



TOGETHER
for a sustainable future

OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.



TOGETHER
for a sustainable future

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as "developed", "industrialized" and "developing" are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

Reference No.

7/10

UNITED STATES
OF AMERICA

(1) HOT POWDER METAL FORMING AND CONVENTIONAL POWDER METALLURGY FOR ELECTRODES

- (1) HOEGANES CORPORATION, River Road and Taylor Lane, Riverdale, New Jersey, U.S.A.; States of America; Office: HOEGANES, Riverdale, N.J.; Tel. or phone: (201) 641-1400; Phone: (201) 641-1400; Contact: Mr. S. Brattin, Research Manager.
- (2) Private; Sales: Approx. \$22,150,000; Capital: No. of employees: 1,000; Main nature of business: Production of iron, steel and ferrous alloy powders.
- (3) Knowhow covering all aspects of production of metal powders at normal and elevated temperatures, especially the coatings required for welding electrodes.
- (4) Will sell knowhow under appropriate conditions.

Reference No.

7/11

JAPAN

(1) PRODUCTION OF REDUCED IRON POWDER

- (1) KAWASAKI STEEL CORPORATION, New Yurakucho Bldg., 11 Yurakucho, Chiyoda-ku, Tokyo, Japan; Office: Riverett Corp Tokyo; Phone: "RIVERETT" 5-5101; Contact: Mr. Minoru Ikeda (General Manager).
- (2) Private; Capital: \$10,000,000; Net sales: \$34,100,000; No. of employees: 10,000; Main nature of business: Iron and Steel Manufacturer.
- (1) Technology covering the solid pulverization process which uses pulverized low-carbon steel filings and fillings and also the melting process in which steel is atomized and droppings are collected, or finally the electrolytic process, all of which produce iron powders, are offered.
- (2) We are ready to negotiate for detailed conditions as mentioned above depending upon specific interests of importers, taking into consideration type, scale and characteristics of their proposals.

Reference No.

10/8

ITEMS AT 10/8
B. AVAILABILITY

(1) **MANUFACTURER**

- (a) **MONTEFALCO S.p.A.**, Via dei Mancini, 1, Montefalco, Umbria, Italy. Director: Mr. G. P. Puccetti. President: Mr. G. P. Puccetti. General Manager: Mr. G. P. Puccetti. Technical Manager: Mr. G. P. Puccetti.

- (b) **Private Capital: Lire 1,000,000,000.00. Total assets: Lire 1,000,000,000.00. Current assets: Lire 1,000,000,000.00. Current liabilities: Lire 1,000,000,000.00.**

- (c) Modern stainless steels were developed to provide the required resistance against attack from oxygen containing metals at lower heat. These steels are very corrosion resistant to stainless steel, titanium, stainless steel, Inconel, X-50CrMoV18-12, manganese, aluminum, copper, zinc, tin, carbon and low-alloy steels.

Modern stainless steels have been developed to provide resistance to oxygen containing metals at lower heat. These steels are very corrosion resistant to stainless steel, titanium, stainless steel, Inconel, X-50CrMoV18-12, manganese, aluminum, copper, zinc, tin, carbon and low-alloy steels.

- (d) Nuclear reaction research, thermal insulation, power plant equipment, aircraft, water supply pipelines, etc., etc.

- (e) (i) Research & Development Department, consisting of expert technical staff, responsible for planning, development of new products, technical publications, test of materials, life testing, analysis of specimens, required for production, responsible for the design of instruments and the production of the specified components.
- (ii) The following are all arrangements made available:
- (a) Long-term equipment arrangements of time and manpower, including:
 - (i) Technical arrangements. The recipient organization must make available their time and manpower to carry out segments by jointly establishing a committee of three persons to represent each organization.
 - (ii) All arrangements in US currency or New York funds, without any reduction of taxes.

Reference No.

10/9

A

(1) **MANUFACTURER** **MONTEFALCO S.p.A.**, Via dei Mancini, 1, Montefalco, Umbria, Italy. Director: Mr. G. P. Puccetti. President: Mr. G. P. Puccetti. General Manager: Mr. G. P. Puccetti. Technical Manager: Mr. G. P. Puccetti. General Manager: Mr. G. P. Puccetti.

- (2) **Private Capital: Lire 1,000,000,000.00. Total assets: Lire 1,000,000,000.00. Current assets: Lire 1,000,000,000.00. Current liabilities: Lire 1,000,000,000.00.**

- (3) The **MANFATTURA** of electrical components of aluminum and its alloys, especially those containing aluminum.

The following are all arrangements made available:

- Software development and transfer.
- Anti-corrosion and lubrication.
- Weathering and fireproofing.

Non-transferable Trade Marks.

- (4) **Geometric features of aluminum frame, assembly, etc.**

- (5) **Licensing arrangements** grant right of license and operation exclusive to the manufacturer and his agents - to the recipient party to operate. **Training** of technical personnel will be arranged for plant operation. **Technical assistance** for continuing plant operation will be granted.

Reference No.

10/10

B

(1) **GENERAL ARRANGEMENTS** **MONTEFALCO S.p.A.**

- (a) **MONTEFALCO S.p.A.**, Via dei Mancini, 1, Montefalco, Umbria, Italy. Director: Mr. G. P. Puccetti. President: Mr. G. P. Puccetti. General Manager: Mr. G. P. Puccetti. Technical Manager: Mr. G. P. Puccetti. General Manager: Mr. G. P. Puccetti.

- (b) **Private Capital: Lire 1,000,000,000.00. Total assets: Lire 1,000,000,000.00. Current assets: Lire 1,000,000,000.00. Current liabilities: Lire 1,000,000,000.00.**

(1) THERMIC HEAT TREATMENT AND REMOVING DEFECTS

- (a) METALURGY INC., P.O. Box 1, Culver City, Calif. 90230, U.S.A.
Phone: 213-822-2424; Contact: Mr. Leonard M. Blumenthal (President).

(b) Private; Capital: \$13 million; Sales: \$13 million; No. of employees: 100; Main nature of business: Metallurgical processes.

(c) Complete equipment for annealing, twisting and straightening vacuum heat treaters, furnace, etc.; complete technology and also furnace. Various pieces of equipment can be supplied by the firm.

(d) Will sell equipment and operating know-how; expert assistance required for installation, application of technology on application of their equipment to specialty metals firms.

11/7

(2) HEAT TREATMENT AND REMOVING DEFECTS

- (a) NIKKAN INDUSTRIE INGENIERIE, Postfach 117, 7000 Stuttgart, Federal Republic of Germany
Chairman: Dr. Ing. H. W. Klemm; Sales: DM 10 million; Profit: DM 1 million; Contact: Mr. K. Frey.

(b) Private; Business: DM 1 million; profit: No. of employees: 30; Main nature of business: Manufacture of heat treatment and foundry equipment.

(c) The necessary knowhow to manufacture heat treating and remanufacturing installations will be given by license agreement. Knowhow for the manufacture of automated coil and bar heating, annealing and the various parts of the processing furnace at plants will also be made available.

(d) A license agreement will be negotiated which will cover all drawings for existing equipment, the know-how, knowhow for the erection of the plant and start-up operation. In the license agreement will be included provision for training.
NIKKAN can give out an consultant for the construction of the plant for a fee, amount which will depend on the value and volume of products to be manufactured in the plant, etc.

11/8

(3) DESIGN AND MANUFACTURE LINE FOR THE PRODUCTION OF COILED COIL

- (a) NIPPON STEEL K.K., 1-1 Otemachi, Chiyoda-ku, Tokyo, Japan
Chairman: Saito; Sales: CME 100; Contact: Mr. Junichiro Yamada (General Manager).

(b) Private; Capital: \$13 million; Sales: \$13 million; No. of employees: 100; Main nature of business: Steelmaking; Annual capacity 100,000 metric tons; Steelmaking and Steel-melting; Annual capacity 100,000 metric tons; Steelmaking and Steel-melting; Annual capacity new building = 1.4 million metric tons.

(c) 1. As compared with the melt strip method to the coiled coil and wire drawing, the main advantage is the process is shorter by 40%. That is very economical and favorable to the production and the period before delivery.
2. Defects in products are reduced.
3. This line requires only a very small space and reduced total construction cost of plant and plant labour saving.

(d) Patent; Knowhow; Licensing policy.

11/9

(4) TECHNIQUES FOR MANUFACTURING RAIDS BY THE HIGH-FREQUENCY ROLLING METHOD

- (a) NIPPON STEEL CORPORATION, 1-1 Otemachi, Chiyoda-ku, Tokyo, Japan
Chairman: NIPPON STEEL TOKYO; Sales: CME 100; Contact: Mr. Makoto Okumi (Director).

(b) Private; Capital: \$10.5 million; Sales: \$10.5 million; No. of employees: 100; Main nature of business: Manufacture and sale of iron and steel products, chemical products and basic iron and mineral products.

11/10

- ¹⁷) The equipment was purchased by the author from a local hardware store for \$100.00. It included a 10' x 10' x 10' wooden frame, two 10' x 10' x 10' wooden walls, and a 10' x 10' x 10' wooden roof. The total cost of the equipment was \$100.00.

The results are available in two formats:

1.00 Wires 100,000 ft, 0.0001 in. dia., 100 ft. weight, 1 lb. A weight
 1.00 Wires 100,000 ft, 0.0001 in. dia., 100 ft. weight, 1 lb. A weight

- (4) Multi-dimensional, full complementarity, approach.
 - (5) Presently known analytic limit of perturbative quantum field theory.

Refrigerator No. 12/20
1) REFRIGERANT (Machin: Insulating Fluid, Mineral Oil, Kerosene, Gasoline, Benzene; Toxic: Chemicals, Oily; Thermal: 100° F.)

- (ii) Information technology, including computer hardware, software, databases, networks, communication technologies, cloud computing, Internet of Things, big data, machine learning, artificial intelligence, and robotics.
 - (iii) All financial, telecommunications, etc.
 - (iv) Previous know-how and/or plant equipment required to manufacture products.

- (e) Present knowledge of or plant applications in problems.

Reference No. **12/21**

UNITED KINGDOM

- (1) SETTING UP OF A WELDING LABORATORY
- (2) THE WELDING INSTITUTE, Atinston Hall, Atinston, Cheshire CH5 2AJ, United Kingdom
Mr. A.P.M. Brimhwaite - Manager, Welding Services.
- (3) Budget: £1,000,000 per annum for 100% Research and Development

- (4) Advice and practical help in writing up working instructions and the like:

 - Assessment of requirements.
 - Design and layout of facilities.
 - Recommendations on equipment needed.
 - Recommendations for staffing.
 - Training of staff.

The above will include all aspects of appropriate such as, welding, cutting, grinding, cleaning, etc., application of welding processes, training of welding engineers and operators, new but practical methods, inspection and qualification.

(5) Welding is the most important way of assembling metal parts and structures, plant or equipment must be monitored and controlled and this requires an organization run by the industry, not a single institution.

(6) Initial assessment, preparation of plans and help in implementation would be on a confidential basis. After the welding laboratory is set up continuing advice and assistance can be obtained through Membership of the Welding Institute.

Reference No. **12/22**

(1) WELDING AND WELDING METALLURGY ENGINEERING

(2) WELDING TECHNOLOGY INC., 9101 SW Chestnut, Beaverton, Oregon, United States of America.
Contact: Mr. Don B. Price (President and Technical Director), 9101 SW Chestnut, Beaverton,
Oregon, Washington 97005, USA (phone: (503) 644-2211).

(3) Private; Adequate capital, incorporating two years; R&D emphasis: Welding
& casting; Three branch offices on West Coast of USA; Main offices located at:
Patent "State-of-the-Art" and technical information on various welding processes.

- (c) Known to customer; (i) Application of the know-how to the production of rings and flanges, including design, equipment, implementation of the plant, supervision of construction, training of personnel, etc.; (ii) Transfer of the know-how to the recipient, including design, equipment, implementation of the plant, supervision of construction, training of personnel, etc., required for the production of rings and flanges according to the know-how.
- (d) Known to customer; (i) Application of the know-how to the production of rings and flanges, including design, equipment, implementation of the plant, supervision of construction, training of personnel, etc.; (ii) Transfer of the know-how to the recipient, including design, equipment, implementation of the plant, supervision of construction, training of personnel, etc., required for the production of rings and flanges according to the know-how.
- (e) Preferred payment policy for: payment each month according to actual costs without profit margin, up to 12 months. Payment shall be in American dollars for delivery of the first 100 units, and regularity may be guaranteed, provided that payment is made in American dollars.

Reference No.

5/14

CALIFORNIA

(1) OFFICIAL PUBLISHING OF DESIGN AND PLANT

(2) ATLAS STEEL COMPANY, Central Street, Walling, Ontario, Canada N0A 1L0; Tel. 613-732-1111; Telex: 61-1111 or 1-1111; Fax: 613-732-1111; E-mail: ascon@teluslink.ca; Web site: www.ascon.ca.

(3) Private; Date: \$100,000 per year; Period: 12 months; Payment: Monthly payments, minimum amount: Minimum cost of tooling, installation, training, and maintenance.

(4) Complete set of processing standards, drawings of processed and all equipment, etc. (etc.) which would include both theoretical and practical instructions. Described in detail, including the details of the start-up of operations in the developing country.

(5) Royalty tolley; training of recipients; availability for contact with recipients; no restrictions provided or available.

Reference No.

5/15

PROGRESS

(1) OFFICIAL PUBLISHING OF DESIGN AND PLANT

(2) GEMÉTRO-IGC, Avenue des Chênes, 17, 67300 Haguenau, France; Tel: +33-388-51-10-00; Telex: 610006; Fax: +33-388-51-10-00; E-mail: gmetro@wanadoo.fr; Web site: www.gmetro.com.

(3) Private; Major procurement of rings and flanges; Location: France; Date: 1998; Period: 12 months; Subject: Major procurement of rings and flanges; Minimum amount: \$100,000 per year; Maximum amount: \$1,000,000 per year; Main nature of business: Mining; Details: Mining plant can be financed by mining.

- (4) - Complete knowhow for the planning and design of the plant and machinery required to produce rings and flanges in all steel qualities (forging press, rolling mills, rolling mills, heat treatment, machining, finishing, quality control and plant services).
- Complete knowhow for the production of rings and flanges in different materials (carbon steel, stainless steel, alloy steel, etc.) in various sizes (from 100 mm to 1000 mm) in carbon and alloy structural steels, low chromium and high chromium stainless steels, as applied in the as rolled condition, rough machined, rough machined and finished, and fully machined according to drawing.
- (5) Rings for mechanical engineering works for first rolling works. Import of other materials required for industry.
- (6) Conclusion of an engineering agreement for a specified period covering all stages of construction of a new plant or for expansion of an existing plant.

Conclusion of knowhow and technical assistance agreements for specific periods with respect to the technological equipment, training of personnel in Gémetro's work, importation of Gémetro's technicians for commissioning of the plant and for initial production phases.

Conditions:

Marketing fee.

Technology and know-how normally applied against each payment (import duty, taxes, insurance).

5/16

PEANUT

- Q) What is the name of your company?
- A) "Sociedad Industrial de Plásticos," located in the city of Montevideo, Uruguay.
- Q) What is the nature of your business?
- A) Production of plastic articles, mainly for the food industry, paper industry, pharmaceuticals, etc.
- Q) What is the size of your plant?
- A) The plant has a capacity of approximately 100 tons per month.
- Q) What is the type of equipment used?
- A) The plant uses a variety of equipment, including injection molding machines, extrusion equipment, and various types of plastic processing machinery.
- Q) What is the quality of your products?
- A) The quality of our products is excellent, and we have received many awards and recognition for our products.
- Q) What is the market for your products?
- A) Our products are sold throughout Uruguay and neighboring countries, including Argentina, Brazil, Chile, and Paraguay.
- Q) What is the future of your company?
- A) We plan to expand our operations and increase our production capacity in the future.
- Q) What is the name of your company?
- A) "Sociedad Industrial de Plásticos," located in the city of Montevideo, Uruguay.
- Q) What is the nature of your business?
- A) Production of plastic articles, mainly for the food industry, paper industry, pharmaceuticals, etc.
- Q) What is the size of your plant?
- A) The plant has a capacity of approximately 100 tons per month.
- Q) What is the type of equipment used?
- A) The plant uses a variety of equipment, including injection molding machines, extrusion equipment, and various types of plastic processing machinery.
- Q) What is the quality of your products?
- A) The quality of our products is excellent, and we have received many awards and recognition for our products.
- Q) What is the market for your products?
- A) Our products are sold throughout Uruguay and neighboring countries, including Argentina, Brazil, Chile, and Paraguay.
- Q) What is the future of your company?
- A) We plan to expand our operations and increase our production capacity in the future.

5/17

PEANUT

- Q) What is the name of your company?
- A) "Sociedad Industrial de Plásticos," located in the city of Montevideo, Uruguay.
- Q) What is the nature of your business?
- A) Production of plastic articles, mainly for the food industry, paper industry, pharmaceuticals, etc.
- Q) What is the size of your plant?
- A) The plant has a capacity of approximately 100 tons per month.
- Q) What is the type of equipment used?
- A) The plant uses a variety of equipment, including injection molding machines, extrusion equipment, and various types of plastic processing machinery.
- Q) What is the quality of your products?
- A) The quality of our products is excellent, and we have received many awards and recognition for our products.
- Q) What is the market for your products?
- A) Our products are sold throughout Uruguay and neighboring countries, including Argentina, Brazil, Chile, and Paraguay.
- Q) What is the future of your company?
- A) We plan to expand our operations and increase our production capacity in the future.
- Q) What is the name of your company?
- A) "Sociedad Industrial de Plásticos," located in the city of Montevideo, Uruguay.
- Q) What is the nature of your business?
- A) Production of plastic articles, mainly for the food industry, paper industry, pharmaceuticals, etc.
- Q) What is the size of your plant?
- A) The plant has a capacity of approximately 100 tons per month.
- Q) What is the type of equipment used?
- A) The plant uses a variety of equipment, including injection molding machines, extrusion equipment, and various types of plastic processing machinery.
- Q) What is the quality of your products?
- A) The quality of our products is excellent, and we have received many awards and recognition for our products.
- Q) What is the market for your products?
- A) Our products are sold throughout Uruguay and neighboring countries, including Argentina, Brazil, Chile, and Paraguay.
- Q) What is the future of your company?
- A) We plan to expand our operations and increase our production capacity in the future.

Conclusion of knowhow and technical assistance agreements for specified periods with respect to basic technical documents, training of personnel in Creuse-et-Loire's works, preparation of plant for commissioning, for commissioning of the plant and for initial production period, for the other parts and for extension of existing plants.

Conditions:

- Engineering fee.
- Technology and knowhow normally supplied against cash payment (basic-fee).

Performance No.

5/18

France

(1) COLD ROLLING OF SILICON IRON STEEL SHEETS (5/18)

(2) CREUSE-ET-LOIRE, Branch Metalurgie, Department Assistance Techniques, 16, route de Paris, 36200 Paray-le-Monial, France; Cable: "FORGAILURE - PARAY"; Tel.: 02.42.31.10.00; Contact: Mr. J. Bourassa (Head, Technical Department and Project).

(3) Private; Major producer of alloy and special steels; Capital: 10,000,000 francs; Sales: 10,000 million (1,000,000 metric t.); Production: 1,000,000 t.
Main nature of business: Special Steels and Mechanical Manufacture.

(4) Complete knowhow for the production of coil rolled silicon steel sheets (in coils), in straight or in slabs, in laminac or transformer grade.

(5) Magnetic circuits, laminations for motors, transformers, conductors, electric motors, etc.

(6) Conclusion of an engineering agreement for a specific period covering all electrical-engineering studies either for a new plant or for expansion of an existing plant.

Conclusion of knowhow and technical assistance agreements for specified periods with respect to basic technical documents, training of personnel in Creuse-et-Loire's works, preparation of plant for commissioning, for commissioning of the plant and for initial production period.

Conditions:

- Engineering fee.
- Technology and knowhow normally supplied against cash payment (basic-fee).

Performance No.

5/19

France

(1) COLD ROLLING OF SPECIAL STEEL STRIPS

(2) CREUSE-ET-LOIRE, Branch Metalurgie, Department Assistance Techniques, 16, route de Paris, 36200 Paray-le-Monial, France; Cable: "FORGAILURE - PARAY"; Tel.: 02.42.31.10.00; Contact: Mr. J. Bourassa (Head, Technical Department and Project).

(3) Private; Major producer of alloy and special steels; Capital: 10,000,000 francs; Sales: 10,000 million (1,000,000 metric t.); Production: 1,000,000 t.
Main nature of business: Special Steels and Mechanical Manufacture.

(4) Complete knowhow for the planning and layout of the plants and machinery required for the production of cold rolled steel strips in special steels (rolling mill, heat treatment, finishing, quality control and plants derived).

Complete knowhow for the production of cold rolled steel strips in the following grades:

- Mild and extra-mild steels for deep drawing.
- Hardened and hardened carbon steels.
- Constructional alloy steels.
- Stainless and heat resisting steels.
- Special stainless steels and stainless spring steels.

In coils or in straight lengths.

(5) Kitchen appliances, washing machines, automobile accessories, radios, fans, lamps, fireplaces, water and gas tubes, springs, hardware, tools, etc.

(6) Conclusion of an engineering agreement for a specific period covering all electrical-engineering studies either for a new plant or for expansion of an existing plant.

Conclusion of knowhow and technical assistance agreements for specified periods with respect to basic technical documents, training of personnel in Creuse-et-Loire's works, preparation of plant for commissioning, for commissioning of the plant and for initial production period.

Conditions:

- Engineering fee.
- Technology and knowhow normally supplied against cash payment (basic-fee).

1) **THE INDUSTRY** AND THE PROBLEMS OF MANUFACTURING

2) **MANUFACTURE OF PLATE SPREADERS**, Birmingham, United Kingdom (Birmingham, United Kingdom); Value: \$10 million; No. of employees: 100; Contact: Mr. Charles G. Pritchard (Manager).

3) **PLATE SPREADERS**: \$10 million; Value: \$4 million; Contact: Mr. Charles G. Pritchard (Manager).

4) **Technology relating to the various aspects of ballistics, together with the necessary finishing operations of the components involved, viz.:**
a) **Steel Plates (Armour);**
b) **Steel Plates (Fertilizer);**
c) **Steel Plates (Aircraft);**

5) **We are open to negotiate further extensions in fieldwork above, depending upon specific interest of applicants, taking into consideration type, quality and characteristics of their proposals.**

Reference No.

5/20

ALAN

1) **THE INDUSTRY** AND THE PROBLEMS

2) **SELLING COMPANY LTD., Birmingham, United Kingdom;** Value: \$10 million; Contact: Mr. A.M. Blacker (Manager).

3) **Estates; No. of employees: 100; We are open to negotiate further extensions in fieldwork above.**

4) **The successful operation of Termination upper-valley, roll neck bearings is dependent upon the correct design of the application. Our Technical Department is at the disposal of selling Mill bearings and engineers are prepared to commit to better finalizing their bearing to ensure the optimum conditions, both technically and economically.**

5) **We have established specific supervisor teams, to help customers to achieve the best bearing performance for their bearing needs.**

6) **In performance of bearings and its application when installation, lubrication, cleanliness, periodic maintenance and other maintenance factors are correctly controlled. Engineering Service Engineers concentrate throughout the world. This is available to all users, you can see.**

Reference No.

5/21

UNITED KINGDOM

1) **THE INDUSTRY** AND THE PROBLEMS

2) **THE FIRM LTD., Birmingham, United Kingdom; Value: \$10 million; Contact: Mr. John Edwards (General Manager).**

3) **Plates: \$10 million; Plates: \$10 million; No. of employees: over 100; Manufacturing: annual capacity = 10,000 metric tons; Annual capacity = 1.5 million metric tons; Building:**

4) **We will start plant development of Polypropylene stamping mill, continuous operation and sophisticated automation with high reliability.**

5) **At the today, computer software and technology to make the fully continuous operation more effective.**

6) **Software, Computer software, Information and operation engineering.**

Reference No.

5/22

ALAN

1) **THE INDUSTRY** AND THE PROBLEMS

2) **METAL ALLOY LTD., Birmingham, United Kingdom; Value: \$10 million; Contact: Mr. Charles Black (General Manager).**

3) **Plates: \$10 million; Plates: \$10 million; No. of employees: over 100; Manufacturing: annual capacity = 10,000 metric tons; Annual capacity = 1.5 million metric tons.**

Reference No.

5/23

ALAN

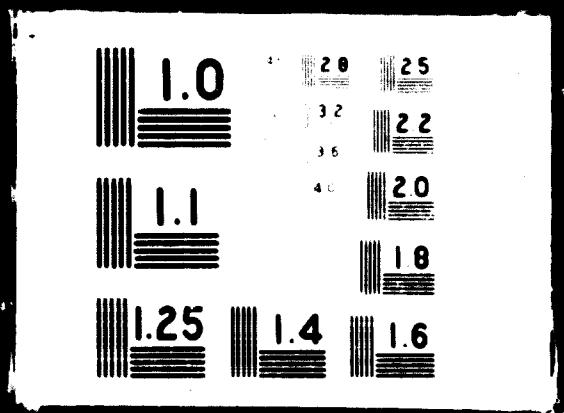
1

OF

3

D O

4974



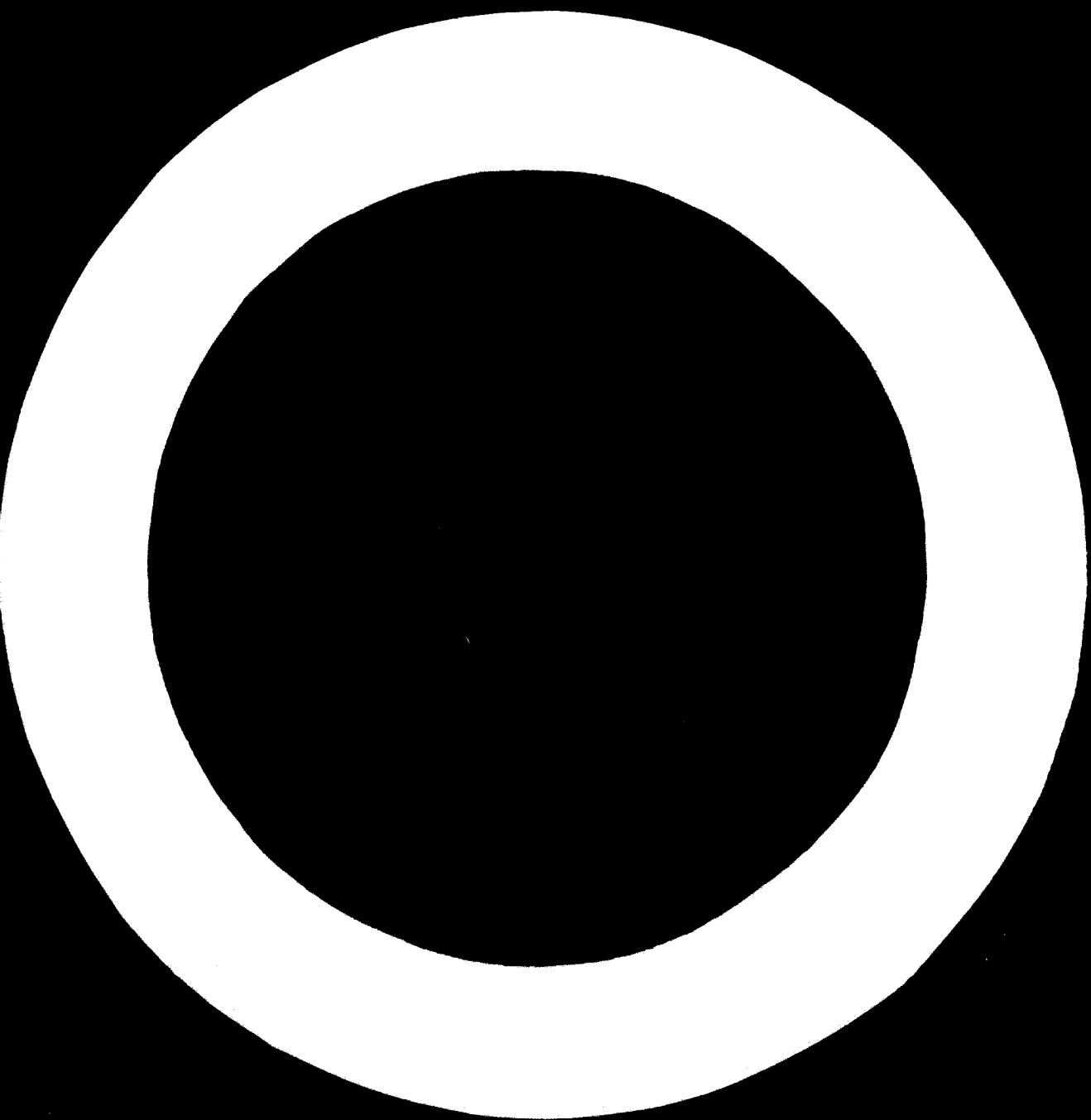


UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

04974

**PORTFOLIO
OF
SELECTED
METAL-TRANSFORMING
TECHNOLOGIES**







UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
VIENNA

**PORTFOLIO
OF SELECTED
METAL-TRANSFORMING
TECHNOLOGIES**

1D/10

july 1973

INTRODUCTION

The establishment of an efficient, modern metal-transforming industry is a vital element of the industrialization of a developing country. The wide range of processes that an industrialized metal-transforming industry can produce - such as rolling, forging, casting, drawing, stranding, powder, plasma, welding, etc., is equally as important to the manufacture of plant and equipment for other industries, for agriculture, for communications, for medical services.

Technologies in the metal-transforming industries are developing rapidly; new processes, improved materials, and more efficient operational practices are being introduced continually. The industrialized countries possess a wealth of knowhow in these areas, the potential value of which is innumerable and incalculable. However, lack of information has all too often prevented the industries of the developing countries from taking advantage of this knowhow.

One of the main roles of the United Nations Industrial Development Organization (UNIDO), as defined in General Assembly resolution 1746 (XXI) that set it up, is to assist in the dissemination of information on technological innovations and knowhow and in the adaptation and application of existing technology to the needs of developing countries. In pursuing its objective, UNIDO recognized the need for alternative participation in the transfer of knowhow to the developing countries. Accordingly, it initiated a project which specifically deals with the metal-transforming industries of Latin America. As a first step, UNIDO appealed to the metal industries of the developed countries for information about knowhow available for transfer. A gratifyingly large number of companies, organizations and institutions responded to the appeal and thereby made the portfolio possible.

A broad range of technologies, covering technological innovations and improvements in the application of established technologies, and consulting services are offered. In the field of casting, the knowhow offered embraces new types of alloys for casting and the techniques involved. These range from relatively simple techniques to intricate and complex investment casting techniques. Consulting services in tooling, planning, design, layout, organization and management are also available. The methods by which the knowhow and services can be obtained are also varied, ranging from lump sum payments through licensing and royalty agreements, to joint ventures.

The aim of UNIDO in undertaking this project is to promote direct contact between potential users of the technology and the organizations that are making it available. However, it would be timely to provide information and advice to the metal-transforming industries.

The portfolio describes the knowhow that is available in the industrialized countries at the present time. This material will be kept up to date and used to aid new technological and improvements. It will ensure that the latest and best available knowhow and equipment become available.

This document has been reproduced without formal editing.

HOW TO USE THE PORTFOLIO

The items of technology or knowhow included in the portfolio have been classified by process. Each group has been given a number as follows:

1. Casting
2. Forging
3. Drawing, Stranding etc.
4. Extrusion
5. Rolling
6. Tubemaking
7. Powder metallurgy
8. Sheet-metal forming
9. Miscellaneous methods of forming
10. Coating and protection
11. Heat treatment
12. Welding, brazing and joining
13. Miscellaneous finishing processes
14. Miscellaneous metalworking processes

It is often necessary to make frequent measurements to follow trends in the population. Such measurements reflect more traditional methods, though, for both fixed samples, the latest version of which is the sample size, and the statistical properties of the individual net worths, to change rapidly. If one does not want to deal with such difficulties,

which will probably require the return of the client. This, however, will not be the case with all, as is detailed below.

CHAPTER IV. THE DEVELOPMENT OF THE THERMALIZING ACTION.

SOMOC GENEALOGY PROJECT

CH 6: GRADING AND EVALUATION

When compared with organization after extracting the relevant information of the portfolio, which is often

study. A further aim is to evaluate the possibility of using the early technology developed in the project, namely, microsatellite technology, for the local diagnosis of patients with lung cancer, and thus programme, in the future, a clinical protocol which could provide a better information on which the treatment (e.g., the use of targeted drugs) should be performed.

¹ The author would like to thank the editor and anonymous referees for their useful comments and suggestions.

Premisión

El establecimiento de una eficiente y moderna industria de transformación es uno de los objetivos principales de la industrialización de un país en desarrollo. Los más variados procesos que se aplican para la transformación del extracto primario, al ser muy complejos no tienen una eficiencia óptima. Es por esto que el sector industrial, en particular, el petroquímico y la siderurgia, con sus necesidades de especialización, requiere de una serie de conocimientos que no se encuentran en el campo de la agricultura, ni en la ganadería, ni en la construcción ni en la pesca, sino que se encuentran en el sector industrial.

En la industria de transformación se requiere la transferencia de conocimientos que permitan aumentar la eficiencia operativa, así como mejorar las condiciones de trabajo y vida de los trabajadores. En este sentido, las industrias industriales más avanzadas permiten una mayor eficiencia y menor costo de producción, lo cual es fundamental para impedir la importación, disminuir el gasto exterior y fijar las bases de la independencia económica y social.

En el año 1970 se realizó la primera reunión entre el Comité Técnico Industrial (CTI) y el Comité de Transformación Industrial (CTI) de la Asociación General de los Trabajadores Mineros, Metalúrgicos y Siderúrgicos (ATM), con el fin de establecer la necesidad de transferir la industria de transformación a través de un organismo gubernamental que promoviera la transferencia de conocimientos y aplicaciones en la tecnología existente y las necesidades de los trabajadores. A través de la ATM se verificó que para alcanzar estos objetivos, tenía que participar activamente en la transferencia de conocimientos y aplicaciones en la industria de transformación de metales de América Latina. Como primer paso, se inició la industria de transformación de metales en los países desarrollados en el campo de la información, investigación, desarrollo tecnológico, responsables para la transferencia, así como las empresas mineras que participan de forma directa o indirecta. Estas empresas son las que tienen la posibilidad de transferir la industria de transformación de metales de América Latina.

La industria de transformación de metales, comprende la actividad científica, tecnológica y organizacional en la aplicación de tecnologías conocidas, y servicios de consulta. Por ejemplo, se incluye la investigación, los procedimientos técnicos ofrecidos, diferentes tipos de aleaciones de metales y sus formas, así como diferentes tipos de procesos industriales relativamente sencillos hasta intrincados y complejos. Dentro de esta actividad se incluye la transferencia de conocimientos y servicios de consultoría en materia de planeamiento, distribución del equipo, organización y acción de talleres de fundición. Los procedimientos mediante los cuales pueden ofrecerse estos servicios y conocimientos son también variados, y van desde los pagos globales, pagos por hora, pagos por acuerdo de licencias y sobre pago de comisiones, hasta la constitución de empresas filiales.

La ATM emitió este proyecto con la intención de promover el contacto directo entre los expertos y los potenciales de la tecnología y las organizaciones que la facilitan. Con tal fin, esta asociación pretende ofrecer la más completa información y asesoramiento a la industria de transformación de metales.

El Reportero describe los conocimientos técnicos que se están actualmente disponiendo en el país para la industria de transformación de metales. Este material se mantendrá al día y se someterá periódicamente a los expertos y perfeccionamiento de los proveedores y del equipo existentes.

El presente documento no ha representado ningún preaviso para la formación de la industria.

Método de utilizar el Reportorio

Los puntos de tecnología o conocimientos técnicos incluidos en el Reportorio se han clasificado por número. A cada uno de estos grupos se le ha asignado un número, conforme al detalle siguiente:

1. Fundición
2. Forja
3. Estirado, fabricación de cables, etc.
4. Extrusión
5. Laminado
6. Fabricación de tableros
7. Polivinilalurgia
8. Conformación de chapas
9. Otros métodos de conformación
10. Recubrimiento y otros métodos de protección
11. Tratamientos térmicos
12. Diversas modalidades de soldadura y unión de metales
13. Procesos varios de acero
14. Procesos varios de transformación de metales

Al principio del Reportorio hay un índice en que se clasifica su contenido y se describe brevemente la descripción de lo que se trata, indicando su fuente.

Se ha preparado una lista de especificaciones para cada punto de tecnología que figura en el Reportorio. La tecnología se especifica así: Punto - n.º del grupo en el que aparece la tecnología, un número de referencia cuyo primer dígito representa el grupo; el segundo elemento es el número de serie que corresponde a la lista de especificaciones dentro de ese grupo. Por ejemplo: 1/1 es la primera especificación que se refiere a procesos de fundición.

Cada nota de especificación contiene diversos apartados numerados. Para facilitar la consulta, dichos apartados continúan con sus datos correspondientes en una de las columnas que se incluyen entre paréntesis.

- (1) Presentación de la tecnología ofrecida
- (2) Nombre, dirección postal, dirección cablegráfica y número de telex y de teléfono de la firma u organización que ofrece la tecnología
- (3) Tareas, características y principales actividades de la firma u organización que ofrece la tecnología
- (4) Descripción de la tecnología ofrecida
- (5) Posibles aplicaciones de la tecnología
- (6) Forma y condiciones propuestas para proporcionar la tecnología

Cómo obtener la tecnología

Cuando una firma u organización que ya haya estudiado la sección o secciones pertinentes del Reportorio tiene interés más información o explorar las posibilidades de utilizar un proceso o tecnología descritos en el Reportorio, deberá ponerse en contacto con la OMUDI o con la organización local que coopere con la OMUDI en la realización de este programa, según proceda. Los posibles usuarios deberán citar la fuente de información sobre la que tienen un interés, es decir, el Reportorio de tecnologías para la transformación de metales (Portfolio of Metal-Processing Technologies). La correspondencia con destino a la OMUDI deberá dirigirse a:

Sección de Industria Metalúrgica
División de Tecnología Industrial
OMUDI
P.O. Box 40
A-1011 Vienna
Austria

La OMUDI pedirá a la firma u organización incluida en el Repertorio que se pongan en contacto con el MNU que haya formulado la consulta. Las negociaciones subsiguientes dentro de los plazos establecidos en el apartado anterior, si bien la OMUDI está dispuesta a conciliuar a dichas partes interesadas en el plazo establecido.

Si una firma u organización de América Latina desea solicitar información relativa a una transformación de metalurgia que no figuren en el Repertorio, o sobre la posible aplicación de determinadas tecnologías en determinadas condiciones industriales, podrá dirigirse a la Secretaría Industrial de la Organización Mundial del Comercio.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

En el caso de que la OMUDI no disponga de la información requerida, se pondrá en contacto con las autoridades nacionales de la industria metalúrgica de los países que se consideren más apropiados.

GENERAL INDEX

Y A T I S T E R D A Y T O M O R R O W

8

... 00101A 02 01/03/2014 04:23:00

Brackets are often used in text and tables
to set off portions of text or separate parts of a boundary.
For example, in
many languages, such as French and English, double quotes
are used to enclose quoted material. In other languages, such as
Spanish, inverted commas, such as " and " are used.

Photo 2 - DRAWING, STRANDING, ETC.

Wolfram filament wire production

ANSWER TO THE CHIEF

Section I - MaterialsSection IISection III - Organization

1/1	Extrusion of aluminum and its alloys
1/2	Extrusion of light-alloy sections and their further treatment by cold drawing, hot drawing, stretching, rolling, etc., for structural purposes
1/3	Extrusion of copper and its alloys
1/4	Extrusion of magnesium and its alloys
1/5	Extrusion of aluminum and its alloys
1/6	Extrusion of magnesium and its alloys
1/7	Extrusion of magnesium and its alloys
1/8	Extrusion of magnesium and its alloys
1/9	Extrusion of magnesium and its alloys
1/10	Extrusion of magnesium and its alloys
1/11	Extrusion of magnesium and its alloys
1/12	Extrusion of magnesium and its alloys
1/13	Extrusion of magnesium and its alloys

Section IV - Extrusion

2/1	Extrusion of aluminum and its alloys
2/2	Extrusion and cold drawing of quality steel sections
2/3	Extrusion of wire for extraction of aluminum
2/4	Know-how on conventional and hydrostatic extrusion
2/5	Extrusion of one-stage alloy shapes and parts
2/6	Extrusion of light-alloy sections for metal structures (window-frame) mainly
2/7	Extrusion of tube-type extrusion and cold drawing

Section V - Rolling

3/1	Rolling of alloy and special steels
3/2	Continuous rolling of metal sections
3/3	Manufacture of light-alloy roll products
3/4	Hot rolling of steel
3/5	Rolling of aluminum and its alloys
3/6	Manufacture of high-alloy steel bars
3/7	Hot rolling of steel
3/8	Hot and cold rolling of high-grade steel strips
3/9	Plating and cladding mills of 1 million tons capacity
3/10	Reheating furnaces for rolling mills
3/11	Production of soft iron composites as basic magnetic material
3/12	Design and supply of rolling mill equipment
3/13	Hot rolling of steel bars and wire rod
3/14	Knowhow covering the rolling of stainless and alloy steels
3/15	Circular rolling of rings and flanges
3/16	Rolling of special steel bars
3/17	Rolling of special steel plates
3/18	Cold rolling of silicon steel sheets (non oriented)
3/19	Cold rolling of special steel strips
3/20	Cold rolling and finishing of stainless steels
3/21	Application of roll nose bearing
3/22	Fully continuous cold tandem mill
3/23	Electric-resistance-welded (ERW) tube
3/24	Spiral line pipe
3/25	Automatic marking equipment

3/1	WEITZKAMPF EDISON - ITALY
3/2	SACMI OSBORN - UK
3/3	HANNOVER-MANNHEIM - AUSTRIA
3/4	METALLINSTITUT - NETHERLANDS
3/5	FOUNDRY - CANADA
3/6	CHESAPEAKE - FRANCE
3/7	TRACON, C.R.D. - INDIA (for extrusion) - SPAIN

3/1	JOHNS - AUSTRIA
3/2	PROGRESS PRAGUE - FR
3/3	COMINOT-SPICHIREY - FRANCE
3/4	LEHIGH STEEL - USA
3/5	MONTRÉAL EDISON - ITALY
3/6	SACMI OSBORN - UK
3/7	EDDINGERS - SWEDEN
3/8	FIDDERBURG - SWEDEN
3/9	KOMTI - HUNGARY
3/10	KOMTI - HUNGARY
3/11	CSMPOL IRON AND METALWORKS - HUNGARY
3/12	JAMES BURN - UK
3/13	PROORG - SWEDEN
3/14	ATLAS STEEL - CANADA
3/15	COMINOT-LOIRE - FRANCE
3/16	COMINOT-LOIRE - FRANCE
3/17	COMINOT-LOIRE - FRANCE
3/18	GRIMSBY-LOIRE - FRANCE
3/19	KAWASAKI STEEL - JAPAN
3/20	THOMAS - UK
3/21	NIPPON KOKAI - JAPAN
3/22	NIPPON STEEL - JAPAN
3/23	NIPPON STEEL - JAPAN
3/24	NIPPON STEEL - JAPAN

<u>Portfolio number</u>	<u>Object</u>	<u>Country of origin</u>
5/5	Light gauge coil roll former	GERMANY - GERMANY
5/6	Single pass mill line and hot strip rolling technology	GERMANY - GERMANY
5/7	Technique for manufacturing rails	GERMANY - GERMANY
5/8	Production technology of rolling stock parts (wheel, axle), and trucks	GERMANY - GERMANY

Group 1 - PIPEMAKING

6/1	Manufacture of steel tubes	DAIKIN - JAPAN
6/2	Fabrication of aluminum alloy tubes	DAIKIN - JAPAN
6/3	Production of thin-walled copper and aluminum tubes by silver rolling and drawing in coils	DAIKIN - JAPAN
6/4	Manufacture of collapsible aluminum tubes	DAIKIN - JAPAN
6/5	Production of steel tubes	DAIHO CO., LTD. - JAPAN
6/6	Cold-drawing of tubes	DAIHO CO., LTD. AND KAWASAKI - JAPAN
6/7	Continuous mandrel coiling device for use in pipe-rolling of complex tubes	DAIHO CO., LTD. AND KAWASAKI - JAPAN
6/8	Extrusion of copper tubes with closed ends	DAIHO CO., LTD. AND KAWASAKI - JAPAN
6/9	"Bunji Weld" tubing	DAIHO CO., LTD. - JAPAN
6/10	Tubes produced by centrifugal casting	DAIHO CO., LTD. - JAPAN
6/11	Electric resistance welded tubes	DAIHO CO., LTD. - JAPAN
6/12	Manufacture of tapered poles	DAIHO CO., LTD. - JAPAN
6/13	Production technology of straight seam welded pipes by roll bending	DAIHO CO., LTD. - JAPAN
6/14	Production technology of spiral welded pipe	DAIHO CO., LTD. - JAPAN
6/15	Production technology of electric welded steel pipe	DAIHO CO., LTD. - JAPAN

Group 2 - POWDER METALLURGY

7/1	Production of hardmetal by powder metallurgy	SHIAW - MALAYSIA
7/2	Parts fabrication by powder metallurgy	SHIAW - MALAYSIA
7/3		SHIAW - MALAYSIA
7/4	Powder metallurgy parts production	SHIAW - MALAYSIA
7/5	Manufacture by powder metallurgy of hard metal carbide tips and tools	SHIAW - MALAYSIA
7/6	Powder metallurgy technology	SHIAW - MALAYSIA
7/7	Production of improved grades of mixed ferrites for use in powder metallurgy	SUPERIOR CARBIDES INC. - MARYLAND
7/8	Tooling for sub-miniature powder metallurgy	SUPERIOR CARBIDES INC. - MARYLAND
7/9	Cemented carbide products	SUPERIOR CARBIDES INC. - MARYLAND
7/10	High purity powder production	SUPERIOR CARBIDES INC. - MARYLAND
7/11	Hot powder metal forming and conventional powder metal forming also coating of welding electrodes	SUPERIOR CARBIDES INC. - MARYLAND
	Production of reduced iron powder	SUPERIOR CARBIDES INC. - MARYLAND

Group 3 - SHEET METAL FORMING

8/1	Manufacture of precision products and welding tubes in light alloys	CHAMONIX INDUSTRIES - FRANCE
8/2	Equipment for determining deep drawing qualities of sheet metal	CHAMONIX INDUSTRIES - FRANCE
8/3	Training courses in sheet metal forming	METALFORM INDUSTRIES INC. - CANADA
8/4	Cold roll forming of steel sheet	WILHELMSEN - SWEDEN

SAFETY AND OPERATION

SAFETY AND

OPERATION

Part II - INDUSTRIALSection 1

- 10/1 Electrode technique, electric heating, plasma
10/2 Electrode technology of plasma cutting
10/3 Corrosion protection, passivation
10/4 Protection of metallic materials by the two-stage
 process
10/5 Preparation of galvanizing line

Section 2

- 10/6 Heat treatment, annealing
10/7 Heat treatment of austenitic stainless steel
10/8 Heat treatment in thermal insulation
10/9 Thermal insulation
10/10 Heat treatment of high-alloyed steels
10/11 Heat treatment of high-alloyed steel
10/12 Heat treatment in thermal insulation
10/13 Heat treatment of protective coatings
10/14 Heat treatment of protective coatings
10/15 Heat treatment of protective coatings
10/16 Heat treatment of protective coatings
10/17 Heat treatment of protective coatings
10/18 Heat treatment of protective coatings
10/19 Heat treatment of protective coatings
10/20 Heat treatment of protective coatings

Section 3 - HEAT TREATMENT

- 11/1 General of heat treatment of austenitic high-alloyed
 steels
11/2 Electrolytic precipitation of austenitic stainless steel
11/3 Preheat treatment in thermal insulation
11/4 Use of protective coatings in heat treatment of austenitic
 stainless and non-austenitic stainless
11/5 Surface nitriding heat treatment of austenitic stainless
 and austenitic ferrite and austenitic
 ferrite
11/6 Heat treatment of austenitic ferrite
11/7 Heat treatment of austenitic ferrite
11/8 Vacuum heat treatment and annealing austenitic
11/9 Heat treatment and hardening equipment
11/10 Heat treatment and hardening equipment
11/11 Heat treatment and hardening equipment
11/12 Heat treatment and hardening equipment
11/13 Heat treatment and hardening equipment
11/14 Heat treatment and hardening equipment
11/15 Heat treatment and hardening equipment
11/16 Heat treatment and hardening equipment
11/17 Heat treatment and hardening equipment
11/18 Heat treatment and hardening equipment
11/19 Heat treatment and hardening equipment
11/20 Heat treatment and hardening equipment

Section 4 - PREHEAT

- 12/1 Heat treatment
12/2 Heat treatment
12/3 Heat treatment
12/4 Heat treatment
12/5 Heat treatment
12/6 Heat treatment
12/7 Heat treatment
12/8 Heat treatment
12/9 Heat treatment
12/10 Heat treatment
12/11 Heat treatment
12/12 Heat treatment
12/13 Heat treatment
12/14 Heat treatment
12/15 Heat treatment
12/16 Heat treatment
12/17 Heat treatment
12/18 Heat treatment
12/19 Heat treatment
12/20 Heat treatment

Section 4 - WELDING, PLASMA AND CUTTING

- 13/1 Preparation of welding and cutting
13/2 Protective layer for plasma plating
13/3 Welding, plasma cutting, plasma spraying and electroslag
 welding
13/4 Apparatus for micro-plasma arc welding
13/5 Micro-plasma equipment for DC welding
13/6 Transformers for manual arc welding
13/7 Rectifiers for manual arc welding
13/8 Apparatus for explosive welding
13/9 Joining by short-temperature plasma treatment
13/10 Plasma welding
13/11 Welding steel fabrication
13/12 Improvement of weldability of metallic materials
 by plasma or electron beam fusion
13/13 Rectifiers for arc and plasma welding
13/14 Rectifiers for arc and plasma welding
13/15 Rectifiers for arc and plasma welding
13/16 Technical resistance of known plasma welding

- 14/1 Heat treatment
14/2 Heat treatment
14/3 Heat treatment
14/4 Heat treatment
14/5 Heat treatment
14/6 Heat treatment
14/7 Heat treatment
14/8 Heat treatment
14/9 Heat treatment
14/10 Heat treatment
14/11 Heat treatment
14/12 Heat treatment
14/13 Heat treatment
14/14 Heat treatment
14/15 Heat treatment
14/16 Heat treatment
14/17 Heat treatment
14/18 Heat treatment
14/19 Heat treatment
14/20 Heat treatment

Portfolio numberTitleCompany or organization

1/1	Production of welding rods and wires for hard-facing
1/2	Welding of austenitic stainless pipe with friction welding of high-speed steel cutting tools
1/3	Perforative spot welding
1/4	Cementing of metal parts
1/5	Setting up of a welding laboratory
1/6	Welding and welding metallurgy - engineering
1/7	Training in a coordination of R&D and training atmosphere
1/8	Welding and welding metallurgy - engineering
1/9	Welding and welding metallurgy - engineering
1/10	Welding and welding metallurgy - engineering
1/11	Welding and welding metallurgy - engineering

Group 1A - SURFACE AND FINISHING PROCESSING

1/1	Manufacture of cold-headed bolts
1/2	Manufacture of welded steel beams
1/3	Surface removal on steel bars or bars
1/4	Alloyed temperature drawing of steel bars
1/5	Heat treatment of metals
1/6	Microhierie and pickling process for steel strip
1/7	Furnace for pickling tonnell steel wire and other materials
1/8	Pickling of internal surfaces of hollow vessels before enameling
1/9	Finishing of metal components
1/10	Finishing of rolled and/or forged steel bars and wire rod
1/11	Refrigeration-free cooling of steel products

WITTEN-KÄRNTEN - SWEDEN

ITALSIDER - ITALY

LA SALLE STEEL - USA

LA SALLE STEEL - USA

HOKING STEEL - USA

MIDLAND INDUSTRIAL - USA

STAHLWERKE RÖCHLING-FIRBACH - FEDERAL REPUBLIC OF GERMANY

KENTI - HUNGARY

ROYAL SMALL ARMS FACTORY - UK

SCOPORS - SWEDEN

NIPPON KOKAN - JAPAN

Group 1B - METALLURGICAL PROCESSING

1/1	Utilization of maximum feed scrap
1/2	Technical information, storage and retrieval service
1/3	Manufacture of metal tools for cutting and forming
1/4	Manufacture of metal equipment
1/5	Manufacture of tungsten carbide tips and tips of tools
1/6	Manufacture of extruded rollers
1/7	Production of precision roller chains
1/8	Manufacture of trans. equality fittings and valves
1/9	Production of aluminum alloy bars and windows
1/10	Production welding, and hot-dip galvanizing of lattice-type structures
1/11	Manufacture of finished products in aluminum
1/12	Quality control for full-tempering steels
1/13	Manufacture of rolls for cold-rolling mills
1/14	Manufacture of structural framework
1/15	General technical assistance in metal transforming technologies
1/16	Manufacture of steel and aluminum bars
1/17	Technical information on tin and tin sheet
1/18	Production of steel cast and graft/production of cast iron cast and graft
1/19	Manufacture of leathers for bags and furniture
1/20	Diamond-cutting tool manufacture
1/21	Technology technology of coated poly.

MAGYAR - HUNGARY

AMERICAN SOCIETY FOR METALS - USA

DANKE PLAKMENTAL - DENMARK

DEUTSCHER STAATSSOZIALFONDO - AUSTRIA

HOY CARBIDES - UK

ITALSIDER - ITALY

PLANT KOMMAU - AUSTRIA

LÖHNTROM - FINLAND

MONTECATINI EDISON - ITALY

PAINTER BROS. - UK

MANSHOFFE-BURNSDORF - AUSTRIA

RESEARCH INSTITUTE FOR FERROUS METALLURGY - HUNGARY

STAHLWERKE RÖCHLING-FIRBACH - FEDERAL REPUBLIC OF GERMANY

SANDERS AND FOSTER - UK

METALLURGISCHE FABRIK TNO - NETHERLANDS

FELIX WALDMAN - AUSTRIA

TIN RESEARCH INSTITUTE - UK

FOUDRIES ET GRENAILLLES METALLURGIQUES (FGM) - FRANCE

GRUNDMANN - AUSTRIA

SAMUEL OSBORN - UK

SEKIGUCHI METAL INDUSTRIES - JAPAN

GROUP 1 - CASTING

Technology

1/1

- (1) PRESSURE DIE CASTING OF CORROSION-RESISTANT ALLOY
- (2) A.H. ANDERSSON and Co., AB, Viskarsträdgården 1, Box 10, 501 01 Borås; Sweden; Phone: 0 31/10 01 00; Contact: Mr. Arne Eriksson, Incentive Research and Development AB, Box 11074, 191 11 Fronnma 11, Sweden.
- (3) Private; A member of the Swedish Incentive Group; Main nature of business: Manufacturing fittings and valves for sanitary purposes.
- (4) The A.H. Anderson Company has developed a corrosion-resistant alloy that can be melted at low temperature and cast in die-cast and machined without difficulty. The company has considerable experience and knowhow in the field of choice of alloy and its properties, the design of tools and dies for casting, and the determination of suitable operating conditions. The use of AMETAL and the Anderson technique results in lower material costs and significant savings from the use of pressure die casting. The quality of the finished products is high.
- (5) Water tube fittings and valves for sanitary and other purposes.
- (6) A non-exclusive license covering manufacture, use, and sales will be offered to potential licensee. Written information and technical information will be made available; this will include not only the present technique, but also future developments. Technical assistance can be provided either at the Anderson works in Sweden or at the licensee's works. License conditions: Skr 1,000,000 per ton Ametal used, together with a payment of about Skr 90,000. Maximum annual royalties to be agreed between the licensor and licensee.

Technology

1/2

- (1) INVESTMENT CASTING OF SPECIAL STEELS
- (2) Gehr. RÖHNER and Co. AG, Postfach 17, A-1011 Vienna, Austria; Office: Stadtteil Wien; Telex: 1104, 1-8; Phone: 21-11-11; Contact: Mr. W. Freiger, Abteilung Technik 1, Firm SA, L. Centro Poncelet 77, Apartado 963, Lima, Peru.
- (3) Governmental; Major producer of special and alloy steels; No. of employees: 10,000; Capital: Several million; Main nature of business: Production of various types of special steels in various forms and finishes.
- (4) Complete knowhow for planning and layout of investment casting plants. Components of knowhow include operations relating to investment casting. Training of personnel in this work is required for this personnel for technical assistance in recipient's work.
- (5) Conclusion of knowhow agreement for specified period. Technology and knowhow normally applied in foundry basin, with additional cash payments. Licensing arrangements can also be negotiated. Technical and craft assistance can also be supplied, subject to agreement on terms.

Technology

1/3

- (1) IRON CASTINGS
- (2) BRITISH CAST IRON RESEARCH ASSOCIATION, Elvechurch, Telford, Shropshire TF5 3AB, United Kingdom; Cable: Ciria Birmingham; Phone: Redditch 0432; Contact: Mr. H. Morrogh (Director).
- (3) Mixed; Co-operative research, development, and consulting organization, with participation by government and private and nationalized industry; No. of employees: 100; Main nature of business: Consulting, research and development for the iron foundry industry.
- (4) Services available include: Assistance in all matters relating to the production of iron castings and their performance in service, including melting, moulding, coremaking, metallurgy of cast iron, physical properties, and non-destructive testing. Assistance in working up, manufacturing, installation and commissioning of new foundries. Financial analysis of new foundry investment. Assistance in the use of computers to production control and on quality control.
- (5) Expert consultancy available on fee-paying basis. Facilities available for visiting firms etc.

Technical Bureau

1/4

Technical Bureau

TECHNIQUE FOR CUTTING OF ALUMINUM ALLOYS USING A HORIZONTAL MACHINING PLATE

Institute "IMPERIUM TECHNICA", Il'yan, Leningrad; tel. 5-1111; phone: 5-8711; Contact: I. N. Kuznetsov. Scientific and Technical Program, Ministry of Machine Building, Moscow, Russia, Leningrad, 195101.

Key word: Aluminum; State-owned corporation for the design and construction of heavy engineering; Design-constructors; Research, design, manufacture of ferrous casting equipment; Manufacturing of research, research, design, manufacture of ferrous equipment, production of non-ferrous castings.

The VP-120 and VP-200 are fully automatic machines designed for precision die casting using a horizontal plate.

Data of technical characteristics given below:

locking force	t	130
opening stroke	time	30-50
die height	mm	100-150
horizontal plateau size	mm	300-400
stroke of two cylindrical punches	mm	10-15
central injection force	t	15
jetter stroke	mm	3-4
mass counter-pressure	kg/m ²	10
max. silicon dioxide	kg Al	1.5
box. shot weight	RW	17
water cooling	l/min	1/2
cycle time	min	10.300
weight	kg	360
dimensions	mm	1400
height	mm	1000
width	mm	1000

The technique can be applied under license, in the form of individual machine or complete mechanized production lines.

Technical Bureau

1/5

Technical Bureau

TECHNIQUE FOR CUTTING OF ALUMINUM ALLOYS WITH AN INERT GAS

Institute "IMPERIUM TECHNICA", Il'yan, Leningrad; tel. 5-1111 and 5-1112; phone: 5-8711; Contact: I. N. Kuznetsov. Scientific and Technical Program, Ministry of Machine Building, Moscow, Russia, Leningrad, 195101.

Key word: Aluminum; State-owned corporation for the design and construction of heavy engineering; Design-constructors; Research, design, manufacture of ferrous casting equipment; Manufacturing of research, research, design, manufacture of ferrous equipment, production of non-ferrous castings.

This technique is working with oxidizing agents. It is a plasma cutting technique. Casting (which is vertical) is conducted in fully or semi-oxidized, and more a burning shoulder.

The process permits the production of castings weighing up to 500 kg, with wall thicknesses of > 0 mm, which is 10 times greater than the productivity of existing methods, and quantity of over 500 atm.

Plasma cutting is carried out in a chamber of 1-mm. with a counter pressure equivalent to one third of the burning shoulder.

Burning can be made of a vertical pipe from a sealed furnace.

This technique produces cuttings free from faults and voids, with high strength and density.

It is an entirely new process, and a complete range of machine and equipment (VP400 and VP530) have been developed, to provide a mechanized production line for aluminum alloy casting.

The technique can be applied under license, in the form of individual machine or complete mechanized production lines.

The technique can be applied under license, in the form of individual machine or complete mechanized production lines.

The technique can be applied under license, in the form of individual machine or complete mechanized production lines.

The technique can be applied under license, in the form of individual machine or complete mechanized production lines.

The technique can be applied under license, in the form of individual machine or complete mechanized production lines.

The technique can be applied under license, in the form of individual machine or complete mechanized production lines.

The technique can be applied under license, in the form of individual machine or complete mechanized production lines.

- (1) MASS PRODUCTION OF MODIFIED CAST IRON
- (2) MIRD, DSO "Metalstroem", 1010 Sofia, Bulgaria; Phone: 3-20-11; Contact: Dipl.Eng. D. Manev, Ministry of Machine Building, Slovenskiy, Sofia, Bulgaria.
- (3) Governmental; Central research and development organization of the State foundry industry corporation; Main nature of business: Research, design, and development for the foundry industry.
- (4) Complete knowhow on the production of perlitic and nodular cast iron.

1/6

- (1) PRODUCTION OF HIGH-MALLEABLE CAST IRON CASTING WITH COMPLEX GEOMETRY
- (2) MIRD, DSO "Metalstroem", 1010 Sofia, Bulgaria; Phone: 3-20-11; Contact: Dipl.Eng. D. Manev, Ministry of Machine Building, Slovenskiy, Sofia, Bulgaria.
- (3) Governmental; Central research and development organization of the State foundry industry corporation; Main nature of business: Research, design, and development for the foundry industry.
- (4) Complete technological knowhow for production of grey inoculated cast iron.
The inventories of the material are as follows:
- a. Distinguishable casting structure;
 - b. Good mechanical properties ($G-35$ kg/mm 2 tensile strength, 100-120 N/mm 2 impact);
 - c. Good wear resistance;
 - d. Good machinability.

1/7

- (1) DESIGN OF HOT-BLAST STOOL FOR FOUNDRY USE
- (2) MIRD, DSO "Metalstroem", 1010 Sofia, Bulgaria; Phone: 3-20-11; Contact: Dipl.Eng. D. Manev, Ministry of Machine Building, Slovenskiy, Sofia, Bulgaria.
- (3) Governmental; Central research and development organization of the State foundry industry corporation; Main nature of business: Research, design, and development for the foundry industry.
- (4) An original design of hot blast cupola, with diameter of 100-200 mm. This is a closed structure, fitted with a furnace for incineration. It ensures a high standard of metal quality. It can operate on low-grade coke, and can utilize low-grade coke.

1/8

- (1) CONTINUOUS CASTING OF ALUMINUM BILLETS FOR SUBSEQUENT EXTRUSION OR FORGING
- (2) GRODDEK-PICHICHI, 10 avenue Marceau, Paris 15, France; Contact: G. Groddek-Leroy; Tel./fax: 01 50 16 06; Contact: A. Creysat (Head, Technical Assistance Department).
- (3) Private; Major French non-ferrous metals producer; Capital: 50 million F; Sales: 1,000 billion F; No. of employees: 1,500; Main nature of business: Primary transformation of aluminum: rolling, drawing and extrusion of all weight aluminum alloys.
- (4) The technology available covers the continuous casting of aluminum for subsequent aluminum forging operations. It is applicable to all aluminum alloys and to all kinds of equipment for continuous casting operations.
- The product can be either solid or hollow (for the manufacture of aluminum foil, aluminum foil rolling, for example).
- The knowhow covers all or part of the following:

1/9

Melting, refining, bath treatment (slagging, leaching, etc.)
 Design and realization of various equipment, especially those for multiple and casting
 Casting techniques
 Heat treatment
 Subsequent mechanical treatment (machining)
 Quality control
 Metal recovery from casting残渣.

The experience of Gendar-Pechiney is derived not only from its major French plants, but also from smaller operations in foreign subsidiaries, and means that the company is equipped to provide the best solution for each local situation.

(4) Gendar-Pechiney can offer the following assistance and knowhow, in part or complete:

- Basic technological documentation
- Assistance in setting up realistic manufacturing programmes
- Selection of basic equipment
- Specification of equipment and issuing invitations to tender
- Preliminary evaluation of tenders
- Assistance in selection of supplier
- Drawing and layout of plant
- Advice on ancillary equipment
- Supervision of installation of equipment
- In-plant training
- Consultancy
- Capital financial planning
- Advice on expansion of existing plant
- Knowhow on new products

Information No.

1/10

FRANCE

(1) DESIGN AND CASTING OF BLANKS FOR ALUMINUM ROLLING AND FORMING

(i) GENDAR-PECHINEY, 28 avenue Maréchal Foch, Paris 16^e, France; Owner: Gendar-Pechiney
 Capital: 100M; Phone: 73 01 00; Contact: A. Grevet (R&D), Technical
 Assistance Department.

(ii) Privaté: Major French non-ferrous metals producer; Capital: F 100 million;
 Sales: F 1,000 billion; No. of employees: 1,500. Main activity: Primary
 transformation of aluminium: rolling, drawing and extrusion of all wrought aluminium
 alloys.

(ii) The technology available concerns the semi-continuous casting of aluminium for subsequent rolling and forming. The plant can be cast to the largest sizes demanded by modern high-quality mills. All alloys can be cast, according to the properties required by customers. The desired properties in the final rolled product; for example, the internal structure needed for forming, for aircraft use, for aerospace engineering, painting, deep drawing, etc.

The knowhow can be all or part of the following:

- Melting, refining, bath treatments (slagging, leaching, etc.)
- Design and realization of various equipment, especially those for multiple and casting
- Casting techniques
- Subsequent mechanical operations (drilling, sawing)
- Preparation of materials
- Quality control
- Metal recovery from casting残渣.

The experience of Gendar-Pechiney is derived not only from its major French plants, but also from smaller operations in foreign subsidiaries, and means that the company is equipped to provide the best solution for each local situation.

(4) Gendar-Pechiney can offer the following assistance and knowhow, in part or complete:

- Basic technological documentation
- Assistance in setting up realistic manufacturing programmes
- Selection of basic equipment
- Specification of equipment and issuing invitations to tender
- Preliminary evaluation of tenders
- Assistance in selection of supplier
- Drawing and layout of plant
- Advice on ancillary equipment
- Supervision of installation of equipment
- In-plant training
- Consultancy
- Capital financial planning
- Advice on expansion of existing plant
- Knowhow on new products.

1/11

1/12

1/13

1/14

100% of the time, the user will experience a significant reduction in the number of errors made by the system.

For example, if the user enters a date such as "12/31/99", the system will automatically convert it to "1999-12-31". This is because the system has been programmed to assume that all dates entered by the user are in the format DD/MM/YY.

The system also includes a feature that allows the user to enter dates in the format MM/DD/YY, and the system will automatically convert it to the correct format.

- The system includes a feature that allows the user to enter dates in the format DD/MM/YY, and the system will automatically convert it to the correct format.
- The system includes a feature that allows the user to enter dates in the format MM/DD/YY, and the system will automatically convert it to the correct format.
- The system includes a feature that allows the user to enter dates in the format YY/MM/DD, and the system will automatically convert it to the correct format.
- The system includes a feature that allows the user to enter dates in the format YY/DD/MM, and the system will automatically convert it to the correct format.
- The system includes a feature that allows the user to enter dates in the format YY/MM/DD, and the system will automatically convert it to the correct format.
- The system includes a feature that allows the user to enter dates in the format YY/DD/MM, and the system will automatically convert it to the correct format.

The system also includes a feature that allows the user to enter dates in the format YYYY-MM-DD, and the system will automatically convert it to the correct format.

The system also includes a feature that allows the user to enter dates in the format YYYY-DD-MM, and the system will automatically convert it to the correct format.

1/15

The system also includes a feature that allows the user to enter dates in the format YYYY-MM-DD, and the system will automatically convert it to the correct format.

The system also includes a feature that allows the user to enter dates in the format YYYY-DD-MM, and the system will automatically convert it to the correct format.

The system also includes a feature that allows the user to enter dates in the format YYYY-MM-DD, and the system will automatically convert it to the correct format.

1/16

The system also includes a feature that allows the user to enter dates in the format YYYY-MM-DD, and the system will automatically convert it to the correct format.

The system also includes a feature that allows the user to enter dates in the format YYYY-DD-MM, and the system will automatically convert it to the correct format.

The system also includes a feature that allows the user to enter dates in the format YYYY-MM-DD, and the system will automatically convert it to the correct format.

(b) Capitalization of plant and equipment.

(c) Information on the organization, number of employees, and financial position of the respondent's firm and its foreign affiliates.

The various points are confidential. Please do not write to expand on any point or add any additional material.

1/17

Manufacturing

(1) Capital: 100 million; Capital: 100 million; Main nature of business: Manufacture of aluminum products; Number of employees: 1000; Financial position: Good.

(2) Capital: 100 million; Main nature of business: Manufacture of aluminum products; Number of employees: 1000; Main nature of business: Manufacture of aluminum products.

(3) Capital: 100 million; Main nature of business: Manufacture of aluminum products; Number of employees: 1000; Main nature of business: Manufacture of aluminum products.

(4) Capital: 100 million; Main nature of business: Manufacture of aluminum products; Number of employees: 1000; Main nature of business: Manufacture of aluminum products.

1/18

Manufacturing

(1) Capital: 100 million; Main nature of business: Manufacture of aluminum products; Number of employees: 1000; Main nature of business: Manufacture of aluminum products.

(2) Capital: 100 million; Main nature of business: Manufacture of aluminum products; Number of employees: 1000; Main nature of business: Manufacture of aluminum products.

(3) Capital: 100 million; Main nature of business: Manufacture of aluminum products; Number of employees: 1000; Main nature of business: Manufacture of aluminum products.

(4) Capital: 100 million; Main nature of business: Manufacture of aluminum products; Number of employees: 1000; Main nature of business: Manufacture of aluminum products.

1/19

Manufacturing

(1) Capital: 100 million; Main nature of business: Manufacture of aluminum products; Number of employees: 1000; Main nature of business: Manufacture of aluminum products.

(2) Capital: 100 million; Main nature of business: Manufacture of aluminum products; Number of employees: 1000; Main nature of business: Manufacture of aluminum products.

1/20

1/21

1/22

1/23

1/24

1/25

1/26

1/27

1/28

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/29

1/31

1/31

1/31

1/31

1/31

1/31

1/32

1/33

1/34

1/35

1/36

1/37

1/38

1/39

MAIL

AMERICAN BANKERS ASSOCIATION

Washington, D. C. 20045
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

1/40

MAIL

AMERICAN BANKERS ASSOCIATION

Washington, D.C. 20045
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

AMERICAN BANKERS ASSOCIATION
1155 17th Street, N.W.
Washington, D.C. 20036
Telephone: 202-732-6600
Telex: 84-7200
Cable: AMBANK

Table 1. The Sample

For example, the 1970 National Survey of Families and Living Conditions found that 40 percent of all children under age 18 were living with a single parent.

Introducing the new model: the Shure QLX-D digital wireless system. It's the most reliable, easy-to-use digital wireless system ever made.

Classification of different varicose veins depends either on the anatomical position or on the clinical presentation. Classification based on clinical presentation is more practical. The classification of varicose veins into primary and secondary is based on the presence or absence of associated venous insufficiency.

10 of 10

1/43

For details, see *Journal of International Law*, Vol. 24, No. 2, 1992, pp. 251-275.

- Development of respiratory distress syndrome in adults
 - Acute respiratory distress syndrome
 - Chronic respiratory distress syndrome
 - Acute respiratory distress syndrome in children

¹ See also the discussion of the relationship between the two concepts in the section on "The Concept of the State" above.

- design, development, and production of new products
- equipment training.
- performing technical assistance and consultancy.

[View all posts by admin](#) | [View all posts in category](#)

1/44

19. **PROBLEMS**. In words, describe the following terms: "PERIODIC TABLE"; "ATOMIC NUMBER"; "NUCLEUS"; "NEUTRONS"; "PROTONS"; "ELECTRONS".

¹⁰ University of Minnesota Institute on the Family; University of Minnesota, School of Social Work, Center for the Study of Traumatic Stress.

Chains: Chain length and chain nature of backbone: Chemical structure and characteristics of the polymer.

and complete knowledge for planning and rigging all kinds of heavy work, such as pattern shop, rough machine shop, metal working, electrical shop, etc., in connection with a foundry shop.

1/42

1/43

1/44

1/45

1/46

the same time, he was also engaged in a secret project to develop a new type of aircraft engine, which he believed would revolutionize flight. He had been working on this project for several years, and had made significant progress. However, he had recently run into some difficulties, and was worried that his work might be discovered.

He had heard rumors that the government was interested in his work, and was concerned that they might try to take it over. He had also heard that there were other people who were interested in his work, and he was worried about what would happen if they got their hands on it. He was trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

1/47

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

1/48

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

He had been thinking about this problem for a long time, and had not yet come up with a clear answer. He was still trying to figure out what he should do, and whether he should continue working on his project or sell it to someone else.

1/49

1/49, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 999, 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677, 1678, 1679, 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687, 1688, 1689, 1689, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, 1729, 1730, 1731, 1732, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 1739, 1740, 1741, 1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1749, 1750, 1751, 1752, 1753, 1754, 1755, 1756, 1757, 1758, 1759, 1759, 1760, 1761, 1762, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1789, 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797, 1798, 1799, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849,

(c) Manufacture of internally similar, hollow and solid, radial sections of various sizes and thicknesses, sheet metal, galvanized, and other relevant protective coatings. These sections are fitted with internal fittings. In addition, these techniques are utilized to manufacture plates, brackets, boxes, bows, etc. Technicians would be required to produce these equipment which will be used in the construction of structures.

(d) A. Subject to negotiation, but the parties are:

- a. Contract, lease or material agreement, to obtain and utilize the following:
 - Consultant services during the first year of facility.
 - Facility to be designed and built.
- b. Consulting and financial advice to provide a financial forecast.

1/52

1/52

(e) Location: Arzach, Italy, 100 Km., East of, Genoa, Italy, and, on coast, 10 Km. from Amerigo Vespucci Canal; Address: "Viale"; Phone: +39-10-4400; Post: 10000; Telex: 10000; Cable: "VALIO" (Italy).

(f) Capital: \$100 million; Capital: \$20 million; Net working capital: \$10 million;

net value of assets: manufacture of castings.

(g) The Valio system is an integrated series of processes, from raw materials, to design, to final product.

(h) The most recent license of this system is attached hereto, Exhibit 1.

(i) This system is a major advancement over the previous "state-of-the-art" known as "Investment Casting" or "Production Casting". This system is capable of producing castings in nearly pure metals, in various sizes, in different weights, in a wide range of temperatures to 1000 degrees. The system is capable of producing castings in different compositions, either hard or soft, under conditions for light or heavy castings. With the different equipment, the function of the assembly is supplied. All of the above, and more, can be done at a low cost, in the following technique and information:

- Manufacturing of investment casting.
- Heat treatment.
- Sand casting, and any type of casting, sand and lost wax.
- Die casting.
- Pressure casting.
- Investment casting.
- Heat resistance.
- Precise die casting.
- Rapid, central, no waste.

(j) The Valio system is known as available immediately upon a firm agreement. The following are the financial requirements are:

(k) i. An initial fee.
ii. A minimum profit, and a royalty, in connection with all products.

(l) The exact amount of money for items i, ii and above will vary depending upon the requirements of the project.

(m) i. An exclusive or non-exclusive license.
ii. Commitments to locate on the general area of plant, its location or to be located, for the project, land, buildings, equipment, labor force, and management personnel.
iii. The extent of the exclusive territory, if exclusive.

(n) Under the proper circumstances a joint venture may be considered; however, US would obtain only one fifth of the profits, and the other four-fifths would be split between US and the Valio system.

(o) On the other hand, we would expect the other ventures to invest sufficient capital for a venture, and the proper operation and the appropriate management personnel.

(p) Under this license, agreement, USI guarantees, in addition to the previously described in clause 4, the following:

- 1. Immediately, and for so long as required, all tool rights and equipment.
- 2. All training required for licensing techniques outlined in 4. Specifically, we will provide training in such management areas as marketing, sales, production, finance, accounting, etc.
- 3. USI agrees to train existing equipment and management staff in Valio techniques, and to assist in the start up of the plant.

(q) READING AND SIGNING OF CONTRACT PENDING.

(r) SOURCE CITIE D'ARZACH EN CEDRE, HAUT Languedoc, France, address,
10000 Arzach, France; Address: "Viale"; Phone: +39-10-4400; Telex: 10000; Cable: "VALIO" (Italy).

(s) Valio; (Joint venture company (10/50) of CHY (30%) and VALIO (70%)) has agreed to pay 100,000,000 and spend at least 100,000,000 VALIO BNC (Investment Casting) in the first year, and to maintain a majority ownership of the commercial continuation until the term of,

1/53

1/54

1/55

(1) THE PRODUCTION OF EAMMELT, FRANLIC EAMMELT, EOD 100 AND EOD 1000.

(2) F.B. ROTK METALLURGICAL SERVICES, INC., 31 Union Street, Allentown, Pennsylvania 18101, United States of America; Phone: (215) 723-1118; Contact: Mr. F.B. Roth, President.

(3) Private; Principal and five highly qualified engineers; Main office of company; Technical assistance to metallurgical and foundry industries.

(4) F.B. Roth Metallurgical Services, Inc., provides a complete technical service, including research and construction, to the foundry industry.

The Company offers:

1. Assistance to existing foundry operations in all phases of process and product development and control. Expert metallurgical help in providing insulation, casting, molding, slitting, rolling and inspection. The staff is experienced in both new production and difficult to produce materials in all processes utilized in the production of iron castings.
2. Assistance in planning new installations. This includes plant layout, cost analysis, design of production facilities, quality control, equipment procurement, engineering, and construction.
3. Development of new foundry products, methods, and standards of quality control.
4. Training of personnel and technical assistance.
5. U.S. technical representation for off-shore technical assistance units in the U.S. market.

(5) Services are rendered under term contract or on a per diem basis depending upon the short-term assignments to assist an operating plant process, or will advise client on best method of assistance in any part, from planning to operation of new facilities.

The Company does not participate in joint ventures and requires a royalty agreement. Royalties depend on the client's needs, price fix, term payment and cost of time.

Company personnel are available for assignment to the plant facilities for any period of time required to complete a project. The entire U.S. staff is available for support of clients. No fee is charged upon hire or client request.

All activities are carried out independently until client concerned, the use of knowledge and experience of the new technology. Formal training sessions are conducted, if and where necessary, for the client and operational personnel.

GROUP 2 - FORGING

(1) PRODUCTION OF BITS FOR ROCK DRILLS

- (a) By AIRAM Ab, Pärnunnenkatu 10A, 00100 Helsinki, Finland; Cable: AIRAM; Telex: 11441; Phone: 11441; Contact: Mr. Mark NAMIAS (Export Sales Engineer).
- (b) Private; No. of employees: 1,100; Approx. annual turnover: 100 million. Main nature of business: Manufacture of lamps, dry-cell batteries, metal products.
- (c) Production of forged steel bits with centered tungsten carbide tips on rock drills.

Reference No.

2/1

FINLAND

(1) DIE FORGING OF ENTRE PRESTON FROM HYPERTECTIC AL-MG ALLOYS

- (a) ALUTER, Tepnograt 12, Budapest XII, Hungary; Telex: 1451 MARAL; Phone: 44-174, 44-175; Contact: Mr. F. Körber (Head of Design Bureau).
- (b) Governmental; Design and consulting division of the Hungarian Aluminium Corporation; No. of employees: 160.

Reference No.

2/2

HUNGARY

(3) PISTONS FOR HIGH-POWER DIESEL AND PETROL ENGINES

The Alutery process uses instead a process of die forging, which results in longer life, greater reliability, better resistance to overload and wear, and low thermal expansion.

A special hypereutectic Al-Ci alloy has been developed for this purpose, which has adequate ductility to permit plastic forming, forging, suitable heat treatment, and machining on automatic production lines.

(4) Production of pistons for high-power diesel and petrol engines in similar high-duty applications.

(5) Alutery can offer the following:

1. Design of die-forged piston blank, to user's specifications
2. Engineering for the manufacturing process
3. Design of tools (and, where necessary, their manufacture) and transfer of complete know-how
4. Advice on selection of equipment
5. Supervision of construction and installation of equipment on site
6. Training of personnel at Hungarian works
7. Commissioning and start-up, organization of production, and in-plant training.

Reference No.

2/3

HUNGARY

(1) PRODUCING OF WORKPIECES WITH SURFACE-FLOW ALUMINIUM ALLOYS BY DIE FORGING

- (a) ALUTER, Tepnograt 12, Budapest XII, Hungary; Telex: 1451 MARAL; Phone: 44-174, 44-175; Contact: Mr. F. Körber (Head of Design Bureau).

(b) Governmental; Design and consulting division of the Hungarian Aluminium Corporation; No. of employees: 160.

(4) In many workpieces produced by die forging, an inner cavity or an undercut surface is needed, perpendicular to the direction of forging. From the point of view of strength and performance, the machining of such workpiece has disadvantages, but not for the design and structure. By means of the Alutery process, using suitably designed dies, workpiece of this type can be die-forged from aluminium alloys.

(5) Alutery can offer the following:

1. Transfer of manufacturing rights and know-how, by licence agreements
2. Design of all tools and transfer of relevant knowhow
3. Supply of process equipment
4. Complete engineering for plant
5. Supervision of construction and installation of equipment on site
6. Training of personnel at Hungarian works
7. Commissioning and start-up of plant, organization of production, and in-plant training.

Reference No.

2/4

AUSTRIA

- (1) FORGING OF ALLOY AND SPECIAL STEELS
- (.) Gebr. BOHLMER and Co. AG, Postfach 5, A-1011 Vienna, Austria; Capital: 1,500,000 Schillers; Wien; Telex: 1104, 100; Phone: 21-15-31; Contact: Mr. W. Fritsch, Agent of Boehler srl Peru SA, L. Castro Viveros 177, Apartado 100, Lima, Peru.
- (2) Governmental; Major producer of special and alloy steels; No. of employees: 1,000; Capital: 50 million; Main nature of business: Production of alloy and special steels in various forms and thicknesses.
- (A) Complete knowhow for planning and layout of hammer and press forging for special steels of all grades. Complete knowhow for manufacturing operations, heating and forging, die forging, heat treatment, and finishing.
- Training of personnel in Boehler Works.
- Provision of Boehler experts for technical assistance in equipment work, e.g. supervision of production start-up, trouble-shooting, inspection operations, etc.
- (c) Conclusion of knowhow assignment for specific clients.
- Technology is available on a royalty-free basis, with minimum restrictions.
- Licensing arrangements can also be negotiated.
- Training and expert assistance can also be supplied, subject to client's instructions.

Reference No.

2/5

UNITED KINGDOM

- (1) PROCESS TECHNOLOGY IN HOT STEEL FORGING
- (.) GKN FORGING LTD., P.O. Box No. 4, Bromsgrove, Worcs, United Kingdom; Telex: 22229; Carringtons Farm; Phone: Bromsgrove 24743; Contact: Mr. Victor S. Corrigan (Overseas Engineering Executive).
- (.) Private; Member of Guest Keen and Nettlefield Group; Capital: £10,000,000; No. of employees: 16,000; Main nature of business: Production of forged parts for the automotive and other industries.
- (A) The Overseas Engineering Division of GKN Forging Ltd. can offer the following range of services in the field of hammer and press forging of steel:
- Direct Consultancy Service, adapted to meet the requirements of an existing forging client, without the need to improve output and utilization of existing plant with minimal capital expenditure.
 - Specific process consultancy, to meet the needs of a client wishing to start production of a range of forgings where proven modern knowhow and/or recent technology are vital (e.g. crankshafts, connecting rods), either in an existing forge or a new facility.
 - Turn-key engineering projects for clients wishing to set up a new forge with minimum building and to achieve optimum production in minimum time.
- (c) For direct consultancy assistance, payment on an instalment basis remitted to UK account.
- For major new forge projects segment is normally associated with plant procurement and installation charges. Under a GKN Forging consultancy, training is given to client's personnel to ensure that appropriate skills, procedures, and techniques are acquired and applied.
- Other services include on-site surveys, on-site consultants and support services from UK.
- Projects can be adapted to meet client's requirements for special needs, such as minimum capital outlay, minimum personnel complement and optimum mechanical handling.

Reference No.

2/6

ITALY

- (1) MANUFACTURE OF STEEL FORGINGS
- (.) ITALSIDER S.p.A., via Cornice 4, 16128 Genova, Italy; Capital: Lit. 1,000,000,000; Telex: 11759 Italy; 4; Phone: 010-661111; Contact: Ufficio Genova.
- (.) Major Italian iron and steel producer; Capital: Lit. 1,000,000,000; No. of employees: 44,000; Main nature of business: Production of iron and steel.

- (4) Italsider offers complete knowhow in the manufacture of large forgings in carbon and alloy steel. The knowhow covers steel specification, ingot casting, forging, heat treatment, and related manufacturing processes.

- (1) New applications in the automotive industry, such as truckloads for large diesel engines, shafts for marine turbines, etc.
- (2) Internation marketing program, implemented by Italian staff in recipient's works and training of recipient's personnel in Italian works.
- The various possible conditions for transfer of the knowhow will be discussed on application from potential recipients.

Reference No.

2/7

UNITED STATES
OF AMERICA

- (1) HOT FORGING OF CARBON AND ALLOY STEELS
- (2) LIBBEY OVEN COMPANY, Street Avenue, Cambridge, Pa., U.S.A., United States of America; Address: 1000 1/2 St.; Phone: (412) 843-1175; Contact: Mr. Leonard Forme (International Manager).
- (3) Private; Owner (part): SWX (100%); Tel. no.: 000-1234; Main office of business: Speciality steel stocks producer and distributor.
- (4) Industrial Steel Company has for over 2 years been in the metals and industries with the needed experience, having various methods of hot forming. One of the processes used is that of forging, drawing, extrusion, the technique is reduction of metal - which may be tools and forgings.
- As a result of this long background of training, development, and experience, Libbeys specialize in and are able to transfer their specialized technical and knowhow to the field of forging to interested recipients.
- (5) 1. Libbeys, by offering the recipient direct contact via teletype or telephone of technical data, in the form of reports, individual information, news剪报, general data, results of the feasibility, etc., desired by a particular personnel in the technical and scientific field, resulting at the availability of the required data.
2. The following financial arrangements are suggested:
- a. Direct payment by wire transfer, bank draft, cashier's check, money order, or personal check.
 - b. Enclosed payment by wire transfer, bank draft, cashier's check, money order, or personal check.
 - c. Contractual arrangement. The contract to be signed by Libbeys and the recipient, covering terms of payment, compensation, and other details, will be drawn up after the completion of the negotiations.
 - d. All arrangements will be made by telephone, written, or faxed, as required.

Reference No.

2/8

Tele. No.

- (1) THE UNITED COMPANY OF MELTING & CASTING
- (2) LIBBEY OVEN COMPANY, Street Avenue, Cambridge, Pa., U.S.A., United States of America; Address: 1000 1/2 St.; Phone: (412) 843-1175; Contact: Mr. Leonard Forme (International Manager).
- (3) Private; Owner (part): SWX (100%); Tel. no.: 000-1234; Main office of business: Manufacturer of high-grade carbon, alloy and stainless steels.
- (4) Full knowhow on forging steel ingots of all grades to round, square or flat sections in plant weighing up to 45 tons; also on heating, heat treatment, annealing, etc.
- (5) Expert service on selection of equipment and operation; results capable in type and size - correct plus dependence of expected value on quantity.
- Transfer of newly-qualified personnel at Libbeys' works in U.S.A. subject to open bid agreement.
- Partial technical assistance available subject to special agreement.

Reference No.

2/9

CANADA

- (1) THE UNITED COMPANY OF MELTING & CASTING
- (2) LIBBEY OVEN COMPANY, Street Avenue, Cambridge, Pa., U.S.A., United States of America; Address: 1000 1/2 St.; Phone: (412) 843-1175; Contact: Mr. Leonard Forme (International Manager).
- (3) Private; Worldwide trading and selling of forged, rolled, sheet, plate, wire, wire mesh, bar, tube, pipe, lead, aluminum, stainless steel, etc.

- (4) Zinc alloy forgings (closed die) or hot forging have been developed by Simeco and are considered to be competitive with brass forgings. Starting temperature goes from 400°C to 500°C and die practice is easily adaptable to Morloy®. Lower forging temperature (400°C, 450°C) extends component life, better finishes, and easier working conditions.

Simeco offers Morloy® zinc alloy extruded bar stock (3/8 - 1 in. dia.) from Cleaving Corporation, the same technology for forging and finishing of these alloys.

Morloy alloy	Density kg./cu. m.	Tensile yield kg./sq. cm.	Elongation % at 100
3170	6.90	35,000	15,000
3230	6.90	45,000	15,000
3270	6.77	50,000	15,000
3273	6.77	50,000	15,000

*Mechanical Test Data, Continue on page 11.

- (4) Appropriate form will be developed to assist in entering certain technical information known, patents, rules, and application engineering skills. Possibilities are work on a consulting fee basis, production license, or that the structure, operating, and specific situations. Financial arrangements could be concluded for a term of rental, depending on individual case, via letter of credit.
- Standard procedures and operator training (i.e. forging) are also available.

Reference No.

2/10

FRANCE

- (1) PRODUCTION OF ALUMINUM ALLOY FOR PLATEAU AND INDUSTRIAL
(2) FORGED ALUMINUM BONNINUS, Rue A. de Villemont, 3300 Paris, France; Tel.: Mr. J. Thore.
(3) Private; 100 workers (a subsidiary of ALUMINIUM TRICO CHINESE) Production of 1000
workers; Main nature of business: ALUMINUM Material for agricultural and industrial
industry equipment.

- (1) - Definition of market.
- Best manufacturing procedure.
- Range of production.
- Choice of the more suitable material.

(2) - File for agricultural use.
- Axles for industrial trailers and semi-trailers.

(3) - Commercial and technical assistance.
- Payment cash for the knowhow.
- Royalties on the turnover with a minimum guaranteed.

Reference No.

2/11

FRANCE

- (1) PRODUCTION OF WELDING MEDIUM
(2) FORGED THOMM, 1, Rue A. de Villemont, 3300 Paris, France; Tel.: Mr. J. Thore.
(3) Private; 100 workers (a subsidiary of ALUMINIUM THOMM CHINESE) Production of 1000
workers; Main nature of business: Forging - Stamping - Production of constructional, industrial
and agricultural equipment.

- (4) - Choice of the metal suited to the material to be produced.
- Forging, and subsequent heat treatment.

(5) - READING MEDIUM for
- Clinker for cement industry.
- Various ores.

(6) - Commercial and technical assistance.
- Payment cash for the knowhow.
- Royalties on the turnover with a minimum guaranteed.

Reference No.

2/12

SWEDEN

- (1) DROP FORGING OF STEEL WITH HAMMERS OR MECHANICAL PRESSES
- (2) AB BOFOR, S-4490 Borlänge, Sweden; Cable: Bofors, Borlänge, Sweden; Telex: 7111; Phone: 0347/360 00; Contact: Mr. Alex Blomgren (Chief Engineer).
- (3) Private; Share capital: SEK 15 million; Sales: SEK 400 million; No. of employees: 3,500; Main nature of business: Steel, ordnance material, civil engineering products and chemicals.
- (4) Know-how activities relate to new production departments or the modernization of existing installations and covers: Analysis of the project; Inspection of existing facilities; Basic engineering; Choice of processes and equipment, including main data specifications; Suggestions of suppliers; Analysis of tenders, technically and economically; Participation in the negotiations with the suppliers; Supply of process manuals; Training of the client's personnel in the Bofors' works; Assistance of our experts at the start-up of the new plant.
- (5) Drop forged products, such as crank shafts, connecting rods and other automotive parts as well as forgings for aircraft and other industries. The steel types are from plain carbon steels to high alloyed special steels, including stainless and heat resisting alloys.
- (6) The preferred payment policy is: Periodic cash rates plus interest by initial down-payment. The periods and rates are to be agreed upon. Payment shall be in Swedish or other transferable currency. A payment policy based on royalty may be considered, provided that satisfactory conditions can be agreed upon.

Reference No.

2/13

SWEDEN

- (1) FLAT DIE FORGING OF STEEL WITH HAMMERS AND HYDRAULIC PRESSES
- (2) AB BOFOR, S-4490 Borlänge, Sweden; Cable: Bofors, Borlänge, Sweden; Telex: 7111; Phone: 0347/360 00; Contact: Mr. Alex Blomgren (Chief Engineer).
- (3) Private; Share capital: SEK 15 million; Sales: SEK 400 million; No. of employees: 3,500; Main nature of business: Steel, ordnance material, civil engineering products and chemicals.
- (4) Know-how activities relate to new production departments or modernization of existing installations and covers: Analysis of the project; Inspection of existing facilities; Basic engineering; Choice of processes and equipment, including main data specifications; Suggestions of suppliers; Analysis of tenders, technically and economically; Participation in the negotiations with the suppliers; Supply of process manuals; Training of the client's personnel in the Bofors' works; Assistance of our experts at the start-up of the new plant.
- (5) A great variety of flat die forged products with piece weight of 4 to 50 metric tons when forged, such as rolls for hot and cold rolling mills, die blocks for drop forging and plastics forming, shafts and discs for water turbines and steam turbines, etc., as well as forged bars with different cross-sections. The steel types are from plain carbon steels to high alloyed special steels including stainless and heat resisting alloys.
- (6) The preferred payment policy is: Periodic cash rates plus interest by initial down-payment. The periods and rates are to be agreed upon. Payment shall be in Swedish or other transferable currency. A payment policy based on royalty may be considered, provided that satisfactory conditions can be agreed upon.

Reference No.

2/14

CANADA

- (1) KNOW-HOW COVERING THE FORGING OF STAINLESS AND ALLOY STEELS
- (2) ATLAS STEEL COMPANY, Centre Street, Welland, Ontario, Canada; Cable: Atlas Welland; Telex: 61-5112 or 61-1140; Phone: (416) 747-5611; Contact: Mr. William A. Thomas (Senior Vice-President).
- (3) Private; Sales: \$2m. 1.3 million (world-wide); No. of employees: 1,100; Main nature of business: Manufacture of tool steels, stainless steels, and mining steels.
- (4) Complete set of processing standards, training of personnel on all equipment pertinent to contract. This would include both theoretical and practical instruction. Dispatch of Atlas technical people to aid in the start-up of operations in the developing country.
- (5) Royalty policy; Training of recipients; Availability for contact with recipients; Expert assistance provided or available.

Reference No.

2/15

UNITED KINGDOM

- (1) HOT PRESSING (FORGING) OF ALUMINUM WITH PARALLEL FLAT SURFACES AND EXTRUDERS
- (2) BRASS AND ALLOY PRECISION (BRITPREC) LIMITED, Liverpool Street, Birmingham, B3 2AA, United Kingdom; Cable: Bralox, Birmingham; Telex: 33420 Baff 11; Phone: 071 777 5515; Contact: Mr. A.E. Clarke (Director).
- (3) Private; Annual sales: £140,000; Issued capital: £25,000; No. of employees: 15; Main nature of business: Manufacturer of hot non-ferrous forgings.
- (4) Tooling design and manufacturing methods have been developed to produce Alumina forgings with parallel core and outside forms at economical costs. Components are produced using specially designed tooling in standard presses. The process is not suitable for very hard metals and is best suited to the crank type of press. Internal forms can be provided in the shape of hexagonal, square, cylindrical etc., as well as to cylindrical forms. Where required, tolerances of plus and minus 0.03 mm. can be obtained.
- (5) Will provide assistance with purchase and installation of plant and equipment, design and manufacture of tooling, details of manufacture of components and inspection methods. Work will be done at cost followed by royalty terms based on component production. Expenses to be negotiated.

Reference No.

2/16

UNITED KINGDOM

- (1) HOT PRESSING (FORGING) OF CARBON/ALUMINA FOR AUTOMOTIVE BRAKES LTD
- (2) BRASS AND ALLOY PRECISION (BRITPREC) LIMITED, Liverpool Street, Birmingham, B3 2AA, United Kingdom; Cable: Bralox, Birmingham; Telex: 33420 Baff 11; Phone: 071 777 5515; Contact: Mr. A.E. Clarke (Director).
- (3) Private; Annual sales: £150,000; Issued capital: £25,000; No. of employees: 15; Main nature of business: Manufacturer of hot non-ferrous forgings and forgings.
- (4) Production of synchronizing cones for automotive gearboxes by hot pressing such that from the starting to finished dimensions and do not require subsequent machining. The entire details of complete production cycle from raw material to finish will be supplied.
- (5) Will provide, where required, assistance with purchase and installation of plant and equipment, design and manufacture of tooling, manufacture of components and inspection. Work will be done above at cost followed by royalty terms based on component production. Expenses to be negotiated.

Reference No.

2/17

UNITED KINGDOM

- (1) MANUFACTURE OF VEHICLE LEAF SPRINGS
- (2) BROCKHOUSE EXPORT LIMITED, Birmingham Road, West Bromwich, Staffordshire, B70 1JL; Telex: Brockley West Bromwich 35611; Phone: 0121-553 4511; Contact: Mr. R. Garside (General Manager).
- (3) Private; Capital: £10 million; Sales: £20 million; No. of employees: 4,000; Main nature of business: Engineering.
- (4) Manufacture of vehicle leaf springs for cars and commercial vehicles, etc. The springs are made from steel strip which is forged, assembled and then heat treated.
- (5) Fee for setting-up complete plant, including training of personnel. Joint venture will be considered.

Reference No.

2/18

FRANCE

- (1) FORGING OF SPECIAL STEELS
- (2) CITROËN-LOIRE, Branche Métallurgie, Département Aménagement Technique, 11, rue de Londres, 75008, Paris, France; Cable: "FORGALOIRE - PARIS"; Telex: 284117; Phone: 092.05.80; Contact: Mr. J. Nouzeau (Head, Technical Cooperation Department).
- (3) Private; Major producers of alloy and special steels; Capital: F. 100,000,000; Sales: F. 100,000 million (1.70); No. of employees: 40,000; No. of plants: 75; Main nature of business: Special steels and Mechanical Engineering.

- (4) - Complete know-how for the planning and layout of the plant and equipment for the production of forged rolls for coil rolling mills with respect to current technology; supply of new equipment and auxiliary equipment, service center, induction furnace and foundry, etc.; supply of technical documents, training of personnel.
- Supply of the induction furnaces and temperature stabilizers.
- Complete know-how and technical assistance for the project management.

U.P. This type of service is usually provided for site selection, planning, design, construction, etc.

(c) All types of coil rolling mills.

- (c) - Conclusion of an engineering agreement for a specified period of time for the supply of know-how to undertake production of forged rolls for coil rolling mills, as well as for the supply of technical documents, procurement of new equipment and machines, etc.
- Conclusion of know-how and technical assistance agreements for specified periods of time for the supply of technical documents, training of personnel in "commissioning work", distribution of qualified technicians for commissioning of the installation and for initial production period.
- Supply of the induction furnaces and temperature stabilizers.

Condition:

- Engineering fees.
- Technology and know-how normally supplied against each individual item.
- Export required at additional charge if required.

Reference No.	
2/21	

JAPAN

(1) COIL AND WHEEL IRON AND ALLOY PRODUCTION

- (1) Company: KOKI, Iron and Steel Works, Incorporated, Address: 1-1-1, Nihonbashi, Chuo-ku, Tokyo, Japan; Tel: 03-551-1111; Telex: 24-20000; Fax: 03-551-1111; E-mail: koki@koki.or.jp; Project: "Coil, Wheel, Mounting Unit" (for export)

U.P. Private; Major producers of alloy and special steels; Capacity: 1,000,000 tons of steel per year; 1,000,000 tons of coil; 1,000,000 tons of wheels; 1,000,000 tons of mounted units; 1,000,000 tons of forgings; 1,000,000 tons of steel.

- (4) - Complete know-how for the planning and layout of the plant and equipment for the production of forged wheels and axles for railways, as well as for rollers.
- Complete know-how and technical assistance for the production of:
- COIL WHEELS: All types of forged rolls, wheels, as well as other types of alloy steels.
 - WHEEL AXLES: For locomotives or rolling stock.
 - MOUNTED UNITS: For locomotives or rolling stock.
 - FORGINGS: In forged steel (closed in furnace) for overhead cranes, lifting systems, rolling mills, etc.

(5) Locomotives and wagons, industrial equipment.

- (6) - Conclusion of an engineering agreement for a specified service covering all of the following items for a new client or for expansion of an existing client.
- Conclusion of know-how and technical assistance agreements for specified periods of time for the supply of technical documents, training of personnel in "commissioning work", distribution of qualified technicians for commissioning of the plant and for initial production period.

Condition:

- Engineering fees.
- Technology and know-how normally supplied against each individual item.

Reference No.	
2/22	

JAPAN

(1) PRODUCTION TECHNOLOGY OF DIE ROLMENTS

- (1) CHINTONG METAL EQUIPMENT, LTD., 15 Fuzhou Avenue, Xiamen, Fujian, China; Tel: 0592-5010000; Fax: 0592-5010000; Telex: 24-20000; E-mail: chintong@public.xmptt.net.cn

- (2) Private; Capital: 100 million; Owner: Mr. Wang; Address: 15 Fuzhou Avenue, Xiamen, Fujian, China; Nature of business: Production and sales of various types of precision machinery, such as steel rolled products, forming, casting, rolling mills, etc. and their parts.

- (4) Production technology of crank shaft, front axle bar etc., including the required equipment.
- (5) 1. Engineering service at the construction of production facilities (steel rolling mill, rolling mill, forming mill, casting mill, etc.).
2. Technical assistance of operation and quality control.
3. Training at our plant in Japan.

GROUP 3 – DRAWING, STRANDING, ETC.

3/1 *WIRE DRAWING WITH PREVENTION*

Mr. ATRAM A., President, Ltd., 10, rue Belgrave, 75, Paris, France; ATRAM
Society: 1939; French: 1939; Director: Mr. Max KANDAU, President, Societe Belge.

Reference No. *

3/1

FINLAND

Private; 10, rue Longchamp, 1337; Address: 10, rue Longchamp, 1337; Date of establishment: December 1938; Director: Mr. Jules Lefebvre, President.

WIRE DRAWING WITH PREVENTION, by means of a special

3/2 *DRAWING OF ALUM AND CIRCUIT WIRE*

Mr. HOFER and Mr. A., President, A-1017 Vienna, Austria; Date: Standart
Wires, October 1938; French: 1938; Director: Mr. W. F. Höfer, Austria; Vice
President: Mr. J. Schatzberger, Austria; General Manager, Austria.

Reference No. *

3/2

AUSTRALIA

Private; 10, rue Longchamp, 1337; Date of establishment: 1938; Director: Mr. J. J. M. De Bruyn; Address: 10, rue Longchamp, 1337; Date of establishment: 1938; Director: Mr. J. J. M. De Bruyn.

Complete knowledge of the manufacture of wire and strand in wire drawing, especially of the machines, complete knowledge of stranding operations, including control operations, annealing, heat treatment, cooking, beating, etc. Control of current in stranding. Drawing of wire and strands in wire and stranding machines, start-up, turning of wire and strands, annealing, etc.

The machines used are different from the machines used in the industry. Complete and detailed knowledge of machines used in industry is desirable. Standard and expert knowledge of wire and strands, annealing, etc. desirable.

3/3 *WIRE DRAWING AND STRANDING*

Mr. KIRKMAN, 10, rue Longchamp, 1337; Date of establishment: 1938; Director: Mr. KIRKMAN, President.

Reference No. *

3/3

AUSTRALIA

Private; 10, rue Longchamp, 1337; Date of establishment: 1938; Director: Mr. J. J. M. De Bruyn; Address: 10, rue Longchamp, 1337; Date of establishment: 1938; Director: Mr. J. J. M. De Bruyn.

• Multisize wire drawing press for various sizes, the largest size depending on the size of the press.
• Multisize wire drawing press for various sizes, the largest size depending on the size of the press.
• Know how to control machines and annealing processes.
• Automatic drawing machine and annealing machine required.

• Multisize stranding machines at the moment of establishment. The various sizes and types of strands and wires and their uses and qualities are desirable.
• Stranding machines desirable.

3/4 *DRAWING AND STRANDING ALUM AND CIRCUIT WIRE, FINLAND*

Mr. ATRAM A., President, Ltd., 10, rue Belgrave, 75, Paris, France; Date of establishment: 1939; Director: Mr. J. J. M. De Bruyn; Address: 10, rue Longchamp, 1337; Date of establishment: 1939; Director: Mr. J. J. M. De Bruyn.

Reference No. *

3/4

FINLAND

Private; 10, rue Longchamp, 1337; Date of establishment: 1938; Director: Mr. J. J. M. De Bruyn; Address: 10, rue Longchamp, 1337; Date of establishment: 1938; Director: Mr. J. J. M. De Bruyn.

4. The following table summarizes the results of the study of the effect of the different factors on the yield of the process.

- Hydrogen bonding, hydrophobic, and van der Waals interactions
 - Hydrogen bonding between water and protein backbone and side-chain atoms
 - Hydrogen bonding between water molecules and each other

For more information, contact the following organizations:

- Dotted gradient
 - Dynamic gradient - can change strength and position of colors
 - Linear gradient - horizontal or vertical
 - Radial gradient - concentric circles
 - Conic gradient - cone shape
 - Elliptical gradient - oval shape
 - Repeating gradient

The experience of derived derivatives is derived and only from the last three digits of the number. The first digit is the sum of the first two digits, and the last two digits are the sum of the first two digits.

1990-1991, 1991-1992, 1992-1993, 1993-1994, 1994-1995, 1995-1996, 1996-1997, 1997-1998, 1998-1999, 1999-2000, 2000-2001, 2001-2002, 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, 2018-2019, 2019-2020, 2020-2021, 2021-2022, 2022-2023, 2023-2024, 2024-2025, 2025-2026, 2026-2027, 2027-2028, 2028-2029, 2029-2030, 2030-2031, 2031-2032, 2032-2033, 2033-2034, 2034-2035, 2035-2036, 2036-2037, 2037-2038, 2038-2039, 2039-2040, 2040-2041, 2041-2042, 2042-2043, 2043-2044, 2044-2045, 2045-2046, 2046-2047, 2047-2048, 2048-2049, 2049-2050, 2050-2051, 2051-2052, 2052-2053, 2053-2054, 2054-2055, 2055-2056, 2056-2057, 2057-2058, 2058-2059, 2059-2060, 2060-2061, 2061-2062, 2062-2063, 2063-2064, 2064-2065, 2065-2066, 2066-2067, 2067-2068, 2068-2069, 2069-2070, 2070-2071, 2071-2072, 2072-2073, 2073-2074, 2074-2075, 2075-2076, 2076-2077, 2077-2078, 2078-2079, 2079-2080, 2080-2081, 2081-2082, 2082-2083, 2083-2084, 2084-2085, 2085-2086, 2086-2087, 2087-2088, 2088-2089, 2089-2090, 2090-2091, 2091-2092, 2092-2093, 2093-2094, 2094-2095, 2095-2096, 2096-2097, 2097-2098, 2098-2099, 2099-20100, 20100-20101, 20101-20102, 20102-20103, 20103-20104, 20104-20105, 20105-20106, 20106-20107, 20107-20108, 20108-20109, 20109-20110, 20110-20111, 20111-20112, 20112-20113, 20113-20114, 20114-20115, 20115-20116, 20116-20117, 20117-20118, 20118-20119, 20119-20120, 20120-20121, 20121-20122, 20122-20123, 20123-20124, 20124-20125, 20125-20126, 20126-20127, 20127-20128, 20128-20129, 20129-20130, 20130-20131, 20131-20132, 20132-20133, 20133-20134, 20134-20135, 20135-20136, 20136-20137, 20137-20138, 20138-20139, 20139-20140, 20140-20141, 20141-20142, 20142-20143, 20143-20144, 20144-20145, 20145-20146, 20146-20147, 20147-20148, 20148-20149, 20149-20150, 20150-20151, 20151-20152, 20152-20153, 20153-20154, 20154-20155, 20155-20156, 20156-20157, 20157-20158, 20158-20159, 20159-20160, 20160-20161, 20161-20162, 20162-20163, 20163-20164, 20164-20165, 20165-20166, 20166-20167, 20167-20168, 20168-20169, 20169-20170, 20170-20171, 20171-20172, 20172-20173, 20173-20174, 20174-20175, 20175-20176, 20176-20177, 20177-20178, 20178-20179, 20179-20180, 20180-20181, 20181-20182, 20182-20183, 20183-20184, 20184-20185, 20185-20186, 20186-20187, 20187-20188, 20188-20189, 20189-20190, 20190-20191, 20191-20192, 20192-20193, 20193-20194, 20194-20195, 20195-20196, 20196-20197, 20197-20198, 20198-20199, 20199-20200, 20200-20201, 20201-20202, 20202-20203, 20203-20204, 20204-20205, 20205-20206, 20206-20207, 20207-20208, 20208-20209, 20209-20210, 20210-20211, 20211-20212, 20212-20213, 20213-20214, 20214-20215, 20215-20216, 20216-20217, 20217-20218, 20218-20219, 20219-20220, 20220-20221, 20221-20222, 20222-20223, 20223-20224, 20224-20225, 20225-20226, 20226-20227, 20227-20228, 20228-20229, 20229-20230, 20230-20231, 20231-20232, 20232-20233, 20233-20234, 20234-20235, 20235-20236, 20236-20237, 20237-20238, 20238-20239, 20239-20240, 20240-20241, 20241-20242, 20242-20243, 20243-20244, 20244-20245, 20245-20246, 20246-20247, 20247-20248, 20248-20249, 20249-20250, 20250-20251, 20251-20252, 20252-20253, 20253-20254, 20254-20255, 20255-20256, 20256-20257, 20257-20258, 20258-20259, 20259-20260, 20260-20261, 20261-20262, 20262-20263, 20263-20264, 20264-20265, 20265-20266, 20266-20267, 20267-20268, 20268-20269, 20269-20270, 20270-20271, 20271-20272, 20272-20273, 20273-20274, 20274-20275, 20275-20276, 20276-20277, 20277-20278, 20278-20279, 20279-20280, 20280-20281, 20281-20282, 20282-20283, 20283-20284, 20284-20285, 20285-20286, 20286-20287, 20287-20288, 20288-20289, 20289-20290, 20290-20291, 20291-20292, 20292-20293, 20293-20294, 20294-20295, 20295-20296, 20296-20297, 20297-20298, 20298-20299, 20299-202000, 202000-202001, 202001-202002, 202002-202003, 202003-202004, 202004-202005, 202005-202006, 202006-202007, 202007-202008, 202008-202009, 202009-202010, 202010-202011, 202011-202012, 202012-202013, 202013-202014, 202014-202015, 202015-202016, 202016-202017, 202017-202018, 202018-202019, 202019-202020, 202020-202021, 202021-202022, 202022-202023, 202023-202024, 202024-202025, 202025-202026, 202026-202027, 202027-202028, 202028-202029, 202029-202030, 202030-202031, 202031-202032, 202032-202033, 202033-202034, 202034-202035, 202035-202036, 202036-202037, 202037-202038, 202038-202039, 202039-202040, 202040-202041, 202041-202042, 202042-202043, 202043-202044, 202044-202045, 202045-202046, 202046-202047, 202047-202048, 202048-202049, 202049-202050, 202050-202051, 202051-202052, 202052-202053, 202053-202054, 202054-202055, 202055-202056, 202056-202057, 202057-202058, 202058-202059, 202059-202060, 202060-202061, 202061-202062, 202062-202063, 202063-202064, 202064-202065, 202065-202066, 202066-202067, 202067-202068, 202068-202069, 202069-202070, 202070-202071, 202071-202072, 202072-202073, 202073-202074, 202074-202075, 202075-202076, 202076-202077, 202077-202078, 202078-202079, 202079-202080, 202080-202081, 202081-202082, 202082-202083, 202083-202084, 202084-202085, 202085-202086, 202086-202087, 202087-202088, 202088-202089, 202089-202090, 202090-202091, 202091-202092, 202092-202093, 202093-202094, 202094-202095, 202095-202096, 202096-202097, 202097-202098, 202098-202099, 202099-2020100, 2020100-2020101, 2020101-2020102, 2020102-2020103, 2020103-2020104, 2020104-2020105, 2020105-2020106, 2020106-2020107, 2020107-2020108, 2020108-2020109, 2020109-2020110, 2020110-2020111, 2020111-2020112, 2020112-2020113, 2020113-2020114, 2020114-2020115, 2020115-2020116, 2020116-2020117, 2020117-2020118, 2020118-2020119, 2020119-2020120, 2020120-2020121, 2020121-2020122, 2020122-2020123, 2020123-2020124, 2020124-2020125, 2020125-2020126, 2020126-2020127, 2020127-2020128, 2020128-2020129, 2020129-2020130, 2020130-2020131, 2020131-2020132, 2020132-2020133, 2020133-2020134, 2020134-2020135, 2020135-2020136, 2020136-2020137, 2020137-2020138, 2020138-2020139, 2020139-2020140, 2020140-2020141, 2020141-2020142, 2020142-2020143, 2020143-2020144, 2020144-2020145, 2020145-2020146, 2020146-2020147, 2020147-2020148, 2020148-2020149, 2020149-2020150, 2020150-2020151, 2020151-2020152, 2020152-2020153, 2020153-2020154, 2020154-2020155, 2020155-2020156, 2020156-2020157, 2020157-2020158, 2020158-2020159, 2020159-2020160, 2020160-2020161, 2020161-2020162, 2020162-2020163, 2020163-2020164, 2020164-2020165, 2020165-2020166, 2020166-2020167, 2020167-2020168, 2020168-2020169, 2020169-2020170, 2020170-2020171, 2020171-2020172, 2020172-2020173, 2020173-2020174, 2020174-2020175, 2020175-2020176, 2020176-2020177, 2020177-2020178, 2020178-2020179, 2020179-2020180, 2020180-2020181, 2020181-2020182, 2020182-2020183, 2020183-2020184, 2020184-2020185, 2020185-2020186, 2020186-2020187, 2020187-2020188, 2020188-2020189, 2020189-2020190, 2020190-2020191, 2020191-2020192, 2020192-2020193, 2020193-2020194, 2020194-2020195, 2020195-2020196, 2020196-2020197, 2020197-2020198, 2020198-2020199, 2020199-2020200, 2020200-2020201, 2020201-2020202, 2020202-2020203, 2020203-2020204, 2020204-2020205, 2020205-2020206, 2020206-2020207, 2020207-2020208, 2020208-2020209, 2020209-2020210, 2020210-2020211, 2020211-2020212, 2020212-2020213, 2020213-2020214, 2020214-2020215, 2020215-2020216, 2020216-2020217, 2020217-2020218, 2020218-2020219, 2020219-2020220, 2020220-2020221, 2020221-2020222, 2020222-2020223, 2020223-2020224, 2020224-2020225, 2020225-2020226, 2020226-2020227, 2020227-2020228, 2020228-2020229, 2020229-2020230, 2020230-2020231, 2020231-2020232, 2020232-2020233, 2020233-2020234, 2020234-2020235, 2020235-2020236, 2020236-2020237, 2020237-2020238, 2020238-2020239, 2020239-2020240, 2020240-2020241, 2020241-2020242, 2020242-2020243, 2020243-2020244, 2020244-2020245, 2020245-2020246, 2020246-2020247, 2020247-2020248, 2020248-2020249, 2020249-2020250, 2020250-2020251, 2020251-2020252, 2020252-2020253, 2020253-2020254, 2020254-2020255, 2020255-2020256, 2020256-2020257, 2020257-2020258, 2020258-2020259, 2020259-2020260, 2020260-2020261, 2020261-2020262, 2020262-2020263, 2020263-2020264, 2020264-2020265, 2020265-2020266, 2020266-2020267, 2020267-2020268, 2020268-2020269, 2020269-2020270, 2020270-2020271, 2020271-2020272, 2020272-2020273, 2020273-2020274, 2020274-2020275, 2020275-2020276, 2020276-2020277, 2020277-2020278, 2020278-2020279, 2020279-2020280, 2020280-2020281, 2020281-2020282, 2020282-2020283, 2020283-2020284, 2020284-2020285, 2020285-2020286, 2020286-2020287, 2020287-2020288, 2020288-2020289, 2020289-2020290, 2020290-2020291, 2020291-2020292, 2020292-2020293, 2020293-2020294, 2020294-2020295, 2020295-2020296, 2020296-2020297, 2020297-2020298, 2020298-2020299, 2020299-2020300, 2020300-2020301, 2020301-2020302, 2020302-2020303, 2020303-2020304, 2020304-2020305, 2020305-2020306, 2020306-2020307, 2020307-2020308, 2020308-2020309, 2020309-2020310, 2020310-2020311, 2020311-2020312, 2020312-2020313, 2020313-2020314, 2020314-2020315, 2020315-2020316, 2020316-2020317, 2020317-2020318, 2020318-2020319, 2020319-2020320, 2020320-2020321, 2020321-2020322, 2020322-2020323, 2020323-2020324, 2020324-2020325, 2020325-2020326, 2020326-2020327, 2020327-2020328, 2020328-2020329, 2020329-2020330, 2020330-2020331, 2020331-2020332, 2020332-2020333, 2020333-2020334, 2020334-2020335, 2020335-2020336, 2020336-2020337, 2020337-2020338, 2020338-2020339, 2020339-2020340, 2020340-2020341, 2020341-2020342, 2020342-2020343, 2020343-2020344, 2020344-2020345, 2020345-2020346, 2020346-2020347, 2020347-2020348, 2020348-2020349, 2020349-2020350, 2020350-2020351, 2020351-2020352, 2020352-2020353, 2020353-2020354, 2020354-2020355, 2020355-2020356, 2020356-2020357, 2020357-2020358, 2020358-2020359, 2020359-2020360, 2020360-2020361, 2020361-2020362, 2020362-2020363, 2020363-2020364, 2020364-2020365, 2020365-2020366, 2020366-2020367, 2020367-2020368, 2020368-2020369, 2020369-2020370, 2020370-2020371, 2020371-2020372, 2020372-2020373, 2020373-2020374, 2020374-2020375, 2020375-2020376, 2020376-2020377, 2020377-2020378, 2020378-2020379, 2020379-2020380, 2020380-2020381, 2020381-2020382, 2020382-2020383, 2020383-2020384, 2020384-2020385, 2020385-2020386, 2020386-2020387, 2020387-2020388, 2020388-2020389, 2020389-2020390, 2020390-2020391, 2020391-2020392, 2020392-2020393, 2020393-2020394, 2020394-2020395, 2020395-2020396, 2020396-2020397, 2020397-2020398, 2020398-2020399, 2020399-2020400, 2020400-2020401, 2020401-2020402, 2020402-2020403, 2020403-2020404, 2020404-2020405, 2020405-2020406, 2020406-2020407, 2020407-2020408, 2020408-2020409, 2020409-2020410, 2020410-2020411, 2020411-2020412, 2020412-2020413, 2020413-2020414, 2020414-2020415, 2020415-2020416, 2020416-2020417, 2020417-2020418, 2020418-2020419, 2020419-2020420, 2020420-2020421, 2020421-2020422, 2020422-2020423, 2020423-2020424, 2020424-2020425, 2020425-2020426, 2020426-2020427, 2020427-2020428, 2020428-2020429, 2020429-2020430, 2020430-2020431, 2020431-2020432, 2020432-2020433, 2020433-2020434, 2020434-2020435, 2020435-2020436, 2020436-2020437, 2020437-2020438, 2020438-2020439, 2020439-2020440, 2020440-2020441, 2020441-2020442, 2020442-2020443, 2020443-2020444, 2020444-2020445, 2020445-2020446, 2020446-2020447, 2020447-2020448, 2020448-2020449, 2020449-2020450, 2020450-2020451, 2020451-2020452, 2020452-2020453, 2020453-2020454, 2020454-2020455, 2020455-2020456, 2020456-2020457, 2020457-2020458, 2020458-2020459, 2020459-2020460, 2020460-2020461, 2020461-2020462, 2020462-2020463, 2020463-2020464, 2020464-2020465, 2020465-2020466, 2020466-2020467, 2020467-2020468, 2020468-2020469, 2020469-2020470, 2020470-2020471, 2020471-2020472, 2020472-2020473, 2020473-2020474, 2020474-2020475, 2020475-2020476, 2020476-2020477, 2020477-2020478, 2020478-2020479, 2020479-2020480, 2020480-2020481, 2020481-2020482, 2020482-2020483, 2020483-2020484, 2020484-2020485, 2020485-2020486, 2020486-2020487, 2020487-2020488, 2020488-2020489, 2020489-2020490, 2020490-2020491, 2020491-2020492, 2020492-2020493, 2020493-2020494, 2020494-2020495, 2020495-2020496, 2020496-2020497, 2020497-2020498, 2020498-2020499, 2020499-2020500, 2020500-2020501, 2020501-2020502, 2020502-2020503, 2020503-2020504, 2020504-2020505, 2020505-2020506, 2020506-2020507, 2020507-2020508, 2020508-2020509, 2020509-2020510, 2020510-2020511, 2020511-2020512, 2020512-2020513, 2020513-2020514, 20205

Suresh Bhagat (Ph.D., IIT-Bombay) is currently a professor at the Indian Institute of Technology, Bombay. He has been a visiting scholar at the University of California, Berkeley, and the University of Michigan, Ann Arbor.

¹ See, e.g., the discussion of the relationship between the right to privacy and the right to autonomy in *Reiter et al.*, *above* note 1, at 11-12.

- How to run a small experiment
 - Guidelines for running a small experiment that will work
 - Design of small experiment
 - Designing an experiment and running it in a field
 - Specifying variables of interest
 - Specifying variables of concern
 - Guidelines in selection of samples
 - Planning well-being of plants
 - Advice on small-scale experiment
 - Description of installation of experiments
 - Implement trials
 - Monitoring trials
 - Operational flexibility
 - Advice on expansion of existing trials
 - Principles of trial design

• 100 •

3/5

卷之三十一

REFERENCES

¹ See, e.g., *U.S. v. Babbitt*, 100 F.3d 1250, 1254 (10th Cir. 1996) (“[T]he [Bald Eagle] Act does not prohibit the killing of bald eagles.”).

¹ See also the discussion of the relationship between the two in the section on "The Nature of the State," above.

¹ See, e.g., *United States v. Babbitt*, 100 F.3d 1402, 1412 (10th Cir. 1996) (“[T]he [Bald Eagle] Act does not require the government to prove that it caused the bald eagle to become an endangered species.”).

With regard to right-angled wire-cutting and wire-feeding, you may have heard of the copper-tin-zinc system, but I know, from direct experience, that it is not the best.

Wright, Frank Lloyd, 1867-1959. Frank Lloyd Wright papers, 1881-1959. (MS. 1000)

and obtained from royalty and film revenue, as well as a large number of

2 / 6

THE NEW BRAZILIAN STEEL

ANSWER

ALBERT STEIN "KOMIY", 200-18 AVENUE, Montevideo, Uruguay. Agent, United States of America.
Tele: 2-4141; Telex: 200-10000; Cables: R.R. International (International Manager).

(4) Laker Steel Company has for many years served the metal-forming industry with diversified capabilities, and
business: Specialty plate steel producer and supplier.

As a result of this long background of training, development, and experience, I have operated and supervised

• During off-line, the plant can be used to produce intermediate products, or intermediate products, including catalysts, coke, by-products, chemicals, gases, vapors, or liquids, etc., but such use must be determined by the plant manager and the general manager of the operation in accordance with the provisions of this section.

- After the plant has been taken over, it is required to be maintained, cleaned or preserved, washed, dried, and stored under conditions which will not damage the plant or any part thereof, except as may be necessary to prevent deterioration of articles on the effective date of the agreement.
- All equipment and structures shall be repaired, without undue delay, after such damage.

Reference to 10.

3/7

UNITED STATES
1970-1974

PLANT NO. 2 (MILWAUKEE) - OPERATING AGREEMENT

THE PLANT NO. 2 (MILWAUKEE) OPERATING AGREEMENT is made and entered into this 1st day of January, 1970, between Mr. William J. Tamm, Jr., General Manager of the plant, and Mr. John F. Doherty, General Manager of the Company.

WHEREAS, the Company and Plaintiff, herein referred to as "Company", have agreed to enter into this Agreement, subject to the conditions set forth in Article IV, hereof.

- To construct, maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.
- To keep the property, premises, equipment, machinery, apparatus, tools, and fixtures, fittings, and materials belonging to the Company in good condition, repair, and working order, and to make them available for the use of the Company.
- To maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.
- To maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.
- To maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.
- To maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.
- To maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.

WHEREAS, the Company, at the time, maintains, owns, or occupies, certain property, including the following described hereinunder, subject to the conditions set forth in Article IV, hereof:

• One building, situated on approximately one-half acre of land, located at 1200 North Avenue, Milwaukee, Wisconsin, containing approximately 12,000 square feet of floor space.

PLANT NO. 3 (WISCONSIN CITY)

THE PLANT NO. 3 (WISCONSIN CITY) OPERATING AGREEMENT is made and entered into this 1st day of January, 1970, between Mr. William J. Tamm, Jr., General Manager of the plant, and Mr. John F. Doherty, General Manager of the Company.

WHEREAS, Plaintiff, herein referred to as "Plaintiff", has agreed to enter into this Agreement, subject to the conditions set forth in Article IV, hereof.

- To construct, maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.
- To keep the property, premises, equipment, machinery, apparatus, tools, and fixtures, fittings, and materials belonging to the Company in good condition, repair, and working order, and to make them available for the use of the Company.
- To maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.
- To maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.
- To maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.
- To maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.
- To maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.
- To maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.

PLANT NO. 4 (NEW YORK CITY)

THE PLANT NO. 4 (NEW YORK CITY) OPERATING AGREEMENT is made and entered into this 1st day of January, 1970, between Mr. William J. Tamm, Jr., General Manager of the plant, and Mr. John F. Doherty, General Manager of the Company.

- To construct, maintain, repair, and preserve all buildings, structures, machinery, equipment, fixtures, fittings, materials, apparatus, tools, and other property belonging to the Company, and to do all acts and things necessary to keep the same in good condition, repair, and working order and to make them available for the use of the Company.

Reference to 10.

3/9

UNITED STATES
1970-1974

The majority of these parts are manufactured in Canada, U.S.A., and Australia. The parts are shipped to the customer in standard shipping containers. The types of steel used are galvanized carbon steel, stainless steel, aluminum, and copper. All standard parts are manufactured in volume orders, often as many as 100,000 units per year. These are delivered raw and in segments at various times, and often in different lots. A full description of quantity and unit cost are included in what I send you in both a word document and in the drawings.

Reference 10.

3/10

3. EXPENSES OF MATERIAL IN U.S.A.

AMERICAN
MATERIAL
COMPANY

AMERICAN MATERIAL COMPANY, Inc., Boston Street, Quincy, Mass., U.S.A. is a division of American Steel & Wire, United States Steel Corporation, Pittsburgh, Pa. This company manufactures structural steel, cast iron, bar, plate, wire, sheet, and tubing.

This company manufactures parts in large quantities. Their products are made from standard steel, aluminum, and copper. They are made from standard sizes of plate, pipe, tubing, carbon steel, cast iron, stainless steel and brass. They are made from standard wire sizes in their required final sizes.

They have, however, small quantities of special sizes.

Quantity of quantity and unit cost are included in what I send you in both a word document and in the drawings.

Reference 11.

3/11

3. EXPENSES OF MATERIAL IN U.S.A.

AMERICAN
MATERIAL
COMPANY

AMERICAN MATERIAL COMPANY, Boston Street, Quincy, Mass., U.S.A. is a division of American Steel & Wire, United States Steel Corporation, Pittsburgh, Pa.

This company manufactures parts in large quantities. Their products are made from standard steel, aluminum, and copper. They are made from standard sizes of plate, pipe, tubing, carbon steel, cast iron, stainless steel and brass. They are made from standard wire sizes in their required final sizes.

They have, however, small quantities of special sizes.

Quantity of quantity and unit cost are included in what I send you in both a word document and in the drawings.

Expert witness in selection of structural shapes and strength calculations, percentage of increased value or quantity.

Quantity of equivalent percentage of increased value or quantity and unit cost.

Expert technical assistance available, etc.

Reference 12.

3/12

3. EXPENSES OF MATERIAL IN U.S.A.

AMERICAN
MATERIAL
COMPANY

AMERICAN MATERIAL COMPANY, Boston Street, Quincy, Mass., U.S.A. is a division of American Steel & Wire, United States Steel Corporation, Pittsburgh, Pa. This company manufactures structural steel, cast iron, bar, plate, wire, sheet, and tubing.

This company manufactures parts in large quantities. Their products are made from standard steel, aluminum, and copper. They are made from standard sizes of plate, pipe, tubing, carbon steel, cast iron, stainless steel and brass. They are made from standard wire sizes in their required final sizes.

- (1) Manufacture of steel-based aluminum section, covering rod and wire drawing, annealing, welding, and stranding. The process consists of wire drawing with continuous electric annealing in-line between benches. After drawing, the wires are coiled automatically. Basket-type multi-stranding equipment is used; this is adapted to the production of aluminum and copper conductors and wire rope.
- (2) The concept chosen for the quantity provision of conductor cables for 330 overhead transmission lines.
- (3) Available according to conditions and payment fixed in individual contract, to be negotiated.
- (4) Technical and manufacturing process description, training of recipient's personnel in Hungarian plants, and technical assistance agreement before separate agreement.

Reference No.

3/13

UNITED STATES
OF AMERICA

(1) WIRE DRAWING PLANT WITH STEEL ALLOY

(1) NEW ALBANY INC., P.O. Box 101, Columbus, Ohio 43211, United States of America;
Phone: (419) 876-1641; Contact: Mr. Lester W. Knapp (President)

(2) Private: Capital: \$3 100,000; Govt: \$3 1.5 million; No. of employees: 300;
Main nature of business: Metalworking plant concern.

(3) To supply, install and operate test equipment for fine wire of ultra high strength steel in the USA.
Responsible: Mr. J. E. ...

(4) With roll forming equipment. With roll equipment and/or conveyor for producing fine wire from
respective high temperature alloy.

Reference No.

3/14

PRAGUE

(1) WIRE DRAWING PLANT WITH STEEL ALLOY

(1) CZECHOSLOVAKIE, General Management Authority, Ministry of Industry, 19000 Prague,
Czechoslovakia; Carrier: "KOMPLEX - PRAGA"; Telex: 23001; CPT; Director: Mr. V. K. Antonin (Head, Technical Cooperation Department).

(2) Capital: No. of employees: 1000; total capital: 100,000,000;
Govt: 100 million (100%); No. of employees: 20,000; Number of plants: 1;
Main nature of business: Special Steel and Mechanical Engineering.

(3) Complete drawing facilities planning and layout of the plants and machinery required for the production of
steel-based wire and bars (drawing tension, wire drawing machine, heat treatment, finishing, quality control and plant's services).

(4) Complete drawing facilities planning and layout of the plants and machinery required for the production of
steel-based wire and bars in the following areas:

- + Carbon and alloy constructional steels (including cold heading qualities)
- + Stainless and heat resistant steels
- + Stainless steels for salt heating
- + Stainless steels for welding electrodes
- + Free cutting carbon and alloy constructional steels
- + Free cutting stainless steels
- + Carbon and stainless steels for springs in coils, reels or straight lengths.

(5) General mechanical engineering: fittings, bolts, nuts and a rows, rivets, welding electrodes, springs, fasteners, items, kitchen appliances, wire mesh, etc.

- (6) + Conclusion of an engineering agreement for a specified period (engineering studies
either for a new plant or for expansion of an existing plant).
+ Conclusion of know-how and technical assistance agreements for specified periods with supply of
basic technical documents, training of personnel in Czechoslovak works, reputation of Czechoslovak
technicians for construction of the plant and for initial production period.

territorial:

- + Engineering fee

(7) + Construction of plant facility, and/or other general, technical equipment, and transport (including) the repatriation.

GROUP 4 - EXTRUSION

Technology Transfer

4/1

(1) EXTRUSION OF ALUMINUM AND ITS ALLOYS

(a) MONTECATINI EDISON S.p.A., Parco Rionord 11, P.O. Box 1100, Milan, Italy
Sales: Montedison; Telex: 61611; Phone: 02/5111; Contact: Dr. Robert Traversi
(Manager, Process and Product Development - DIXM), Montecatini Edison S.p.A.
Foro Buonaparte 6, Milan

(b) Private; Capital: Lit. 34 billion; Sales (1979): Lit. 40.5 billion; No. of
employees: 5,000; Main nature of business: Manufacture of aluminum, metals and
ferroalloys.

(c) Know-how or hot extrusion (by means of electrolytic process) of aluminum billets, i.e. no thermal treatment
configurations, tubes, and bars of various diameters and shapes, comprising the following activities:

- Cutting and sorting of billets
- Billet extrusion, with possibility of continuous hardening in-line
- Cutting up and finishing
- Annealing

(d) Licensing arrangement against payment of license covering expenses connected with transfer of technology
plus annual royalty - to be negotiated with recipient. Training of technical personnel who will be sent
abroad at client's option. Technical assistance for feasibility transfer and start-up of plant.

Technology Transfer

4/2

(1) EXTRUSION AND COLD DRAWING OF QUALITY STEEL SECTION

(a) SAMUEL FROGMAN LTD., Hyde Steel Works, P.O. Box No.1, Sheffield S. 9RJ,
United Kingdom; Sales: Osborn, Sheffield; Telex: 81121; Phone: (0743) 6004
Contact: Mr. E.W. Foster (Group Project Manager)

(b) Private; An international group of companies founded 1959; Capital: £1 million;
Sales: £10 million; Employees: 2,000; Main nature of business: Manufacture of
high-quality steel bars, extruded steel sections, rolled sheets, cutting tools, etc.

(c) A comprehensive package covering all current processes, product, equipment and operating techniques and
know-how for extruding, cold drawing, and finishing of carbon steels, low-alloy steels, stainless steels,
and certain copper-alloys and exotic metals from prepared billet. Manufacturing facilities can be
represented by a nominal output capacity of 1,000 tons per annum of current direct value of
approximately £1.5 million at an average of £200 per ton requiring capital expenditure in the region of
£1.5 million.

* Finished products are solid and hollow sections with the variety of section shape to requirements. Products
cut from extrusions up to 17 meter in length. Maximum input billet weight is some 50 kg in maximum
cross-sectional extruded area in some 1,000 mm within a diameter of 100 mm. Extrusion can be carried out
tolerances as to section, section change over length, and section twist over length. Cold drawing and
stretching is applied as may be required to improve tolerance, surface finish, and section properties of
the product.

Manufacturing techniques include billet preparation, billet heating via electric or infra-red heating,
process lubrication, extrusion, heat treatment, straightening, re-heating, cold drawing, drawing
procedures and all materials-handling equipment.

Pack-out know-how is offered covering project management requirements and provision from a design facility
to a fully operational unit involving drawings, layouts, diagrams, planning, cost and profit control,
techniques, technological and operational guidance and information are available in respect of proposed
material range, specific manufacturing route, quality standards and control, production planning and control,
cost control manpower requirements and management organization and staffing.

(d) Implementation sequence

- Step 1. Preliminary exchange between Osborn and recipient to establish mutual interest.
2. Preliminary survey visit to establish specific parameters of requirements.
3. Preparation and submission of written survey report and programme.
4. Negotiation and finalisation of proposals, financial, commercial and contractual terms.
5. Invitation for recipient to visit Osborn to see and discuss the pertinent techniques and facilities.
6. Osborn to supply reports, documentation, general instructions, statements.
7. Osborn to provide and/or arrange for expert assistance.
8. Osborn to train recipient personnel in such techniques, procedures and practices.
9. Osborn to service project operation on contractual basis.

Commercial policy

Step 1 will involve no expense to the recipient.

Steps 2, 3 and 4 will be carried out on an individual fee plus expense basis in accordance
with requirements.

Steps 5, 6 and 7 will be carried out on an individual fee plus expense basis in accordance
with requirements and in addition will be open to negotiation to rapidly agree
joint-venture arrangements.

Section 4.

4/3

CARIBBEAN

A. ESTABLISHMENT OF ALUMINUM EXTRUSION PLANT

International Metallurgical, GAGGENAUER STRASSE 14, A-1100 Innsbruck-Landstrasse, Austria; Owner: WERNER ALTMAYER, AZ 1967; Sales: 1,000,000 kg/year; 1,000 m² (new); Capital: 100,000,000 DM; Director: Dr. Helmut Fischer (Sales Manager).

A. International Metallurgical and manufacturer of aluminum and aluminum products and semi-finished copper and copper alloy products in Austria; Capital: A 410 million; Revenue: \$70 million; No. of employees: 4,500; Main nature of business: Production of wire, cable and cables in copper, aluminum, and its alloys.

- The characteristics of extruded aluminum, copper, and aluminum, the die quality is of great importance. The size of dies also has a large influence and resulting structure for an aluminum extrusion plant to have the best die-making facility.

B. Research, development, and design department of aluminum and die-making, design and erection of modern die-making equipment, research and development of suitable tools and working equipment, advice on management, technical and financial terms, negotiations regarding layout, advice on production, etc.

- Subject to further information.

4/4

CARIBBEAN

B. RESEARCH ON METAL ALUMINUM AND EXTRUSION

REMANIUTEC INC., 1000 University Street, Seattle, Washington; Sales: Over \$100 million; Capital: \$100 million; Director: Mr. J. L. Reman, President of Reman Inc. Engineering Company.

A. Reman Inc. part of Reman International which includes Reman Inc., Central Research Institute of America Scientific Research; Annual sales: \$100 million (U.S.); Capital: \$100 million; Main nature of business: Research and development.

- Research, development, design department of aluminum and die-making, research and development of suitable tools and working equipment, advice on management, technical and financial terms, negotiations regarding layout, advice on production, discussions of research experiments.

- Subject to further information for facilities in the Metal Research Institute that will be about \$10 per person per month.
- Research, development, design department of aluminum and die-making, research and development of suitable tools and working equipment, advice on management, technical and financial terms, negotiations regarding layout, advice on production, discussions of research experiments.
- Research, development, design department of aluminum and die-making, research and development of suitable tools and working equipment, advice on management, technical and financial terms, negotiations regarding layout, advice on production, discussions of research experiments.

4/5

CARIBBEAN

C. EXPANSION OF INDUSTRIAL ALUMINUM PLANT

Y. NORDEN INC., 1000 University Street, Seattle, Washington; Sales: Christian Park, 1967; Revenue: \$100 million; Director: Mr. Norden, H. Fischer (Manager, New Metal Processing Center).

A. Reman Inc. part of Reman International which includes Reman Inc., Central Research Institute of America Scientific Research; Annual sales: Over \$100 million; Capital: \$100 million; Main nature of business: Zinc and lead mining, refining and working.

- Research, development, design department of aluminum and die-making, research and development of suitable tools and working equipment, advice on management, technical and financial terms, negotiations regarding layout, advice on production, discussions of research experiments.

- Research, development, design department of aluminum and die-making, research and development of suitable tools and working equipment, advice on management, technical and financial terms, negotiations regarding layout, advice on production, discussions of research experiments.

Basis	Type	Size	Elevation
Kinetics	Extrusion	1000 kg/m ²	1000 kg/m ²
Alloy	Extrusion	1000 kg/m ²	1000 kg/m ²
Alloy	Extrusion	1000 kg/m ²	1000 kg/m ²
Alloy	Extrusion	1000 kg/m ²	1000 kg/m ²

- Research, development, design department of aluminum and die-making, research and development of suitable tools and working equipment, advice on management, technical and financial terms, negotiations regarding layout, advice on production, discussions of research experiments.

- (e) Appropriate terms will be developed to assist interested parties in their evaluation of the technology and experience known, patents, data, and utilization opportunity exist.
- Possibilities are work on a consulting fee basis, production license, or that the ultimate arrangement specific citations. Financial arrangements could be modified to meet the needs of each particular size, via letters of credit.

Expert assistance and operator training (in English) is also available.

Reference Doc.

4/6

STAGE

(1) LIBRE-ALLOY OPTIONS FOR METAL STRUCTURES (WINDOW FRAMES) MAINTENANCE

(a) COEUDIR-PECHINCY, Avenue Marconi, Paris 13^e, France; Indus. Electrometallurgie; Tel: 01 34 20 20 20; Phone: 01 34 20 20 20; Contact: A. Crepet (Head, Technical Assistance Department).

(b) Private; Major French non-ferrous metals producer; Capital: F 1.0 billion; Sales: 1,000 million; No. of employees: 1,500; Main sources of income: Primary transformation of aluminum; rolling, drawing and extrusion of all grades of aluminum alloy.

(c) The technology available concerns the production by extrusion of precision aluminum profiles, in aluminum and alloys such as Al-Mg-Si.

(d) The know-how covers all or part of the following:

- Casting of appropriate billets
- Design of sections
- Extrusion techniques
- Exploitation of materials (especially productivity)
- Heat treatment
- Quality control
- Design and production of dies (Plain, port hole, rivetrider, spider iron)

The experience of Coedir-Pechiney is derived not only from its major French plants, but also from similar operations in foreign subsidiaries, and means that the company is equipped to provide the best solution for each local situation.

(e) The projects of this technology are most commonly used in metal structures: fabrication of windows, fixed, movable partitions, cladding elements, curtain walls, etc. They are also used for decorative purposes, in transport structures, etc.

(f) Coedir-Pechiney can offer the following assistance and know-how, in part or completed:

- Basic technological documentation
- Assistance in setting up realistic manufacturing programmes
- Selection of basic equipment
- Specification of equipment and auxiliary installations to tender
- Preliminary evaluation of tenders
- Assistance in selection of supplies
- Planning and layout of plants
- Advice on ancillary equipment
- Supervision of installation of equipment
- In-plant training
- Commissioning
- Operational planning
- Advice on expansion of existing plant
- Knowhow on new projects

Reference Doc.

4/7

STAGE

(1) FABRICATION OF TUBES BY EXTRUSION AND COLD DRAWING

(a) TUPACEX, C.E. de PIROS por EXTRUSION Sist. Arana, Barrio Gardoña s/n, Eibar (Alava), Spain; Tel: 0104 TUPEX-B; Phone: 120600; Contact: Mr. Ignacio R. Fernandez (Director General).

(b) Private; Capital: Pts 75 million; No. of employees: 120; main products: Business: Fabrication of steel without welding.

(c) Fabrication of steel tubes without welding of carbon and alloy steels, by bending the billets supplied from conventional and continuous cast billets. The production comprises a range of tubes from 10 to 1,000 millimetres of outer diameter, with a great variety of thicknesses.

(d) Carbon and alloy cold-drawn types are used in the production of boiler tubes and structural.

(e) Normally we follow the royalty policy, but we can also apply other conditions. Financial agreements.

GROUP 5 – ROLLING

LITERATURE REVIEW

5/1

AMERICA

(1) ROLLING OF ALLOY AND SPECIAL STEELS

Author: RÖHRLICH and Dr. A. J., Innsbruck 1, A-1011 Vienna, Austria; Editor: Mährische Zeitung, Linz; Tel.: 1162, 1163; Theme: 100-100%; Contact: Mr. W. Fritsch, Acroter Fritsch tel. 100-08, 1, Innsbruck, Austria; Tel.: 100-08, Linz, Austria.

(c) Non-financial; Major producer of steel skins and alloy steels; No. of employees: 11,500; Capital: \$30 million; Main output and products: Production of alloy and structural steels in various forms and thicknesses.

(ii) Complete analysis for planning and design of rolling mills (flexible and roughing mill), re-rolling bar mill, sheet and strip mill for several types of all process.

Clearly define knowledge for manufacturing, assembly, mounting, control operations, heat treatment, conditioning, curing, decontamination, etc.

Training of Parrot in Bohemian Vireo.

Provision of Miller experts for technical assistance in scientific works, etc., supervision of production, advertising, public relations, etc.

(c) Dissemination of knowhow agreement for a specified period. Licensing and knowhow normally implies an royalty payable, with additional cash payment. Licensing arrangement can also be options, subject to certain conditions.

100 *Chapman*

5/2

1118 K. WILCOX

(b) GOLD MOUNTAIN COUNTRY

(7) BROMHOLM SWEDEN, The Bromholm Organization, Bromholm being their General Staff, Unit Number 100; Head: Brock W. M. Greenwell (Capt); Name: Olego M.; Command: Mr. E. J. Farrel (General Manager).

(c) **Contractors:** forms of agreement comprising procurement contracts, leases, and joint production agreements, standard, and non-negotiable contracts, together with a range of engineering products, including: **Engineering, design, planning, transmission equipment, constructional elements, etc.**; **Value of contracts: £1,000 (from); Capital: £10 million; Revenue: £10 million; Work in progress: £1 million.**

The chairman of each company or organization which had a stall was given the right to name the committee by which the company was to be represented.

and their mechanism of action, as well as the potential for resistance, will be two of the key research areas of forthcoming work until the final scheme is developed.

left the room and was seated in his chair, and informed me that all present except myself, Jim, Electriceine, Captain and pilot, were away, and the Company's agent will receive from material written about the (U.S.) Navy with respect to the subject.

They can be classified as follows: (a) simple machines (saw, etc.) in which pushing, pulling, lifting, embedding, applying, wedging, and cutting operations usually are involved. They include the pump, screw, pulley and inclined plane and the except from well-known.

Gold reduction can have a very wide field of application for an overall product incorporating the use of gold metal as being made at as quite possible that a gold reduced reaction can fulfil a requirement. It is possible to add various substances either to an oilfield, resulting in lighter weight oil with a low cost.

He signed, letter, the following:

- External manufacturer.
- Distributor (or a reseller).
- Agent or dealer.

卷之三

5/3

8-18

1993-1994 學年上學期第 10 次定期評量

W. J. H. DODD, JR., Wm. H. Nettie, Frank C. Jones, Fred G. Miller; George E. Tracy, John C. Tracy; Frank M. O'Gorman, Fred T. Ladd, Frank J. K. Hart, Frank J. K. Hart, and Frank J. K. Hart.

For private; Major General transferred in 1917 to Boston, Massachusetts, and died there in 1921.

- (4) The technology available applies to all or part of the following:

 - The manufacture of hot-rolled products, flat or coiled, for subsequent cold-rolling, such as:
 - finished plates, up to 180 mm thick.
 - the cold-rolling of sheet or strip of 0.5 mm thickness and less.

These operations can be carried out in reversing or non-reversing mills, in tandem trains, in two high-speed mills etc. Width can be up to 1,500 mm.

The experience of Sogear-Fechiney is derived not only from its major French plants, but also from those abroad. The company is equipped to review the best plant for each local situation.

(5) There are many applications for these products:

 - Medium and heavy gauge sheet for the aircraft industry.
 - Coiled strip as raw material for foil production.
 - Special quality strip for the production of coated containers for the food industry, pharmaceuticals, etc.
 - Plates, discs, blanks for stamping and upsetting.

(c) Sogear-Fechiney can offer the following assistance and knowhow, in part or complete:

 - Basic technological documentation.
 - Assistance in setting up realistic manufacturing programmes.
 - Selection of basic equipment.
 - Specification of equipment and issuing invitations to tender.
 - Preliminary evaluation of tenders.
 - Assistance in selection of suppliers.
 - Planning and layout of plants.
 - Advice on ancillary equipment.
 - Supervision of installation of equipment.
 - In-plant training.
 - Commissioning.
 - Operational planning.
 - Advice on expansion of existing plant.
 - Knowhow on new projects.

Vol. 27, No. 1, January 1995

5/4

UNIVERSITY OF
MINNESOTA

- 5/4**

(1) HOT ROLLING OF STEEL
(2) INGRAM STEEL COMPANY, Strode Avenue, Conneautville, Pa. 16420, United States of America
tel: 812-255-1141; Phone: (151) 524-2100; contact: Mr. Leander Lampert
(International Manager).
(3) Private; Sales (1971): \$13,174,000; No. of employees 300; Main industry:
sheet metal; Ferrous plate steel producer and fabricator.

- (4) Lukens Steel Company has for many years served the metal-user industry with fabrication components, utilizing various methods of hot forming. One of the processes used is that of rolling. In many cases, the design and production of special equipment and tools have been required. As a result of this long background of training, development and experience, Lukens specialists are fully able to transfer their specialist technological knowhow in the field of rolling to interested firms.

(e) 1. Lukens Steel Company can transfer the technology via expert technicians and/or management personnel, primarily through the form of lectures, individual instruction, use of operational data, analysis of operational data, designed to develop personnel in the techniques of engineering and the preparation of the specificity in question.

2. The following financial arrangements are possible:

 - a. Lump-sum payment in advance (based on estimate of time and/or manpower utilized).
 - b. Contractual arrangements. The recipient may take no more than one year from the date of contract to commence payment, and not more than ten years, with payments in quarterly installments starting on the effective date of the agreement.
 - c. All payments in US currency to a New York bank, without any reduction of time.

Bull. Amer. Mus. No. 8

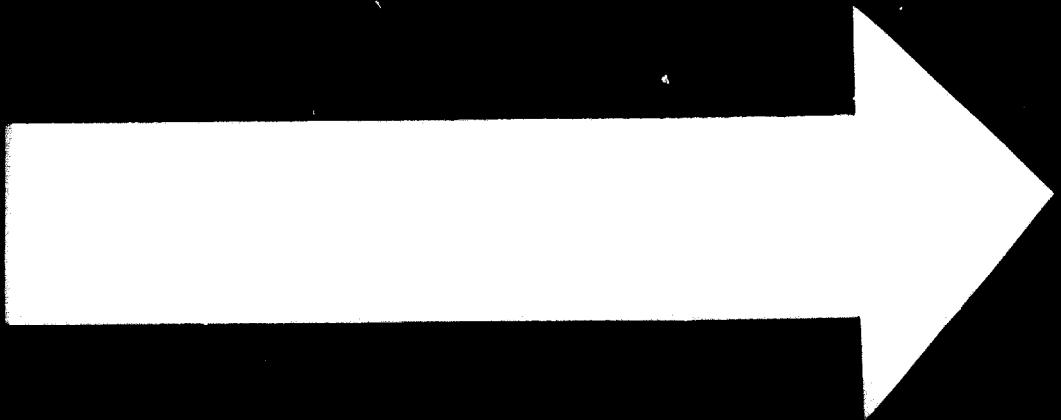
5/5

2741

- (1) ROLLING OF ALUMINUM AND ITS ALLOYS

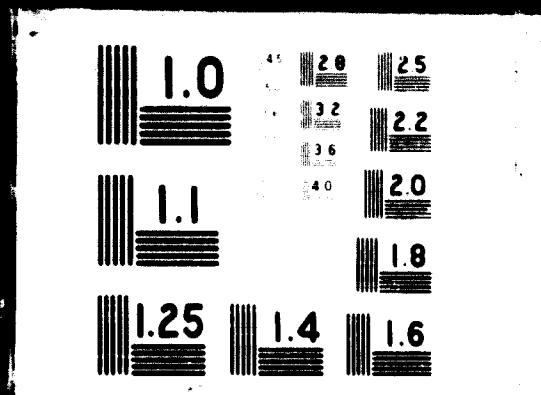
(2) MOLTING EDITIONS S.A., Rue Desjardins, 1000, Montreal, Quebec H3C 2M5, Canada; Tel: 514-383-1111; Mont-Valin; Telext: 514-383-1111; Fax: 514-383-1111; Montreal International Aluminum Process and Product Development - DIME), Montreal, Quebec H3C 2M5, Canada; Tel: 514-383-1111; Valence.

(3) Private Capital: Lit 100 million; Date: 1980; Main activity or business: Manufacturing of aluminum, aluminum alloys.



17.7.74

2 OF 3
D O
4974



GROUP 5 - ROLLING

5/1

RECORDED BY [REDACTED] ON [REDACTED]

1. [REDACTED] was born on [REDACTED] in [REDACTED].

2. [REDACTED] was married to [REDACTED] in [REDACTED].

3. [REDACTED] has [REDACTED] children.

4. [REDACTED] is a [REDACTED] and works at [REDACTED].

5. [REDACTED] has [REDACTED] relatives in [REDACTED].

6. [REDACTED] has [REDACTED] friends in [REDACTED].

7. [REDACTED] has [REDACTED] hobbies.

8. [REDACTED] has [REDACTED] interests.

9. [REDACTED] has [REDACTED] pets.

10. [REDACTED] has [REDACTED] possessions.

(c) **Employees:** A large number of employees are working with us, including, administrative, technical, scientific, teaching, medical, nursing, paramedical, auxiliary, security, food service, maintenance, transportation, construction, laundry, and other employees. Total: 10,000 (approx); Female: 6,000; Male: 4,000; Total number of employees of Indian origin: 5,000.

The following is a list of the names of the members of the Board of Education, their term of office, and the date of their election.

1958. The first two years were spent in the field, and the third year was spent in the laboratory. The first year was spent in the field, and the second year was spent in the laboratory. The third year was spent in the field, and the fourth year was spent in the laboratory. The fifth year was spent in the field, and the sixth year was spent in the laboratory. The seventh year was spent in the field, and the eighth year was spent in the laboratory. The ninth year was spent in the field, and the tenth year was spent in the laboratory. The eleventh year was spent in the field, and the twelfth year was spent in the laboratory. The thirteenth year was spent in the field, and the fourteenth year was spent in the laboratory. The fifteenth year was spent in the field, and the sixteenth year was spent in the laboratory. The seventeenth year was spent in the field, and the eighteenth year was spent in the laboratory. The nineteenth year was spent in the field, and the twentieth year was spent in the laboratory. The twenty-first year was spent in the field, and the twenty-second year was spent in the laboratory. The twenty-third year was spent in the field, and the twenty-fourth year was spent in the laboratory. The twenty-fifth year was spent in the field, and the twenty-sixth year was spent in the laboratory. The twenty-seventh year was spent in the field, and the twenty-eighth year was spent in the laboratory. The twenty-ninth year was spent in the field, and the thirtieth year was spent in the laboratory. The thirty-first year was spent in the field, and the thirty-second year was spent in the laboratory. The thirty-third year was spent in the field, and the thirty-fourth year was spent in the laboratory. The thirty-fifth year was spent in the field, and the thirty-sixth year was spent in the laboratory. The thirty-seventh year was spent in the field, and the thirty-eighth year was spent in the laboratory. The thirty-ninth year was spent in the field, and the forty-third year was spent in the laboratory. The forty-first year was spent in the field, and the forty-second year was spent in the laboratory. The forty-third year was spent in the field, and the forty-fourth year was spent in the laboratory. The forty-fifth year was spent in the field, and the forty-sixth year was spent in the laboratory. The forty-seventh year was spent in the field, and the forty-eighth year was spent in the laboratory. The forty-ninth year was spent in the field, and the fifty-first year was spent in the laboratory. The fifty-second year was spent in the field, and the fifty-third year was spent in the laboratory. The fifty-fourth year was spent in the field, and the fifty-fifth year was spent in the laboratory. The fifty-sixth year was spent in the field, and the fifty-seventh year was spent in the laboratory. The fifty-eighth year was spent in the field, and the fifty-ninth year was spent in the laboratory. The sixty-first year was spent in the field, and the sixty-second year was spent in the laboratory. The sixty-third year was spent in the field, and the sixty-fourth year was spent in the laboratory. The sixty-fifth year was spent in the field, and the sixty-sixth year was spent in the laboratory. The sixty-seventh year was spent in the field, and the sixty-eighth year was spent in the laboratory. The sixty-ninth year was spent in the field, and the seventy-first year was spent in the laboratory. The seventy-second year was spent in the field, and the seventy-third year was spent in the laboratory. The seventy-fourth year was spent in the field, and the seventy-fifth year was spent in the laboratory. The seventy-sixth year was spent in the field, and the seventy-seventh year was spent in the laboratory. The seventy-eighth year was spent in the field, and the seventy-ninth year was spent in the laboratory. The eighty-first year was spent in the field, and the eighty-second year was spent in the laboratory. The eighty-third year was spent in the field, and the eighty-fourth year was spent in the laboratory. The eighty-fifth year was spent in the field, and the eighty-sixth year was spent in the laboratory. The eighty-seventh year was spent in the field, and the eighty-eighth year was spent in the laboratory. The eighty-ninth year was spent in the field, and the ninety-first year was spent in the laboratory. The ninety-second year was spent in the field, and the ninety-third year was spent in the laboratory. The ninety-fourth year was spent in the field, and the ninety-fifth year was spent in the laboratory. The ninety-sixth year was spent in the field, and the ninety-seventh year was spent in the laboratory. The ninety-eighth year was spent in the field, and the ninety-ninth year was spent in the laboratory. The one-hundredth year was spent in the field, and the one-hundred-first year was spent in the laboratory.

- **High BDI** (≥ 10 points).
 - **High risk** (≥ 10 points).
 - **High severity.**

Digitized by srujanika@gmail.com

1911-1912. The author, Dr. W. H. Brewster, of Cambridge, Mass., has kindly given me his notes, and I have
had the pleasure of consulting them. They contain a great deal of information which I have not been able to find elsewhere.

Travels; - Many of the old notes by them, and some of the new ones, are very interesting, and I have made a copy of them, and will send you a copy of the same.

(4) Nippon Steel started the commercial production of new type of steel plate to render the following technical information:

1. Comprehensive training program:
 - SW training manufacturing technique:
 - (a) Operating technique.
 - (b) coil tension.
 - (c) Improvement of production technique.
 - (d) quality control and inspection.

Reference No.

5/24

JAPAN

(1) SPECIAL HIGH TENSILE

(2) NIPPON STEEL CORPORATION, 1-2 Otemachi, Chiyoda, Tokyo 100, Japan; NIPPON STEEL TOKYO; Telex: 21161; Phone: 03-551-1111; Director: K. Ito (Director).

(3) Private; Capital: \$ 20.7 million; Sales: \$ 117 million; Net Profit: \$ 10.9 million; 9.3%; Main nature of business: Manufacturer and distributor of structural steel products and mechanical equipment therefor.

(4) Nippon Steel's equipment capable of furnishing special high tensile steel plate with thickness of 0.700 in single sheet or 0.350 in coil form, will be available in 1980.

Nippon Steel is ready to render the technical assistance in connection with the design, construction and operation of the equipment for furnishing special high tensile.

Reference No.

5/25

JAPAN

(1) AUTOMATIC MARKING EQUIPMENT

(2) NIPPON STEEL CORPORATION, 1-2 Otemachi, Chiyoda, Tokyo 100, Japan; NIPPON STEEL TOKYO; Telex: 21161; Phone: 03-551-1111; Director: K. Ito (Director).

(3) Private; Capital: \$ 20.7 million; Sales: \$ 117 million; Net Profit: \$ 10.9 million; 9.3%; Main nature of business: Manufacturer and distributor of structural steel products and mechanical equipment therefor.

(4) Nippon Steel has various types of marking equipment:

1. Sheet Printer - This equipment can print a mark on the sheet of paper continuously with high speed of 400 m/min.
2. Mark Selecting Type Sheet Printer - This equipment has advantage of being able to select one of several marks, can be printed by printing with tape.
3. Coil Printer - This can be used for the marking coil strip. Length of paper can be changed easily.
4. Printer for Pipe or beam shape material.
5. Numbering Printer.

Reference No.

5/26

JAPAN

(1) LIGHT GAUGE COLD ROLL FORMING

(2) NIPPON STEEL CORPORATION, 1-2 Otemachi, Chiyoda, Tokyo 100, Japan; NIPPON STEEL TOKYO; Telex: 21161; Phone: 03-551-1111; Director: K. Ito (Director).

(3) Private; Capital: \$ 20.7 million; Sales: \$ 117 million; Net Profit: \$ 10.9 million; 9.3%; Main nature of business: Manufacturer and distributor of structural steel products and mechanical equipment therefor.

(4) In accordance with rapid increase of light gauge structural steel, Nippon Steel has developed the following accurate cold roll forming and cutting line.

1. Forming speed: 150-160 m/min.
2. Accuracy of cutting length: $\pm 1 \text{ mm}$.
3. Exchanging time of forming stand or type of cutting machine: 1 min. - 2 min.

Reference No.

5/27

JAPAN

(3) 3000 TON PLATE AND SHEET AND COLD-ROLLING PLANT

(1) Private; Capital: 100,000,000 Yen; Tel: 03-571-2111; Name: Kankaku, Nagoya, Japan
Address: 1-1-1, Higashimurayama, Tokyo, 162-0011; Contact: Mr. Katsuji Kishi,
General Manager.

(2) Private; Capital: 100,000,000 Yen; Tel: 03-571-2111; Name: Kankaku, Nagoya, Japan
Address: 1-1-1, Higashimurayama, Tokyo, 162-0011; Main nature of business: Production and sales of special steel
(flat, wire, narrow plate, forgings, castings).

(3) The plant is a cold-line formed strip mill, and the principal equipment is the Single Planetary Mill.
Cold rolling mills of conventional type have been replaced by planetary design. In this system,
only one planetary mill is employed, so it is possible to reduce the number of rolls.

The features of the Single Planetary Mill are:

- Short operating cycle, initial roll with a small installation, which makes the machine particularly
suited to automation of various aspects of operation.
 - Adaptability to strict control of workpiece temperature on account of compact design.
 - Short reduction ratio, with accompanying economy in number of mill stands.
 - Versatility in forming and temperature conditions permits production of steel of extremely
uniform fine metallurgical structure.
- (4) • The equipment is not yet connected with a hot strip initial stand, as a result, or both of them,
not the cold strip mill, which is now under construction, is continuing to develop.

Reference No.

5/28

JAPAN

(1) PLATE AND SHEET PATTERNING PLANT

(1) NIPPON STEEL CORPORATION, 1-1 Otemachi, Chiyoda, Chiyodaku, Tokyo, Japan; Tel: 03-551-2111; Telex: 114; Name: J. S. Dill; Contact: Mr. Isamu Okaki
(Director).

(2) Private; Capital: \$ 500 million; Sales: \$ 100,000 million; No. of employees:
80,000; Main nature of business: Manufacture and sale of iron and steel and of
chemical products, and insurance, industrial finance.

(3) Nippon Steel techniques permit the manufacture of various universal rolled products. Nippon Steel
manufactures bridge, railroad and automobile, structures, pipes and wire, aircraft, etc., as well as current
technological fields, including a continuous rolling line, for example.

Information on the above plant may be obtained at the manufacturer, Nippon Steel.

Reference No.

5/29

JAPAN

(1) PLATE AND SHEET PATTERNING PLANT, TOKYO, JAPAN

(1) NAKAMOTO METAL INDUSTRIES INC., 10-Kitashirakawa, Meguro-ku, Tokyo, Japan
Capital: JAPANESE YEN; Tel: 03-540-1111; Name: O. Nakamoto.

(2) Private; Capital: 100,000,000 Yen; Tel: 03-540-1111; Name: N. Nakamoto
Address: 1-1-1, Higashimurayama, Tokyo, 162-0011; No. of employees: 1,000 (as of end of 1971); Main nature of business:
Production and sales of various steel rolled products, alloy steel rolled products,
forging, casting, rolling, etc., parts and fasteners.

(3) 1. Production technology of wheel and tire, including hot working, heat treatment and machining.
2. Production of parts of trucks and fabrication of trucks.

(4) 1. Engineering service at the construction of production facilities (including design and construction).
2. Technical assistance of operation and quality control.
3. Training at our plant in Japan.

GROUP 6 - TUBEMAKING**(1) MANUFACTURE OF STEEL TUBES****6/1**

- (1) Private; Capital: Lit. 100 million; Sales (1970): Lit. 100 million; No. of employees: 1,000; Main nature of business: Manufacture of steel tubes and associated items.
- (4) 1. Butt-welding of tube sections
2. Manufacture of electric resistance-welded (ERW) and continuous butt-welded (CBB) pipes, pressure tubes
3. Cold drawing
4. Manufacture of seamless, conical and tapered pipe
5. Manufacture of steel cylinders
6. Bitumen coating and cathodic protection of tubes
- (5) Design of equipment, training for administrators and personnel and other aspects of technology transfer. The specific terms and conditions involved will depend on the particular manufacturing.

(2) FABRICATION OF ALUMINUM ALLOY TUBES**6/2**

- (1) Non-Basic: Head Office: P.zza Giovanni XXIII, 1, I.C. Box 500, Milano, Italy; Other: Montebelluna; Telex: 1014; Phone: 02 5000; Contact: Dr. Robert Franchini Manager, Process and Product Development - (MME), Montebelluna S.p.A. in Banchisurte 10, Milano.
- (4) Private; Capital: Lit. 240 billion; Sales (1970): Lit. 40 billion; No. of employees: 1,700; Main nature of business: Manufacture of chemicals, metals and fertilizers.
- (4) Fabrication of aluminum alloy tubes, pipes, etc. by seam-welding process. The weld is melted and deposited to restore the original properties of the alloy.
- (5) Irrigation tubes, pipelines for water, air, etc.
- (6) Licensing arrangements against payment of lump sum covering extended license with transfer of technology plus annual royalty - to be negotiated with recipients. Training of technical personnel who will be in charge of plant operation. Technical assistance for technical transfer and start-up of plant.

(1) PRODUCTION OF THIN-WALLED COPPER AND ALUMINUM TUBES BY PILGER ROLLING AND DRAWING IN COILS

Reference No.

6/3

AUSTRIA

- (1) Vereinigte Metallwerke DANSCHOTT-BERGHOFF AG, Bergstrasse 4, A-101 Amstetten, Austria; Other: VWW Amstetten; Telex: 1014 (Amstetten); Other: 02 24 10 10 10; Contact: Dr. Mario Pizzetti (Sales Director), GM Bautzen-Großhartmannsdorf AG, A-2100 Bautzen, Riesa, Germany.
- (4) Governmental; Leading producer and manufacturer of aluminum and aluminum alloys and non-ferrous and copper and copper alloy products in Austria; Capital: \$ 110 billion; Sales (1970): \$ 2.5 billion; No. of employees: 4,000; Main nature of business: Production of zinc, tin, and lead and their alloys, aluminum, and its alloys.

(4) cold pilger rolling

based on rolling of bloom between calibrated rolls, stretching material lengthwise along a fiber surface of armor.

Max. dia. of billet:	76 mm
Wall thickness:	0.3 mm for copper 0.5 mm copper alloys
Finishing size:	30 mm dia., 1.1 mm wall 6 mm dia., 1.4 mm wall
Feed motion:	8 - 12 mm (depending on alloy)
No. of strokes per min:	145
Coolant/lubricant:	Benzine 1:6

Drawing of tubes in coils

The tube discharge from the pilger mill is further reduced in the coil line during the automatic drawing. Resulting product has accurate size and good inner surface quality.

Tube can be produced with finished diameters of 12 mm and 6.5 mm wall thicknesses.

Known available drawing sequences, the layout, heat treatment, and coating.

2. The following information is available:

3. A copy of the contract is attached.

Reference No. 6/4

6/4

Austria

MANUFACTURE OF PLANT AND EQUIPMENT

1. **MA-VR AUSTRIAMETALL**, Zweigstrasse 1, A-1030 Vienna, Austria; Owner: United Mining Wien; Address: 1030 Vienna; Phone: 711-11-11; Director: Mr. Otto Mayer (Sales Management).

2. **Product:** Coal gasification plant; Main purpose of plant: Manufacture of plastics and chemicals from coal.

3. **Scope:** Manufacture of plants for the manufacture of chemicals and intermediate and finished equipment. This includes:

- Active equipment and equipment
- Drawings, tool set data, etc.
- Assembly schedule
- Technical specification by Austria client
- Technical requirements of reference plant

4. **The mode of delivery:** Plants integrated with auxiliary devices; drawings are extended to internal and external and internal distances are included; end result of plant are given further.

5. **Performance period:** 12 months from start of work.

6. **Delivery period:** 12 months. Final acceptance for technical performance. Will submit at design, erection and trial operation stages of plant construction.

Reference No. 6/5

6/5

Austria

MANUFACTURE OF PLANT AND EQUIPMENT

1. **GRIMMAGAS, Griesbachstrasse, Linz 9, Austria;** Mr. Peter Reichen (Director-Linzen), Head Department, Phone 03 22 41 11 11; Director: Mr. Peter Reichen (Director-Linzen), Phone 03 22 41 11 11.

2. **Product:** Coal gasification plant; Main purpose of plant: Manufacture of chemicals and intermediate products.

3. **Scope:** Manufacture of plants for the manufacture of chemicals and intermediate products, and, also, raw materials, tools; starting from the first stage of plant construction, including design, erection, and production.

4. **Delivery period:** 12 months from start of work. Final acceptance for technical performance. Form of payment plan: Performance period, 12 months.

5. **Delivery period:** 12 months. Final acceptance for technical performance. Form of payment plan: Performance period.

6. **Delivery period:** 12 months. Final acceptance for technical performance.

7. **Delivery period:** 12 months.

Reference No. 6/6

6/6

Austria

MANUFACTURE OF PLANT AND EQUIPMENT

1. **MEYER IRON AND METALWORKS, Section 1, P.O. Box 1, Budapest XXI, Hungary;** Address: 1071 Budapest; Phone: 11-10-11; Director: International Commercial Relations Department.

2. **Product:** Coal gasification plant; Main purpose of plant: Foundry and intermediate products.

3. **Scope:** Manufacture of plants for the manufacture of foundry and intermediate products. The production process was completely modernized in 1968, with the introduction of oxygen cutting, prefabrication and field.

4. **Delivery period:** 12 months. Final acceptance for technical performance. Form of payment plan: Performance period, as well as interim milestones.

5. **Delivery period:** 12 months. Final acceptance for technical performance. Form of payment plan: Performance period.

6/7

- (1) Complete knowledge of the plant and its products; ability to evaluate the quality of the steel produced; ability to evaluate the quality of the heat treatment process.
- (2) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (3) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (4) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.

6/8

- (1) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (2) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (3) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (4) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.

6/9

- (1) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (2) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (3) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (4) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (5) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.

6/10

- (1) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (2) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (3) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (4) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.
- (5) Complete knowledge of the plant's equipment and processes; ability to evaluate the quality of the heat treatment process.

- (c) Engineering industry, rollers for rolling mills, materials and fixture, various cutters for the mechanical engineering industry, etc.
- (d) Technical assistance agreements for a specified period covering: a) engineering studies for the construction of our export plant.
- b) Purchase of know-how and technical assistance agreements for specified periods with supply of basic technical documents, training of personnel in Creusot-Loire's factories and at the plant of the metallurgical and for an adjustment period.
- (e) Royalties:
- Royalties due
 - Royalties and know-how normally payable against each payment (lump-sum) plus royalties.

Reference No.

6/11

JAPAN

(1) ROLLING PROCESS AND WELDING

- (a) KAWASAKI STEEL CORPORATION, New Kawasaki Bldg., 11-1 Yurakucho 1-chome, Chiyoda-ku, Tokyo, Japan; Cable: KAWASEI TOKYO; Phone: 531-4111; Telex: 022-267-7711; Contact: Mr. Katsu Iseki (General Manager)
- (b) Private Capital: \$1.5 billion; Sales: \$10,000 million; No. of employees: 10,000; Main nature of business: Production of structural steel products from our Steel Manufacturer.
- (c) Royalties: Royalty on the various stages involved from the receipt of hot-rolled coil to the final delivery of medium frequency electric resistance welded pipe is offered.
- (d) We are ready to negotiate for detailed conditions mentioned above depending upon specific interest of customers, taking into consideration type, scale and characteristics of their projects.

Reference No.

6/12

JAPAN

(1) MANUFACTURE OF TAPERED POLES

- (a) NIPPON KOKAN K.K., 1-10, Minamisumidai-cho, Kawasaki, Japan; Cable: STEELTURE TOKYO; Telex: 531-2714; Phone: 044-1111; Contact: Mr. Saito Yamada (General Manager)
- (b) Private Capital: \$1.5 billion; Sales: \$10,000 million; No. of employees: over 10,000; Main nature of business: Production: Annual capacity = 150,000 metric tons. Steelmaking: Annual capacity = 1.5 million metric tons. Manufacturing: Annual capacity new building = 1.5 million metric tons.
- (c) Specialized technology in lighting pole and tapered poles developed in the manufacture by use of the unique turning shear. Nippon Kokan has developed its original know-how for the production from a special cutting method of material plates up to the market. This permits successful manufacture of satisfactory tapered poles at a high efficiency. All the manufacturing techniques and facilities for this purpose including the above-mentioned know-how can be provided.
- (d) Supplying know-how, patent technology, training of experts.

Reference No.

6/13

JAPAN

(1) PRODUCTION TECHNOLOGY OF STRAIGHT SEAM WELDED PIPE BY ROLL BENDING

- (a) SHIMIZU METAL INDUSTRIES LTD., 17 Kitahama 5-chome, Higashii-ku Osaka, Japan; Cable: SHIMIZUMETAL OSAKA; Telex: 044-144; Phone: 06-220-1111
- (b) Private Capital: 1,000,000,000; Sales: 1,000,000,000 (between 1 October 1971 and 31 March 1972). No. of employees: 1,000 (as of end of 1971); Main nature of business: Production and sale of carbon steel rolled products, forged, casted, rolled steel parts and railroading.
- (c) i. Production technology of high-test class steel API Standard (X), covering cold forming of steel plate by cold bending press and pipe by roll bending, and submerged arc welding of both inner and outer faces of seam.
- ii. Inspection technology of spiral welded tubes by ultrasonic, etc.
- (d) i. Engineering service and construction of plant
- ii. Instruction of operation and quality control
- iii. Training at our plant in Japan.

6/14

(1) PRODUCTION TECHNOLOGY OF SPIRAL WELDED PIPE

(a) SUMITOMO METAL INDUSTRIES LTD., 10 Kitamura-cho, Nishinomiya City, Hyogo
Capital: JPY 1,111,400; Sales: JPY 1,111,400 (as of end of March 1977);
Cable: SUMITOMOMETAL OSAKA; Telex: 6118; Postcode: 662-0831.

(b) Private; Capital: Yen 1,111,400; Sales: JPY 1,111,400 (as of end of March 1977);
No. of employees: 100 (as of end of March 1977); Main output of
business: Production and sales of carbon steel rolled products, alloy steel rolled
products, forging, casting, rolling stock parts and fabrication.

- (c) 1. Production technology of high-test line pipe (API Standard 10X), such as high-efficiency continuous spiral forming of hot rolled strip and subsequent welding by submerged arc method of seam.
2. Inspection technology of spiral welded pipe at the early stage.

- (d) 1. Engineering service and construction of plant
2. Instruction of operation and quality control
3. Training at our plant in Japan.

6/15

(1) PRODUCTION TECHNOLOGY OF ELECTRIC WELDED STEEL PIPE

(a) SUMITOMO METAL INDUSTRIES LTD., 10 Kitamura-cho, Nishinomiya City, Hyogo
Capital: JPY 1,111,400; Sales: JPY 1,111,400 (as of end of March 1977);
Cable: SUMITOMOMETAL OSAKA; Telex: 6118; Postcode: 662-0831.

(b) Private; Capital: Yen 1,111,400; Sales: JPY 1,111,400 (as of end of March 1977);
No. of employees: 100 (as of end of March 1977); Main output of
business: Production and sales of carbon steel rolled products, alloy steel rolled
products, forging, casting, rolling stock parts and fabrication.

- (c) 1. High-efficiency production process for electric welded steel pipe
2. Production technology of high-grade steel tube, such as mechanical strength, dimensional

- (d) 1. Engineering service and construction of plant
2. Instruction of operation and quality control
3. Training at our plants in Japan.

GROUP 7 – POWDER METALLURGY

7.1 FINLAND

The ASEA AB, Turbogenerator Division, has been developing the use of Al-Al₂O₃ composites for use in electric power generation. The work is being done in Sweden.

The ASEA AB, Turbogenerator Division, has been developing the use of Al-Al₂O₃ composites for use in electric power generation. The work is being done in Sweden.

Information Sec.

7/1

FINLAND

7.2 UNITED STATES OF AMERICA

The ASEA AB, Turbogenerator Division, has been developing the use of Al-Al₂O₃ composites for use in electric power generation. The work is being done in Sweden.

Principles: Current interest: Item 8.1, subject: No. of employees: 10; Main activities: Research and Development; Type of business: Manufacturing of metal parts, metal products;

The following are some of the activities of the company: Research and development of special materials for metal parts, metal products;

- Research and development
- Production of metal products
- Research and development of metal products

For example, the products, and their initial applications, have been developed for the USA and sufficient experience has been gained in the production of the required products.

Principles: Current interest: Item 8.1, subject: No. of employees: 10; Main activities: Research and Development; Type of business: Manufacturing of metal parts, metal products;

The following are some of the activities of the company: Research and development of special materials for metal parts, metal products;

Principles: Current interest: Item 8.1, subject: No. of employees: 10; Main activities: Research and Development; Type of business: Manufacturing of metal parts, metal products;

The following are some of the activities of the company: Research and development

The following are some of the activities of the company: Research and development of metal parts, metal products;

The following are some of the activities of the company: Research and development

7.3 UNITED STATES OF AMERICA

The ASEA AB, Turbogenerator Division, has been developing the use of Al-Al₂O₃ composites for use in electric power generation. The work is being done in Sweden.

Principles: Research and development of metal parts, metal products; Type of business: Manufacturing of metal parts, metal products;

The following are some of the activities of the company:

- Research and development of metal parts, metal products
- Research and development of metal parts, metal products
- Research and development of metal parts, metal products

The following are some of the activities of the company: Research and development of metal parts, metal products;

Information Sec.

7/3

UNITED STATES
OF AMERICA

Reference No.

7/4

UNITED KINGDOM

- (1) MANUFACTURE BY POWDER METALLURGY OF HARDMETAL CARBIDE TIPS AND BLADES.
- (2) MAXICARB METALS LTD., Burnley Road, Burnley, Lancashire BB11 1JL, United Kingdom; Telex: 70141; Director: Edward Scott, MSc, FIMM, MRIM, MIM, MIMI, MIMI (Managing Director).
- (3) Private; Sales: £ 2.5M; Number of employees: 100; Main products: Wear-resistant instruments; Manufacture of kennametal tips and tools, carbide cutters.

- (4) Complete manufacturing process, including:

Formulation	Diffusion coating
Mixing	Hot isostatic pressing
Precising	Hot isostatic
Pressing	Hot isostatic
Cleaning	Hot isostatic
Degassing	Hot isostatic

Also advice on plant and space requirements.

- (5) Expert assistance and personnel training at every stage of equipment implementation. Short-term low payment and restricted period of royalties to be agreed. Interests with respect to plant location required. Recipients to pay all reasonable expenses (travel, insurance, shipping, etc.).

Reference No.

7/5

UNITED STATES
OF AMERICA

(1) POWDER METALLURGY TECHNOLOGY

- (1) NEW INDUSTRIAL TECHNIQUES INC., 11000 North Andrews Road, Ft. Lauderdale, Florida 33309, United States of America; Founder: James C. Smith; President: Mr. James Andreotti (President).

- (2) Private; Sales: \$ 2.5 million; No. of employees: 100; Main products: Powder compaction, sintering, powder metallurgy parts, and tools.

- (3) Complete knowhow on the manufacture of powder metallurgy (PM) parts.

Basic analysis:	Conventional vs PM parts sets
	Cost of starting up PM operation
Design of parts:	Design for part conventional production
	Materials selection
	Prototype parts

Equipment recommendation, selection, and procurement (model, form, size, number, quantity).

Tooling:	Tool design, manufacture, and testing
Production:	Location of equipment
	Materials flow

- (4) New Industrial Techniques Inc. propose the following:

Equipment:	Compacting press at cost through affiliate, converter plus 10% profit
Tooling:	Design at 10% and above/manufacture at cost plus 10%
Training:	All key personnel to be trained at NIT plant, plus expert instruction at recipient's plant for annual consulting fee of \$150,000 for one year, \$100,000 for each of the next two years, plus travelling, expenses and per diem for second foreign liaison (by agreement).

Reference No.

7/6

HUNGARY

- (1) PRODUCTION OF IMPROVED GRADES OF MIXED FERRITES FOR USE IN POWER METALLURGY.
- (2) RESEARCH INSTITUTE FOR FERROUS METALLURGY, Budapest, 11th District, Hungary. Phone: 290-090.
- (3) Governmental; No. of employees: 300; Main nature of current: Research and development in ferrous metallurgy.

(7) Develop a process of the synthesis of fine metal powder by water, air, liquid, or a combination of these media. Also, develop a method of synthesis of fine metal powder, which will afford better magnetic properties of ferrite.

Ferrites of different compositions and sizes can be made. By using iron powder, electrolytic Mn, that are free from contaminations, the compositions can be varied. The compositions can be varied by adding Mn, Fe, Ti, etc., to ferrite, and/or the magnetization can be varied. The ferrites can be synthesized by the methods of solid state reaction, liquid phase sintering, FeMn, FeNi) by atomic exchange.

Also, the ferrite composition can be varied to the base material produced by this process.

A final product of ferrite can be sold with magnetic values of about \$13.00-100 per ton can result from this use of this process.

(8) Develop a technology for the production of magnetic components for radar, electronic, etc. industries.

(9) Develop a process.

Reference No.

7/7

PATENT

7.7. WELDING AND SINTERING POWDER METALLURGY

(1) GENERAL, "Metallurgy Technical Research Institute," Institute of M., Belorussia M., Gomel, Belarus, Chemnitskij 14, Ukraine, 20000.

(2) University, State educational research institute, educational institution, Ministry of Education, Ministry of Culture, Ministry of Science, Ministry of Defense, Ministry of Internal Affairs, Ministry of Foreign Affairs, Ministry of Finance, Ministry of Economic Development, Ministry of National Economy, Ministry of Construction, Ministry of Agriculture, Ministry of Health, Ministry of Environment, Ministry of Transport, Ministry of Communications, Ministry of Radioelectronics, etc.

(3) The manufacture of composite materials. Welding powder metallurgy, sintered production processes, special solutions. GENERAL can also conduct basic development work in this area. (4) Review offers concern the selection of the elements, technological sequence of joining, etc., on the basis of which first of all to make the interdenomination agreements without the use of special equipment.

(5) Radar, electronics, telecommunications, etc.

(6) Production of welding and sintering plant supplied against lump-sum payment.

Reference No.

7/8

UNITED STATES
OF AMERICA

7.8. WELDING PROCESS

(1) AIAWAI INCORPORATED, Brooklyn, New York 11201, United States of America; General Offices: 100-1100 Flushing Avenue, Brooklyn, New York, New York(11201); Director: Mr. R. J. Preiss (President).

(2) Developed unique equipment with worldwide industry. Main feature of equipment: the ability of creating variable plasma.

(3) The technology offered, export technical assistance in the following areas:

- (a) Description of required equipment and recommended domestic and foreign sources.
- (b) Training of licensee personnel at Henrietta, N.Y. and/or Turnhout, Woer, The Netherlands.
- (c) Metallurgical consulting services.
- (d) Exchange of new developments in cutting, erosion, methods of manufacture, equipment, carbide use etc.

(4) Titanium and titanium carbide products are used for cutting tools, mining tools and wearing parts. Also other specialized applications where high strength and resistance to wear are required.

(5) The knowhow is available in various forms of licensing agreements.

Reference No.

7/9

UNITED STATES
OF AMERICA

7.9. HIGH PURITY POWDER PRODUCTION

(1) MIRALUMET INC., P.O. Box 100, Salt Lake City, Utah 84110, United States of America; President: Michael C. Ladd; Director: Dr. James M. Ladd, Ph.D., President.

(2) Precision Casting Co., Cedar Park, Texas 78613, United States; Director: Michael Ladd, Ph.D.

(3) Will design, build and operate high purity powder production units for the production of powder from molten metal such as titanic and etc. These units are external induction melted or arc melted metal or unit can have added gases like carbon, argon, helium, hydrogen, etc. Powder densities collected in a high purity gas. Particularly useful for high temperature alloy.

(4) Will sell equipment and/or certain off equipment. Will sell technology and prior to expert assistance in starting and operating equipment.

GROUP 8 – SHEET METAL FORMING

Reference No.

8/1

FRANCE

(i) MANUFACTURE OF FORGED PRODUCTS AND WELDED TUBES IN HIGH ALLOY

(j) GOMARD-TECHNOLY, 10 Avenue Marceau, Paris 16^e, France; Tel.: 54 00 00; Director: M. Gomard; Phone: 54 00 00; Contact: A. Gravet (Head, Technical Assistance Department).

(k) L'Institut Mécanique de l'Industrie du Métal (IMI), 10 Avenue Marceau, Paris 16^e, France; Tel.: 54 00 00; Director: M. Gomard; Phone: 54 00 00; Main nature of business: Primary transformation of aluminum: rolling, drawing, and extrusion of all wrought aluminum alloys.

(l) The technology available concerns:

- Manufacture from cold-tempered strip of products sheeting (e.g., corrugated sheets, tempering).
- Manufacture from strip of pre-coated systems.
- Manufacture from strip of welded tubing.

(m) Knowhow covers principally the following:

- Definition of suitable strip qualities (alloys, metallurgical treatment, etc.).
- Design of press tools.
- Manufacturing techniques.
- Operation of plant.
- Quality control.

The existence of Gomard-Technolyc is derived not only from a major French plant, but also from smaller operations in foreign subsidiaries, and means that the company is equipped to provide the best solution for each local situation.

(n) Pressed sheets are used principally in the constructional industry, for roofs, ceilings, etc.

Welded tubes are used for metal furniture (smaller diameters) and in irrigation (large diameters).

(o) Gomard-Technolyc can offer the following assistance and knowhow, in part or complete:

- Basic technological documentation.
- Assistance in setting up realistic manufacturing programmes.
- Selection of basic equipment.
- Specification of equipment and issuing invitations to tender.
- Preliminary evaluation of tenders.
- Assistance in selection of supplier.
- Planning and layout of plants.
- Advice on ancillary equipment.
- Supervision of installation of equipment.
- In-plant training.
- Commissioning.
- Operational planning.
- Advice on expansion of existing plant.
- Knowhow on new products.

Reference No.

8/2

HUNGARY

(i) APPARATUS FOR DETERMINING DEEP-DRAWING CAPACITY OF SHEET METAL

(j) APPARATUS FOR DETERMINING DEEP-DRAWING CAPACITY OF SHEET METAL, Párizsi utca 146, Budapest 11, Hungary; Phone: 30-00-00; Contact: Dr. John Voth (Technical Director).

(k) Governmental; No. of employees: 200; Main nature of business: Research and development in ferrous metallurgy.

(l) A technique and apparatus have been evolved for validating the deep-drawing and stretch-forming properties of sheet metal. This is based on measurement of the formability parameters: plastic anisotropy (α) and strain-hardening (n).

The apparatus determines α and n values simultaneously and accurately from tensile tests.

(m) Sheet metal industries (preparing, stamping, etc.), such as automotive, textile apparatus, etc., and basic steel producing industry (for determination of optimum parameters).

(n) Knowhow and equipment available, subject to negotiation. The equipment can also be studied in Hungary.

8/3

• 8 188-132-2

卷之三十一

REVIEW ARTICLE: *THE HISTORY OF THE BALTIC STATES*, by Rolf-Dieter Müller, Berlin, 1990.

Figure 14. Earthquakes in the area of the San Andreas fault between 1900 and 1960. The magnitude of each event is plotted against its distance from the San Andreas fault. The magnitude of the largest event is 7.00; the distance of the largest event is 100 km.

¹⁰ See, e.g., *U.S. v. Babbitt*, 100 F.3d 1322, 1328 (10th Cir. 1996) ("[T]he [FWS] has authority to regulate the importation of species that are not listed under the Convention, but which are listed under the Endangered Species Act.").

- Model building: did I build a model of something, either to understand it better, or to communicate my ideas to others.
 - Planning and tracking: in theory, experiment, or design, did I plan, track, or monitor progress toward a goal?
 - Play: **How did I play?** Did I play with things, objects, or ideas, trying to understand them through trial and error, trial and improvement, or trial and fun?
 - Problem solving: did I work on two or three ideas, and then choose one to work on further? Did I try different approaches, or did I keep coming back to the same approach?

Digitized by srujanika@gmail.com

8/4

(2) GOLD FILL MATERIAL OF STAINLESS STEEL

PRINTER'S MARK

(c) Mr. Williamson said, "I am not able to give you any definite information concerning the present condition of the water supply system, but I can assure you that it is in good condition."

It first goes through a preparation which separates the clay, sand, and gravel from the rest of the soil by means of a roll-forming mechanism. The latter is used to separate the fine material from the coarser material.

Self-assembly forming a well-developed polymer network is observed.

Other automation techniques may be necessary to produce functionally equivalent systems, such as those shown in Figure 4 with functioning processors and no external memory storage.

(b) Armament, helms, steering equipment, constructional machinery, aircraft and their equipment, tanks, propelling apparatus, etc.

(c) 1. Joint venture policy for development of self formed steel products and markets.
2. Licensing for products and plant.
3. Training of recipient's personnel.
4. Design and delivery of equipment.
5. Expert technical assistance.
6. Financial arrangements.

Reference No.

8/5

BRUNO KNUDSEN

(1) APLICACIONES DE LA ESTATÍSTICA MATEMÁTICA EN LA INVESTIGACIÓN

(c) FSC ALLOYS LTD., Alloys division, P.O. Box 40, St. Andrews Road, Bognor Regis, West Sussex, United Kingdom. Date of Application: April 1971. Date of Publication: October 1974; Contract: Mr. B. E. Rutherford, Director of Research, FSC Alloys Ltd.

(iv) Private Limited Capital: £ 16,000; Annual Income: £ 1,000,000; Nature of business: Manufacture of fertilizers, phosphate, super-phosphate, zinc-phosphate, super-phosphate and manures.

(d) Sheet metal forming equipment which will be the standard equipment for the metal with the aim of forming the plates. This will include the following: rolling mill, hot and cold rolling, wire bending, hot and cold forming, drawing, stretching, etc., for example, low-cost metal forming. The price will be kept at the lowest level possible.

The above will be supplied to companies which have experience in sheet metal forming, drawing, stretching, bending, rolling, plating, and so forth. The first two years all machinery is supplied free of cost and after that 10% of the cost.

In general, the above will be supplied to companies which have experience in sheet metal forming, drawing, stretching, bending, rolling, plating, and so forth. The first two years all machinery is supplied free of cost and after that 10% of the cost.

After delivery, the equipment will be used for the production of metal products.

After delivery, the equipment will be used for the production of metal products.

After delivery, the equipment will be used for the production of metal products.

(e) Know-how and equipment for the handling of components from sheet metal are offered. The know-how will include:

- A number of sheet metal forming techniques, application of the material, site for product design, selection of metal, forming technique, forming, forming techniques, manufacturing costs, and marketing area.
- An extensive specification for the necessary forming machinery.
- A machine operating manual.
- Up to five thousand experts technical, financial, and market specialists.
- Information on the use of the forming process and advice on each aspect of the know-how.

For these services and the know-how and of our products for know-how, we charge £1,000 initial fee and a royalty of 10% on all sales value of products produced.

In the following what we want to directly license, which we hope to license shortly in either - an existing production system featuring the ability to extend the range of material in which he can offer his products or - an existing plant that is capable of producing the quality tank 10,000 per year, or a manufacturer who produces a tank of the size of the quantity tanks.

Availability of the sheet: We are confident that during the implementation period the sheet is imported from the U.S.A. Know-how and equipment for the local making of sheet metal will also be available from IN ALUMI Ltd. under a separate.

Reference No.

8/6

WAGAM

(1) DRAWING AND CONTINUOUS FABRICATION (INCORPORATED, 1971) LTD. CHINA IN ASSOCIATION WITH INTERNATIONAL DEVELOPMENT FOR INDUSTRIALISATION (1980)

INCHIN C.A., the Metal Working Division, c/o, 11th Avenue, 10th District, Bangkok, Thailand; Tel: 02-233-1111; Telex: 142-233; General Manager: Mr. S. K. Chai, Chairman of the Metal Working Division.

(a) Drawings supplied with a capacity of 10,000 t.p.d.; plant location: Bangkok, Thailand; Annual turnover of about £1,000,000; Annual production: 10,000 t.p.d.; Number of employees: 150; plant will be under construction by December 1980; plant will be able to produce metal working.

(b) Drawings supplied with a capacity of 10,000 t.p.d.

- equipment comprising:
 - An integrated continuous forming system, including, forming, drawing, forming of maintenance, inspection and so on).
 - Moulds, dies, jigs, fixtures.

(c) Drawing equipment of the manufacturing and sale with the building of plant and machinery (total investment).

Reference No.

8/7

WAGAM

(1) GOLD FORMING LTD., 222 Wangwiwatwongso, Rama 9, Bangkok, Thailand (THAILAND)

(a) Project Capital: \$3 million; Tel: 02-233-1111; General Manager: Mr. S. K. Chai, Chairman of the Metal Working Division; Main nature of business: Production; Annual capacity = 10,000 metric tons; Plant location: Annual output steel plate = 10,000 metric tons; Plant facilities: Annual capacity new buildings 10,000 metric tons.

(b) Manufacture of light steel sections for building and structural purposes, new structures, etc., but in order to produce satisfactory products a high efficiency, if it is particularly necessary to increase an excellent rate, quality, and facilities, and so forth, may be necessary.

We can supply know-how of roll forming for the production of sheet metal, to ensure optimum facilities and complete plant guidance for this purpose.

(c) Supply of know-how, patent policy; Drawing of equipment, blueprint and other services.

GROUP 9 - MISCELLANEOUS METHODS OF FORMING

(1) EXPLOSIVE FORMING

- (.) GOVERNMENT RESEARCH INSTITUTE, University of Denver, Denver, Colorado, United States of America; Phone: (303) 734-2174; Contact: Mr. Andrew J. Palmer, Manager, Dept. of Mechanical Sciences and Environmental Engineering.
- (.) Private; University-based non-profit research subsidiary; \$1,000,000.00 maximum research and development contract; Main nature of business: Research and development.
- (.) Explosive forming uses the energy of high explosives in a centralized manner to form metal parts. No female die is needed, the explosive shock wave acting as a male die. The initial investment required is very low, since only a pool of water of sufficient size, a tank or barrel, safety, containment and working area, and the usual hand tools are necessary. In addition, the explosive technology is such that it will make it possible to locate the facilities within 100 miles of other established businesses if desired.
- (.) Explosive forming of boxes for storage or shipping would show the greatest potential for economic profit.
- (.) The Denver Research Institute will design the facility, train the personnel to operate it, and assist in conducting a market survey, preparing an economic analysis, and a site location plan. Institute personnel will provide expert assistance in putting the facility into production and will be available for subsequent consultation and guidance.
- Repairs or service are offered by the Institute at cost plus a management fee of 10% of total sales, continuing two years after the facility goes into production. The royalty may be paid annually, quarterly, or bi-monthly, however, is paid in US dollars.

9/1

(2) SUPERPLASTICITY IN HIGH-PRECISION METAL FORMING

- (.) FISHER RESEARCH INSTITUTE LTD., Stoke Poges, Slough, Bucks, England, United Kingdom; Cable: Fishercon Slough; Telex: 8114 Palmer; Phone: Palmer 111; Contact: J.A. Hallay (Information and Development Manager).
- (.) Private; Independent research institute specializing in materials technology; No. of employees: 100; Main nature of business: Research and development.
- (.) Certain metals and alloys, when heated to approximately low temperatures and deformed by plastic flow, exhibit "superplasticity". In a superplastic condition the material can be formed at temperatures in a single operation, even at room temperature. This material, therefore, offers a new method of the research for higher and better ways of making components, namely, "Metal forming under superplasticity". Superplastic components made by superplastic forming are already in use today, but the potential of superplasticity is not yet fully appreciated. Present, with considerable experimental experience, is the factory relating mechanical properties and structures, of the relevant materials, obtained with a private research firm, a group-contract project to adapt the equipment and thus to provide to the engineering industry by superplastic metals.
- (.) Palmer is prepared to grant licenses and train recipient personnel. Contractual agreement will be revised on a contract basis.

9/2

(3) MANUFACTURE OF STAINLESS STEEL CYLINDERS

- (.) CSEPPEL IRON AND METALWORKS, Gyopar 1, P.O. Box 9, Budapest XII, Hungary; Telex: 25-566; Phone: 31-105; Contact: International Commercial Relations Department.
- (.) Governmental; Major engineering complex; Main nature of business: Processing and engineering products.
- (.) The process covered in the knowhow available begins with a hexagonal steel billet. A slot is formed in the end of the billet, and a thin-walled cylinder is then drawn in a horizontal drawbench. The throat is formed by heating the open end and then drawing it together using a special tool. The final shape of the throat is formed with a manual tube press.
- (.) Medium and large-pressure cylinders (1-50 liter capacity).
- (.) A lump-sum payment plus an agreed royalty per cylinder manufactured. Export royalties and training of personnel is possible, under a separate agreement.

Reference No.

9/3

Reference No.

9/4

HUNGARY

- (1) ELECTROSTATIC FORMING OF THIN PLATE AND EQUIP FOR THIS AND RELATED FORMING
(2) MFTCHMI (Machine Industry Technologies Institute), Fórum ut 14, Budapest XIV, Hungary; Telex: Chemimex 345; Phone: 411-111.
(3) Governmental; State industrial research institute, working on contract basis; Budget: Ft 80 million; No. of employees: 300; Main nature of business: Engineering and machinery research and development.
(4) Electromagnetic forming is used for reducing or expanding hollow drawing materials in order to form a surface pattern or to make joints with other components.
Knowhow is available on the formation of thin plates, forming of pipe ends, joining of flexible pipe ends, etc. in aluminum and copper; the knowhow covers process and equipment.
(5) Process knowhow and/or plant supplied against lump-sum payment.

Reference No.

9/5

HUNGARY

- (1) EXPLOSIVE FORMING-PROCESS, EQUIPMENT, PLANTS
(2) MFTCHMI (Machine Industry Technologies Institute), Fórum ut 14, Budapest XIV, Hungary; Telex: Chemimex 345; Phone: 411-111.
(3) Governmental; State industrial research institute, working on contract basis; Budget: Ft 80 million; No. of employees: 300; Main nature of business: Engineering and machinery research and development.
(4) In explosive forming, the energy resulting from the controlled detonation of an explosive material is used to deform plate materials in prepared formers. It can be used with corrosion-resistant materials that are difficult to form conventionally. It has advantages over conventional press forming in that expensive punches are not needed, but merely a die in normal deep-drawing tool material. High-strength materials can be subjected to cold forming, avoiding much subsequent heat treatment, and a greater degree of deformation can be achieved in a single operation.
(5) Pressure vessel manufacture.
(6) Process knowhow and/or plant supplied against lump-sum payment.

Reference No.

9/6

UNITED KINGDOM

- (1) ROLL SWAGING
(2) ROYAL SMALL ARMS FACTORY, Enfield Lock, Middlesex EN3 6JL, United Kingdom; Telex: 20411; Phone: Waltham Cross 4411; Contact: the Director (Capt. K.D. Pinney, Chief Metallurgist).
(3) Governmental; Main nature of business: Manufacture of armaments.
(4) Knowhow on rotary cold swaging of riflet and plain core tubes in steel.
(5) Engineered components, ordnance, etc.
(6) Knowhow etc.

Reference No.

9/7

JAPAN

- (1) CORRUGATED PIPE AND LINER-PLATE
(2) KAWASAKI STEEL CORPORATION, New Yokohama Bldg., 11, Yuraku-cho 1-chome, Chiyoda-ku, Tokyo, Japan; Cais: Riversteerc Tokyo; Telex: 031-461 "RIVERSTEERC TOK"; Phone: Tokyo 03-4611; Contact: Mr. Minoru Ikeda (General Manager).
(3) Private; Capital: \$10,000,000; Net sales: \$150,000,000; No. of employees: 35,000; Main nature of business: Iron and steel manufacturer.
(4) Technology relating to all aspects of the forming of corrugated pipe and liner plates are offered.
(5) We are ready to negotiate for detailed conditions as mentioned above depending upon specific interest of inquirers, taking into consideration type, scale and characteristics of their proposals.

9/8

(1) PREFABRICATED FRAMES

- (1) KAWASAKI STEEL CORPORATION, New Yurakucho Bldg., 11, Yurakucho, Chiyoda-ku, Tokyo, Japan; Cable: Rivertown Tokyo; Telex: 0-101-101111111111; Phone: Tokyo 31-4111; Contact: Mr. Kinomura (General Manager).
- (2) Private; Capital: \$ 2,000,000; Net profit: \$ 100,000; No. of employees: 30,000; Main nature of business: Iron and steel manufacturer.
- (3) Technology relating to the various fabricating techniques which have been developed for the production of prefabricated steel frames are offered.
- (4) We are ready to negotiate for detailed conditions as mentioned above, depending upon specific requirements, taking into consideration type, scale and characteristics of the project.

9/9

(1) STEEL SHEET AND PLASTIC FASTENING SYSTEM FOR BRATT-ON-STEEL LATTICE

- (1) KAWASAKI STEEL CORPORATION, New Yurakucho Bldg., 11, Yurakucho, Chiyoda-ku, Tokyo, Japan; Cable: Rivertown Tokyo; Telex: 0-101-101111111111; Phone: Tokyo 31-4111; Contact: Mr. Kinomura (General Manager).
- (2) Private; Capital: \$ 2,000,000; Net profit: \$ 100,000; No. of employees: 30,000; Main nature of business: Iron and steel manufacturer.
- (3) Kawasaki Steel has developed a new chemical system for sheet metal fastening which is unique. Knowhow relating to this new process is offered.
- (4) We are ready to negotiate for detailed conditions as mentioned above, depending upon specific requirements, taking into consideration type, scale and characteristics of the project.

9/10

(1) PRODUCTION TECHNOLOGY OF GAS CYLINDERS FROM BLANKS (1970)

- (1) SUMITOMO METAL INDUSTRIES, LTD., 10 Kitahama-cho-honmachi, Higashisumiyoshi-ku, Osaka; Cable: SUMITOMONITAL OSAKA; Telex: 0-101-101111111111; Phone: 06-661-1111.
- (2) Private; Capital: Y 10,000,000 (about \$ 100,000); Net profit: Y 1,000,000 (about \$ 10,000); No. of employees: 1,000 (including 100 engineers); Main nature of business: Production and sales of carbon steel roll forming, aluminum roll forming products, forging, casting, rolling sheet plate, and tube drawing.
- (3) 1. Bottom forming equipment and production process (using bottom forming, top forming, side forming, etc.).
2. Top forming equipment and production process (using top forming, side forming, etc.).
3. Hydraulic stretch forming equipment, including bending with a straightening system.
4. Automatic die stamping device.
5. Automatic paint coating equipment.
- (4) 1. Engineering service at the construction or equipment installation, design and operation.
2. Technical assistance of operation and quality control.
3. Training at our plant in Japan.

GROUP 10 - COATING AND PROTECTION

Reference No.

10/1

FRANCE

(1) VARNISH AND PAINT COATINGS FOR LIGHT-METAL FLATEN AND SHEETS

(1) CEPEDER-BETHUNE, 6 avenue Maréchal, Paris 16, France; Turner: Jean-Pierre Peltier
Deputy: Jean-Peltier; Phone: (1) 43 60 40; Director: A. Grouzet (Head, Technical Affairs Department)

(2) Peugeot: Major French non-ferrous metals producer; Capital: F 1,000 million;
Debt: F 1,000 million; No. of employees: 1,000; Main fields of work: (1) Primary
transformation of aluminum: rolling, drawing and extrusion; (2) wrought aluminum alloys.

(3) The technology available concerns:

- Manufacture of varnished shapes or strips
- Manufacture of painted sheets or strips

The knowhow covers all or part of the following:

- Definition and variable traits: shapes and strip colour, metallurgical treatment, surface quality, etc.)
- Manufacturing techniques: conversion, coating and curing
- Exploitation of materials
- Quality control
- Study and control of paint and varnish coatings in the context of their application.

The experience of Cepeder-Bethune is derived not only from its own French plants, but also from smaller operations in foreign subsidiaries, and means that the company is equipped to provide the best solution for each local situation.

(4) Painted products have applications in the food preserving industry, in the manufacture of aerosols, cosmetics, etc.

The painted products can be used in vehicle finish, domestic resin, etc., in the construction of varnishes, lacquers, and for kitchen equipment.

(5) Peugeot technology can offer the following assistance and knowhow, in part or complete:

- Basic technical documentation
- Assistance in setting up realistic manufacturing programmes
- Selection of basic equipment
- Specification of equipment and auxiliary installations for tender
- Preliminary evaluation of tenders
- Assistance in selection of supplies
- Planning and layout of plants
- Advice on ancillary equipment
- Description of installation of equipment
- Installation assistance
- Commissioning
- Operational assistance
- Advice on expansion of existing plant
- Knowhow on new products

Reference No.

10/2

FRANCE

(1) ALUMINIUM FLAT ALLOYS

(1) CEPEDER-BETHUNE, 6 avenue Maréchal, Paris 16, France; Turner: Jean-Pierre Peltier
Deputy: Jean-Peltier; Phone: (1) 43 60 40; Director: A. Grouzet (Head, Technical Affairs Department)

(2) Peugeot: Major French non-ferrous metals producer; Capital: F 1,000 million;
Debt: F 1,000 million; No. of employees: 1,000; Main fields of work: (1) Primary
transformation of aluminum: rolling, drawing and extrusion of all wrought aluminum alloys.

(3) The technology available relates to:

- Traditional anodizing (coloured or plain) of light-alloy products, principally of extruded sections and sheets
- Delivering of anodized film by electrolytic methods
- Self-colouring anodizing of the above products

The knowhow covers principally:

- Properties needed in practice for anodizing
- Anodizing technology
- Exploitation of materials
- Quality control

The experience of Cepeder-Bethune is derived not only from its own French plants, but also from smaller operations in foreign subsidiaries, and means that the company is equipped to provide the best solution for each local situation.

(c) Anodizing plants are used in aircraft, marine, industrial, domestic electrical equipment, etc.

(d) Peacock-Lindner can offer the following assistance and training services:

- Project technical/financial feasibility
- Assistance in setting up realistic specific training programmes
- Selection of basic equipment
- Specification of equipment and services required by customer
- Preliminary evaluation of tender
- Assistance in selection of suppliers
- Planning and layout of plants
- Advice on ancillary equipment
- Supervision of installation of equipment
- In-plant training
- Commissioning
- Operational training
- Advice on expansion of existing plant
- Preview of new products

Reference No.

10/3

FINLAND

(1) CORROSION PREVENTION

(2) COMET Oy, P.O. Box 47, 00100 Helsinki, Finland; Director: Gert Lindberg;
Phone: 00-314-606

(3) Private; A small group of experts in corrosion prevention, chemicals, water treatment, and metallurgy; Main nature of business: Research, development, consultancy.

(4) General and orientational consulting services in problems connected with construction and operation of pulp and paper industries.

Consulting on specific corrosion problems

Supervision of corrosion prevention jobs

Laboratory and on-site corrosion research

Planning of corrosion research laboratories, including training of personnel and planning and initiation of research programmes.

(5) Expert assistance available

Training of recipient's personnel

Financial arrangements to be agreed in individual cases.

Reference No.

10/4

UNITED KINGDOM

(1) HIGH-SPEED ELECTRO-DEPOSITION

(2) FULMER RESEARCH INSTITUTE LTD., Steelhouse Lane, Rotherham, South Yorkshire, S6 2PF, United Kingdom;
Cable: Research Fulmer; Telex: 44111 Fulmer; Director: Mr. D. J. T. Smith; Mr. J. A. Bailey (Information and Development Manager).

(3) Private; Independent research institute mainly engaged in research and development; employees: 140; Main nature of business: Research and development.

(4) The development of methods for achieving high-rate electro-deposition, especially for copper and nickel, at current densities up to 5,000 $\mu\text{A}/\text{sq ft}$ has been achieved.

Copper and nickel can be electro-deposited at rates of 0.001 - 0.002 in./min. from baths containing no additives. Significant deterioration in mechanical properties, The techniques developed do not require expensive filtration and purification of the bath and brightening or levelling agents are not necessary. Thus electro-deposition can probably be applied to metals other than copper or nickel.

Schemes both for continuous forming of strip or sheet and for batch-wise forming of components have been outlined.

(5) Fulmer is prepared to grant licences and train recipient's personnel. Other expert assistance is also provided on a contract basis.

Reference No.

10/5

UNITED KINGDOM

WELFARE INSTITUTE - A NATIONALLY KNOWN AND REPUTED

PRIVATE RESEARCH INSTITUTE LTD., GLENROTHES, FIFE, SCOTLAND, UNITED KINGDOM
Address: Glenrothes, Fife, Scotland, KY10 8LZ; Telephone: (0351) 650 2222;
Contractor: Mr. J.A. COOPER, Information and Development Manager

- (1) Private; Independent research institute involved in the development of materials technology;
No. of employees: 140; Main nature of business: Research and Development.
- (2) A number of large, well-established plants, engaged in the production of various materials, including steel, cement, glass, paper, chemicals, fertilizers, petrochemicals, pharmaceuticals, etc.
The methods are standard though some have been developed by the contractor's own experience.
- (3) An extensive range of equipment is available for the production of various materials, including steel, cement, glass, paper, chemicals, fertilizers, petrochemicals, pharmaceuticals, fertilizers, etc.
- (4) Existing facilities are available for the production of various materials, including steel, cement, glass, paper, chemicals, fertilizers, petrochemicals, pharmaceuticals, fertilizers, etc.
The process can replace existing or existing of existing technologies. This enables a company to easily develop its own products.
- (5) Relies on a dedicated, highly experienced and trained technical staff, management, and other support staff, which can be provided on a contract basis.

Reference No.

10/6

UNITED KINGDOM

POLISHED FOR PRODUCING CARBON-BEARING-CONTAINING FINISHES OR SPRAYS

PRIVATE RESEARCH INSTITUTE LTD., STONE PARK, BIRMINGHAM, ENGLAND, UNITED KINGDOM
Address: Birmingham, England, B33 9PL; Telephone: (021) 555-1234;
Contractor: Mr. J.A. COOPER, Information and Development Manager

- (1) Private; Independent research institute specializing in materials technology; No. of employees: 140; Main nature of business: Research and Development.
- (2) Metal producer that will or has a high percentage of their employees involved in research and development.
- (3) An investigation of processes shows that increased carbon bearing content in the coating material, which is initiated in the bath, and that a carbon containing bath is required to produce an effective carbon bearing finish.
- (4) Relies on a dedicated, highly experienced and trained technical staff, management, and other support staff, which can be provided on a contract basis.

Reference No.

10/7

ITALY

AIR KNIFE SYSTEM FOR CONTINUOUS GALVANIZING

(1) ITALIDIM S.p.A., via Cintia 1, 16100 Genova, Italy; Office: Italiano Genova;
Telex: 20041 Italy; Phone: 010-510000; Director: D'Urso, A.M.

(2) Mixed; Major Italian iron and steel producer; Capital: Lit. 10,000 million;
No. of employees: 44,000; Main nature of business: Production of iron and steel.

- (3) The air knife system is an alternative to the conventional galvanizing plant, which uses two powered rotating rolls immersed in the bath of molten zinc, to adjust the thickness of the coating applied to the strip. The air knife system is based on the potential energy of a low-pressure liquid, which is converted to kinetic energy when the fluid is forced through a narrow slot.

Adjustment of the coating as the strip emerges from the zinc bath is determined by the following parameters:

- Fluid pressure
- Positioning of the air knife - distance above bath, distance from strip, angle of inclination to strip.
- Knife geometry (i.e. cap profile)
- Knife thickness

This system offers excellent economic advantages over the conventional roll system, because of its low manufacturing cost, its relatively maintenance cost, its ease of operation, the reduced in coating weight adjustment, and the fact that there is no mechanical contact with the strip.

- (4) Integrated assistance program, implemented by Italianer staff in recipient's works and training of recipient's personnel in Italianer areas.

The various possible conditions for transporting the strip will be discussed in particular, from potential

3. Knowledge of metallurgical plant design, all aspects of steel production, and techniques of operation, maintenance and strip production; the ability to understand and follow written instructions.
- a. Drawing, layout and construction of plant.
 - b. Metallurgical plant.
 - c. Strip rolling and strip.
 - d. Plant layout, construction, site and terrain.
4. Ability to prepare and estimate, and to draw up a uniform breakdown.
5. Knowledge of industrial labour payment of local area, existing working conditions with transfer of technology and industrial safety of the recipient with equipment. Training of recipient personnel who will be in charge of plant operation. Training of recipient to fully understand operation of plant.

Reference No.

5/6

UNITED KINGDOM

4. ROTATING EQUIPMENT AND PLANT

1. CAPITAL GROUP LTD., Steel Works, 16, St. Mary's, Sheffield S17 1P, United Kingdom; Owner: Giffen Hoff Ltd.; Power: 1000; Item #: (03) 004; Contact: Mr. J. W. Parker, General Manager.

1. Private: An international group of companies based in U.S.A. Capital: £1 million; Share: 100 million; 100% ownership; 1969; Manufacturer of precision metal manufacture of heavy plates, steel bars, structural sections, plates, sheet, rolling tools, etc.
2. A large capacity plant for the production of billets, plates, equipment and operating technology and know-how for the manufacture of high-quality stainless steel from imported billet, including building and fitting-out, current requirements, maximum annual output capacity of 6,000 tons per annum of stainless steel, a value of an average of £100,000 ton, or equivalent, £1 million and capital expenditure in the order of £10 million.

Finishes to work in the range of 1,000 to 10,000 tonnes, hot-rolling, annealing, cooling, scaling, quenching, drawing, cold-rolling, with all of it to G.I. Grade.

Manufacturing equipment including billet cutting and crating, billet heating furnaces including electrical induction heating, hot rolling, bar heat treatment furnaces, bar finishing processes including straightening, drawing, tumbling, surface treatment, crack detection, and hot rolling material handling and working equipment.

Working knowledge of off-the-shelf engineering procurement requirements and prepared from a green field start to a fully operational plant including drawings, layouts, instruments, planning, cost, and process control drawings. Technical and operational studies and information is available in respect of product and plant design, procurement, assembly, testing, quality standards and control, rotation planning and control, and delivery, delivery requirements and management, training, sites and staffing.

The plant is designed to produce a wide range of stainless steel products to customer specification. Likewise, however, to ensure availability of quality and workability particularly in respect of high-speed and alloy tool and valve steels, it is necessary to have heating facilities to provide these as an integral part of the process. Heating facilities are required although no details to that previously indicated.

5. Implementation steps:

- Step 1. Preliminary exchange between Giffen and recipient to establish initial contact.
- a. Preliminary survey which will establish specific requirements of recipient.
 - b. Preparation and submission of written survey report and proposals.
 - c. Negotiation and finalization of proposal, financial, commercial and contractual terms.
 - d. Invitation for recipient to visit Giffen to see and discuss the plant, design, plant procedures.
 - e. Obtain to supply reports, documentation, manual instructions, photographs.
 - f. Obtain to provide on-site services, expert assistance.
 - g. Determine train recipient personnel on each technique, procedure and practice.
 - h. Determine service project operation on contractual basis.

Commercial policy:

Step 1. Will involve no expense to the recipient.

Step 2. Will involve expense to recipient of individual supplies, equipment in accordance with requirements.

Step 3. Will involve expense to recipient of individual supplies, equipment in accordance with requirements and will be subject to individual negotiations and royalty and/or net-venture arrangements.

Reference No.

5/7

SWEDEN

4. ROTATING EQUIPMENT

1. VÄSTERGÖTTALAND AB, Box 300, Hultsfred, Sweden; Contact: Mr. Åke Hagberg, Director - Engineering, Steel Division, Västergotland AB, c/o C. Forslund, Sweden; Item #: (03) 005.

2. Private: Share capital: SEK 1,000,000; employees: 1,400; Main nature of business: Manufacturer of high-speed steel, alloy and stainless steel.

(c) **AMAL** will be entitled to negotiate a license agreement with **AMAL** for the transfer of technology, including:

(i) **AMAL** products;

- Surface treatment and finishing
- Welding and Assembly

The above will be subject to negotiations between **AMAL** and **AMAL**.

Registration of trademarks

AMAL will be entitled to negotiate a trademark registration.

(d) **AMAL** will be entitled to negotiate a license agreement with **AMAL** for the transfer of technology, including:

- Equipment, machines and processes to be negotiated with recipients. Training of technical personnel who will be in charge of plant operation. Technical assistance for technical transfer and start-up of plant.

Information No. 10/11

10/11

U.S.A.

(a) **OPERATIONAL AGREEMENT AND WORKING AGREEMENT**

(i) **AMERICAN METALS Co., Inc.**, 1000 Franklin Avenue, St. Paul, Minnesota, U.S.A.
Chairman: Mr. George L. Tamm; President: Mr. Robert F. Tamm;
Manager, Research and Product Development: Dr. James W. Givens; Manager, Sales: Mr. John C. Miller; Vice-President, U.S.A.; Vice-President, Canada: Mr. John C. Miller.

(ii) **Private**; No. of employees: 1000; Main activity: Manufacture of chemicals, metals and personal care.

(iii) Conventional and heavy-duty anti-dust-coatings, and the following techniques for the following applications:

- Surface cleaning and treating
- Anti-dust
- Waxing and impregnating

(iv) Civil and electrical building components and decorative paints.

(v) Technical arrangements against payment of compensation or other consideration associated with transfer of technology, financial results, to be negotiated with recipients. Training of technical personnel who will be in charge of plant operation. Technical assistance for technical transfer and start-up of plant.

Information No. 10/12

10/12

UNITED STATES
OF AMERICA

(a) **AMERICAN METALS Co., Inc.**

(i) **AMERICAN METALS Co., Inc.**, 1000 Franklin Avenue, St. Paul, Minnesota, U.S.A.; Chairman: Mr. George L. Tamm; President: Mr. Robert F. Tamm; Manager, Research and Product Development: Dr. James W. Givens; Vice-President, U.S.A.; Vice-President, Canada: Mr. John C. Miller.

(ii) **Private**; No. of employees: 1000; Main activity: Manufacture of chemicals, metals and personal care.

(iii) Complete range of knowhow, technology, and other services in the field of mineral extraction, refinement, legislation, etc.

- a. appraisal of anticipated requirements, programme and schedule
- b. appraisal of necessary raw materials and sources of supply, design and development of processing requirements, and materials, etc.
- c. appraisal of site considerations
- d. development of equipment specification and procurement flow
- e. advice on selection of contractors
- f. development of equipment layout detail
- g. supervision of construction, equipment, and commissioning
- h. training of all grades of personnel
- i. provision of sample material and development of tooling
- j. assist domestic manufacturers in development of systems
- k. establishment of development and control laboratories, equipment and apparatus
- l. testing of domestic raw materials in client's and R&D laboratories and on R&D production lines
- m. supply of US raw materials or reference standards
- n. development of markets
- o. training on client's equipment after start-up

(iv) Construction, U.S. implementation, management, administration, etc.

(v) Knowhow transmitted under value of knowhow + information. At least 5% to be converted as percentage of total equipment cost; remainder made up in heating or insulation of plant, client's specific result.

Alternatively, royalty or licensing of equipment - static royalties.

Refugee List

10/13

DATA

REFUGEE LIST - 10/13

(a) **Mr. G. M. Karpov**, 50 years old, Russian, engineer, married, 2 children, wife and son now in U.S.A., daughter in Canada.

(b) **Mr. V. A. Karpov**, 25 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(c) **Mr. N. V. Karpov**, 20 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(d) **Mr. S. V. Karpov**, 18 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(e) **Mr. V. V. Karpov**, 16 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(f) **Mr. G. V. Karpov**, 14 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

Refugee List

10/14

DATA

REFUGEE LIST - 10/14

(a) **Mr. G. M. Karpov**, 50 years old, Russian, engineer, married, 2 children, wife and son now in U.S.A., daughter in Canada.

(b) **Mr. V. A. Karpov**, 25 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(c) **Mr. N. V. Karpov**, 20 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(d) **Mr. S. V. Karpov**, 18 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(e) **Mr. V. V. Karpov**, 16 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(f) **Mr. G. V. Karpov**, 14 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

Refugee List

10/15

DATA

REFUGEE LIST - 10/15

(a) **Mr. G. A. Karpov**, 50 years old, Russian, engineer, married, 2 children, wife and son now in U.S.A., daughter in Canada.

(b) **Mr. V. V. Karpov**, 25 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(c) **Mr. N. V. Karpov**, 20 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(d) **Mr. S. V. Karpov**, 18 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(e) **Mr. V. V. Karpov**, 16 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(f) **Mr. G. V. Karpov**, 14 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

(g) **Mr. S. V. Karpov**, 12 years old, Russian, engineer, married, 1 child, wife and son now in U.S.A.

Interference

10/16

A.M.

W

Mr. Alvaro Varela, Director of the National Institute of Statistics and Census, and Mr. Luis Fernando Varela, General Manager, presented the results of the 1982 population census to the President of the Republic, Dr. Belisario Porras, at the National Palace.

The Director of the INSTATS, Mr. Alvaro Varela, informed the President that the total population of the country is 4,130,000 inhabitants, which represents an increase of 1.5% over the 1970 census.

The Director also informed the President that the population growth rate is 1.5% per year, which is lower than the 1.8% registered in the previous decade. This growth is due to the low birth rate and the high death rate, which has been constant at 1.5% per year.

Interference

10/17

A.M.

W

Mr. Alvaro Varela, Director of the National Institute of Statistics and Census, and Mr. Luis Fernando Varela, General Manager, presented the results of the 1982 population census to the President of the Republic, Dr. Belisario Porras, at the National Palace.

The Director of the INSTATS, Mr. Alvaro Varela, informed the President that the total population of the country is 4,130,000 inhabitants, which represents an increase of 1.5% over the 1970 census.

The Director also informed the President that the population growth rate is 1.5% per year, which is lower than the 1.8% registered in the previous decade. This growth is due to the low birth rate and the high death rate, which has been constant at 1.5% per year.

The Director stated that the population distribution is as follows: 3,900,000 inhabitants in urban areas and 230,000 in rural areas. The urban population is 92.5% of the total.

The Director also informed the President that the population growth rate is 1.5% per year, which is lower than the 1.8% registered in the previous decade. This growth is due to the low birth rate and the high death rate, which has been constant at 1.5% per year.

Interference

10/18

A.M.

W

Mr. Alvaro Varela, Director of the National Institute of Statistics and Census, and Mr. Luis Fernando Varela, General Manager, presented the results of the 1982 population census to the President of the Republic, Dr. Belisario Porras, at the National Palace.

The Director of the INSTATS, Mr. Alvaro Varela, informed the President that the total population of the country is 4,130,000 inhabitants, which represents an increase of 1.5% over the 1970 census.

The Director also informed the President that the population growth rate is 1.5% per year, which is lower than the 1.8% registered in the previous decade. This growth is due to the low birth rate and the high death rate, which has been constant at 1.5% per year.

The Director stated that the population distribution is as follows: 3,900,000 inhabitants in urban areas and 230,000 in rural areas. The urban population is 92.5% of the total.

Interference

10/19

A.M.

W

Mr. Alvaro Varela, Director of the National Institute of Statistics and Census, and Mr. Luis Fernando Varela, General Manager, presented the results of the 1982 population census to the President of the Republic, Dr. Belisario Porras, at the National Palace.

The Director of the INSTATS, Mr. Alvaro Varela, informed the President that the total population of the country is 4,130,000 inhabitants, which represents an increase of 1.5% over the 1970 census.

The Director also informed the President that the population growth rate is 1.5% per year, which is lower than the 1.8% registered in the previous decade. This growth is due to the low birth rate and the high death rate, which has been constant at 1.5% per year.

W

Reference No.

10/20

AL AL

(1) RESEARCH & DEV

- (2) LIQUID CHROME COATING, the company, has developed a new method of applying liquid chrome coating to metal parts.

- (3) Estimated: October 1960. Description: This method of applying liquid chrome coating to metal parts is a significant improvement over existing methods. It is particularly useful for parts which are difficult to coat by conventional methods.

(4) Estimated: October 1960. Description: This method of applying liquid chrome coating to metal parts is a significant improvement over existing methods.

(5) Estimated: November 1960.

Reference No.

10/21

AL AL

(1) RESEARCH & DEV

- (2) LIQUID CHROME COATING, the company, has developed a new method of applying liquid chrome coating to metal parts.

- (3) Estimated: October 1960. Description: This method of applying liquid chrome coating to metal parts is a significant improvement over existing methods.

(4) Estimated: October 1960. Description: This method of applying liquid chrome coating to metal parts is a significant improvement over existing methods.

(5) Estimated: October 1960. Description: This method of applying liquid chrome coating to metal parts is a significant improvement over existing methods.

(6) Estimated: October 1960. Description: This method of applying liquid chrome coating to metal parts is a significant improvement over existing methods.

(7) Estimated: October 1960. Description: This method of applying liquid chrome coating to metal parts is a significant improvement over existing methods.

Reference No.

10/22

AL AL

(1) RESEARCH & DEV - COLOR & VALUABLE MATERIAL

- (2) LIQUID CHROME COATING, the company, has developed a new method of applying liquid chrome coating to metal parts.

- (3) Estimated: October 1960. Description: This method of applying liquid chrome coating to metal parts is a significant improvement over existing methods.

(4) Estimated: October 1960. Description: This method of applying liquid chrome coating to metal parts is a significant improvement over existing methods.

(5) Estimated: October 1960. Description: This method of applying liquid chrome coating to metal parts is a significant improvement over existing methods.

The new development can prevent the white rust for a long time, by adding more zinc to the liquid chrome.

Generally speaking, anti-corrosivity is better when the zinc coating weight is about 100 mg/cm². In this method, even the sheet with low chrome coating weight will have the similar anti-corrosivity to the sheet with usual high chrome coating weight.

Attractive surfaces with less coloring can be obtained by this method.

Reference No.

10/23

AL AL

(1) RESEARCH & DEV

- (2) LIQUID CHROME COATING, the company, has developed a new method of applying liquid chrome coating to metal parts.

- (3) Estimated: October 1960. Description: This method of applying liquid chrome coating to metal parts is a significant improvement over existing methods.

These factors largely contributed to the low sales volume of the company. The company's main market is the manufacture of the leather industry, which is a very competitive industry. In addition, the company has to compete with foreign companies, such as Germany, France, Italy, and the United States. These companies have more experience and better technology than the company. Therefore, the company has to work hard to improve its products and services to meet the demand of the market. The company also has to follow certain regulations and standards set by the government to ensure the quality and safety of its products.

100. MELA, PERAMENT AND PLATEAU, PREWEDDING CEREMONY WITH DANCE, TUNISIA. MELA IS THE
MUSICAL AND DANCING PART OF THE CEREMONY.

Journal of Clinical Research, Vol. 1, No. 1, February 1970, pp. 1-10.

Prepared by: Patricia A. Hiltner; Approved by: Ward Jackson, Ph.D.; Reviewed by: Mark F. Jackson; Effective date: July 1, 2002; Expiration date: July 1, 2005; Last revised: July 1, 2002.

155 Dibenzyl ether, bisphenol A, and bisphenol F were also tested, showing similar results, while formaldehyde
156 reacted with the allyl group to form a crosslinked polymer. The polymerization of allyl phenyl ether was
157 reported by Kondo et al. [10]. The polymerization of allyl phenyl ether, allyl phenyl ether-
158 phenyl phenyl ether, and allyl phenyl ether-allyl phenyl ether was reported by Tadokoro, *et al.* [11].
159

For this reason, the author suggests that the first step in the process of writing a research paper is to identify what exactly one wants to write about.

The properties of the thin-film form of selected metals

¹⁰ See also the discussion of the relationship between the two in the section on "Theoretical Approaches" above.

The above results confirm that the effect of the headwind can be neglected.

In addition to metal parts, rubber, plastic and composite layers (for example, printing plates, textile industries, etc.) can be used.

These experiments provide the first experimental evidence that experiments studied and tested in our plants are robust.

International Conference on the Future of the Internet, 2003

Primary prevention: This refers to the prevention of disease before it occurs, through measures such as vaccination, healthy diet, exercise, and avoidance of risk factors.

（三）在本行的“存入”栏内，填写存入金额，即存入的人民币数。

Figure 1. *Allozyme analysis*. The presence of the *lactate dehydrogenase* (LDH) isozyme LDH-5 in the plasma membrane fraction of rat heart muscle tissue.

SYNTHETIC POLY(URIDYLIC ACID) ANALOGUE AS A PRECIPITATION SUBSTRATE FOR PLASMINOGEN ACTIVATED CLOSTRIDIUM HEMOLYTICUM

2. SONG TWO MILAI, MUSICAL INSTRUMENTS LTD., 15 KITAARAHASHI-CHO, KITA-ku, OSAKA, Japan;
Telephone: CHIN-DOUMON-TEL 06-221-5100; Telex: 20-2000-S.

Private: Capital: £1,000,000; Sales: £1,000,000 (annual unit); Staff: 100 (including 100 apprentices); No. of employees: 100 (annual unit); Main nature of business: Production and sale of cast iron stoves, radiators, etc.; Standard products: Stoves, radiators, grilles, heating accessories and fireplaces.

100. Present technology of wind turbines in China. *Wind Energy*, 2008.

Performance Test

10/26

۱۰۷

© 2012 The Authors. Journal compilation © 2012 Association for Child and Adolescent Mental Health.

- (1) PREVENTED: Organically, physically, chemically, or by other means, from being exposed to, and to become subject to, the influence of employment, training, and education, by virtue of one or more of the following: discrimination and unfair treatment of the individual, including racial, ethnic, gender, age, marital status, political affiliation, religious, national, military, or other participation.

(2) UNWILLINGLY ASSISTED: Organically, physically, chemically, or by other means, to be exposed to, and to become subject to, the influence of employment, training, and education, by virtue of one or more of the following: discrimination and unfair treatment of the individual, including racial, ethnic, gender, age, marital status, political affiliation, religious, national, military, or other participation.

(1) Knewton

1. Manufacturing equipment and facilities
 2. Technical assistance of operators and quality control
 3. Training of employees and staff

WEDNESDAY, NOVEMBER 10.

10/27

April

Journal of Polymer Science: Part A: Polymer Chemistry, Vol. 37, 297-302 (1999)
© 1999 John Wiley & Sons, Inc.

- Swanson Metal Products Inc., 10 Kalmus Drive, Waukesha, Wisconsin, United States; SWANSON METAL USA, Tel: +1-414-786-1000.

- (A) 1. Pre-treatment technology will be required to reduce organic, mineral, and inorganic pre-treatment loadings and sediment, nutrients, bacteria.

2. Pretreatment technology will be required to remove organic, mineral, and inorganic loadings.

3. Disposal services will be required to remove organic, mineral, and inorganic loadings.

4. Potential application of specific organic pollutants.

5. Treatment of organic pollutants.

Methodology

10/28

UNITED KINGDOM

110 JOURNAL OF POLYMER SCIENCE: PART A-1

- (2) M.V.L.D.T. DEPARTMENT AND INSTITUTIONS, UNIVERSITY OF MADRAS, CHENNAI-600005,
Science and Technology, Cankkvilai Street, Madraswaram, 600005, Tamil Nadu,
India; Institute: Dr. P. R. M. Praveen, Institute of Materials Engineering, 600005,
Tamil Nadu.

- 5.5 Mobility:** A car or a bicycle is recommended, as the off road areas of the park and the patients are associated with the centre; Walk patients of parks and forests, especially, the patients advised and encouraged to go outside, from morning time, and after the treatment period, the patients are recommended.

卷之三

10/29

100

卷之三十一
列傳第十一
列傳第十一
列傳第十一

¹ The following section is based on the discussion of the same topic in the first edition.

Reactions of the alkyl iodides with the Grignard reagents were carried out with the following results:

Such a complex system as the human body is necessarily, which runs according to the laws of physics, subject to the laws of thermodynamics.

“我就是想让你知道，你不是唯一一个被选中的人。”

¹ See also the discussion of the relationship between the concept of "cultural capital" and the concept of "cultural value" in the introduction.

¹ The term "combustion chamber" is used here to denote the volume within which combustion occurs, i.e., the cylinder of an engine, the furnace of a boiler, etc.

— 1 —

10/30

2

（三）在本办法施行前，已经完成的工程，其质量不符合本办法规定的，由建设单位组织设计、施工、监理等有关单位进行处理。

For more information about the study, please contact Dr. Michael J. Hwang at (319) 356-4550 or via email at mhwang@uiowa.edu.

在這裏，我們將會看到一個簡單的範例，說明如何在一個應用程式中使用 `File` 類別。

The new research indicates that individuals' responses to environmental information are determined by their personal interests of the environment. The results of the present study may help to explain why people respond differently to environmental information.

GROUP 11 - HEAT TREATMENT

(a) Implementation of heat treatment

11/1

(i) Heat treatment: The heat treatment of the steel is a critical process to ensure the quality of the final product. It involves heating the steel to a specific temperature and holding it for a certain period of time to achieve the desired microstructure.

(ii) Heat treatment equipment: The heat treatment equipment used in the plant includes induction furnaces, gas furnaces, and electric furnaces. These furnaces are designed to handle different types of steel and provide the required heat treatment conditions.

(iii) Heat treatment quality control: The quality control of the heat treatment process is carried out through regular monitoring of the temperature, time, and atmosphere of the furnace. This ensures that the heat treatment conditions are met and the quality of the final product is maintained.

Implementation steps

- Step 1: Establishing requirements
- Defining specific heat treatment requirements for different types of steel.
 - Identifying the required equipment and facilities.
 - Identifying the required personnel and training.
 - Identifying the required space and infrastructure.
 - Identifying the required energy and power sources.
 - Identifying the required safety and environmental controls.
 - Identifying the required quality control measures.

Implementation plan

- Step 1: Establishing requirements

- Step 2: Procurement of equipment

- Step 3: Setup of heat treatment facility

(a) Implementation of heat treatment

11/2

(i) Heat treatment: The heat treatment of the steel is a critical process to ensure the quality of the final product. It involves heating the steel to a specific temperature and holding it for a certain period of time to achieve the desired microstructure.

(ii) Heat treatment equipment: The heat treatment equipment used in the plant includes induction furnaces, gas furnaces, and electric furnaces. These furnaces are designed to handle different types of steel and provide the required heat treatment conditions.

(iii) Heat treatment quality control: The quality control of the heat treatment process is carried out through regular monitoring of the temperature, time, and atmosphere of the furnace. This ensures that the heat treatment conditions are met and the quality of the final product is maintained.

Implementation steps

1. Provision of sufficient space and equipment: The plant must have enough space and equipment to handle the required heat treatment processes. This includes:
- All required infrastructure, including, but not limited to, power, water, and waste disposal equipment and infrastructure.
- All required tools and equipment, including, but not limited to, furnaces, sensors, and control systems.

Implementation sequence

- Step 1: Preliminary planning between OEM and supplier to establish requirements and timelines.
- Preliminary survey visit to understand the current state of the plant.
 - Preparation and execution of written contract for the heat treatment facility.
 - Negotiation and finalization of the terms, timelines, and costs of the heat treatment facility.
 - Invitation to potential suppliers to bid on the project.
 - Due diligence and evaluation of proposals by the plant management.
 - Selection of the most suitable supplier based on cost, quality, and delivery timelines.
 - Contract to commence procurement process and begin negotiations for the heat treatment facility.
 - Commence to procure required equipment and infrastructure.

Commercial policy

- Step 1: Initial involvement of supplier in the procurement

- Step 2: Procurement of equipment and infrastructure

- Step 3: Setup of heat treatment facility

11/3

W. H. D. - I am enclosing a copy of the letter from Mr. W. H. D., Secretary, Washington, Wash., to the Board of Directors, dated April 10, 1908.

Therefore, the main purpose of this paper is to propose a new approach to evaluate the reliability of the unstructured soil slope.

¹ See also the discussion of the relationship between the two in the introduction.

11/4

在於此，我們可以說：「我喜歡你」，就是「我喜歡你這個人」，就是「我喜歡你這個人的性情、外貌、才學、工作、家庭、朋友等」。

¹ See, e.g., *U.S. v. Babbitt*, 100 F.3d 1321, 1326 (10th Cir. 1996) (“[T]he [Bald Eagle] Act does not prohibit the killing of bald eagles.”).

1. The following table shows the results of a study on the relationship between age and income.

1996-1997 学年第二学期期中考试高二物理试题

For the first time in history, the world's population has reached 7 billion.

11/5

the main title; this is repeated at the end of the article, with the author and date having been omitted. The title page is followed by the abstract, which is usually a brief summary of the article.

¹ See also the discussion in Section 3.1.1 above, and the discussion in the next section below.

¹ Although the first two editions of the *Encyclopaedia Britannica* did not contain any articles on the subject of the American Revolution, the third edition (1797) did.

11/6

¹ See also the discussion of the relationship between the two in the introduction.

That is the reason why we have to go to the United Nations, and that is the reason why the U.S. must be a participant.

- (4) Full knowhow on hot rolling of all types of steel, carbon, alloyed, and stainless, including rolling of ingots into blooms, slabs, and billets, and secondary hot rolling of flats, angles, channels, and wire, and plates up to 6 mm wide. Also relevant to heat treatment and annealing of all products.
- (5) Expert advice on selection of equipment and operation, regularly payable in form of royalty payment plus percentage of revenue value or quantity. Training of recipient's personnel at recipient's works in Sweden subject to special agreement. Expert technical assistance available subject to special agreement.

Reference No.

5/8

SWEDEN

(1) HOT AND COLD ROLLING OF HIGH-GRADE STEEL (CONT.)

- (a) Industrial AB, S-17-0 Bagtorp, Sweden; Contact: Mr. Åke Ljungblad (Chief Engineer, Steel Division), Lindeberg AB, S-17-0 Bagtorp, Sweden (also see Reference No. 5/7).
- (b) Private; Share capital: Skr 1,000,000; no. of employees: 1,000; Main nature of business: Manufacture of flat products, wire and stainless steels.

- (4) Full knowhow on the hot and cold rolling of high-grade carbon, alloy, and stainless steel, including rolling of ingots and in thicknesses down to 0.6 mm; also annealing operations, such as pickling, cutting and heat treatment.
- (5) Expert advice on selection of equipment and operation, regularly payable in form of royalty payment plus percentage of revenue value or quantity. Training of recipient's personnel at recipient's works in Sweden subject to special agreement. Expert technical assistance available subject to special agreement.

Reference No.

5/9

HUNGARY

(1) PLOMING AND BLASTING MILLS OF 1 MILLION TONS CAPACITY

- (a) KEMI, Planning Institute of the Ministry for Metallurgical and Machine Industries, Post box No. 4, Budapest 1, Hungary; Cable: KEMI Budapest; Tel: 41-41-4; Phone: 32-150; Contact: Mr. László Takács (Chief Engineer, Member of Board of Directors).
- (b) Governmental; Planning Institute; No. of employees: 1,300; General nature of business: Development projects for metallurgical industry, technology and training, consulting engineering.
- (4) Ingot-cladding mill with 50-100 mm roll diameter, for annual production of 600,000 tons of steel, to produce semi-finished square and flat products of 150-300 mm and 400-700 mm thickness by 100-150 mm width, equipped with casting pit, 10-ton transfer and (if required) automatic control.
Two-high reversing mill for annual production of 100,000-400,000 tons of carbon and stainless steel from max. 1-ton ingots, 150-180 mm square billets, from max. 4-ton ingots, 150-180 mm square or rectangular plates.
- Manufacture of steel plates, profiles, etc., equipped with heat-treatment plant, cooling bath for slow cooling of high-speed steels, and if required, automatic control.
- (5) Manufacture of steel plates, profiles, etc., for finish-mill, forging, drawing, etc.
- (6) Available according to conditions and payment fixed in individual contract, to be negotiated, including manufacture, construction, training of recipient's personnel in Hungarian plants, and technical assistance provided under separate agreement.

Reference No.

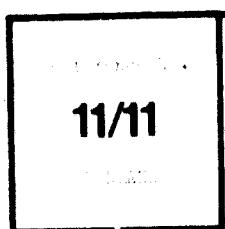
5/10

HUNGARY

(1) INGOT-CLADDING MILLS

- (a) KEMI, Planning Institute of the Ministry for Metallurgical and Machine Industries, Post box No. 4, Budapest 1, Hungary; Cable: KEMI Budapest; Tel: 41-41-4; Phone: 32-150; Contact: Mr. László Takács (Chief Engineer, Member of Board of Directors).
- (b) Governmental; Planning Institute; No. of employees: 1,300; General nature of business: Development projects for metallurgical industry, technology and training, consulting engineering.

- (ii) Approval of all necessary funds and personnel required to support the implementation of the project, including the funding of the required equipment, training, and supplies. Approval will be given by the Project Manager.
- Finally, the management board will be responsible for ensuring that the implementation of the project is carried out in accordance with the agreed upon standards, and that the project is completed on time, within budget, and to the satisfaction of the client.
- The final stage of the project will involve the evaluation of the results of the implementation of the project, and the assessment of the overall performance of the project. This will be done through the use of various methods, such as surveys, interviews, and reports, to determine the effectiveness of the project, and to identify areas for improvement.
- At the end of the project, the management board will be responsible for presenting the final report to the client, detailing the results of the project, and the lessons learned during the implementation process. This will be done in a formal presentation, and will include a summary of the project's objectives, a review of the implementation process, and a final assessment of the project's performance.



11/11

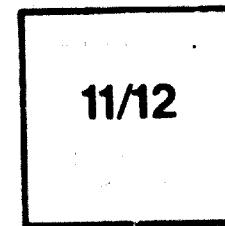
11/11

11/11 FINANCIAL COMMISSIONING CHECKLIST

- (i) Financial Commissioning Checklist, dated 11/11, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.
- (ii) Financial Commissioning Checklist, dated 11/11, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.
- (iii) Financial Commissioning Checklist, dated 11/11, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.

- (iv) Financial Commissioning Checklist, dated 11/11, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.

- (v) Financial Commissioning Checklist, dated 11/11, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.



11/12

11/12

11/12 FINANCIAL COMMISSIONING CHECKLIST

- (i) Financial Commissioning Checklist, dated 11/12, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.
- (ii) Financial Commissioning Checklist, dated 11/12, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.
- (iii) Financial Commissioning Checklist, dated 11/12, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.

- (iv) Financial Commissioning Checklist, dated 11/12, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.

- (v) Financial Commissioning Checklist, dated 11/12, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.
- (vi) Financial Commissioning Checklist, dated 11/12, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.
- (vii) Financial Commissioning Checklist, dated 11/12, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.
- (viii) Financial Commissioning Checklist, dated 11/12, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.

- (ix) Financial Commissioning Checklist, dated 11/12, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.

- (x) Financial Commissioning Checklist, dated 11/12, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.

- (xi) Financial Commissioning Checklist, dated 11/12, prepared by the Project Manager, and distributed to the Project Manager, Project Lead, and Project Team members.

11/13

- (c) All of which, however, can, obviously, have a bearing on the question of whether the plant will be economic; contact: Mr. A. S. Miller, Office of Standardization.
 - (d) Existing: Stein Capital: Joe Stein, 1000 Avenue of the Americas, New York, New York 10019; phone: 212-554-1212; fax: 212-554-1212; e-mail: jstein@stein.com; nature of the project: Clean, continuous water and UV treatment plant for industrial wastewater.
 - (e) Knowledgeability of relate to how the customer operates the plant: No knowledge of the customer's operations or equipment, including mining, refineries, petrochemicals, pharmaceuticals, pulp and paper, food processing, and pharmaceutical plants; operation of the customer's plant with the customer's equipment, including the training of the personnel performed on the customer's works; no actual effort expected from the customer to the new plant.
 - (f) All types of heat exchangers, thermal insulation, piping, structural steel, concrete, timber, mineral, ceramic, brick, masonry, epoxy, polyurethane, polyvinyl chloride, asbestos, and other types of surface protection. The size of the vessel does not matter, as long as it is designed to withstand normal industrial operating conditions.
 - (g) The customer's equipment policy and technical requirements for the new plant, and the customer's desire and need to be open to inspection. Inspecting their plant, or even an off-site location, is important. This is to say, property may be considered, provided that property being inspected is not subject to any legal

11/14

- 11/14

 - (1) CONTROL OF SURFACE HEAT TRANSFER.
 - (2) ROBERT HEDGES (HEDGES) LTD., Group Research Centre, Benthall Hall, Benthall,
Shifnal, Shropshire, England, United Kingdom.
 - (3) Primary test equipment: 1.0 litre/min. air flow system, with variable air flow, light engine, transp., electrical equipment, fuel system and combustion systems.
 - (4) Identical of prop. air system, pressurizing and heating with another temperature controlled. A flow of air from the system together with mass control and temperature. The air will be heated and then circulated for trials purposes together with special air flow techniques.
 - (5) Propulsion and airway equipment: conventional.

GROUP 12 – WELDING, BRAZING AND JOINING

Reference No.

12/1

AUSTRIA

(1) EQUIPMENT FOR WELDING PLANTS

(1) Firm: ECHIDNA AG, Postfach 5, A-1011 Vienna, Austria; Galler Strasse 20, 1100, Vienna; Director: Dr. Ing. Dipl. Phys. W. Fenzl, Contact: Mr. W. Fenzl, Ammerstrasse 11, 8000, Linz, Austria; Registered 1971, Specializing in, Linz, Austria.

(2) Governmental: Major producer of special and rolling steel; No. of employees: 10,500; Capital: 300 million Austrian Schillings; Main activity: Production of rolling steel specializing in various forms and finishes.

(3) Complete knowhow for planning and layout of electron plants.

Supply of main manufacturing units.

Complete knowhow for manufacturing operations.

Supply of management plan (theory, transmitting the results of continuous product improvement and development).

Training of personnel in plant software.

Evaluation of R&D performance after technical assistance in dependent works.

(4) Conclusion of knowhow agreement for specified projects, technology and knowhow normally supplied on royalty basis, with additional compensation. Training of personnel can also be negotiated. Training and expert assistance can also be supplied, subject to mutually acceptable terms being agreed.

Reference No.

12/2

BULGARIA

(1) PRODUCTION LINE FOR WELDING PLANTS

(1) ALFET/IMI, Welding Division, Ev. Tschauder 10, Sofia 10, Bulgaria; Director: Mr. D. Ivanov, Head of Dept.; Contact: Mr. Eng. D. Ivanov, Department for Scientific and Technical Projects, Ministry of Machine Building, Slavyanska 1, Sofia, Bulgaria.

(2) Governmental: State-owned corporation for the design and construction of welding equipment. Main nature of business: Research, development, design and construction for special welding equipment.

(3) Knowhow and equipment for planning of foundry production flow lines following departmentalized system.

Reference No.

12/3

BULGARIA

(1) WIRE FEED DEVICE FOR GMAW AND GTAW AND CUTTING AND WELDING

(1) ALFET/IMI, Welding Division, Ev. Tschauder 10, Sofia 10, Bulgaria; Director: Mr. D. Ivanov, Head of Dept.; Contact: Mr. Eng. D. Ivanov, Department for Scientific and Technical Projects, Ministry of Machine Building, Slavyanska 1, Sofia, Bulgaria.

(2) Governmental: State-owned corporation for the design and construction of welding equipment. Main nature of business: research, development, design, and construction for special welding equipment.

(3) Fusion of welding electrode wire using the SAW and MIG techniques.

Data for the bipolar type planetary wire feed device:

Overall dimensions	Length	110 mm
	Height	60 mm
	Width	40 mm
Wire diameter	0.8 mm	0.8 - 1.0 mm
Max. open with 0.8 mm wire	3 mm/min	
Max. open with 1.0 mm wire	5 mm/min	
Currents form of wire	0.8 mm	7.0 kA
	1.0 mm	9.0 kA
	1.2 mm	11.0 kA
Currents for nozzle contact	0.8 mm	1.0 mm
	1.0 mm	1.5 mm
Weight	90 kg	15 kg

(4) Engineering and equipment, complete equipment for preparation of planetary wire feed device.

Reference No.

12/4

BULGARIA

(1) APPARATUS FOR MICRO-PLASMA ARC WELDING

(a) NIPKOWS, Welding Division, 40, Tsvetnoy bulvar, 107015, Sofia, Bulgaria; Contact: M. Eng. D. Manov, Department of Development and Production, Ministry of Machine Building, Blagoevgrad, Bulgaria, 7000, Bulgaria.

(b) Governmental; State-owned corporation for the research and construction of welding equipment; Main nature of business: Research, development, design and construction for special welding equipment.

- (4) The IZA-64 micro-plasma arc welding apparatus consists of power supply unit, a torch, and control unit and it is the power supply unit provides the current for welding steel and non-ferrous metal (including castings aluminium and Al alloys). It has a built-in high-frequency oscillator for arc initiation. The control devices are on the front of the unit, together with the control buttons.

The micro-plasma arc torch can be used for either manual or automatic operation. It is supplied with an on-off switch.

Technical data are as follows:

Over-all dimensions of power supply unit	length 1000 mm width 450 mm height 450 mm
Weight of power supply unit	45 kg
Weight of welding torch	0.5 kg
Supply voltage	220 V, 50 Hz
Max. welding current	4 A
Rated welding current	15A/100% - 60A
No-load voltage	20 V
Output	1.50
Working gases: plasma armen protective argon and hydrogen	0.5-1.5 liters/min C = 10,000 min 1 atmosphere, 20°C ± 5°C
Water for torch cooling	
Automatic arc striking using high-freq. neg. oscillator	

- (c) Licensing arrangements negotiable.

Reference No.

12/5

BULGARIA

(1) SEMI-AUTOMATIC EQUIPMENT FOR CO₂ WELDING

(a) NIPKOWS, Welding Division, 40, Tsvetnoy bulvar, 107015, Sofia, Bulgaria; Contact: M. Eng. D. Manov, Department of Development and Production, Ministry of Machine Building, Blagoevgrad, Bulgaria, 7000, Bulgaria.

(b) Governmental; State-owned corporation for the research and construction of welding equipment; Main nature of business: Research, development, design and construction for special welding equipment.

- (4) The semi-automatic equipment for CO₂ welding consists of a power supply unit, a wire feed device and a torch. The IZA plan device (see reference no. 12/4) is patented (Reg. No. 10000000).

Technical data on the equipment are as follows:

Supply voltage	2 x 220V at 50 Hz
Primary current	11.5 A
Output	0.5-8.0 A
Rated current	200 A
Duration of operation	10 s
Gas flowrate	20-30 liters/min
No-load voltage	10-12 V
No. of control steps	3
Diameter of electrode wire	0.6-1.2 mm
Wire feed speed	0.5-1.5 m/min
Length of flexible welding tube	1.5 m
Max. weight of wire load	7 kg
Over-all weight	150 kg

- (c) Licensing agreements may be negotiated, or complete plants for the production of the apparatus can be purchased.

12/6

10000000

Section Three

12/7

WILHELM

1. The first part of the experiment was to have the subjects read a short story about a man who had been given a new job at a company. The subjects were told that they would be asked questions about the story after they had read it.

Parameter	12A-540	12A-510	12A-500	12A-540
Supply voltage V	107±0	107±0	107±0	107±0
Operating current A	50	50	50	50
Maximum voltage V	100	100	100	100
Minimum working current A	70	70	70	70
Durantion of operations (h)	300	300	300	300
Range of controlled welding current A	25-540	25-510	25-500	25-540
Overload characteristics	25-540	25-510	25-500	25-540
height mm	230	230	230	230
width mm	700	700	700	700
depth mm	600	600	600	600
Weight kg	60	60	60	60

- (c) Each individual member may be represented, or complete plants for the production of the apparatus can be purchased.

Reference No.

12/8

SWEDEN
MATERIALS
OF ALUMINUM

(1) ELECTRIC WIRELESS

- (1) Private; University is the most important institution in Sweden for research and development activity. Main center of research is Stockholm.
- (2) Replacing welding or gluing with the more difficult technique of riveting would result in significant weight increase, unless the rivets were stronger than current metal strength. In addition, riveting is slow, costly, and time consuming, the facilities required could be away from the plant.
- (3) Previously lead-clad steel found in naval aircraft has not been found to show the greater potential of aluminum.
- (4) The Denver Research Institute will design the facilities, train the technicians and conduct a market survey, prepare an economic analysis and evaluate the institute personnel will receive up to 100% of their present salary plus \$1000 available for subsequent construction and relocation.
- The services are offered by the institution at cost plus 10% up to 10 years after the feasibility study and its design. The reported cost of the unclad wire, however, is given as \$1.00/lb.

Reference No.

12/9

SWEDEN
ELECTRICAL

(1) JOINING BY HIGH-TEMPERATURE PARTS MANUFACTURE

- (1) Edwards High Voltage (Edwards), New Bedford, Massachusetts, has developed a high temperature joining process for aluminum parts. The basic principle is to heat the aluminum parts to 1000° F. and then to apply a vacuum to the joint area. The joints are made by the use of a special adhesive, which is applied to the joint area and then heated to 1000° F. The adhesive is then removed, leaving the joint.
- (2) The process is unique in that it is able to join aluminum parts with some aluminum and other materials. The process is also unique in that it is able to join aluminum parts with other materials.
- The process has the following advantages:
1. Assembly work and production simplified due to the following factors:
 - The process is flexible.
 - Joints can be made parts and sections.
 - Joints are eliminated, which leads to better quality.
 - The process is carried out under controlled conditions.
 - After joining, the parts are bright and clean.
- The known offeror covers the following areas: design, assembly, production, inspection, training, selection of contractors, and quality inspection. The offeror will be responsible for production inspection.
- The basic process had been in use for ten years by Edwards, and had been used by other companies who have contracted out by the company.
- (3) The advantages listed in (1) above mean that the process can be adopted in the aircraft, aerospace and general engineering industries.
- (4) 1. Outright sale of "package" of plant and technology, including the following:
 - Establishment of local vacuum brazing equipment for the industry.
 - Member with a negotiated investment.
- In either of these cases, expert advice and technical assistance will be provided by the offeror.

Reference No.

12/10

SWEDEN

(1) ELECTRIC WIRELESS

- (1) EGAB, P.O. Box 105, Drottninggatan 100, Stockholm, Sweden, is a large electrical engineering firm. The firm has a large number of employees.
- (2) Private; Share capital: Swedish krona; Current Rands: 1000000000; employees: 11000.

11. Manufacture of:

Welded structures, such as ships, aircraft, space vehicles, and other structures, which require extensive welding operations, such as ship hulls, aircraft fuselages, etc.

Structures made of steel, aluminum, magnesium, titanium, etc.

Structures made of stainless steel, aluminum, magnesium, titanium, etc.

Structures made of non-ferrous metals, such as copper, brass, bronze, etc.

Structures made of various materials, such as wood, fiber glass, plastic, etc.

Structures made of various materials, such as wood, fiber glass, plastic, etc.

Structures made of various materials, such as wood, fiber glass, plastic, etc.

12/10

12. Welding and related processes:

(a) Welding: Welding, cutting, brazing, soldering, flame spraying, diffusion bonding, etc., used in the manufacture of structures.

Supplementary
Information

(b) Processes: Processes used in the manufacture of structures, such as casting, forging, stamping, etc.

(c) Welding: Welding, cutting, brazing, soldering, flame spraying, diffusion bonding, etc., used in the manufacture of structures.

(d) Welding: Welding, cutting, brazing, soldering, flame spraying, diffusion bonding, etc., used in the manufacture of structures.

(e) Welding: Welding, cutting, brazing, soldering, flame spraying, diffusion bonding, etc., used in the manufacture of structures.

(f) Welding: Welding, cutting, brazing, soldering, flame spraying, diffusion bonding, etc., used in the manufacture of structures.

(g) Welding: Welding, cutting, brazing, soldering, flame spraying, diffusion bonding, etc., used in the manufacture of structures.

(h) Welding: Welding, cutting, brazing, soldering, flame spraying, diffusion bonding, etc., used in the manufacture of structures.

(i) Welding: Welding, cutting, brazing, soldering, flame spraying, diffusion bonding, etc., used in the manufacture of structures.

12/11

(1) Development of welding: Development of welding, such as arc welding, plasma welding, etc.

(2) Research: Research on welding, such as arc welding, plasma welding, etc.

RESEARCH

(3) Governmental: Govt. of employees: 100; Main nature of business: Research and development.

(4) Other: Other: None; Main nature of business: Research and development.

(5) Certain steels showing no allotropic transformation, such as austenitic manganese (Hastfield) and ferritic chromony steels, are difficult to weld.

(6) Knowhow is available on a process designed to permit welding where previously only mechanical joining methods were available. In certain steels, it involves grain-coarsening in the heat-affected zone of the weld.

(7) Welding of cast manganese steel railway railings (swallowtail) and carbon steel rails.

(8) Knowhow and training of welders for personnel assigned to maintenance and plant administration.

12/13

10.00

Welding of structural components

Welding of structural components

Welding of structural components

(a) A complete set of drawings and technical specifications for the design of structural components. It includes all the information which is required for the design of structures.

(b) A complete set of drawings and technical specifications for the design of structural components. It includes all the information which is required for the design of structures.

12/14

10.00

Welding of structural components

Welding of structural components

Welding of structural components

(a) A complete set of drawings and technical specifications for the design of structural components. It includes all the information which is required for the design of structures.

The two main areas, which can be divided into welding of structures, are the requirements and specifications for the design of structures, and the requirements and specifications for the design of structures.

(b) All types of welding.

(c) Various types of welding.

12/15

10.00

Welding of structural components

Welding of structural components

(a) Design of structural components; welding of structural components; welding of structural components.

(b) According to a continuing research programme valued at £14,000,000 per year.

Advice on - selection of materials for welding

selection of processes for welding

design of structures using welding.

Examination of weld failures.

Development of special techniques and/or equipment.

Access to information services.

Training courses on all aspects of welding technology and non-destructive testing.

(c) Technical services available and to public institutions, other organisations and individual countries, but for small or developing countries by giving technical assistance to the national body (e.g. an industry for nation). These services are available at the Research and Training centre and available to the public, to national bodies, to the industry and to the public at Abington.

Training courses are available to the public, to national bodies, to the industry and to the public at Abington.

Reference No.

12/16

EDISON BRAZING
OF AMERICA

- (a) Developments in welding rods and wire, and their applications.
- (b) Edison Braze, Inc., located at 1000 Broadway, New York, N.Y. 10001, United States of America. President: Mr. John C. Kinsella; Vice President: Mr. J. L. Tracy; Director: Mr. Eugene G. Denehy; Manager of Research: Mr. E. H. Tamm.
- (c) Edison Braze is known as the American Braze Line Company. No. of employees: 1,000. Main business of firm: Manufacture of industrial castings and friction materials.
- (d) An extensive line of alloys and a strong manufacturer of welding rods for hard-facing applications. Know-how and equipment are available for licensing.
- (e) Research, product development, sales, marketing and general industry.
- (f) Excellent opportunities for employment in research, development, production, sales, marketing, and general industry. Training opportunities for research, development, sales, marketing.

Reference No.

12/17

EDISON

- (a) Edison Braze, Inc., located at 1000 Broadway, New York, N.Y. 10001, United States of America. President: Mr. John C. Kinsella; Vice President: Mr. J. L. Tracy; Director: Mr. E. H. Tamm.
- (b) Research and developmental work is carried on, working on contract basis, in the following areas: (1) Development of new alloys; (2) new processes; (3) new types of materials; (4) Engineering and design in research and development.
- (c) A wide variety of products are available, including the day-to-day industrial market for friction materials, hard-facing rods, welding rods, etc. Many products are unique in composition, characteristics and performance.
- (d) Production of friction materials, hard-facing, brazing and welding.
- (e) Research opportunities for bright men, engineers, scientists, and technicians.

Reference No.

12/18

EDISON

- (a) Edison Braze, Inc., located at 1000 Broadway, New York, N.Y. 10001, United States of America. President: Mr. John C. Kinsella; Vice President: Mr. J. L. Tracy; Director: Mr. E. H. Tamm.
- (b) Research and developmental work is carried on, working on contract basis, in the following areas: (1) Development and design in research and development.
- (c) Research involves the use of friction welding for the fabrication of steel workpieces of various compositions, of which some are lower in cost than the conventional forming processes (casting or forging). Efficient welding can also result in the high-quality joining of carbon steel to high-speed steel. In this case, ordinary carbide can be very effectively replaced by replacing ordinary high-speed cutting edges to a carbon-steel substrate, without affecting the properties of expensive high-speed steel.
- (d) Specialized knowledge and suitable equipment are available.
- (e) Research, development.
- (f) Research, development.

Reference No.

12/19

EDISON

- (a) Edison Braze, Inc., located at 1000 Broadway, New York, N.Y. 10001, United States of America. President: Mr. John C. Kinsella; Vice President: Mr. J. L. Tracy; Director: Mr. E. H. Tamm.
- (b) Research and developmental work is carried on, working on contract basis, in the following areas: (1) Development and design in research and development.

Technical information: The properties of various steels, their composition, mechanical and low temperature tests, were variation in the steel production, and the two types of steel, the main properties. The output from the plant from 100-500 tons.

5.11) HOT ROLLING OF STEEL BARS AND WIRE

Business description: Production of hot rolled wire, wire mesh, wire, technical and industrial wire, and other products, the production of wire, wire mesh, wire, technical and industrial wire, and other products.

Reference No.

5/11

UNITED KINGDOM

5.11) HOT ROLLING OF STEEL BARS AND WIRE

(a) Address: 100, Newgate Street, London, E.C.2, United Kingdom; Phone: 01-241-1440; Description: Hot rolled wire, wire mesh, wire, technical and industrial wire, and other products.

(b) Description: Steel bars and wire, rolling mill equipment, foundry and metal casting equipment.

(c) Description: Steel bars and wire, rolling mill equipment, steel bars and wire, rolling mill equipment, wire mesh, wire, technical and industrial wire, and other products, rolling mill equipment, steel bars and wire, rolling mill equipment, wire mesh, wire, technical and industrial wire, and other products.

(d) Description: Steel bars and wire.

(e) Description:

5.12) HOT ROLLING OF STEEL BARS AND WIRE

(a) Address: 140, Newgate Street, London, E.C.2, United Kingdom; Phone: 01-241-1440; Description: Wire mesh, wire, technical and industrial wire, and other products.

(b) Description: Steel bars and wire, rolling mill equipment, wire mesh, wire, technical and industrial wire, and other products.

(c) Description: Steel bars and wire, rolling mill equipment, wire mesh, wire, technical and industrial wire, and other products.

(d) Description: Steel bars and wire, rolling mill equipment, wire mesh, wire, technical and industrial wire, and other products.

(e) Description: Steel bars and wire, rolling mill equipment, wire mesh, wire, technical and industrial wire, and other products.

(f) Description: Steel bars and wire, rolling mill equipment, wire mesh, wire, technical and industrial wire, and other products.

(g) Description: Steel bars and wire, rolling mill equipment, wire mesh, wire, technical and industrial wire, and other products.

(h) Description:

(i) Description: Technical information, and guidance for the manufacture of equipment for steel rolling or its quality policy. To advise the company about the latest research, and new developments.

Reference No.

5/12

UNITED KINGDOM

5.13) HOT ROLLING OF STEEL BARS AND WIRE

(a) Address: 100, Newgate Street, London, E.C.2, United Kingdom; Phone: 01-241-1440; Description: Wire mesh, wire, technical and industrial wire, and other products.

(b) Description: Share capital: SEK 1,000,000.00; Main nature of business: Steel, iron and metal, especially iron products and chemicals.

Reference No.

5/13

SWEDEN

- Increased implementation of IT systems, such as web based systems.
 - Standardization of the product portfolio with regard to the product families.
 - Standardization of materials, processes, methods and plant equipment worldwide.
 - Standardization was also implemented in the procurement of raw materials and components for the production.
 - Standardized training programs were developed, especially for manufacturing and welding techniques.
 - Standardized assembly procedures were developed for assembly procedures.
 - Development of quality control standards and inspection procedures.
 - Internationalization of quality management systems through certification.
 - Internationalization of quality management systems through application of ISO 9000.
 - Internationalization of quality management systems.
 - Development of standard parts, such as on-profile and on-profiles, as off-shelf parts and welding plates for the further standardization.
 - Internationalization of information technology, especially in the field of design, CAD, CAM, CAE, quality management and supply chain management.
 - Internationalization of quality management systems.

and function as a primary, personal validation and result flow. This reflects an appreciation that an emerging future, "as yet undetermined," can be used to expand our horizons, to challenge us to live in the space being provided. A second validity, for communication to happen, needs to be, in my view, that, for validation to take place, there must be some form of action. We may trust what is proposed, but without some action, plans or standards of validation, the validation arrangement would be an empty process of acceptance. Dependence on this in most large organizations I have seen.

卷之三

12/23

¹ See also the discussion of the relationship between the two in the introduction to this volume.

1) 雖然在當時的社會上，「中國人」這個稱號，已經被廣泛地應用於中國人身上，但當時的中國人，卻沒有「中國人」這個稱號；「中國人」這個稱號，是後來才有的。

- (c) Development of "Simpler" or "easier" techniques. Scientific research.

(d) How can they be used? What techniques, with a variation of a particular range of material, does it change, improve, simplify, facilitate, etc., and how much time is saved? (See reference, Time).

In addition, what is the simple way to make, and how to make it more reliable, following different types of shapes of the structures. The present day "theoretical Mathematics" and "Practical Mathematics" are different, though similar. The former is derived from mathematics, evolved from science and engineering, and the latter is derived from science and engineering, evolved from mathematics. The former is theoretical, and the latter is practical. The former is abstract, and the latter is concrete. The former is general, and the latter is specific.

GROUP 13 – MISCELLANEOUS FINISHING PROCESSES

（三）在中國社會主義的新時期，我們要繼續堅持和發展毛澤東思想，並在新的歷史條件下，把毛澤東思想的實踐進一步推向深入。

1. *Environ Biol Fish* 1993; 37: 29-36. © 1993 Kluwer Academic Publishers. Printed in Belgium.

10.000-10.000-10.000-10.000

THE AMERICAN QUARTERLY • 35(4)

13/2

- (1) STATION NO. 4, mid-channel, 10 fms., 100% sand; (2) STATION NO. 5, mid-channel, 10 fms., 100% sand.

- (b) These rules shall be effective immediately after their publication in the *Official Journal of the European Union*, except for the provisions relating to the protection of personal data, which shall enter into force on the day following the publication of the final version of the Regulation in the *Official Journal of the European Union*.

Digitized by srujanika@gmail.com

(1) APPROVAL OF BUDGET FOR 1951

13/3

- () LA CAÑA STEEL COMPANY, Inc., Box 600, Rio Piedras, Puerto Rico, 00969, U.S.A.
American: Phone: "T" 2-2466; Radio: "P" 2-2466; Telex: 124-2222
Levielle Street 10, P.O. Box 106, Rio Piedras, Puerto Rico, 00969.

- () Private; No. of employees: 100; Main nature of business: Manufacturing

- (d) A project for the removal of residual oil from the soil by the use of the cold trituration consisting of mechanical trituration of the soil by passing the water or through a rotary trituration apparatus, and addition of organic oil to facilitate the removal of oil.

The resulting framework can be used to build a system that can automatically generate a large number of training samples.

- (c) The agreement would be based on the Bill's principles. The Bill would be a single document of a single negotiating approach with no written or oral vetoes. The Bill's object is, however, to provide for the negotiation of the Arrestional Convention which refers to the International Criminal Court.

13/4

(a) GENERAL INFORMATION

13/4

NAME OF COMPANY
CROWN METAL INDUSTRIES LTD.

ADDRESS: 1000 BROADWAY, NEW YORK, NEW YORK, UNITED STATES OF AMERICA;
PHONE: (212) 554-1200; TELETYPE: 212-554-1200; CABLE: "CROWN", IN CABLES STEEL
CO., NEW YORK, NEW YORK, UNITED STATES OF AMERICA.

(b) PRIVATE; DIVISION OF: THE VITAR GROUP OF COMPANIES; Manufacture of well-defined
metal products.

(c) The following information is given in order to give an account of the industrial and financial fact that
the construction of long distance telephone lines (over 1000 miles) may significantly influence the
affairs of the company indicated. Capital expenditures of \$100 million or more, major improvements in
existing facilities and/or the creation of new facilities along the route.

(d) The company's main product or service offered is through a combination of quality control,
research, development, drawing, special equipment and controlled automation.

(e) Production of steel pipes, tubes, etc. for the mining industry, oil, pulp, paper, glass, stone, etc.).

(f) The company would like to receive the following telephone numbers. The company is prepared to negotiate either
one or two telephone numbers, each with a different prefix. The company would also prefer to have
either one or two telephone numbers, each with a different prefix, for its telephone system and/or its telegraph. Additional
information will be provided if the company receives both prefixes.

13/5

(a) GENERAL INFORMATION

NAME OF COMPANY
CROWN METAL INDUSTRIES LTD.

ADDRESS: 1000 BROADWAY, NEW YORK, NEW YORK, UNITED STATES OF AMERICA;
PHONE: (212) 554-1200; TELETYPE: 212-554-1200; CABLE: "CROWN", IN CABLES STEEL
CO., NEW YORK, NEW YORK, UNITED STATES OF AMERICA.

(b) PRIVATE; DIVISION OF: THE VITAR GROUP OF COMPANIES; No.; kind nature of
business; specialist, metal products producer and distributor.

(c) Industrial plants in the Latin America, which include the hot rolling process, heat treatment, various
machining, etc., were formed by "Vitarsa". This has to be acquired by the world leader in this field of metal
processing. The company is engaged in the manufacture of steel products and has a large number of customers.
The company is engaged in the manufacture of steel products and has a large number of customers.
The company is engaged in the manufacture of steel products and has a large number of customers.
The company is engaged in the manufacture of steel products and has a large number of customers.
The company is engaged in the manufacture of steel products and has a large number of customers.

(d) The company is engaged in the manufacture of steel products and has a large number of customers.
The company is engaged in the manufacture of steel products and has a large number of customers.
The company is engaged in the manufacture of steel products and has a large number of customers.
The company is engaged in the manufacture of steel products and has a large number of customers.

(e) Manufacturing, power plants, chemical plants, industrial plants, mining plants, oil refineries, etc.

(f) The company is engaged in the manufacture of steel products and has a large number of customers.
The company is engaged in the manufacture of steel products and has a large number of customers.
The company is engaged in the manufacture of steel products and has a large number of customers.
The company is engaged in the manufacture of steel products and has a large number of customers.

(g) The following financial arrangements are possible:

- a. Advance payment in advance (based on estimate of time and/or amount) charged at
a percentage rate.
- b. Contractual arrangements. The recipient pays back no less than five
and not more than ten years, with payments in quarterly installments starting on the effective
date of the agreement.
- c. All payments in U.S. currency to a New York bank, without any reduction of taxes.

13/6

(a) GENERAL INFORMATION

NAME OF COMPANY
CROWN METAL INDUSTRIES LTD.

ADDRESS: 1000 BROADWAY, NEW YORK, NEW YORK, UNITED STATES OF AMERICA;

PHONE: (212) 554-1200; TELETYPE: 212-554-1200; CABLE: "CROWN", IN CABLES STEEL
CO., NEW YORK, NEW YORK, UNITED STATES OF AMERICA.

(b) PRIVATE; DIVISION OF: THE VITAR GROUP OF COMPANIES; No.; kind nature of
business; specialist, metal products producer and distributor.

- (d) Most commonly, available. The machine is designed for the production of 100 kg of stainless steel wire per hour. The maximum diameter of the wire is 100-120 mm. Maximum feed rate is 100 m/min. The maximum length of the wire is 100 m. The maximum weight of the wire is 100 kg. The maximum length of the wire is 100 m. The maximum weight of the wire is 100 kg.

There are no fixed standards for stainless steel wire. Therefore, it is difficult to give a standard specification for the machine. However, the following are typical values for the machine:

Length range: 0.5-100 m.
Wire width: 10-100 mm.
Wire thickness: 0.5-10 mm.
Wire diameter: 0.5-10 mm.
Wire speed: 100-1000 m/min.
Power supply: 100V, 50Hz, 3-phase.

- (e) Medium frequency, which can be increased or decreased by the control system, with starting intervention.

13/7

- (1) Production facility producing wire with different diameters.
(2) Standardized product name, produced by a single company, consisting of aluminum, carbon, and other materials.
(3) Frequency: 50 Hz; maximum diameter: 100 mm; maximum weight: 100 kg; maximum length: 100 m.
(4) A process based on the principle of vibration for the production of stainless steel wire (wire, wire rod, bars, etc.).
Applicable to pickling, rinsing, descaling, and peeling.
Result: more thorough and even treatment of the surface.
(5) Finishing process of finished and semi-finished products.
(6) A contract will be negotiated to cover each individual case.

13/8

- (1) GRINDING OF INTERNAL SURFACES OF HOLLOW VESSELS (BOTTLES, TUBES, ETC.).
(2) FRTI, Planning Institute of the Ministry of Construction and Urban Development, Post Box 164, Bratislava 1, Slovakia; Tel.: +421 2 541 11 44; Fax: +421 2 541 11 45; Contact: Mr. Miroslav Štefan (Head of Department, Head of Department of Directors).
(3) Governmental; Planning institute; No. of employees: 1450; Main activities: planning and development projects for multifunctional industry; telephone number: +421 2 541 11 44; fax: +421 2 541 11 45; e-mail: miroslav.stefan@frti.sk.
(4) A single-purpose grinder has been designed and developed for the grinding of internal surfaces of hollow (e.g. hemispherical) vessels prior to crimping.
The main data of the equipment are as follows:
Permissible diameter of workpiece: 100-2000 mm inclusive
" height " " max. 300 mm
" weight " " max. 5,000 kg
The grinding slide has three different positions, with a separate drive to each position and a separate motor. The bench has a separate drive with six different speeds. Removal of the workpiece from the workbench is automatic.
- (5) Autoclaves for use in chemical industry processes.
(6) Available according to conditions and payment fixed in any valid contract. The following are typical values for the machine:
Manufacturing capacity: incineration, treatment of sewage, sludge, industrial waste, etc.; incineration resistance: provided under a separate agreement.

13/9

13/9
13/9
13/9

13/10

13/10
13/10
13/10

13/11

13/11
13/11
13/11

GROUP 14 – MISCELLANEOUS PROCESSES

Algebra, I, Part 2, Chapter XIII, page 144, 1937.

Figure 1. A large-scale study of the relationship between the number of species and the area of habitat.

在這裏，我們將會看到一個簡單的範例，說明如何在一個應用程式中使用。

Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, Uruguay, Venezuela

- (2) Events; Non-profit-making firms of all kinds; and the fair value of their net non-monetary assets.

(3) ASW made alternative proposals and calculations, which were put before the Parliamentary Committee, and the Committee agreed with the Institute of Actuaries, that the fair value was the best representation of the value of the firm, and that ASW was right.

(4) But it was thought that ASW had not taken into account the different ownership interest of different shareholders, and the Committee agreed that ASW must make the value of the firm separately for each shareholder.

THE SAMPLING OF INFLUENT LOADS FOR THE MM TREATMENT

(-1) Private; Subsidiary of A/S Danckersmaefabriek, Dordrecht, The Netherlands.
Main nature of business: Manufacture and sale of boats and yachts.

- (c) Planning and organization of companies for manufacture of materials, tools, Training in tool design, Training in tool manufacture; training, including, application, utilization, diffusion knowhow for worker production of hermetical materials, vessels, containers, etc.

(d) Planning, training, and supply of productive equipment for production of

14/1

14/2

14/3

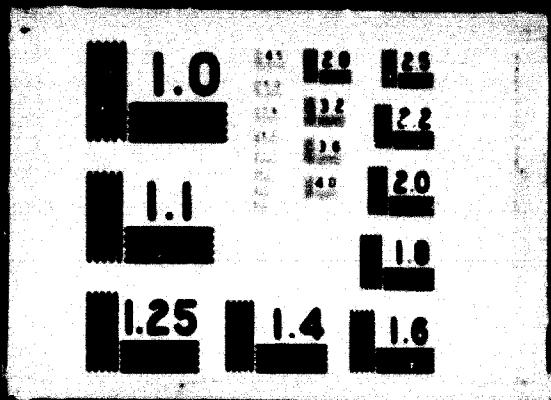


17.7.74

3 OF 3

D O

4974



Reference No.

14/4

ITALY

(1) MANUFACTURE OF DENTAL & IMPLANT

(1) DENTALIA - PIAZZA DELLA LIBERTÀ, 1 - 21040 Varese (PV) Italy; Office: Dentalwerk

Varese; Tel: +39 0382 60344; Fax: +39 0382 60344; Contact: Mr. ...

(2) Private; Capital: \$ 1 million; Date: 1980; Sector: Dental equipment.
Employees: 100; Main nature of business: Manufacture of dental equipment.(3) Knowhow for production of high temperature resistors, small units, air-driven instruments,
dental knowhow equipment.

(4) Persons involved in project not to individual manufacturers.

Reference No.

14/5

ITALY

(1) MANUFACTURE OF TUNGSTEN CARBIDE AND TUNGSTEN

(1) Tungsten Carbide, Inc., 100-1, 10th Street, Brooklyn, New York, USA; Office: Tungsten
Carbide, Inc.; Tel: +1 718 348 1717; Contact: Mr. ...; Fax: +1 718 348 1717;(2) Private; Share Capital: American Tungsten Corp. (\$ 1,000 millions); Capital: \$ 1,000 million;
Employees: 100; Main nature of business: Manufacture of tungsten carbide tools, tungsten carbide
and tungsten carbide tips, tungsten carbide cutting and grinding materials.

- (3) Known how to manufacture of tools.
- (4) Known how to manufacture the tungsten plant and equipment.
- (5) Known how to transform raw material to finished product (tungsten carbide cutting tools
and tungsten carbide tips).

(6) Raw material required:

Tungsten carbide, tungsten powder, hot-pressed sintered-crystal tungsten carbide, steel bar and forgings,
complicating them raw material into intermediate tips and then manufacture thereafter into cutting tool
and cutting tips which are tungsten carbide tips.

(7) Known how to manufacture of tungsten carbide cutting tools.

- (8) Known how to manufacture of tools.
- (9) Known how to manufacture of tools.
- (10) Known how to manufacture of tools.

(11) Known how to manufacture of tools, which the potential market requirements are known
in the world.(12) Known how to manufacture that, tungsten carbide carbide tips are the raw material for tools of all kinds,
manufacture tools first in the tools importing the carbide from us. Only when the knowhow on
tungsten carbide carbide tools the manufacture of carbide to discuss. This process (carbide
manufacture) is very complex, it is needed, the more likely to come out in achievement than the
traditional processes. ... , the suitable the easier way.

Reference No.

14/6

ITALY

(1) MANUFACTURE OF CONVEYOR-SEMI ROLLERS

(1) ITALSIDER S.p.A., via Corrida 1, 16136 Genova, Italy; Office: ItalSIDER Genova;
Tel: +39 010 710000; Fax: +39 010 710000; Contact: Ufficio Genova.(2) Mixed; Major Italian iron and steel producer; Capital: Ls. 10,000 million; No. of
employees: 44,000; Main nature of business: Production of iron and steel.

- (3) Known how to manufacture of various types of rollers for use conveyor belt.
- (4) Known how to manufacture roller; special Italsider system, with high efficiency and reliability.
- (5) Known how to manufacture roller; certain for extremes of climate (from -40°C to +60°C), for highly corrosive
atmosphere (e.g. in chemical plants), for the transport of sensitive material in the presence of strong
magnetic fields, or for transport of extra large and/or heavy materials.
- (6) The rollers are assembled in sets according to customer requirements.
- (7) The rollers are fabricated from carbon or steel into a special feature is the use of uncoated non-lubricated
bearings.

(8) Interplant assistance programme, implemented by Italsider staff in recipient's works and training of
recipient's personnel in Italsider works. The various possibilities exist for licensing the knowhow will
be discussed on application from potential recipients.

- (1) PRODUCTION OF PRECISION ROLLER CHAINS
(2) FRANZ FORMAKER GmbH, Sibratenstrasse 7, A-1031 Vienna, Austria.
(3) Private; Capital: \$1.5 million; Sales: \$1.5 million; No. of employees: 100;
Main nature of business: Production of precision roller chains.

14/7

- (1) MANUFACTURE OF BRASS SANITARY FITTINGS AND VALVES
(2) LONNITION Oy, 01400 Rauma 10, Finland; Cable: Armit; Telex: 211165;
Phone: 30-11200.
(3) Private; No. of employees: 1000; Main nature of business: Manufacturer of top quality valves.
(4) Complete knowhow for manufacture of sanitary fittings and valves:
Product planning: product development; making and testing of prototypes; preparation of complete operational plans.
Operations planning: Construction; materials handling; warehousing; welding; assembly; casting; production line casting; cleaning; machining; grinding; buffing; painting; etc.; etc.
(5) Lump-sum payment 1/3 when ordering, 2/3 for delivery of final documents.

14/8

- (1) FABRICATION OF ALUMINUM ALLOY DOORS AND WINDOWS
(2) MONTECATTINI EDISON S.p.A., Foro Buonaparte 1, P.O. Box 500, Milano, Italy; Cable: Montecattini; Telex: 11619; Phone: 5151; Contact: Dr. Roberto Capraro (Manager, Process and Product Development - BIM), Montecattini Edision S.p.A., Foro Buonaparte 1, Milano.
(3) Private; Capital: Lit. 140 billion; Sales (1970): Lit. 100 billion; No. of employees: 52,000; Main nature of business: Manufacture of chemicals, oil and ferroalloys.
(4) Fabrication of windows, doors, etc., and also in aluminum and its alloys, including the following:
 - Engineering and design of sections and panels.
 - Fabricating techniques for windows and doors from sections and panels.
 - Manufacture of sections and laminates.
 - Finishing techniques (anodizing, painting, etc.).
 - Assembly techniques.
(5) Licensing arrangements against payment of lump sum covering expenses connected to transfer of technology plus annual royalty - to be negotiated with recipient. Delivery of technical personnel who will be in charge of plant operation. Technical assistance for technology transfer and start-up of plant.

14/9

- (1) FABRICATION, WELDING, AND HOT-DIP GALVANIZING OF LATTICE-TYPE STRUCTURES
(2) PAINTER PROS. LTD., Merimer Road, Hereford, United Kingdom; Telex: 35771; Phone: Hereford 101; Contact: Mr. H. Weatherill (Director and General Manager).
(3) Private; Capital: £2 million; Sales: £4 million; No. of employees: 100;
Main nature of business: Structural engineers specializing in design, testing and fabrication of lattice-type structures.
(4) Knowhow in metallurgical processes - fabrication, welding, and hot-dip galvanizing - of lattice-type structures.
(5) Electrical transmission towers, television and radio masts, bridges, etc.
(6) Knowhow or technique agreement based on negotiations:
 - initial "goodwill" payment.
 - consultancy fee.
 - annual royalty.

14/10

A patented light distribution pole is also available for licensing, either separately or in conjunction with a general agreement. Expert assistance and/or advice in design of layout, selection and design of specialized plant, jig and tool requirements, planning and control can be given and consultant services offered, followed by consultancy role for advice on specific problems that may arise.

CONFIDENTIAL

14/11

SUMMARY

MANUFACTURE OF PLASTIC COATED ALUMINUM

Address: Metallwerke, Bischoppenstrasse 11, A-3100 Linz-Gumpendorf, Austria;
 Phone: 0732-3110; Telex: 7742 (Linz 2), 7743 (Welt 4);
 Telex: (0732) 3110; Contact: Dr. Mario Fuchs (Sales Manager).

- (1) Description: Leading producer and manufacturer of aluminum and aluminum products and semi-finished copper and copper alloy products in Austria. Capital: \$ 410 million.
 Main products: 1.000,000 t. of aluminum; 6,000 t. main output of
 aluminum production of zinc, tin and antimony in copper, aluminum, and its alloys.
- (2) Products available in the fabrication of aluminum door handles in extruded aluminum sections.
 The types of fabrication available cover a wide range of styles and applications. A number of patented
 techniques for ornate, embossed, engraved, decorative scaling are also offered.
- (3) Knowledge which includes fabrication techniques, drawings, models, technical assistance, and training.
- (4) Applications mainly have applications in residential, hotel, industrial, business, hospital, etc. buildings
 in temperate and tropical climates.
- (5) Subject to individual negotiation.

CONFIDENTIAL

14/12

SUMMARY

QUALITY CONTROL - TALL-STEEL SHEETS

Address: INSTITUTE FOR PERIODIC METALS, Pusztai ut. 10, Budapest 11, Hungary;
 Phone: 30-0-0; Contact: Mr. Paul Lutz.

- (1) Description: Research and development, Research and development in ferrous metallurgy.
- (2) The quality control of tall-steels depends on the determination of the cleanness of the steel
 (i.e. freedom from non-metallic inclusion). However, this is not only to accomplish
 a low sulphur content and low incandescence, one of which the tendency to pass through the acid bath and used as a
 criterion for the cleanness of tall-steels, in the form of hot-dip galvanized bars.
- (3) Description of tall-steels and steel coil required is subject to individual negotiation.
- (4) Payment and payment variants, subject to negotiation. The payment can also be based on quantity.

CONFIDENTIAL

14/13

CONFIDENTIAL

MANUFACTURE OF STEEL AND IRON-PLATED SHEETS

Address: STAHLWERK RHEIN-RUHR AG, Postfach 1-2-0, D-4400 Düsseldorf, Federal
 Republic of Germany; Telex: 4-47 501; Phone: 0211-700.

- (1) Description: Capital: D. 100,000,000; Number of employees: 10,000;
 Main nature of business: Iron and steel.
- (2) Services: Drawing, cutting, heat treatment, galvanizing, testing.
- (3) Steel coils for cold rolling mill.
- (4) An agreement will be negotiated which will cover the installation of equipment and its operation including
 technical control of various finishing techniques. The exact contents of the contracts will be negotiated
 by individual negotiation.

CONFIDENTIAL

14/14

CONFIDENTIAL

MANUFACTURE OF SPECIAL SPINDLES

Address: SAWMILL AND WOOD INDUSTRIES LTD., 100 Victoria Park Road, London E.W.1,
 United Kingdom; Phone: 01-580 1666; Telex: 846000; Contact:
 Mr. J. H. Taylor (Sales Manager).

- (1) Description: Member of Great Britain Group of Companies. Main nature of business:
 Structural steelwork, timber and fasteners.

- (4) 1. General technology in manufacture of structural steelwork, including design, welding, finishing (shot-blasting, scraping) and general assembly.
2. Design, manufacture, and erection of single-storey timber structures including buildings, clear portal, tied portal, and crane building types.
3. Manufacture of steelwork components and formwork etc. for LA construction projects; structure up to 6-8 storeys, suitable for building schools, offices, hospitals, libraries.
4. Design, manufacture, and erection of composite concrete/steel frame for high-rise projects, known as MULTIBUILD.

(5) Structural steelwork industry.

(6) By licensing arrangements basically covering:

- a. (i) Single once-for-all payment (in lieu of fee), trial, and royalty arrangements.
b. (i) A down payment to cover initial costs in preparing tools, of those parts to be manufactured.
(ii) An annual royalty at an agreed percentage on the net contract value.
(iii) A minimum annual royalty (payable in advance).
(iv) An agreed period of years.
(v) Training in UK factories of licensee's personnel.
(vi) Visits of UK technicians to overseas licensee.
(vii) Maintenance of technical support and knowhow during license period.

(1) GENERAL TECHNICAL ASSISTANCE IN METAL FORMING TECHNOLOGIES

(2) METALINSTITUT TNO, Post Box 50, Delft, Netherlands; Telex: 2203; Phone: (015) 1914; Contact: Mr. J.L. Bemmelveld (Director of Production Engineering Research).

(3) Mixed; Part of Organisatie voor Natuurwetenschappelijk Onderzoek TNO (Central Organisation for Applied Scientific Research); Annual budget: \$3.7 billion (1977); No. of employees: 4,000; Main nature of business: Research and development.

(4) Metalinstitut TNO has experience, and can offer expert technical assistance in the following areas:

	Research and Development	Industrial Applications	Training
Cold working	X	X	X
Hot working	X	X	X
Explosive forming	X	X	X
Forming	X	X	X
Sheet metal working	X	X	X
Extrusion	X	X	X
Cutting	X	X	X
Heat treatment	X	X	X
Welding	X	X	X
Finishing	X	X	X

- (5) a. The fee for stagiaires for training in the Metal Research Institute will amount to about \$1,000 per month.
b. The charges for advisers sent out by the Organisation will be in the range of \$1,000-\$1,500 per day, exclusive of travelling expenses and daily subsistence allowance.
c. Auxiliary educational material and/or learning devices for courses that may be given in the countries where the pertinent knowhow is to be transferred (including, but not limited to, about \$5,000 per set).

14/15

RECOMMENDED

(1) MANUFACTURE OF STEEL AND ALUMINIUM DOORS

(2) FELIX WALDNER, Kappnauerstrasse 60, A-1020 Linz, Austria; Telex: 62-145; Phone: (0122) 37073/393.

(3) Private; No. of employees: 120; Main nature of business: Production and sale of steel doors, garage doors.

(4) Knowhow on manufacture of new types of gates and doors in steel and aluminium. Manufacturing techniques are used which enable high rates of production to be attained. Special jigs, welding techniques and materials have been developed for fabricating the steel and aluminium.

(5) Manufacture of aluminium and steel doors and gates.

(6) Licensing arrangements for production of complete door and gate assemblies.

14/16

RECOMMENDED

Reference No.

14/17

UNITED KINGDOM

(1) TECHNICAL INFORMATION ON TIN AND ITS USES

- (2) TIN RESEARCH INSTITUTE, Fraser Road, Ferriby, Grimsby, Lincolnshire, United Kingdom; Phone: 01 52 454; Cable: Tinsearch, Grimsby; Contact: Mr. D.A. Robins, Assistant Director, Tin Research Institute, Fraser Road, Ferriby, Grimsby, Lincolnshire, United Kingdom.
- (3) International Headquarters Staff: 10; Offices in Brussels, Ohio, Düsseldorf, The Hague, Milan, Rio de Janeiro and Tokyo; Main nature of business: Developing the uses of tin.

- (4) The work of the Tin Research Institute is directed to develop the use of tin and is based on scientific and technical study of the metal, its alloys and compounds, and of industrial processes which use tin or may provide future markets.

The whole group of organizations controlled by the Council is engaged in spreading knowledge of tin throughout the world. This is effected by publishing the results of research, by contributing to the technical and trade press, by issuing practical handbook, by giving lectures, by participating in exhibitions and fairs, by practical demonstrations of tin-using processes, and by consultations at user's works. The institute publishes a wide range of technical literature relating to the uses of tin and also produces a quarterly named "Tin and Tinuse" in six languages.

- (5) Technical leaflets and advice relating to the uses of tin are given free of charge.

Reference No.

14/18

FRANCE

(1) PRODUCTION OF STEEL SHOT AND GRIT; PRODUCTION OF CAST IRON SHOT AND GRIT

- (2) PROCESSES ET GRENAILLLES METALLIQUES (PGM), 10, rue A. de Vigny, 75008 Paris, France; Contact: Mr. J. Thomé.
- (3) One of the most prominent European companies to specialize in the production of cast iron and steel shot and grit; 40% of the production is sent for export; Main nature of business: Production and sale of shot and grit.

- (4) The main processes of the production are as follows:

- Pouring liquid metal on to water jets.
- Drying and screening.
- Handling.
- Heat treatment.

The PGM company could also supply specific machines such as:

- Water, etc.
- Sieves and grating tables.
- Heat treating furnaces.

- (5) Cleaning of foundry parts (removing sand and carbonaceous material) and forged parts; cleaning the metallic surfaces before painting, enameling coating.

- (6) Commercial and technical assistance; payment of 10% for know-how; royalties on the turnover with a minimum amount guaranteed.

Reference No.

14/19

AUSTRIA

(1) MANUFACTURE OF LOCKS FOR DOORS AND FURNITURE

- (2) GES. GRUNDMANN, GmbH, P.O. Box 1, A-1100 Wien-Grazburg, Austria; Cable: GRUNDMANN, Grazburg; Telex: 615-151; Phone: (01-82) 451; Contact: Dr. Erich Buxbaum (Director).
- (3) Private; oldest and largest lock manufacturer in Austria; No. of employees: approx. 1,100; Main nature of business: Manufacture of locks and foundry for cast iron and light metal.
- (4) Technology and know-how for manufacturing all sorts of locks and similar articles. Planning of complete lock factories, assembling works or parts of such; elaboration of all designs or drawings; supply of raw material, semifinished and finished parts for assembling; fabrication and supply of special tools and machines. Special section: technology and know-how for cylinder locks and master-key installations.
- (5) Conditions depend on the required technology and/or know-how. For example, technology and know-how for a simple lock factory is supplied against 1% = payment with facilities (certain advance plus acceptance letter of credit) depending on the volume of the project. Technology and know-how for cylinders and master-key systems are supplied on a royalty basis plus fixed payment.

14/20

- (1) ENGINEERS' CUTTING TOOL MANUFACTURE
- (2) SAMUEL OSBORN AND CO. LTD., Clyde Steel Works, P.O. Box No. 1, Sheffield S3 3JZ, United Kingdom; Cable: Osborn Sheffield; Telex: 54374; Phone: (0141) 450111; Contact: Mr. R.W. Foster (Group Project Manager).
- (3) Private; An international group of companies founded 1851; Capital employed £13 million; Sales: £70 million; No. of employees: 4,000; Main national business: Manufacture of high-quality steel bars, extruded steel sections, rolled sheets, cutting tools, etc.
- (4) A comprehensive package covering current - all current process, product, equipment and operational techniques and knowhow for high volume flow line manufacture of superior quality high speed steel twist drills, indexable threaded cutters, chucks, toolholder bits and lathe tools from bar and coil material etc. Osborn will consider separation of any part of the project knowhow and technology offered to suit particular interests. Construction, layout, equipment and services are based upon a nominal output capacity of some 6 million pieces per annum of current sales value of approximately £10 million, requiring capital expenditure in the order of £3 million, and some 1,400 tons of bar and coil material per annum. This material is available from the steel producing companies within the Osborn organization.
- Main finished products are straight and taper shank twist drills in a comprehensive variety of common fractional and metric sizes and types, and parallel and tapered reamers for hard metal machine applications. The range of threaded shank cutters include end mills, slot drills, dovetail cutters, woodruff cutters and ripping cutters. Face mills and side and face cutters are manufactured with plain and threaded bars. The Osborn-Mushet range of Titanic Chucks and chuck accessories are designed with many special features to accommodate a wide range of milling cutters, and to give fast cutting and long life. Toolholder bits are produced in square, rectangular, round, bevel, and double bevel sections in lengths to suit all standard toolholders. Special purpose cutting tools are manufactured to specified requirements.
- Manufacturing techniques and facilities include sawing, abrasive cutting, turning, friction welding, milling, broaching, grinding, straightening, heat treatment, finishing procedures, jigs, fixtures, fixtures and all materials handling equipment.
- Back-up knowhow is offered covering project management requirements and procedures from a green field start to a fully operational unit including drawings, layouts, diagrams, planning, cost and progress control techniques. Technological and operational guidance and information is available in respect of plant selection, product and material range, product manufacturing route, product performance, quality standards and control, servicing requirements, production planning and control, cost control, manpower requirements and management organization and staffing.
- The processes and technology offered are established and operated by Samuel Osborn's subsidiary company, Osborn-Mushet Tools Limited at Sheffield, England.

- (5) Proposed manner and conditions for supplying the technology and/or knowhow:
Implementation sequence

- Step 1. Preliminary exchange between Osborn and recipient to establish mutual interest.
2. Preliminary survey visit to establish specific parameters of requirements.
3. Preparation and submission of written survey report and proposals.
4. Negotiation and finalization of proposals, financial, commercial and contractual terms.
5. Invitation for recipient to visit Osborn to see and discuss the pertinent technical and procedural aspects.
6. Osborn to supply reports, documentation, manual instructions, photographs as may be agreed.
7. Osborn to provide and/or arrange for expert assistance as may be agreed.
8. Osborn to train recipient personnel in such techniques.
9. Osborn to service project operation on contractual basis as may be agreed.

Commercial Policy

Step 1 will involve no expense to the recipient.

Steps 2, 3, 4 and 5 will be carried out on an individual fee plus expenses basis with the recipient in accordance with requirements.

Steps 6, 7, 8 and 9 will be carried out on an individual fee plus expenses basis with the recipient in accordance with requirements and an option will be open to negotiation of royalty and/or joint venture arrangement.

In accordance with

14/21

- (1) PRODUCTION TECHNOLOGY OF TAPERED POLE
- (2) SUMITOMO METAL INDUSTRIES LTD., 15 Kitahama 5-chome, Higashinada-ku, Osaka, Japan; Cables: SUMITOMETAL OSAKA; Telex: 1490; Phone: 06-65111.
- (3) Private; Capital: Yen 1,000,000,000; Sales: 1,000,000,000 (approx.) (from 1970 to 1972); No. of employees: 15,000 (at end of 1972); Main national business: Production and sale of carbon steel rolled products, alloy steel rolled products, forgings, casting, rolling stock parts and fabricating.
- (4) Production technology of tapered pole, covering U - G forming, slip lining, submerged welding, butt welding, special joint, form of base plate, stress relieving at expansion joint and winding of insulation.
- (5)
- 1. Engineering Service at the construction of facility.
 - 2. Technical assistance of operation and quality control.
 - 3. Training at our plant in Japan.

Printed in Austria
72-410 - August 1973 - 4,740

MB/110 (English only)



17.7.74