshan K Maini

Established: 1973.

Datas about the people employed in the firm

Professional staff: 20

Skilled labour: 40

Unskilled labour: 35

A very competent company.

Annual turnover, equity, profits and economic facts

1979-80 turnover: 4 300 000 In R

1980-81 " : 5 700 000 In R

The company is making a good profit.

Product mix

Lapping mandrels and sleeves, dowel pins, roller tappet pins, piston pins, hand primers, hot forged slotted nuts. Assembling of stroboscopes and voltage stabilisers.

Production technology, equipment and other technical information

Cutting, turning, lapping, grinding, finishing, etc. to a very high standard.

All equipment need for the products and processes mentioned. Some of the equipment is of own manufacturing.

Datas about marketing organization etc

Products are delivered to Motor Industries Company Ltd of India, to India Pistons, Ashok Leyland, Bharat Electronics Ltd and other companies. Nuts are exported to USA and Canada.

The future plans of the firm

The scrap and repair percentages are very high at the moment. In the actual field the company want to improve the technology to reach a higher percentage of export.

The possibilities of the firm

Concerning the skill and the ambition, the possibilities are very good.

Recommendations and proposals

The firm should be assisted in the technical field, to be able to fulfil its plans. The company need relevant equipment.

ENTERPRISE PROFILE

Name and Address of firm : MAINI PRECISION PRODUCTS PRIVATE LTD.  
 B-59 Functional Industrial Estate, Tumkur Road,  
 Peenya, Bangalore 560 058  
 Tel: 38846, 38847, 38714  
 Telex : 8428255 MPP IN

Name of Entrepreneur/Manager : Mr. S.K. Maini, B.Sc. (Engg.) DLCT (Hons) UK.,  
 F.I. Prod. E (U.K.), F.I.E.

Established Year : 1973

No. of Professional staff employed	Post/Graduate Engineers	6
	Engineering Diploma Holders	8
	Management/Administration & Secretarial qualified staff	6
	Total Professional Staff	<u>20</u>

In addition we employ the services of various professionals on part time basis and as consultants.

No. of skilled labour : 40

No. of unskilled labour : 35

Annual Turnover	:	
	<u>1979-1980</u>	<u>1980-81 (budgeted)</u>
Domestic Sales	Rs 37,25,000.00	Rs 46,00,000.00
Exports	1,75,000.00	2,50,000.00
Work Done	4,00,000.00	7,50,000.00
Total	<u>Rs 43,00,000.00</u>	<u>Rs 56,00,000.00</u>

Product Mix (Description/  
 etc.)

- A. Precision Ground Components. These include:
  1. Lapping Mandrels and Sleeves, Dowel Pins etc.  
 The tolerance required is of the order of .004 mm on the diameter.
  2. Roller Tappet Pins and Piston Pins etc.  
 These require a tolerance of upto .002 mm on diameter, surface finish of 0.6 Rt.
- B. Hand Primers and Assembly of Fuel Filters for Fuel Injection Equipment.
- C. Hot Forged Slotted Nuts for Export
- D. Electronic Assemblies including Stroboscopes, Voltage Stabilisers, etc.

PHOTOGRAPHS OF TYPICAL PRODUCTS ATTACHED.

9. Process Description:

- A. Lapping Mandrels are turned from Cast Iron rods on special purpose machines, rough ground, spiral grooved on special purpose machine, cut to length, finished ground and 100% inspected for diameter by Microkaters.
- B. Sleeves are cut from Cast Iron rods to length, taper drilled, taper reamed, turned to size, grooved, centreless ground, slit and deburred etc.
- C. Piston Pins and Roller Tappet Pins etc., are centreless ground and lapped, crack detected and grouped in .002 mm diameter sizes by Microkaters and checked for surface finish.
- D. Forging nuts are forged with slots on Hot Forging Machines from blanks. They are then deburred, tapped, checked and blackened before exporting.

10. Present Market Outlets  
Local and Export

Bulk of mandrels and sleeves are manufactured for Motor Industries Company Ltd., which use them in their plants in India and also export to a certain extent.

Hand Primer and Fuel Filters are also manufactured for Motor Industries Co. Ltd.

Piston Pins are manufactured for India Pistons.

Dowels are manufactured for Ashok Leyland, Larsen & Toubro

Electronic Assemblies are done for Bharat Electronics Limited and Motor Industries Company Ltd.

Stabilisers are manufactured for sale in the market. We are also suppliers of stabilisers to Blue Star Ltd. for their export model of water coolers.

Nuts are exported to Canada and USA.

Bulk of our local outlets are to Original Equipment Manufacturers in the Automobile Industry.

11. List of Machines and equipment with make and type:

Major Machinery include:

- 2 Nos. TOS. (Czech.) Centreless Grinding Machines.
- 3 Nos. Satnam (Local) Centreless Grinding Machines
- 4 Nos. Special Purpose End Grinding Machines (self designed)
- 1 No. Special Purpose Grooving and Cut Off Machine
- 6 Nos. Drilling Spindles
- 2 Nos. Reaming Machines
- 8 Nos. Second Operation Machines
- 1 No. Special Purpose Automatic Centreless Turning Machine (Self Designed)
- 1 No. Thread Milling Machine
- 1 No. Single Spindle Automat
- 2 Nos. Annealing Furnaces
- 2 Nos. Vertical Forging Machines ( Ecchelles)
- 1 No. Horizontal Split Die Forging Machine
- 6 Nos. Tap ping Spindles
- 1 No. Thread Cutting Machine (Landis)

13:

Major Inspection Equipment include :

10 Microkaters, Slip Gauges, Magnetic Crack Detector, Hardness Tester, Solex Air Gauge and Leak Testing Equipment for Hand Primer Assembly etc.

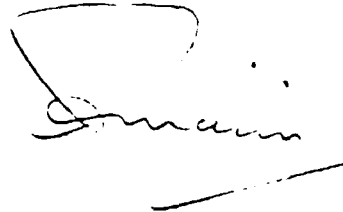
12. Other Information

: We are engaged in mass production of high precision items, specially in centreless grinding area. We supply almost all our products to original equipment suppliers whose requirements are very stringent and inspection very rigid with constant demand on improvement of quality from year to year.

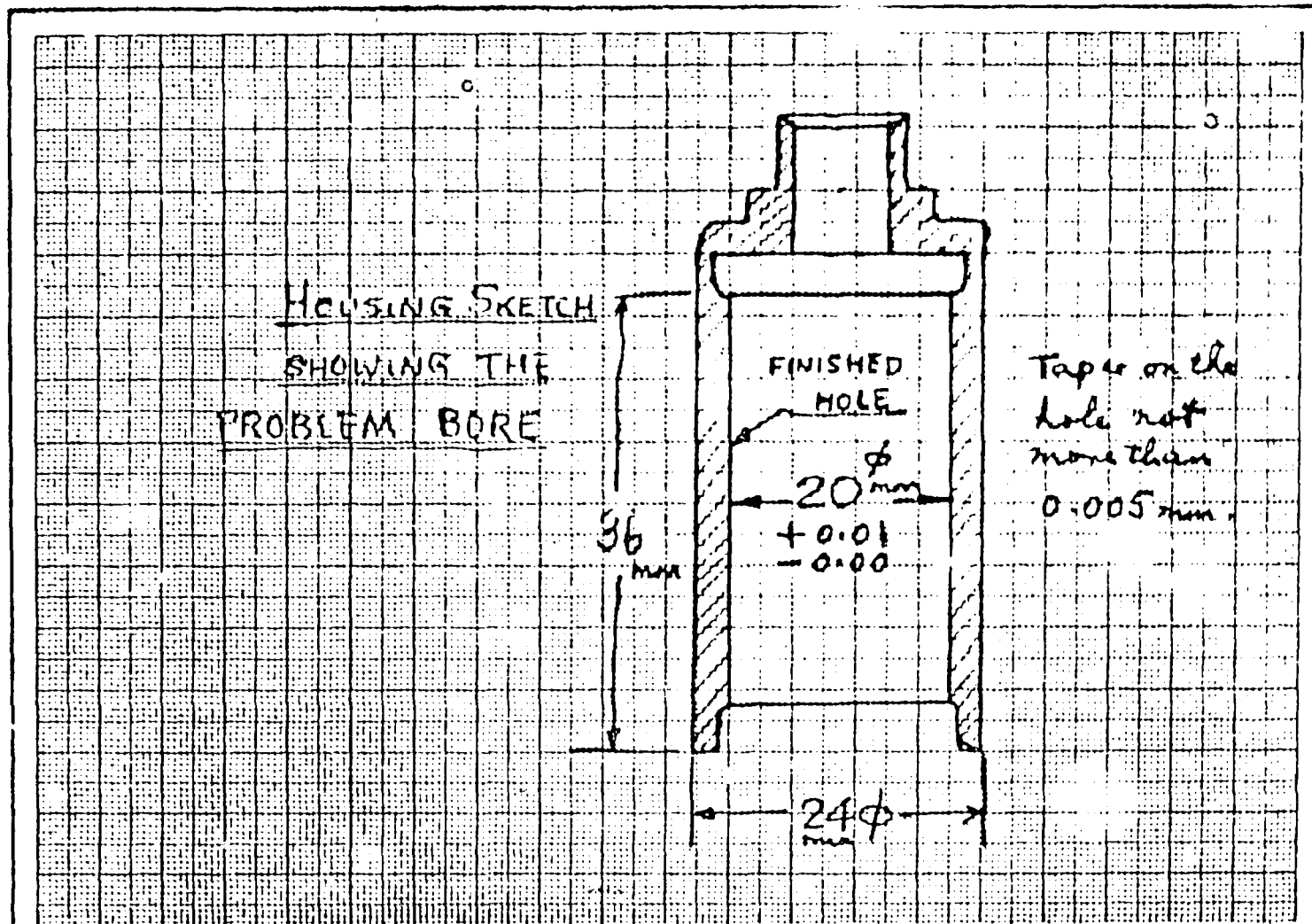
We have a well qualified and trained staff and modern production systems which have been the backbone of our capacity to maintain high precision of our items.

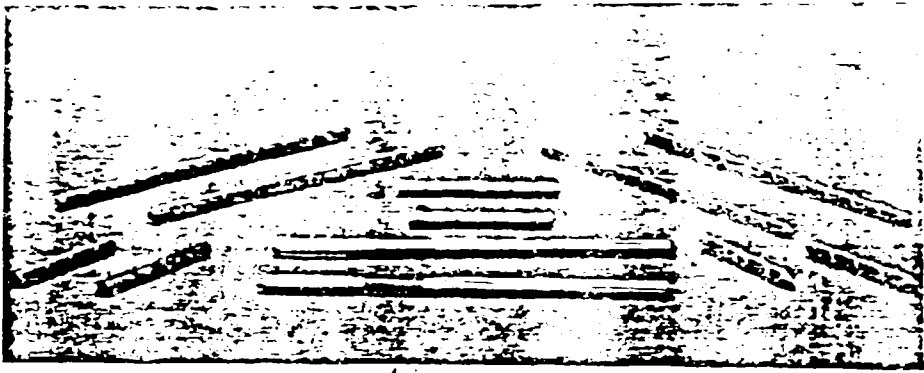
Our scrap and repair percentages are very high currently. Upgradation of technology at this stage will not only help us to export but also make us a more viable unit.

For *Mahindra Engineering Works Pvt. Ltd.*,

A handwritten signature in cursive script, appearing to read 'Suman', is written over a horizontal line.

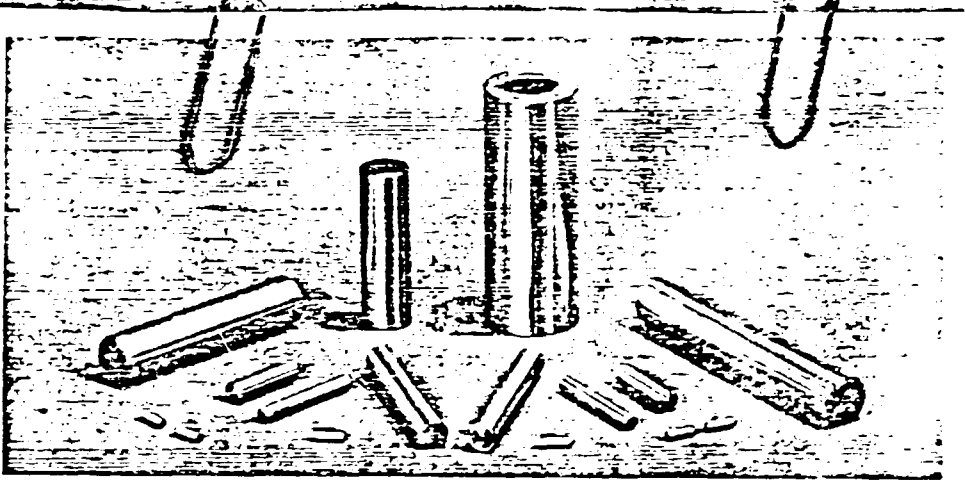






A1

A1 - PRECISION GROUND COMPONENTS  
Lapping Mandrels, Sleeves, Dowel Pins



A2

A2 - PRECISION GROUND COMPONENTS  
Roller Tappet Pins and Piston Pins

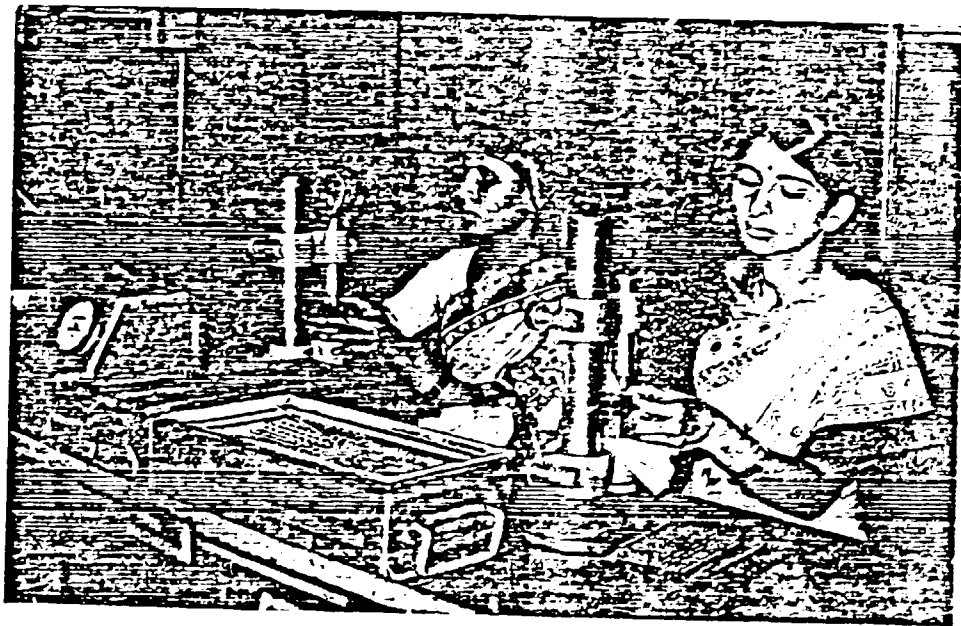
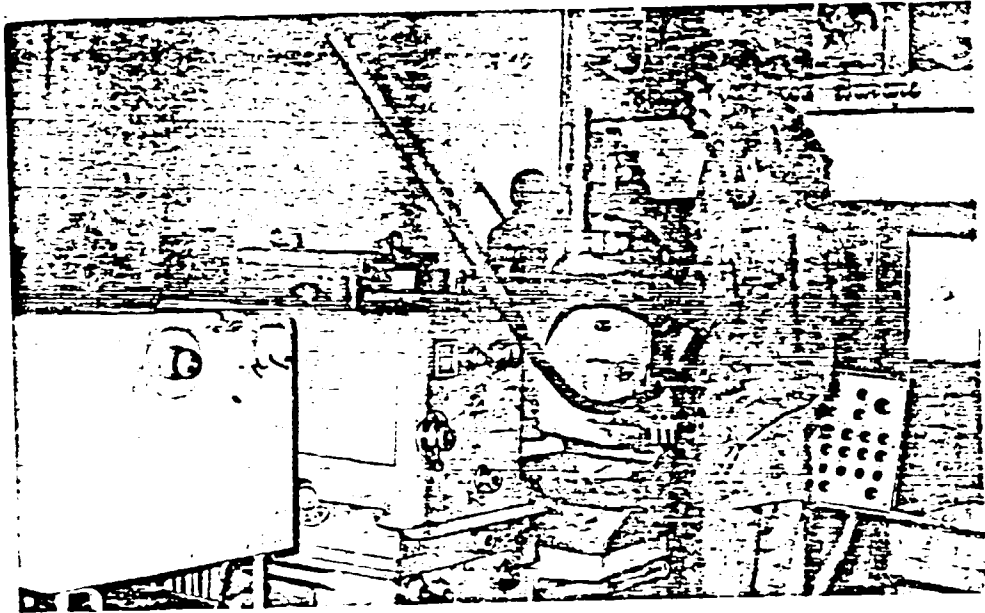
Enterprise - Large volume - Central location - and world wide service - P.S. We are expanding to USA and Canada

Enterprise - Large volume - Central location - and world wide service - P.S. We are expanding to USA and Canada

ASSEMBLIES

Typical Products, numbered as per Item 8 of Enterprise Profile

Typical Products, numbered as per Item 8 of Enterprise Profile





**MAINI  
PRECISION  
PRODUCTS  
PRIVATE LTD.**

TELEX : 845-8255 MPP IN

GRAMS : 'EMPIPI' BANGALORE-550 001

PHONE : 3 8 8 4 6

B-29, FUNCTIONAL INDUSTRIAL ESTATE, TUMKUR ROAD, PEENYA, BANGALORE-560 058

Your Ref :

Our Ref : MPP:1503:82:1

Date : 15.3.1982

22

The Managing Director  
Karnataka State Small Industries Development Corpn. Ltd.  
Rajajinagar Industrial Estate  
Bangalore 560 044

Dear Sir:

Sub: Upgradation of Technology in our unit

With reference to your letter of February 24th and our reply of 2nd March, we are pleased to enclose a detailed report giving the relevant information regarding our technological processes and the problems we currently face in each one of them. This will help in identifying the direction in which the technological processes could be upgraded. We have also given some ideas regarding the kind of Swedish Unit/Units which can assist us in upgrading these technologies.

We hope this information will be sufficient. We shall be pleased to give any further information required from us.

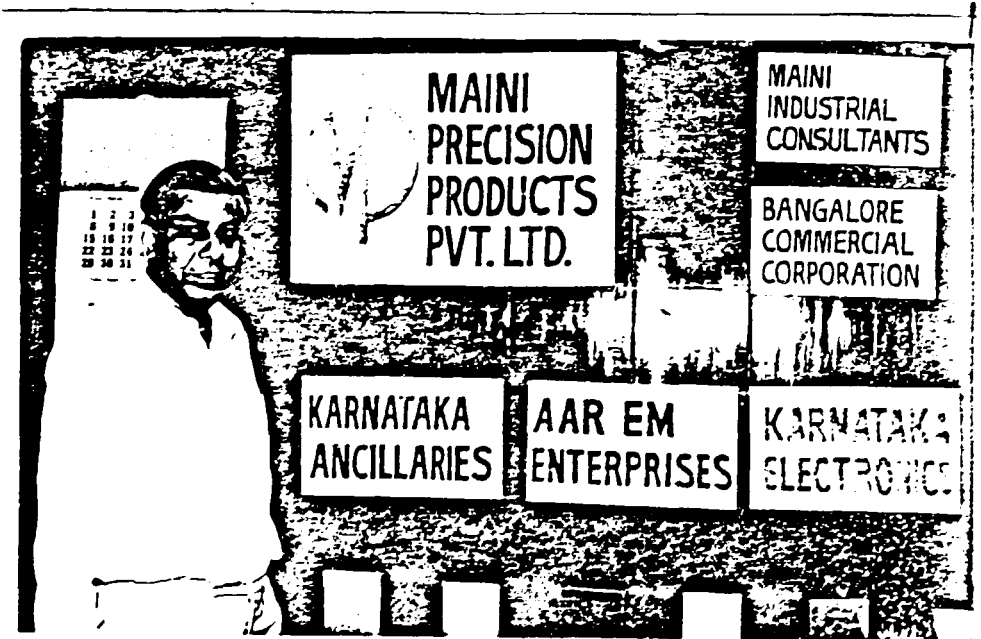
Yours faithfully,  
for MAINI PRECISION PRODUCTS PVT. LTD.

(S.K. MAINI)  
Chairman

Encl: \*

bc

REGD. OFFICE : 439 I





**MAINI  
PRECISION  
PRODUCTS  
PRIVATE LTD.**

TELEX : 845-8255 MPP IN  
GRAMS : 'EMPIPI' BANGALORE-550 001  
PHONE : 3 8 9 4 6

B-39, FUNCTIONAL INDUSTRIAL ESTATE, TUMKUR ROAD, PEENYA, BANGALORE-560 058

Your Ref :

Our Ref :

Date : March 15, 1982

NOTE ON UPGRADATION OF TECHNOLOGY AT MAINI PRECISION PRODUCTS PRIVATE LTD.

1. Basically we are a small scale industry engaged in mass production of high precision items requiring machining and grinding. These include cast iron lapping mandrels, ball bearing steel hardened pins and hand primer components. We have currently reached a status where with some extra operations, a number of our products are being exported. However, to achieve the tolerances required for exports, our manufacturing and inspection methods are inadequate and we are able to achieve these tolerances at the cost of high repair and scrap.
2. In the following paragraphs (4 to 9) we are giving details of major technological processes which we feel can be upgraded. Even at the cost of repeating, in paragraph 10, we have given processing details of our major component groups. Relevant samples of various products are also enclosed. We feel in this manner we are providing sufficient relevant information necessary for initial assessment. Basically the information includes the status we have reached in a certain process, our requirements, the typical size of the components and the approximate quantities we process currently.
3. We feel grinding, super finishing, fine boring and heat treatment are fairly integrated processes. A typical Swedish Company which would have sufficient knowledge for upgrading the technology in all these areas would be SKF of Gothenburg. However, SKF is a multi national. We feel a medium scale set up in Sweden similar to SKF would be perhaps, more appropriate to give us the necessary help. 'Lind Koping' in Sweden manufactures Centreless Grinders and related equipment and we feel they should have sufficient knowledge to help us in upgrading technology in our grinding and super finishing areas. We are using Microkatons manufactured in Sweden and perhaps, they have sufficient technological knowledge for upgrading our inspection methods. In the case of castings, the people dealing in the manufacture of Valve Guides for Volvo Car may have sufficient technology to help us out.

REGD. OFFICE : 439 RAJMAHAL VILAS EXTENSION, BANGALORE-560 080. PHONE : 30975

Contd...2



**MAINI  
PRECISION  
PRODUCTS  
PRIVATE LTD.**

TELEX : 845-8255 MPP IN

GRAMS : 'EMPIPI' BANGALORE-550 001

PHONE : 3 8 8 4 6

B-39, FUNCTIONAL INDUSTRIAL ESTATE, TUMKUR ROAD, PEENYA, BANGALORE-560 038

Your Ref :

Our Ref : Page Two

Date : March 15, 1982

4. CENTRELESS GRINDING:

One of our major activities is Centreless Grinding of a variety of components to very close tolerances. Most of our centreless grinding is done on cylindrical components by 'through feeding'. We are able to maintain a tolerance of 0.006 mm on diameters and 0.003 mm Out of Roundness. The bulk of the components we grind are ranging between  $\phi$  5 mm to  $\phi$  7 mm. Our total range is between  $\phi$  3 mm to  $\phi$  20 mm. We have problems in maintaining tolerances which are required for some of our items for export. The tolerance requirements are 0.002 mm on diameter, 0.001 mm Out of Roundness.

5. SUPER FINISHING:

We are able to maintain normally a surface finish of approximately Rt 3 by Centreless Grinding. By using very fine grit imported wheels, we are able to maintain by Centreless Grinding a surface finish of approximately Rt 2. However, for a large number of pins ground by us, the finish requirement is up to Rt 0.6. This we are not able to achieve. It may be possible by upgrading the centreless grinding process itself, or it can be done by barrelling or some other process.

6. HEAT TREATMENT:

Pins which are being ground to finish are manufactured out of ball bearing steel and need a hardness value of Rc 59 to Rc 64. We are unable to maintain this close range of hardness and we therefore, resort to 100% checking of hardness for these pins. In spite of cheap labour, this is very expensive. A suitable process for hardening these pins so that the tolerance is automatically kept during the hardening process is required to eliminate 100% checking of these pins.

Contd....3



**MAINI  
PRECISION  
PRODUCTS  
PRIVATE LTD.**

TELEX : 945-8255 MPP IN

GRAMS : 'EMPIPI' BANGALORE-550 001

PHONE : 3 8 8 4 6

B-89, FUNCTIONAL INDUSTRIAL ESTATE, TUMKUR ROAD, PEENYA, BANGALORE-58

Your Ref :

Our Ref : Page Three

Date : March 15, 1982

7. BORE FINISH:

We have problems with achieving tolerances and finish in the bore diameter of some of our products.

7.1 We require to finish a mild steel housing bore of  $\phi$  20 mm and length 40 mm (figure enclosed). We need a diameter tolerance of 0.01 mm with a taper and out of roundness not exceeding 0.005 mm. Currently, we rough bore and ream with solid carbide reamers. It is very expensive and we still do not get the right tolerance. Our scrap is very high. The quantity involved is about 15000 pcs. per month. It is worthwhile to note here that if we are able to sort out this problem in a reasonable manner, we have a chance of exporting over one million rupees worth of goods only to West Germany.

7.2 We manufacture Valve Guides out of cast iron for the automobile industry where the typical bore sizes are 8 mm, 9 mm and 10 mm, with lengths varying from 50 mm to 75 mm. The diameter tolerance of the bore is 0.010 mm and the finish required is Rt 2. We also have problems in achieving these tolerances even with solid carbide reamers.

8. CASTINGS:

We manufacture cast iron mandrels from castings which are 9 mm in  $\phi$  and 240 mm length. These castings are normally varying between hardness from 190 to 230 BHN. We anneal them at 750°C with a soaking time of five hours, to bring down the hardness between 130/180 BHN. We then turn these castings to a diameter of 6.3 +.1 and subsequently grind them. The cast iron rods after turning to  $\phi$  6.3 +.1 have blow holes upto 50/60% and therefore, the process becomes very expensive. There is a very good possibility of exporting the bulk of these mandrels provided we can avoid these blow holes and reduce the cost of this by upgrading technology in castings.

9. INSPECTION:

Because of the capability of our current manufacturing processes lower than the tolerances required by us, we are resorting to very high degree of inspection mostly manual, in various stages of inspection. Currently, we employ one inspector for every two production personnel. For diameter checking, we are using mostly Microkatons manufactured in Sweden. We feel there is a considerable scope in upgrading our inspection procedures.

REGD. OFFICE : 439, RAJMAHAL VILAS EXTENSION, BANGALORE-560 080.

PHONE : 30975

Contd...4

*[Signature]*



**MAINI  
PRECISION  
PRODUCTS  
PRIVATE LTD.**

TELEX : 845-8255 MPP IN

GRAMS : 'EMPIPI' BANGALORE-550 001

PHONE : 3 8 8 4 6

B-59, FUNCTIONAL INDUSTRIAL ESTATE, TUMKUR ROAD, PEENYA, BANGALORE-58

Your Ref :

Our Ref : PAGE FOUR

Date : March 15, 1982

10. PROCESSING DETAILS OF MAJOR COMPONENT GROUPS

10.1 CAST IRON MANDRELS

- SIZE : 6 mm diameter and 60 mm/150 mm long
- QUANTITY : 250,000 pieces per month
- TOLERANCES : Dia 6.01 + .005 mm  
- .000
- Out of Roundness 0.002 mm
- Hardness 130/180 HRB
- RAW MATERIAL : Grey Iron Cast Rods Dia 9.00 mm/9.50 mm
- Hardness 180/230 HRB
- PROCESS :
- Anneal at 750°C - Soaking time 5 hours to Hardness 130/180 HRB
  - Turn to 6.3 + 0.1 mm dia - Part off to correct length
  - Centreless Grind in four passes from 6.3 + 0.1 mm to 6.01 + 0.005 mm - 0.000 mm
  - Check 100% for diameter and 10% for out of roundness on Microkators.

We only prefinish these mandrels. They are finally finished by User MICO in Bangalore to a tolerance of 0.002 mm on diameter and 0.001 mm out of roundness. Even for prefinishing, we check 100% and normally our scrap is about 10%. After operation (b) we check for blow holes on the surface and our current rejections are upto 50% at this stage.

POSSIBILITIES OF UPGRADING TECHNOLOGY

- CENTRELESS GRINDING : To achieve the tolerances of the finished product
- INSPECTION : Specially of diameter checking
- CASTING : To achieve blow hole free products

Contd...5

REGD. OFFICE : 439, RAJMAHAL VILAS EXTENSION, BANGALORE-560 080. PHONE : 30975

*[Handwritten signature]*





**MAINI  
PRECISION  
PRODUCTS  
PRIVATE LTD.**

TELEX : 845-8255 MPP IN  
GRAMS : 'EMPIPI' BANGALORE-550 001  
PHONE : 3 8 8 4 6

D-59, FUNCTIONAL INDUSTRIAL ESTATE, TUMKUR ROAD, PEENYA, BANGALORE-560 058

Your Ref :

Our Ref : Page Five

Date : March 15, 1982

10.2

PINS

SIZE : 7 mm diameter and 20/40 mm length

QUANTITY : 200,000 pieces per month

TOLERANCES : Dia 7 - 0.030 mm  
- 0.025 mm

Surface Finish Rt 0.6

MATERIAL : Bright Drawn Ball Bearing Steel Bars 7.2 mm  $\phi$

PROCESS:

- a) The pins are parted off on automats
- b) They are then hardened to 59/64 HRC
- c) Hardened pins are checked 100% for hardness.
- d) The pins are centreless ground in 4 p-passes
- e) Two further passes are given on lap grinding wheels with a grit of 500
- f) They are checked 100% for diameter on Microkatons and visual for surface finish
- g) The rejections are 5%

POSSIBILITIES OF UPGRADING TECHNOLOGY:

SURFACE FINISH : The surface finish achieved by us varies between Rt 1.5 to Rt 2.0 even after two passes with a lap grinding wheel on the centreless grinding machine. Our requirement is Rt 0.6

HARDENING : Hardening variations are too much resulting in 100% checking of the pins for hardness. With an appropriate hardening procedure and equipment we should be able to eliminate this 100% checking.

bc

REGD. OFFICE : 439 RAJMAHAL VILAS EXTENSION, BANGALORE-560 080. PHONE : 30975

SCANDIACONSULT

ENTERPRISE  
DESCRIPTIONAnnex 6:27  
Page 98

## 1. GENERAL

## 1.1 Name and address of enterprise

Maini Precision Products Private Ltd.  
B-59, Functional Industrial Estate  
Tumkur Road, Peenya  
Bangalore 560058  
Phone: 50687, 38714, 38846  
Telex: 0845-8255 MPP IN

IB5

## 1.2 Contact person

Mr. Sudarshan K. Maini, Chairman.

## 1.3 Form of ownership

Private limited.

## 1.4 Invested capital -

## 1.5 Annual turnover

Last year 5.7 MRS.

## 1.6 Year established 1973.

## 2. PERSONNEL

## 2.1 Managerial and engineering staff

Managers	1
Engineers, grad.	6
Engineers	8

## 2.2 Clerical staff 6

## 2.3 Workers (total) 75

Skilled	40
Unskilled	35

---

3. PRODUCTION

3.1 Products

Lapping mandrels, piston pins, special pins, hand primers,  
fuel filters.

3.2 Main production processes

See attachments.

3.3 Main machinery

See attachments.

3.4 Factory premises -

3.5 Production volume -

3.6 Current collaboration agreements. None.

3.7 Quality control

See attachment.

3.8 Input materials

Grey iron cast rods, bright drawn ball bearing steel bars.

3.9 Utilities -

4. MARKETING

4.1 Main market

Mainly local market but some export.  
See attachment.

4.2 Distribution

See attachment.

- 
- 4.3 Competitors -
  - 4.4 Market demand -
  - 4.5 Market share -
  - 4.6 Market surveys -
  - 4.7 Future plans -
  - 5. PROBLEMS - DEVELOPING PROJECTS
    - 5.1 Upgrading present products  
See attachments.
    - 5.2 New products in present product line -
    - 5.3 New products outside present product line -
    - 5.4 Projected market demand -
    - 5.5 Projected plant capacity -

SCANDIACONSULT

PRELIMINARY

Malmö

MATCHING  
1982-05-07

58.0648-01

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RECIPIENT ENTERPRISE

IBS Maini Precision Products Private Ltd.

CANDIDATE PARTNER ENTERPRISE

Name: AB Posto  
Address: Box 3042, S-286 03 ÖRKELLJUNGA  
Phone: 0435-53375 Telex:  
Managing director: Göran Sandberg  
Contact person:  
Turnover: 12 M SEK Employees: 70  
Product mix: Precision tool manufacture

---

1982-05-07

Phone to Mr. Göran Sandberg

Mr. Sandberg is at present a little busy but on the other hand he did not want to say no to the project. However, as the company works on subcontracting basis and consequently does not have any products of their own, he was a little puzzled in which way they could transfer any technology. He will submit some information on his company.

---

COLLABORATION PROPOSALRecipient enterprise

Maini Precision Products P. Ltd.  
Bangalore-560058, India  
Contact person: Mr. Sudarsham K. Maini, Chairman

Technological requirements of the recipient enterprise

- Technology to improve production quality especially regarding:
  - Tolerances in centerless grinding, super finishing, bore finish and heat treatment.
  - Quality of castings.
  - Inspection procedures.

Partner enterprise

Ing. Torsten Ullman AB  
Storgatan, S-340 36 Moheda  
Contact person: Mr. Per-Gunnar Fransson, Marketing Director

Information of the enterprise and its products is enclosed.

Available technology of the partner enterprise

- The company is the largest subcontractor to Swedish mechanical industry. It is specialized in manufacturing turned, hardened and grinded components with extreme tolerances in large quantities. In order to be able to offer the right quality, a system has been developed, where quality control, production planning and manufacturing are regarded as an integrated system.

Proposed general framework for future collaboration

During a visit to Ing. Torsten Ullman AB on September 1, 1982, Mr. Per-Gunnar Fransson showed great interest in the project after studying the previously submitted information on Maini Precision Products P. Ltd. The following sketch on the future collaboration was discussed:

- The transfer of technology will be focused on the quality control system, which has been developed by the company to fulfill the requirements from the Swedish automotive industry and which has been substantiated in the Quality Systems Manual.

- 
- o Ing. Torsten Ullman AB is willing to train some engineers from Maini Precision Products P. Ltd. in the quality system.
  - o As a consequence of the training programme, a lot of detailed technical information will be submitted during the discussions with the temporary colleagues.
  - o The remuneration will preferably be cash payment.

Torsten Ullman AB

Ownership: Trelleborg AB

(Torsten Ullman AB and Lango AB, Stockholm  
forms the mechanical division.)

Share capital: 2 300 000 SEK

Annual turnover: 52 000 000 SEK

Employees: 250

Established: 1945

Business idea: As an subcontractor produce hardened and  
grinded components with extreme tolerances  
in large quantities to European industry.

Customers: Volvo, Saab-Scania, Atlas Copco, IBM, Daimler-  
Benz, Ford, BMW and others.

Managing director: Mr Rudolf Samuelsson

Financial manager: Mr Rolf Nilsson

Production manager: Mr Börje Dahl

Sales manager: Mr Per-Gunnar Fransson



QUALITY MANUAL

From the view of the customer one of our advantages is our quality and our system for quality control. We have quality agreement with Volvo and Saab-Scania.

Customers like Ford, Daimler-Benz and BMW have done a valuation of the quality routines within the company and they all have put us in Class A.

The quality system is documented in the manual, which is brought up to date as soon as there are any changes.

When we introduce the company to a new customer we give a report of our quality system. It is a clear advantage to be able to show it in a written document.

The customer can easily make an estimation of us without having to make expensive travels.



Ingenieur  
Torsten Ullman AB  
340 36 MOHEDA Sweden  
Tel. 0472-703 20  
Telex S-52120

Our Swedish factory at Moheda has about 250 employees and is the largest subcontractor to Swedish mechanical industry. The exceptionally good craftsmanship of our employees together with mainly German and Swiss machine tools and production machines of latest design combine to give our customers punctual deliveries in any quantities and required quality at a reasonable price. Multispindle lathes to max 83 mm diameter, Swiss repetition lathes to max 20 mm diameter, Automatic turret lathes- Complete grinding facilities — Heat treatment — Automated secondary operation machines — A termicel deburring machine — Efficient inspection department. We specialize in components with extreme tolerances in large quantities and invite you to ask for quotations.

Unsere schwedische Betriebsanlage in Moheda hat etwa 250 Angestellte und ist die grösste Zulieferfirma zu den schwedischen mechanischen Industrien. Ein hochmoderner Maschinenpark in Kombination mit einem guten technischen Mitarbeiterstab garantiert unseren Kunden Qualitätsprodukte.

In unserem Maschinenpark befinden sich Mehrspindelautomaten bis durchlass 83 mm, Langdrehautomaten bis durchlass 20 mm und Revolverautomaten für kleine Serien. Schleifmaschinen für Rund-, Plan-, Loch- und Spitzenlosschleifen. Eine moderne Härterei steht uns auch zur Verfügung. Ausserdem haben wir einen umfassenden Maschinenpark für eventuelle Fertigbearbeitung sowie eine thermische Entgratanlage. Eine moderne und gut ausgerüstete Kontrollabteilung garantiert Ihnen was unsere Firma verspricht.

Unser Spezialität ist Drehteile mit feinen Toleranzen. Wenden Sie sich vertrauensvoll an uns mit Ihren Anfragen.

Notre usine suédoise de Moheda emploie normalement 250 salariés et est le plus important sous-traitant de l'industrie mécanique suédoise. Nous disposons de tours multibroches de diamètre maximal 83 mm, de tours de reprise suisses de diamètre maximal 20 mm, de tours revolvers automatique, d'équipements complets de rectification, de dispositifs pour traitements thermiques, de machines automatiques pour opérations de finition, d'une machine thermique à ébarber et d'un service contrôle efficace.

Nous sommes spécialisés dans la fabrication de grandes séries de pièces à tolérances sévères et nous nous tenons à votre disposition pour répondre à toute demande de devis de votre part.

Onze zweedse fabriek in Moheda heeft cirka 250 man personeel in dienst en is het grootste toeleveringsbedrijf van de zweedse mechanische industrie. De grote vakbekwaamheid van het personeel gecombineerd met een modern machinepark bestaande uit hoofdzakelijk duitse en zwitserse gereedschaps- en produktiemachines van het laatste ontwerp garanderen onze klanten snelle levering van elke hoeveelheid en gewenste kwaliteit tegen een redelijke prijs.

Tot ons machinepark behoren meerassige draaibanken tot een diameter van max. 83 mm, zwitserse draaiautomaten tot max. 20 mm diameter, en revolverdraaibanken voor kleine series, slijpmachines voor verschillende oppervlakken. Voorts voeren wij warmtebehandelingen uit en beschikken wij over een uitgebreid machinepark voor machinale eindbewerkingen alsmede een thermische ontbramingsinstallatie. Een efficiënt en goed geoutilleerde inspectieafdeling garandeert u onze kwaliteit.

Wij zijn gespecialiseerd in onderdelen met zeer kleine toleranties en in levering van grote hoeveelheden.

Vraag naar onze offertes.



# INGENJÖR TORSTEN ULLMAN AB

Address: S-340 36 MOHEDA, Sweden  
Telex no: 521 20 TUAB S  
Telephone no: 0472 - 708 20

Our Swedish factory at Moheda has about 250 employees and is the largest subcontractor in Swedish mechanical industry. The exceptionally good craftsmanship of our employees together with mainly German and Swiss machine tools and production machines of latest design combine to give our customers punctual deliveries in any quantities and required quality at a reasonable price. In order to give our customers the right quality we use modern methods in which quality control goes hand in hand with preparing quotations, production planning and manufacture. We specialize in hardened and grinded components with extreme tolerances in large quantities and invite you to ask for quotations.

## LIST OF OUR MACHINERY

**Single-spindle automatic bar lathes:** 35 pcs Dim. area  $\phi$  1 mm — max.  $\phi$  60 mm.

Makes: Tornos M4, M7, M10, M28 and RR20.  
Index B42 and B60

**Multi-spindle bar automatics:** 27 pcs.

Makes:		Dim. area		Max. length
Tornos	AS 14	$\phi$ 14 mm		70 mm
Schütte	SE 16	$\phi$ 18 mm	..	120 mm
..	AF 26	$\phi$ 26 mm	..	140 mm
..	SE 25	$\phi$ 26 mm	..	140 mm
..	SD 32	$\phi$ 35 mm	..	130 mm
..	SF 40	$\phi$ 42 mm	..	150 mm
..	SD 50	$\phi$ 51 mm	..	190 mm
..	SD 80	$\phi$ 80 mm	..	210 mm
..	SF 80	$\phi$ 83 mm	..	205 mm
Wickman	..	$\phi$ 1 3/4 inch	..	165 mm
..	..	$\phi$ 1 3/8 inch	..	165 mm

**Multi-spindle chucking automatics:** 1 pc

Make: Schutte SFH 160

**Automatic copying lathes:** 3 pcs

Make: Gallicop

**Lathes:** 3 pcs

CNC-lathe PN 420 U

Make: Boehringer

NC-lathes DR 133

Make: Hembrugger

**Centre lathes:** 20 pcs

Makes: Schaublin 102, etc.

**Automatic second operation lathes:** 5 pcs

Makes: Feinbau etc.

**Centerless cylindrical grinding machines:** 6 pcs

Makes: Lidköping 46 and 3 B/U, Malcus MC 40 and MC 50, Wennerholm.

**Grinding machines for grinding between centers:** 5 pcs

Makes: Studer and Tschudin.

**Thread-cutting machines:** 1 pc

Make: Cridan type A.

**Thread-rolling machines:** 1 pc

Make: Pee Wee P 15 U

**Drilling machines:** 20 pcs

Make: Varying manufacturerers

**Milling machines:** 19 pcs

Makes: Schaublin SV 13, Sajo 52, 54 and HM-300-TNC 121 etc.

**Impact machines:** 2 pcs up to 18 ton.

**Broaching machines:** 1 pc

Make: Rauch RS 3-1000.

**Honing machines:** 1 pc

Make: Sunnen

**Double-sided surface grinding machines:** 1 pc

Make: Diskus DDS 600.

**Internal circular grinding machines:** 6 pcs

Make: Voumard.

**Crack-indicating:** Magna Flux

**Thermal deburring machines:** 1 pc

Make: Bosch.

**Machines for induction hardening:** 3 pcs

Make: Philips, 25kW, Amysa 60 kW

**Hardening furnace with protective gas:** 2 pcs

Make: Ipsen.

**Hydropneumatic circular table HW 25/12:** 1 pc

Make: Pfiffner.

**Circular indexing table for drilling, thread cutting, milling and broaching:** 5 pcs.

SCANDIACONSULT

VISIT  
REPORT  
1982-11-23

Page 1

Malmö

58.0648-01

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Visit to Ing. Torsten Ullman AB, Moheda, 15 November 1982

## Participants:

Mr. Sudarshan K. Maini, Maini Precision Products P. Ltd., Bangalore, India  
Mr. Per-Gunnar Fransson, Ing. Torsten Ullman AB  
Mr. Thomas Grahn, Scandiaconsult AB

- o Mr. Maini visited Europe on a business trip and wanted to see his partner enterprise as well. As we were noticed well ahead, there were no difficulties to arrange the meeting.
- o Mr. Maini was picked up by me at the hydrofoil terminal in Malmö early in the morning and after a three hours' car travel we arrived at Ullman's.
- o Mr. P.G. Fransson introduced himself and his company and guided us through the factory. Mr. Maini made several stops and asked for detailed information on technical subjects. For me, as an outsider, Mr. Maini and Mr. Fransson seemed to talk the same specialists' language.
- o The collaboration proposal was based on the quality control system of Ullman's, but the QC manager was not available until the next day and consequently the discussions about this was postponed.
- o During the following discussion Mr. Maini stated that the production of Ullman's and of his own company's are very similar except for the degree of mechanization.
- o Mr. Maini pointed out that several of the labour intensive products should be well suited for manufacturing in India as the labour costs there are very low. Mr. Maini got some samples and the corresponding drawings and quantities and he will make a quotation on the manufacturing of them for Ullman.
- o Mr. Maini suggested that Ullman's, being well known in Europe for its high quality products, will sell MPP's products on the European market in its own name, providing that the quality requirements can be fulfilled. This could be done if Ullman's would supply the technical assistance required.
- o Ullman's has some old, but technically good machinery, which presently are running idle. Mr. Maini showed great interest in these machines and would like to buy them including start up and training, which would be a means of transfer of technology.
- o Mr. Maini stayed overnight in Växjö, the nearest big city, to continue the discussions regarding the QC system and to meet the managing director Mr. Rudolf Samuelsson while I went back to Malmö.

- o According to a telephone call from Mr. Maini the following evening, the negotiations had continued in about the same tracks during that day and he was quite satisfied so far.

Malmö, 23 November, 1982  
SCANDIACONSULT AB

Thomas Grahn



TORSTEN ULLMAN AB

540 56 MOHEDA - SWEDEN

Moheda 1983.03.15

S.K. MAINI  
 MAINI PRECISION PRODUCTS  
 603, 6 th FLOOR  
 DEVATHA PLAZA Bldg  
 131, RESIDENCY ROAD  
 BANGALORE - 25  
 INDIA

Dear Mr Maini

Thank you for your letter. I'm so sorry about the delay to answer it. The market in Sweden and Europe is very bad just now, and it's necessary to work very hard. My mainly work is to visiting companies, trying to get new objekts for Torsten Ullman .

I read your letter with interest and I'm very happy that you enjoyed your visit in Moheda.

The samples of the hand primer housings have been honed and will be sent to you in week 8312. Together with this letter I will send the results from the manufacturing.

The board of Torsten Ullman AB, is informed about our co-operation and have made their decission. They considered that a collabration as your proposal is not interested. Our customers in Sweden and Germany are very anxious about manufacturing outside our own factory. They had also doubts about the technical kapacity to be succesful. After studying your prices for the various details your oot when visiting us, we have determined that your prices are not in competi-tive conditions.

The comparison is as follows:

1. Dowel pin 834 259  
 Your price: 0:61 SEK  
 Our manufacturing price: 0:49 SEK
2. Piston 737 589  
 Your price: 13:- SEK  
 our man. price: 11:40 SEK
3. Tätningsshuvud 112-XX-01  
 Your price: 1:90 SEK  
 Our man. price : 1:65 SEK
4. Bush 830 072  
 Your price : 0:55 SEK  
 Our man. price: 0:50 SEK

House 911 85 124

Your approximate price: 10:- SEK


Our manufacturing price: 6:30 SEK

As you can see our manufacturing prices are in better pricelevel. Your samples of these details arrived last week and we are very satisfied with them after an ocular inspection. We will do further tests with the samples.

Today I got information about the meeting in Malmö. I will be there on thuesday the fifth. Looking forward to see you. But as you can see in my letter the collobration form have to be in a different way then you suggestion. I think that you in the future can supply TUAB with details if your prices is competitive.

With Kind Regards

TORSTEN ULLMAN AB

  
Per-Gunnar Fransson

This is a note, dictated by Mr. Fransson of Ullman, to which Mr. Maini agrees.

We think the proposal must be that Maini Precision Products to be supplier for Ullmans. Ullmans will help MPP with some technology know-how as required. This will vary from component to component.

Ullman would like from MPP prices in two ways - including material and exclusive material.

The type of items we have found, that are suitable for MPP, are bushes, pins, pistons etc.

For manufacturing these parts, Ullmans are going to find machines in Sweden suitable for machining for MPP such as honing machines, deburring machines and other second hand machines. We will send over the prices for these machines to MPP.

The execution will be done as follows:

I will select for you 25 more items. I will send you drawings, samples, control inspection reports, operation list, where the time cost of each operation, material costs in Sweden and all information I can get on each item. I will send you this about the 20th to 23rd of April wherever you are in Europe you get it and then we perhaps can meet in Moheda the first week in May for further discussion. When I get your answer, I will have a report for the board of Ullmans and further discussion there. I think we can get a decision by the end of June, when the next board meeting is in Moheda. Perhaps after the summer you can deliver some samples for us.



**ANNEX No. 3**COLLABORATION PARTNERS

Sonalkar Tool Works P. Ltd., Harihar, Karnataka, India (STW)  
and  
Skandinaviska Chuckfabriks AB, Tyringe, Sweden (SCA).

SELECTION PROCEDURES

Based on the report of Expolaris (subannex 3:1) and the short briefing by Mr. Hånell, STW was selected as one of the potential recipient enterprises to be further promoted for collaboration with a Swedish enterprise. The main reasons for the selection were:

- o A positive overall impression of the company.
- o It was said to be a company with good management, high technology standards, good marketing organization and good finances.
- o The company size seemed proper.
- o The present products were shown in a pamphlet.

During the selection work a letter came from STW (subannex 3:2) stating:

- o List of machinery.
- o Specific requirements on transfer of technology and the Swedish Enterprises able to provide this.

After the selection phase, an attempt was made to make a preliminary matching with the Swedish enterprise Lofab Square AB (subannex 3:3). They showed interest in the project and submitted information on the company and its products. However, their products seemed to match better those of Elneca Works. On the other hand the preliminary matched partner of this company, SCA, seemed to match STW better.

The impressions from the visit to STW during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 3:4). The following came out of that visit:

- o It was confirmed that the management, technology level, market situation and the general business are good.
- o It was also confirmed that the company has some specific requirements on technology transfer to improve the present products.

- o This technology is available in Sweden as the partner was already identified.
- o STW is capable of adopting a new technology.
- o Even the form of the future collaboration was presented.

After the Mission, there was another screening procedure based on the additional information now available. As most of the criteria for the selection of the projects to be continued were fulfilled, STW was put in the group of potential recipient enterprises, which should be finally matched with Swedish partners.

#### MATCHING PROCEDURE

As the potential partner SCA was already identified by STW, the matching procedure was quite simple and no other enterprises were contacted. During this period Mr. Sonalkar, Chief Executive of STW, visited Europe on business and he took the opportunity to visit SCA as well. In the letter of October 14, 1982, (subannex 3:5) he gives some information on the result of the meeting, which should be taken into consideration while working out the Collaboration Proposal.

#### COLLABORATION PROPOSAL

The Collaboration Proposal is attached (subannex 3:6) and contains the following framework for future collaboration:

- o STW will buy machinery and training necessary to improve production.
- o STW would like to negotiate the terms of getting the SCA chuck technology.

#### NEGOTIATIONS

In connection with the Group Visit to Malmoe, Sweden, April 5-8, 1983, Mr. R. Sonalkar, STW, and Mr. G. Björk, SCA, discussed future collaboration along the general lines as per the attached hand notes (subannex 3:7). The collaboration will develop through the following stages:

- o SCA experts will study the plant of STW and advise on improvements.
- o Training of three persons from STW at the SCA plant including working methods, operation of modern machines and details of process of manufacture of lathe chucks.
- o STW will purchase special-purpose machines of SCA design for the manufacture of chucks.
- o STW will purchase drawings and designs for some chucks and manufacture the same to SCA specifications to make a buy back arrangement possible.

PROJECT STATUS JUNE 83

Both parties have during briefings after the negotiations expressed their satisfaction with the development of this collaboration so far and the plans they have worked out to implement it.

STW will get in touch with the Indian Government to get the necessary permits for this project, especially import licences for machines and the SCA experts' services. This might require some assistance from the coordinating agency in India, Karnataka State Small Industries Development Corporation, KSSIDC.

STW will draft a contract agreement, if necessary with the assistance of UNIDO.

UNIDO will take a decision on the requested expenses to be carried by the project, i.e. travel expenses and per diem for the SCA experts' visit to STW and for the STW personnel to be trained at the SCA plant.

PROJECT STATUS OCTOBER 83

After the Malmoe meeting, Sonalkar has visited SCA twice to discuss the future cooperation. According to Mr. Björk of SCA, the relations between the two companies are now very good, and SCA looks forward to a good and profitable relation with Sonalkar.

The technology transfer agreement still contains the elements outlined above. Sonalkar has informed SCA that approval of the agreement by Indian Authority can be expected in December -83 or January -84. UNIDO has promised to assist in financing a visit for 2 SCA representatives to the Sonalkar plant. Such a visit was a precondition set by SCA for their involvement in this project.

**Comments**

This project is now straight purchase of technology, special machines and training. Discussions regarding by-back-agreements (from Sonalkar) have been held but SCA regards the present quality of Sonalkar's products too low. This is based on samples SCA has got from Sonalkar.

So far, SCA has not been in touch with any Swedish supporting organization to discuss or get assistance in this project. All contacts with UNIDO has been handled by Sonalkar.

Name and other identification data of the firm

A Sonalkar Tool Works Private Ltd  
Industrial Estate  
Marihara 577 602, Karnataka State

Managing director: C R Sonalkar

Phone: 224, 296

Grams: Chucks

Established: 1949

Datas about the people employed in the firm

Professional staff: 12

Skilled labour: 85

Unskilled labour: 20

Annual turnover, equity, profits and economic facts

Turnover 1980: 6 500 000 In R

Product mix

Lathe chucks, live and dead centres, limit and gauges,  
power chucks and hydraulic attachments.

Production technology, equipment and other technical information

Casting, machining, heat treatment, grinding.

Several lathes, grinding, tapping, drilling, planing  
and other machines.

The equipment is in good status.

Datas about marketing organization etc

The firm has both big industries as buyers and dealers  
all over India. 15 % export.

The future plans of the firm

They want to modernize the machine-park, train the labour  
force and also include pneumatic chucks in the production.  
Raise the export to foreign countries.

The possibilities of the firm

The market is very good, they are running two-shift.

Recommendations and proposals

The company need assistance concerning technology and marketing.  
Establish a contact with a swedish dealer in the field, which  
is familiar also with the technique.

Director General of Industries

U. S. A. India Liaison

ers of  
uges. Hydraulic  
es. Hydro-Cooping  
is

"LAKSHMI"  
247-14 B, Yeravada,  
Off Deccan College Road,  
Poona-411 005.  
Phone No. 21795.

**Sonaltek**  
**Industrial Works**

y to  
J. Box 24  
7501 Karnataka.

. Grams: Chucks  
Phones: 224 & 96.

2 G. APR 1982

Private Ltd.  
Harihar.

Dt. 6th April '82.

Ref.No.102/HCI/3329 BY AIR-MAIL

BY AIR-MAIL	
Wafa Kamel	
501210	
452/34	

Dear Mr. Wafa Kamel,

Enclosed with this letter are the details for Technical Process which can be upgraded as also the name of Swedish Concerns which can provide technology for the Scheme for our Concern under the scheme of transfer of technology with the assistance of UNIDO.

We would request you to kindly follow-up in this matter and let us know if the above mentioned Swedish Firm is interested in the transfer of technology, so that we can take up the matter further with the Firm themselves.

With kind regards.

Thanking you,

Yours sincerely,

(RAVI, C. SONALKAR)

Encl: as above.

Mr. Wafa Kamel,  
Industrial Development Officer,  
Development & Transfer of Technology Branch,  
United Nations Industrial Development Organisation,  
P.O. BOX 300,  
A-1400 Vienna,  
AUSTRIA.

ENCLOSURE ATTACHED

rEs/bvp

Manufacturers of:  
s. Gauges. Hydraulic  
-Packs. Hydro-Copying  
instruments.

"LAKSHMI"  
247-14 B, Yeravada,  
Off Deccan College Road,  
Poona-411 006.  
Phone No. 21795.

**Sonalkar**  
**tool works**

Private Ltd.

Reply to  
by P.O. Box 24  
at 577601 Karnataka.

Grams: Chucks  
Phones: 224 & 296.

Ref.No.136/HC/1856

Harihar, 27th Feby.1982.

Process Upgradation for manufacture of  
Limit Gauges:

- (1) Lapping of flat surfaces
- (2) Lapping of snap gauge surfaces
- (3) Heat-treatment and stabilizing processes  
in the manufacture of tool steel gauges.
- (4) Inspection of taper gauges.

The Swedish firm which will be able to provide  
the above mentioned technology is -

M/s.C.E.Johansson,  
Box 365  
S-63105 Eskilstuna  
SVERIGE

Telex:- 46080 Cajs

Telegram: COMBINATION

Telephone:- (016) 11,70,000

-----  
RCS/KRA

Manufacturers of:  
Scales, Gauges, Hydraulic  
Presses, Hydro-Copying  
Machines.

"LAKSHMI"  
247-14 B, Yeravada,  
Off Deccan College Road,  
Poona-411 006.  
Phone No. 21795.

**Senalkar**  
**Tool Works**

Private Ltd.

Reply to  
P.O. Box 24  
Mysore 577601 Karnataka.

Grams: Chucks  
Phones: 224 & 296.

Ref.No.136/HC/1857

Mangalore, 27th Feb. 1982.

Processes for Upgradation in manufacture of Chucks.

- 1) Bevel gear cutting for scroll and pinion in 3-Jaw self centering chucks.
- 2) Spiral cutting and spiral grinding in 3-Jaw chucks made as per the Cushman system.
- 3) Guideway milling and grinding in 3-Jaw self centering & 4-Jaw Independent chucks.
- 4) Jaw teeth cutting and grinding in 3-Jaw chucks.
- 5) Manufacture of Cam-Pins for Camlock spindle.
- 6) Testing process for 3-Jaw & 4-Jaw Chucks.

The Swedish firm which can provide the above technology

is -

**Skand**

M/s. Skandinaviska Chuckfabriks  
Aktiebolaget,

S-282 00 TYRINGE

SWEDEN

Telegram:-Skandchuck

Telex:-48058 SCA S

Telephone: 0451-50970

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RCS/KRA

LIST OF MACHINES OWNED BY MS. SONALKAR TOOL WORKS PVT. LTD.,  
HARHAR AS ON 31ST MARCH 1982.

Sl. no.	Name and Description of the Machinerics	Cost value.
1.	Bhadravathi 'O' Lathe	802-00
2.	Zigs and fixtures	9,115-00
3.	Roids Grinding machine	277-00
4.	Horizontal Milling Machine	166-00
5.	Matterson Level Gear Generating Attachment	629-00
6.	Avery's hardness testing machine	158-00
7.	Clarkson's tool cutter grinder	165-00
8.	Broomwade air compressor	151-00
9.	Vertical milling machine	1,160-00
10.	Praehoma surface grinder	1,125-00
11.	Universal milling machine	3,810-00
12.	Mannaioni screw cutting machine	5,321-00
13.	Radial drilling machine	301-00
14.	Therlek furnace no.1	414-00
15.	Yugoslavian turret lathe	4,009-00
16.	EIJ-16 Cylindrical grinding machine	2,280-00
17.	Shimoga No.1 Lathe	1,964-00
18.	USSR tool room milling machine	6,041-00
19.	Jayems shaping machine	966-00
20.	Therelek furnace no.2	666-00
21.	'Churchill' cylindrical grinder	9,263-00
22.	SDH-20 surface grinder	6,729-00
23.	Punching machine	4,622-00
24.	TU-400 cylindrical grinder	845-00
25.	Harihar D-1 Lathe	1,647-00
26.	Arbour press	413-00
27.	Slotting machine	1,322-00
28.	22 Cooper shaping machine	898-00
29.	HMT LB 17 Lathe	5,300-56
30.	1/2" Drilling machine	846-72

/Cont., on 2/



Sl. No.	Name and Description of the Machineries	Cost value
31.	Shimoga W.I. Lathe	30,245-07
32.	Getcos LT 20 Lathe	50,126-87
33.	Batliboi's Radial drilling machine	67,306-93
34.	Horizontal drilling machine	78,085-10
35.	Rockwell hardness testing machine	3,946-34
	Pantograph engineering machine	18,778-32
37.	Mechanical comparator	4,689-36
38.	MH-22 Precision lathe	1,36,666-24
39.	Surface Grinding machine	46,794-76
40.	Lathe grinder	1,423-57
41.	Shalimar PSG Lathe	46,507-70
42.	Dust collecting machine	7,351-55
43.	Horizontal milling machine	16,323-15
44.	NFA 3V Milling Machine No. 251120	1,14,611-00
45.	FA 3V Milling machine no. 331248	1,14,610-50
46.	Internal grinding machine no. 60/76/014	2,23,061-00
47.	24 V Shaping machine RK Brand	38,119-00
48.	Microscope with projection screen	50,981-15
49.	Bench grinder	1,666-00
50.	Shimoga Shortbed lathe	38,798-38
51.	Shimoga short bed lathe	42,086-15
52.	Milling machine FA-3U	1,14,167-30
53.	Milling machine FA-3V	1,14,167-30
	Bombay Lathe - MK Make	1,88,624-84
55.	PSG Lathe	57,393-45
56.	HMT Universal grinding machine	88,947-44
Total Rs.		17,67,014-75

for SONALKAR TOOL WORKS PVT. LTD.,

SCANDIACONSULT

PRELIMINARY

MATCHING

Malmö

1982-05-07

58.0648-01

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RECIPIENT ENTERPRISE

IB6 Sonalkar Toolworks Private Ltd.

CANDIDATE PARTNER ENTERPRISE

Name: AB Lofab  
Address: Box 16034, S-200 25 MALMÖ  
Phone: 040-945320 Telex: 32580 lofab s  
Managing director: Bengt Ohlsson  
Contact person:  
Turnover: Employees: 35  
Product mix: Lathe mandrels, chucks, reduction sockets etc.

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SCANDIACONSULT

ENTERPRISE  
DESCRIPTIONAnnex 6:30  
Page 109

## 1. GENERAL

## 1.1 Name and address of enterprise

IB 6

Sonalkar Tool Works Pvt. Ltd.  
 P.O.Box 24  
 Harihar-577602 601  
 Phone: 296, 224

## 1.2 Contact person

Mr Ravi C. Sonalkar, Chief Executive

## 1.3 Form of ownership

Private Limited Company

## 1.4 Invested capital. -

## 1.5 Annual turnover

Last year 15 M RS

## 1.6 Year established: 1949

## 2. PERSONNEL

## 2.1 Managerial and engineering staff 12

## 2.2 Clerical staff. -

## 2.3 Workers, total 105

Skilled	85
Unskilled	20

- 
3. PRODUCTION
- 3.1 Products
- Lathe chucks  
Limit gauges  
Hydraulic attachments
- 3.2 Main production processes
- Casting, machining, heat treatment, grinding, assembling
- 3.3 Main machinery
- Lathes, grinding, lapping, drilling and planing machines  
List of machinery available at Scandiaconsult
- 3.4 Factory premises
- Roofed production area 500 m<sup>2</sup>  
Age of buildings approx 10 years
- 3.5 Production volume
- Chucks: 600 units per month, 2 shift  
Gauges: 3 000 units per month, 2 shift  
At present full capacity production
- 3.6 Current collaboration agreements
- None.  
The present chucks have been developed by copying an american made chuck
- 3.7 Quality control. -
- 3.8 Input materials. -
- 3.9 Utilities. -

---

4.           MARKETING

4.1          Main market

Local   85 %  
Export  15 %

4.2          Distribution

Dealers all over India  
Industries all over India

4.3          Competitors

On world market the main competitors are the Polish.

4.4          Market demand. -

4.5          Market share. -

4.6          Market surveys. -

4.7          Future plans. -

5.           PROBLEMS - DEVELOPING PROJECTS

5.1          Upgrading present products

See attachment.

5.2          New products in present product line

Pneumatic chucks  
Special chucks - 2 jaw chucks and bigchucks >900 mm  
Thread gauges

5.3          New products outside present product line. -

---

5.4 Projected market demand

Thread gauges are manufactured in India by one big and one small company at present.

5.5 Projected plant capacity

Pneumatic chucks: 25-100 units per month  
Thread gauges: 1 000 units per month

6. COMMENTS

Mr Sonalkar will be in Europe 25-30 Sept and will eventually take contact for meetings with Swedish companies.

Ref.No.136/HC/ 1857

Harihar, 27th Feby.1982.

Processes for Upgradation in manufacture of Chucks.

- 1) Bevel gear cutting for scroll and pinion in 3-Jaw self centering chucks.
  - 2) Spiral cutting and spiral grinding in 3-Jaw chucks made as per the Cushman system.
  - 3) Guideway milling and grinding in 3-Jaw self centering & 4-Jaw Independent chucks.
  - 4) Jaw teeth cutting and grinding in 3-Jaw chucks.
  - 5) Manufacture of Cam-Pins for Camlock spindle.
  - 6) Testing process for 3-Jaw & 4-Jaw Chucks.
- The Swedish firm which can provide the above technology is -

~~Skanska~~

M/a. Skandinaviska Chuckfabriks  
Aktiebolaget,

S-282 00 TYRINGE

SWEDEN

Telegram:-Skandchuck

Telex:-46058 SCA S

Telephone: 0451-50970

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RCS/KRA

Ref.No.136/HC/ 1856

Haridwar, 27th Feby.1982.

Process Upgradation for manufacture of  
Limit Gauges:

- (1) Lapping of flat surfaces
- (2) Lapping of snap gauge surfaces.
- (3) Heat-treatment and stabilizing processes in the manufacture of tool steel gauges.
- (4) Inspection of taper gauges.

The Swedish firm which will be able to provide the above mentioned technology is -

M/s.C.E.Johansson,  
Box 365  
S-63105 Eskilstuna  
SVERIGE

Telex:- 46080 Cejs

Telegram: COMBINATION

Telephone:- (016) 11,70,000

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RCS/KRA





Sonalkar Tool Works Pvt. Ltd.

Manufacturers of:  
Chucks, Gauges, Centres,  
Hydro-Copying Attachments,  
Hydraulic Power Packs, etc.

Post Box No. 24,  
Harihar - 577601 - Karnataka  
Phone - 296/260  
Grams: CHUCKS

Ref.No.102/H/ 717

BY AIR-MAIL

Dt. 14th October '82.

Dear Mr. Grahn,

I was unable to contact you from Copen Hagen as you were not available when I rang in morning and later I went out on a sight seeing tour which kept me busy till evening.

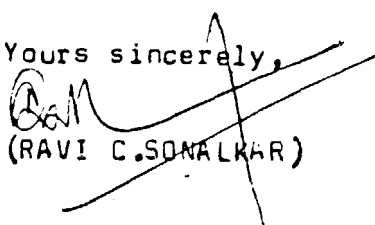
I had a very nice visit with the S.C.A. people at Tyring. However, I found with most of the chucks being manufactured by them are also being manufactured by us, and hence there is no possibility of transfer of Technology with respect to any new product. There is further scope for transfer of Technology in terms of a new manufacturing process. I would therefore request you to kindly discuss with Mr. Bork about his interest in transfer of Technology with respect to the manufacturing process.

During the course of my visit, it was suggested that the people from SCA should visit our manufacturing activities here in India and study the same and then suggest the changes required. I am also studying this proposal and will get back to you in a few days.

I would once again like to thank you for your assistance during my visit to Malmo.

Thanking you,

Yours sincerely,

  
(RAVI C. SONALKAR)

Mr. Thomas Grahn  
Scandiaconsult  
S:t Johannesgatan 2  
211 46 Malmo  
SWEDEN.

Regd. Office: 'LAKSHMI' 247-14 B, Yeravada, Poona-411 006. Phone: 24833

rsc/bvp

SCANDIACONSULT

COLLABORATION  
PROPOSAL  
1982-10-11

Malmö

58.0648-01

Recipient enterprise

Sonalkar Tool Works Pvt. Ltd.  
Post Box No. 24  
Harihar-577601-Karnataka  
India

Contact person: Mr. Ravi Sonalkar, Chief Executive

Technological requirements of the recipient enterprise

- o Upgrading quality and productivity of chucks.
- o Upgrading quality and productivity of limit gauges.
- o Technology for manufacturing of pneumatic chucks.

Partner enterprise

Skandinaviska Chuckfabriks AB  
Box 121  
S-282 00 Tyringe  
Sweden

Contact person: Mr. Gösta Björk, Managing Director

Available technology of the partner enterprise

Skandinaviska Chuckfabriks AB, SCA, was the first chuck manufacturer in Europe and is still in the frontiers of the chuck technology development.

The company is family-owned and has about 90 employees. The turnover is about 16 M SEK.

Proposed framework for future collaboration

The two counterparts have already had their first discussion during a visit by Mr. Sonalkar on September 27, 1982. It was pursued in general terms, both parties being well aware that starting a business relation is a project over a long period of time. However, some substantial items were mentioned:

- o Sonalkar Tool Works Pvt. Ltd., STW, is interested in buying some second hand machinery from SCA, which soon probably will be replaced by NC-machines. If it would be realized, a package deal will be formed containing the machinery as well as the erection and testing of it and training of the personnel. For the training of the personnel, there might rise requirements on external funds for financing, e.g. via UNIDO.
- o STW is interested in the unique design of the SCA chucks and there will be future negotiations on the terms of such a technology transfer.

TITLE - Transfer of technology by plant level co operation, for small & medium sized concerns between Sonalkar Tool Works, Harihar, India & M/s Skandinaviska Chockfabrike Aktiebolaget, Tylinge, Sweden (SCA)

BACKGROUND INFORMATION

Both the above companies are engaged in the manufacture of the same product namely Lathe Chucks, i.e. holding devices used on lathes.

M/s SCA are the oldest manufacturers of Lathe Chucks in Europe & their chucks are considered to be among the best in the world. The company is over 90 years old & possesses a bank of high level skills in terms of personnel & machines.

M/s STW have been manufacturing chucks in India for the past 25 years. Their chucks have found a ready market in India, however, with the more powerful & high speed lathe machines coming into the market, a need was felt for the upgradation of quality of their products.

It may be observed that the SCA chucks have the higher gripping power among all the manual chucks being made in the world & as such their technology was found to be the most suitable for adaptation by STW.

OBJECT:-

It is therefore the object of this project, to transfer this technology at plant level from M/s SCA to M/s STW in a series of steps as indicated below.

The following areas of cooperation were identified by the two parties, to facilitate the transfer of technology for the plant level co-operation

① Study of existing manufacturing methods by SCA experts at the plant of M/s STW in Harihar India. & suggestions by them, on the improvement of methods.

② Training of at least 3 persons from M/s STW Haraha at the SCA plant in Tyenige, Sweden. Under a training programme drawn up by M/s SCA, including the method of working, operation of modern machines & details of the process of manufacture of lathe chucks.

③ Purchase of various machinery, special purpose, designed by M/s SCA for the manufacture of chucks. Some of these machinery are absolutely essential for the ~~max~~ improve in quality & others may gradually be imported as the quality is to be further improved as also the productivity.

④ Purchase of drawings & designs for 3 sizes of chucks. & manufacture the same to SCA specifications as this could lead to the purchase (buyback) of chucks from STW by M/s SCA.

The transfer of technology will take place in the following 3 stages & the programme is envisaged to be ongoing in nature.

STAGE I :- (period 2 yrs)

This stage was to start immediately;

(a) Visit by SCA experts to the plant of M/s STW to survey the existing methods of working & to form a basis for all future co-operation.

(b) Training of 3 persons from M/s STW for a period of 2 months/man at the SCA plant under a plan drawn up by M/s SCA. The training will include operation of various machines to be purchased by M/s STW.

(c) Purchase of machinery. It was observed that it would not be useful to train the people from STW unless at least a few machines were purchased immediately. Based on the discussions had between Mr. Gösta Björk, Boss SCA & Mr. Ran Sonalakar of STW on the 6<sup>th</sup> & 7<sup>th</sup> of April '83 in Tynege 4 machines have been finalized for. Stage I found

The cost break up for stage I is as follows

	<u>SKr.</u>
① Travelling cost of 2 persons from SCA to India.	50,000 :-
② Training of 3 men by SCA (not including travelling & staying costs)	3,60,000 :-
③ Purchase of machines	
a) Special lathes for Chuck body turning 2 nos.	2,15,000 :-
(b) Left grinding machines for 6", 8" & 10" chucks - 2 nos	3,25,000 :-
Total cost of stage I	9,50,000 :-

It is expected that stage I will be completed within a period of 2 years or less. After the completion of stage I, stage II will be started.

## STAGE II

This stage will start after the completion of stage I.

(a) Purchase of dies & designs from M/s SCA for the chucks of sizes 6", 8" & 10" & to buy M/s STW & manufacture the same to their standards.

A Royalty will be paid on all such chucks as will be mutually agreed, for sales within India. All export will be covered under an agreement to be drawn up with M/s SCA.

(b) Purchase of Additional machinery including

(a) Special purpose broaching machine for broaching slots in chuck bodies. - 1 no. 5,00,000 sk

(b) Milling machines for teeth milling operations - 4 nos. (to be indicated)

~~(c) Lathe~~

Stage II will take between 1½ & two years after the completion of stage I we start stage III.

STAGE III :-

This commences with the end of stage II.

(a) One person from SCA will visit the STW plant in Hambar & in case he is satisfied with the quality, SCA will proceed to buy chuck's from M/s STW for purposes of marketing under the brand name ~~STW~~ SCA.

(b) Purchase of further special purpose machines especially for bevel gear generation on scrolls & pinions.

(c) Possible training of M/s STW personnel for the operation of the machines & for details regarding sale of chuck's to SCA.

After the stages I, II & III are over M/s STW will have absorbed the existing modern technology available with M/s SCA. A review will be made at this time & the methods of further co-operation determined.

ROLE OF UNIDO & SCANDIA CONSULT

It would be of great assistance, in the beginning of this programme, if Unido could assist financially, for the travel of 2 persons to India from SCA & for the training of 3 persons by SCA. Approx costs are as follows.

(1) Trip of 2 persons from SCA to India	SKr. 50,000 :-
(2) Training 3 persons at the SCA plant	SKr 3,60,000 :-
(3) Cost of travel board etc for 3 persons at SCA plant.	SKr 1,25,000 :-
	<hr/>
	SKr. 5,35,000

Scandia consult could assist in drawing up the training plans for the STW personnel & also monitor the progress of co-operation. Assistance in drafting the agreement at stage II and stage III if necessary.

ROLE OF KSSIDC

KSSIDC could be effective by giving recommendatory letters to the Reserve Bank of India & also for the import licences required for the import of special purpose machines.

KSSIDC can also arrange for assistance during the visit of SCA experts to India.

CONCLUSION

If the programme is completed in the manner mentioned above, a very effective modernization of the M/S STW plant would take place, making the Indian product one of the best available in the world.



# Skandinaviska Chuckfabriks Aktiebolaget

QUOTATION, preliminary  
-----

Supplier: Skandinaviska Chuckfabriks Aktiebolaget,  
S-282 00 TYRINGE, Sweden

Buyer: Sonalkar Tool Works Pvt Ltd, P.O.Box 24,  
KARNATAKA, India

Travelling costs to India for two representatives from SCA	SEK 50.000.-
Training of three representatives from Sonalkar Tool Works at SCA (two months each)	SEK 360.000.-
	<hr/>
	SEK 410.000.- -----

Royalties to be discussed later on

Tyringe 1983-04-07

Skandinaviska Chuckfabriks Aktiebolaget

# Skandinaviska Chuckfabriks Aktiebolaget

QUOTATION, preliminary  
-----

Supplier: Skandinaviska Chuckfabriks Aktiebolaget,  
S-282 00 TYRINGE, Sweden

Buyer: Sonalkar Tool Works Pvt Ltd, P.O.Box 24  
KARNATAKA, India

Delivery of:

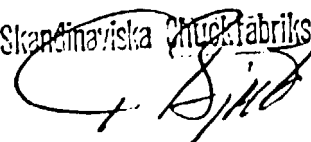
- 1 - special automatic lathe with increased power, including available tools, for chuck bodies, body backs, scrolls a.s.o.
- 1 - special automatic lathe, including available tools, for chuck bodies, body backs, scrolls a.s.o.
- 1 - grinding machine for 10" jaws
- 1 - grinding machine for 6" and 8" jaws, including new lead screws and cams

Total amount: SEK 515.000.-  
-----

Royalties to be discussed later on

Tyringe 1983-04-07

Skandinaviska Chuckfabriks Aktiebolaget



# Skandinaviska Chuckfabriks Aktiebolaget

QUOTATION, preliminary

Supplier: Skandinaviska Chuckfabriks Aktiebolaget,  
S-282 00 TYRINGE, Sweden

Buyer: Sonalkar Tool Works Pvt Ltd. P.O.Box 24  
KARNATAKA, India

Delivery of:

1 - special automatic lathe with increased power, including available tools, for chuck bodies, body backs, scrolls a.s.o.	SEK 115.000.-
1 - special automatic lathe, including available tools, for chuck bodies, body backs, scrolls a.s.o.	SEK 100.000.-
1 - grinding machine for 10" jaws	SEK 125.000.-
1 - grinding machine for 6" and 8" jaws including now lead screws and cams	SEK 175.000.-
	<hr/>
	SEK 515.000.-
	-----

Royalties to be discussed later on

Tyringe 1983-04-07

Skandinaviska Chuckfabriks Aktiebolaget



# Skandinaviska Chuckfabriks Aktiebolaget

QUOTATION, preliminary  
-----

Supplier: Skandinaviska Chuckfabriks Aktiebolaget,  
S-282 00 TYRINGE, Sweden

Buyer: Sonalkar Tool Works Pvt Ltd, P.O.Box 24  
KARNATAKA, India

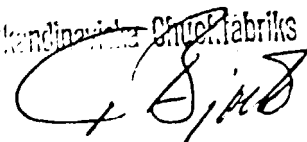
Broaching machine, excluding tools

Total amount SEK 500.000.-  
-----

Royalties to be discussed later on

Tyringe 1983-04-07

Skandinaviska Chuckfabriks Aktiebolaget



**ANNEX No. 4**COLLABORATION PARTNERS

BDK Valves P. Ltd., Hubli, Karnataka, India  
and  
AB Scmas, Säffle, Sweden.

SELECTION PROCEDURES

Based on the report from Expolaris (subannex 4:1), some pamphlets and the short briefing by Mr. Hånell, BDK was selected as one of the potential recipient enterprises to be further promoted for collaboration with a Swedish enterprise. The main reasons for the selection were:

- o A positive overall impression of the company.
- o The management was said to be good.
- o The products were properly presented in the pamphlets.
- o The present standard of technology seemed good enough to be the platform for further development.
- o The required technology would most likely be found within the Swedish valve industry.

After the selection phase, an attempt was made to make a preliminary matching of BDK and Fluid Systems P. Ltd., Hyderabad, India, both being Indian valve manufacturers, with the Swedish enterprises Tour & Andersson AB and Glimåkra Armatur AB (subannex 4:2 and 4:3). They showed interest in the project and submitted information on the companies and their products. However, their products were not actually within the present product lines of either of the Indian enterprises and were dropped after presentation to them.

The impressions from the visit to BDK during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 4:4). The following came out of the visit:

- o It was confirmed, that the management capability was good.
- o The company will be able to adopt new technology.
- o The management had some very specific requirements on technology to supplement the present product line.

- o The new products would make it possible to find new markets, also for the present products.
- o The requested technology will most likely be found in Sweden.

After the Mission, there was another screening procedure based on the additional information now available. As most of the criteria for the selection of the projects to be continued were fulfilled, BDK was put in the group of potential recipient enterprises, which should be finally matched with Swedish partners.

#### MATCHING PROCEDURE

The main technology requirements of BDK were listed. So were those of the other two Indian valve manufacturers being in the project. Discussions were then held with valve specialists among the business acquaintances of Scandiaconsult.

Each of the Indian valve manufacturers was matched with a couple of Swedish enterprises. For two Indian valve manufacturers, it was not possible to get partners, despite of several attempts, but for BDK the first Swedish enterprise contacted, which was Somas, immediately showed great interest in the project and wanted to go further. After studying the information available thoroughly, a Collaboration Proposal was worked out.

#### COLLABORATION PROPOSAL

The Collaboration Proposal is attached (subannex 4:5) and contains the following framework for future collaboration:

- o In phase 1 BDK will be the agent for Somas in India. All manufacturing made by Somas.
- o In phase 2 some of the manufacturing and the assembly will be made by BDK. Somas will supply components.
- o In phase 3 all the manufacturing of the most frequent sizes will be made by BDK. Rare types and sizes will be made by Somas.

#### NEGOTIATIONS

In connection with the Group Visit to Malmoe, Sweden, April 5-8, 1983, Mr. S.K. Ladha, BDK, and Mr. G. Andersson, Somas, discussed future collaboration based on the framework given in the Collaboration Proposal. The result of these discussions was put down in the attached Minutes of Meeting (subannex 4:6) and is of the same structure as the Collaboration Proposal, except for the scheduling and the detailing of the three phases.

PROJECT STATUS JUNE 83

Both parties have expressed their satisfaction with the development of this collaboration so far and the plans they have worked out to implement it.

BDK will confirm the agreement of Phase No. 1 as soon as possible.

No need for UNIDO assistance during the Phases No. 1 and 2, but for Phase No. 3 assistance may be required for drafting the agreement.

PROJECT STATUS OCTOBER 83

The project has developed as intended in the minutes of meeting presented in Subannex 4:6. Market research, made by BDK, has given positive results. BDK will start test marketing of Somas products expected to last 1 year. The intention is that BDK shall prepare production of some of the more simple valve parts, while Somas, pending the marketing success, continues to produce the key parts. So far, no concrete negotiations concerning the conditions for transfer of complete production rights (and know-how) have been held.

Somas has discussed this project with Swedfund in Stockholm (Mr. Chöler), since Somas wants assistance during the forthcoming discussions regarding terms for the technology transfer. Somas has heard from business associates that such agreements with Indian companies can be difficult to negotiate.

Before Somas enters into a technology transfer agreement they want to send a man to BDK to check BDK's production plant (equipment, quality control, etc).

**Comments**

Somas is still interested in building a relationship with BDK. This interest will remain as long as the possibilities to earn money exists, according to Mr. Andersson of Somas.

Further assistance from UNIDO is primarily recommended in financing a visit of one Somas representative to BDK.

Name and other identification data of the firm

A B D K Valves Limited  
N-4, Industrial Estate, Gokul Road  
Hubli-58 00 30

Managing director: S K Ladha

Phone: 5326

Telex: 0865-202 AKAY IN

Cable: Chemfloval

Established: 1976

Datas about the people employed in the firm

Professional staff: 10

Skilled labour: 40

Unskilled labour: 15

Annual turnover, equity, profits and economic facts

Turnover 1980: 10 000 000 In R

Product mix

Diaphragm valves and sluice valves.

Production technology, equipment and other technical information

Machining of castings and bar material. Lining with rubber, glass, lead, plastic, etc. Assembling and testing.

Lathes, shaping machines, drilling machines, welding set, grinders, compressors, pressure testing fixtures.

The company is the largest manufacturer of these valves in India.

Datas about marketing organization etc

Valves are sold in India through Akay Industries and also directly to chemical, fertilizer and other industries, nuclear installations. Export to UK and Malaysia.

The future plans of the firm

The company want to improve both the casting methods and the lining methods. They also want to include ceramic forging.

The possibilities of the firm

Good.

Recommendations and proposals

Establish a contact with a swedish foundry, working if possible also with lining.

*År inne på kärnkraftsiden.*  
*Glimsörens smidesverk*



SCANDIACONSULT

PRELIMINARY

MATCHING

Malmö

1982-05-07

58.0648-01

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RECIPIENT ENTERPRISE

IB7 BDK Valves Ltd.  
IH12 Fluid Systems

CANDIDATE PARTNER ENTERPRISE

Name: Tour & Andersson AB, Valve Division  
Address: Box 120, S-501 03 BORAS  
Phone: 033-100230 Telex:  
Managing director: Berndt Hedblom  
Contact person: Berndt Hedblom  
Turnover: 200 M SEK Employees: 850  
Product mix: Radiator fittings, gate valves, chuck valves,  
globe valves, ball valves, pipe couplings, balan-  
cing valves, mixing valves, sanitary fittings and  
flow regulators, fittings for fire-fighting  
equipment

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1982-05-06

Phone to Mr. Berndt Hedblom

Mr. Hedblom showed great interest in the project and he is willing to discuss it further. The company has been involved in the building of a tube factory in Tanzania where they were responsible for the process as a consultant. Mr. Hedblom will submit some information on the company.

SCANDIACONSULT

PRELIMINARY

Malmö

MATCHING  
1982-05-07

58.0648-01

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RECIPIENT ENTERPRISE

IB7 BDK Valves Ltd.  
IH12 M/S Fluid Systems Private Ltd.

CANDIDATE PARTNER ENTERPRISE

Name: Glimåkra Armatur AB  
Address: Box 113, S-280 64 GLIMÅKRA  
Phone: 044-42445 Telex:  
Managing director: Sten Johnsson  
Contact person: Sten Johnsson, Leif Nilsson, Marketing m.g.r.  
Turnover: 26 M SEK Employees: 75  
Product mix: Cast iron and brass fittings, faucets, valves etc.

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1982-94-33

Visit to Mr. Sten Johansson together with  
Mr. S.R. Vijay

Mr. Johnsson showed interest in the project but the company  
does not have the proper product range for BDK Valves Ltd.  
as they mainly produce brass and gun metal valves.

- 
1. GENERAL
- 1.1 Name and address of enterprise IB 7
- BDK Valves Private Limited  
Kutchi House Jayachamaraj Nagar  
Hubli 580020  
Phone: 67105, 63638  
Telex: 0865-232 BDKC
- 1.2 Contact persons
- Mr Bharat B Khimji, Managing Director  
Mr V G Chillal, Director Marketing  
Mr P J Lalka, Director
- 1.3 Form of ownership
- Private Limited Company
- There are five companies within the BDK-group
- 1.4 Invested capital. -
- 1.5 Annual turnover
- Last year 11.7 M RS
- 1.6 Year established: 1976
2. PERSONNEL
- 2.1 Managerial and engineering staff 15
- 2.2 Clerical staff 45
- 2.3 Workers, total 80

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3. PRODUCTION

3.1 Products

Industrial valves, mainly diaphragm valves  
Manufacturing programme and pamphlets available at Scandiaconsult

3.2 Main production processes

Machining of castings and bar material  
Lining with rubber, glass, lead, plastic etc  
Assembling and testing

3.3 Main machinery

Lathes, drills, welding set, grinders etc

3.4 Factory premises

Office area	500 m2
Roofed production area	1 200 m2
Total land area	2 000 m2

3.5 Production volume

Capacity	30 000 valves per year
Utilization	20 000 valves per year at present

3.6 Current collaboration agreements

Not for the BDK Valves Priv. Ltd but for the other companies in the group.

3.7 Quality control

Pressure tests

3.8 Input materials

Castings, rods of iron, steel, brass etc locally available

3.9 Utilities. -

---

4.           MARKETING

4.1          Main market

Mainly local market  
Water and effluent treatment plants. Power plants.  
Chemical industry. Food industry.

4.2          Distribution. -

4.3          Competitors. -

4.4          Market demand. -

4.5          Market share. -

4.6          Market surveys. -

4.7          Future plans. -

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5. PROBLEMS - DEVELOPING PROJECTS

5.1 Upgrading present products. -

5.2 New products in present product line

Technology for:

Corrosion and heat resistant glass lining

Processing of fluoroplastics and elastomers - lining and moulding

Control valves and valve actuators

Also see attachment.

5.3 New products outside present product line. -

5.4 Projected market demand. -

5.5 Projected plant capacity. -

6. COMMENTS



## WHAT WE ARE

We are a Private Limited Company, managed by a Board of Directors. Mr. Bharat B. Khimji is the Company's Managing Director. Other Directors and Executives are :

1. Mr. S.K. Ladha,  
Executive Director  
Qualified in Mechanical Engineering  
and Business Management and with 10  
years experience.
2. Mr. V.G. Chillal,  
Director-Marketing,  
Qualified in Mechanical Engineering  
and with 15 years experience.
3. Mr. J.M. Subramanya,  
Director  
Qualified in Mechanical Engineering  
and with 12 years experience.
4. Mr. H. R. Rao,  
Senior Executive,  
Qualified in Mechanical Engineering  
and with 15 years experience.

Head Office                      Kutchi House  
    Jayachamaraj Nagar,  
    Hubli 580 020  
    Phone : 3638, 7105  
    Telex : 0865- 232 BDK C  
    Gram : UNIFLOVAL

Works                                N-4 Industrial Estate  
    Hubli 580 030  
    Phone : 5326, 4959

Our Works is located on an area of 22,000 square feet with a covered area of 13,000 square feet and an office space of 6,000 square feet. Our employment strength is 140 - 60 staff and 80 workmen.

We are part of B.D.K. Group of Companies. Other Companies in the Group are :

- B.D.K. Alloy Pvt Ltd            J.F. Brown UK
- B.D.K. Synthetics Pvt Ltd - Rubber joints.
- B.D.K. Exports Pvt Ltd and
- B.D.K. Engineers Pvt Ltd    Cranepacking Co USA

We manufacture a wide range of industrial valves for use in water treatment            effluent treatment plants, thermal power plant            near power plants, caustic soda





plants, fertiliser plants, petrochemical plants, refineries, sugar factories, and in general in Chemical and Process industries.

A copy of our 'Manufacturing Programme - Industrial Valves', some photographs and copies of our Diaphragm Valves and Sluice Valve catalogues are enclosed.

We have a manufacturing capacity of 30,000 nos valves per annum. Our production for the last three years has been as below :

1980-81	18,000 nos	Rs. 1,17,00,000
1979-80	17,000 nos	Rs. 87,00,000
1978-79	10,000 nos	Rs. 41,00,000

Manually operated Diaphragm Valves account for the largest share of our production.

Diaphragm Valves are industrial valves which offer several important advantages over other types of industrial valves. Low cost, suitability for a wide range of services and simple operation are some of these.

We manufacture these valves in a wide range of designs and materials of construction. Valves are offered with bodies of Cast Iron, Stainless Steel, Gun Metal or any other metal that can be cast and machined. In addition, linings of



natural and synthetic rubbers, plastics, lead and glass are offered with Cast Iron bodies leading to suitability for a wide range of services at low cost. Similarly valves are offered with diaphragms of natural and synthetic rubbers and plastics.

## WHAT WE NEED

1. Technology for
  - a. Corrosion and heat resistant glass lining
  - b. Processing of fluoroplastics - lining and moulding
  - c. Processing of elastomers - lining and moulding

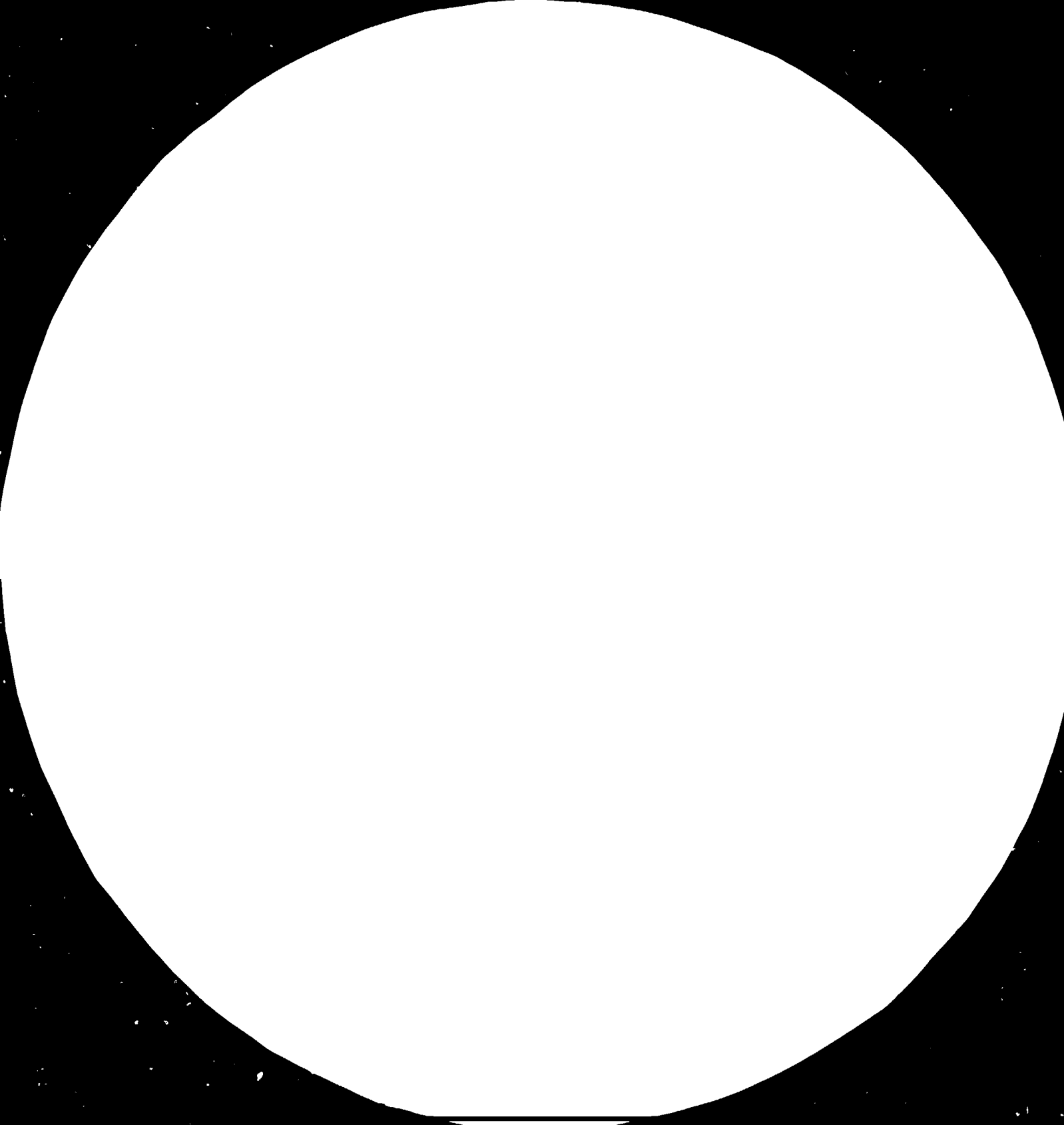
Diaphragm valves offer the important advantage of suitability for a wide range of services at low cost.

Now, as the technologies in the chemical and process industries advance and new process routes are discovered, service conditions (chemical action, temperature, pressure, abrasion etc) tend to become more severe.

Also increasing concern with safety, higher cost of downtime and such other factors demand that valves and such other equipment be made to perform at higher levels of reliability.

More severe service conditions and demand for higher reliability (for instance in the case of a Nuclear power plant where a failure may prove to be a major hazard and lead to closure of the plant) require continuous upgrading of technology of manufacture.

In the case of Diaphragm Valves, use of synthetic rubbers for linings and diaphragms like Neoprene, Hypalon, Butyl, Buna-N, EPDM, Silicone, Urethane etc. accounts for a large number of applications. These





synthetic rubbers are imported into the country along with chemicals needed for processing these materials. This in turn means that information on upto-date developments in the field of processing of these materials is not available in the country and leads to poor exploitation of opportunities in product development and applications. We therefore could do well with upgrading of technology available with us in the field of elastomer processing.

There are many service conditions in chemical and processing industries which are beyond the capabilities of rubber materials and which require that glass and special plastic materials like fluoro plastics - Polytetrafluoroethylene (PTFE), Polyvinylidene Fluoride (PVDF), Ethylene-Tetrafluoroethylene (ETFE) etc - be offered as materials of construction.

Heat and corrosion resistance properties of glass are fully exploited in case of Diaphragm Valves without sacrificing the advantage of low cost by depositing a layer of glass on Cast Iron and Steel surfaces. This process uses sophisticated technology and is not well developed in the country. Thus, though we are able to produce small quantities of glass lined valves, the quality and quantity of

production are not entirely satisfactory. We therefore could do well with upgrading of technology available with us in the field of glass lining.

Coming to special plastics like fluoroplastics, these materials are not produced in the country and have to be imported from advanced countries. Their processing involves sophisticated equipment and technology. Use of these fluoroplastics is made to produce linings as well as mouldings (valve bodies, pipe fittings, instrument housings, diaphragms, pump impellers etc) but the processing technology is not available except to a very limited extent. We are thus not able to offer valves in cases requiring these materials and therefore could do well with upgrading of technology available with us in the field of fluoroplastics processing.

- 2. Knowhow for development and manufacture of valve actuators, control valves and pressure relief valves.

We presently manufacture a wide range of manually operated industrial valves.

As in the case all over the world, unit plant sizes are

becoming larger and larger in terms of production capacities necessitating automation of control and other plant operations under pressure of high man-power costs and demand for safety and reliability in operations. Thus more and more plants specify valves fitted with actuators (pneumatic, electric) and controllers. We could do well by offering actuators, controllers and such other instrumentation of proven design. Such needs will otherwise be met through imports.

The country has an ambitious programme of development of power sector, fertiliser industry, oil refining and petrochemical industry. These industries have ever growing requirement of control valves and pressure relief valves. A large portion of this need is met through imports and we could do well with know-how for development and manufacture of these valves.

\* \* \* \*



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Recipient enterprise

BDK Valves Private Limited  
Kutchi House Jayachamaraj Nagar  
Hubli-58 00 20-Karnataka  
India

Contact person: Mr. Bharet B. Klimji, Managing Director

Technological requirements of the recipient enterprise

- o Control valves
- o Valve actuators
- o Corrosion and heat resistant lining

Partner enterprise

AB Somas  
Box 107  
S-661 00 Säffle  
Sweden

Contact person: Mr. Göran Andersson, Export Manager

For further information of the company, please refer to the attached enterprise description.

Available technology of the partner enterprise

AB Somas is a well established Swedish supplier of control valves to the chemical and pulp and paper industry in Sweden and Europe. For further information on the products, please refer to the attached brochures.

Proposed framework for future collaboration

During several phone conversations in October 1982, Mr. Göran Andersson has shown great interest in the project after acquainting himself with the information available on BDK Valves P. Ltd. The following sketch on future collaboration has been discussed:

- o The proposed collaboration will develop in three steps during some years.
- o Step 1: BDK Valves P. Ltd. will be the agent for the products of AB Somas in India. All the manufacturing will be made in Sweden.
- o Step 2: BDK Valves P. Ltd. will manufacture the body and assemble the butterfly valve type TVB and the appropriate actuator as per AB Somas' specifications. AB Somas supplies the disc and the sealing, which require NC machining and special steel.

- 
- o Step 3: All the manufacturing of the frequent sizes of the valves for the Indian market will be made by BDK Valves P. Ltd. on licence or in a joint venture company. The rare types and sizes of the valves will be supplied by AB Somas if competitive.



## SOMAS

### The history of SOMAS

SOMAS has been in the valve business since 1950. The company is located in Vaermland, close to lake Vaernern, a part of Sweden dominated by pulp- and paper mills.

The manufacturing is made in our own workshop where we make all machining and assembly. Just a minor part of our products are made by sub-supplier. All casted material are bought from foundries in Sweden and Norway.

The number of employees is about 60. Of these about 15 are on sales and administration and 45 on the floor. With this staff we made a turn over last budget year of 36 milj. SEK.

For many years, Somas made only butterfly valves. The demand for combined tight shut-off and control valves with free bore, prompted Somas to develop its ball segment valve. Careful studies led to a valve type unlike any other type. Instead of using a sector of a ball, Somas uses a segment. The result is a valve with the control features of a ball sector type valve and the tight shut-off features of a ball valve. Seat material of PTFE or solid stellite in combination with centric or ex-centric located ball segment make the valve suitable for most applications within a very wide temperature range. The Somas ball segment valves range in size from 1" with reduced bore up to 24".

Soft-seated butterfly valves have been used as tight shut-off valves as well as control valves for many years. The desire to use this valve type in broader temperature ranges has called for high performance butterfly valves. To solve the special demands of the pulp and paper industry, Somas developed the all-metal type VSS seated butterfly valve. The seat, made from solid special stainless steel, is corrosion and abrasion resistant to most flows of liquids and gases within a very wide temperature range. The unique disc shape in combination with the flexible seat design gives the VSS butterfly valve features which outperform most other high performance butterfly valves. The Somas VSS butterfly valve can be made bubble tight



## SOMAS

for shut-off and the stainless steel seat makes it resistant to abrasion in most control applications.

Somas valves are tight shut-off as well as control valves. Particularly in control applications, there is a demand for a rugged, friction-free pneumatic actuators. The Somas double acting and spring return pneumatic actuators have been developed to meet these demands, and to withstand the environments of process industries. The actuators feature adjustable limit stops, built in limit switches and position indicators.

A new series of pneumatic and electro-pneumatic valve positioners has recently been released. The positioners are specially developed for quarter turn valves, featuring qualities and technical performance beyond that of most other types in the market. The unique non-adjustable I/P Converter designed as an add-on unit to the pneumatic positioner gives a total flexibility. The capability to pre-select valve position to be maintained upon signal failure and field hand control are available as options to the electro-pneumatic positioner.

The Somas product range is designed to meet the demands of the pulp and paper industry. There are special valves to meet the most demanding applications. As an example, there is a ball segment valve for lime mud and another one that is used as a capping valve.

Today Somas has become one of the leading valve supplier to the Swedish pulp and paper industry. Since the release of the metal seated butterfly valve in late 1979, Somas has supplied the control valves to all major pulp and paper mill expansions in Sweden, and recently, has also supplied the on-off and manually operated butterfly valves to this industry.



SOMAS

MINUTES OF MEETING

Participants: Mr S.K. Lahda, BDK Valves  
Mr Göran Andersson

Date: 1983-04-07

Subject: UNIDO Project, transfer of technology  
from SOMAS to BDK Valves.

PHASE 1

- 1) BDK Valves and SOMAS have agreed upon to continue to find a way of co-operation which gives mutual benefits.
- 2) BDK Valves will review info received during the visit at SOMAS and discuss the matter with the management at BDK valves. The need for further info will be evaluated.
- 3) BDK will make an estimation of the potential for SOMAS range of products in India.
- 4) BDK Valves will estimate the work to enter into the Indian market. This estimation includes support for SOMAS.

Phase 1 ready 1983.12.01.

PHASE 2

- 1) A test marketing will be carried during 12 months with start 1983.12.01. For this SOMAS will provide BDK valve with
  - Printed material
  - Demo valves
  - Slides, OH, Photos etc.

cont.

PHASE 3

- 6) Manufacturing in India will be discussed 1984.12.01. These discussions will be based upon the results which have been obtained during Phase 1 and 2.

**ANNEX No 5**COLLABORATION PARTNERS

Elmeca Works, Dharwad, Karnataka, India  
and  
Lofab Square AB, Malmö, Sweden

SELECTION PROCEDURES

Based on the report from Expolaris (subannex 5:1), some pamphlets of the products and the short briefing by Mr Hånell, Elmeca Works was selected as one of the potential recipient enterprises to be further promoted for collaboration with a Swedish enterprise. The main reasons for the selection were:

- o A positive overall impression of the company.
- o It was said to be a company with a very high technological level.
- o The management was said to be very qualified.
- o The present products were properly described in the pamphlets.

After the selection phase an attempt was made to make a preliminary matching with the Swedish enterprise Skandinaviska Chuckfabriks AB (subannex 5:2). They showed interest in the project and submitted information on the company and its products. However, their products seemed to match better with those of Sonalcar Tool Works P. Ltd. On the other hand the preliminary matched partner of this company, Lofab Square AB, seemed to match Elmeca better.

The impressions from the visit to Elmeca during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 5:3). The following came out of the visit:

- o The high level of the technical and managerial capability of the company was confirmed.
- o The management had prepared a very good company write-up which was submitted to the Mission members.
- o The company presented some quite distinct requirements on technology to supplement the present products.
- o This technology would fit into their general expansion plans.
- o They were quite convinced that there is a market for the new products.
- o The requested technology will most likely be found in Sweden.

After the Mission there was another screening procedure based on the additional information now available. As most of the criteria for the selection of the projects to be continued were fulfilled, Elmeca was put into the group of potential recipient enterprises which should be finally matched with Swedish partners.

#### MATCHING PROCEDURE

The main requirements of Elmeca were listed and compared to the available key words of the register of Swedish Industry and Commerce, Kampass, through which a couple of potential Swedish enterprises were systematically chosen. The first company contacted immediately pulled out because they considered themselves too small. The second one was Eminentverktyg AB, Eskilstuna, who was interested and wanted to see the information available on Elmeca. However, two weeks later they pulled out because of lack of technical capacity due to reorganization of the production policy. The third Swedish enterprise contacted was Lofab Square AB, who immediately showed interest in the project. After studying the information available and after a meeting with Scandiaconsult, a Collaboration Proposal was worked out.

#### COLLABORATION PROPOSAL

The Collaboration Proposal is attached (subannex 5:4) and contains the following framework for future collaboration:

- o The collaboration will be focused on a patented product.
- o Elmeca will be the representative of Lofab Square AB on the Indian market.
- o Some parts of the products will be manufactured by Elmeca.
- o The patented part will be manufactured by Lofab.

#### NEGOTIATIONS

In connection with the Group Visit to Malmoe, Sweden, April 5-8, 1983, Mr H.C. Desai and Mr A. Kittur, Elmeca, and Mr B. Ohlsson, Lofab Square AB, discussed future collaboration starting with the framework given in the Collaboration Proposal and ending with an agreement as per attached letter (subannex 5:5). The main contents of the agreement are as follows:

- o The agreement concerns the patented "Loflex" system of Lofab.
- o For the technology transfer, Elmeca will pay a certain amount.
- o The technology transfer will be executed in two steps. An agreement has been signed for the first stage and the second stage will be considered within three years.
- o The first stage includes manufacturing and marketing of three products of the "Loflex" system in India by Elmeca. The key-part of the "Loflex" system, the "Loflex" screw, will be supplied by Lofab.



- o Elmecca will arrange the patent protection of the "Loflex" system in India and carry the costs therefor.
- o There might be some buy back arrangements besides of this technology transfer project.

#### PROJECT STATUS JUNE 83

Both parties have expressed their satisfaction with the development of this collaboration so far and the plans they have worked out to implement it.

Elmecca will arrange all necessary permits from the Indian Government. This may require assistance from the coordinating agency in India, Karnataka State Small Industries Development Corporation, KSSIDC.

Lofab will try to locate appropriate second-hand special-purpose machinery for Elmecca.

#### PROJECT STATUS OCTOBER 83

According to Mr. B. Olsson of Lofab, the agreement between Lofab and Elmecca signed in Malmoe in April-83 has now been approved by concerned Indian Authorities. Lofab are now awaiting payment of the sum stated in the contract before actual transfer of technology starts.

Since April, the contacts between Elmecca and Lofab have been intense. Lofab has also placed a trial order with Elmecca. The products have been delivered but they did not completely satisfy Lofab. However, Elmecca will be given new chances. The initial agreement did not include any by-back-clauses but Lofab are interested in evaluating Elmecca's competitiveness as a supplier.

#### **Comments**

Lofab has handled the contacts with Elmecca without assistance from any Swedish supporting organization. Mr. Olsson stressed that Elmecca has asked for assistance with quality control management during start-up of production in India. The companies will ask UNIDO to participate in financing a visit by one Lofab technician to Elmecca.

Mr. Olsson also suggested that UNIDO shall organize a Group Visit for leading representatives of the Swedish companies to India.

Name and other identification data of the firm

A Elmecca Works  
Behind Railway Station  
Post Box No 17  
Dharwar 580-007, Karnataka State

Phone: 801 77, -8, -9

Gram: Collet

Managing director: Harsh C Desai

Established: 1959

Datas about the people employed in the firm

Professional staff: 91

Skilled labour: 64

Unskilled labour: 95

Annual turnover, equity, profits and economic facts.

Turnover 1979-80: 4 500 000 In R  
1980-81: 6 200 000 In R

The firm is profitable.

Export to USA, Malaysia, Hongkong, Ceylon.

Product mix

Collets, feed fingers, guide bushes, liners, adaptors,  
Collet Chucks, micro boring and facing heads, fixtures,  
sleeves, drill holders, pneumatic chucks.

Production technology, equipment and other technical information

Turning, milling, heat treatment, grinding.

Equipment of high standards for manufacturing, assembling and testing.

Datas about marketing organization etc

The firm is selling to very many big and small Indian industries and has also a fairly good export.

*Wkt kwalificerat företag.*

The future plans of the firm

Extension of the foreign markets.

The possibilities of the firm

Good potential in foreign markets.

Recommendations and proposals

Inform the company about suitable agents/importers in other countries.

SCANDIACONSULT

PRELIMINARY

MATCHING

Malmö

1982-05-07

58.0648-01

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RECIPIENT ENTERPRISE

IB8 Elmeca Works

CANDIDATE PARTNER ENTERPRISE

Name: Skandinaviska Chuckfabriks AB  
Address: Box 121, S-282 00 Tyringe  
Phone: 0451-50970 Telex: 48059 sca s  
Managing director: Gösta Björk  
Contact person:  
Turnover: 16 M SEK Employees: 90  
Product mix: Chucks, clamping tools, self gripping drivers,  
lathe spindles

---

1982-04-21

Phone to Mr. Gösta Björk

Mr. Björk showed interest in the project and will consider an engagement in it. He will submit some company information.

## 1. GENERAL

## 1.1 Name and address of enterprise

Elmecca Works  
 Post Box No. 17 (mail address)  
 Behind Railway Station (visiting address)  
 Dharwad-580007  
 Phone: 80177, 80178, 80179

IB8

## 1.2 Contact person

Mr. Harsh C. Desay, Director

## 1.3 Form of ownership

Private Limited Company  
 Proprietors: Pelma Engineering Industries Private Ltd.

## 1.4 Invested capital -

## 1.5 Annual turnover

Last year 6 MRS.

## 1.6 Year established 1959.

## 2. PERSONNEL

## 2.1 Managerial and engineering staff

Managers	6
Engineers	35

## 2.2 Clerical staff 52

## 2.3 Workers (total) 156

Skilled	64
Semi-skilled	18
Unskilled	59
Seasonal	15

- 
3. PRODUCTION
- 3.1 Products
- Collets, feed fingers, chucks etc.  
See attachment, ann. II.
- 3.2 Main production processes -
- 3.3 Main machinery
- Lists of machinery and measuring instruments are available  
at Scandiaconsult.
- 3.4 Factory premises -
- 3.5 Production volume
- Approx. 6 MRS per year.
- 3.6 Current collaboration Machine Tool Institute of India, Bangalore.
- 3.7 Quality control -
- Inspection as per Indian standards derived from DIN.
- 3.8 Input materials -
- 3.9 Utilities -
4. MARKETING
- 4.1 Main market
- Mainly local market, industries.  
Some exports, approx. 50,000 RS per year.
- 4.2 Distribution -

---

4.3 Competitors

There are four manufacturers of machine tools in India. Elmecca Works has the largest product range of these.

4.4 Market demand -

4.5 Market share

Elmecca Works has approx. 40 % of the Indian market.

4.6 Market surveys

Home market survey will be done in the near future.

4.7 Future plans -

5. PROBLEMS - DEVELOPING PROJECTS

5.1 Upgrading present products

Mass production technology.

5.2 New products in present product line

NC toolings.  
Pneumatic chucks (CMTI-licence).  
Micro boring and facing heads.

5.3 New products outside present product line -

5.4 Projected market demand

There are only 6-8 NC machines in India at present but there will be a considerable increase during the next few years.

5.5 Projected plant capacity

NC-toolings: 200 pieces per month.

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6. COMMENTS

World marketing assistance is requested, as well as production management.

The financing status seems fairly good.

They have copied most of their products from European made products so far, but would like to get a technological agreement so that they learn to know why one design is better than the other.

BRIEF WRITE - UP ON ELMECA WORKS

1. Location: 'ELMECA' is located at Dharwad in the State of Karnataka and is on the Asian Highway No. 47. Indian National Highway No. 4 Bombay - Bangalore. The distance between Bombay and Dharwad is approximately 650 km. It is also connected by Rail. Convenient trains are available from Bombay to Dharwad. Dharwad is not connected with any air link. However, the nearest airport is Belgaum which is 70 km. away from Dharwad. The Bombay - Belgaum flight takes 1 hour 20 minutes.
2. Climatic Conditions: Dharwad has a very pleasing climate, very much suitable for Machine Tool Industry. The altitude is MSL - 2400 ft. The minimum temperature is 52° F. and the maximum temperature is 95° F. The average rainfall is 40".
3. Organisation: 'ELMECA' was established in the year 1959. There was a constitutional change in the year 1971, when it was converted into a Private Limited Company registered under the Companies Act, under the name and style: ELMECA WORKS, (Proprietors: PELMA ENGINEERING INDUSTRIES PRIVATE LIMITED),. The Factory licence No. MYW/DWR/318.

The company has its works at Dharwad at the following address:

Post Box No. 17, Dharwad - 580 007, Karnataka, South India.  
Telephone : 80177/78/79.      Telegrams: 'COLLET'.  
Telex : Applied for.

The Registered Office of the Company is at the following address:

Behramji Mansion, 2nd Floor, Sir P.M. Road, Fort,  
Bombay - 400 001.  
Telephone : 299151.      Telegrams: 'STARCOLLET'.  
Telex : Applied for.



... two ...

The Company is managed by a Board of Directors:

1. Mr. Harsh C. Desai - Director.
2. Mrs. Ushma H. Desai - Director.
3. Mr. Lajpat Rai - Technical Director.

The Company's Bankers: M/s. State Bank of India, Main Branch,  
Dharwad, Karnataka State, India.

The Company is also enrolled with Government Agencies, viz. Director General of Technical Development (DGTD), New Delhi. and Director General of Supplies and Disposals (DGS&D), New Delhi also various other units in Public Sector and Defence Organisations - Government of India.

4. Photographs depicting 'ELMECA' is enclosed herewith.

5. The Company has engaged the following staff in different departments:

a) Managerial Staff	...	6
b) Administrative Staff	...	52
c) Technical Supervisors	...	35
d) Labour Skilled	...	64
: Semi - Skilled	...	18
: Govt. Trainees	...	15
: Unskilled	...	59

6. The Company has attained a turnover of 4.7 million Rupees during the yr. July 1979 to June, 1980. We have projected a turnover of six million rupees during the year July 1980 to June - 1981.

7. The raw material is procured from M/s. Visvesvariah Iron & Steel Ltd., Bhadravati, Karnataka with Test Certificates, the raw material being as per Indian Standards.

... 3/-

... three ...

8. An up-to-date list of Plant & Machinery (Refer Annexure I A) and a list of Measuring Instruments (Refer Annexure I B) is enclosed herewith.

9. A list of the products presently manufactured by us is also enclosed. (Refer Annexure II).

10. The following products are under development.

- a. Self Contained Pneumatic Chuck  $\phi$  250. Capacity 60mm.
- b. Self Contained Air Operated Collet Chuck, Bar Capacity  $\phi$  42mm.

The above products are under licence from a Government Agency-M/s. Central Machine Tool Institute of India, Bangalore.

Apart from the above two items, we have also taken for development the following item.

1. Micro Boring and Facing Head, Model SDLS-400. With Boring and Facing Capacity upto 400mm.

The above Boring Head is equivalent to "WOLHAUPTER" make Micro Boring & Facing Head, UPA-4.

11. Clientele: The Company is patronised by Machine Tool Manufacturers. A list of the same is enclosed herewith (Refer Annexure III).

12. The Exports effected by us todate (Refer Annexure IV).

13. The present manufacturing capacity of the plant is 0.475 million per month. This can be increased to 0.525 million per month. We are in a position to reserve 25% capacity for export.

... 4/-

... four ...

14. Manufacturing facilities: The Company is self-contained in all respects except raw material and bought-out items. The products are inspected as per Indian Standards derived from DIN.

15. The Company will be shortly going in for an expansion which would add to the turnover of the Company approximately 2.4 million - Year 1981 -82.

16. It is proposed to procure immediately new plant and machinery (Refer Annexure V) to add to the manufacturing capacity.

IMPORTANT NOTE: Dharwad - the district where the present factory of 'ELMECA' is situated is considered to be an industrial developing district by the Union Government of India and any industry set up in these developing districts get a 15% Government Subsidy on the Plant & Machinery and Building.

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LIST OF PLANT AND MACHINERY

ANNEXURE : IA

Sl No.	Name of the Machines	Model	Specification	Nos.
1.	Gohil Hacksaw No. 1	Size 2	300mm cap.1.5HP Motor	1
2.	Gohil Hacksaw No.2	Size 2	300mm Cap.1.5HP Motor	1
3.	Tool and Cutter Grinder	Voza 5	Universal - 0.34 KW	1
4.	Gas Welding Equipment	-	-	-
5.	Electric Muffle Furnace	-	1300°C/300x300x450	1
6.	Turret Lathe	HTR 40	40 Bar Capacity	1
7.	IFCO Oil Fired Furnace	-	10000/375x375x450	1
8.	Expanding Machine	-	-	-
9.	Internal Grinder No. 1	Jotes	12 $\phi$ to 100 $\phi$	1
10.	Turret Lathe.	RTES-40	40mm $\phi$ Bar Capacity	1
11.	Centre Lapping Machine Lathe Harihar		1000mm x 200mm	1
12.	Universal Grinder	BUA 20	200/750 mm	1
13.	Shot Blasting E-quipment	Tilghman	Cabinet-1000x1000x1000mm	1
14.	Universal Grinder	HMT G-13	130/800 mm	
15.	Air Compressor, with Air Tank	-	100 c.c./Min	1
16.	Universal Milling Machine	AIG-100	640 x 195	1
17.	Tempering Furnace with Capaciter	-	500/450 x 150	1
18.	Radial Drilling Machine No.1	-	20 mm	
19.	H. S. Assembly for Lathe Tashing equipment No.1	-	-	1
20.	Milling Machine	HMT M2H	1100 x 310	1
21.	HMT Lathe	LBS-17	170 x 1000 mm	1
22.	Internal Grinder No.2	Jotes	12 $\phi$ x 100 $\phi$	1
23.	Turret Lathe	H.No.4	50mm/Bar Capacity	1
24.	Cylindrical Grinder	Paragon	150 x 450	1
25.	HMT Lathe No.1	H - 22	220 x 1000	1
26.	Pentograph Machine	Toolcraft	-	1
27.	HMT Lathe	LT 20	200 x 1000	1
28.	Polish Hardness Tester	LUCENIK	-	1

1	2	3	4	5
29.	Lathe	Shimoga	300 x 1500	1
30.	South Bend	198 C	300 x 1000mm	1
31.	Hand Shearing Machine	-	3/16" Thick Cap.	1
32.	Bending Machine (Small)	-	Locally Fabricated	1
33.	- do - (Big)	-	"	1
34.	Flexible Shaft Grinder	-	-	1
35.	Grinder Bench	H 22	CTG 6"	1
36.	Surface Grinder	PLS - 10	-	1
37.	Buffing Machine	-	-	1
38.	Tool Grinder	Pelma 35 A	-	1
39.	Grinder Machine	CTG 6"	Cap. 3/16" Thick	1
40.	Blower for Hearth	-	-	1
41.	Polishing Machine	-	-	1
42.	Tool Post Grinder	-	-	1
43.	Cut off Machine	-	-	1
44.	Jet pump Mounted on well	-	-	1
45.	Air Compressor	-	-	1
46.	Flexible Shaft Grinder	Ralliwolf	8 <sup>1</sup> / <sub>8</sub> , 4 <sup>3</sup> / <sub>4</sub> x 5 PB-2	1
47.	Chain Pulling Block	-	3 ton Capacity	1
48.	Chain Pulling Block	-	1 ton Capacity	1
49.	Air Compressor	-	-	1
50.	Internal Grinder No.3	Jotes	12 $\phi$ to 100 $\phi$	1
51.	FIE Rock Well Hardness Tester	RAS	-	1
52.	High Speed Drilling Machine	-	10mm Cap speed 355-5600 RPM	1
53.	HMT Lathe	H 22	220 x 1000	1
54.	Transformer 250 KVA	K.E.C.Make	11000/433 Volts	1
55.	M K Inspection Heads	M K make	-	1
56.	Lathe	Jupiter	200 x 1000	1
57.	HMT Centre Lathe	LB/17	170x1000mm 10HP Motor 200 RPM	1
58.	HMT Universal Grinder	-	K 130/500 V	1
59.	HMT Milling Machine	M.I.T.R	1067 x 28mm	1
60.	Armag Profiling Head(Swiss)	60	-	1

1	2	3	4	5
61.	Pneumatic Chuck	-	Drawings	1
62.	Air Operated Chuck	GMT/3B-250	-	1
63.	Oil Fired Furnace with Preheater	-	Locally Fabricated	1
64.	Face Grinding Machine	-	-	1
65.	Relieving Furnace	-	-	1
66.	Deep Hole Drilling Machine	-	-	1
67.	Furnace Oil Lifting pump	-	-	1
68.	Tool Post Grinder	-	-	1
69.	Cut off attachment fixed on H. pole	-	-	1
70.	Nut Slitting Machine	-	-	1
71.	Stamping Machine	-	-	1
72.	Arun Universal Dividing Head	-	130 mm	1
73.	Electrical Tempering Furnace	Vertical with air Circulation	12" $\phi$	1
74.	Grinder	CTG 6"	-	1
75.	MK Enterprise Lathe	1330	1000 mm	1
76.	Hindustan Ram Type Milling machine	M I T R	-	1
77.	Voumard Internal Grinder (Swiss)	3 A	-	1
78.	Tansi - HMT High Speed Hydraulic Hacksaw Machine	HS -20	-	1
79.	Cleaning Booth with cleaning tank	-	-	1
80.	Elgi Air Compressor	IG - 100	-	1
81.	Vijay Radial Drill Machine	-	1 " cap	1
82.	Arun Universal Dividing Head	Arun/UDH 130	-	1
83.	Square Deal Brand Slotting Machine	No 2	-	1
84.	Muffle Furnace	-	-	1
85.	Suraj - 3 Lathe	CLT - 42	-	-

LIST OF MEASURING INSTRUMENTS

ANNEXURE : IB

1.	Dial Test Indicators	800 s.
2.	-do-	800 N 2 UM.
3.	Thread Micrometers	40 z - 0-25
4.	-do-	40 z - 25.50mm
5.	-do-	40 z - 50.75mm
6.	-do-	40 z - 75 - 100mm
7.	-do-	40 z - 100 -125mm
8.	-do-	40 z - 125 to 150mm
9.	Interchangable Thread Measuring Anvils	3 fm
10.	"	0.5 - 0.7
11.	"	0.7 - 0.1
12.	"	1.25 - 2
13.	"	2 - 3.5
14.	"	3.5 - 5
15.	"	5 - 7
16.	"	7 - 9
17.	"	40 zfw 40-32
18.	"	32 - 24
19.	"	24 - 18
20.	"	18 - 14
21.	"	14 - 10
22.	"	10 - 7
23.	"	7 - 4.5
24.	"	4.5 - 3
	American Thread - (60°)	40 ZFUST
25.	"	32 - 24
26.	"	24 - 18
27.	"	18 - 14
28.	"	14 - 10
29.	"	10 - 7
30.	"	7 - 4.5
31.	"	4.5 - 3
	Pitch	40 zt/ACME-(29°)
		1.25

32.	Anvils Pitch	1.5
33.	"	2.0
34.	"	2.5
35.	"	3.0
36.	"	4.0 mm
37.	T P I	10
38.	"	12
39.	"	16
40.	"	20
41.	Micrometer - Standard	43 x 25mm 60°
42.	Outside Micrometer Standard	50 mm
43.	"	75 mm
44.	"	100 mm
45.	"	125 mm
46.	Micrometer Standard	43 x 25mm 55°
47.	"	50 mm
48.	Micrometer Standard	75 mm
49.	"	100 mm
50.	"	50 mm
51.	"	75 mm
52.	"	100 mm
53.	"	125 mm
54.	Taper Plug Gauge Morse Taper No.	397 D 0
55.	Taper Plug Gauge	1 397 D
56.	"	2 "
57.	"	3 "
58.	"	4 "
59.	"	5 "
60.	"	6 "
61.	Taper Ring Gauge No. Morse Taper	397 H 0
62.	Taper Gauge	1 397 H
63.	"	2 "



64.	Taper Ring Gauge	3 297 H
65.	"	4 "
66.	"	5 "
67.	"	6 "
68.	Taper Plug Gauge for Steep Machine Taper	399 D 30
69.	"	" 40
70.	Taper Plug Gauge	399 D 50
71.	"	" 60
72.	Taper Ring Gauge for steep Machine Taper	399 H 30
73.	"	" 40
74.	Taper Ring Gauge	" 50
75.	"	" 60
76.	Pocket Vernier Calipers	16 N H
77.	Measuring Range	300 mm
78.	Depth Gauge	30 T - 200mm
79.	Depth Gauge	30 T - 300mm
80.	Dial Gauges	58 mm
81.	Magnetic Base	MB 1
82.	Magnetic Base	MB 2
83.	Bevel Protractor	
84.	H I P Gauge Thread	7/6" x 20 TPI
85.	Gramill Surface Plate	
86.	Vernier Dept. Gauge	300 mm

LIST OF PRODUCTS MANUFACTURED

ANNEXURE II

IS AND DIN STANDARDS

1. Collets of all types	: DIN 6343 & IS 6238 - 1971
2. Feed Fingers all types	: According to customers Specification.
3. Guide Bushes	: Company's Standard/Customers Specification.
4. Linors	: - do -
5. Reduction Milling Sockets	: 5927 - 1970
6. Adaptors for Milling Machine	: Company Standard
7. Lever Operated Collet Chuck	: - do -
8. Stub Arbors	: 8615/8613-1977
9. Micor Boring & Facing Head	: Company's Standard
10. Indexing & Non-Indexing Fixture	: - do -
11. Autogrip Adaptors	: - do -
12. Quick Change Drill Chucks and Drill Holders	: IS 7824 - 1975
13. Adjustable Adaptors	: IS 8919
14. Drill Sleeves	: DIN 6329
15. Tap Sleeves	: DIN 6328
16. Extension Sockets	: IS 6682 - 1972
17. Reduction Drill Sleeves	: IS 6702 - 1972
18. Turret Sockets	: BS 1660 - 1972
19. Pneumatic Chucks	: Company's Standard.

EXPORTS EFFECTED FOR THE LAST THREE YEARS

ANNEXURE : IV

JANUARY TO DECEMBER 1978

U.S.A.	: Quick Change Drill Chuck & Collet	Rs. 544-71
Malaysia	: Quick Change Drill Chuck & Collet	Rs. 1674-00
Ceylon	: Spring Collet for Herbert 1D and Herbert 2D	Rs. 1383-00

JANUARY TO DECEMBER 1979.

Ceylon	: Spring Collet for Herbert Lathe	Rs. 2735-00
Ceylon	: Spring Collet Model C-40	Rs. 828-00
Indonesia	: Milling Adaptor & Boring Head and Collets	Rs. 80000-00

JANUARY TO DECEMBER 1980

Hong Kong	: Milling Adaptor & Collets	Rs. 686-80
Ceylon	: Spring Collet for H 2 D	Rs. 1210-00
Ceylon	: Collets for Traub A-25 & 42	Rs. 1330-00

SPOT SALE DURING IMTS-80

U.S.A.	: Boring Heads, 5C and R8 Collets and Accessories.	Rs. 8000-00
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JANUARY TO MARCH 1981.

U.S.A.	: Milling Adaptors and Quick Action Collet Chucks, Collets	Rs. 27000-00
NEPAL	: Boring Heads, Milling Adaptors, and Sockets	Rs. 8000-00

Iran	:	Autogrip Adaptors.	Rs. 600-00
Canada	:	Pneumatic Chuck, Cylinder Accessories & Set of Soft Jaws.	Rs. 8000-00
Houston. U.S.A.	:	Pneumatic Chuck, Cylinder Accessories with set of Soft Jaws.	Rs. 8000-00
West Germany:		Pneumatic Chuck only	Rs. 3350-00

\* \* \* \* \*

LIST OF OUR CLIENTELE

ANNEXURE - III

1. Aeronautical Development Establishment, Bangalore.
2. Artificial Limbs Manufacturing Co. Kanpur.
3. Ammunition Factory, Kirkee.
4. Armament Research Development Estt. Poona.
5. B E M L Kolar Gold Fields.
6. B E L Bangalore.
7. C V R D E , Avadi, Madras.
8. C M T I Bangalore.
9. Naval Science & Technical Lab, Visakhapatnam.
10. The Director General Naval Project, Visakhapatnam.
11. Diesel Locomotive Works, Varanasi.
12. Eastern Railway Calcutta.
13. Explosive Research Devp. Lab Poona.
14. Field Gun Factory, Kanpur.
15. Gun Carriage Factory, Jabalpur.
16. Heavy Vehicles Factory, Avadi,
17. Indian Airlines, New Delhi.
18. I T I Bangalore.
19. I T I Naini.
20. Indian Card Clothing Co. Ltd., Poona.
21. ISRO Setellite Centre, Dept of Space, Bangalore.
22. Machine Tool Prototype Factory, Ambernath.
23. Nuclear Fuel Complex, Hyderabad.
24. Ordnance Factory, Nagpur.
25. Ordnance Factory, Jabalpur.
26. Ordnance Factory, Ambernath.
27. Ordnance Factory, Trichirapalli.
28. Ordnance Factory, Dhera Dun.

.2.

29. Prototype Development & Trg. Centre, New Delhi.
30. Rifle Factory, Ishapore.
31. Space Application Centre, Ahmedabad.
32. Vehicle Factory, Jabalpur.
33. Vikram Sarabhai Space Centre, Trivandrum.
34. The Mysore Kirloskar Ltd., Hubli.
35. The Mysore Kirloskar Ltd., Harihar.
36. Bharat Fritz Werner, Bangalore.
37. P S G Industries, Coimbatore.
38. P M T Machine Tools Automatics (Traub India) Ltd., Poona.
39. Tata Engineering & Locomotive Works, Poona.
40. Tata Engineering & Locomotive Works, Jamshedpur.
41. Tata Iron & Steel Company, Jamshedpur.
42. Cooper Engineering Works, Poona.
43. Sandvik Asia Ltd., Poona.
44. Kirloskar Oil Engines Ltd., Poona.
45. Kirloskar Pneumatic Ltd., Poona.
46. Kirloskar Brothers, Kirloskarvadi.
47. Kirloskar Tractors Ltd., Nasik.
48. Jessop & Jessop Company, Calcutta.
49. Atlas Cycle Ltd., Sonapat.
50. Escorts Ltd., Faridabad.
51. Magnestic Auto Ltd., Ludhiana.
52. Moline of India Ltd., New Delhi.
53. Shama Engine Valves, Bhopal.
54. Bharat Heavy Electricals Ltd., Bhopal.
55. Bharat Heavy Electricals Ltd., Hyderabad.
56. Bharat Heavy Electricals Ltd., Hardwar.
57. Bharat Heavy Electricals Ltd., Trichirapalli.
58. Bharat Heavy Electricals Ltd., Jhansi.
59. Bharat Heavy Electricals Ltd., Bangalore.
60. Bokaro Steel Ltd., Dhanbad.

.3.

61. Bharat Pumps & Compressors Ltd., Naini.
62. Hindustan Machine Tools Ltd., Pinjore.
63. Hindustan Machine Tools Ltd., Bangalore.
64. Hindustan Machine Tools Ltd., Kalamassery.
65. Hindustan Machine Tools Ltd., Ajmere.
66. Hindustan Machine Tools Ltd., Hyderabad.
67. Hindustan Aeronautics Ltd., Bangalore.
68. Hindustan Aeronautics Ltd., Nasik.
69. Hindustan Aeronautics Ltd., Lucknow.
70. Hindustan Aeronautics Ltd., Koraput.
71. Praga Tools Ltd., Secunderabad.

PROPOSED MACHINERY FOR EXPANSION

ANNEXURE V

<u>Sl.No.</u>	<u>Name of the Machine</u>	<u>Model &amp; Specification</u>
1.	Capstan Lathe	Herbert No. 4
2.	H M T Centre Lathe	LB 17 / 1000
3.	H M T Vertical Milling M/c.	FN 2V
4.	Amba Hydraulic Cylindrical Grinder.	U - 127 / 500
5.	Rockwell Hardness Testing Machine	No. 6402
6.	Hydraulic Cylindrical Grinding Machine.	M 750 / 150
7.	Slot Grinding Machine	-

\* \* \* \* \*



LIST OF PRODUCTS MANUFACTURED

ANNEXURE II

IS AND DIN STANDARDS

- |   |   |   |
|---|---|---|
| 1. Collets of all types                         | : | DIN 6343 & IS 6238 - 1971                   |
| 2. Feed Fingers all types                       | : | According to customers Specification.       |
| 3. Guide Bushes                                 | : | Company's Standard/Customers Specification. |
| 4. Linors                                       | : | - do -                                      |
| 5. Reduction Milling Sockets                    | : | 5927 - 1970                                 |
| 6. Adaptors for Milling Machine                 | : | Company Standard                            |
| 7. Lever Operated Collet Chuck                  | : | - do -                                      |
| 8. Stub Arbors                                  | : | 8615/8613-1977                              |
| 9. Micor Boring & Facing Head                   | : | Company's Standard                          |
| 10. Indexing & Non-Indexing Fixture             | : | - do -                                      |
| 11. Autogrip Adaptors                           | : | - do -                                      |
| 12. Quick Change Drill Chucks and Drill Holders | : | IS 7824 - 1975                              |
| 13. Adjustable Adaptors                         | : | IS 8919                                     |
| 14. Drill Sleeves                               | : | DIN 6329                                    |
| 15. Tap Sleeves                                 | : | DIN 6328                                    |
| 16. Extension Sockets                           | : | IS 6682 - 1972                              |
| 17. Reduction Drill Sleeves                     | : | IS 6702 - 1972                              |
| 18. Turret Sockets                              | : | BS 1660 - 1972                              |
| 19. Pneumatic Chucks                            | : | Company's Standard.                         |

SCANDIACONSULT

COLLABORATION

Page 1

Malmö

PROPOSAL

1982-10-25

58.0648-01

Recipient enterprise

Elmecca Works  
Post Box No. 17  
Dharwad-58 00 07-Karnataka  
India

Contact person: Mr. Harsh C. Desay, Director

Technological requirements of the recipient enterprise

- o NC toolings
- o Micro boring and facing heads
- o Mass production technology

Partner enterprise

Lofab Square AB  
Box 16034  
S-200 25 Malmö  
Sweden

Contact person: Mr. Bengt Ohlsson, Managing Director

For further information of the company, please refer to the attached enterprise description.

Available technology of the partner enterprise

Lofab Square AB is a well-established Swedish supplier of toolholders to the mechanical industry. Since more than 30 years the company has been making its high quality products. For further information, please refer to the attached brochures.

Proposed framework for future collaboration

During a visit to Lofab Square AB on September 17, 1982 and some phone conversations afterwards, Mr. Bengt Ohlsson showed great interest in the project after studying the information available on Elmecca Works. The following sketch on the future collaboration was discussed:

- o The collaboration will be about the patented "Loflex" system described in the attached brochures.
- o Elmecca Works will be the representative of Lofab Square AB on the Indian market.

- o The "machine" part as well as the toolholder part will be manufactured by Elmeca Works.
- o The patented "Loflex" screw will be manufactured in Sweden by Lofab Square AB.

Lofab Square AB

Lofab Square AB is an enterprise with both production and agencies within the range of cutting and holding tools for the machine tool industry.

Number of employed: about 40, of which 6 sales engineers.

Estimated turnover 1982: 15 million SEK.

Lofab Square concentrates on high quality tooling and represents in Sweden i.a. the West-German enterprises Komet, Jel and Strasmann.

The production of Lofab Square concentrates on holding tools, i.e. chucks, end mill arbors, adapters and particularly on tools for NC centres.

Lofab Square has also developed a number of own products, which have been patented. Special attention must be called to Loflex, which is a flexible toolholder system based on a standard shell end mill arbor, which means that the tool can be used both in ordinary milling machines and in NC centres. This is a new tooling system but it has already attracted great attention on the international market.

**lofab**  
**□ SQUARE**

Elmecca Works  
 P.O. Box No 17  
 DHARWAD 580 007  
 Kanataka State  
 Indien

Malmö 1983-04-06  
 Sweden

Technical collaboration agreement with your company

This is to confirm the discussion between Mr. Bengt Olsson and Mr. Havsh Desai, Director of the company at Lofab Square Head Office in Malmoe, Sweden. We discussed in detail about a technical collaboration to manufacture the Loflex system in India. The cost of selling the know-how of the Loflex system is SEK 746.500,-. It was mutually agreed between us that as the amount of the total sum was quite large we should split the agreement in two stages.

The first stage of the agreement signed today would contain the manufacture activity and complete transfer of technical know-how for the manufacture of Loflex two flute boaring head, one flute fine boaring head, ball bearing nut for collet chucks at a lumpsum of SEK 223.950,- as per the technical collaboration agreement signed today and handed over to you for its application and completion of formalities with the Indian government.

You will keep us informed of the development with the Indian government and should you need any further assistance in completing the agreement in all respects we will only be too happy to render. As this arrangement has been made through the UNIDO we feel that there will be no difficulties in completing this collaboration.

The first stage of the agreement has been signed by us today and we intend to complete the agreement in three years after which the second stage will begin. The second stage would be considered by us at the then prevailing conditions and the price

...2

Postadress	Gödsadress	Telegram	Telex	Telefon	Postgöro	Banngöro
Box 16034 200 25 Malmö 16	Vollframgatan 14 213 54 Malmö	lofab malmoec	S-325 80	040-94 53 20	24 68 00-7	875-3568

1983-04-06

of further transfers of know-how which is agreed to be at SEK 746.500,- would also be subject to review and reconsideration depending to our choice.

The Lofab's screw will be purchased from Lofab at list price less 30 % discount and you will make all arrangements to protect the patented rights of Lofab in India at your cost.

Yours faithfully,  
LOFAB SQUARE AB

Bengt Olsson

**ANNEX No 6**COLLABORATION PARTNERS

Indo Hacks Ltd, Hyderabad, Andra Pradesh, India (IH)  
and  
Westlings Sägbladsfabrik AB, Vansbro, Sweden (WSA)

SELECTION PROCEDURES

Based on the report from Expolaris (subannex 6:1), some pamphlets on the products and the short briefing by Mr Hånell, IH was selected as one of the potential recipient enterprises to be further promoted for collaboration with a Swedish enterprise. The main reasons for the selection were:

- o A positive overall impression of the company.
- o The management was said to be very good.
- o The technological level was said to be high.
- o The company had plans to expand capacity as well as to include new products into the programme.
- o The requested technology would most likely be found in Sweden as manufacturing and heat treatment of special steel is a Swedish speciality.

After the selection phase an attempt was made to make a preliminary matching with the Swedish enterprise Kapman AB (subannex 6:2). They showed interest in the project and submitted information on the company and its products. However, after some time they pulled out due to lack of managerial capacity.

The impressions from the visit to IH during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 6:3). The following came out of the visit:

- o It was confirmed that the managerial as well as the technical capability of the company is very high.
- o There were very specific requirements of technology to supplement the present product range.
- o These new products were planned to be manufactured in a new factory for which a foreign collaboration partner was desired.
- o The management is experienced in starting up new enterprises.
- o The requested technology is most likely available in Sweden.

After the Mission there was another screening procedure based on the additional information now available. As most of the criteria for the selection of the projects to be continued were fulfilled, IH was put in the group of potential recipient enterprises which should be finally matched with Swedish partners.

#### MATCHING PROCEDURE

After the Scandiaconsult mission, we had extensive information on Indo Hacks' technology needs and type of manufacturer they wanted to co-operate with. 2 - 3 Swedish companies, working within the technology fields in question, were identified and contacted. Soon it turned out that, the fields of special interest to Indo Hacks, namely Circular Carbide Saws and Segmental Saws, were exactly the specialist product areas of Westlings. Since Westlings also had a certain interest of learning more about the Indian and Far Eastern markets, they indicated positive interest to continue with our project.

Based on information on Westlings' product range, production facilities and marketing, a Collaboration Proposal was worked out.

#### COLLABORATION PROPOSAL

The Collaboration Proposal is attached (subannex 6:4) and contains the following framework for future collaboration:

- o WSA assists IH in planning and training of personnel for a new factory for manufacturing of segmental saws and carbide saws.
- o WSA will assist IH in quality control.
- o WSA delivers semimanufactured products for assembly at IH factory for Asian markets.
- o Buy back arrangement of IH products for WSA's customers in Europe.

#### NEGOTIATIONS

Mr. V. P. Rao, managing director of IH, took a very active interest in this technology transfer project. As soon as Scandiaconsult had identified WSA, this was communicated through UNIDO to IH. This was in August, 1982. Mr. Rao then immediately indicated that he had the intention of visiting Sweden and WSA in September, 1982, in connection with a business trip to Europe. All planning of this first contact between IH and WSA was done through UNIDO and Scandiaconsult. Unfortunately, Mr. Rao's visit to Europe was cancelled. Through various channels, the companies did, however, start to seek information about each other as a preparation for future negotiations.



First direct personal contact between Mr. Elfsberg, managing director of WSA, and Mr. Rao of IH took place at the group visit meeting in Malmö, April, 1982. Following a visit to the WSA plant at Vansbro, Sweden, after the group visit and negotiations that took place there, the following principles for a co-operation between IH and WSA were agreed upon (see subannex 6:5).

- o It was agreed to launch a programme for the establishment of future collaboration between IH and WSA in three phases and covering the period 1983 - 1990.
- o A joint venture company, called "Indo-Hacks Westling Ltd.", shall be formed when certain legal problems are solved, to handle the co-operation.
- o WSA shall, during phase 1, train IH personnel so that servicing and repair of WSA products can be done by IH.
- o During phase 2, WSA will supply IH with semimanufactured products. Final assembly and finishing of Westlings' products will be done by IH.
- o During phase 3, complete production of segmental saws using the Westlings technology will be done in India on a joint venture basis.

#### PROJECT STATUS JUNE 83

Details regarding the principle agreement presented in subannex 6:5 are now under discussion between IH and WSA. Among other things, WSA are checking their patent and brand name rights in India and in other countries to be covered by the forthcoming joint venture. Preliminary contacts have been taken with Indian authorities to ensure possibilities for import of certain special machines. Discussions with Swedfund on the financing of a joint venture project has also started.

#### PROJECT STATUS OCTOBER 83

Mr. Elfsberg of Westlings is preparing a visit to Indo Hacks in November. This visit was originally planned for September but due to communication problems the visit was delayed.

During the meeting in India, the details of an agreement involving technology transfer shall be finally negotiated. The frame of such an agreement will follow the minutes presented in Subannex 6:5

#### **Comments**

Westlings seems to have lost a bit of their initially great interest in this project. The reasons are several:

- o Communication problems. The letter from IH saying everything was ready for Mr. Eflsberg's September visit came to WSA 2 days after scheduled departure from Sweden. Telexes to IH have not been answered.
- o IH (and their Indian bank) wants to speed up the time schedule for the cooperation. This is not in WSA:s interest. They want to build a solid platform for future cooperation. "Quick deals"are not of interest to WSA.
- o WSA has been warned by business associates that doing business with India is very demanding (bureaucratic problems, payment problems,etc). WSA, being a company with limited management resources, must carefully select the projects they work with, according to Mr. Eflsberg. His forthcoming visit to IH in India will determine how much resources WSA will put into this project.

Name and other identification data of the firm

A Indo Hacks Limited  
 B-4, IDA, Phase I, Pattancherru  
 Medak  
 Phone: 352  
 Grams: Indo Hacks  
 Telex: 015-283

Managing director: Shri V P Rao

Established: 1975

Datas about the people employed in the firm

Professional staff: 4

Skilled labour: 60

Unskilled labour: 30

Annual turnover, equity, profits and economic facts

Turnover 1980: 12 000 000 In R

Product mix

Hack-saw blades (high speed steel, low carbon steel  
 hack-saw blades).

Production technology, equipment and other technical information

Machining in different ways, hardening.

Metal-cutters, grade-scissors, furnaces, etc.

The equipment is adequate.

Datas about marketing organization etc

The company is selling within India, no export.

The future plans of the firm

Improving the quality, to be able to compete with other low  
 labour-cost countries. They also plan a joint venture with  
 Volkswagen for manufacturing of cars.

*Has license for Sandvik  
 till gå vidare.*

The possibilities of the firm

Good.

Recommendations and proposals

Transfer of technology from a leading swedish manufacturer  
 ought to be carried out.

*Kapman Vedlige Exported Lanskvelm. Indierbenk*

(417)

SCANDIACONSULT

PRELIMINARY

Malmö

MATCHING  
1982-05-07

58.0648-01

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RECIPIENT ENTERPRISE

IH13 Indo Hacks

CANDIDATE PARTNER ENTERPRISE

Name: Kapman AB  
Address: Box 55, S-430 20 VEDDIGE  
Phone: 0340-30310 Telex: 3478 weab s  
Managing director: Sven-Olof Salomonsson  
Contact person: Lars Axelsson, Export manager  
Turnover: 11 M SEK Employees: 45  
Product mix: Hack saw blades

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1982-04-30

Phone call to Mr. Lars Axelsson

The company only deals with metalcutting.  
Mr. Axelsson was interested in considering a UNIDO-project  
engagement, but he also indicated that this is a question  
for the managing director, whom will be contacted in the  
matter when he is back early next week.

1.	GENERAL		
1.1	Name and address of enterprise		IH 13
	Indo Hacks Ltd "Satya Tulsi" 1-11-251/4/11/1 Kirloskar Colony Begumpet Hyderabad - 500016 Phone: 821154		
1.2	Contact person		
	Mr V.P. Rao, Managing Director		
1.3	Form of ownership		
	Private limited.		
1.4	Invested capital.	-	
1.5	Annual turnover		
	Last year	10,5 M Rs	
	This year (est.)	18,0 M Rs	
	Next year (est.)	20,0 M Rs	
1.6	Year established:	1976	
2.	PERSONNEL		
2.1	Managerial and engineering staff		
	Managers	4	
2.2	Clerical staff.	-	

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2.3	Workers	90
	Skilled	60
	Unskilled	30
3.	PRODUCTION	
3.1	Products	
	Hack saw blades, brand "Viking".	
3.2	Main production processes	
	Machining. Hardening.	
3.3	Main machinery	
	Metal cutters, grade scissors, furnaces etc.	
3.4	Factory premises.	-
3.5	Production volume	
	Comp. turnover.	
3.6	Current collaboration agreements	
	Ancillaries working with:	
	High Carbon Steel Strips - Japanese company (Dec -82)	
	Bi-metal hacksaw blades - West German company (-83)	
	Cutting tools and wood saws - Colombo Free Trade Zone	
3.7	Quality control.	-
3.8	Input materials	
	Low alloy high carbon and high speed steel strips imported from Japan and Sweden, Fagersta 10 M Rs per year.	
3.9	Utilities.	-

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4.       MARKETING

4.1      Main market

Local.

4.2      Distribution

The "Viking" Brand is the only Indian brand earned  
ISI Mark for all sizes and dimensions of hacksaw blades.

4.4      Market demand.                   -

4.5      Market share.                     -

4.6      Market surveys.                  -

4.7      Future plans.                    -

5.       PROBLEMS - DEVELOPING PROJECTS

5.1      Upgrading present products.       -

5.2      New products in present product line

Circular carbide saws.  
Segmental saws.

5.3      New products outside present product line.

Tool bits.  
Wire drawing for high speed-steel, tool bits.

5.4      Projected market demand.      -

5.5      Projected plant capacity.      -

6.      COMMENTS



SCANDIACONSULT

COLLABORATION  
PROPOSAL  
1982-11-11

Page 1

L H S

58.0648-01

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COLLABORATION PROPOSALRecipient enterprise

Indo Hacks Ltd  
"Satya Tulsi"  
1-11-251/4/11/1  
Kirloskar Colony  
Begumpet, Hyderabad - 500016  
India

Contact person: Mr. V.P. Rao, managing director

Technological requirements of the recipient enterprise

Indo Hacks, established 1975, are producing hacksaw blades under the brand "Viking". The company is also considering the establishment of a manufacturing plant in the Free Trade Zone at Colombo, Sri Lanka.

Indo Hacks has existing collaboration agreements with a Japanese company (high carbon steel strips) and a West German company (Bi-metal hacksaw blades).

From a Swedish cooperation partner, Indo Hacks are seeking technology for the manufacturing of:

- o Circular carbide saws
- o Segmental saws

A partner enterprise

Westlings sågbladsfabrik AB  
S-780 50 Vansbro  
Tel. 0281/110 30  
Contact person: Mr. Mats Elfsberg, managing director

Westlings are the only producer in the Nordic countries of segmental circular saws and carbide circular saws larger than diameter 600 mm for steel and non-iron metals. Westlings are also the leading producer of carbide circular saws for the wood cutting industry.

Westlings is a family owned company with its production plant located some 250 km north west of Stockholm. The company has 125 employees and its annual turn-over is about 4,5 million US \$. About 40 percent of Westlings production is exported primarily to USA and West Germany.

Some of the products manufactured by Westlings are presented in the enclosed brochures.

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Available technology of the partner enterprise

Westlings can offer extensive technical knowledge covering the construction and manufacturing of:

- o Segmental circular saw blades.
- o Carbide saw blades for steel, non-iron metals and wood.

We have noted that Westlings are specialised in just about exactly the fields where Indo Hacks are seeking technology.

Proposed general framework for future collaboration

Westlings present foreign activities are mainly concentrated to Europe and USA. Mr. Elfsberg, managing director at Westlings, has heard of Indo Hacks during visits to international trade shows. He was eager to meet Mr. Rao during his planned visit to Sweden in August.

We would suggest that the future discussions between Westlings and Indo Hacks concentrates on the following cooperation possibilities:

- o Technology transfer agreement where Westlings will assist Indo Hacks during construction of a plant for production of segmental saws and carbide saws in India (and/or Sri Lanka). Such an agreement shall include education of Indo Hacks staff in Sweden and/or India.
- o Assistance from Westlings to Indo Hacks in upgrading quality control and productivity.
- o Delivery of semi-manufactured saws to assembly plant operated by Indo Hacks for exports to primarily asian markets.
- o Westlings might also be interested in buying back products produced within Indo Hacks and market these to Westlings present customers. Such an agreement certainly demands that high quality requirements are met.

Westlings is very interested in getting in touch with Indo Hacks as soon as possible to discuss future collaboration.

Minutes of the meeting held at Malmö - Vansbro held from 4 th April 1983 to 7 th April 1983.

Present

SRI. Mats Elfsberg  
M.D. of Westlings

SRI. V.P.Rao  
M.D. of Indo-Hacks  
SRI. J. Pandurangam  
G.M. (Tech) Apssidc

Under the sponsorship of Unido for Transfer of technology from Swedish Industry to Indian Industry, a project with the aid of Swedish International development Authority had been sponsored and Unido identified M/S Indo Hacks of Andhra Pradesh a joint of A.P Small Scale Ind.dev.Corp, India for receiving the technology from M/S Westlings of Sweden as possible colloborator for the manufacturing of

- cirkular carbide saws

● Segmental saws

Discussions were held between the representatives on the scope of colloboration, areas of technology transfer, period of implementation to prg, Costs of training of personnel, marketing arrangement payment terms etc.

Following are the areas of under standing reached subject to Indian & Swedish govt. export and import regulation.

Scope of cooperation.

Pending entering into agreement by both Parties, transfer of technology for production of segmental saws in India is agreed to. The programme has been agreed to be implemented in 3 phases as follows. This shall be done by

- Floating a joint Co under the style of "INDO-HACKS WESTLINGS LTD" to be incorporated in Andhra Bradesh, India.

● I Phase

1983-85 M/S Indo Hacks shall install the sharpening and repairing facilities. Furnishing list of Machinery & the responsibility for training of men for marketing and production shall be under taken by M/S Westlings Sweden. During this period, markets in India and surrounding countries shall be explored by the newly formed Co. Export to other countries in East Asia and Africa including sales in INDIA shall be undertaken by Co in INDIA. The sharpening and servicing facilities in INDIA shall be utilised for finish grinding the segmental saws.

## II Phase

1985-88 Under the programme for II stage facilities in the form of machinery shall be created by M/S Indo Hacks Westlings LTD as advised by Westlings SWEDEN for assembly of imported segments and bodies.

## III Phase

1988-90 Westlings shall identify and advise the equipment in order to enable the Co. to produce the segmental saws in full.

Cust of putting up these facilities shall be invested by M/S Westlings by way of equity up to 26 % for all the 3 phases.

## Areas of operation for marketing.

It was identified that following are the potential competetors for M/S Westlings

M/S AMV	France
M/S Lennartz	Germany
M/S Ohler	Germany
M/S Wagner	Germany
M/S Kinkelder	Holland

It was identified that while the Cos. in Germany Produce goods nearer to the specification of M/S Westlings in quality and conparable price and as such it would not be advisable for M/S Indo Hacks - Westlings to enter European, American and Canadian and Mexican markets. It was there fore agreed upon to limit the areas of marketing to Indian Co to India, surrounding countries to India. Rest of the world is open except Europe, USA, Mexico, Canada. where in the written consent of Westlings Sweden would be essential for carrying out exports.

## Training

It has been egreed to that M/S Westlings Sweden shall train the representatives sponsored by M/S Indo Hacks - Westlings LTD. Nemely a sales executive, a repair shop Foreman and a Hammerman.

It was agreed on that the cost of training, Sales executive would be free. Cost of providing boarding and lodging for. Repair shop Foreman and Hammerman for a preiod ranging between 90 to 120 days shall be around SEK 150.000/-.

It was agreed to find source for meeting this expenditure either under Unido Purview or that of Swed Funds.

## TRADE MARK

It was agreed for the use of Westlings name with M/S INDO HACKS as brand in India under the style of WESTLINGS.

## Buy back arrangement

To help the Indian Co stabilise, M/S Westlings shall agree upon at the implementation of III stage programme to buy a position of production for export to third COUNTRIES at prices to be mutually settled frome time to time.

## PRICES

Price of supply of segments, segmental saws shall be regulated from time to time depending upon the market competition and costs of production at Sweden and that of in India.

Exporting to the 3<sup>rd</sup> country outside the marketing areas specified to M/S Indo Hacks - Westlings LTD, if found competitive, M/S Westlings shall discuss and agree upon the cost of supply and period of supply from time to time depending upon the competition from the European producers and the supply position.

## FORMATION OF A NEW CO

It was agreed upon that a new Co shall be formed in India under the style of M/S INDO HACKS WESTLINGS LTD. There shall be two directors from each Co of M/S Indo Hacks and Westlings respectively. The investments in the equity by M/S Westlings shall be 26% of the equity at any-time of the programme.

The equity shall be provided by M/S Westlings in the form of machinery special equipments etc at costs to be agreed upon mutually.

## PAYMENT TERM

It was agreed to by M/S Westlings that for the 1<sup>st</sup> stage of the project that it shall supply finished segmental saws, except grinding and that M/S Indo Hacks. Shall through its repair shop finish the sawblades.

It was felt that it is essential to study the market penetration thoroughly & it was thought essential to give marketing support for the Indian Co for a period of 2 to 3 years. Under this support M/S Westlings of Sweden shall provide for 360 days credit from the date of shipment, under letter of credit to be provided by M/S Indo Hacks Westlings LTD.

For the 2<sup>nd</sup> and 3<sup>rd</sup> stage of cooperation prog. the Swedish partners shall provide 120 days credit.

## Market Support

Sharing cost of marketing expenses will be agreed upon mutually.

## Machinery Supply

M/S Westlings LTD., of Sweden shall arrange for the long term credit through SWED FUND/Swedish Trade Council for the cost of the machinery required to be imported into India under the agreement either of Swedish Origin or from any third country.

Machinery which are of non proprietary nature and if available in India, it shall be locally procured by Indian Co.,

Such of the equipment, which have to be specially built, it was agreed upon that M/S Westlings, Sweden shall provide necessary specifications and design drawings to enable M/S Indo Hacks Westlings Ltd., to build in India.

The cost of such equipment cost of supply of design documentations shall be agreed upon from time to time.

Subject to the approval of participation financially by Swed Fund and Swedish export promotion council on the Part of Swedish partner and pending approval of Govt. of India foreign investment Board for modification of the terms of agreement if any both parties have agreed in Principle to exchange letter of intent accepting the broad terms of understanding reached and signed in the minutes.

It was also agreed upon to send a copy of the minutes to UNIDO for information and also for arranging necessary financial help. Where ever required.

Mr Mats Elfsberg  
M.D. WESTLINGS  
SWEDEN

Mr V.P. Rao  
M.D. INDO HACKS  
INDIA

Mr J. Panduranga  
G.M. (Tech) APSSIDC  
INDIA

We endorse this projekt as sponsored by UNIDO and support Indo Hacks of Andhra Pradesh in the efforts to establish manufacturing of circular segmental and ~~carbide tipped~~ blades for metal cutting in India. In order to clarify the essence of these minutes, we wish to make the following statement,

1. The incorporation of a joint-venture in Andhra Pradesh will require the approval of the Westlings board of directors, the labor unions representing the Westling labor force and the Swedish national bank. (Sveriges Riksbank)
2. The marketing of blades made in India by the joint-venture outside India, shall be subject to the approval of Westlings in each individual case and be reviewed within the overall context of Westlings marketing policies and commitments to third parties at the time such distribution by the joint-venture becomes appropriate and desirable.
3. The use of the Westling name and Brand name outside of India shall be subject to a separate royalty agreement.

Mr Mats Elfsberg  
M.D. WESTLINGS  
SWEDEN

Schedule of programme of cooperation

1983

4 Signing of Minutes collection of samples, Literaline collection.  
Balance sheet, letter of authorisation for use of name.  
Preperation of schedule of Prog.

5

6 Signing of agreement, Incorporation of Co, opening letter of  
Credit for import. Placement of orders for segments & machinery.

7

8 Deputing of Personal for training in Sweden.  
Shipment of machinery to India.

9

10 Installation of service machinery.

11 Return of skilled labour to India.

Commencement of triol Production in India.

12 Indo Hacks Westlings shall inform the capacity regnisent to M/S  
Westlings of rough estimates.

1984

1 Posting of offer for supply of machinery for II phase by M/S Westlings.

2

3 Confirmation of the order for supply of machinery for IInd phase and  
opening of letter of credit by IHWL.

1985

4

5

6 Shipment of machinery for 2nd phase by M/S Westlings producment  
of Indogenous machinery.

7

8 Installation of all machinery and commencement of trial production  
of IInd phase in India.

9

10 Projection of sales for III phase and capacity reqd for III phase.

11 Offer of supply of equipment for III phase by Westlings and also  
furnishing of specifications for procurement of indegenous  
machinery in India.

12

1936

- 1 Confirmation of order for shipment by Indo Hacks Letter of credit.
- 2
- 3 Shipment of machinery for III phase.
- 4
- 5
- 6 Installation of machinery for the III phase.
- 7
- 8 Trial Production of segmental saws in full and release to Market.



**ANNEX No 7**COLLABORATION PARTNERS

Alpex Engineering and Trading Co, Maharagama, Sri Lanka (AET)  
and  
Svenska No-Ha AB, Eskilstuna, Sweden (SNH)

SELECTION PROCEDURES

Based on the Expolaris report (subannex 7:1) and the short briefing by Mr. Hånell, AET was selected as one of the potential recipient enterprises to be further promoted for collaboration with a Swedish enterprise. The main reasons for the selection were:

- o A positive overall impression of the company.
- o Available management resources were said to be very good.
- o The company worked within a well defined product area and had well defined technology needs.
- o The company had clear expansion plans and could most likely offer interesting co-operation possibilities for a Swedish company.

When AET had been selected, a preliminary matching attempt was made with the Swedish company Anders Krahner AB (see subannex 7:2). However, this company turned out to be too concentrated on production of the steel tubes for fire extinguishers. During the mission, further information on the technology needs and the kind of collaboration sought was done. The result was as follows:

- o It was confirmed that the managerial capability of the company was very high.
- o AET could be regarded as the market leader within the fire-fighting equipment market in Sri Lanka and offer very interesting market possibilities for a Swedish co-operation partner.
- o Co-operation was sought with a Swedish company who could offer both know-how on existing and future fire-fighting technology and special know-how on efficient production of hand-held fire-fighting extinguishers.
- o The requested collaboration partner, in possession of the technology and know-how of interest to AET, is most likely to be found in Sweden.

After the mission, a second selection procedure was done and it was then found that AET could well defend its place among those companies who should be selected for further promotional activities. Hence, AET was put in the group of potential recipient enterprises which should be finally matched with Swedish partners.

#### MATCHING PROCEDURE

The kind of co-operation partner that AET was looking for, namely a Swedish company with extensive know-how on the fire-fighting equipment market and own experience from production of fire extinguishers, gave us only two real alternative candidates in Sweden. During the matching process, it soon turned out that there were several companies with know-how on fire-fighting equipment but most of these companies had no direct access to the production know-how of interest to AET. We were soon left with only two alternatives, Tempus AB and Svenska No-Ha AB. Of these, Tempus were the largest and most well-known. During initial contacts with Tempus, they showed great interest in co-operating with AET. A Collaboration Proposal (see subannex 7:4) was worked out in which it was outlined a joint venture between AET and Tempus. This venture should incorporate transfer of technology covering both product design and production of fire-fighting equipment.

However, just a few weeks before the intended first meeting between representatives from AET and Tempus, Tempus announced that they had to pull out of the project. The reason was that Tempus' mother company had announced that they should concentrate on the Swedish market only. Tempus should also stop their own production of fire extinguishers and start to buy these from a subcontractor. At that stage, Scandiaconsult contacted SNH as an alternative collaboration partner. We soon learned, under strict secrecy, that a co-operation agreement was planned between Tempus and SNH. These plans implied that SNH should produce all fire extinguishers also for Tempus. This should be done in a brand-new plant to be erected during 1983 in Eskilstuna.

During our first contacts with SNH, they indicated great interest in continuing the discussions with AET but they also said that they would prefer such discussions to take place during late 1983 or early 1984 since they were so heavily involved in their own expansion at the moment. If a representative of AET was to participate at the group visit meeting held in Malmö, SNH were prepared to receive him at their plant for preliminary collaboration discussions. This information, together with information on the company SNH, was communicated to AET in Sri Lanka before the group visit.

#### COLLABORATION PROPOSAL

The same Collaboration Proposal that was worked out regarding Tempus and AET, is applicable also for a co-operation between AET and SNH. The main ingredients in such a collaboration agreement should be:

- o AET starts production for export markets of interest also to SNH.
- o Certain products to be delivered from Sweden to AET in a knocked down or semimanufactured mode and to be completed in the AET plant.
- o Technology for upgrading of AET's production methods for fire extinguishers to be supplied by SNH.
- o Certain training of AET personnel shall be done at the SNH plant.

#### PROJECT STATUS JUNE 83

During Mr. O. T. Blom's, managing partner of AET, visit to Sweden in April, 1983, he also visited with SNH in Eskilstuna. During the dates Mr. Blom was present in Sweden, it was unfortunately not possible to arrange a meeting with the general manager of SNH, Mr. Hjalmarsson. During a meeting with Mr. Torbjörn Ahlqvist, marketing manager of SNH, it was agreed that the companies had much in common and that a future co-operation could be fruitful for both parties. SNH had a definite interest in markets in south-east Asia. A co-operation with AET, involving production and/or assembly in Sri Lanka, based on technology provided by SNH, could therefore be of great interest to SNH. Since SNH, at the time of Mr. Blom's visit, were heavily involved in negotiating on future co-operation with Tempus, establishment of their new production plant and at the same time also negotiating on further expansion with their mother company in Norway, no details could be negotiated on a future co-operation with AET. In a letter to Mr. Blom, SNH has invited him to return to Sweden for detailed negotiations any time after November, 1983. During the meeting with Mr. Blom, it was also agreed that he should work out a detailed proposition for such a co-operation. In such a paper, AET shall outline product areas of special interest and markets for these areas in south-east Asia, AET technology requirements and possible forms of a joint venture between SNH and AET.

After Mr. Blom's visit with AET, he visited Swedfund in Stockholm to inform them on the forthcoming negotiations between AET and SNH. Swedfund has declared positive interest in the project and they too are awaiting a more detailed proposition from Mr. Blom.

The letter from SNH to Mr. Blom of AET, confirming SNH's readiness to take up detailed discussions on a co-operation after November, 1983, is attached in subannex 7:5.

#### PROJECT STATUS OCTOBER 83

SNH has now started up its production line for fire extinguishers.

Mr. Ekholm of SNH says that SNH has not yet heard anything from Mr. Blom or AET. SNH regrets this, since they are still interested to discuss technology transfer and cooperation with AET.

SNH wants UNIDO to approach AET and find out whether their interest in a cooperation still exists.

Name and other identification data of the firm

Alpex Engineering & Trading Co  
176, Lake Road  
Maharagama  
Phone: 0792-402

Managing director: R J Blom

Established: 1971

Datas about the people employed in the firm

Professional staff: 6  
Skilled labour: 35  
Unskilled labour: 25

Annual turnover, equity, profits and economic facts

Turnover 1980: 4 500 000 Rs

Product mix.

Fire extinguishes with accessories and refills.

Production technology, equipment and other technical information

Shearing, rolling and welding. Very simple equipment, most work is done by hand. All the same, the products are filling the standards set up.

The company also has a small foundry.

Datas about marketing organization etc

This company is the only manufacturer of fire extinguisher in Sri Lanka. No export.

The future plans of the firm

They plan to invest in modern machinery to develop the industry. A new building is completed. They also intend to start some export.

The possibilities of the firm

A competent and thrifty management who has clear plans and knows the market make the possibilities good.

A  
Handwritten signature

Name and other identification data of the firm

Alpex Engineering & Trading Co  
176, Lake Road  
Maharagama  
Phone: 0792-402

Managing director: R J Blom

Established: 1971

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The company also has a small foundry.

Datas about marketing organization etc

This company is the only manufacturer of fire extinguisher in Sri Lanka. No export.

The future plans of the firm

They plan to invest in modern machinery to develop the industry. A new building is completed. They also intend to start some export.

The possibilities of the firm

A competent and thrifty management who has clear plans and knows the market make the possibilities good.

SCANDIA CONSULT

PRELIMINARY

MATCHING

1982-05-06

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RECIPIENT ENTERPRISE

KN3 East Africa Spectre Ltd.  
SC5 Metco Industrial Enterprise  
SMH6 Alpex Eng. & Trading Co

CANDIDATE PARTNER ENTERPRISE

Name: Anders Krahner AB  
Address: Box 6, S-568 00 SKILLINGARYD  
Phone: 0370-70640 Telex: 70062 krahner s  
Managing director: Thorvald Christensen  
Contact person: Thorvald Christensen  
Turnover: 26 M SEK Employees: 120  
Product mix: Semifinished steel tube and sheet metal products

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1982-05-06

Phone to Mr. Christensen

The company works as a sub-contractor only. Their business idea is to solve manufacturing problems in the most efficient way. Mr. Christensen has worked with UNIDO projects in Africa and is familiar to the problems involved in this type of projects but nevertheless he is interested in further discussions on the project. He will submit some information on the company.

## 1. GENERAL

## 1.1 Name and address of enterprise

Alpex Engineering & Trading Co.  
"St. Therese"  
176, Lake Road  
Maharagama

## 1.2 Contact persons

Mr O.T. Blom, Managing Partner  
Mr O.T.A. Blom, Marketing Director

## 1.3 Form of ownership

Independent private partnership.

## 1.4 Invested capital

Machinery	0,6 M RS
Vehicles	0,5 M RS
Land and buildings	4,5 M RS

## 1.5 Annual turnover

Last year	7,3 M RS
This year (est)	10,6 M RS

## 1.6 Year established 1971

## 2. PERSONNEL

## 2.1 Managerial and engineering staff

Managers 3

## 2.2 Clerical staff -

## 2.3 Workers, total 86

Skilled	21
Unskilled	65

X(24) F

Empire

Alpex team  
reference

---

3. PRODUCTION

3.1 Products

Fire extinguishers.  
Fire fighting equipment

3.2 Main production processes

Shearing, rolling and welding.

3.3 Main machinery

Simple machinery

3.4 Factory premises

Roofed production area 1 100 m<sup>2</sup>  
Roofed storage area 150 m<sup>2</sup>  
Age of buildings approx 5 years

3.5 Production volume :

60 % of the turnover is own production.  
350 fire extinguishers per week is the present  
production capacity.

3.6 Current collaboration agreements. None.

3.7 Quality control -

3.8 Input materials

Sheet metal and castings locally available.  
CO<sub>2</sub> and powder locally available.  
Foam chemicals imported.  
Hoses, hydrants and hose wheels imported.  
High pressure gas cylinders imported from China.

3.9 Utilities -



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4.           MARKETING

4.1           Main market

Local market.

4.2           Distribution

Own sales and service organisation covering all Sri Lanka.  
The after sales service is very important as a marketing factor. ✓

4.3           Competitors

The company is the only registered manufacturer of fire  
fighting equipment in Sri Lanka.  
Some import through local agents.

4.4           Market demand

The market will grow rapidly as there is a new law under  
development stating that buildings with more than 4 floors  
have to be equipped with hydrants and buildings up to 4 floors  
have to be equipped with hoses.

4.5           Market share

90 % of the local market.

4.6           Market surveys -

4.7           Future plans

Try to get into the Middle East market.

5.           PROBLEMS - DEVELOPING PROJECTS

5.1           Upgrading present products

Improve quality to fulfill BS. At present IS only.  
Gun metal and iron castings, at present brass och  
aluminium only.

- 
- 5.2      New products in present product line  
          Small type fire extinguishers for vehicles.
- 5.3      New products outside present product line  
          Rubber lined canvas hoses.
- 5.4      Projected market demand  
          Going in for the new products an increase of 30-50 %  
          on the local market is projected.
- 5.5      Projected plant capacity -
6.      COMMENTS

SCANDIACONSULT

COLLABORATION  
PROPOSAL  
1982-11-11

Page 1

L H S

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COLLABORATION PROPOSALRecipient enterprise

Alpex Engineering & Trading Co  
176, Lake Road  
Maharagama  
Sri Lanka

Contact persons: Mr. O.T. Blom, managing partner  
Mr. O.T.A. Blom, marketing director

Technological requirements of the recipient enterprise

- o Technology which can help the company to improve present design and quality of the companies fire fighting equipment, presently produced of brass and aluminum.
- o Technology covering product design and manufacturing of small fire extinguishers for vehicles.
- o Technology for the design and manufacturing of additional fire fighting equipment such as hoses, valves, alarm systems, etc.

Alpex is interested in broadening its product range and to further develop its exportactivities within the field of fire fighting equipment.

Partner enterprise

AB Svenska Tempus  
Box 32015  
126 11 Stockholm  
Tel. 08/19 02 90  
Telex 17525 Tempus S  
Contact person: Mr. Per Nyås, marketing director

Information on the company and its product range is enclosed.

Svenska Tempus AB was founded 1922 and since 1979 the company belongs to the International Securitas group. This group is specialised in industrial security (guarding, alarmsystems, fire fighting equipment, etc.) Tempus has 220 employees and a turn-over of about 10 million US \$ 1982.

Tempus produces 80-100.000 fire extinguishers per year, of which about 25 % are water extinguishers and 55 % are pressurised dry powder extinguishers. Remaining 20 % are carbon dioxide and cartridge operated dry powder extinguishers.

Available technology of partner enterprise

With reference to the enclosed description of Tempus' activities, the company can offer technology within the following fields:

- o Design and production of portable fire extinguishers.
- o Design, manufacturing and installation of fixed extinguishing systems.
- o Design, manufacturing and installation of alarm and safety systems.
- o Design and manufacturing of aggregates and special-built rescue vehicles.

The company does not produce all their products in their own factory but uses sub-contractors. However, Tempus engineers have full control over and insight in the production processes used by Tempus sub-contractors and suppliers.

#### Proposed general framework for future collaboration

Tempus has declared that they find a possible collaboration with a company in Asia very interesting. Their products level of technology and the high transportation costs does not permit their own penetration of the asian market.

However, Tempus' long experience from design, manufacturing and marketing of fire fighting equipment can most likely be of great value to Alpex and Tempus is prepared to discuss a possible cooperation with Alpex along any of the following lines:

- o A joint venture where Tempus provides know-how regarding construction of products and manufacturing plant.
- o Assist as advisers in product development projects and manufacturing/marketing.
- o Assistance in establishing a assembly plant for Tempus' fire fighting equipment in Sri Lanka. Certain vital parts to be delivered from Sweden.
- o Educational program where Tempus will receive personnel from Alpex and train these in product design, manufacturing and marketing of fire fighting products and systems.

Possibly also import from Sri Lanka of parts for fire fighting extinguishers if these products are competitive in price and quality.

Tempus' has an open attitude to forthcoming contacts regarding the forms of cooperation between Tempus and Alpex. They view a cooperation with Alpex as a way of opening up a part of the world market which they can not cover with their present organisation. Such a cooperation shall be founded on a sound business bases and will certainly involve transfer of technology from the swedish company to Alpex.

*Lignia J. Halonen*

*83-04-14/*

Mr. O. T. Blom  
Alpex Eng. and Trading Co.  
83 A, W. A. Silva  
Mavvatha  
Colomb 6, SRI LANKA

T Anlqvist/if 1983 04 14

Dear Mr. Blom:

At first I want to thank you for your visit at our office in Eskilstuna. It was to us a very giving meeting.

Further we have the pleasure in confirming parts of our discussions as follows:

You come back to us with suggestions on a deeper co-operation between our companies; type of technical know how we can supply your company with as well as your export plans.

We regret very much that our manager didn't have the opportunity to meet you this time. Therefore we suggest that you come back to Sweden in November, then we are with our whole new production in operation. Further we ought to be ready at that time reg. co-operation.

We are looking forward to receiving your suggestion.

Yours faithfully,  
~~SVENSKA NO HA AB~~

*Torbjörn Anlqvist*  
Torbjörn Anlqvist  
Marketing Manager

Copy to  
Scandia Consult  
Håkan Sandlund  
Box 4560  
102 65 STOCKHOLM

**ANNEX No 8**COLLABORATION PARTNERS

Swarna Electricals, Bangalore, Karnataka, India  
and  
Backer Electro-Värme AB, Sösdala, Sweden

SELECTION PROCEDURES

Based on the report of Expolaris (subannex 8:1) and the short briefing by Mr Hånell, Swarna was selected as one of the potential recipient enterprises to be further promoted for collaboration with a Swedish enterprise. The main reasons for the selection were:

- o A positive overall impression of the company.
- o The management and the technical capabilities were said to be very good, although the company is small.
- o There were some specific requests on technological transfer, like improving the production processes and broadening the product range. This seems to fit well into their present development considering also the new factory building.

After the selection phase an attempt was made to make a preliminary matching with the Swedish enterprise Backer Electro-Värme AB (subannex 8:2), which is one of the leading companies in the field of electrical heaters in all Europe, and consequently not very difficult to identify. They showed interest in the project and submitted information on the company itself and its products to be handed over to Swarna.

The impressions from the visit to Swarna during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 8:3). The following came out of the visit:

- o It was confirmed that the technical and managerial capabilities are very high.
- o A market survey had been made which showed good possibilities for the present and the planned products.
- o The brand name "Swarna" is well established on the local market.
- o The financial status of the company seemed good.

After the Mission there was another screening procedure based on the additional information now available. As most of the criteria for the selection of the projects to be continued were fulfilled, Swarna was put in the group of potential recipient enterprises which should be finally matched with Swedish enterprises.

#### MATCHING PROCEDURES

As the potential partner Backer was already identified, the matching procedure was quite simple and no other enterprises were contacted. During this period Mr A.S. Prabhakar, Managing Director of Swarna, visited Europe on business and he took the opportunity to visit Backer as well. The meeting took place on July 6, 1982 (subannex 8:4) and gave good ideas on how a future collaboration could be developed, which of course was of great value when working out the Collaboration Proposal.

#### COLLABORATION PROPOSAL

The Collaboration Proposal is attached (subannex 8:5) and contains the following framework for future collaboration:

- o Swarna submitted an inquiry to Backer on cooking coils and some special steel tubular elements for heaters to be finished by Swarna.
- o Swarna would like to buy an idle, heavy duty press from Backer including some tools for the production of cooking coils. The straight elements for these will be bought from Backers.
- o Backer will submit a proposal on the production of straight elements for the cooking coils to enable Swarna to make the complete cooking coils within India.

#### NEGOTIATIONS

As the two parties were not able to participate in the Group Visit to Malmö, Sweden, April 5-8, 1983, they arranged a separate meeting at Backer's on April 12-13, 1983, where Mr A.S. Prabhakar, Swarna, Mr J. Hedin, Managing Director, and Mr N-E. Persson, Marketing Director, Backer, continued the discussions on future collaboration as per the attached "Minutes of meeting" (subannex 8:6). The discussions focused on two main areas to be implemented in stages:

##### A. Manufacture of cooking coils.

- o Backer has agreed to supply machines, testing bench and tools.
- o Swarna will buy the straight element from Backer until Swarna starts manufacturing them itself.
- o Swarna will send an acceptance within 1 1/2 months from the date of receipt of the quotation from Backer.

- B. Collaboration arrangement for the manufacture of certain types of heating elements.
- o The collaboration will be either a joint venture or a technical know-how transfer.
  - o Backer will supply the full know-how such as selection of machines, factory layout, process planning, raw material selection, quality control equipment, etc.
  - o Backer will train people from Swarna at its factory in Sösdala.
  - o Backer will purchase from Swarna, on exclusive basis, finished products if quality and price, etc., are suitable.
  - o Swarna will buy various types of heating elements from Backer on exclusive basis.

PROJECT STATUS JUNE 83

Backer and Swarna have expressed the firm intention of going ahead with the new projects in India on suitable terms.

Any assistance from UNIDO has not been requested.

PROJECT STATUS OCTOBER 83

Backer has offered Swarna a technology transfer package including special machinery, and initial supply of special heating elements. Backer is also prepared to further discuss the next step, involving training etc. Since September, Backer has not heard anything from Swarna. The reason might be that Swarna is securing the necessary permits from Indian Authorities. However, Backer is impatient and wonders what is going on and if Swarna has lost interest. Backer thinks the project is still very interesting and wants to continue.

**Comments**

We recommend that UNIDO contacts Swarna to find out the reason behind their silence in relation to Backer.

Swarna and Backer might also need some assistance in formulating an agreement concerning transfer of know-how, training and possible buy-back arrangements from Swarna to Backer.



Name and other identification data of the firm

A Swarna Electricals  
14, Subbarama Chetty Road (near Nettykallappa Circle)  
Bangalore-4

Managing director: A S Prabhakar

Established: 1968

Datas about the people employed in the firm

Professional staff: 4

Skilled labour: 20

Unskilled labour: 6

Annual turnover, equity, profits and economic facts

Turnover 1980: 950 000 In R

Product mix

Industrial and immersion heaters, dippers, geysers, hot plates, etc.

Production technology, equipment and other technical information

Wiring, insulation, plating, testing etc for manufacturing of the above mentioned products.

Equipment consists of pressing machine, drilling machine, grinding machine, heating oven, winding machine.

The firm has moved to a new building during spring 1981.

Datas about marketing organization etc

The company has two major customers and is also marketing its products under the brand SWARNA.

The future plans of the firm

The firm has no special plans, others than to consolidate its present operation.

The possibilities of the firm

The decision to consolidate looks to be the right decision.

Nya lokaler.  
Hy Heat företag.  
Produktionsteknik. Breddning produktprogram.  
Frico, Tylo

Recommendations and proposals

Consultant help could be fruitful for the company. It is possible to both raise the quality and the efficiency, plus to extend the product mix.

Therefore steps should be taken to get the company in contact with a similar swedish company.

Ms

SCANDIACONSULT

PRELIMINARY

MATCHING

Malmö

1982-05-07

58.0648-01

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**RECIPIENT ENTERPRISE**

IB4 Swarna Electricals

**CANDIDATE PARTNER ENTERPRISE**

Name: Backer Electro-Värme AB  
Address: S-280 10 SÖSDALA  
Phone: 0451-60500 Telex: 48031 backer s  
Managing director: Jan Hedin  
Contact person: Jan Hedin  
Turnover: 72 M SEK Employees: 340  
Product mix: Electrical tubular heating elements

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1982-04-22

Visit to Mr. Jan Hedin together with  
Mr. S.R. Vijay

Mr. Hedin showed interest in the project and was willing to discuss export of know-how and equipment and import of heaters. The company is looking for collaboration partners in this part of the world. However, they would like to collaborate with a bigger company, which in turn could serve their customers with technical solutions to their problems.

## 1. GENERAL

## 1.1 Name and address of enterprise

Swarna Electricals  
14, Subbarama Chetty Road  
Basavanagudi  
Bangalore-560004  
Phone: 602772, 607732

IB4

## 1.2 Contact person

Mr. A.S. Prabhakar, Managing Director.

## 1.3 Form of ownership

Private.

## 1.4 Invested capital -

## 1.5 Annual turnover

Last year                      2.5 MRS

## 1.6 Year established 1969

## 2. PERSONNEL

## 2.1 Managerial and engineering staff 4

## 2.2 Clerical staff -

## 2.3 Workers (total)              26

Skilled                              20  
Unskilled                            6

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PRODUCTION

Products

Tubular heating elements, 500 W - 2,000 W.  
Immersion heaters for water.  
Ceiling fans.  
Control panels.  
Washing machines.

Main production processes

Wiring, insulating, plating assembling and testing.

Main machinery

Winding machine, pressing machine, heating oven, drilling machine, grinding machine.

Factory premises

Roofed production area approx. 600 m<sup>2</sup>.

Age of buildings 1 year.

Production volume

Heating elements: 5,000 units per month. Approx. 95 % of capacity.

Current collaboration agreements. None.

Quality control

100 % testing on insulation and actual power.

Input materials

Resistance thread, castings, tubes, electrical fittings and switches locally available.  
MgO finer grades imported.

Utilities -

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4.           MARKETING

4.1          Main market

Local market.

4.2          Distribution

●           A few marketing agencies and some big manufacturers of electrical appliances.  
The "Swarna" brand is well-known.

4.3          Competitors

●           There are 30 manufacturers organized in India, 5 large scale. S.E. is small scale.  
No imports of water heaters. 60 % imports (restricted) of air heaters.

4.4          Market demand -

4.5          Market share -

4.6          Market surveys

●           The prices are higher than in Europe due to taxes and import duties on raw materials.

4.7          Future plans

●           Export.

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5. PROBLEMS - DEVELOPING PROJECTS

5.1 Upgrading present products

Modernize the machinery to increase capacity and quality.

5.2 New products in present product line

Air heaters up to 5,000 W.

5.3 New products outside present product line

Thermostats.

5.4 Projected market demand

Approx. 7.5 MRS per year of S.E. air heaters.

5.5 Projected plant capacity -

6. COMMENTS

The company also expects business contacts through UNIDO and the government.

The financing status of the company seems good.

Mr. Prabhakar wants to visit Backer Electro Värme AB during his visit to Europe in July.

SCANDIACONSULT

VISIT REPORT

Page 1

Malmö

1982-07-06

58.0648-01

Visit to Backer Electro-Värme AB,  
Sösdala, 6 July 1982

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Participants:

Mr A.S. Prabhakar, Swarna Electricals, Bangalore, India (IB 4)  
Mr Jan Hedin, Managing Director, Backer Electro-Värme AB  
Mr Nils Erik Persson, Marketing Director, Backer Electro-Värme AB  
Mr Curt Broberg, Technical Director, Backer Electro-Värme AB  
Mr Thomas Grahn, Scandiaconsult

- . Mr Prabhakar visited Europe on a short business trip and found it wise to visit Sweden and Backer Electro-Värme AB as well. The meeting was set up with short notice with Mr Hedin, who was a little familiar to the project since a meeting 22 April, 1982, with Mr S.R. Vijay of KSSIDC, Bangalore, India and Mr Grahn.
- . Mr Grahn briefed on the objectives of the UNIDO project emphasizing that the aims of the project are to bring a recipient company and a Swedish partner company together to negotiate an agreement containing a portion of technology transfer.
- . Mr Hedin informed that his company has 300 employees manufacturing tubular heating elements. He considers the company no three in Europe in this field. The aims of the company are to make the more sophisticated types of elements containing a portion of technical know-how. This means that they develop their own manufacturing processes and machinery and even sell the machinery only.
- . Mr Prabhakar informed that his company, Swarna Electricals has 45 employees, 13 of whom manufacturing tubular heating elements at a rate of 5 000 elements per month. They make copper elements only, as copper tubes are locally available and good enough for water heating. They have own testing facilities and for some special tests local laboratories are engaged.
- . 80 % of the heating elements used in India are imported from UK, USA and West-Germany. The value of the import is 10 M RS per year of which 8 M RS is the value of cooking coils which are not manufactured in India. The market demand is approx. 20 M RS.
- . Heating elements of incoalloy and stainless steel are not manufactured in India.



- 
- . Imported cooking coils, Redring, cost 65 RS of which 15 RS is duty while indian made cost 120 RS.
  - . The import duty is higher for incoalloy tubes than for strips and finished elements.
  - . Mr Prabhakar intends to expand into the cooking coils manufacturing and manufacturing of mild steel, stainless steel and incoally tubular heating elements. As a start he will import either complete cooking coils or straight elements which will be bent and pressed by Swarna Electricals which ever is most competitive.
  - . Mr Prabhakar submitted an inquiry on cooking coils and straight, annealed incoalloy elements. The cooking coil quantity required by Swarne Electricals needs, 5 000 units per year is too small to be of interest but if they can collaborate with other companies the volume may be 50 000 units per year which is an interesting amount.
  - . Backer has a 2 000 tons capacity press for pressing cooking coils, which is very little utilized as the swedish market for the coils is dead. It is for sale to a reasonable price. However, Mr Prabhakar has to investigate if it is possible to import it as there are indian made presses available.
  - . Mr Hedin mentioned the possibilities to train people from Swarna Electricals in the Backer factory.
  - . Mr Prabhakar will make a brief market survey for different types of heaters and based on that he will specify a few very specific products that he would like to start manufacturing in collaboration with Backer.
  - . Having recieved the market survey and the selected products Backer and Scandiaconsult will work out a collaboration agreement proposal.
  - . Mr Hedin showed the factory and invited us for lunch.

Malmoe, 6 July, 1982  
SCANDIACONSULT

  
Thomas Grahn

SCANDIACONSULT

COLLABORATION

Page 1

Malmö

PROPOSAL  
1982-09-06

58.0648-01

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**COLLABORATION PROPOSAL****Recipient enterprise**

Swarna Electricals  
14, Subbarama Chetty Road, Basavana Gudi, Bangalore - 560004, India  
Contact Person: Mr A.S. Prabhakar, Managing Director

**Technological requirement of the recipient enterprise**

Technology for the manufacturing of:

- o electrical cooking coils
- o tubular heating elements made of mild steel, stainless steel and incoalloy.

**Partner enterprise**

Backer Electro-Värme AB  
S-280 10 Sösdala  
Contact Person: Mr Jan Hedin, Managing Director

Information on the enterprise and its products was submitted to Mr Prabhakar at a visit to the company on July 6, 1982.

**Available technology of partner enterprise**

Backer Electro-Värme AB is the third biggest manufacturer of tubular heating elements in Europe. Due to the high labour costs in Sweden the company aims to make the more sophisticated types of elements containing a portion of technical know how. Consequently it develops its own manufacturing processes and equipments and even offers the equipment only for sale.

Backer has a 2000 tons capacity press for pressing electrical cooking coils for sale. It is very little utilized at present as the Swedish market for cooking coils is almost dead.

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Proposed general framework for future collaboration

Already at the meeting on July 6, 1982, some possible means of collaboration were discussed:

- o Mr Prabhakar submitted an inquiry of some special steel tubular elements and some electrical cooking coils. A quotation has been submitted by Backer and is now under consideration by Swarna Electricals.
- o Swarna Electricals wish to buy the press and some tools from Backer including some supervision and training for the production of electrical cooking coils. A formal inquiry on the press has already arrived and a quotation is under preparation at Backer's.
- o A proposal on the production of straight elements for the cooking coils will also be submitted in the near future. This will enable Swarna Electricals to make the complete cooking coils within India.

As some business activities has already started within the above mentioned areas, there are good possibilities that a collaboration between the two enterprises will be established.

Minutes of a meeting at Backer Sösdala 12 - 13 th of April 1983.

Present Mr. A.S. Prabhakar, SWARNA

Mr. Jan Hedin and  
Mr. N-E Persson, BACKER

The following two main points were discussed to be implemented in two stages:

Stage 1. Manufacture of cooking coils

● For the manufacture of cooking coils from straight Heating Elements, Backer has agreed to supply machines, testing bench, tools which are ready with them to manufacture the cooking coils.

● Backer will present a quotation for press, tools and also drawings to make further tools to be made in India for other different type of coils as per the samples given by Swarna. Swarna proposes to buy straight Elements for the manufacture of cooking coils till Swarna itself start manufacture of Heating Element suitable for cooking coils. Backer has agreed to send a quotation to supply the bending/forming machine, Swarna has agreed to send its acceptance to Backer about its offer within 30 to 45 days time from the date of receipt of the quotation of all the items.

Swarna has further agreed they will open L/C within 30 days from the date of acceptance. Backer has agreed to furnish tool design/drawing and know how to manufacture tooling in India for the coil types of which Swarna has given four samples. These are in common use in India.

● Stage 2. Collaboration arrangement

- A. Total collaboration (with Financial Investment).  
B. Collaboration to give only the technical know how.

Swarna and Backer has discussed in length for the above two types of collaboration arrangements for the manufacture of certain type of Heating Elements.

- A. In case of total collaboration, Backer has to make financial investment etc. Backer is seriously considering and thinking of various possibilities.
- B. In case of only technical know how arrangement Backer has agreed to give the full know how such as selection of machines, factory lay out, process planning, raw material selection, quality control equipment, final testing etc. and also of any other relevant matter if it is necessary.

Backer has not yet decided which of the two is agreeable. Backer has agreed to confirm to Swarna within two months its decision.

Backer has agreed to send a draft agreement for consideration and will furnish all the details regarding the type of arrangement.

Backer has agreed to train a person at their factory in the event of any arrangement as agreed.

Backer is contemplating to purchase from Swarna on exclusive basis finished products if the quality, price and all other terms are suitable on mutual arrangement from time to time.

Swarna has agreed to buy various type of Heating Elements from Backer on exclusive basis.

Backer and Swarna have the firm intention of going ahead with the new projects in India on suitable terms.

Sösdala, 13 th April, 1983

**ANNEX No 9**COLLABORATION PARTNERS

Dynamics Engineering Ltd, Nairobi, Kenya (DE)  
and  
Kjällströms Mekaniska Verkstad AB, Kvänum, Sweden (KELLVE)

SELECTION PROCEDURE

Based on the report of Expolaris (subannex 9:1) and the short briefing by Mr Thorve, DE was selected as one of the potential recipient enterprises to be further promoted for collaboration with a Swedish enterprise. The main reasons for the selection were:

- o A positive overall impression of the company.
- o The company seemed well organized and of sufficient size.
- o The main problem was said to be bad quality of castings, and that assistance in foundry technology was requested, which most likely is available in Sweden.

After the selection phase an attempt was made to find a preliminary matching partner within the foundry industry but it failed mainly due to low business activity within the foundry industry in Sweden at that time.

The impressions from the visit to DE during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 9:2). The following came out of the visit:

- o It was confirmed that the technical and managerial capabilities are very high.
- o There is experience in executing development projects in collaboration with foreign companies.
- o The strategy of DE is to get foreign collaboration agreements in different product fields.
- o The requested technology will make some of these product fields more complete, and it is most likely available in Sweden.

After the Mission there was another screening procedure based on the additional information now available. As most of the criteria for the selection of the projects to be continued were fulfilled, DE was put in the group of potential recipient enterprises, which should be finally matched with Swedish enterprises.

### MATCHING PROCEDURE

One of the product fields in which DE requested technology transfer was bulk handling equipment, where Scandiaconsult has a considerable knowledge of the market in Sweden. Several manufactures of belt conveyors were contacted like AB VretstorpVerken, who pulled out due to low business activity and internal problems at the time, and Nils Weibull AB, who also pulled out but in this case due to too heavy work load on the management. When Kellve was contacted, they immediately showed great interest in the project and wanted to go further. After studying the information available thoroughly and after a meeting with Scandiaconsult a Collaboration Proposal was worked out.

### COLLABORATION PROPOSAL

The Collaboration Proposal is attached (subannex 9:3) and contains the following framework for future collaboration:

- o The collaboration will be implemented in three steps during some years.
- o In step 1 DE will be the agent for Kellve in Kenya and East Africa. All manufacturing will be made in Sweden but DE will be trained in the application technology.
- o In step 2 DE will manufacture steel structures and Kellve will supply mechanical components and know-how.
- o In step 3 all the manufacturing will be made by DE on licence from Kellve.

### NEGOTIATIONS

As the two parties were not able to participate in the Group Visit to Malmö, Sweden, April 5-8, 1983, they arranged a separate meeting at Kellve's on May 30-31, 1983, where Mr P. Lad, DE, and Mr B. Lindskog and Mr A. Lindahl, Kellve, held their discussions. Also attending the discussion was Mr Kiiru, Ministry of Industry, being the Coordinating Agency in Kenya.

DE discussions on future cooperation complied with the Collaboration Proposal and the contents were put down in the attached "Memos" (subannex 9:4). An agreement was made regarding the steps 1 and 2 of the Collaboration Proposal.

- o The products are belt conveyors and bulk handling systems.
- o The geographical area is Kenya and its neighbouring countries.
- o DE will be the agent for Kellve in this region.
- o If found competitive, DE will supply steel structures, chutes and erection work.
- o Kellve will pay a commission to DE.
- o DE will send people to Kellve for training.
- o A decision to go further with step 3 of the Collaboration Proposal will be taken at a later stage.

PROJECT STATUS JUNE 83

Kellve will prepare a draft contract which will be sent to DE and UNIDO for reviewing.

Mr B. Lindskog, Managing Director, Kellve, is supposed to go to DE in August or September, 1983, to visit the factory and to sign the collaboration contract.

The parties will ask for funds from UNIDO for the financing of the training programme of one or two persons from DE at Kellve's factory.

PROJECT STATUS OCTOBER 83

At the meeting in Malmoe in May, Dynamics and Kellve agreed that DE should send a draft of an agreement to Kellve. This draft should be constructed in much the same way as DE's cooperation agreements with other European companies in other fields of technology.

According to Mr. A. Lindahl, Kellve supplied DE with check-lists, etc. so that they could return home and start the preparation for step 1 in the preliminary cooperation agreement (agency for Kellve's belt conveyors). Since the meeting in Malmoe, Kellve has not heard anything from Dynamics. Mr. Lindskog's visit to DE in Kenya has also been postponed until Kellve hears from DE.

**Comments**

Kellve are still interested in the project but they await an agreement proposal from DE. We recommend UNIDO to contact Dynamics to find out the reason why DE has not yet reverted to Kellve.

Kellve has discussed this project with Swedish Export Council to get assistance in the agreement evaluation.



Dynamic Engineering      Mr. Brahin Bhatt  
 P.O. Box 18069  
 Nairobi  
 Tel 555455 or  
       555632

#### DYNAMICS ENGINEERING Ltd

A large firm in the heavy metal industry. Their are three manufacturing units. The manufacture of cog wheels up to 50 cm diam partly from locally foundries of low quality. Used mainly in sugar and coffee industries. Also make screw feeders up to 50 cm diam. They have fairly good machinery. Have a heavy lathe with up to 1,000 mm chuck diam, large column-mounted drill, eight production lathes 8"-10", and a 12 tonne travelling crane.

They also manufacture pumps and valves for sewage. They import castings from England "Blakeborough" and have a small bronze foundry of their own.

They have a special department that makes and assembles water supply equipment for the power industry on sub-contract for Japan.

They have a third department manufacturing leaf springs for cars. They are well equipped and make everything

themselves.  
*At: bigger items made in Colington. For better.*

*Comment: Too big for us - they manage themselves.*

SCANDIACONSULT

ENTERPRISE  
DESCRIPTIONAnnex 6:14  
Page 51

## 1. GENERAL

## 1.1 Name and address of enterprise

KN 5

Dynamics Engineering Ltd  
Enterprise Road  
P.O.Box 18624  
Nairobi  
Phone: 555045, 555570  
Telex: 23169

## 1.2 Contact persons

Mr Pravin Lad, Technical Manager  
Mr D. D. Sharma, Marketing Manager

## 1.3 Form of ownership

Independent. Private Limited.

## 1.4 Invested capital

Machinery 10 M KSH  
Land and buildings Rented

## 1.5 Annual turnover

Last year 35 M KSH

## 1.6 Year established: 1974

## 2. PERSONNEL

## 2.1 Managerial and engineering staff

Managers 5  
Engineers, grad 10  
Engineers

## 2.2 Clerical staff. -

## 2.3 Workers. -

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3. PRODUCTION

3.1 Products

See attached company information.

3.2 Main production processes. -

3.3 Main machinery

See attached company information.

3.4 Factory premises

Roofed production area 2 x 1 000 m<sup>2</sup>  
Age of buildings approx. 10 years

3.5 Production volume

The machine shop is utilized below capacity at present.  
The rest at full capacity.

3.6 Current collaboration agreements

Cocklar, UK, Leaf springs. Joint venture.

Blakesborough, UK, 1978, water valves licencing.

Agreement in three steps:

1. Marketing of B:s products.
2. Import of raw castings from B. and manufacturing by D.E.
3. Fully local manufacturing. At present step 2.

NEI Cochran Ltd, UK, 1980, boilers. Similar agreement.

Burners, fittings, tubes and instruments are imported.

Ridz Pumpen Fabrik GmbH, W. Germany, 1978, complete water pumps.

Oldsbercly Trailers, UK, 1979, small trailers.

Sem Termits, France, 1979, 1 ton dumpers licencing.

S.T. provide complete design and some components, Lister, UK, engine, axles gearbox. These parts can be imported as spareparts at reduced import duty.

Feka Baumaschinen, W. Germany, 1979, concrete mixers licence.

Step 1.

NEI Int. Combustion, UK, 1982, milling plants for stone, coal and ore. Agency agreement.

Baxter, UK, 1982, crushers for rock. Agency agreement.

S. Briggs & Co, UK, brewery and dairy equipment.

S.B. & Co provide design, figs, materials and components. Dozing and metering equipment for water treatment.

3.7 Quality control

They have their own X-ray testing facilities and qualified welding engineers.

3.8 Input materials. -

3.9 Utilities. -

4. MARKETING

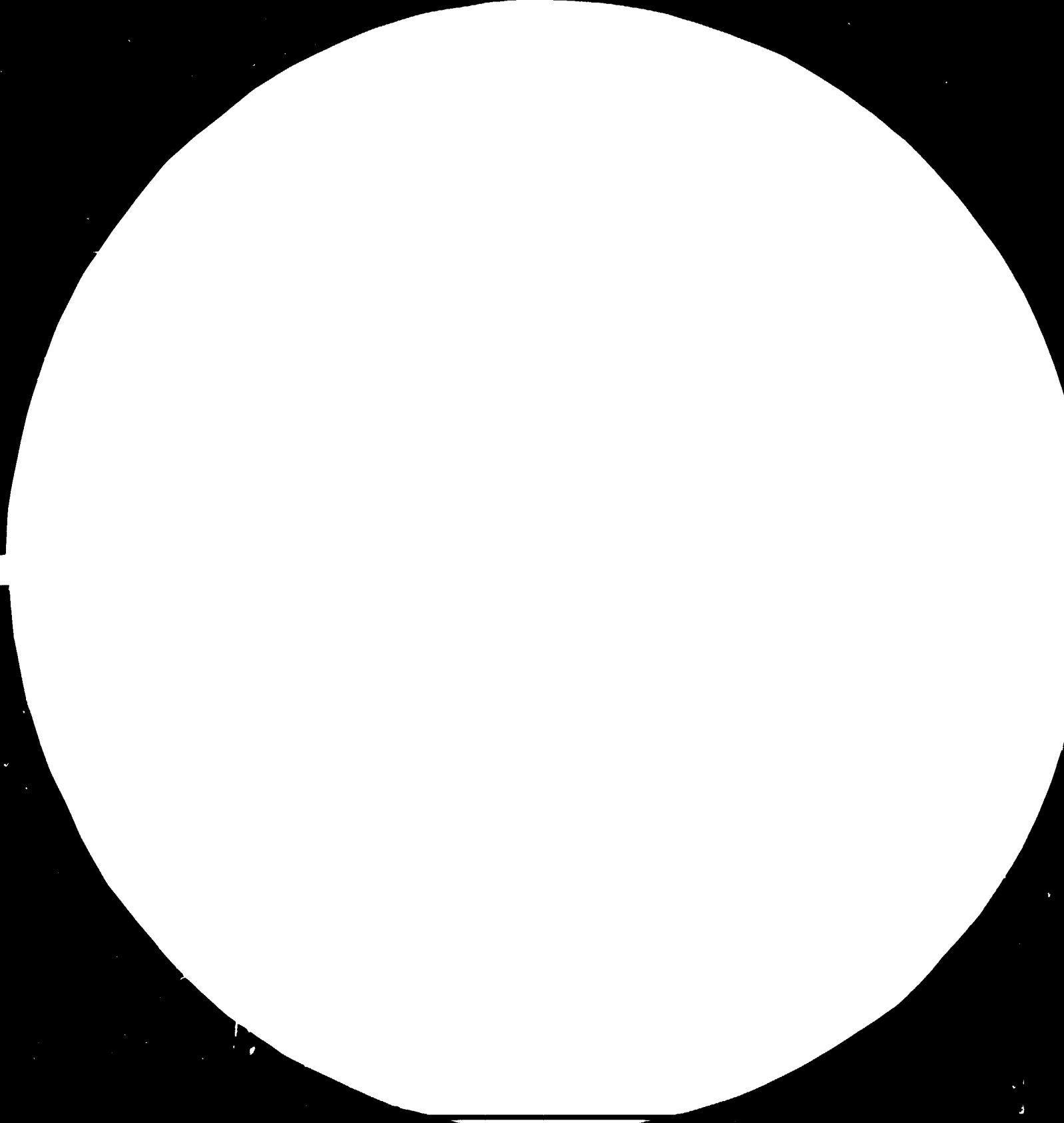
4.1 Main market

Government and industry.

4.2 Distribution. -

4.3 Competitors. -

4.4 Market demand





2.8



3.2



3.6



4.5



## MICROCOPY RESOLUTION TEST CHART

NATIONAL BUREAU OF STANDARDS  
NATIONAL BUREAU OF STANDARDS  
NATIONAL BUREAU OF STANDARDS  
NATIONAL BUREAU OF STANDARDS

## 4.5 Market share

Leaf springs 60 %. DE 1 of 3 Kenyan manufacturers.

- 5

## 4.6 Market surveys. -

## 4.7 Future plans. -

## 5. PROBLEMS - DEVELOPING PROJECTS

## 5.1 Upgrading present products. -

## 5.2 New products in present product line.

Belt conveyors  
Hot water boilers      Now 100 % import  
Solar heaters  
Agriculture equipment  
Automotive components

## 5.3 New products outside present product line

## 5.4 Projected market demand

The big potentials are water supply and agriculture.

## 5.5 Projected plant capacity. -

## 6. COMMENTS

This is a big company with a lot of experience of international collaboration. They have already covered the water supply and power plant sectors with agreements and are now getting into the bulk handling industry sector and solar energy sector with new collaboration agreements.

## I N T R O D U C T I O N

DYNAMICS IS A NAME SYNONYMOUS WITH QUALITY AND HEAVY ENGINEERING.

DYNAMICS ENGINEERING HAS A HEAVY MACHINE SHOP AND HEAVY FABRICATION SHOP, REPUTED FOR MANUFACTURE OF CAPITAL PLANT AND EQUIPMENT FOR VARIOUS PROCESS INDUSTRIES.

THE ENGINEERING CAPITAL EQUIPMENT IS MANUFACTURED TO INTERNATIONAL STANDARDS - BS, ASME, API, DIN & JIS.

ON LINE AND FINAL INSPECTION BY BOTH INTERNAL AND EXTERNAL INSPECTORS ENSURES QUALITY AT THE HIGHEST LEVEL.

THE TOTAL MANUFACTURING AREA IS 70000 SQ. FT. FOR BOTH FABRICATION AND MACHINE SHOP AND IN FABRICATION SHOP SINGLE WORK PIECES UP TO 80 TONS HAVE BEEN MANUFACTURED AND MACHINE SHOP CAN HANDLE COMPONENTS UP TO 22 TONS OF WEIGHT.

THE COMPANY HAS BUILT UP REPUTATION FOR INNOVATION AND TAKING A LEAD IN ADVANCE TECHNOLOGIST AND HAS COLLABORATIONS WITH REPUTED EUROPEAN MANUFACTURERS FOR LOCAL MANUFACTURE OF A RANGE OF PUMPS FOR HANDLING WATER AND OTHER FLUIDS, FOR THE MANUFACTURE OF VALVES, FOR THE MANUFACTURE OF DUMP TRUCKS, ROUGH TERRAIN FORK LIFT TRUCKS AND PARTIAL MANUFACTURE OF PACKAGE BOILERS.

DYNAMICS ENGINEERING LIMITED HAS QUALIFIED GRADUATE MECHANICS, ELECTRICAL AND WELDING ENGINEERS IN BOTH FABRICATION AND MACHINE SHOP.

THE MANUFACTURING SERVICES ARE SUPPORTED BY FIELD INSTALLATION AND ERECTION SERVICES. THE FIELD INSTALLATION GROUP HAS ENGINEERS AND OTHER TECHNICIANS WITH RELEVANT EXPERIENCE. DYNAMICS ENGINEERING LIMITED HAS BEEN RESPONSIBLE FOR CARRYING OUT INSTALLATION OF A NUMBER OF IMPORTANT PROJECTS IN THIS COUNTRY, INVOLVING POWER STATIONS, PAPER MILLS, POWER COMPLEX, PUMPING & WATER TREATMENT WORKS, BREWERY PLANT/MACHINERY INSTALLATION, ETC.

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FACILITIES AND EQUIPMENT

FABRICATION SHOP

The heavy fabrication works consists of a total floor area of approximately 40000 sq. ft. A more detailed description of the various facilities and equipment is given below:

<u>EQUIPMENT</u>	<u>QTY</u>	<u>CAPACITY</u>
<u>Plate Burning</u>		
Automatic tracing Shape Burner	1	2.5m x 1.5m x 100mm thick
Automatic Straight Shape Burner	6	100 mm thickness
<u>Forming</u>		
Horizontal Plate	1	25 mm thick x 3 m wide
Bending Rolls	1	8 m thick x 2.5 m wide
	1	6 m thick x 1.5 m wide
Press Brake	1	3 m wide x 400 tons
Circle Shearer	1	6 mm thick x 2.5 m diameter
Tube Bender	1	100 mm diameter pipe
Universal Cutting Machine	1	32 diameter bar 100 x 100 x 12 m angle
<u>Hydraulic Presses</u>		
	1	300 tons
	1	100 tons
	1	50 tons
<hr/>		
<u>Plate Shear</u>	1	3 m x 10 mm thick
<hr/>		
<u>Material Handling</u>		
Overhead Cranes	1	25 tons
	1	10 tons
Mobile Cranes	2	4 tons
Fork Lift Trucks	1	5 tons

MACHINE SHOP

The heavy machine shop consists of a total floor area of approximately 30000 sq. ft. A more detailed description of the various facilities and equipment is given below:

<u>EQUIPMENT</u>	<u>QTY</u>	<u>CAPACITY</u>
Radial Arm Drill	1	1220 mm radius
Pedestal Drills	2	25 and 50 mm diameter
Vertical Lathes	1	1.5 m diameter turntable
	2	600 mm diameter turntable
Capstan Lathe	1	50 mm diameter hollow spindle
Centre Lathes	1	800 mm diameter at 5000 mm CRS
	6	600 mm diameter at 4000 mm CRS
	2	500 mm diameter at 3000 mm CRS
	1	2000 mm diameter at 2000 mm CRS
Milling Machine	1	Universal type 1000 mm between stops
Shaper	1	600 mm stroke
Surface Grinder	1	600 mm magnetic table
Boring Machine	1	450 mm diameter
	1	2000 mm diameter
Planner	2	1200 mm stroke
Hydro Feed Circular	1	300 mm square
Power Saw	1	200 mm square
Slotter	1	1.5 m diameter x 500 mm stroke

ERECTION EQUIPMENT

<u>SERIAL NO:</u>	<u>QUANTITY:</u>	<u>DESCRIPTION:</u>
1	2	Crane, capacity 10 tons and 25 tons, span 10 m lifting height 8 m
2	6	Mobile cranes from 4 tons to 30 tons
3	10	Manual hoists
4	1	Electric hoist upto 10 tons
5	4	Guy derricks with hoists and accessories up to 30 tons
6	5	Hydraulic pumps, with all accessories
7	10	Job site vehicles from 1 ton to 25 tons
8	30	Electric welding sets with all accessories up to 1200 amps
9	10	Argon welding sets.
10	2	Compressed air generators and tools (compressors, drilling and grinding machines etc.)
11	20	<del>Gas welding and cutting sets</del>

GENERAL MANUFACTURING PROGRAMME

FABRICATIONS:

Steel Structures : Industrial Buildings, Towers, Masts, Auto-Fabs etc.

Hydraulics Steel Structures : Weirs, Penstocks, Sluice gates etc.

Tanks and Vessels : Pressure Vessels  
Manufactured from a variety of materials up to 4420 mm diameter and 25 mm thick for Petro - Chemical and associated industries.

Air Receivers  
Up to 100 cubic meters capacity.

Gas Storage Tanks  
LPG, Chlorine, Carbondioxide etc.  
1 to 100 tons capacity.

Gas Road Tankers  
Both rigid and articulated for the carriage of LPG, Chlorine, Ammonia, Carbon dioxide.

Storage Tanks  
Acids, oil, water, etc.

Condensers, Heat Exchangers, Vacuum pans, Juice Heaters, Furnace Tubes

Pipings : Pipes of all dimensions and sizes from carbon steel, stainless steel and clad steel for steam, water, gas, sewerage, slurry and corrosive fluids.  
Pipe fittings - Tees, Bends, Reducers etc.

Trailers : Trailers for road and sugar cane transportation from 3 ton to 25 ton capacity.

.../2

Fabrication : Heavy fabrications upto 80 tons and to meet high quality plating and welding demands.

Steel Chimneys and Ducting : Single and multi-core, up to 4220 mm diameter and 50 m high, insulated and clad as per customer requirements.

SPECIFIC MANUFACTURING PROGRAMME

● Sugar Industry : Mill Roller Shells, Shrunk Mill Shells, Trash Plates, Scrapper Plates, Fire Bars, Conveyor Slats, Conveyor Chains, Cane Knives, Pumps and Pump bodies, Tanks and Pressure Vessels.

Cement Industry

&

Mineral Ore

Processing

Industry

: Jaws, Mill Liners, Kiln Parts, Kiln Nozzles, Abrasion Resistant Components.

## INDUSTRIAL PROJECTS

<u>SN:</u>	<u>PROJECT DETAILS:</u>	<u>VALUE:</u>
1	Floating Pumping Station for Magadi Soda Soda Ash Dredger at Magadi.	5 Million
2	Olkaria Geothermal Project 30MW Power Station. Manufacture of all the Steel Structure, Pressure Vessels, Condensers, Heat Exchangers, Evaporators, Ball Check Valves, Steam Transmission Pipes. Installation of all the equipment for the power plant including electrical works.	18 Million
3	Boiler House for Kisumu Breweries Design, manufacture and supply of complete boiler house system.	6 Million
4	Pollution Prevention Plant for - Chloride Exide - Kenya. Manufactured and supply complete plant for the recovery of lead smelting process. Installed the same.	7 Million
5	Installation of 90 ton/hr. Boiler Complex for Pan African Paper Mills including electrical work.	4 Million
6.	Installation of Evaporators for Pan African Paper Mills including electrical works.	4 Million
7.	Installation of 60 ton/hr Boiler plant for E. A. Sugar Industries, including electrical work.	8 Million
8.	Installation - Shitoli Pumping Station, including electrical works.	4 Million
9.	Installation of complete Hydro-Pumping Station at Sidindi - Malanga.	12 Million
10.	Installation of Plant and Equipment plus manufacture of Tanks etc for Mohan Meakin Brewery.	6 Million
11.	Installation of Gizera Pumping Station - Sudan.	6 Million
12.	Installation of Umdom Pumping Station - Sudan.	6 Million
13.	East African Brewery Limited - Yeast Handling Plant.	4 Million
14.	Olkaria Geo-Thermal Phase II - fabrication and installation	18 Million

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COLLABORATION  
PROPOSAL  
1982-10-11

Page 1

Malmö

58.0648-01

Recipient enterprise

Dynamics Engineering Ltd.  
P.O.Box 18624  
Nairobi  
Kenya

Contact persons: Mr. Pravin Lad, Technical Manager  
Mr. D.D. Sherma, Marketing Manager

Technological requirements at the recipient enterprise

- o Belt conveyor technology.
- o Hot water boiler technology.
- o Solar heater technology.
- o Agriculture equipment technology.

Partner enterprise

Kjällströms Mekaniska Verkstad AB  
S-535 00 Kvänum  
Sweden

Contact person: Mr. Anders Lindahl, Marketing Manager

For further information, please refer to the attached enterprise description.

Available technology of the partner enterprise

Kjällströms Mekaniska Verkstad AB, KELLVE, is a subsidiary to AB Nordströms Linbanor, the major Swedish supplier of materials handling equipment, especially within the bulk materials sector. KELLVE, being established in 1890, has specialized in two different fields:

- o Industrial belt conveyors, mainly for rock crushing plants, pulp and paper industry, metallurgical industry and coal fired district heating plants.
- o Front loaders for agricultural tractors of most brands available in Europe.

For further information on the products, please refer to the attached pamphlets.

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Proposed framework for future collaboration

During a visit to KELLVE on October 8, 1982, Mr. Anders Lindahl showed great interest in the project after studying the previously submitted information on Dynamics Engineering Ltd. The following sketch on the future collaboration was discussed:

- o The proposed collaboration will develop in three steps during some years.
- o Step 1: Dynamics Engineering Ltd., DE, will be the agent for KELLVE's belt conveyors within Kenya and the neighbour countries. All manufacturing will be made in Sweden but the erection work will be carried out by DE.
- o Step 2: DE will manufacture steel structures and chutes for the conveyors. KELLVE will supply the mechanical parts like drive and take up sections and idlers.
- o Step 3: All the manufacturing of the belt conveyors for the East African market will be manufactured in Kenya by DE on licence.



Enterprise description.

1. General
  - 1.1 Name and address of enterprise  
Kjällströms Mek. Verkstad AB  
S-535 00 KVÄNUM Sweden  
Phone 46.512.92400  
Telex 42029 Kellve S  
Telefax 92432
  - 1.2 Trade Mark  
Kellve
  - 1.3 MD Mr Bo Lindskog
  - 1.4 Contact person  
Mr Anders Lindahl
  - 1.5 Form of ownership  
Fully owned by AB Nordströms Linbanor  
Member of the Incentive group
  - 1.6 Annual turnover  
Last year 31 milj. SEK  
This year (est) 40 milj. SEK
  - 1.7 Year established  
1890 Family own
2. Personnel
  - 2.1 Management group 6
  - 2.2 Technical staff 10
  - 2.3 Sales staff 6
  - 2.4 Clerical staff 20
  - 2.5 Workers  
Skilled 60  
Unskilled 10
3. Production
  - 3.1 Products  
Belt conveyors, Frontloaders for agricultural tractors,  
Lifting devices for fodder.

### 3.2 Main production processes

Sheet metal and shapes cutting, shaping and welding.  
Machining. Painting. Assemblying.

### 3.3 Factory premises

Roofed production area 5700 m<sup>2</sup>  
    "- storage area 1200 m<sup>2</sup>  
Office area 900 m<sup>2</sup>

## 4. Marketing

### 4.1 Main market

Agricultural market in Sweden, Norway and Great Britain.

Industrial market in Scandinavia and as sub-supplier world wide.

### 4.2 Distribution

Through dealers for agricultural machinery and as sub-supplier of conveyors for quarries, mines, papermills etc.

### 4.3 Future plans

Direct Export of the whole product range to importer in more countries, world wide.

We are interested in all kinds of agreements or a mixture of both.



Memos from a meeting between representatives from Dynamics Engineering and Kjällströms Mekaniska in Kvänum 1983-05-30.

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1. DE is an only nine year old company which has gone through a very quick expansion programme. The company is self-financed and has an annual turnover of about seven million American dollars. The number of employees is between 140 and 150.

DE is only producing according to orders not for warehousing except leafsprings and a few other articles for pipes.

The company has subsidiary companies in Sudan and Uganda.

2. DE is wellknown to all companies who can be users of the type of conveyors which Kellve is producing. There are two main cementfactories in Kenya-East African Portland Cement and Bamburi Portland Cement. EAPC is situated in Nairobi and BPC in Mombasa. DE has good connections to these two companies. Both are going to expand their production in the near future. DE has also good connections to other users such as Magadi Soda Company in Magadi and Pan African Papermills.

3. DE is interested in a cooperation with Kellve as regards beltconveyors. They have the technical facilities necessary for production of the structural parts.

4. An agreement was discussed where the main points are that DE shall act as agent for Kellve in Kenya and in neighbouring African countries such as Sudan and Uganda where DE has subsidiary companies. Such an agency shall be built up so that DE can manufacture the steel structures and chutes if that will be the most competitive way in certain cases.

5. Kellve shall pay DE a commission of 10% on sales to DE.

6. The aim for the cooperation shall be that after some years DE shall take over all the manufacturing of the Kellve beltconveyors for the markets mentioned above and other prospective East African countries which can be of interest.

7. As an agent DE shall pass on to Kellve all enquiries for beltconveyors which DE gets from their customers. Kellve will make the necessary designwork including drawings and make a specified offer. DE will then make a judgement which parts of the production can be made by DE and adjust the final offer accordingly.

The main part of the material necessary for production in Kenya, such as steel bars etc. will be bought from Kellve since all rawmaterial available in Kenya anyway is imported. If steel tubes are available in Kenya they will be bought there.

8. It is understood that in the first phase of the cooperation one designer from DE has to be educated in Kellve's factory in Kvänum.
9. DE shall supply Kellve with all necessary information regarding the enquiries which are passed on to Kellve.
10. When the agreement is signed DE shall supply Kellve with the names of all the important potential customers so that Kellve can write to them informing about DE's agency status enclosing relevant leaflets etc.
11. DE shall soonest possible give Kellve an information about the potential market size for conveyors in Kenya, Sudan and Uganda.
12. All imports have to be covered by import licenses. At this stage it will not be any problem to get import licenses for a complete conveyor package even if later on 50% of the product has to be produced in Kenya.
13. No special standard as regards conveyors are at present required in Kenya. ASEA motors can be used but 415-440 volt is necessary. Service and repair can be arranged by DE. The final assembly shall be made by DE.
14. Before DE after the initial period takes over the whole production their technicians shall be properly educated by Kellve in Kvänum or in DE's factory.
15. Before DE takes over the whole production a new agreement shall be made where i.a. the size of royalty is settled.
16. Payment shall be made in SEK and against irrevocable L/C confirmed by a Swedish bank.
17. Mr Lad shall as soon as possible after his arrival back to Kenya send to Kellve an example of the type of agreement DE has with other European suppliers.

**ANNEX No 10**COLLABORATION PARTNERS

T.J. Cottington & Partners Ltd., Nairobi, Kenya (TJC)  
and  
AB Linde-PML, Anderstorp, Sweden (PML)

SELECTION PROCEDURE

From the report of Expolaris (subannex 10:1) and the short briefing by Mr Thorve, TJC was selected as one of the potential recipient enterprises to be further promoted for collaboration with a Swedish enterprise. The main reasons for the selection were:

- o A positive overall impression of the company.
- o The management was said to be good.
- o The present standard of technology seemed good but it could be further developed.
- o The development potential of the company was said to be good.

After the selection phase an attempt was made to make a preliminary matching with the Swedish enterprise AB Linde-PML (subannex 10:2) which is the major manufacturer of axles and wheels for agricultural and industrial vehicles in Sweden. They showed interest in the project and submitted some information on the company and its products. This was presented for the TJC management, who found it suitable for their requirements of technology transfer.

The impressions from the visit to TJC during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 10:3). The following came out of the visit:

- o The company had at the time financial problems and needed badly some supplementary products in order to reconstruct the company.
- o The management had executed a market survey and was quite familiar to the market situation for the products they would like to build the future on.
- o It was confirmed that the technical capability was good.
- o The requested technology could be found at the preliminary matched partner PML, whose products pamphlets were submitted.

After the Mission there was another screening procedure based on the additional information now available. Although there was some scepticism about the financial status the rest of criterias were fulfilled and TJC was put in the group of potential recipient enterprises which should be finally matched with Swedish enterprises.

#### MATCHING PROCEDURE

As there was a strong desire from TJC to get matched with PML, the matching procedure was very easy. However, when the additional information about TJC recieved by the Mission was submitted to PML they hesitated to go further, but after a meeting with Scandiaconsult a Collaboration Proposal was worked out.

#### COLLABORATION PROPOSAL

The Collaboration Proposal is attached (subannex 10:4) and contains two parts, a future collaboration part and a questions part.

The vague ideas on future collaboration contains:

- o PML submits to TJC know-how for the production of rims.
- o The remuneration will be either royalty based or as part of the price for axle components for assembly in Kenya.

PML rose a lot of questions about TJC and demanded that these were satisfactorily answered before going further in the negotiations. The questions dealt with:

- o Finances and ownership of TJC.
- o Strategic plans.
- o Production capacity.
- o Market survey.
- o Previous collaboration agreements.

The answers are given in a letter from TJC dated 23rd March, 1983 (subannex 10:5), which was submitted to PML. After studying this PML was still hesitant but agreed to recieve a representative from TJC for negotiations.

#### NEGOTIATIONS

As the two parties were not able to participate in the group Visit in Malmö, Sweden, April 5-8, 1983, they arranged a separate meeting at PML's on June 2, 1983, where Mr Ohingo, TJC, Mr Eje Dahlin-Karlsson and Mr Sven Danielsson, PML., held their discussions. Also attending the discussion was Mr Kiiru, Ministry of Industry, beeing the Coordinating Agency in Kenya.

The discussions on future cooperation complied with the Collaboration Proposal and the content was put down in the attached letter from PML, dated 83-J6-14 (subannex 10:6).

An agreement was made that

- o TJC will be the active part.
- o TJC will arrange the financing of the developing project.
- o TJC will specify their requirements in accordance to available tyre dimensions.
- o TJC will then ask PML for the assistance required to plan a suitable production unit.

PROJECT STATUS JUNE 83

TJC will make the arrangements agreed upon during the meeting and then get in touch with PML to continue the negotiations.

PML is still very doubtful about the possibilities of this cooperation project, mainly due to the financial problems which TJC obviously is facing.

PROJECT STATUS OCTOBER 83

According to Mr. E. Dahlin-Karlsson of PML, they have not heard anything from Mr. Ohingo or TJC after the June meeting at PLM in Sweden (see Subannex 10:6). PLM are interested in participating in a technology transfer project outlined in Subannex 10:6, provided PLM can get cash payment for transferred technology /equipment. This fact they had made clear to Mr. Ohingo at his visit to PLM.

T.J. Cottingham  
and partners  
P.O. Box 41826  
Nairobi  
Tel 556433 or  
556617 or  
556562

Mr. W.E. Ominde  
General Manager

T J COTTINGTON AND PARTNERS Ltd

Manufacture tractor-drawn vehicles, for goods, of sizes up to 18 tons. The wheel axles are made on licence from England. Cast details such as wheel houses are imported. The brakes as well. The components for 3.5 and 5 tonne axles are finished and assembled. They plan to manufacture bigger axles. Wheels are imported. The vehicles are of their own design and primarily intended for the transport of agricultural products. They are robust, somewhat clumsy, not well finished but probably long-lasting.

The working of the materials is bad. They have quite good drills and lathes from India. They export to other African countries about 80% of their production. There are no competitors in axles in Kenya. Turn-over 25,000' per annum. 140 employees. This firm can be developed.

3T. Hög teknologisk nivå. Kan utvecklas.

*Proposal: Widened collaboration with England on axles. Collaboration with a Swedish goods vehicle manufacturer could be profitable for the design and manufacture of goods vehicles.*



SCANDIACONSULT

PRELIMINARY

MATCHING

Malmö

1982-05-07

58.0648-01

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RECIPIENT ENTERPRISE

EC3 Tanta Motors Company  
KN4 T.J. Cottingham and partners

CANDIDATE PARTNER ENTERPRISE

Name: AB Linde-PML  
Address: Box 33, S-334 00 ANDERSTORP  
Phone: 0371-16100 Telex: 70191  
Managing director: Eje Dahlin-Karlsson  
Contact person:  
Turnover: 30 M SEK Employees: 120  
Product mix: Axles, wheels, mechanical brakes etc for  
agricultural, forestry and industry vehicles

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1982-04-30

Phone call to Mr. Eje Dahlin-Karlsson

The company is owned by Mr. Dahlin-Karlsson, since autumn 1981. He is very interested in the project and will furnish some company information next week. In return he will get information on the recipient enterprises.

## 1. GENERAL

## 1.1 Name and address of enterprise

KN 4

T. J. Cottingham & Partners Ltd.  
Lunga Lunga Road  
P.O.Box 41826  
Nairobi  
Phone: 5564331 556562, 556617, 22628, 276917  
Telex: 22592 PACE

## 1.2 Contact persons

Mr S. W. Ohingo, Director General  
Mr Francis S. Odera, General Manager  
Mr Joseph N. Wisuve, Axel Project Co-ordinator

## 1.3 Form of ownership

Independent. Private Ltd.

## 1.4 Invested capital

Machinery 5 M KSH  
Total capital incl working capital 20 M KSH

## 1.5 Annual turnover

Last year 15 M KSH  
This year (est) 20 M KSH  
Next year (est)

## 1.6 Year established: 1970

## 2. PERSONNEL

## 2.1 Managerial and engineering staff:

Directors 3  
Managers 6  
Engineers, grad 5

2.2 Clerical staff. -

2.3 Workers, total 90

3. PRODUCTION

3.1 Products

Trailers (50 %)

Axles (25 %)

Order specific products, small industrial boilers,  
steel structures, petroleum tanks, turn key plants (25 %)  
Consulting engineers on sugar industry, veg. oil plants etc.

3.2 Main production processes. -

3.3 Main machinery. -

3.4 Factory premises

Roofed production area 6 000 m<sup>2</sup>

Total land area- 20 000 m<sup>2</sup>

Age of buildings approx 10 years

3.5 Production volume

Present utilization 50 %

3.6 Current collaboration agreements

The axles production was started up with English collabo-  
ration but the englishmen pulled out.

No licences or agreements valid at present.

3.7 Quality control. -

3.8 Input materials. -

3.9 Utilities. -

---

4.       MARKETING

4.1       Main market

Trailers - shops locally. Export  
Axles - manufacturers.  
Order projects - industry.

4.2       Distribution

See above.

4.3       Competitors

Trailers - imports, local small manufacturers.  
Axles - imports.

4.4       Market demand

4.5       Market share. -

4.6       Market surveys

A feasibility study on axles was carried out 1977 and  
was supposed to be revised shortly. (Available at Scandia-  
consult.)

4.7       Future plans.

5.       PROBLEMS - DEVELOPING PROJECTS

5.1       Upgrading present products

Improve quality and rationalize production.

5.2       New products in present product line

Axles and rims for the automotive industry.

---

5.3 New products outside present product line. -

5.4 Projected market demand

Axles and rims: 60 M KSH. Now imported but there will be import restrictions if a local production takes place.

5.5 Projected plant capacity. -

6. COMMENTS

The financial status is a little brittle at present but there are possibilities that the banks will support the company if the government grants a guarantee. The company is very interested in the product line of Linde-PLM, Sweden, especially the rims, and would like to get into a joint venture collaboration with a very short notice, within 4 months. The Swedish company will have to supply some funds.

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COLLABORATION  
PROPOSAL  
1982-09-03

Page 1

Malmö

58.0648-01

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COLLABORATION PROPOSALRecipient enterprise

T.J. Cottington & Partners Ltd  
P.O. Box 41826, Nairobi, Kenya  
Contact Persons: Mr S.W. Ohingo, Mr Francis S. Odera

Technological requirements of the recipient enterprise

Technology for the production of rims and axles for the automotive industry.

Partner enterprise

AB Linde - PML  
Box 33, S-334 00 Anderstorp, Sweden  
Contact Person: Mr Eje Dahlin-Karlsson, Managing Director

Enclosed herewith are a description of the partner enterprise and a pamphlet showing the products and the production facilities.

Available technology of the partner enterprise

AB Linde - PML is working with three main product lines:

- Rims, hubs, axles, wheel brakes and complete wheels for agricultural-, forestry- and industrial vehicles.
- Petrol tanks.
- Subsupplier of pressed and punched sheet metal articles and machined complex items for the Swedish automotive and engineering industry.

The required technology can be found mainly within the first product line, where the company is the major manufacturer in Sweden.

Proposed general framework for future collaboration

During a visit to AB Linde - PML on September 1, 1982, Mr Eje Dahlin-Karlsson, Managing Director, still showed interest in the project after studying the previously submitted information on T.J. Cottingham & Partners Ltd. However, he emphasized that before getting into details regarding the collaboration proposal and starting negotiations he demands satisfactory answers to the following questions.

Some vague ideas about a potential collaboration were briefly discussed. The main structure was:

- . AB Linde - PML submits drawings, specifications and manufacturing procedures for the rims.
- . The remuneration will be either royalty based on the actual production volume or delivery of axle components for assembly in Kenya.

Further information requested by the partner enterprise

It is very essential for the future of this project that a quick reply on the following questions will be given, as the partner enterprise is not willing to continue until he has received and evaluated the answers.

Which is the financial situation of the company? For its normal operation? For new projects?

Who are the main shareholders? Are there any big companies or banks or governmental institutions among them?

Which are the strategic plans for the future?

Why did the english company withdraw from the axle project?

Which is the axle production capacity, installed and actually utilized, at present? Are there any plans for expansion in the near future?

Has the market survey on axles of May 19, 1977 been updated? If so, please submit a copy.

Please submit a list of machinery.

What is the situation regarding raw materials supply for the productions of rims and axles. Which steel qualities are used in the present production?

ENTERPRISE DESCRIPTION

AB P.M. Liljeqvist/Linde PML - The workshop  
with the weighty resources

The visitor of P.M. Liljeqvist or PML and its marketing company Linde-PML will be faced with literally weighty resources. These are there in the shape of big presses with pressforces of up to 8 000 kN. There are big press workshops as well as other weighty manufacturing resources.

There are many things which can be manufactured by P.M. Liljeqvist - among others hydromechanical pressing - really a sensational change in the conditions for pressing and drawing of sheet metal items.

From the blacksmith's shop

The company was founded already in 1905. At that time it was a forge shop and the master blacksmith Peter Magnus Liljeqvist was taking charge of the work.

The forge shop grew into a modern metal working industry. The master blacksmith retired and his six sons took over the business. Mechanical handling equipment and petrol tanks were the main products of own make, as it is today, supplemented by a considerable amount of contract manufacture.

In 1978 PML and its biggest competitor on wheel production, AB Linde Maskiner, merged under the holding company Säfveån AB. This explains the name of the marketing company, Linde-PML.

In connection to the reduction of the industrial sector of Säfveån AB the former managing director of PML, Mr Eje Dahlin-Karlsson, took over the business at the end of 1981.

Mr Eje Dahlin-Karlsson has been in charge of a necessary make up and modernization of the productive resources of the company. Consequently P.M. Liljeqvist now is well equipped to face the technical requirements of the future as well as the requirements of competitive production costs.

Today there are about 90 employees in the company and in 1981 the turnover exceeded 24 million SEK.

Production policy

The production policy of the company consists of three main sectors:



- 
- o Mechanical handling equipment for agricultural, forestry and industry vehicles.
  - o Petrol tanks.
  - o Contract manufacturing of pressed and punched sheet metal items, also of great thickness, cutting machining of complicated items, compressed-air regulators, steering gears etc.

#### Mechanical handling equipment

The mechanical handling equipment range consists of rims, hubs, journals and shafts, brake equipments and complete wheel units.

These products have been developed especially for trailers, implements and machines used in agriculture and forestry as well as some kinds of industrial vehicles.

#### Petrol tanks

Since the production started in 1950 a lot of petrol tanks have been sold throughout the world under the wellknown brand "Never stop". There are many car travellers who have blessed the spare litres of petrol at dark nights in desolate places.

The demand for petrol tanks is increasing because of the increasing number of power lawn-movers, mini-tractors, snow slingers, outboard motors and power saws.

The petrol tanks have been continuously modernized but they are still manufactured of cold-rolled high quality steel, which resists the sunlight, the cold and rough handling.

#### Contract manufacturing

P.M. Liljeqvist manufactures a lot of different products on contract including simple punched washers and complicated steering gears with requirements on high quality and small tolerances.

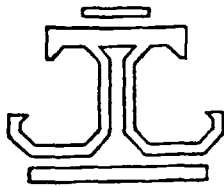
There are various materials and dimensions, castings and forgings, steel sheets, strips and rods, stainless steel, aluminium etc.

Among the customers you will find Volvo, SKF, Atlas Copco and Robert Bosch among many others.

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Production resources

- o Approx. 12 000 m<sup>2</sup> heated workshop and storage area.
- o Hydraulic drawing presses with max table size : 600 mm x 1 100 mm, stroke max 1 000 mm, dolly max 3 000 kN, press force 600-8 000 kN, feeding mechanism and reels.
- o Spindlepresses 400-5 000 kN.
- o Power shears max 2 500 mm x 6 mm.
- o Automatic welding equipment, projection welding machines, spot welding machines, seam welding machines, gas and electric welding equipment, soldering and high frequency soldering equipment.
- o CNC Swedturn 10 micro-processor controlled lathes.
- o Chuckautomates, copying lathes etc.
- o Broaching machines, thread cutting machines and drilling machines.
- o Surface treatment, degreasing and tumbling equipment.  
Painting department with a modern electrostatic painting automat. Max dimensions dia 400 mm, height 1 000 mm.
- o Edge cutting and folding equipment.
- o Leakage testing equipment.
- o Equipment for various kinds of assembly works.
- o Tool makers' shop including tool manufacturing.
- o Quality control department with sophisticated measuring and materials testing equipment.

24<sup>th</sup> may 4<sup>th</sup> June

T.J. COTTINGTON

(TECHNICAL SERVICES) LTD.

INDUSTRIAL ENGINEERS

P.O. Box 47648, Tel: 29657, 556754 Nairobi.  
24367

Ref:

Date: 23rd March, 1983

KENYA/SWEDISH COLLABORATION PLANT LEVEL COOPERATION

Company Name: T.J. Cottingham (Technical Services) Ltd.  
P.O. Box 47648  
Nairobi  
Workshop at Kisumu

1. Strategic Plans for future

This Company wishes to assume the role of supplier of component to motor industry as opposed to the past role of general engineering. This role is to be fulfilled by acquisition of new production equipment and technology collaboration. The company intends to supply to the manufacturers or assemblers of trailers and vehicles in Kenya, East Africa and the P.T.A. (Preferential Trade Areas).

2. Items Requested of this Collaboration

Identification of suitable machine tools, technology and materials necessary for manufacture of Axles stubs rims wheel brakes, and castor wheels and petrol tanks for Agricultural Forestry and Road Trailers and auto-motives industry.

3. Financial Institutions

Normal Banking - National Bank of Kenya, Harambee Avenue  
Bridging Finances - Middle Africa Finance Co.  
Long Term Finance - East Africa Development Bank  
Industrial Development Bank  
Up to 8 years

EADB representative is soon to visit Linde PML for this Programme.

4. Main Share Holders/Directors of T.J. Cottingham (TS)

S. W. Ohingo Director - (Engineer)  
Dr. L.H. Otieno - Director  
E.M. Ohingo - Director  
D.W. Omol - Director (Engineer)

.. /2

5. English Collaborator

The English Company Hunttons stopped axles business, and no further collaboration was possible. Collaboration was only technical and also, supply of raw materials and components.

6. Although Axle capacity was about 5000 P.A. Complete new installed capacity is required to cater for the complete mix of products stated. Hence assistance in equipment and setting up complete production plant is required to provide:

- 1000 - large axles 12 ton P.A.
- 4000 - 5 ton Axles P.A.
- 4000 - 3½ ton Axles P.A.
- 4000 - Castors P.A.
- 1000 - Petrol tanks
- 500,000 studs

Also required are equipment for pressing of petrol tanks for motor vehicles and wheel rims and studs. A study of these not yet completed but has started.

7. Machinery Required are

- (1) for casting of Drums
- (2) for machining of stubs and Drums and hubs and studs
- (3) for machining of stubs
- (4) for rolling of rims
- (5) for manufacture of Tanks
- (6) for jigging and welding of above where necessary

The market survey of 1977 has changed due to emphasis on local manufacture and assembly but the updated survey has not been completed.

8. Raw Material for axles and rims

These are largely imported. We use steel alloy above 60 tons strength for stubs and studs. Casting or pressings above 17 tons for drums and malleable iron or steel castings for hubs.

*High*


**AB LINDE-PML**

ett företag i Safveån

Scandiaconsult  
Att: Thomas Grahn  
Box 17040

200 10 MALMÖ

Er referens - Your reference	Vår referens - Our reference	Datum - Date
	SD/BN	1983-06-14

Dear Sir,

Notes from meeting with Mr Kiiru, Ministry of Industri an Mr S W Ohingo, T J Cottington Company, in Anderstorp 1983-06-02.

From AB Linde-PML Mr Eje Dahlin-Karlsson Managing Director and Mr Sven Danielsson Marketing Director participated.

Mr Kiiru and Mr Ohingo informed us that to increase the degree of self supporting they wanted contact with a company that could supply technological knowledge for production of hubs, axles and rims and they also informed that the project was supported by UNIDO.

Mr Kiiru mentioned the available investment sum to 2-3 millions USD.

After showing the factory we presented our programme of hubs, axles, axleshafts, rims and brakes, at which foremost every variant of hubs and axleshafts was thoroughly studied and discussed.

After this Mr Ohingo made a summary of the wishes of the guests according to following:

- technical support for production of 5 hub sizes - 375, 900, 2.100, 3.300 and 5.000 kg (load per hub at 30 km/h)
- Do for production of axleshafts
- do for production fo brakes with pressed drums
- do for production of pressed rims
- proposal on machine equipment for prodution of above mentioned products

Mr Ohingo here presented the wish about so ordinary useful machines as possible i.e. one and the same machine shall be able to use for production of so many variants as possible.



Scandiaconsult  
Att: Thomsa Grahn  
Box 17040

200 10 MALMÖ

In connection with this Mr Ohingo also informed that they willingly accept secon-handed machines.

- proposal on production line - in the first place summary for them to react on.
- proposal on machines for production of screws and nuts. The wish was cheap machines. Even so they accepted secon-handed slow machines.
- proposal on equipment for production of fuel-tanks in different sizes.

As annual quantities were mentioned about 10.000 pairs hubs, axleshafts and rims and 500.000 - 1.000.000 screws and nuts.

As conclusion we informed our guests that for us to be able to propose suitable press- and tool equipment (that are two heavy items in respect of investment) we have to know approximately what rimdimensions can come to the fore.

This they knew nothing about at the visit, so we suggested that they first of all should contact the domestic tyre producer and after that inform us about which tyredimensions that are produced within the country, before we, if desired go on working with the project.

Yours sincerely,  
AB linde-PML

*Sven Danielsson*  
Sven Danielsson

**ANNEX No 11**COLLABORATION PARTNERS

Tanta Motors Company, Tanta, Egypt (TMC)  
and  
Kjällströms Mekaniska Verstad AB, Kvänum, Sweden (Kellve)

SELECTION PROCEDURE

Based on the report of Expolaris (subannex 11:1) and the short briefing by Mr Thorve, TMC was selected as one of the potential recipient enterprises to be further promoted for collaboration with a Swedish enterprise. The main reasons for the selection were:

- o A positive overall impression of the company.
- o The management was said to be good.
- o The development potential seemed good.
- o Some hints on technology requested were given in the report, which technology could most likely be found in Sweden.

After the selection phase an attempt was made to make a preliminary matching with the Swedish enterprises AB Linde-PML, manufacturer of vehicle components (subannex 11:2), and AB K.M. Anderssons Mekaniska, manufacturer of agricultural and industrial vehicles (subannex 11:3). These enterprises showed interest in the project and submitted some information on the companies and their products. However, after presentation to TMC, these contacts were dropped as they were considered not being able to provide the technology really requested by TMC.

The impressions from the visit to TMC during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 11:4). The following came out at the visit:

- o The high managerial capability was confirmed.
- o The financial capacity of the company seemed good.
- o TMC are sales agent for a number of foreign companies and consequently they are well experienced in marketing.
- o TMC presented several development projects where technical assistance from Swedish enterprises could be possible and desirable.

After the Mission there was another screening procedure based on the additional information now available. As most of the criteria for the selection of the projects to be continued were fulfilled, TMC was put in the group of potential recipient enterprises which should be finally matched with Swedish enterprises.

#### MATCHING PROCEDURE

At an early stage the TMC development project concerning the front loaders for agricultural tractors was focused. The main manufacturers in Sweden were identified and as one of them was Kellve. Kellve were already contacted for another recipient company, and it was natural to ask them if they were interested to get a collaboration partner within their second product range as well. Kellve responded quickly and positively and at a meeting with Scandia-consult the headlines in the Collaboration Proposal were worked out.

#### COLLABORATION PROPOSAL

The Collaboration Proposal is attached (subannex 11:5) and contains the following framework for future collaboration:

- o The collaboration will be implemented in three steps during some years.
- o In step 1 TMC will be the agent for Kellve's front loaders in Egypt and the Middle East.
- o In step 2, TMC will manufacture the implements and the tractor mounting brackets. The front loader boom system will be manufactured by Kellve.
- o In step 3 all the manufacturing of the front loaders for the Middle East region will be done by TMC on licence or in a joint venture company.

#### PROJECT STATUS JUNE 83

As Kellve was not able to participate in the Group Visit to Malmö, Sweden, April 5-8, 1983, it is left to them to contact TMC to set a time for a meeting in July or August, 1983.

#### PROJECT STATUS OCTOBER 83

In August, Mr. Freihka of TMC visited Kellve in Sweden.

During the meeting, the discussions concerned transfer of technology for both the front loaders and the belt conveyors. TMS are now working mostly with service and repair of agency products. It is TMS's intention to start local production of more products and therefore they were interested in technology for both of Kellve's products.



According to Mr. Lindahl of Kellve, TMC:s search for new products seems to be based upon a wish to justify an expansion of their factory. It is now equipped only for repair work etc.

Kellve are interested in a cooperation with TMC for a special reason. Kellve's previous marketing partner in Egypt for belt conveyors (a Swedish company) has terminated the agreement. Kellve now wants to establish a new channel through which they can supply their belt conveyors to the Egyptian market. This can very well include a substantial local production in Egypt.

Regarding the front loaders, Kellve realize that the products need to be locally produced in order to be competitive.

A letter of intent was signed during Mr. Freihka's visit to Kellve. Since the visit there has been no contacts between the companies. The reason is that Kellve has had too much to do.

#### **Comments**

Kellve will need further assistance in the formulation of agreements and preparation of the technology transfer. They have a solid interest to cooperate with someone who can produce their products on/for Egyptian market.

UNIDO is recommended to provide assistance to both companies to secure that the technology transfer prospects in the project will be realized. Such assistance will primarily mean drafting of transfer agreement, time-schedule and training plan.

Tanta Motors Company  
Tanta P.O. Box 111  
Tel 2570-4191

Mr. Abed Abou Freikha  
Agr. Eng.

#### TANTA MOTORS COMPANY

The firm manufactures equipment for agricultural purposes such as trailers of various sizes and water-tank trailers. The raw material is St 37, which means that the products are very clumsy and heavy. The weight of a normal trailer

*John Kenyon - Collington.*

is about 2 tonnes. They make all of the components themselves, except the tyres. The axles have a shaft section of about 8 x 8 cms. Each one weighs about 100 kgs. The price of a trailer is about one pound per kilo weight. The firm wants to produce motorised pumps which are mainly imported. Unfortunately the castings that have to be purchased are of low quality.

The firm also has a small repair shop for motors.

TANTA M are also dealers for an Italian manufacturer who make loaders and excavators.

*Proposals: At present it is difficult to see if there are any possibilities of co-operating with any Swedish firm. At least we can send them information on Swedish trailers and loaders for their study.*

SCANDIACONSULT

PRELIMINARY

MATCHING

Malmö

1982-05-07

58.0648-01

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RECIPIENT ENTERPRISE

EC3 Tanta Motors Company  
KN4 T.J. Cottingham and partners

CANDIDATE PARTNER ENTERPRISE

Name: AB Linde-PML  
Address: Box 33, S-334 00 ANDERSTORP  
Phone: 0371-16100 Telex: 70191  
Managing director: Eje Dahlin-Karlsson  
Contact person:  
Turnover: 30 M SEK Employees: 120  
Product mix: Axles, wheels, mechanical brakes etc for  
agricultural, forestry and industry vehicles

---

1982-04-30

Phone call to Mr. Eje Dahlin-Karlsson

The company is owned by Mr. Dahlin-Karlsson, since autumn 1981. He is very interested in the project and will furnish some company information next week. In return he will get information on the recipient enterprises.

SCANDIACONSULT

PRELIMINARY  
MATCHING  
1982-05-07

Malmö

58.0648-01

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RECIPIENT ENTERPRISE

KN4 T.J. Cottington and Partners  
EC3 Tanta Motors Company

CANDIDATE PARTNER ENTERPRISE

Name: AB K.M. Anderssons Mekaniska  
Address: S-930 10 LÖVÅNGER  
Phone: 0913-10320 Telex:  
Managing director: Martin Andersson  
Contact person:  
Turnover: 12 M SEK Employees: 30  
Product mix: Transport vehicles for agricultural,  
forestry and industry purposes

---

1982-05-05

Letter recieved

## 1. GENERAL

## 1.1 Name and address of enterprise

Tanta Motors Company  
Moudirieh St.  
P.O.Box 111 - Tanta  
Phone: 2570, 4191  
Telex: 93231 TMCO UN

EC3

## 1.2 Contact person

Mr. Abed Abou Freihka

## 1.3 Form of ownership

Private independent

## 1.4 Invested capital 500,000 L.E.

## 1.5 Annual turnover

Last year	2.5 M L.E.	0.6 M L.E. own production
This year (est.)	3.0 M L.E.	

## 1.6 Year established

1950 - subdealer  
1964 - manufacturing

## 2. PERSONNEL

## 2.1 Managerial and engineering staff

Managers	2
Engineers	4

## 2.2 Clerical staff 80

Sales staff	15
-------------	----

## 2.3 Workers 100

Skilled	60
Service personnel	20
Unskilled	20

- 
3. PRODUCTION
- 3.1 Products
- Trailers, tank trailers, thrashers, ploughs, land levelers, grain crusher/seperator.
- 3.2 Main production processes
- Sheet metal and shapes cutting, shaping and welding. Machining. Assembling. Painting.
- 3.3 Main machinery
- 3.4 Factory premises
- |                        |          |
|------------------------|----------|
| Roofed production area | 3,000 m2 |
| Roofed storage area    | 5,000 m2 |
- Age of buildings 5-15 years
- 3.5 Production volume
- Trailers 300 units per year.  
Manufacturing volume is going to expand.
- 3.6 Current collaboration agreements
- The company is the sales agent for a great number of foreign manufacturers, mainly within the agricultural equipment sector. They negotiate with an Italian company to start manufacturing excavators on joint venture basis.
- 3.7 Quality control -
- 3.8 Input materials
- Sheet metal and shapes locally available.  
Axles, disc brakes, wheels, turning tables etc. imported from Italy.
- 3.9 Utilities -

---

4.       MARKETING

4.1       Main market

Agricultural local market

4.2       Distribution

Own sales staff for the own products as well as the imported.

4.3       Competitors

Mainly imports.

4.4       Market demand

The market for agricultural equipment is growing rapidly.

4.5       Market share

Excavators (imported)   80 %  
Trailers                   ~ 8 %

4.6       Market surveys

Are planned for new products.

4.7       Future plans

Export to the Arabic countries and Pakistan.  
One trailer exported to Saudi Arabia to check the market.  
The prototype grain crusher/separator sold to Pakistan.

5.       PROBLEMS - DEVELOPING PROJECTS

5.1       Upgrading present products

Improvement of quality and design of present products.

5.2       New products in present product line

Excavators (collaboration with Italian company, Argenterio).  
Tractor front loaders.  
Grain crusher/separator.  
Agricultural equipment.

5.3 New products outside present product line -

5.4 Projected market demand

Excavators	400 units per year
Front loaders	150-200 units per year
Trailers	400 units per year
Grain crusher/separator	80-100 units per year

5.5 Projected plant capacity

Corresponding to the market demand.

6. COMMENTS

The financing capacity of the company seems to be good, as the Italian part of the excavator joint venture is small.

The requirements of the company are technical and managerial assistance. Licencing agreements are not desired.

The manufacturing of 400 excavators and 150-200 front loaders will give 100 % profit on the capital per year. For this project machinery, manufacturing technique and training is required.

Government manufacturing licences for trailers limit the utilisation of the factory. They get a licence for a certain number of trailers which are produced and another amount of trailers free of licence is also produced.



Recipient enterprise

Tanta Motors Company  
P.O.Box 111  
Tanta  
Egypt

Contact person: Mr. Abed Abou Freihka, Managing Director

Technological requirements of the recipient enterprise

- o Technology for front loader for agricultural tractors.
- o Technology for excavators.
- o Technology for grain crusher-separators.
- o Technology for improvement of quality and design of present products.

Partner enterprise

Kjällströms Mekaniska Verkstad AB  
-535 00 Kvänum  
S. eden

Contact person: Mr. Anders Lindahl, Marketing Manager

For further information, please refer to the attached enterprise description.

Available technology of the partner enterprise

Kjällströms Mekaniska Verkstad AB, KELLVE, is a subsidiary to AB Nordströms Linbanor, the major Swedish supplier of materials handling equipment, especially within the bulk materials sector. KELLVE, being established in 1890, has specialized in two different fields:

- o Front loaders for agricultural tractors of most brands available in Europe.
- o Industrial belt conveyors, mainly for rock crushing plants, pulp and paper industry, metalurgical industry and coal fired district heating plants.

For further information on the products, please refer to the attached pamphlets.

---

Proposed framework for future collaboration

During a visit to KELLVE on October 8, 1982, Mr. Anders Lindahl showed great interest in the project after studying the previously submitted information on Tanta Motors Company. The following sketch on the future collaboration was discussed:

- o The proposed collaboration will develop in three steps during some years.
- o Step 1: Tanta Motors Company, TMC, will be the agent for KELLVE's front loaders within Egypt and the Middle East area. All the manufacturing will be made in Sweden.
- o Step 2: TMC will manufacture the implements and the tractor mounting brackets. The front loader booms system including the hydraulics will be manufactured in Sweden.
- o Step 3: All the manufacturing of the front loaders for the Middle East region will be done in Egypt by TMC on licence or in a joint venture company.

Enterprise description.

## 1. General

## 1.1 Name and address of enterprise

Kjällströms Mek. Verkstad AB

S-535 00 KVÄNUM Sweden

Phone 46.512.92400

Telex 42029 Kellve S

Telefax 92432

## 1.2 Trade Mark

Kellve

## 1.3 MD Mr Bo Lindskog

## 1.4 Contact person

Mr Anders Lindahl

## 1.5 Form of ownership

Fully owned by AB Nordströms Linbanor

Member of the Incentive group

## 1.6 Annual turnover

Last year 31 milj. SEK

This year (est) 40 milj. SEK

## 1.7 Year established

1890 Family own

## 2. Personnel

2.1 Management group 6

2.2 Technical staff 10

2.3 Sales staff 6

2.4 Clerical staff 20

## 2.5 Workers

Skilled 60

Unskilled 10

## 3. Production

## 3.1 Products

Belt conveyors, Frontloaders for agricultural tractors,  
Lifting devices for fodder.

### 3.2 Main production processes

Sheet metal and shapes cutting, shaping and welding.  
Machining. Painting. Assembling.

### 3.3 Factory premises

Roofed production area 5700 m<sup>2</sup>  
-"- storage area 1200 m<sup>2</sup>  
Office area 900 m<sup>2</sup>

## 4. Marketing

### 4.1 Main market

Agricultural market in Sweden, Norway and Great Britain.

Industrial market in Scandinavia and as subsupplier world wide.

### 4.2 Distribution

Through dealers for agricultural machinery and as subsupplier of conveyors for quarries, mines, papermills etc.

### 4.3 Future plans

Direct Export of the whole product range to importer in more countries, world wide.

We are interested in all kinds of agreements or a mixture of both.

**ANNEX No. 12**COLLABORATION PARTNERS

Engineering Systems P. Ltd., Bangalore, Karnataka, India (ES)  
and  
Svedala-Arbrå AB, Svedala, Sweden (SA).

SELECTION PROCEDURE

During the visit to Sweden by Mr. S.R. Vijay, Managing Director of Karnataka State Small Industries Development Corporation, some light engineering industries were visited to give Mr. Vijay an opinion about Swedish industrial business. One of the industries visited was Moving AB and due to the good contact established between Mr. B. Franzén, Managing Director of Moving, and Mr. Vijay, the latter promised to introduce the Mission members to a materials handling company in Bangalore to match Moving, being one of the major materials handling equipment suppliers in Sweden. The Indian enterprise Mr. Vijay had in mind was ES.

The impressions from the visit to ES during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 12:1). The following came out of it:

- o The managerial and technological capabilities of the company were convincing.
- o A very good company presentation was submitted.
- o The company is in an expansion phase and needs some new products to utilize the production capacity.
- o ES already has international collaboration to supplement its own products.
- o ES already has established a business contact with the Swedish enterprise AB Siwertell on continuous ship unloaders. As Moving is a subsidiary to Nordströms Linbanor, which is the main competitor of Siwertell, it was decided to drop the contact with Moving to avoid interference in the ongoing business contacts.

ES furnished supplementary data about the company in a letter dated July 8, 1982 (subannex 12:2).

After the Mission, there was a screening procedure based on the information now available. As most of the criteria for the selection of the projects to be continued were fulfilled, ES was put in the group of potential recipient enterprises, which should be finally matched with Swedish enterprises.

### MATCHING PROCEDURE

One of the fields, where ES requested assistance, was stackers and reclaimer for bulk materials handling. The only manufacturer in Sweden of this type of equipment, AB Vretstorp Verken, was contacted and they were interested to discuss further, and a preliminary collaboration proposal was worked out before they pulled out due to low business activity and internal problems at the time.

The second field in which ES requested assistance was heavy crushing and screening equipment. The main manufacturer in Sweden of this type of equipment is SA and they showed immediate interest in the project when contacted. After studying the information available and after a meeting with Scandiaconsult a Collaboration Proposal was worked out.

### COLLABORATION PROPOSAL

The Collaboration Proposal is attached (subannex 12:3) and contains the following framework for future collaboration:

- o The collaboration will be implemented in three steps during some years.
- o In step 1 SA will supply complete crushers and screens, while ES will make steel structures for these, supply conveyors and make the erection work.
- o In step 2 ES will manufacture the throughs and frames for feeders and screens and SA will supply the machineries.
- o In step 3 ES will make screens and feeders on licence.

### NEGOTIATIONS

As SA was not able to participate in the Group Visit to Maimoe, Sweden, April 5-8, 1983, it is left to them to contact ES to set a time for a meeting this summer.

### PROJECT STATUS JUNE 83

The parent company of SA, Allis Chalmers Inc., has recently taken a decision to start up a subsidiary in India, which means that in the long run all activities within the Allis Chalmers Group in India will be directed through this new company. However, SA offers ES to collaborate on a case to case basis until further notice. This information has been submitted to ES via telex (subannex 12:4).

### PROJECT STATUS OCTOBER 83

According to Mr. R. Wickström of SA, the management of SA will meet with

parent company Allis Chalmers in early November 1983 to discuss future strategy of SA. The proposed collaboration with ES will then be brought up. Mr. Wickström will inform CAS/UNIDO on the outcome of the meeting. If SA is allowed to operate on the Indian market, they are interested in re-establishment of the contact with ES.

**Comments**

● UNIDO is recommended to contact SA in late November 1983 and thereafter, if of interest to SA, promote further contacts between SA and ES.

●

●

●

●

- 
1. GENERAL
- 1.1 Name and address of enterprise IB 19
- Systems  
1-A, Peenya Industrial Area, Phase II  
Bangalore 560058  
Phone: 31742, 38371, 38372, 38373  
Telex: 845-549 SYSMIN
- 1.2 Contact persons
- Mr Jagdish Chandani, Managing Director  
Mr Arvind K. Bhide, Director
- 1.3 Form of ownership. -
- 1.4 Invested capital. -
- 1.5 Annual turnover
- |                 |          |
|-----------------|----------|
| Last year       | 41 M RS  |
| This year (est) | 60 M RS  |
| Next year (est) | 100 M RS |
- 1.6 Year established: 1966
2. PERSONNEL
- 2.1 Managerial and engineering staff
- Managers 8
- 2.2 Clerical staff. -
- 2.3 Workers, total 250



## 3. PRODUCTION

## 3.1 Products

Materials handling equipment, especially conveyors and elevators for bulk materials  
Turn key materials handling systems

## 3.2 Main production processes. -

## 3.3 Main machinery.-

## 3.4 Factory premises

	Bangalore	Hosur
Rooted production area	3 000 m <sup>2</sup>	2 100 m <sup>2</sup>
Total land area	21 000 m <sup>2</sup>	60 000 m <sup>2</sup>
Age of buildings	10 years	-

## 3.5 Production volume. -

## 3.6 Current collaboration agreements

Weighing and bagging equipment - S:t Regis, USA - licence  
Truck unloading equipment - Beumer W. Germany - techn assistance  
A new factory will be built for these products.  
Continous shipunloading equipment - Siwertell, Sweden - business collaboration.

## 3.7 Quality control

Inspection and quality control department with modern equipment.

## 3.8 Input materials. -

## 3.9 Utilities. -

---

4.       MARKETING

4.1       Main market

Local market  
Power stations, fertilizer, chemical and cement factories,  
mines, steelworks and pulp and paper mills.  
Reference list is available at Scandiaconsult.

4.2       Distribution. -

4.3       Competitors. -

4.4       Market demand. -

4.5       Market share. -

4.6       Market surveys. -

4.7       Future plans. -

5.       PROBLEMS - DEVELOPING PROJECTS

5.1       Upgrading present products. -

5.2       New products in present product line

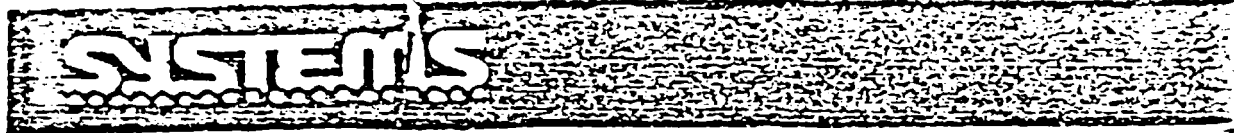
Heavy duty equipment - belt, apron, scraper conveyors with  
capacities of 8 - 10 000 tons per hour.  
Crushing and screening equipment.  
Stackers and reclaimers.  
Light, preassembled, materials handling equipment.

5.3       New products outside present product line. -

5.4       Projected market demand. -

5.5 Projected plant capacity. -

6. COMMENTS



# ENGINEERING SYSTEMS PRIVATE LIMITED

Post Box No. 5828, Peenya Industrial Estate, Bangalore-560 058.

Phone : 38306 Grams : SYSTEM

Telex : 845-54

JULY 08, 1992

Mr. Wasakamal  
Development Officer  
Technology Transfer Division  
UNIDO  
V I E N N A (Austria)

*Mr. Kamel*

X

NO ACTION REQUIRED

INITIALS *WK*

(CCF) No. 2/212

File: 452/31

Dear Sir:

Re: Application for transfer of technology-

We refer to the visit of Mr. Thomas Graham of Scandia Consultants and Mr. S.M. Kullur, Assistant Development Officer, UNIDO, to our factory.

The two were very much impressed with our set up and the equipments we are manufacturing for Material Handling and suggested that we could do better by importing technical know-how from abroad which could assist us in the manufacture of allied products in the field of Material Handling.

We are enclosing our application duly filled in with a request to suggest us fresh products for which we could import know-how, in India.

In the event you feel there is any other information you need, please feel free to write to us.

Thanking you,

Yours faithfully,  
for ENGINEERING SYSTEMS PVT LTD

*Harkishen Chandani*

HARKISHEN CHANDANI  
Manager (Administration & Accounts)

Encl: Application for transfer of technology.

ENCLOSURE ATTACHED

R:

Regd. Office : 385, 13th Main, Rajmahal Vilas Extension, Bangalore-560 080. Phone : 31742

Form No. 100003/0482

S Y S T E M S

QUESTIONNAIRE

BACKGROUND INFORMATION ON  
SMALL AND MEDIUM-SCALE LIGHT ENGINEERING  
INTERESTED IN PLANT LEVEL CO-OPERATION FOR  
TRANSFER OF TECHNOLOGY

(All information provided in this questionnaire will be treated with strict confidentiality, and will be used by UNIDO to identify an appropriate partner enterprise in the SWEDEN for negotiating a technology transfer agreement)

QUESTIONNAIRE

SYSTEMS MANUFACTURING  
PRIVATE LIMITED

ENGINEERING SYSTEMS  
PRIVATE LIMITED.

**I GENERAL**

- |    |  |   |   |
|----|--|---|---|
| 1. | Name & address of enterprise   | Systems Manufacturing Private Limited<br>1-AA Peenya Industrial Area<br>Phase II, Peenya<br>BANGALORE - 560 058 (Karnataka)                                       | Engineering Systems Private Ltd.<br>Plot Nos. 99 & 100<br>SIPCOT Industrial Complex<br>HOSUR - 635 126 (Tamilnadu)  |
| 2. | Name of individual to contact (Telephone No)   | a. Mr. Jagadish Chandani<br>Bangalore Ph: 38497 Off<br>32110 Res<br><br>b. Mr. Arvind K. Bhide<br>Bangalore Ph: 38306 Off<br>367890 Res                           | Mr. Jagadish Chandani<br>Bangalore Ph: 38497 Off<br>32110 Res<br><br>Mr. Arvind K. Bhide<br>Bangalore Ph: 38306 Off<br>367890 Res   |
| 3. | Year Established   | 1971 (went into production in 1973)   | 1978 (went into production in late 1980)  |
| 4. | Any expansion or modernisation since plant first began operations; if yes, please specify. | From the time we began production we have spent Rs. 26 lakhs for the addition and replacement of machinery, expansion of the factory and administrative building. | Expansion being planned in Mysore with a capital lay-out of Rs. 1.15 crores to manufacture Special Purpose machines such as Packing (Bagging and weighing), Truck and Wagon Loaders, Clinker Transporters, Bag divertors etc. |
| 5. | Total area in sq.mts of Plant Floor space  | 3,000 sq.mts  | 2,500 sq.mts.   |
| 6. | Value of average annual sale in last three years.  | 1981 Rs. 32.00 Million<br>1980 Rs. 25.00 Million<br>1979 Rs. 17.50 Million  | 1981 Rs. 10.00 Million<br>1980<br>1979  |
| 7. | Total Invested Capital   | Rs. 4.0 Million   | Rs. 5.5 Million.  |
| 8. | Is this an independent enterprise or a Subsidiary?   | Independent   | Independent   |
| 9. | Form of ownership (private, partnership,   |   |   |

## QUESTIONNAIRE

SYSTEMS MANUFACTURING PRIVATE LTD

ENGINEERING SYSTEMS PRIVATE LTD.

## II PERSONNEL

	Managerial	Engineering	Managerial	Engineering
1. Managerial/Engineering Staff:	20	20	12	8
Education:	Post Graduates 2 Double Graduates 8 Graduates 20 Diploma Holders 10		Post Graduates Nil Double Graduates 2 Graduates 10 Diploma Holders 8	
Experience:	Chief Executives with over 20 yrs experience; others with an average of 10 years experience		Chief Executives with over 20 yrs experience; others with an average of 7 years experience.	
2. Total No. of				
- Clerical Staff	62		20	
- Draughtsmen	18		Nil	
- Skilled Workers	50		50	
- Semi-skilled Workers	22		20	
- Contract Labours	20		10	
- Trainees	15		30	
- Apprentices	13		Nil	
3. No. of working days per annum and No. of shifts per day (and hours/shift)	300 Two Shifts per day Eight hours per Shift		300 Two Shifts per day Eight hours per Shift.	

## III PRODUCTION

1. Describe briefly your current business activity and in particular, list the products you are producing in the attached table together with the additional information indicated.
- |  |   |   |
|--|---|---|
|  | Material Handling Equipments like Belt Conveyors, Screw Conveyors, Over-head Conveyors, Coal, Lime-stone Crushers, Packing Plants etc., and Components like Rollers, Idlers, Pulleys etc. | Material Handling Equipments like Belt Conveyors, Screw Conveyors, Over-head Conveyors, Coal, Lime Stone Crushers, Packing Plants etc and Components like Rollers, Idlers, Pulleys etc. |
|--|---|---|
2. Was your production volume at or below plant capacity

## QUESTIONNAIRE

## SYSTEMS MANUFACTURING PRIVATE LTD

## ENGINEERING SYSTEMS PRIVATE LTD

- |  |  |   |
|--|--|---|
| 3. Describe briefly the production process you employ  | Normal welding to fabricate Structural components, machining, Assembly and Site Erection.  | Normal welding to fabricate Structural components, machining, Assembly and Site Erection.   |
| 4. Are you currently involved in any licensing, patent or other form of agreement with a foreign concern? If so, please specify.             |  | 1) Packing machines (Weighing & Packing) - St. Regis Paper Co. U.S.A.<br>2) Clinker Conveyors and Truck & Wagon Loading Equipments. Beumer Maschinenfabrik KG West Germany.   |
| 5. List inputs material you purchase and indicate local availability.  | (a) Steel (M.S. plates, sheets, rounds and structural sections)<br>(b) Special Alloys, Rounds and Flats<br>(c) Standard components, gear boxes Electric motors, Beltings, bearings, plummer blocks etc.<br>(d) Castings to our design and specification<br><br>Almost all items available locally. | a) Steel (M.S. Plates, sheets, rounds and structural sections.<br>b) Special alloys, rounds & Flats<br>c) Standard components, gear boxes Electric motors, beltings bearings, plummer blocks etc.<br>d) Castings to our design and Specification.<br><br>Almost all items available locally |
| 6. Indicate the amount and unit price of utilities (fuel, electricity, water, etc) you use and describe any difficulty in their availability | Electricity Unit . 6000<br>Unit Rate . Rs. 0.80<br><br>Power Cut about 30%   | Electricity Unit 3000 Need 8000<br>Unit Rate Rs. 0.95<br><br>Tamilnadu has Power Cut and load shed down frequently during summer months.<br>A generated Diesel 400 lts<br>Unit rate Rs. 3.25 per lt.  |
| IV MARKET  |  |   |
| 1. What is the estimated total demand for your product in your customary markets.  | Approximately Rs. 6,000/- Million per year   | Approximately Rs. 6,000/- Million per year.   |



## QUESTIONNAIRE

## SYSTEMS MANUFACTURING PRIVATE LTD

## ENGINEERING SYSTEMS PRIVATE LTD

2. What are your distribution channels for marketing your products?
- Our products are custom built as per specifications of Clients. Offers are made against tenders flotted by Govt., Qusi Govt. and other big industries. Canvassing and follow-up of the offers is done through experienced agents appointed in each sector all over India
- Our products are custom built as per specifications of Clients. Offers are made against tenders flotted by Govt., Qusi Govt. and other big industries. Canvassing and follow-up of the offers is done through experienced agents appointed in each sector all over India.
3. Is the Government one of your customers?
- Yes (Major Clients)
- Yes (Major Clients)
4. What are the projections of demand for your products?
- The 6th Five-year Plan envisages a tremendous growth and expansion in core industries. The demand of material handling equipment is estimated to increase by 100% over the Plan period.
- The 6th Five-year Plan envisages a tremendous growth and expansion in core industries. The demand of Material Handling Equipment is estimated to increase by 100% over the Plan period.
- The demand from existing industries and under the expansion for Packing machines, Truck and Wagon Loaders, Clinker Transporters is expected to be around 200 crores in the coming ~~year~~ Five-years. There is hardly any competition in this field and we expect to do a business of Rs. 20 Crores over the Plan period with about 1.5 to 2 crores in the first year (Our expansion programme in Mysore).
- V. CO-OPERATION PROPOSAL
1. Which of the following are you contemplating
- Introduce new product line(s) -  
Mainly in this area
- Introduce new product line(s) -  
Mainly in this area.

## QUESTIONNAIRE

SYSTEMS MANUFACTURING PRIVATE LTD

ENGINEERING SYSTEMS PRIVATE LTD.

2. Please state the reason for your plans and financial resources you can mobilise. The Government of India is emphasizing a rapid growth in core section like power, coal, Cement, fertilisers, sugar grains etc.

The Government of India is emphasizing a rapid growth in core sections like power, coal, cement, fertilisers, sugar, grains etc.

Financial Resources: Plan Capital lay-out if Rs.1.15 crores for our Mysore Project. Further investment will be made by Equity contribution from the public, reploughing profit other than benefits available from the Government (Central and State) financial institutions and commercial banks.

3. Specify projected plant capacity and annual production programme for each product after acquisition of new technology.

The Plant capacity can be increased 2 to 3 folds as we will have land available for expansion.

Annual production programme for the products can be estimated only after the acquisition of furnished technology depending upon the demand for the product/products in our country and in the export market.

4. Please describe the kind of technology and know-how you need to implement the plans you propose. Design and manufacturing process involved. Technical advice

Design and manufacturing process involved.

Technical advice.

List of goods Produced	Estimated Quantity		Estimated annual sale value \$.		Estimated % sold to final consumers		(a) % sold locally	(b) % to other regions	(c) % exported
	(a) Last year		(a) Last year		(b) Estimate % sold as in put to other industries.				
	(b) Year before		(b) Year before						
	(c) 2 Years before		(c) 2 years before						
	SMPL	ESPL	SMPL	ESPL	SMPL	ESPL	SMPL	ESPL	ESPL
1. Carrying Idlers	(a) 6,400	3,200	(a) 6,40,000/-	3,40,000	(a) 80%	80%	(a) 20%	20%	
	(b) 5,500	-	(b) 5,50,000/-	-	(b) 20%	20%	(b) 80%	80%	
	(c) 4,500	-	(c) 4,50,000/-	-	(b) Nil	Nil	(c) Nil	Nil	
2. Return Idlers	(a) 2,150	1,050	(a) 86,000/-	42,000/-	(a) 80%	80%	(a) 20%	20%	
	(b) 1,600	-	(b) 64,000/-	-	(b) 20%	20%	(b) 80%	80%	
	(c) 1,500	-	(c) 60,000/-	-	(b) 20%	20%	(c) Nil	Nil	
3. Self Cleaning Return Idlers	(a) 350	150	(a) 28,000/-	12,000/-	(a) 80%	80%	(a) 20%	20%	
	(b) 300	-	(b) 24,000/-	-	(b) 20%	20%	(b) 80%	80%	
	(c) 100	-	(c) 8,000/-	-	(b) Nil	Nil	(c) Nil	Nil	
4. Impact Idlers	(a) 1,000	500	(a) 1,50,000/-	75,000/-	(a) 80%	80%	(a) 20%	20%	
	(b) 800	-	(b) 1,20,000/-	-	(b) 20%	20%	(b) 80%	80%	
	(c) 600	-	(c) 90,000/-	-	(b) Nil	Nil	(c) Nil	Nil	
5. Self Aligning Carrying Idlers	(a) 1,300	700	(a) 1,95,000/-	1,05,000/-	(a) 80%	80%	(a) 20%	20%	
	(b) 1,000	-	(b) 1,50,000/-	-	(b) 20%	20%	(b) 80%	80%	
	(c) 500	-	(c) 75,000/-	-	(b) Nil	Nil	(c) Nil	Nil	
6. Self Aligning Return Idlers	(a) 550	250	(a) 44,000/-	20,000/-	(a) 80%	80%	(a) 20%	20%	
	(b) 500	-	(b) 40,000/-	-	(b) 20%	20%	(b) 80%	80%	
	(c) 300	-	(c) 24,000/-	-	(b) Nil	Nil	(c) Nil	Nil	
7. Structural Components	(a) 400	200	(a) 3,20,000/-	1,60,000/-	(a) 100%	100%	(a) 20%	20%	
	(b) 400	-	(b) 3,20,000/-	-	(b) Nil	Nil	(b) 80%	80%	
	(c) 300	-	(c) 2,40,000/-	-	(b) Nil	Nil	(c) Nil	Nil	
8. Pulleys	(a) 500	200	(a) 3,00,000/-	1,20,000/-	(a) 100%	100%	(a) 20%	20%	
	(b) 500	-	(b) 3,00,000/-	-	(b) Nil	Nil	(b) 80%	80%	
	(c) 400	-	(c) 2,40,000/-	-	(b) Nil	Nil	(c) Nil	Nil	
9. Bucket Conveyors	(a) 40	10	(a) 2,00,000/-	50,000/-	(a) 100%	100%	(a) 100%	100%	
	(b) 40	-	(b) 2,00,000/-	-	(b) Nil	Nil	(b) Nil	Nil	
	(c) 30	-	(c) 1,50,000/-	-	(b) Nil	Nil	(c) Nil	Nil	

r:

Recipient enterprise

Systems  
1-A, Peenya Industrial Area, Phase II  
Bangalore - 560058  
India

Contact persons: Mr. Jagdish Chandani, Managing Director  
Mr. Arvind K. Bhide, Director

Technological requirements of the recipient enterprise

Technology for the manufacturing of:

- o Heavy duty bulk materials handling equipment.
- o Crushing and screening equipment.
- o Stackers and reclaimers for bulk materials handling.
- o Light preassembled materials handling equipment.

Partner enterprise

Svedala-Arbrå AB  
S-233 00 Svedala  
Sweden

Contact persons: Mr. Ingvar Ottosson, Marketing manager  
Mr. Roland Wickström, Export Manager

For further information of the company please refer to the attached enterprise description.

Available technology of the partner enterprise

Svedala-Arbrå AB was founded in 1882. Initially agricultural equipment was the main product but soon rock crusher production started. Nowadays crushing and screening equipment for quarries and mines is the main product. Other products in the manufacturing programme are waste disposal plants, bag filling machines, snow-plows and other snow-removal equipment.

Svedala-Arbrå AB is a subsidiary of Allis-Chalmers Corp., USA since 1974. There are about 1 000 employees in the company most of them working in the factories in Svedala and Arbrå.

For further product information please refer to the attached pamphlets.

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Proposed framework for future collaboration

During a visit to Svedala-Arbrå on October 11, 1982, Mr. Roland Wickström showed great interest in the project after studying the previously submitted information on Systems. The following sketch on the future collaboration was discussed:

- o Systems will be the representative of Svedala-Arbrå s crushing and screening equipment on the Indian market and the collaboration will develop in three steps:
- o Step 1: Svedala-Arbrå AB supplies complete crushers and screens. Systems manufactures steel structures and chutes for these. Systems also supplies belt conveyors and makes the erection work.
- o Step 2: Systems will manufacture the troughs and frames for feeders and screens and Svedala-Arbrå AB supplies the machineries.
- o Step 3: Screens and feeders will be totally made in India. Even the manufacturing of crushers may be done in India in the future.



CERN  
Purchasing Service  
CH-1211 GENEVA 23

## QUESTIONNAIRE

To be completed, preferably typewritten, by companies interested in CERN's requirements

Name of Company SVEDALA-ARBRA AB

Address \_\_\_\_\_

Country SWEDEN Postal code S-233 00 Town SVEDALA

Telephone No. 46-40-40 11 00 Telex No. 32390 SASVED S

Year of establishment 1882 Registered capital Million SEK 67

Turnover in Swiss francs Million SEK 280 for year 1981

Total personnel numbers 904 including 109 qualified engineers

Personnel in design office 68 in workshop 485 on work sites -

Bankers (full name and address) Skandinaviska Enskilda Banken, Malmö, Svenska Handels-  
banken, Malmö, Skånska Banken, Svedala, (all in Sweden)

Account No. \_\_\_\_\_

Postal cheque account \_\_\_\_\_ Account No. \_\_\_\_\_

Subsidiary of which group of companies Allis-Chalmers Corp, Milwaukee, Wisc., U.S.A.

Representation (if any): in Switzerland Svedala-Arbra AG, Orelfingen

in France EMMISA S.A./A.C. France, Paris

ACTIVITIES (please indicate below the codes relating to your activities according to our attached list of codes)  
180.7

### THE MOST IMPORTANT REFERENCES AND COMMENTS, IF ANY

The dominating sector in the Company product programme is Crushing and Screening  
equipment for the gravel, stone and mining industries. Main references, see  
encl. list of companies.

Date Oct. 15, 1982

Signature and company stamp

Name and position of signatory

**Svedala-Arbrå AB**  
Export Department  
*Roland Wickström*  
Roland Wickström,  
Export Sales Manager

20

## GENERAL

(General Information, 000—099)

200 Crushing and screening machinery,  
general

(Information on other products, 100—199, 300—999)

*Groups in brackets are not  
included here since special  
folders or registers are  
available for these.*

## Group 2

CRUSHING and  
SCREENING  
MACHINERY

21

## FEEDERS

210 General

211 Apron and belt

212 Reciprocating and rotating table

213

214 Free-swinging vibrating

215 Forced-motion vibrating

216

217

218 Feeder stations

219 Diverse

22

## CRUSHERS

220 General

221 Double toggle jaw crushers

222 Single toggle jaw crushers

223 Cone and gyratory crushers

224 Impact breakers

225 Roll crushers

226

227

228

229 Diverse

23

## MILLS

230 General

231 Hammer mills

232 Disintegrators

233 Rotating mills

234 Vibrating mills

235

236

237

238

239 Diverse

24

## SCREENS

240 General

241 Free-swinging, circ. motion

242 Free-swinging, linear motion, mech.

243 » » » elmag. 248

244 Forced-motion screens

245 Trommel screens

246

247

248 Gyratory screens, air separa

249 Diverse

25

## WASHING and WET-CLASSIFYING EQUIPMENT

250 General

251 Classifiers without moving parts

252 Conveying classifiers (screws etc.)

253 Vibrating-type classifiers

254

255

256 Washing drums

257

258

259 Diverse

26

260 General

261

262

263

264

265

266

267

268

269 Diverse

27

## CONVEYING EQUIPMENT

270 General

271 Elevators

272 Belt conveyors

273 Other mechanical conveyors

274

275

276 Dragline winches

277

278

279 Diverse

28

## CRUSHING and SCREENING PLANTS

280 General

281 Mobile plants

282 Stationary plants

283 Asphalt plants

284

285

286

287

288

289 Diverse

29

## STORAGE BINS and DIVERSE MACHINERY

290 General

291 Storage bins and accessories

292

293

294 Diverse equipment

295 Mixers

296

297

298 Weighing equipment

299 Diverse

SvedalaArbra

Thomas.

Här hoppas en rät telex till Systems  
ent. löfte

Roland Wickström

09.48

0381845549+

845 549 SYSM IN

32390Z SASVED S

Telex 3750 Telex 3760 1983-05-31

ATT.: MR. Bhide

COLLABORATION PROPOSAL

WE REGRET THAT WE HAVE NOT BEEN ABLE TO ANSWER YOU EARLIER IN THIS MATTER DUE TO EXTENSIVE TRAVELLING AND THE FACT THAT WITHIN OUR MOTHER COMPANY DISCUSSIONS HAVE BEEN HELD TO DECIDE WHETHER OR NOT TO FORM A DAUGHTER COMPANY IN INDIA.

AS OF NOW OUR MOTHER COMPANY ALLIS-CHALMERS HAVE TAKEN THE DECISION TO GO AHEAD AND FOLLOWING THAT WE WILL HAVE TO USE THIS CHANNEL WHEN AND IF THIS DAUGHTER COMPANY IS FORMED.

WE ONCE AGAIN MUST EXPRESS OUR REGRETS FOR THE DELAY IN ANSWERING YOU BUT IT HAS NOT BEEN POSSIBLE TO GIVE YOU AN ANSWER UP TO NOW.

AS THIS DAUGHTER COMPANY HAS NOT YET BEEN FORMED AND WE ANTICIPATE THAT SOME TIME WILL ELAPSE UNTIL IT IS, WE ARE WILLING, IF YOU HAVE AN INTEREST IN SUCH AN ARRANGEMENT, TO WORK TOGETHER WITH YOU ON A CASE TO CASE BASIS ACCORDING TO STEP 1 IN OUR COLLABORATION PROPOSAL UNTIL THIS COMPANY IS FORMED.

WE HOPE TO HEAR FROM YOU REGARDING THIS CHANGED PROPOSAL.

BEST REGARDS  
ROLAND WICKSTROEM  
EXPORT SALES MANAGER

\*  
845 549 SYSM IN  
32390Z SASVED S+++



**ANNEX No. 13**COLLABORATION PARTNERS

D. Samson Industries Ltd., Colombo, Sri Lanka (DSI)  
and  
Trelleborg AB, Trelleborg, Sweden (TGA).

SELECTION PROCEDURE

During the Mission to Sri Lanka, some of the enterprises to be visited informed that they could not possibly receive the Mission Members at the scheduled time. In order to use the time available in best possible way some other enterprises were picked out by the local coordinating agency. One of these was DSI.

The impressions from the visit to DSI during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 13:1). The following came out of it:

- o The management seemed to be well experienced in international business and would most likely be able to implement a technology transfer project.
- o The company is manufacturer of rubber components.
- o There is idle capacity, which could be used for new components with a higher level of technology.
- o There is an intention to improve the quality and the productivity of the company.
- o The company has a sales agent in Sweden for some of its products.

After the Mission there was another screening procedure based on the additional information now available. Although there was some scepticism about the financial status the rest of criterias were fulfilled and DSI was put in the group of potential recipient enterprises, which should be finally matched with Swedish enterprises.

MATCHING PROCEDURE

The requested technology is rubber technology and to get informed about the details and potential suppliers of it, the International Projects Department of TGA, being one of Scandiaconsult's business partners, was contacted. They soon found out, that the requested technology is available within TGA and that the International Projects Department itself deals with supply of rubber technology.

So they were interested to get into this project as well and after studying the information available a Collaboration Proposal was worked out.

In order not to interfere with the existing business partner in Sweden, this company was informed about the project and the intentions in the Collaboration Proposal and they had no objections.

#### COLLABORATION PROPOSAL

The Collaboration Proposal is attached (subannex 13:2) etc.

- o TGA will make a suggestion on processes machinery and administrative routines required to improve quality and productivity of DSI's rubber factory.
- o If required TGA will assist in purchasing machinery and training personnel.
- o The remuneration will be a lumpsum payment.

#### PRESENT STATUS

Shortly before the Group Meeting in Malmoe, Sweden, April 5-8, 1983, DSI pulled out of the project.

---

1. GENERAL

1.1 Name and address of enterprise

D. Samson Industries Ltd  
P.O.Box 778  
97, First Cross Street  
Colombo 11  
Phone: 26509, 20573

SC 12

1.2 Contact person

Mr K. Rajapakse, Managing Director

1.3 Form of ownership

Independent, private, limited company.

1.4 Invested capital -

1.5 Annual turnover

Last year 35 M RS

1.6 Year established: 1962

2. PERSONNEL

2.1 Managerial and engineering staff.

Managers and Engineers, grad 16  
Engineers

2.2 Clerical staff -

2.3 Workers, total 375

Skilled 275  
Unskilled 100

---

3. PRODUCTION

3.1 Products

Foot wear.  
Rubber products for the automobile industry.

3.2 Main production processes -

3.3 Main machinery

Rubber mills: 14 Nos 26"x14", 2Nos 60"x22".  
Extruder, cold feed type 2½". Boiler, 1 500 kgs.  
Hydraulic vulcanizing presses: 4 Nos 48"x36" 5 daylights, 10 Nos 18"x18"  
Vulcanizing chambers: 3 Nos. Rubber cutting machines: 10 Nos.

3.4 Factory premises -

3.5 Production volume

2 shift operation, 1,5 shift shoes and 0,5 shift rubber products.

3.6 Current collaboration agreements

Rubber products are exported to Kaj Nygren AB, Sweden, which supplies Swedish automobile industry among others with rubber goods. The Swedish firm supplies the moulds.

3.7 Quality control -

3.8 Input materials

Natural rubber, locally available, ½ world market price.  
Chemicals etc imported, more expensive than world market price.

3.9 Utilities -

---

4.       MARKETING

4.1       Main market

Local market 90 %  
Export        10 %

4.2       Distribution -

4.3       Competitors -

4.4       Market demand -

4.5       Market share -

4.6       Market surveys -

4.7       Future plans -

5.       PROBLEMS - DEVELOPING PROJECTS

5.1       Upgrading present products

Manufacturing shoes on customers design.  
Improve quality and increase productivity on rubber goods.

5.2       New products in present product line -

5.3       New products outside present product line -

5.4       Projected market demand -

5.5       Projected plant capacity

Expanding capacity.

6.       COMMENTS

SCANDIACONSULT

COLLABORATION  
PROPOSAL

Page 1

Malmö

1982-10-15

58.0648-01

COLLABORATION PROPOSALRecipient enterprise

D. Samson Industries Ltd  
P.O.Box 778  
97, First Cross Street  
Colombo 11  
Sri Lanka

Contact person: Mr K Rajapakse, Managing Director.

Technological requirements of the recipient enterprise

- . Improve quality and increase productivity on rubber goods.
- . Manufacturing of shoes on customers design.

Partner enterprise

Trelleborg AB  
International Projects Division  
Box 501  
S-231 01 Trelleborg  
Sweden

Contact person: Mr Bengt Jönsson, Manager.

Available technology of partner enterprise

Trelleborg AB is the biggest rubber products manufacturer in Sweden within several technical fields. In the International Projects Division the know how of the entire company is marketed as a separate product all over the world. The available technology consists of, among others, the following products:

- . Conveyor belts and rubber sheets
- . Mining products
- . Industrial hoses
- . V-belts
- . Tyres
- . Roll lining
- . General Rubber Goods
- . Vibration and shock dampers

Malmö

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Proposed framework for future collaboration

During a visit to Trelleborg AB on September 2, Mr Bengt Jönsson showed an interest in the project after the briefing on D. Samson Industries Ltd. The following sketch on future collaboration was discussed:

- . Trelleborg AB will make a study on the present production processes and make a suggestion on which machinery has to be added and which administrative and production planning routines should be used to improve productivity and quality.
- . If required, Trelleborg AB will assist in purchasing machinery and training personnel.
- . The remuneration will preferably be cash payment. It should be investigated if there are any financial resources at UNIDO or SIDA.

**ANNEX No. 14**COLLABORATION PARTNERS

Egyptian Society for Soldering Supplies, Cairo, Egypt (ESSS)  
and  
Elgasvets AB, Lerum, Sweden (Elga).

SELECTION PROCEDURE

From the report of Expolaris (subannex 14:1) and the short briefing by Mr. Thorve, ESSS was selected as one of the potential recipient enterprises to be further promoted for collaboration with a Swedish enterprise. The main reasons for the selection were:

- o A positive overall impression of the company.
- o The management was said to be good.
- o The quality of their products is good.
- o There was a desire to expand the product program with more distinguished components.

After the selection phase an attempt was made to make a preliminary matching with the two Swedish manufacturers of welding equipment AGA Welding AB (subannex 14:2) and Elga (subannex 14:3). They both showed interest in the project at this stage and submitted some information on their companies and their products. This was presented for the ESSS management, who found both suitable for their requirements of technology transfer but they ranked AGA Welding AB as No. 1 of them.

The impressions from the visit to ESSS during the Mission in May-June, 1982, were put down in the Enterprise Description (subannex 14:4). The following came out of the visit:

- o ESSS wants to improve their gas welding products.
- o ESSS has recently finished a big investment project and is now ready to go into a new development project.
- o There is a market demand of the products in Egypt.
- o The requested technology is available at the preliminary matched Swedish enterprises.



After the mission, there was another screening procedure based on the additional information now available. Although there was some scepticism about the financial status, the rest of criterias were fulfilled and ESSS was put in the group of potential recipient enterprises, which should be finally matched with Swedish enterprises.

#### MATCHING PROCEDURE

As there was a desire from ESSS to get matched with AGA Welding AB, this company was first contacted. However, after studying the information available, they pulled out due to the fact, that they belong to a multinational group and they are already represented in Egypt.

Then Elga was contacted and they wanted to take part of the information available about ESSS. After studying this, Elga agreed to work out a Collaboration Proposal.

#### COLLABORATION PROPOSAL

The Collaboration Proposal is attached (subannex 14:5) and contains the following framework for future collaboration:

- o Elga will supply technology for the manufacturing of precision nozzles and the upgrading of the present products.
- o ESSS will be the agent for Elga's complete product programme in Egypt and the neighbour countries.

Elga also rose some questions about ESSS and wanted to get these satisfactorily answered before going further. The questions dealt with:

- o Marketing organization of ESSS and its market.
- o Present collaboration agreement on the gas project.

#### PRESENT STATUS

A few months after the completion of the Collaboration Proposal, Elga suddenly pulled out of the project due to lack of managerial and technical capacity for this project.

Egyptian Society for  
Soldering supplies  
P.B. 101 Cairo  
Tel 47065

Mr. Said Iskandar  
Farag  
Director

EGYPTIAN SOCIETY FOR SOLDERING SUPPLIES

This firm are specialists in making equipment for gas welding.  
The machinery is of a high standard and the firm has good  
production facilities. They want to expand into similar products.  
There are about 25 people in the firm. The quality of their  
products is good.

Proposals: Send brochures from the Swedish AGA\* on gas welding \*ej intresserad.  
equipment. Then the firm can either collaborate with the Swedish. Elshah 2  
company or try to copy their products if they are not patented. has skickat  
info.

SCANDIACONSULT

PRELIMINARY

Malmö

MATCHING

1982-05-07

58.0648-01

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RECIPIENT ENTERPRISE

EC7 Egyptian Society for Soldering Supplies

CANDIDATE PARTNER ENTERPRISE

Name: AGA Welding AB

Address: Box 21044, S-200 21 MALMÖ

Phone: 040-188100 Telex: 32252 agamalm s

Managing director: Mats Fridlund

Contact person: Roland Adgård

Turnover: 200 M SEK Employees: 500

Product mix: Equipment for cutting, welding, soldering and systems for gasregulation and distribution

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1982-05-06

Phone to Mr. Roland Adgård

Mr. Adgård is very interested in discussing this project further. The company has delivered draining-centres for welders to Hungary and the Soviet Union among others and has just finished a quotation for a similar training-centre to an African country through SIDA. They are also interested in licencing. Mr. Adgård will submit some information on the company.

SCANDIACONSULT

PRELIMINARY

MATCHING

Malmö

1982-05-07

58.0648-01

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RECIPIENT ENTERPRISE

EC7 Egyptian Society for Soldering Supplies

CANDIDATE PARTNER ENTERPRISE

Name: Elgasvets AB

Address: Box 306, S-443 01 LERUM

Phone: 0302-11600                      Telex: 2427 elgaler s

Managing director: Anders Alfredson

Contact person:

Turnover:                                      Employees: 120

Product mix:                      Equipment for gas welding and cutting.  
   Filler metal for welding and soldering

---

1982-05-06

Phone call to Mr. Anders Alfredson

Mr. Alfredson will consider a UNIDO-project engagement..  
He will forward some information on his company and looks  
forward to further information from the recipient enter-  
prise.

## 1. GENERAL

## 1.1 Name and address of enterprise

Egyptian Society for Soldering Supplies  
PB 101-Cairo  
Phone: 769065, 972065

EC7

## 1.2 Contact person

Mr. Saied Iskandar Farag, Director

## 1.3 Form of ownership -

## 1.4 Invested capital -

## 1.5 Annual turnover -

## 1.6 Year established -

## 2. PERSONNEL -

## 2.1 Managerial and engineering staff 2

## 2.2 Clerical staff (2-4)

## 2.3 Workers 25

## 3. PRODUCTION

## 3.1 Products

Gas welding and soldering equipment.  
High pressure gas welding equipment.

## 3.2 Main production processes -

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### 3.3 Main machinery

1 pantograph, 2 automatic turret lathes 35 mm, 2 semiautomatic turret lathes 50 mm, 2 do 25 mm, 2 centerlathes 1 m one of them equipped for tapered threads, 2 semiautomatic drilling machines 16 mm, 2 drilling machines 16 mm, 1 drilling machine for fine holes 0.1 mm 28,000 rpm, 1 excentric press 63 tons, 1 friction press 300 tons, 1 air compressor, 1 testing machine, grinding and polishing equipment.

### 3.4 Factory premises -

### 3.5 Production volume

Nozzles 2,000 units/year.  
The production at present is only 50 % of capacity due to labour shortage. They try to increase the salary to get the labour needed.

### 3.6 Current collaboration agreements

A new factory for oxygen, argon, nitrogen etc. is under construction with German collaboration, Linde.  
Import of precision nozzles from Harris, England.

### 3.7 Quality control

Pressure test.

### 3.8 Input materials

Bars and tubes of steel and brass. No problems with the supply.

### 3.9 Utilities

No problems with the supply.

## 4. MARKETING

### 4.1 Main market

Public sector more than the private.

### 4.2 Distribution -

- 
- 4.3 Competitors  
Import 60 % of the demand.  
An old partner is the only competitor in Egypt.
- 4.4 Market demand -
- 4.5 Market share  
Approx. 25 %.
- 4.6 Market surveys -
- 4.7 Future plans -
5. PROBLEMS - DEVELOPING PROJECTS
- 5.1 Upgrading present products  
Improve finish.
- 5.2 New products in present product line  
Precision nozzles.  
Date up technology for welding and gas cutting.
- 5.3 New products outside present product line  
New factory for oxygen, argon, nitrogen etc. is going to start up this summer.
- 5.4 Projected market demand  
There is a possibility to increase the market share.
- 5.5 Projected plant capacity  
Expansion over present plant capacity is the aim.

6. COMMENTS

The owner has great experience in the field.  
The financing capability seems good.



Recipient enterprise

Egyptian Society for Soldering Supplies  
P.B. 101  
Cairo  
Egypt

Contact person: Mr. Saied Ishandar Farag, Director

Technological requirements of the recipient enterprise

- o Improve finish of the present products.
- o Update gas welding and cutting technology.
- o The manufacturing technology for precision nozzles.

Partner enterprise

Elgasvets AB  
Box 306  
S-443 01 Lerum  
Sweden

Contact person: Mr. Anders Alfredson, Managing Director

Available technology of the partner enterprise

Elgasvets AB is a well known Swedish manufacturer of welding equipment with a wide range of high quality products. For further information please refer to the attached catalogue.

Proposed framework for future collaboration

During several phone calls in September 1982 Mr. Anders Alfredson has shown interest in the project after taking part of the information available on Egyptian Society for Soldering Supplies. The following sketch on future collaboration has been discussed:

- o Elgasvets AB will supply technology for the manufacturing of precision nozzles and the upgrading of the present products.
- o Egyptian Society for Soldering Supplies will be the agent for the product programme of Elgasvets AB within Egypt and the neighbour countries.

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Further information requested by the partner enterprise

- o Which is the potential market situation in Egypt and the neighbour countries at present?
- o Please describe the marketing organization for the welding equipment and the welding gases.
- o Does the gas plant collaboration with Lindhe include welding technology and equipment?

## ANNEX NO. 15

COORDINATING AGENCIES

## EGYPT

Eng. & Ind. Design Develop. Center - EIDDC  
P.O. Box 2267 - CAIRO (mail address)  
203 Pyramids Road - Giza (visiting address)  
Phone: 85 35 44, 85 25 50, 84 69 83, 84 53 38  
Telex: 389 TANFIZ UN

Dr. Eng. Yusef K. Mazhar, Director General  
Eng. Ezz El-Sharkawy, Mgr of Gen. Dep. of S.S.I. and Training  
Eng. Nabil H. soliman Mgr of S.S.I. & Extension Services Dep.  
Mr. Otto P. John, S.S.I. Extension Services Adviser

## KENYA

Ministry of Industry  
P.O. Box 30418 NAIROBI (mail address)  
Kenya House, Koinange/Monrovia Street (visiting address)  
Phone: 33 28 11

Mr. S.S. Gill  
Mr. Kenany  
Mr. Odera

## INDIA

Ministry of Industrial Development  
Nirman Bhavan (South Wing), 7th floor  
Maulana Azad Road  
NEW DEHLI 110011  
Phone: 38 49 11

Mr. Kamal K. Kapoor, Deputy Director

INDIA - ANDHRA PRADESH

Andhra Pradesh S.S. Industrial Development Corpn. Ltd.  
5-9-58/B, Fateh Maidan Road  
Parisrama Bhavanam. Basheer Bagh  
HYDERABAD - 500029  
Phone: 353 11  
Telex: 155-683

Mr. Umepathy, Managing Director  
Mr. R.K. Celly, General Manager

INDIA - KARNATAKA

Karantaka State S.S. Industries Development Corpn. Ltd.  
Industrial Estate Rajajinagar  
BANGALORE - 560044  
Phone: 800 37  
Telex: 0845-8182 KSIC IN

Mr. S.R. Vijay, Managing Director

INDIA - TAMIL NADU

Directorate of Industries  
Government of Tamil Nadu  
MADRAS - 600005  
Phone: 84 81 73, 887 53

Mr. N. Alnimoolam, Director  
Mr. G. Narayanan, Joint Director

SRI LANKA

Industrial Development Board  
615, Galle Road  
MORATUWA  
Phone: 072-490, 072-326

Mr. P. Gunawardena, Chief Engineer

SWEDEN

Scandiaconsult AB  
P.O. Box 4560  
S-102 65 STOCKHOLM  
Phone: 08-714 70 00  
Telex: 17496 CONSULT S

Mr. Thomas Grahn  
Mr. Håkan Sandlund

**UNIDO****UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**

VIENNA INTERNATIONAL CENTRE

P.O. BOX 300, A-1400 VIENNA, AUSTRIA

TELEPHONE: 26 310 TELEGRAPHIC ADDRESS: UNIDO VIENNA TELEX: 135612

REFERENCE: 452/34

February 1983

## A I D E - M E M O I R E

MEETING ON PLANT LEVEL CO-OPERATION FOR  
SMALL AND MEDIUM SCALE ENTERPRISES

Malmö, Sweden, 5 - 8 April 1983

A. Background Information

The development of small-scale industry in developing countries is generally acknowledged as an effective tool for

- a) achieving a well balanced economic growth among urban and rural areas, e.g. increasing the employment opportunities for local population in non-metropolitan areas,
- b) strengthening indigenous technologies and managerial capabilities for more self reliance.

It is also recognized that the small-scale industry sector in developed countries constitutes a sound base of the industrial structure in those countries. In most cases small industries in developed countries are suppliers of various industrial products and components which enter into the production of larger enterprises. While the capacity for innovative and competitive industrial technologies has been a decisive factor in the survival of small enterprises in developed countries, their relatively limited resources, however, have reduced their capabilities to operate beyond a limited geographical area.

Given the opportunity, small enterprises in developed countries may prove to be exemplary partners for co-operation with equivalent enterprises in developing countries whereby they can provide appropriate technologies required for accelerating the industrialization process of those countries.

It is within this frame of understanding that a project for co-operation at plant level was launched with the aim of establishing industrial and economic co-operation between small enterprises in Sweden and similar enterprises in selected developing countries on the basis of equitable and mutually beneficial terms.

These selected developing countries are Egypt, India, Kenya and Sri Lanka.

The development of project has reached a stage that some 14 collaboration proposals have been identified. The meeting is therefore called to elaborate in detail on these proposals and to negotiate on terms and conditions for their implementation.

B. Objectives of the Meeting

1. The creation of an appropriate environment in which entrepreneurs from India, Sri Lanka, Egypt and Kenya can negotiate with entrepreneurs from Sweden on the appropriate transfer of technology on the basis of preidentified project opportunities;
2. The identification of UNIDO inputs for those project proposals which will receive technology adaptation prior to its application by the recipient enterprise as well as other necessary inputs to be provided by other sources.

C. Participants

- Representatives of enterprises from India, Egypt, Kenya and Sri Lanka, whose project proposals have been accepted by UNIDO for promotion;
- Representatives of enterprises from Sweden, who have expressed interest to negotiate their future co-operation towards implementation of the project proposals accepted for promotion;
- Senior representatives of the co-ordinating agencies in Sweden, India, Egypt, Sri Lanka and Kenya;
- Representatives of investment and financing institutions in Sweden;
- Representatives of the Swedish International Development Authority (SIDA).

D. Language

All material and documentation for the meeting will be English only.

E. Financial Arrangements

UNIDO will provide one representative of the selected enterprises and one representative of the co-ordinating agencies from India, Egypt, Kenya and Sri Lanka, either with a roundtrip economy air ticket from their home city to Malmo, or with per diem for the duration of the meeting in accordance with the UN rate prevailing at present (\$60).

Participants are requested to bear the following costs:

- all expenses in the respective country related to attending the meeting; visas, vaccinations, etc.;
- salary and related allowances for participants during the period of the meeting;
- roundtrip ticket of per diem allowances.

UNIDO will not assume any responsibility for the following expenditures:

- a) costs incurred by participants with regard to any insurance, medical bills or hospitalization fees in connection with attending the meeting;
- b) compensation in the event of death, disability or illness of participants in connection with attending the meeting;
- c) any additional costs incurred due to travel other than by direct route and authorized mode;
- d) loss of or damage to personal property of participants while attending the meeting;
- e) purchase of personal belongings and compensation for damage caused to them by climatic or other conditions;
- f) travel or any other costs incurred by dependants who might accompany the participants.

F. Place of Meeting

The meeting will take place in the Skyline Hotel, Stadiongatan, Malmo, Sweden. Tel.Int. 46/4080 300 Telex: 33570

A block reservation for participants of the meeting has been secured in the same hotel. Participants are requested to communicate the date of arrival and room requirement directly to the meeting co-ordinator in Sweden:

Thomas Grahn  
Scandiaconsult  
Box 17040  
20010 Malmö, Sweden  
Tel. 040 10 00 80

G. Organization

A formal introduction is scheduled to take place at 10.00 hours on 5 April 1983. Individual negotiations will commence from the afternoon of 5 April onwards.

H. Miscellaneous

Annexed is a guide for the convenience of the participants with respect to communications, visa requirements and currency. Also annexed to this aide-mémoire is:

1. Malmo tourist map,
2. Schedule for buses Kastrup Airport - Malmo Central Station,
3. Schedule for buses and hydrofoils Kastrup Airport - Malmo,
4. Schedule for buses Sturup Airport - Malmo Central Station,
5. Information about the Swedish customs regulation,
6. Information about Hotel Skyline, Malmo.

For all additional information please refer to:

1. Mr. Thomas Grahn  
Scandiaconsult  
Box 17040  
20010 Malmo, Sweden  
Tel: 040 10 00 80
2. Mr. Wafa Kamel  
Industrial Development Officer  
UNIDO  
P.O. Box 300, A-1400  
Vienna International Centre  
Austria  
Tel: 2631 00  
Telex: 135612



Malmö

1983-04-05

## UNIDO CONFERENCE

MALMÖ, SWEDEN, 1983-04-05

## PARTICIPANTS

Andersson, Göran  
Export ManagerAB Somas  
Säffle, SwedenBjörk, Gösta  
Managing DirectorSkandinaviska Chuckfabriks AB  
Tyringe, SwedenBlom, O.T.  
Managing PartnerAlpex Engineering & Trading Co  
Maharagama, Sri Lanka

Cramwinckel, Joppe

UNIDO  
Vienna, AustriaDesai, Harsh C.  
DirectorElmeca Works  
Karnataka, India

Ehrenborg, Stellan

Swedfund  
Stockholm, SwedenElfberg, Mats  
Managing DirectorWestlings Sägbladsfabrik AB  
Vansbro, SwedenFransson, Per-Gunnar  
Marketing DirectorTorsten Ullman AB  
Moheda, Sweden

Grahm, Thomas

Scandiaconsult  
Malmö, Sweden

Gunawardene, P.

Ind. Dev. Board  
Moratuwa, Sri LankaIvarsson, Roy  
Managing DirectorStorebro Bruks AB  
Storebro, Sweden

Kamel, Wafa

UNIDO  
Vienna, Austria

Kittur, A.

Elmeca Works  
Karnataka, IndiaLadha, S.K.  
Executive DirectorBDK Valves P. Ltd.  
Karnataka, India

Lavestam, U.

Swedish Trade Council  
Stockholm, Sweden

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Lindblad, L.	SIDA Stockholm, Sweden
Maini, Sudarshan K. Chairman	Maini Precision Products P. Ltd. Bangalore, India
Muniswamy, C. Managing Director	KSSIDC Bangalore, India
Murelius, O	SIDA Stockholm, Sweden
Nehru, Ashok	Swedfund New Delhi, India
Ohlsson, Bengt Managing Director	Lofab Square AB Malmö, Sweden
Olsson, Hasse	Skandinaviska Chuckfabriks AB Tyringe, Sweden
Pandurangam, J. General Manager	APSSIDC Hyderabad, India
Rao, V.P. Managing Director	Indo Hacks Ltd Hyderabad, India
Ray, D.	Embassy of India Stockholm, Sweden
Sandlund, Håkan	Scandiaconsult Stockholm, Sweden
Shivashankar, B.R. Managing Partner	Toolcraft Bangalore, India
Sonalkar, Ravi C. Chief Executive	Sonalkar Tool Works Karnataka, India

