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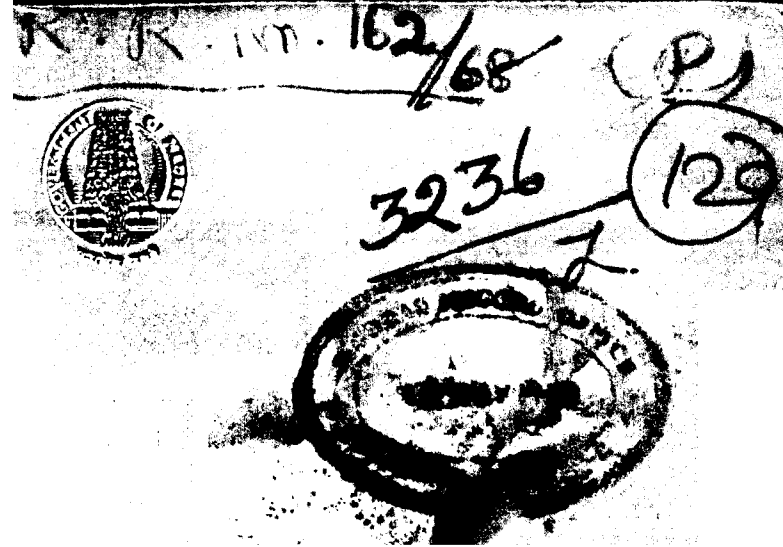
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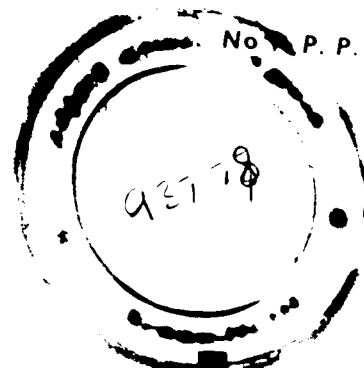
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IND COM JOURNAL

Vol. XXII

OCTOBER - DECEMBER 1967

No. 4

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SCHEME FOR FINANCING CRAFTSMEN AND OTHER QUALIFIED ENTREPRENEURS DESIROUS OF SETTING UP SMALL INDUSTRIES BY THE STATE BANK OF INDIA

1. INTRODUCTION

There are instances where craftsmen and other qualified entrepreneurs have worthwhile schemes to set up and operate small industries but are unable to do so for lack of sufficient resources to provide the initial capital, or, as it is technically termed, the 'owner's equity', required. For want of such resources, they cannot obtain finance from banks or other financial agencies. If, however, financial assistance was made available to them, they might be enabled to set up and operate the proposed enterprise successfully. It is to tap this potential and encourage entrepreneurial talent that the Scheme set out herein is being introduced, to provide financial assistance to such craftsmen and qualified entrepreneurs. It is expected that the Scheme will give a boost to growth of industrialisation in the country.

2. THE SCHEME

2-1. The Scheme envisages provision of finance to such entrepreneurs, including, to the extent necessary, the owner's equity in business. So long as the purpose is to set up a worthwhile project, there are prospects for its successful operation and, in consequence, reasonable assurance of repayment forthcoming, finance will be made available, provided, of course, the persons have personal attributes like character and integrity and possess the requisite know-how as well as managerial ability. For protection, the entrepreneurs will be required to charge to the Bank their assets acquired either through the finance made available by the Bank or otherwise.

2-2. The financial assistance may take different forms depending upon the actual requirements. It may even cover a combi-

nation of more than one type of financing: Instalment Credit for financing the purchase of machinery/equipment, Medium Term Loan for financing the long term working capital and, where and to the extent necessary, the owner's equity and Cash Credit or Demand Loan for catering to the short term working capital requirements.

2-3. To start with, however, only such projects will be entertained where the total financial assistance to an entrepreneur can be limited to Rs. 1 lakh.

2-4. All surplus generated by the enterprise will first be applied in repayment of the Instalment Credit and Medium Term Loan. In this manner, the owner's equity will be gradually strengthened and, until this has been done, no part of the surplus will ordinarily be allowed to be withdrawn from business for any purpose whatsoever.

3. CRITERIA

3.1. Eligibility: Entrepreneurs who have worthwhile projects for setting up new industries and, apart from having good character and integrity, possess the requisite know-how and ability to operate the projects successfully, but have only limited resources, will be eligible for financial assistance under the Scheme. Persons who already own a factory wholly or partially will not be considered.

3.2. Purpose: Advances under the Scheme will be given to industrial units which are engaged in the manufacture, processing and preservation of goods. Preference will be given to the projects covered by the following industries:-

- (a) Defence-oriented industries.
- (b) Industries which are substantial net savers of foreign exchange and, in particular, are export-oriented.
- (c) Industries providing essential consumer goods which have an assured base in domestic raw materials.
- (d) Industries which provide a basis for—
 - (i) agricultural development, and
 - (ii) further industrialisation.

3.3. Location: The proposal should be for setting up the industry in an Industrial Estate, where there is provision of suitable factory accommodation, with requisite ancillary facilities like water supply, power, transport and communication. Also, the accommodation should as far as possible be secured on a rental basis.

This will ensure that the investment in fixed assets is kept down to the minimum and enable entrepreneurs to make the best use of the financial assistance available from the Bank.

Simultaneously, it will provide better control for the Bank over the operations of the industry and thus assist the Bank in making a positive contribution to the growth of the enterprise.

3.4. Technical feasibility and economic viability: The project must be technically sound and economically viable.

A confirmation will be required from the Small Industries Service Institutes or the Director of Industries that the project is technically feasible and that the products of the unit will have a ready market. In addition, the Bank will independently examine this aspect, as well as economic viability, where necessary, in consultation with specialists in the line.

4. Forms of Financial Assistance

4.1. For acquiring machinery/equipment: As most of the machinery/equipment will normally be movable or at best fixed to the ground through nuts and bolts (not firmly embedded in the earth to comprise part of fixed assets), finance would ordinarily be provided by way of Instalment Credit, under the Bank's Instalment Credit Scheme as modified for small-scale industries.

Medium Term Loans may also be considered, where this becomes absolutely necessary, to finance acquisition of part of the fixed assets, which cannot be catered through Instalment Credit.

4.2. For providing long term working capital: Finance for this purpose will be provided by way of Medium Term Loans.

4.3. For short term working capital: To finance the carry of stock-in-trade, short term working capital will be provided by way of Cash Credit or Demand Loans on normal terms as applicable to small-scale industries.

Cash Credit or Demand Loans may be either on 'lock & key' basis or 'factory type', or a combination or both according to the requirements, with separate split-up limits for each. Where necessary, trust receipt facility may also be extended.

Receivables too may be covered, preferably by way of overdrafts against bills.

5. PROCEDURE

5.1. Processing: Each proposal will be subjected to detailed scrutiny for credit evaluation. If it satisfies the criteria referred to in items 3.1, 3.2, and 3.3, the credit factor 'purpose' would have been taken care of. For the credit factor 'person', apart from enquiring into the antecedents of the entrepreneur to obtain information with regard to his family background, character and integrity, educational qualifications, etc., his technical know-how and competence would need to be verified. Simultaneously, the project will be evaluated with regard to the other credit factors 'payment (repayment)' and 'prospects', on the basis of technical feasibility and economic viability, vide paragraph 3.4.

If all these credit factors on evaluation are found satisfactory, an assessment will be made of the total cost of the project and consideration given to the mode of financing, thus:—

(a) Cost of the project			
1. Machinery	...		A
2. Other fixed assets, if any	...		B
3. Pre-operative expenses	...		C
4. Working capital			
(i) Stock-in-trade	...	s	
(ii) Stocks-in-process	...	sp	
(iii) Receivables	...	r	
(iv) Stores & spares	...	ss	
(v) Overheads for a month	...	oh	
		—	D
Total cost			A+B+C+D

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(b) *Mode of financing*

1. Instalment credit for machinery = A—M1
2. Medium term loan to cover other fixed assets = B—M2
3. Cash credit / demand loan against stock-in-trade, stock-in-process and stores and spares = (s—M3)+(sp—M4)+ (ss—M5)
4. Overdraft against receivables = r—M6
5. Medium term loan for long term working capital = C+oh+M1+M2+M3+M4+M5+M6
(Own resources to the extent provided + Sundry creditors to the extent expected)

M1, M2, M3, M4, M5 & M6 represent the owner's equity that is required to be carried in the respective assets. As, however, the financing will be on a totality basis, this may be fixed uniformly at 20% for each.

In so far as working capital (item (a) (4)) is concerned, the requirements will have to be computed on the maximum carry of stock-in-trade and receivables; when the level of these assets is low, part of the owner's equity allowed thereagainst would become surplus, but so long as no surplus is withdrawn from the business this need not cause any worry as the position would change again when the stock-in-trade and receivables mount up.

Separate financing of receivables has been suggested as bills may be drawn for each

account due—either trade bills or supply bills on Government Departments—and it may be best to finance them on an overdraft basis.

Normally, the entrepreneur will himself be expected to submit the required estimates and projections for the above analysis; where he is unable to do so, he would need to be assisted in the compilation thereof. The assumptions on which the estimates and projections are based, as also the computations, will need to be carefully verified. This would enable a view to be taken as to the surplus to be generated from year to year and to fix up on that basis the amortisation schedules for the Instalment Credit and Medium Term Loans. All surplus generated will be utilised in repayment of these loans and until this has been done no part of the surplus should be allowed to be withdrawn from business.

5.2. **Protection:** For 'protection', the assets financed under each of the items (b) (1), (b) (2) and (b) (3) would require to be charged to the Bank:—

- (a) Instalment credit ... Hypothecation of movable machinery / equipment.
- (b) Term loans. Registered mortgage over fixed assets; in a case where the loan amount is not in excess of Rs. 25,000/—, an equitable mortgage, accompanied by a Memorandum of Deposit, may be taken in the prescribed manner.
- (c) Working capital ... Pledge / Hypothecation of all current assets.

For the Medium Term Loan for long term working capital, there would normally be no surplus assets left to be charged, and this loan will have to be made on a clean basis. Where, however, the entrepreneur has any other unencumbered personal assets, a charge should be obtained thereagainst for the purpose. In any case, a suitable undertaking should be obtained from the entrepreneur that any surplus available on the other accounts could be utilised by the Bank in repayment of this loan.

Where possible, if the protection available in the above manner is not considered adequate, the feasibility may be explored of obtaining a third party guarantee, particularly for the clean loan.

5.3. **Disbursement:** Term loans/instalment credit will be disbursed strictly in accordance with the scheme approved by the Bank.

As far as possible, the financial arrangements concerning the purchase of machinery, as also raw materials and components, should be finalised in consultation with the Bank and letters of credit established, whenever feasible, covering the various goods proposed to be acquired. Payments should preferably be made by the Bank direct to suppliers but, where this is not possible, the Bank should be fully satisfied as regards payments having been correctly made.

In so far as the medium term loan for long term working capital is concerned, the amount on disbursement will require to be credited to a current account until it is used up for meeting the owner's equity on instalment credit, medium term loan for fixed assets, short term working capital and preoperative expenses as well as overheads.

5.4. **Terms of repayment:**

- (i) Term loan ... Ordinarily not longer than 5/7 years; start-up period may be considered in appropriate cases.
- (ii) Instalment credit ... Not longer than 5 years
- (iii) Short term working capital ... On demand

As stated in paragraph 5.1, the amortisation schedules for (i) and (ii) will be determined on the basis of the surplus to be generated by the enterprise.

5.5. **Interest/Commission:** In view of the additional risks to be undertaken, the Bank charges for the credit facilities provided under the Scheme will be slightly higher, as follows:

- (i) Interest on term loans ... 2% above State Bank Advance Rate minimum 9½% per annum
- (ii) Finance charge on instalment credit ... 9½% per annum (on outstandings)
- (iii) Interest on working capital ... 1½% above State Bank Advance Rate minimum 9% per annum

Besides, commission at the approved rate (which is ½%) on the amount of sanctioned limits in regard to working capital advances and on the amounts outstanding in the case of term loans and instalment credit will be payable to the Guarantee Organisation.

5.6. Insurance: The assets charged to the Bank should be fully insured, at the borrower's expense, against the usual risks with a company or companies on the approved list of the Bank in the joint names of the Bank and the borrower; the insurance policies should be deposited with the Bank. The borrower shall also undertake to take out insurance against riot and strike risks as and when called upon by the Bank to do so.

5.7. Expenses: Any legal expenses incurred in connection with the sanctioning of the loan, viz., lawyer's fees, cost of documentation, etc., will be borne by the borrowers.

6. Follow-up

6.1. Progress of the enterprise: It will be necessary to maintain a close watch on the operation of the enterprise. For this purpose an effective follow up action would need to be taken periodically, say, once in a quarter. Apart from visiting the industrial unit and scrutinising of its books, particularly in regard to production and sales, arrangements should

be made for the entrepreneur to submit quarterly statements of progress of the enterprise in suitable form. Whenever any tendency is noticed of undue accumulation of stocks, particularly the manufactured products, the reasons would require to be carefully gone into and suitable action initiated with regard thereto immediately.

The borrowers should be prevailed upon to maintain proper books of accounts and records of their financial and manufacturing operations and they must agree to submit to the Bank, as and when called for, periodical statements in such forms as the Bank may require.

6.2. Verification of assets: The assets charged to the Bank will need to be verified periodically, by monthly inspections in the usual manner.

7. Concurrent borrowings: In view of the special nature of financing envisaged on a totality basis, concurrent borrowings from other financing agencies will not ordinarily be permitted.

NATIONAL STANDARDS AND INDUSTRIAL DEVELOPMENT

G. L. GULATI

DIRECTOR, INDIAN STANDARDS INSTITUTION, MADRAS BRANCH

The importance of industrial standardization on a national basis as a means to rapid industrial development had been recognized by the industrially advanced countries like Germany, U. K., U.S.A. and Japan even prior to World War I. It was, however, during 20's and 30's of the current century that there developed a world-wide trend towards highly organized national direction and assistance to industry by the application of standardisation on national basis and it led to the establishment of National Standards Organizations in almost all the European Countries.

It is a matter of common knowledge that U. S. S. R. emerged as one of the foremost industrial countries after the Revolution through the intensification of standardized production through her National Development Plans. In Germany too, standardization played a great part in her remarkable recovery after the World War II. Redundant sizes and types were eliminated and industry was made to operate on highly standardized lines to streamline production. Simplification and standardization has likewise played a very important role in the postwar industrial development of U. S. A. and U. K. Japan had been equally alive to the advantages accruing from standardization and she not only introduced it in the development of large and medium scale industries, but, also

applied it particularly in the production in cottage industries.

That standardization on rationalized lines and national basis was essential for rapid industrial development was also recognized by our Government and we consider ourselves rather fortunate in having our National Standards Body the Indian Standards Institution established in 1947 before we actually launched on big industrial development plans and projects. The ISI which is a joint venture of the Government and the Industry has for its objects the preparation, promotion and general adoption at the national and international levels of Standards relating to materials, commodities, structures, practices and operations. The Institution aims at assisting in the rationalization of industry by co-ordinating the efforts of producers and consumers for the improvement of appliances, processes, raw materials and products. It promotes quality control methods and provides for the registration of Standard Marks applicable to materials, commodities, etc. conforming to Standards issued by it.

In the preparation of Standards, ISI functions through Committees of experts, scientists, technologists and representatives from industrial and Government organizations. There are at present over 1760 such committees, sub-committees and panels with a

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membership of over 20,000. The Sectional Committees are appointed by the Executive Committee or any of the eight Division Councils of the ISI, namely, Agricultural and Food Products, Chemical, Civil Engineering, Consumer Products, Electrotechnical, Mechanical Engineering, Structural and Metals and Textiles. The staff of ISI assists and guides the committees in their technical work.

Proposals for formulating Indian Standards are normally entertained from Government Departments, technical associations, organized industry, chambers and Members of ISI. Every proposal is scrutinized and when approved by the appropriate Division Council the work of formulating a Standard is assigned to one of its committees. In general, ISI does not initiate or write standards. It merely provides neutral ground and the machinery conducive to the development of national standards. As the national standardizing body, ISI operates broadly in the public interest and exercises great care to see that the Indian Standards are unbiased and widely applicable. So far, more than 4,500 Indian Standards have been laid down for raw materials, semi-finished goods, codes of practice, methods of test, glossaries of terms, etc. In the fields of mechanical, electrical, structural and general engineering, metallurgical, building, chemical, textile, food and agriculture as well as other industries. Indian Standards on an equal number of subjects are

under various stages of preparation and new subjects are continuously proposed to satisfy the growing needs of planned development.

General voluntary support of all interested groups is relied upon to make the Indian Standards effective. Industry, both in the public and private sectors, which actively collaborates in the initial stages of establishing Indian Standards finds that it pays to follow these Standards for procuring raw materials, machines, tools, etc., and for selling its own products in open competition. The Standards having been formulated after taking into consideration the divergent view-points of all the interests concerned represent the common measure of agreement and therefore, are well suited for adoption. It becomes, therefore, the interest of everyone concerned to ensure and demand compliance with the Indian Standards for whatever one manufactures, deals in or purchases to secure the greatest possible economy and overall efficiency. That is why the Government of India has adopted as a declared policy that wherever Indian Standards are available they will be used as basis of all official purchases. State Governments together with Municipal Corporations and Committees are progressively adopting the same policy. The Government of Tamilnad have also issued instructions to all the Heads of Departments to make their purchases as per Indian Standards wherever available.

Indian Standards are key to reducing waste, eliminating duplication and increasing efficiency. They multiply our technical assets. They increase the productivity of our scarce national resources. It is imperative, therefore, that they should be developed and applied in increasing numbers right now in the early years of our technological revolution. It will be too costly for the nation to start industrial production in non-standard, wasteful and costly ways and then think of standardization when the industry will have become solidified.

In short in promoting the development of national industry and in securing larger market for indigenous products, there is surely no formula more effective than one which will assure the manufacturer economy in production, and to distributors merchandise that can be sold competitively and can be used universally. For providing this formula Indian Standards have no substitute in the country.

With a view to serving the inexperienced and busy consumer who, though willing to pay for quality, is unable always to secure it with confidence and to protect the interest of the manufacturer of standard goods against unfair competition by the producers of cheap and shoddy goods, ISI is operating Certification Marks Scheme by granting licence to the manufacturers producing goods conforming to Indian Standards for affixing the Standard ISI Mark on their goods. Over 1,500 licences covering 325 products have so far been issued. The large scale purchasers and the State Governments have through experience found ISI certified products dependable. Many State Governments have, therefore, issued instructions giving preference to ISI Certified products wherever such products are available, over non-certified products. Some of the State Governments like Tamilnad and Andhra Pradesh have even notified price preference up to two percent for the products bearing ISI Mark.

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ENGINEERS AND MODERN MEDICINE

Thiru A. BALAKRISHNAN, B. E.,

*Superintendent, Artificial Limb Centre, Government General Hospital,
Madras*

Inaugurating the seventh annual conference of the Indian Association for the advancement of Medical Education and the Seminar on training of teachers for medical education, Dr. A. Lakshmanaswami Mudaliar, the Vice-Chancellor of Madras University, called for adjustment of the medical curriculum to include medical engineering, as the new developments in electronics played a vital part in its application to modern medicine.

As users of sophisticated electronic equipments, the doctors are expected to know something about electronics and the engineering techniques involved in the use of these equipments. Reports on European Symposium and exhibition on medical electronics held in Brighton in 1965, state that there were heated arguments whether the medical man ought to have some training in electronics. It is reported that several physicists attending the symposium were of the view that if doctors were to be given additional training in any of the sciences, it should be in Physics. But if the latest engineering techniques are to be put to effective use in medicine, inclusion of engineering subjects in medical curriculum alone will not help, but there should be close collaboration between the faculty of medicine and Engineering faculty. Doctors who are already over burdened with medical problems cannot be expected to do justice to a branch of applied science quite different from their own work.

In advanced countries all over the world, Engineers are working hand-in-hand with doctors in developing lifesaving devices. They have designed artificial hearts, artificial kidneys and artificial limbs.

But in India we are lagging behind in this field of collaboration. This new and exciting experiment of collaboration between a Medical Department and an Engineering Department for the treatment of patients was tried for the first time in this country by the Government of Madras. Credit for this goes to Dr. M. Natarajan, Professor of Orthopaedic Surgery, Madras Medical College and Orthopaedic Surgeon, Government General Hospital, Madras. At his initiative as Director of the Artificial Limb Centre, a workshop attached to this centre was set up at the General Hospital, Madras in collaboration with the Department of Industries and Commerce, Madras. Another project to ultimately benefit the sick and physically suffering population in the state is the Central Servicing cell for Electro-Medical Equipment, run by the Industries Department. This unit now functions in the compound of the King Institute, Guindy and will be soon shifted to new buildings to be constructed in the Industrial Estate, Guindy.

In the design, fabrication and improvement of Orthopaedic appliances and artificial limbs, there is a vast scope where the Mechanical

Engineers can contribute their know-how to the Orthopaedic Surgeon in helping the paralysed child or an amputee. This field of Biomechanical Engineering offers wide scope not only for the application of existing knowledge but also for carrying out research to elucidate many factors. For example the orthopaedic surgeon explains the mechanics of the human knee and gives the specification for the artificial limb knee joint. The Engineer designs and makes the joint whether it is a simple mechanical one or a more complex hydraulic knee.

Similarly in the field of orthotics and special appliances, there is enormous scope for electronic engineers to help in the designing of various controls and motor systems of the upper extremity appliances.

Upper extremity orthotic devices using external power have been developed successfully and are being applied to patients with a variety of disabilities. Compressed gas is widely used as a power source, but electric motors are becoming more common in the newer devices.

Patients completely paralysed in the upper and lower limbs in electric wheel chairs can operate and control the wheel chairs by blinking their eyes. The electricity from the muscles of the eyes are made use of in this case.

It is essential to attract more and more engineers to this new field of Medical Engineering. But most of the present day career-conscious engineers are reluctant to enter this field, either because they are not aware of developments in this branch or because they do not consider this as Engineering. A Chemical Engineer, the Director of a Bio - Medical Engineering Laboratory and a member of a team of engineers and doctors in the U.S.A., designing an artificial heart says, "For the people who joined the artificial heart team, the decision was prompted by fascination with the project and undoubtedly a touch of idealism, rather than a way for furthering their careers." He feels that his work has been a detriment to his chemical engineering career. "I left the traditional pattern and entered an activity that

is not recognised as Engineering". Again another member of the artificial heart team, an Electrical Engineer says "The biological application of engineering is a very exciting one. I sometimes ask myself why I am not in something more secure. May be some folks have to explore, learn and be useful".

If this is the reaction of Engineers in a highly developed country like the United States of America, then the difficulty to attract Engineers to this field in a country like ours can be very well imagined.

In my own experience with fabrication of artificial limbs, the reaction of most of the fellow Engineers to this field is not encouraging. To them limb fabrication is only the work of carpenters, cobblers and blacksmiths. To some others the very atmosphere is nauseating and repulsive. Some of them ask "Does this work require an Engineer and that too an Electrical Engineer?" Such views are expressed by people mainly because they are not aware of the latest developments in Medical Engineering.

Over a hundred years ago, it was discovered that active nerves and muscles generate electrical currents. Since then hundreds of Scientists have been working on the study of Bio-electricity. In the U.S.S.R., Canada, U.S.A. and other advanced countries, artificial arms are operated by making use of biological electric signals generated by muscles. The signals are picked up by skin electrodes, then

amplified by transistor amplifiers and fed into miniature motors in the artificial hand to control the movements of the hand. Doctor - Engineer teams are currently working on devices that would operate under the control of actual nerve or brain signals sensed by a direct connection to the Central nervous system.

Bio-Engineering is an exciting new field. It will be of interest to know that a Doctor in Electrical Engineering, is a Professor of Physiology of a Medical Centre in the U.S.A. It is our duty to induct more and more qualified young engineers to this field. With this in view, it will be a right step if bio-engineering is included in the curriculum of Engineering institutions also. Bright and promising Engineering graduates and post-graduates with a flair for research and didactic zeal should be encouraged to take up this line, by offering attractive scales of pay and status.

The Medical Engineering Personnel already in the field, but without any Engineering background, are definitely hostile to new entrants who are qualified Engineers. It appears as if even the Medical men are reluctant to recognise qualified Engineers as something more than Para Medical Personnel. There should be a change of heart. Intellectual and professional snobbery should not prevent the medical-men from inviting to their fold as team mates Engineers, who are experts in their own field.

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METALLISATION OF NON-CONDUCTORS

INDIAN PATENT NO. 90113

The Central Glass and Ceramic Research Institute, Calcutta has developed a process for Metallisation of non-conductors. This process for the metallisation of non-conducting surfaces is particularly suited for the deposition of a firmly adherent coating of Silver on Mica for manufacturing Silver Mica Capacitors which are extensively used in radio, transistors and other electronic apparatus.

The technique can also be used for metallising of Ceramic Surfaces for use as capacitors and printed circuits, Ceramic to metal seals and preparing silver contact electrodes of non-conductors for electrical testing.

THE PROCESS

The process consists in preparing a dispersion of a metallic resinate in an organic solvent, applying the said dispersion on a non-conducting surface (mica) and finally heating at a temperature below 450°C for a few minutes.

ITS ADVANTAGES

1. The silver paint is converted to a firmly adherent coating of the metal by heating for a few minutes at a temperature below 450°C which is decidedly an advantage particularly in the case of mica.
2. The coating dries very quickly at room temperature and requires no prolonged artificial drying.
3. The metallic coating obtained by this process has very good adherence and abrasion resistance along with very low dielectric loss.

SCALE OF STUDY

The work has been studied on laboratory scale only:

Raw Materials: W. W. Rosin, Silver nitrate, caustic soda, Xylene soldering metal phenolic and epoxy brass eyelets etc. are the raw materials needed in the process.

PLANT AND MACHINERY

The items of plant and machinery required in the process are:—

1. Press with dies and punch.
2. Electric furnace.
3. Temperature controller and indicator.
4. Conveyor belt with motor.
5. Pot Mill.
6. Soldering arrangements.
7. Casing stamping arrangements.
8. Mica test set.
9. Impedance comparators.
10. Thickness gauges.
11. Spart coil test set.

CAPITAL OUTLAY

The total capital outlay for a Small Plant capable of producing 1,000 to 1,500 pieces of saleable finished capacitors per day has been estimated at about Rs. 64,000 (Rs. 49,000 as capital cost and 15,000 as working capital.)

Parties interested in undertaking the commercial development of the process are invited to correspond with:

The Secretary,
National Research Development Corporation of India,
Mandi House, Lytton Road,
New Delhi.

PRESERVING FOOD BY RADIATION

SAFE OR UNSAFE?

By passing foodstuffs packed in plastic containers past a radiation source, in such a way that they receive a brief but lethal dose, all the micro organisms in the food are killed. Until the container is opened for cooking or eating no more can get in. It sounds like the ideal way to preserve food but it has not caught on as quickly as scientists had hoped, though in Canada radiation is being used to preserve potatoes and is to be used for grain and onions.

One reason is that the high doses needed to sterilise, for example, meat, have tended to give it a distinct and unpleasant flavour. Another is the high capital cost of the equipment involved - the radiation source, the shielding and safety precautions which have to surround it and the conveyor belt used to carry the food past the source. This costs less, relatively, the larger the scale on which it is built, and radiation sterilisation would be most valuable if this was exploited. It would be particularly valuable in the developing countries, but it is difficult for them to find the money because of other more urgent needs. On the other hand once it is installed, the running costs of the equipment are low, since a radiation source will run for years and years without replenishment.

There is a third reason why people have hung back and this is the association of the word radiation with harm to human beings. Until recently it looked as though common-sense was slowly but surely overcoming this

prejudice. But in the last year or so several scientists have published the results of experiments which, to them at least, seemed to show that food which had been irradiated to preserve it could be harmful to human beings. If this is so, then it is a far more important argument against radiation preservation than any other. But the general opinion of the scientific world is that there is no real proof from these experiments that irradiated food can cause damage to people whereas a much larger number of experiments by other scientists have consistently failed to produce any evidence that irradiated food is harmful.

Experiments with carrot and other plant cells grown in tissue culture in coconut milk which had been exposed to heavy radiation showed that the growth of the cells was inhibited. Fruit flies fed on heavily irradiated food were apparently unusually liable to harmful mutations, or harmful changes in their genetic make-up. The work showed that very heavy irradiation of sugars in food was liable to produce substances which could act as growth inhibitors.

However, Professor A. M. Cooke of the School of Pharmacy at the University of London and Dr. Roger Berry of the Radiobiology Laboratory at Churchill Hospital, London have pointed out that the effects of irradiated food on cells in tissue culture bear no real relation to the effects of the same foods on

human beings. In tissue culture individual cells are directly exposed to very high concentrations of any growth inhibitors that may be formed, but in human beings the same substances are in far lower concentrations. They would have to be absorbed through the wall of the gut, carried in the blood to a site where they could be harmful and then absorbed there. The human body has many filters to protect it against such risks. A much fairer test is to feed animals on irradiated foodstuffs over a long period and 10 years of such experiments on rats, pigs, mice and monkeys in Britain and elsewhere, have failed to show any evidence of harmful effects, even over two or more generations.

The general consensus of scientific opinion is that the evidence so far is generally in favour of preserving food by radiation. For example, the deep-frozen chicken may be replaced by an irradiated bird, as a result of research carried out by the Meat Research Institute, at Trumpington near Cambridge. Broiler carcasses, exposed to gamma radiation provided by the Atomic Energy Authority, keep fresh for a week at temperatures similar to those which would be encountered during distribution and retailing and then in storage in the home. A panel of ten tasting judges was unable to tell the difference between such chicken meat when cooked and that from deep-frozen birds. ★

REPORT ON THE WORKING OF ARECANUT DRIER AT THE CENTRAL ARECANUT RESEARCH STATION, VITTAL

A prototype of the Arecanut Drier fabricated at the Central Food Technological Research Institute, Mysore, was installed at the Central Arecanut Research Station, Vittal in October, 1965. The drier is a through flow type where hot air is allowed to penetrate through the bed of arecanut fruits kept in trays. The drier consists of a drying cabinet with four perforated trays which slide on runners on the sides of the cabinet. The door of the cabinet opens full out in front allowing easy loading and unloading of trays and provides for air tight closure. The cabinet is connected to the bottom of the middle section of a heat exchanger through a centrifugal blower. The top of the cabinet is connected to the top of the middle section of the heat exchanger thus providing for re-circulation of the heated air after passage through the drier if required. The bottom section of the heat

exchanger is connected to an oven and the top segment to a chimney for the passage of the flue gases from the oven through the tubes in the body of the heat exchanger. The air blown into the cabinet is heated in the tubular heat exchanger. The air passing over the tubes in the middle section is indirectly heated by flue gas from the wood fire in the attached oven passing through the tubes without coming into actual contact with the air blown in. Suitable connections are provided for measurements of pressure and temperature at inlet, outlet and at different levels inside the drying cabinet.

The air blown is about 800 cu.ft. per minute by a centrifugal blower directly connected to a one H.P motor. The air blown is at a pressure of 4" water gauge and a velocity of 1.6 meter per second, inside the cabinet. The

required inlet temperature is obtained by regulated feeding of the fuel usually firewood, which is rated at 5-6 kg. per hour. This unit has a holding capacity of about 280-300 kg. of ripe fruits per charge. This is equivalent to 7500-8000 fruits of big size.

The unit was operated and demonstrated to the arecanut growers during the Farmers' Week of the station in February, 1966. There was a general appreciation of the working of the drier. The general opinion is that the drier will be more useful for the off-season monsoon crops, when the usual practice of sundrying is not possible. Off-season crops are being at present dried in this drier regularly. Normally about 19.0% of the year's produce comes to harvest during monsoon, and it is these fruits that will go to

the drier for drying. These off-season fruits do not have a ready market and it has been observed that by drying them using the drier, the return on these fruits will be increased by 100%.

The observations made so far go to show that the drier will be quite useful for drying the arecanut fruits particularly the monsoon crop. The quality of dried fruits compare well with the normal sundried nuts.

The drier will cost about Rs. 6,000/-. The cost of processing one kilogram of dry nut will come to 50-52 paise. The time required for drying ripe fruits for each charge is 60-70 hours and the optimum inlet temperature is 40°C at the beginning to be raised to 70°C towards the end by stages. ★

GROUNDNUT SHELLS AND COIR DUST TO MAKE BUILDING BOARDS

LONDON INSTITUTE'S REPORT DISCUSSES POSSIBILITIES

The use of waste materials like groundnut shells, coconut palm timber and coir dust in the construction of buildings and furnishings is being examined by the Tropical Products Institute, London.

"It has been found that considerable quantities of tropical wood and waste vegetable material may be available for conversion into particle boards" says the annual report of the Institute for 1966.

The boards are made by coating the groundnut shells about 1,500,000 tons of which are available in India alone each year - with resin and compressing them for 15 minutes at a temperature of 140°C.

SAMPLES PRODUCED

Splinters of coconut palm timber obtained from the Gilbert and Ellice Islands have also

been converted into board whose strength characteristics are reported to be slightly superior to those specified in British Standards.

Laboratory samples of board made from saturated and compressed coir dust have also been produced.

Discussions involving the National Research Development Corporation are going on for the design of a particle board making plant for developing countries, capable of producing boards of standard size in sufficient quantities to enable them to be sold locally at competitive prices. The boards would be suitable for building and furniture-making.

One of the projects mentioned in the report is the manufacture of protein products from oilseeds for the relief of malnutrition. The Institute has found that by using non tradi-

tional processing techniques the value of oilseeds already used for human consumption as a source of protein could be greatly increased.

TRAINEES

The report points out that 35 people from developing countries, including one from India, were trained at the Institute in 1966. Training

was given in the techniques of analysing oils and fats, pesticides, various aspects of food science and technology, pulp and paper technology, fibre studies and physiochemical methods of analysis.

The Institute dealt with 852 inquiries from other countries and international agencies. Of these 18 were from India. ★

AN ELECTRODE SIMPLIFIES WELDING OF ALUMINIUM

Development of a new electrode which may make possible the usage of aluminium on many structures where steel originally had to be used is a result of research by Magna Alloys and Research Private Ltd.

An electrode—Magna 505—which provides complete weld stability in welding aluminium yet requires no special equipment, no shielding gases and can be applied with any DC welding generator has been developed by the firm.

In the past, the electric arc proved practical in welding practically all metals except aluminium.

Aluminium, however, required either oxy-acetylene welding which required substantial operator skill and was slow and practical only on special applications or else needed special inert arc welding equipment.

Such equipment is costly, requires special argon gas and also requires substantial welder's skill.

Despite many attempts in the past to develop special aluminium welding electrodes, conventional aluminium electrodes fume, spatter and give poor weld quality.

NEW CHEMICAL CONCEPTS

Also, the electrode burn-off was so rapid that a high degree of skill was needed and only

applications made under ideal conditions were practical.

Magna's 505 welding electrode for DC arc—welding aluminium is based on a new type of ultra—high pressure extrusion, and employs a unique flux based on new chemical concepts.

The new electrode has simplified aluminium welding so that novice welders can apply perfect welds on the first trial.

The electrode uses a much shorter arc which prevents the usual spatter and contributes to its ease of application in all positions.

The key factor is a thermostatic action flux coating on the electrode which controls penetration and reduces the arc transfer from the usual globule to a fine liquid spray.

The resulting welds are dense of ultra high strength and glossy with a perfect colour match to the base metal. The welds have good corrosion resistance, which formerly was uncommon with aluminium welds.

Magna 505 has a wide amperage range. It can be applied to aluminium as thin as .064 inch yet there is no limit to thickness; even 3 inch thick aluminium can be welded.

RESISTANCE TO SHOCKS

The coating chemistry causes high fluidity when the electrode is molten and its unusually high ductility prevents cracking when the deposit cools. The finished welds show unprecedented resistance to shock.

The superiority of this electrode is the result of ultra high purity alloying ingredients and the complex highly alloyed core wire which contains special elements such as manganese, chromium, nickel and silicon to greatly improve the mechanical properties, the cold workability and its resistance to inter—granular attack.

The coating of the electrode contains lithium, special metal chlorides, fluorides and extracts from rare earth compounds.

Enquiries:

Magna Alloys and Research Pte. Ltd.,
21st May Street,
St. Peters, N. S. W.,
Australia.

Agents: National Welding Company, 14, Opal Crescent, Singapore 13, Gascom Engineering Corporation, Suit 310, Far East Bank Building, Muralla Intramuros, Manila, Philippines (Agents Wanted elsewhere) ★

MAGAZINE BAR FEED SAVES WORKSHOP SPACE

Since introducing their plug-board type programme control equipment for converting capstan lathes for automatic operation, a British firm has made a number of improvements to the system, the latest being the addition of an automatic bar feed unit that operates in sequence with the machine. The illustration shows the unit in use with a capstan lathe equipped with the programming system.

Designed specially for use with capstan conversions and auto-capstans, the unit is said to be more economic in both space and cost—and versatile than conventional types in use. It will accept bars from $\frac{1}{2}$ inch (13 mm) to $1\frac{1}{4}$ inch (32 mm) diameter, in lengths from 5 ft. (152 cm) to 5 ft. 3 inch (160 cm) these being accommodated on a

sloping magazine which can hold, for example, a total of 160 ft. (49 m) of $\frac{1}{2}$ inch (13 mm) diameter stock. Hexagonal bars can also be used.

The magazine is so designed that, as a fresh length of stock is required, a single bar from the stack is transferred automatically to the feed tube while the remainder of the stack is held on the magazine. The bar is fed through the capstan collet by a push-rod which advances along the feed tube by means of a chain drive, powered by a pneumatic cylinder, through a system of sprockets and chains. This arrangement enables the thrust exerted by the push-rod to be varied for different bar diameters.



As a fresh bar is fed into the collet, the leading end stops at a datum position just in front of the parting-off tool. It is then faced off automatically on a signal from the controller before production commences. A difference of upto 3 inch (76 mm) in bar lengths is automatically adjusted and the front end of the bar is fed through the collet at the appropriate point in the machine cycle, this length being controlled by limiting the stroke of the pneumatic cylinder which drives the push-rod.

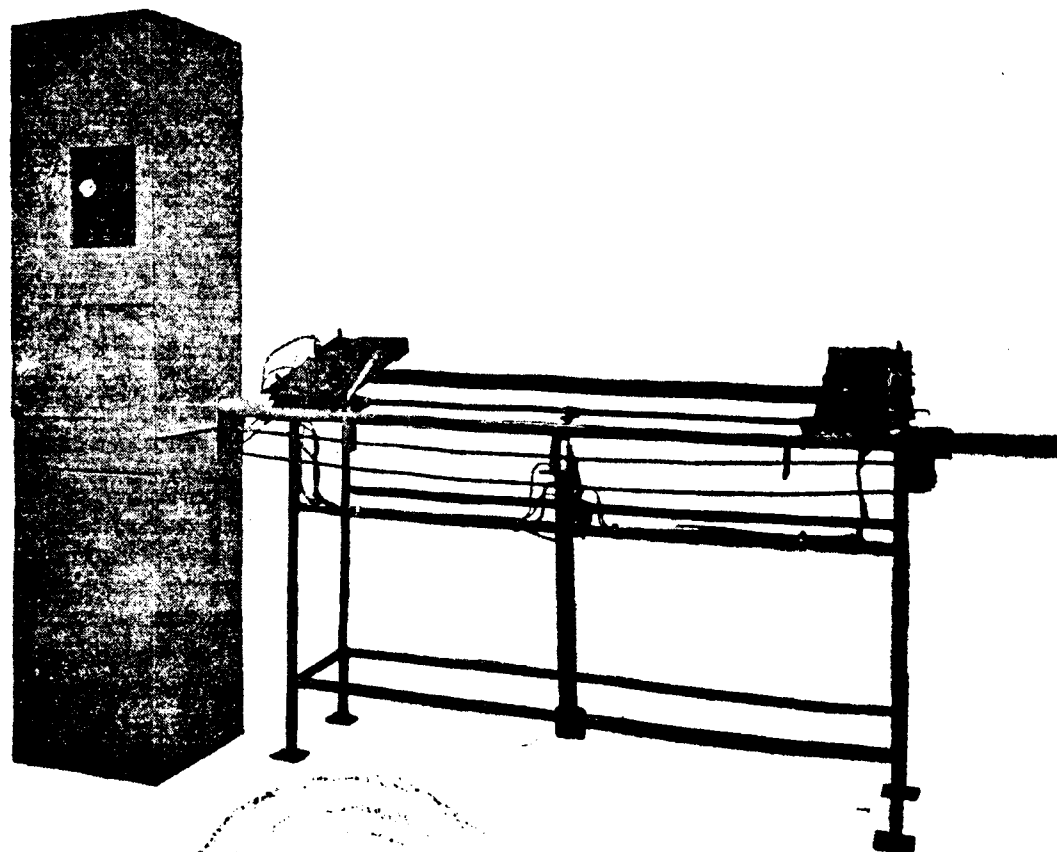
A minimum length of 1 inch (25 mm) can be gripped in the collet at the end of each bar. Shorter lengths are automatically ejected and a fresh bar is fed in from the magazine. When

the magazine is nearly empty, this is indicated by warning lights on the control panel.

The unit can be used with machines which have been converted for automatic operation by other makes of equipment, provided means exist for linking it into the programme. If not, small modifications to the control systems will be required.

Further details from:

Gearaide Ltd.,
Gorple Works, Worsthorne,
Burnley, Lancashire,
England.



SPECIALISED ELECTRONIC UNITS TO AID INDUSTRY

Australian made specialised industrial equipment particularly in the electronic field, is becoming more sophisticated.

It has reached the point where many machines are not only more modern and superior in performance to those from overseas sources, but are available at highly competitive prices.

A particular example is Fairfield Electronics industrial electronic heating equipment.

The company produces seven main types of industrial electronic heating machines and also makes ancillary equipment.

Basic standard units made by the company are six types used for heat application to metals and non-metals and another for surface treatment of plastics.

They include dielectric heating machines, induction heaters, plastic preheaters, rubber preheaters, plastic welding machines, plastic sealers and Corona discharge generators.

Dielectric heating machines are produced in a standard range from 1.5 K. W. power output to 40 K. W. but others up to 100 K. W. are available.

They are used for synthetic glue setting by cabinet and furniture makers and for the production of joining and building materials in general in conjunction with mechanical, pneumatic and hydraulic presses.

Use of radio frequency heating in timber trades is gaining in popularity. The ability of dielectric heating to penetrate rapidly any relatively poor thermal conducting timber and selectivity in heating the glue, without raising the temperature of the surrounding mass, are the basic features of this method.

THIRTY SECONDS

R. F. heating sets synthetic resin glue in as little as 30 seconds, even when glue is inches below the surface.

Induction heaters, used for heating various metals and metal alloys, as well as some non-metals such as graphite are made in a similar range to the dielectric machines.

They are clean in operation, produce no fumes and require no lengthy starting and shut-off times.

Plastic preheaters in a standard range of 1 K. W., 2.5 K. W. and 6 K. W. power output, are used mainly for preheating thermosetting plastic prior to moulding, and they have many advantages.

Rubber preheaters are similar and made in the same range, but are used for preheating rubber blanks prior to moulding. They have a different operating frequency and size and type of electrodes.

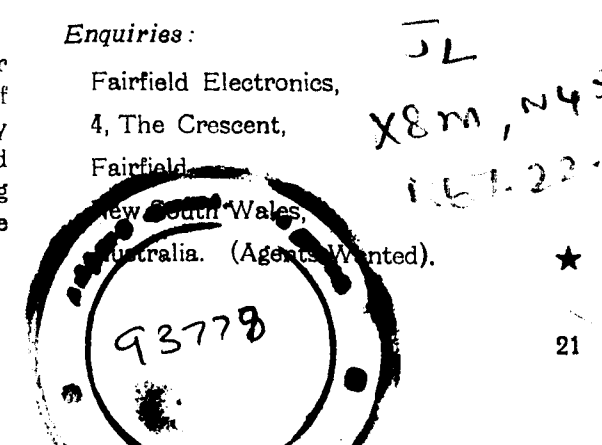
Plastic welding machines are applied extensively to the production of welded sheet plastic products such as rain coats, book binders and bags, where P. V. S. and P. V. A. sheets are used.

Plastic sealing machines are essentially similar but are employed to produce a water-tight seal after sewing plastic impregnated cloth.

Enquiries:

Fairfield Electronics,
4, The Crescent,

Fairfield,
New South Wales,
Australia. (Agents Wanted).



MESH HANDBAG FIRM OFFERS TO SELL ITS KNOW-HOW

An Australian firm exports mesh handbags and accessories of the highest quality at very competitive prices.

Park Lane Handbags (Pte.) Ltd., is one of Australia's largest and most diversified handbag manufacturers.

Mesh handbags and accessories by the firm carry the trade name Regal. The range includes handbags for day and evening in popular shapes and styles, purses, wallets, cigarette lighter, cigarette case, Spectacle case, key case, cosmetic purse and Alice band.

TECHNICAL KNOWLEDGE

Standard colours are gold, silver, black and white but the products are supplied in any surface finish required. Designs also can be varied to suit customers' specifications.

Park Lane can supply mesh which has not been assembled and handbag and purse frames for local manufacture.

The firm offers to sell technical knowledge of mesh manufacture in countries where Government regulations prevent import of mesh products or unassembled mesh.

NEW COLOUR COATING PROCESS FOR METALS

A new continuous colour coating process has been introduced by Australia's largest manufacturer of sheet and galvanised iron.

It has been described as the greatest development in sheet metal production since continuous galvanising was introduced in 1961.

The machine is 616 feet long and includes in its cycle, cleaning and surface preparation of the metal painting, stoving and final cooling.

Regal mesh combines 85 per cent copper with 15 per cent alloy and complies with the highest standards of finishing.

Its baked enamel surface coating is tarnish and chip resistant and is applied after the mesh has been plated in a colour which will harmonise with the final enamel finish.

Frames for handbags and purses are also finished with clear or coloured baked enamel. Filigree, as well as plain frames are featured in the Park Lane range.

Others are decorated with floral motifs which cannot chip because they are "locked" under the enamel finish.

Enamels used on both mesh and frames have been developed by Park Lane. They are abrasive resistant and give a highly attractive finish.

Popular snake chain handles in matching colours are used on many Regal mesh handbags. Linings are in finest quality satins and silks, selected for their durability as well as attractive appearance.

Enquiries:

Park Lane Handbags (Pte.) Ltd.,
G-14, Imperial Arcade,
Sydney, New South Wales,
Australia (Agents wanted)



The surface preparation of the metal ensures corrosion resistance and high adhesion of the colour coating.

Pre-coloured metals have many uses. In the building industry they range from roofing to wall cladding; and in the domestic field from washing machines to radio sets.

Enquiries:

John Lysaght (Australia) Ltd.,
50, Young St.,
Sydney, New South Wales,
Australia.



NOW IT'S POWDERED BUTTER

And now it's powdered butter developed by the dairy division of the Australian Government's Scientific Research Organisation; it is expected to go into commercial production soon.

They say it can be dry-blended into cakes, pudding mixes and ice cream without tedious creaming.

It is made in much the same way as powdered milk.

Sugar is added to cream or butter oil and pushed in a fine spray into a heated chamber. The water is evaporated, and the powder falls into a tray.



PROCESSED FERTILISER FROM GREEN LEAVES

A new processed fertiliser from green leaves to act as stimulant for plant growth has been developed by Dr. B. Sanjiva Rao, a retired scientist now working in the Indian Institute of Science under the auspices of the Central Scientific and Industrial Research.

Dr. Rao who has named it "Lead-nip" explained that the fertiliser has the same pro-

perties of stimulation for plant growth as "humophos", a fertiliser, developed by Russian investigators.

Attempts are being made to use green leaves as a source of protein for supplementing human diet. Green leaves are also being used for manual purposes.



PLANS FOR PILLS OUT OF VITAMIN-RICH CASHEW APPLES

Cashew apple juice contains comparatively larger proportion of vitamins and there is a proposal for making vitamin pills out of cashew apple juice.

This information was given by Mr. Ramunni Menon, Director, Cashewnut Development Council.

He told pressmen that researches in the Institute of Scientific Research, Delhi had proved it. He said there was wastage of 3 lakhs tonnes of cashew apple in Kerala every season. The Food Technological Institute at Mysore which conducted experiments on cashew apples, revealed that apple

juice, apple jam, apple syrup, apple candy, canned cashew apple fruit, chutney etc. could be manufactured out of cashew apple. Out of four tonnes of apple, two tonnes wine could be extracted.

About 2,50,000 of tonnes apple in the country was going waste and a proposal now was before them to utilise it.

Nineteen thousand tonnes of beverage (4 per cent alcohol) could be made out of the cashew apple going waste. Rs. 14 crores in foreign exchange could be saved to the country every year if it is utilised to manufacture quality liquor, he said.



THERMOMETERS COME UNDER DRUGS ACT

The Government of India have published a notification bringing clinical thermometers within the purview of the Drugs and Cosmetics Act.

The standards for the thermometers shall be those published by the Indian Standards Institution.

According to a press note issued by the Ministry of Health and Family Planning, steps are being taken in consultation with the Indian Standards Institution for the grant of an I. S. I. certification mark for clinical thermometers.



FOUNDRY MEETS THE CHALLENGE

SUCCESSFULLY TACKLES EMERGENCY CASTINGS

There was an unexpected breakdown in one of the kilns at the Sankarnagar Works of The India Cements Limited during the last week of August. Two bearing housings of the supporting rollers were broken to pieces and the kiln was idle resulting in a loss of production amounting to 400 tons a day. The Foundry Division was asked to make the castings, which were to be machined in Madras, immediately. They rose to the occasion to a man and completed the job brilliantly in the very short time of one week starting from September 1. *Nothing is impossible* was the spirit behind the operation, thanks to team work and expertise. Reporting on the assignment Mr. Francis Voburka, Chief Engineer, Foundry Division says :

"For this job the only thing the Foundry was given as a guideline was one set of housings from another supporting roller. There were no drawings or materials specifications.

The normal practice would have been to prepare drawings from the parts, make the patterns and core boxes with proper machining allowance and then produce the castings. This procedure was out of the question in this case because it would take a minimum of 1,000 man-hours of skilled workers. It was therefore decided to use the parts themselves as patterns and to produce the cores, making necessary modifications for machining allowance core prints and the necessary inserts to save time.

This needs ingenuity and application of the best available skills and effort.

Their laboratory analysed the chemical and physical properties of the original imported castings under 12 hours and the Maintenance Department worked round the clock on wooden moulding boxes of required sizes and was able to pour the first casting, thanks to the CO₂ process on September 4.

It was able to supply one complete set of the housing castings consisting of two bottom castings, two top castings, two end covers and four inspection covers weighing a 1,000 kilograms, by September 8, exactly a week after we commenced operation.

The covers were machined here and the big castings had to be sent out for machining as the Foundry did not have the necessary equipment. Having modified the original parts to be used as patterns, we took this opportunity to produce a spare set as producing another set at a later date would involve either making complete patterns or stopping the kiln and removing the parts. The spare set was supplied in another week for machining.

The physical properties required for the castings were maintained strictly and the castings were inspected after machining and found 100% sound."

Mr. Voburka paid a tribute to all staff members and workers for their excellent sense of responsibility and co-operation.

REVIEW OF THE IMPORT OF PAINTS, ENAMELS AND VARNISHES INTO JORDAN

The advalorem rate of import duty on paints, enamels and varnishes is :

Tariff No. 32/9—Varnishes, lacquers, distempers, prepared water pigments, paints, enamels (other than those used in the ceramic and glass industries) pigments in linseed oil, white spirits of turpentine...28%

2. The import statistics of these items, for 1964, 1965 and 1966 are shown in Annexure. The marked decline in imports is attributable to the establishment of local production units over this period.

3. The two main kinds of paints in demand in Jordan are plastic emulsion paints (P.E.P.) and synthetic enamel. There are two main manufacturing units for paints and enamels in Jordan. The first of these, The Industrial, Commercial and Agricultural Co. Ltd., Post Box No. 6066, Amman, manufactures the following formula compositions under licence from I.C.I. and Carson—Paripan (both British firms):—

I.C.I. DULUX p.e.p.
DULUX Synthetic enamel

Carson-Paripan - ULTRALUX p.e.p.
ULTRALUX glass enamel
ULTRALUX undercoating

plus small quantities of aluminium paint, varnish, stains, black-board paint, floor paint, road marking paint.

4. The approximate retail prices of these are :

DULUX p.e.p. - JD 2-500 per U.S. gallon
DULUX synthetic enamel - JD 3-000 per U.S. gallon

ULTRALUX synthetic enamel - JD 2-700 per U.S. Gallon

ULTRALUX p.e.p. (second quality, Carson-Paripan) JD 1-250 per U.S. gallon)

5. The second main manufacturing unit, The Jordan Torginol Co. Post Box 706, Amman, manufactures p.e.p., synthetic enamel, and ready mixed oil paint for woodwork and metalwork (marketed in tins of 1 kg, 2 kg and 5 kg). under licence from Pinchin Johnson, also a British firm.

6. In addition there are two other smaller manufacturers. Abdel Karim Hatahet, P.O. Box 1059, Amman, manufactures varnishes, lacquers under Licence from Mitsui of Japan. The retail prices of this firm's products vary from JD 1-250 to JD 2-250 per U.S. gallon. Awad and Butros Dibbo, Al-Misdar Street, Amman, makes polishes and waxes for motor vehicles and also shoe polishes. This firm's formulae are its own. This firm is actually only a small workshop, with negligible production.

7. The Jordan Torginol Co's. production capacity is only about 8000 U.S. gallons per

month, that of the Industrial Commercial and Agricultural Co. Ltd.'s 15,000 to 20,000 U.S. gallons per month, and that of Abdel Karim Hatahet only 1,000 kgs. to 15,000 kg. p.m. The estimated total requirements of paints etc. in Jordan (excluding the Government's and especially the Army's the figures for which are not available), are about 1,50,000 U.S. gallons per annum. Thus, theoretically, Jordan should be able to meet its requirements from within, but in fact its plants produce so much below their capacity that considerable quantities of paints, etc. have still to be imported. The economic dislocation caused by the recent conflict in the Middle East has resulted in still lower production.

8. The following is a list of importers in Jordan of paints, varnishes, and enamels:—

(a) Abdel Amin Misri, King Talal Street, P.O. Box 358, Amman.

(b) Abed Darwish Kadamni, Khayyam Street, Amman.

(c) Fayek El Sayegh, King Talal Street, Amman.

(d) Fayek Sayegh, & George Nimus, Hashimi Street, Post Box 1286, Amman.

(e) Halaseh Trading Co., King Hussein Street, P.O. Box 661, Amman.

(f) Hikman M. Shreim, King Faisal Street, P.O. Box 201, Amman.

(g) Kattan & Ashour, Prince Mohd. Street, Amman.

(h) Majrouh Bros., Jabal Amman Street, Amman.

(i) Matalka Co., Basaman St., P.O. Box 588, Amman.

(j) Nicolas Sami Sabanekh, King Hussein Street, Amman.

(k) Raymond Marroum, Prince Mohd. Street, P.O. Box 589, Amman.

(l) Taysir Rashed Amireh, Hashmi Street, Amman.

(m) Trans-Jordan Building Materials Co. Ltd., Hashimi Street, P. Box 275, Amman.

(n) Wassef Bisharat Co. Ltd., King Hussein Street, P.O. Box 27, Amman.

(o) Zabaneh Bros., Station Street, P.O. Box 558, Amman.

DOMESTIC WATER PUMP FOR HOTEL, LODGING, GARDEN & FOR SMALL FARM
FROM WELL, BOREHOLES, TANK OR RIVER—"TVP THIRUMALAI".
PISTON TYPE PUMP.

Sole Selling Agents:

NATIONAL ELECTRIC TRADERS,
5, THAMBU CHETTY STREET, MADRAS-1.

ANNEXURE

Tariff No. 32/9 — Varnishes, lacquers, distempers, prepared water pigments, paints/enamels (other than those used in the ceramic and glass industries), pigments in linseed oil, white spirit, spirits of turpentine.

Country	1966		1965		1964	
	Qty. (Kgs.)	Value (JDs.)	Qty. (Kgs.)	Value (JDs.)	Qty. (Kgs.)	Value (JDs.)
Total	314,986	61,261	529,534	119,773	622,092	145,953
U. S. A.	12,529	4,538	19,817	8,203	31,501	9,934
Belgium	39,782	5,382	78,775	11,533	35,948	5,528
Denmark	33,110	10,246	61,356	17,169	81,236	22,534
France	6	24	2,027	295	982	236
West Germany	21,432	6,566	58,270	18,731	55,058	16,258
Netherlands	30,155	6,769	22,059	6,110	98,963	18,590
Sweden	—	—	981	399	2,722	1,264
Switzerland	2,500	907	800	315	190	179
U. K.	131,425	18,729	152,014	36,407	272,012	63,412
Czechoslovakia	8	10	—	—	1,000	119
East Germany	—	—	25,400	2,904	5,098	591

WE SUPPLY EVERYTHING IN ALUMINIUM

JEEWANLAL (1929) LIMITED

Manufacturers of "CROWN" & "SUN" Brands

ALUMINIUM, BRASS AND STAINLESS STEEL WARES AND SUPPLIERS OF ALUMINIUM IN ALL FORMS
CALCUTTA, MADRAS, BOMBAY, RAJAHMUNDY, HYDERABAD, DELHI, ADEN

Country	1966		1965		1964	
	Qty. (Kgs.)	Value (JDs.)	Qty. (Kgs.)	Value (JDs.)	Qty. (Kgs.)	Value (JDs.)
Italy	—	—	265	291	3,331	838
Spain	—	—	—	—	1,504	203
Lebanon—Foreign	8,210	1,577	35,728	8,741	20,081	3,737
Lebanon—Foreign	476	188	1,250	387	2,479	795
Kuwait—Foreign	16,180	2,765	—	—	450	35
China	17,290	2,906	25,544	4,513	8,810	1,391
Hong Kong	926	326	654	280	727	309
Greece	—	—	428	148	—	—
Syria	—	—	673	103	—	—
India	8	14	898	309	—	—
Japan	—	—	780	231	—	—
Poland	—	—	1,872	209	—	—
Syria—Foreign	15	30	100	10	—	—
South Africa	—	—	39,898	2,480	—	—
Austria	800	257	—	—	—	—
Saudi Arabia—Foreign	84	27	—	—	—	—

RADEL SERVICES PRIVATE LIMITED

323, LINGHI CHETTY STREET, MADRAS - 1

SPECIALISTS IN REPAIRS AND REWINDINGS OF

All and any kind of
ELECTRICAL EQUIPMENT

SYRIA

REVIEW OF SPECIFIC COMMODITIES

ALUMINIUM CIRCLES, BRASS & COPPER CIRCLES AND RODS

(i) Aluminium Circles : There is a good demand for copper, brass and aluminium circles in Syria. Aluminium circles are being imported from China, Italy, Lebanon, Hungary and Russia. China has the advantage of supplying all varieties of circles: soft, hard, quarter hard and semi-hard. Russia supplies semi-hard circles.

The current quotation for aluminium circles is £. sterling 225 per ton C & F Lattakia. The circles in demand are 1 mm, 1.2 mm and 1.5 mm thickness.

Aluminium circles are used in the manufacture of pots, dishes and trays. Annual requirements are estimated at 500 tons. Customs and other duties total 7% ad valorem.

The leading Syrian importers of this item are :

M/s. Kalpakji & Khandji, Ghassan Street, Damascus

M/s. Izzat Abo Jaib, Bzoorieh, Damascus

M/s. Bawarski & Nahhas, Faisal Street, Damascus

(ii) Copper & Brass : The main suppliers of copper and brass circles to Syria are Yugoslavia, Italy and African countries. Demand for copper and brass circles is estimated at 200 tons a year. However, preference during the last few years has been shifting to aluminium. The main importers of these items are:

M/s. Kalpakji & Khandji, Ghassan Street, Damascus

M/s. Hashem Nahhas, Nahhaseme Street, Damascus

M/s. Abdul Satir safweh, Homs (Syria)

(iii) Copper rods : The State's Import & Export Co. (SIMEX), P. O. B. 829, Damascus, has the sole monopoly of importing copper rods into Syria. These rods are used in the manufacture of cables by the Syrian Cable Factory, Damascus.

In 1966, Syria imported 776 tons of electrolytic copper rods worth 4,074, 200 Syrian Pounds. The main suppliers were Italy, Japan, Yugoslavia and West Germany. Customs and other duties on such rods is 7% ad valorem.

Import of copper rods into Syria is monopolised by the State's Import and Export Co. (SIMEX) P. O. B. 829, Damascus.

Disputes : Several complaints are being received from Indian firms regarding the delay caused in receiving their remittances from Syria. It may be noted that on account of severe foreign exchange shortages in this country, remittances to foreign suppliers are now being delayed upto 22 months after negotiation of documents.

Two complaints were received regarding failure of the Syrian Firms to clear the consignments sent to them from India. In respect of one of these consignments, the Indian Party has decided to divert the goods to Iran. The other case is being followed up.

DUBAI

REVIEW OF SPECIFIC COMMODITIES

Electric Fans : There is no factory here to manufacture fans and the entire demand of fans is met by imports from abroad.

On the basis of market survey conducted, given below are the CIF Dubai prices of different brands of ceiling and table fans:—

- (a) "S. M. C." ceiling fans from Hongkong 56" Sh. 112 each.
- (b) "K. D. K." Table fans from Japan 16" blade with push button and timer Sh. 150 each.
- (c) "Toshiba" Table fans from Japan : 16" blade without push button and timer Sh. 135 each.

16" blade with push button and timer Sh. 140 each.
- (d) "SHARP" table fans from Japan, 16" blade Sh. 140 each.
- (e) "National" Table fans from Japan, 16" blade Sh. 188 each.

S. M. C. ceiling fans and K. D. K. table fans are the most popular brands in Dubai. Indian fans have not been able to enter this market in significant quantities, but there is a definite scope for the increase of exports in this line especially because of the hot and humid climate of Dubai for major part of the year. The fans from India can withstand the competition in the local market only if the prices are cheaper and deliveries are effected according to the schedule. In this connection it is suggested that manufacturers / exporters should preferably deal by appointing sole agents for their goods.

A list of the dealers in the electric fans is given below:—

1. M/s. Super Radio, P. O. Box No 253, Dubai.
2. M/s. Wassumulla Corporation, P. O. Box No. 274, Dubai.
3. M/s. Bhatia Radio Electric Co., P. O. No. 16, Dubai

4. M/s. Gajria & Co. P. O. Box No. 43, Dubai.
5. M/s. Abdulla Mohamed Akram Bros. P. O. Box No. 498, Dubai.
6. M/s. Musarrat Hussain, P. O. Box No. 444, Dubai.
7. M/s. Mohd. Shariff Bookha Sh. P. O. No. 118, Dubai.

2. M/s. Arabian Traders, P. O. Box No. 788, Dubai.
3. M/s. Sobhraj Raloomal, P. O. Box No. 371, Dubai.
4. M/s. Bharat Trading Co. P. O. Box No. 314, Dubai.
5. M/s. Regal Traders, P. O. Box No. 52, Dubai.
6. M/s. Empire Traders, P. O. Box No. 37, Dubai.
7. M/s. Al Soroor Stores, P. O. Box No. 520, Dubai.
8. M/s. Narsingdas Naraindas, P. O. Box No. 11, Dubai.
9. M/s. Omaniam Stores, P. O. Box No. 347, Dubai.
10. M/s. Mohd. Ali Badri, P. O. Box No. 58, Dubai.

Woollen suitings : This item is mostly imported from U. K. and Japan. There appears to be a good demand and the exports can certainly be pushed up provided the prices are competitive. C. I. F. prices of English and Japanese suitings are given below:—

Quality (Weight)	English	Japanese
11 to 11-1/2 oz. (58" width)	Sh. 24	Sh. 13/6
15 to 15-1/2 oz.	Sh. 31	Sh. 18/6

A list of prominent importers of woollen suitings is given below:—

1. M/s. Wassumula Corporation, P. O. Box No. 274, Dubai.

FOR TOOLS, JIGS & FIXTURES AND STANDARD DIE-SETS

Please Contact

NATIONAL ELECTRICALS,

(TOOLS DIVISION)

B-10, Ambattur Industrial Estate,
MADRAS-58.

GEARS INDIA

Manufacturers of

GEARS AND INDUSTRIAL SPEED REDUCERS

B-1, Industrial Estate, Guindy, Madras-32.

Phone: 80515

Telegrams: GEARS

SCOPE FOR JOINT VENTURES IN MALAYSIA

The Industrial Development Finance Limited of Malaysia has informed that there exists a scope for setting up industries for the manufacture of Electrical Industrial Equipment, Miscellaneous Electrical apparatus, Rubber Products, Bakery Products, Machinery for Spinning, Weaving and Finishing, Industrial Chemicals, Synthetic materials, Pharmaceuticals, Hardware, Non-metallic materials, Products etc. in Malaysia. The investment laws and incentives are specially encouraging with no currency restriction and with the guaranteed repatriation of capital and profit. This situation is likely to continue for some time. Moreover, tariff protection and income tax reliefs are granted more liberally in Malaysia.

2. It is pointed out that as regards industrial sites, Malaysia, especially the West Coast has done much. Some of their industrial areas or estates have adequate facilities. They are all well developed, and well planned.

Practically one could choose any urban area with these facilities. The investment climate in Malaysia may be regarded as satisfactory. The possibilities of setting up an industry in Malaysia with Malaysian collaboration exists. In case any additional information is required, their High Commissioner in Kuala Lumpur may be contacted direct.

3. A statement showing imports into Malaysia of various items during the year 1964-65 is given below so that an idea of Malaysian market could be assessed. With the formation of ASA and the possibilities of common market in South East Asia with Indonesia coming in, the market will eventually be a big one and any effort in setting up industry would be worthwhile.

For information and guidance a note giving guidelines in respect of Government of India's policy regarding Indian collaboration abroad is also furnished below :

Tariff Code	Manufacture of Electrical Machinery and Parts	(States of Malaya quantity)	1964 Imports Value M\$ '000
Electrical Industrial Equipment			
722111	Generator alternator under 10 KW	566 Units	800
722112	Generator alternator 10 KW and over	344 "	3,000
722114	Electric transformer reactor inductor	5660 "	3,000

Tariff Code	Manufacture of Electrical Machinery and Parts	(States of Malaya quantity)	1964 Imports Value M\$ '000
Misc. Electrical apparatus			
723101	Insulated telephone wire not submarine plastic	127 tons	300
723102	Insulated telephone wire not submarine other than plastic.	991 "	2,000
723104	Insulated electric wire not rubber	145 "	500
723105	Insulated electric wire not plastic	1048 "	2,600
723109	Insulated electric wire	2462 "	4,600

ITEMS FOR IMPORT SUBSTITUTION

Tariff Code	Rubber Products	(States of Malaya quantity)	1963/4 Imports Value M\$ '000
021010	Unvulcanised rubber	213 tons	481
	sheets and strips	5,170 "	353
599760	Accelerator	4,189 cwt	748
		4,823 "	892
621051	Industrial Hose	546,468 yd.	1,440
		406,603 "	858
629300	Hygienic Medical and surgical goods	—	545
		—	838
629401	Belting flat	282,028 units	345
		918,850 "	305
629402	V-Belts	135,219 "	310
		139,025 "	303
629403	Belting flat	67,795 ft	612
		104,478 "	861
629989	Manufacture of soft and hard rubber	—	527
629999		—	672

Tariff Code	Food	(States of Malaya quantity)	1964 Imports Value (M\$ '000)
BAKERY PRODUCTS			
048900	Macaroni mee and similar products	128,917 cwt.	4,000
048421	Biscuits	6,046 cwt.	1,000

Tariff Code	Textiles	(States of Malaya) Quantity	1964 Imports Value (M\$ '000)
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Spinning, Weaving and Finishing

(i) Natural Fibre

652291	Cotton duck bleached	42268 sq. yds.	417
652292	Cotton fabric woven bleached	22295288 do	11,130
652293	Cotton duck Dyed	1147891 do	1,540
652294	Cotton fabric woven not dyed	16710731 do	11,860
652295	Cotton fabric woven not printed	41248481 do	22,860
652296	Cotton fabric woven not coloured	3874427 do	2,250
655611	Twine and cord jute	1166 tons	1,000
655615	Rope Manila Hemp	792 do	1,000
656101	Sacks of jute unused	2951 do	3,000
656620	Blankets rugs cotton	381988 units	1,000
656630	Blankets rugs	73931 do	500
656911	Linen bed table toilet kitchen cotton	—	3,700
656912	Linen bed table toilet kitchen not cotton	—	500
657420	Floor covering paper base inc. linoleum	587242 sq. yds.	550
657601	Carpet rug wool or hair excl. knotted	26548 do	1,000

MADE UP TEXTILES

	Linen bed table toilet kitchen cotton	—	3,700
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Tariff Code	Chemicals	(States of Malaya) Quantity	1964 Imports Value (M\$ '000)
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Industrial Chemicals

519271	Carbon Black	38857 cwt.	1,500
514101	Sodium chlorate	49823 do	1,500
514402	Alum	88172 do	700
514404	Sodium Arsanite Powder	122335 do	1,000
514940	Calcium Carbide	84047 do	1,000
561300	Potassium fertilizer bulk not natural	21958 tons	3,700
599211	Insecticides etc. liquid	79204 galls	1,400
599231	Weed killer liquid	1259047 do	3,500

Synthetic Materials

581111	Laminated Boards Paper or textile based	9,925 cwt.	1,800
581201	Polyethylene in Primary form	44582 do	02,60
581203	Polystyrene in primary form	9,685 do	700

FOR ELECTROPLATING OF ANY TYPE & SUPPLY OF MACHINED COMPONENTS

CONTACT:

VIKAS INDUSTRIES

C-23, Industrial Estate, Guindy,

MADRAS-32

Phone: 80663

Tariff Code	Chemicals	(States of Malaya) Quantity	1964 Imports Value (M\$ '000)
581205	Polyvinyl in primary form	16468 do	1,100
581206	Polyvinyl in semi-manufactured form	4458231 do	2,500
<i>Synthetic Materials</i>			
581321	Regenerated Cellulose Sheet	1268762 lbs.	1800
541300	Antibiotics	—	800
	Explosive		
571210	Mining Elastling and Safety Fuses	4806559 cwts.	600
<i>(ii) Synthetic Fibre</i>			
653511	Synthetic fabric woven printed of continuous fibre	1680285 sq. yd.	1,800
653512	Synthetic fabric woven coloured or continuous fibre	4436472 do	5,370
653519	Fabric woven nes of continuous fibre	613109 do	800
653521	Fabric woven printed of ruptured fibre	521290 do	580

PACKAGING REQUIREMENTS
CONTACT
SIVA PACKAGING INDUSTRIES

B-1, AMBATTUR INDUSTRIAL ESTATE, MADRAS-58

Manufacturers of 'MARINA' Brand Corrugated Rolls, Boards, Boxes, Cardboard Boxes, Printed Cartons etc.

Tariff Code	Chemicals	(States of Malaya) Quantity	1964 Imports Value (M\$ '000)
623522	Fabric woven coloured of ruptured fibre	2249546 do	900
653529	Fabric woven not of ruptured fibre	316903 do	550
653612	Artificial fabric woven coloured of continuous fibre	5702035 do	4,300
653619	Artificial fabric woven not of continuous fibre	1025247 do	1,000
653621	Artificial fabric woven printed of ruptured fibre	3312161 do	2,700
653629	Artificial fabric woven of ruptured fibre	888542 do	1,400
653631	Artificial fabric chenille printed	14836 do	32
<i>Knitting</i>			
841422	Stockings not knit or crocheted exclusive elastic	383602 Dozens	1,500
841431	Knitted or crocheted undergarments cotton	931307 do	6,670
841439	Knitted or crocheted undergarments non cotton	250096 do	1,500
841440	Knitted or crocheted undergarments	86443 do	1,400

FOR ALL TYPES OF TIN CONTAINERS, PLAIN & PRINTED; & SIGN BOARDS, DRUMS & KEGS

Please Contact Manufacturers:

MADRAS METAL CAN MANUFACTURERS

C—12-A, Industrial Estate, Ambattur, Madras-58.

Phone: 60341

Grams: "Presscan"

Also manufacturing "HERCULES & RALEIGH" TYPE CYCLE GEAR CASES.

Tariff Code	Metal Industries	(States of Malaya) Quantity	1984 Imports Value (M\$ '000)
HARDWARE			
693110	Cables uninsulated and slings iron	2352 tons	2,800
693311	Iron wire netting for fencing	1045 do	1,100
694211	Bolts and nuts Iron Changkols	1909 do	1,600
695102	Changkols	194239 Units	500
695103	Axes and Adzes	92571 do	200
695109	Agricultural hand tools	— do	500
695219	Handsaws and blades excl. Hacksaw and Bandsaw	—	950
695221	Pliers, Pincers, Spanners etc.	—	700
695222	Perforating punches for office	7410 Units	9
695223	Hand Files and rasps	725052 do	350
695231	Household tools non electric iron	— cwt	100
695239	Hand tools nes	—	1,700
698110	Locks padlocks base metal incl. parts	—	2,000
698121	Bolts haslshinges base metals	8286 cwt	6,000
698129	Base metal fittings for furniture, door etc.	—	2,000
698530	Clasps bocks eyelets etc. base metal	—	700
715100	Machine tools for working metals	—	2,800
717303	Parts for sewing machine	—	4,600
718120	Paper cutting machine	—	270
719520	Machine tool for working wood etc.	—	1,700
719540	Accessories and parts for the machines	—	1,500

Tel: 'Srikrishna'

Phone: 2202

S. K. INDUSTRIES

70, T. P. K. Road, MADURAI - XI

Manufacturers: Teak Wood Casing, Capping Fillets, T. W. Boxes etc., 11 mm
Conduit, Pipes & Fittings, Huller Spare Parts, Machinery Parts.

Tariff Code	Metal Industries	(States of Malaya) Quantity	1984 Imports Value (M\$ '000)
WIRE PRODUCTS			
677010	Wire not insulated ordinary steel	17888 tons	7,000
684211	Aluminium wire	403 do	800
684221	Aluminium strips and sheets ton	1275 do	3,000
684230	Aluminium foil	72869 do	3,000
STRUCTURAL SHAPES			
673510	Angles shapes etc. under 80 MM width ordinary steel	12014 do	4,000
674140	Universal Plates steel	2985 do	1,000
674210	Plates 3 to 4 point 75 MM Thick Ordinary steel	4822 do	2,000
STAMPED, COATED AND PRESSED METAL PRODUCTS			
674701	Tinplate Prime	5449 tons	4,000
674702	Tinplate Waste & Clippings	9169 do	4,000
674801	Galvanised Sheets	4610 do	2,700
692110	Iron tank over 66 gall.	15105 cwt	1,100
692211	Capacity/Drums over 30 gall.	46815 Units	600
692212	Iron containers below 80 oz. capacity	—	12,000
692213	Other iron containers	—	1,000
697110	Iron domestic stoves non electric and parts	—	2,000
697210	Household utensils iron incl. parts	—	1,400
697231	Household utensils aluminium and parts	—	580
ARCHITECTURAL METAL PRODUCTS			
691101	Prefab window and door casement of iron	1405 tons	2,300
691109	Other structural parts of iron	7002 do	6,000
691201	Prefab window and door casement aluminium	274 do	1,700
691209	Other structural parts Aluminium	287 do	670

Tariff Code	Non-Metallic Mineral Products	(States of Malaya) Quantity	1963/4 Imports Value (MM '000)
EARTHENWARE			
	n.e.s.	2280 tons	561
662300	Refractory bricks and similar material	2923 do	884
666400	Porcelain Household Ware	—	3,250
			3,133
662441	Wall & Floor tiles	3068 tons	1,468
	unglazed	4422 do	1,315
662451	Wall & Floor tiles	4525 do	2,389
	glazed	4964 do	2,552
812200	Sanitary ware	2400 do	3,171
		1752 do	2,734
CEMENT & CONCRETE PRODUCTS			
	Cement Tiles Roofing	5687 tons	566
		3401 do	353
MINERAL PRODUCT GLASSWARE 1964			
664400	Glass, Polished, Ground Rectangular	712885 sq. yds.	2,000
665110	Glass container 40 ozs. capacity and below	357389 do	4,000
665119	Glass container over 40 ozs. capacity	—	100
665200	Glassware for household use	—	1,500
678200	Pipes cast iron	4337 tons	1,800

ES-TEE ENGINEERING CO. (Madras) PRIVATE LTD.

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Factory:

C-8 Unit, Ambattur Industrial Estate,
MADRAS-58

Telephones: 60291

Tariff Code	Non-Metallic Mineral Products	(States of Malaya) Quantity	1963/4 Imports Value (MM '000)
BASIC METAL SHAPES			
678200	Pipes iron excl. cast or seamless	8106 do	4,600
678300	Pipes iron welded	25684 do	16,000
678501	Pipe fittings Cast Iron	6356 do	4,000
678502	Pipe fittings iron excl. cast or steel	1090 do	1,600
679200	Articles or cast steel	411 do	600
696870	Soldering & Welding Rod etc. Base Metal	1895 do	3,000
FOUNDRY INDUSTRIES			
719920	Taps, cocks, valves and similar appliance	—	3,600
Tariff Code	Industrial Machinery	(States of Malaya) Quantity	1964 Imports Value (M\$ '000)
711511	Diesel Engine under 10 HP Stationary	1356 Units	1000
711512	Diesel Engine over 10 HP to 50 HP Stationary	1194 do	2,500
711513	Diesel Engine over 50 HP Stationary	635 do	7,500
711514	Marine Engine diesel	1467 do	5,700
711515	Road transport Engine diesel	1350 do	2,000
719214	Pump centrifugal and rotary	6259 do	3,000
719215	Pumping reciprocating	391 do	360
719216	Parts for pump	— do	1,700
719222	Gas or air compressor	1234 do	2,000
719990	Machinery parts non electrical		12,500
722114	Electric transformer reactor inductor	5660 Units	3,000
722121	Electric motors under 1 HP	1978 do	200
722122	Electric motors 1 to 2 HP	1991 do	250
722123	Electric motors over 2 to 25 HP	2985 do	870
722124	Electric motors over 25 to 100 HP	309 do	500
722125	Electric motors over 100 HP	84 do	800
BOILERS & PARTS			
711108	Parts for steam generating boiler	— do	800

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EXTERNAL GRINDERS, MILLING MACHINES,
TURRET LATHES, H. M. T. CENTRE LATHE,
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Please Contact :

THE SUPERINTENDENT,

COMMON LEASE SHOP

INDUSTRIAL ESTATE,

GUINDY, MADRAS-32.



**GENERAL GUIDELINES GOVERNING INDIAN
PARTICIPATION IN JOINT OVERSEAS VENTURES**

1. Government approves of such schemes provided Indian investment is limited to value of indigenous machinery, equipment, tools, structurals etc., required for the new venture.

2. Government does not allow cash remittances for investment abroad.

3. Normally Government favours minority participation by Indian parties i. e. upto 49%. The intention is that foreign local parties should have majority participation.

4. If in a particular case, the Indian party is in a position to supply machinery etc., to a greater value than his equity participation, Government welcomes such a scheme as the excess machinery etc., could be sold straight away for cash and to that extent it will mean an earning of foreign exchange.

5. Usual import replenishments available to registered exporters will also be allowed on export of machinery etc., for investment as equity capital abroad.

6. Machinery etc., exported should be of Indian make; no second hand or reconditioned machinery would be allowed for export against Indian investment as it is feared that might bring us a bad name in the long run.

7. Government favours association with local parties in foreign countries; also local development banks, financial institutions and local Government.

8. As far as possible Indian industrialist are advised to propose a turn key job as this will lighten the responsibilities of the foreign local party.

9. Government also favours Indian parties providing in their agreement with foreign parties for training facilities in India to nationals of the country of investment.

10. After preliminary discussion with the foreign party by correspondence or visits to the foreign country, an outline of the proposed scheme for investment should be sent to Govt. of India for securing their approval in principle to the scheme. The outline of the scheme should indicate broadly the nature of the project, total cost, financing of the project, extent of Indian participation (including value of machinery, tools, equipment, structural etc.) scope for future export from India of raw materials or components etc.

11. On receipt of Government's approval in principle, details may be worked out with the foreign party on the understanding that final agreement reached would be subjected to Government of India's approval.

12. All references on Joint Ventures abroad may be addressed to Thiru J. Banerjee, Director EA, Ministry of Commerce, New Delhi.

TRINIDAD

According to the Bulletin published by the Trinidad Chamber of Commerce, there are

OCTOBER — DECEMBER 1967

opportunities for the import of following items :

- (a) Frozen meat, butter, garlic, onions, eggs, flour, cereals, corned beef, vermicelli, sausages, cheese, etc. (Argentina)
- (b) Pianos, guitars. (Japan)
- (c) Cotton and rayon textiles, spices, seeds, pulses and produce items. (India)
- (d) Toys, plastic flowers, garments, hosiery, cotton piece goods, household goods, sundries, canned foods, chinaware, enamel and earthenware, stationery. (Hong Kong)
- (e) Locks, shirts raincoats, straw hats, lamp bulbs, leather shoes, other household items. (Hong Kong)
- (f) Damascene, cultured pearl, silver, semi-precious stone, and cloisonne jewellery. (Japan)
- (g) Cotton aloha printed poplin. (Japan)
- (h) Clothes pins, coat hangers, rat and mouse traps, and other wooden articles. (Sweden)
- (i) IVC compounds, galvanised iron accessories, men's and women's garments, confectionery, scotch whisky, baby carriages, fitted wardrobe cupboards. (Britain)
- (j) Footwear. (Japan)
- (k) Lacquered plastic / presswoodwares. (Japan)

- (l) Teaching materials for schools, materials for mounting and painting walls, hides of wild beasts and reptiles; gauva shells, marmalades and jams, pine and pawpaw marmalades, handbags confectionery and cakes; carpets and rugs; fancywork of Columbia fabrics for children. (Columbia)

- (m) Men's, ladies' children's fully knitwear in 100% wool and acrilan. (Malta)

- (n) Plastic sealed kitchenware, auto accessories-car pillows, rearview mirrors, car washing equipment, inflatable cushions for cars. (Japan)

- (o) Hand knitted woollen carpets and rugs. (Pakistan)

- (p) Potatoes, onions, garlic, beans, chicken-pease, etc. (Portugal)

- (q) Canned pineapple and pineapple juice. (Malaysia)

The exporters in India may be informed of the scope for the export of these items to Trinidad and Tabago.

The main items of imports during the year 1966 were :

1. Meat and meat preparations.
2. Dairy products, honey etc.
3. General cereal preparations.
4. Mineral fuels, lubricants.
5. Base metals.

The commodities mentioned above can serve as a guide to the exporters in India.

The names and addresses of firms in Trinidad and Tobago, Jamaica Surinam etc. who made enquiries in the imports of items mentioned against each during April 1967 are as under :—

S.No.	Names and Addresses	Items
1.	M/s. Sun Sun Importers & Exporters, 32, Charlotte Street, Port of Spain, Trinidad.	Plastic wares, such as--lunch boxes, plastic food containers, refrigerators boxes, plate drainers, baby chambers, soap boxes and baby bath tubs.
2.	M/s. Hull Jones & Co. Ltd., P. O. Box No. 470, 36, Edward Street, Port of Spain, Trinidad.	Mustard oil.
3.	A. A. Laquid Ltd., 32, Frederick Street, Port of Spain, Trinidad.	Hospital quality absorbent wool and absorbent lint.
4.	Mr. Shaffiek Sonny Ali, Trinidad Cement Ltd., Claxton Bay, San Fernando.	Drugs.
5.	Trinidad Newlines Sales, 6, Henry Street, Port of Spain, Trinidad.	Cotton fabrics for the shirt industries; cotton and terylene, mixed; cotton and rayon, mixed cotton and nylon mixed for the shirt industry. Linen fabrics, silk fabrics, satin and rayon fabrics, cotton bed sheets, plain and printed along with pillow cases (ready made).

Note: The Exporters in India of leather goods are informed that the Government of Jamaica have informed that the Importation of leather and certain specified goods, namely footwear and ladies' handbags is subject to the issue of an import licence by the Jamaican Trade Administrator. The importation of other leather goods, however, is not subject to import licence requirements.

STANDARDS FOR INDUSTRY

Within two decades of its existence the Indian Standards Institution has already established about 4,000 Indian Standards besides a number of draft standards the work on which is in progress. These standards cover different technical aspects of various subjects like Agricultural and Food Products, Civil Engineering, Structural and Metals, Chemical, Textiles, Mechanical Engineering, Electrotechnical, Consumer Products and even documentation and publishing and printing trades. Considering the average time taken to prepare a standard of about three years, this is a creditable achievement. However, these efforts will be fully rewarded only when the industries, trade, purchasing organisations and departments and public effectively utilise them to achieve the benefits of standardization.

The Handbook, which is a comprehensive and up-to-date guide not only to the work

of standardization on the national level accomplished by ISI but also to the standardization work at the International level achieved through the International Organisation for Standardization (ISO) and International Electrotechnical Commission (IEC) is divided into three sections. Section 1 lists the Indian Standards in numerical order giving the price of each and also a reference to the corresponding international recommendations if any. Section 2 lists the recommendations and publications of ISO and IEC along with their respective prices. Section 3 provides an exhaustive alphabetical subject index to the publications listed in Sections 1 and 2 as well as the addresses of the national standards bodies of overseas countries which are able to supply these publications in their respective countries. The book is a must to every entrepreneur, industrial and trading establishment, public organisation, municipality and local body, technical, scientific and research institutions and public library. It is priced at Rs. 5.

LIST OF LICENCES ISSUED UNDER THE INDUSTRIES (DEVELOPMENT AND REGULATION) ACT, 1951 DURING THE MONTHS OF JUNE, JULY AND AUGUST, 1967 IN THE STATES OF MADRAS, ANDHRA PRADESH, KERALA, MYSORE AND PONDICHERRY

Name and full address of the undertaking (and location)	Articles of manufacture and capacity (type of licence i.e. NU/SE/NA/COB/shifting)	Licence No. and Date
Schd. Ind. No. 5 (1)—Equipment for Generation, Transmission and Distribution of Electricity including Transformers.		
M/s. English Electric Co. of India Ltd., Post Box No. 2392, Madras-27 (Madras, Madras State)	Medium voltage air circuit breakers—400 (volts) (800—1600 amp) (N. A.)	Nos. p.a. 300 L/5(1)/136/EEI/67 18-5-67
M/s. Madhav Capacitors Private Ltd., Bharat Coal Compound, Ball Bazaar, Kurla, Bombay-70 (Poona-Maharashtra or Bangalore, Mysore)	(Capacity annual) or maximum utilisation of plant)	No. L/5(1)—137/EEI/67 28-6-67
Schd. Ind. No. 9—Machine Tools.		
Managing Director, Praga Tools Limited, 6-6-8/32, Kavadiguda Road, Secunderabad-3 (Andhra Pradesh) (Secunderabad, Andhra Pradesh)	Horizontal spindle surface grinding machines (N. A.)	Nos. p.a. 300 No. L/9/174/M.T./67 1-6-67
Schd. Ind. No. 27 (4)—Food Processing Industries—Flour.		
Thiru K. N. Khemka, Khemka House, 4, Bhabani Dutta Lane, Calcutta-7 (Vizagapatnam, Andhra Pradesh)	Wheat products (N. U.)	Tonnes p.a. (on three shift basis) 15,000 L/27(4)/10/60-L.I. (I) 8-6-67
Schd. Ind. No. 19 (10)—Explosives including Gun powder and safety fuses.		
M/s. Indian Detonators Ltd., Kukatpalli, Sanatnagar (EI) P.O., Hyderabad-18 (Hyderabad, Andhra Pradesh)	Cartridge, ANFO and NON explosives (N. A.)	Tonnes p.a. 15,000 L/19(10)1/67—LI (I) 7-6-67
Schd. Ind. No. 25—Sugar.		
M/s. Thiru Vijayarama Gajapati, Co-operative Agricultural and Industrial Society Ltd., Bhimasingi Co-operative Central Bank Buildings, Vizianagram, Andhra Pradesh, (Bhimasingi, District Visakhapatnam, Andhra Pradesh)	Installed crushing capacity of sugar cane (N. U.)	Tonnes per day 1,250 L/25/N—191/67 17-6-67

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**STATEMENT SHOWING THE LETTERS OF INTENT ISSUED DURING
THE MONTHS OF JUNE, JULY AND AUGUST, 1967 TO PARTIES WHO
HAVE APPLIED FOR LICENCES UNDER THE INDUSTRIES (DEVELOPMENT
AND REGULATION) ACT, 1951**

Name and address of the undertaking (and location)	Articles of manufacture and capacity and type of licence	Letter [of Intent] No. and Date
Schd. Ind. No. 27—Food Processing Industries.		
M/s. Tapioca Products, Prop. M/s. Sayaji Mills Ltd., Kathwada, Ahmedabad-2 (Chalakudy, Kerala)	(i) Starch and modified starches. Tonnes p.a. 36,000	No. 16(4)/66—LI (I) 7-8-'67
	(ii) Glucose syrup ... (after expansion) ... 14,000 (S. E.)	
Schd. Ind. No. 9—Machine Tools.		
M/s. Precision Industries, 14, Rajabhadur Mansion, 11, Bruce Street, Bombay-1 (Madras State or Mysore)	(i) Broaching tools Nos. p.a. 3,000 (ii) Broach grinding machines ... 4 (N. U.)	No. 4—95/66—MT 16-8-'67
Schd. Ind. No. 19—Chemicals (Other than Fertilisers).		
M/s. The Mysore Acetate & Chemicals Co. Ltd., Post Box No. 772, Mysugar Building, Sri Jayachamaraja Wadiyar Road, Bangalore-2 (Mandya, Mysore)	Processed articles from cellulose acetate, i.e. extended sheets and fibres ... (N. A.) ... 750	11/97/66—Ch. I 21-8-'67

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**STATEMENT SHOWING CHANGES EFFECTED IN THE NAMES OF OWNERS/
UNDERTAKINGS DURING THE MONTHS OF JUNE, JULY AND AUGUST, 1967**

Licence No. and date (type of licence and location)	Name of the original owner/undertaking	Name of the new owner/undertaking
Registration Certificate No. R/37/171 24-10-53 (Mysore) L/37/9/53 L/34(6/1) 16-12-53 (S. E.) (Mysore) L/34(6)/79 62— Chem IV 31-8-62 (S. E.) (Mysore) L/34(6)/102/64—L Ind. II 20-3-'64 (S. E.) (Mysore)		
	Government porcelain factory, Bangalore	M/s. Mysore Porcelains Limited, Bangalore.
L/1A(7)/N-291/63 3-10-63 (N. U.) (Madras State)	LICENSEE Thiru N. A. Ramachandra, Rajapalayam	UNDERTAKING M/s. Strip Rolling Mills Ltd., Rajapalayam.
L/19(11)/40/66—A & I 29-11-66 (N. U.) (Madras State)	Thiru Ravindra, Madras	M/s. Mico Farm Chemicals Ltd., Madras.
L/5(6)—65/LEEI/63 27-9-63 (N. U.) (Madras State)	M/s. Premraj Ganpatraj & Company Private Ltd., Madras	M/s. Madras Electrical Conductors Private Ltd., Madras.

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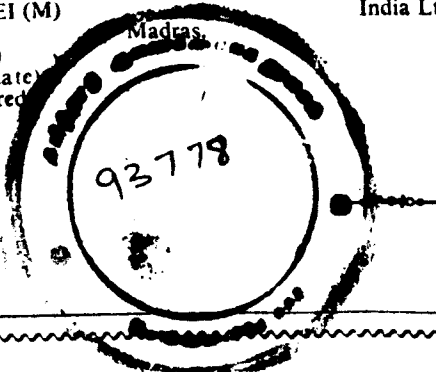


HARVEYS OF MADURAI

**STATEMENT SHOWING THE LICENCES REVOKED/SURRENDERED DURING
THE MONTHS OF JUNE, JULY AND AUGUST, 1967**

Licence No. and Date	Name of the Party	Articles of Manufacture
L/23(1)/989/65— Tex (H) 27-6-'65 (S. E.) (Madras State) (Surrendered)	M/s. Annamaliar Mills (P) Ltd., Dindigul.	Cotton Cloth.
L/5(1)—50/EEI/61 6-9-61 (S. E.) (Mysore) (Surrendered)	M/s. The Mysore Electrical Industries Ltd., Bangalore.	Power Factor Correction Capacitors.
L/23(1)/994/65— Tex (H) 12-7-'65 (N. U.) (Pondicherry)	LICENSEE Thiru S. Sivaraman, Pondicherry. UNDERTAKING M/s. Shri Venkateswara Spinning Mills	Cotton Yarn.
L/1A(5) (15)/62— EI (M) 17-8-62 (N. U.) (Madras State) (Surrendered)	M/s. The Tube Investment of India Ltd., Madras.	Push Rods for Motor Industry and Bundy Welded Tubings.

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