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IN THIS ISSUE

Seminar on Plastics

The proceedings of the Seminar on Plastics conducted by the Central Small Industries Organisation at Bombay and inaugurated by Sri T. N. Singh, Union Minister for Industry on the 4th May this year revealed the potential for the development of the plastic conversion industries in the Small Scale Sector in our country. The technical papers presented during the seminar sessions and the exhibition arranged on the occasion threw much light on the present stage and the complete scope of the plastic industry during the Fourth Five Year Plan Period. Suggestions offered at the seminar for the further development of plastic industry in Madras State find a place at the concluding part of this detailed report.

At the inaugural address, the Union Minister for Industry said that while there has been a phenomenal development of Small Scale Engineering Industries during the Second and Third Five Year Plans, a great leeway has yet to be made in the field of Chemical Industries during the Fourth Plan period. There is likely to be a large increase in the availability of plastic raw materials by 1970-71 as the targets of production to be attained by 1970-71 is fixed at 400 thousand tonnes compared to the existing production of about 29,000 tonnes per year. The anticipated production of important plastics for 1967 and 1970-71 are as follows :

	1967 tonnes	1970-71 tonnes
Polyethylene	26,000	1,00,000
P. V. C.	17,000	1,00,000
Polystyrene	10,000	35,000

While shortages in the case of some raw materials like non-ferrous metals, stainless steel sheets etc. make it difficult for new enterprises to come up, in the case of plastic industry this should not be so because of the high capacity of production planned for the Fourth Plan. This means ample scope for expansion of existing units and for new enterprises to come up for processing plastics. Further, while licensing factories for manufacture of basic plastics raw materials, Government have ensured that a substantial part of it is available for processing by large, medium and small scale industries. Because processing of plastics is comparatively easy and not so expensive, this industry is ideally suited for development in the small scale sector and these could be set up with greater ease in small towns and in some cases in rural areas also. For the growth of small units it is essential to establish adequate capacity for the manufacture of moulds at a large number of places. It is also important that these moulds are produced at a reasonable price and within a reasonable time. There is also great need to plan for training programme for training both entrepreneurs and workers in the various aspects of plastics industry. The Minister made particular reference that the

Madras State is hoping to set up three Functional Plastics Industrial Estates in the State.

The other important speakers at the inaugural session were Shri S. I. Parekh, Vice-President, All India Plastic Manufacturers' Association, Bombay, Dr. R. M. Thakkar, Plastic Converters Private Ltd., Bombay; Dr. G. P. Kane, Deputy Director-General, Technical Development Directorate, New Delhi, and Sri C. R. Sundaram, Chairman, National Small Industries Corporation, New Delhi. They spoke on possibilities of export, difficulties of Plastic Industry, facilities to be offered for development etc. Sri C. R. Sundaram said that in the past 10 years, National Small Industries Corporation gave machines valued at Rs. 20 crores on hire-purchase.

PLASTIC INDUSTRY IN THE FOURTH PLAN

At the technical discussions four papers were presented. The first was on "Plastic Industry in Fourth Plan" by Sri L. Kumar, Adviser, Ministry of Petroleum and Chemicals, New Delhi. It was stated that the consumption of Polyethylene, P. V. C. and Polystyrene has increased rapidly during the past few years and this growth would have been much more rapid had more resins been available. It is also significant that this rapid growth has taken place in spite of the fact that the cost of resin is high in India which is 3 or 4 times the international market prices. India continues to suffer acute shortage of traditional materials such as ferrous and non-ferrous metals, asbestos, cement, and paper which can be replaced economically in varying degrees by plastic materials. By and large, shortages of these traditional materials will continue and in certain specific cases become more acute in the future years. These factors will greatly accelerate the demand for plastic resins which will be further assisted by a decline in prices of plastic resins caused by high capacity production units and development of Petro-chemical industries which would provide cheap raw materials for manufacture of plastic materials. Thus this paper gave an insight into the immense possibilities of growth of Plastic Industry in future.

RAW MATERIALS

The second paper was "Plastic Raw Materials-prospects for Fourth Plan" by Shri R. Parikshit, Directorate-General of Technical Development, New Delhi. This paper discussed both the production aspect of plastic basic material and the aspect of processing plastics in the Fourth Plan. Amongst the Thermosetting Plastics, for manufacture of Phenol Formaldehyde and Urea Formaldehyde, the major raw materials required would be available indigenously except for Alpha Cellulose Pulp. Amongst the Thermo Plastics all the raw materials for production of Polystyrene, Polyethylene, P.V.C. and Cellulose Acetate flakes are indigenous.

Regarding production of ancillary materials like Plasticisers for compounding P. V. C. Resins to P. V. C. Compositions and Cellulose Acetate flakes to moulding powders a beginning has already been made and some of the plasticisers are now produced in India. Regarding dyes and pigments most of these are to be imported because they are covered by patents. In case of stabilisers, those based on calcium and lead are produced in the country while the others are still imported. The major plastics will be produced to an extent of 400 thousand tonnes by 1971 and the price also is expected to be reduced because most of the plastics will be produced from petro chemical source raw materials. The Plastic conversion industry has been facing serious limitations on account of shortages of materials, machinery, and technical skill. It is expected the position will improve much by the end of Fourth Plan. Mention has been made of the plants to increase production of plastic basic materials. Regarding machines there are already two existing units namely Messrs. Brimco and Messrs Bhoolani. A third unit M/s. Windsor India Ltd., has just gone into production for manufacture of Injection Moulding Machines with U. K. collaboration. Then Messrs Engel India Machine Tools Ltd., will soon be establishing a big mould shop and machine manufacturing unit with Austrian collaboration. The number of machines expected to be produced by all these units at full production and the requirement of machines by 1971 are indicated below:

	Anticipated production per year No.	*Requirement per year No.*
Compression Moulding Presses	—	450
Injection Moulding Machines ...	700	1,200
Extruders	400	1,200

Regarding training of skilled technicians, a project is under consideration to set up a training centre with assistance from United Nations Special Fund. Also a professional society for technical men has started functioning and is called "The Institute of Plastics Industry".

POLYSTYRENES

The third paper was on "polystyrenes" by Shri A. S. Athalye, Polychem Ltd., Bombay. No single plastic has all the desirable properties. Hence it is necessary to select a particular plastic for a specific end use in mind. One of the versatile and yet the cheapest of all the available thermoplastics is "Polystyrene". Consumption of Polystyrene in India has gone up from 4 million pounds in 1956 to 15 million pounds in 1964. Though all the five known methods of processing like Injection moulding, Compression moulding, extrusion, Blow-moulding, Vacuum forming and Pressure forming could be made use of for fabricating Polystyrene, in our country 90% of the conversion is done by the injection moulding process only. Polystyrene has made its greatest impact on the market of steel by displacing enamelled sheets as the material generally in use for refrigerator liners, air conditioner grills, fan canopies, etc. The second big impact is on conventional packaging materials like glass, aluminium, paper, cardboard, etc. It has successfully replaced conventional materials or opened up new fields like in manufacture of radio cabinets, bobbins for enamelled wire, spools and containers for photographic film, Bath room accessories and cisterns, watermeter components, wall tiles bangles, shoe industry, etc.

FOAM POLYSTYRENE

The last paper for the day was on "Foam Polystyrene" by Sri M. Balasubramaniam, Indoplast Ltd., Bombay. Expanded polystyrene first appeared in Indian market in 1958, under the name "Thermocole". The raw material was originally imported which is today manufactured indigenously. The raw material is in the form of small beads containing a blowing agent which are processed into the finished product by heat supplied either by steam or hot water. The beads are processed in two steps. First step is pre-expansion of the beads to 50-60 times their original volume. Second step is further expansion and welding together in moulds of desired shape. Expanded polystyrene has established itself in the refrigeration and building insulation fields on account of its outstanding insulation properties. Its shock protecting and other properties combined with its ability to be processed into complicated shapes also make it a very suitable material for contour packaging. Because of its resistance to water and moisture, it is finding wide use as a buoyancy medium in marine equipment as fishing floats, lifebuoy and life jacket inserts.

POLYVINYL CHLORIDE

In the technical session five more technical papers on the following subjects were also read. The first was on "Polyvinyl Chloride and its applications" by Sri S. Mitra, Calico Chemicals and Plastics Division, Bombay. The high consumption of P. V. C. is because it could be made in a range of grades varying from soft flexible rubber like material even competing with rubber latex foam to hard rigid products approaching metals. This versatility of P.V.C. is due to the possibilities of modifying its properties by suitable compounding. Although all the processing techniques used in plastic industry can be adopted for processing P.V.C. the most important are Extrusion, Calendering and Spreading. Injection moulding of P. V. C. is a difficult process.

Extension: This is a continuous process and any length of the product is possible, the only limitation being the space available. Products such as pipes, tubings, rods, handrails, refrigerator and automobile beadings, expansion joints can be produced by this process. Rigid P.V.C. sheets are used for chemical tanks and in building trade.

Calendering: Like extrusion this is also a continuous process. It is possible to manufacture products like sheets, films, coated fabrics, etc. either plain, or embossed by this process. The Calendered films can also be printed to various designs by rotogravure printing. These films and sheetings are used for rainwear, protective clothing in chemical industries, curtains and table cloths, machinery covers, book covers, inflatable toys, wall screens, hand bags, brief cases, washers and gaskets, floor mats, P. V. C. flooring etc, etc.

Spreading: In this P.V.C. paste is coated on to various substrates such as fabric, paper, hessian, etc, products such as leather cloth, book binding cloth.

Injection moulding: Electric plugs, cycle handle bar grips, watch straps, shoes and slipper soles and heels and numerous other products can be made by this process. Other applications of P.V.C. include profiles, drinking straws, monofilaments and bristles, display boards, crash helmets, etc. Soft hollow dolls and toys, gloves, purses, squeeze bottles, etc. are also made from P.V.C. paste (Plastisols) by slush moulding or rotational casting. Plastisols can be used for manufacture of flexible foams which are more lasting than rubber latex foam.

CELLULOSICS

The second paper was on "Cellulosics" by Sri B. A. Carpenter, East Anglia Plastics, Calcutta. Cellulose plastics are made from cellulose and acetic anhydride. Cotton linters is one of the cheapest source of pure cellulose. Acetic Anhydride can be made from molasses. Both these raw materials are available in abundance in India. Cellulosics is one of the earliest plastics and in spite of the advent of many new types of plastics especially the Polyolefines and Polystyrenes, it is seen that the world over Cellulosics continue to be produced in greater quantities year after year. The fields which should be examined by small scale plastic processors are manufacture of fountain pens, combs, spectacle frames, complete sets of stationery and office articles, tool and knife handles, umbrella handles, dolls of high quality, suit case and door handles, coat hangers, cycle mudguards, cinematographic film containers, etc.

POLYETHYLENE

The third paper was on "Rule of Polyethylene" in Indian Economy" by Sri V. B. Pathak, Product Manager (Plastics), Union Carbide India Limited, Calcutta. This paper discussed the growth in economy by use of polythene. For example, polyethylene bags are used for transplanting in millions since they are cheaper, unbreakable, and lighter than earthenware pots. Again black polyethylene film is used as mulch conserves soil moisture resulting in greater agricultural yield. The black film is also used in canal lining and pond lining which saves use of cement and provides more water for irrigation. It is also used for water-proofing in civil construction. Another production made by extrusion is monofilament which has given employment to many for weaving baskets, mats, etc. Polyethylene is used for manufacture of wires and cables and for pipes etc.

CONVERSION OF PLASTICS

The next paper was on "Conversion of Plastics in the Small Industry-Acrylics, Nylon, Acetal Co-polymers" by Sri D. K. Basu, Imperial Chemical Industries, Calcutta. This paper dealt with broadly on the method of manufacture, general properties, methods of conversion to articles, and the types of articles produced for plastic materials like Acrylics, Nylon and Acetal Co-Polymers.

The last paper of the day was on "Injection Moulding" by Sri D. K. Banerjee, Union Carbide, Calcutta. This paper discussed about the construction, operation and maintenance of Injection Moulding Machines.

REINFORCED PLASTICS

On the last day of Seminar there were four papers. The first was on "Reinforced Plastics" by Sri Y. V. Chittal, Bakelite (India) Ltd., Bombay. The term "Reinforced Plastics" has come to be applied to glassfibre reinforced particularly using Polyster resins. These are unique in that their shaping requires neither heat nor pressure. Therefore they can be shaped by inexpensive tools and simple moulding techniques. The revolutionary nature of these materials could be further appreciated by the fact that they can be moulded into one piece to shapes of such size and complexity which are impossible with other plastics. In fact, with the advent of "Reinforced plastics" plastics have entered for the first time in the structural field. These are therefore called structural plastics. The uniqueness and outstanding nature of these can be gauged by the applications already established by them which include beat hulls as long as 70 ft., bodies of cars, trucks, parts of air-craft, pipes, ducts and tanks, corrugated roof light sheets, structural shapes like I-beams, angles, channels, containers, trays, industrial housings, etc. Regarding materials, except glass fibre, the others are now available in India. Even glass fibre, would be available in India from about the middle of 1965 as a plant for this is under erection in Bombay. The paper also described in brief the process of making articles from "Reinforced Plastics".

NEW PLASTICS

The second paper was "A Review on New Plastics" by Dr. R. M. Thakkar, Plastic Converters Private Ltd., Bombay. This paper dealt with new plastics coming into the field like Polysters, Epoxide resins, Acetals and Polycarbonates, Fluoro-carbon polymers and Stereo specific polymers. These new plastics have not yet come into India and as such the paper was only of academic interest.

THERMOSETTING RESINS

The next paper was on "Thermosetting Resins" by A. B. Divekar, Deputy Director, Small Industries Service Institute, Kanpur. The paper discussed the methods of manufacture of Phenol Formaldehyde and Urea Formaldehyde. After that the paper went on to describe the construction, operation and maintenance of compression moulding presses used for processing the P. F. and U. F. Powders.

PLASTICS EXPORT

The last paper of the Seminar was on "Scope of Plastics Exports in the Small Scale Sector".

by Sri D. S. Swaminathan, Secretary, The Plastics and Linoleums Export Promotion Council. The export performance in the Plastics and Linoleums has been encouraging. From an export of Rs. 7·42 lakhs in 1956-57, the export of these items touched the figure of 319 lakhs in 1964-65 as per details given below:

	Rs. in lakhs
1. Polyethylene-lined jute goods ...	116·70
2. Linoleums.	28·67
3. Pure Plastics	173·63
	319·00

Of the 173·63 lakhs of pure plastics exported, the export by small scale units amounted to Rs. 81 lakhs constituting 47% of the exports which comprises of the following broad categories of products.

1. **Bangles:** This industry is principally located in the suburbs of Bombay. This is labour intensive. The total production of these units is estimated at about Rs. 3 crores per year

2. **Imitation Jewellery:** These consists of fashion items such as necklaces, brace lets, ear-tops, hair bands etc.,

3. **Ladies handbags and monsoon wear goods:** These are P. V. C. fabricated ladies hand-bags and vanity wear as well as travel goods and monsoon wear.

4. **Spectacle Frames.** These are at present exported to U.S.A. and U.K.

It would thus be seen that the scope for export of plastics by Small Scale Industries is vast.

CONCLUSIONS AND RECOMMENDATIONS

From the papers read at the seminar and the lines of discussions that took place after each paper, one could easily arrive at the conclusion that the potential for developing plastic conversion industries in the small scale sector is immense and the development in this direction is inevitable because of the following important reasons. (1) Plastic conversion industry is ideally suited for Small Scale Sector due to less requirement of capital investment and easy possibilities of training required skilled operators, (2) Availability of required machinery and raw materials, (3) The difficult supply position of traditional raw materials like M. S. Sheets, Stainless Steel, Tin Plates non-ferrous metals, etc. in the country which is likely to become more acute in future. So to help development of Plastic Conversion Industries in Madras State, the following suggestions have been offered for consideration: In Madras State there should be a central plastic institute. This institute should also have short courses extending from 2 to 4 weeks to educate prospective entrepreneurs in the various lines of production. The institute should also have a separate demonstration and exhibition wing to educate people on the scope of Plastic Industry.

2. One of the major difficulties faced by Small Scale Sector Units in plastics is lack of facilities for getting moulds at a reasonable cost within a reasonable time. So there should be separate tool rooms located at important centres in the State for manufacturing Dies and moulds for Plastic Industry.

3. The most important tool in the Plastic Industry is the brain of the designer, as the producer who can bring out new and attractively designed products finds no difficulty in marketing the product at handsome profits. But small units may not be able to engage top class designers. Hence it would be helpful if there is a central design cell staffed with capable product designers.

4. The demand for Plastic processing machinery would be high and the indigenous capacity would be inadequate to meet this demand. Italy is one of the leading countries in the world manufacturing these machinery. Therefore one factory should be located in Madras State in collaboration with some leading Italian firm for manufacturing Plastic machinery.

5. One factory for manufacture of P. V. C. is being set up in Madras State. There should be more factories manufacturing such basic plastic materials to help the growth of small units. Madras State can easily have a factory for Cellulosics because of the availability of cotton linters and molasses. Then again there can be a factory for manufacture of thermo-setting plastic powders because of the anticipated availability of phenol and Urea of Neiveli.

6. Functional Estate for plastics could be set up at Mettur so that the estate would be ready by the time the production of P.V.C. starts.

7. There is a good scope for manufacture of ancillary items like Plasticisers, Retraders and dyes and pigments.

ARE YOU A SMALL SCALE INDUSTRIALIST IN NEED OF FINANCIAL ASSISTANCE?

BASIC INFORMATION FOR PROSPECTIVE BORROWERS FROM THE STATE BANK OF INDIA

Financial assistance to small scale industries is one of the most important developmental activities which the State Bank of India has undertaken as a matter of policy and its liberalised provision of credit in this regard has been very impressive and making good progress. The scheme for providing credit to small scale industries, which was introduced in April 1956 at certain selected centres as an experimental measure, was extended to all the branches of the bank from January 1959. This article is designed to give the general information regarding the bank's scheme for providing credit facilities to small industries as it obtains at present. The scheme is subject to such charges as may be considered desirable by the bank from time to time.

The working capital requirements of an industrial unit comprise (1) the cost of obtaining raw materials and stores, including those in process, and the finance required for holding the manufactured products pending sale and, after despatch of such products, until the sale proceeds are received from purchasers and (2) overheads for running the industry which would include salaries, wages, selling expenses, power charges, rent, insurance etc.

While credit facilities for the items of expenditure shown in (1) above will be provided by the Bank it normally expects units to have sufficient resources to meet the outgoings listed in (2) above and the margin required to be maintained on advances taken from the Bank for working capital.

The facilities which the Bank is in a position to provide and its terms are detailed in this article. You may require further details when you wish to submit your application; the nearest State Bank Agent would always be pleased to advise you fully regarding the procedural formalities.

You may wish to know in what manner the Bank has liberalised its usual terms in granting advances to small-scale industries. On this subject, it is stated that **Firstly,** the advances the Bank is prepared to sanction are based on the production needs of a unit-the means of the proprietors are not the overriding consideration. What it looks to primarily is the efficiency of the unit, the marketability of its products and the integrity of the proprietors. An industrialist of small means is, therefore, not excluded from the purview of its scheme; on the contrary, he is quite welcome to approach the Bank.

Secondly, the State Bank is prepared to grant advances against a wide range of industrial raw materials and finished goods provided these have a reasonably good market. The Bank's motto has been that anything that sells can, and should, be financed.

Thirdly, in the case of very small units the Bank is prepared to consider favourably the grant of unsecured advances, subject to their performance being wholly satisfactory.

Fourthly, the Bank endeavours to tailor the credit facilities it extends to suit the individual needs of units, relaxations in terms being permitted wherever necessary.

Fifthly, the interest rates charged have been kept at the lowest possible levels.

Finally, the bank does not promise to meet all requirements irrespective of the merits of each case, but once you get used to the bank it is sure that the facilities it provides at low cost will go to improve your business steadily over the years, as many who have been helped by it will testify.

Information the Bank needs from borrowers

When the State Bank of India first introduced its scheme there prevailed for some time the erroneous expectation that one had only to submit a loan application for it to be automatically sanctioned. The business of industrial finance, however, involves a certain amount of preliminary enquiry and, in some cases, fairly close questioning. There is at times the wrong impression that once security is furnished, a credit line can be established. The Bank does not deny the importance of the security, but what it is more interested in is knowing as much as possible about your business for three reasons:

One, The Bank will be able to know about your working and sanction a limit that will fully suit your production needs.

Two, If your working is not too satisfactory but it holds promise of improvement or adequate security is not readily available, to suggest how best it can help you, as also to see whether a relaxation of its terms would be possible.

Three, you might require additional facilities when your business grows or when a temporary setback is unfortunately experienced and it would be helpful to it in coming to constructive, expeditious decisions if it had all the relevant material about your business.

No detail is too unimportant for the Bank and it would be most interested to know all about the history and working of your enterprise, its difficulties and its triumphs. Please remember that the Bank officials are your good friends and that, if they question you keenly, they are only trying to see how best they can help you. The Bank's request, therefore, is: *Let there be no barriers, as its happy relationship will depend on mutual trust and confidence.*

The Bank's main object in providing credit facilities to small-scale industries is to see that they can grow and operate from a position of strength. Its interest in your welfare will, therefore, continue undiminished even after the credit arrangement has been established and it would welcome full information from you about your progress from time to time. It has enjoined on its officers to take a personal interest in your genuine financial problems and gives you the fullest possible co-operation in finding suitable solutions.

Security

Traditionally, there is one point on which the views of banker and customer are likely to differ, and that is concerning the security for an advance. The customer is apt to ask why his own personal integrity should not be good enough security. The Bank agrees that the customer's integrity, is one of the important considerations in granting an advance, but the banker has to assure himself against unexpected events in the future—events which may be due to factors entirely external to the customer's business and against which the customer's integrity or ingenuity may be no protection. The banker, therefore, asks for security so that it may be a second, but at the same time an equally essential, line of defence.

The Bank is aware that may small-scale units may not possess sufficient security to back a proposition for an advance—their cases, of course, will receive its sympathetic consideration-but, where security is available and can be furnished without undue trouble or expense, it would urge you to bear with it when this subject is introduced in the preliminary discussions. To determine what is a fair banking risk is often not an easy matter-so many factors may have a bearing-and it would be aided in coming to quicker decisions should security, where available, be provided. The furnishing of security would have another advantage-you may require various facilities in future to meet temporary situations, and it would be possible for it to provide these readily on the strength of the security already given to it.

It is however, emphasised that the Bank regards, the deposit of security merely as evidence of your good faith and stakes in the venture and that, ultimately, it looks to your sense of purpose, the prosperity of your business and your ability to run it successfully as the fulfilment of the purpose of, and the best assurance for its lending-security is only something that will be there when things go wrong unavoidably.

Various Facilities Extended by the Bank

TYPES OF ADVANCES

(*i*) Advances against the pledge of acceptable raw materials and finished goods awaiting despatch. This facility will be found useful particularly by units purchasing raw materials in bulk. All the raw materials not immediately required for processing purposes can, therefore, be kept under the Bank's lock and key and advances obtained there against. In regard to acceptance of finished goods as security, the main criteria would be the technical performance of the unit and the marketability of the goods.

(*ii*) Advances, on what is known as the "factory" type basis, are granted during the time the stocks are in process or in cases where units do not purchase raw materials in bulk and, as such, cannot avail themselves of "lock and Key" advances. In "Factory" type accounts, the pledge over the goods in our favour is evidenced by the exhibition of the Bank's nameboard and the posting of a full-time watchman at the factory. Advances will be regulated by the value of goods remaining in the factory and it will, therefore, be necessary

for borrowers to maintain an accurate record of stocks. The posting of a full-time watchman will be dispensed with where adequate supervision can be exercised by the Bank's staff, Advances for "Process" requirements will be related to the production needs of units for such period as is required for the conversion of raw materials into finished goods; to determine the quantum of the credit limits required, accurate date on the point will be needed from borrowers.

(*iii*) Advances are granted against bills covering supplies of finished goods made by units to purchasers.

(*iv*) Where the nature of the business is such that pledge advances are not feasible, or where a unit has expended all its resources on acquiring fixed assets and is short of working capital the Bank will be pleased to consider the feasibility of granting clean credit, the guarantee of suitable persons and/or the security of fixed assets or other collateral being taken wherever necessary or possible. In the latter event, a suitable repayment programme will be stipulated so that, with sufficient accretions to profits, the arrangement will come to an end.

OTHER FACILITIES

(*i*) To assist units in buying raw materials the State Bank is prepared to establish letters of credit in favour of the suppliers, internal or foreign. It will also consider favourably requests for financial assistance in cases where suppliers of raw materials to small-scale industries require pre-payment of cost. Suitable margins will be required to be desposited by borrowers in these cases.

(*ii*) All other banking requirements of units e.g. effecting of remittances, foreign exchange business etc., will be undertaken.

(*iii*) Assistance in completing loan application forms relating to facilities required from the other agencies interested in providing financial help to small scale industries-the Industries Departments of State Governments, State Financial Corporations and the National Small Industries Corporation Ltd. The completed application forms will, if required, be forwarded to these other agencies.

Terms

Margins: The margins the Bank retains will primarily be dependent on the types of raw materials and finished goods offered as security, but its standard margins may be relaxed in cases of genuine necessity subject to the standing and performance of the unit being satisfactory. Advances are granted against a wide range of goods but these must be directly connected with the process of manufacture of the industry.

Interest: The interest chargeable is linked to the State Bank of India advance rate which at present is 5% and is related to the type of advance granted. Specially reduced rates of interest are charged on advances to small scale industries. For lock and key advances, for example, the rate would work out to 5½% per annum and slightly higher rates would be levied on "factory" type or clean advances. The rate chargeable will not, however, exceed 6½% per annum, so long as the State Bank of India Advance rate is not enhanced.

GENERAL

(*i*) The Bank's advances, which are for supplementing working capital requirements, are granted for 6 months. Renewals of facilities will be arranged thereafter provided the account has been satisfactorily conducted.

(*ii*) The State Bank's eight subsidiaries (State Bank of Bikaner, State Bank of Hyderabad, State Bank of Indore, State Bank of Jaipur, State Bank of Mysore, State Bank of Patiala, State Bank of Saurashtra and State Bank of Travancore) are also in a position to extend credit facilities to small scale industries on the same lines, except that slightly higher rates of interest will be charged by them.

Medium-Term Loans

The Bank is in a position to grant medium-term loans to *such small-scale units as already have borrowing arrangements with it for some time past for their requirements of working capital and wish to obtain finance for purposes of expansion, modernisation etc.* These loans are granted for periods ranging up to seven years, the period being dependent on the estimated capacity of units to repay the loans out of profits and will require to be secured by a charge over unencumbered fixed assets and movable machinery and guarantees wherever considered necessary. Annual repayment schedules will be prescribed. In as much as loans are granted over an extended period and repayment would depend on anticipated profits the Bank would require not only detailed information on the present working of units but also some indication as to the purpose of the projected expansion, modernisation etc., and prospects for the future. The officials of the Bank will be happy to advise industrialists regarding its terms for this type of business and assist them in the completion of the relative formalities.

SCHEME FOR THE MANUFACTURE OF PARTICLE BOARD FROM GROUNDNUT SHELLS

INTRODUCTION

Groundnut is extensively grown in almost all tropical countries and our country is one among them. Because of this, relatively large quantities of groundnut shells are available which have at present no Industrial use. Great research and experimental results have proved that particle boards can now be manufactured from these groundnut shells which are new being thrown as waste or used as fuel for the boilers in some factories, because of its hard fibre and other characteristics. From these, building boards can be made having similar characteristics as Particle board from wood by introducing variations in manufacturing techniques which could enable the product to compete with them in price.

Process: This scheme has been drawn up for a plant having a capacity to produce 12 tons or 11,000 sq. ft. a day. The process is simple. The natural air dried shells are sieved by a sieve shaker, to serson off dust and to separate the shells according to different sizes. To this Urea Formaldehyde, a synthetic resin, now available indigenously, is added a little harder and the mixture is sprayed on the shell, while, the same revolves in a mixer for uniform mixing. The same is then set in frames and pressed in Hydraulic Hot Platen press to give desired thickness or extruded under pressure to size usually $\frac{3}{4}$" thick boards of standard size 8′×4′ and 6′. This is similar to a wood particle board plant but simpler as this does not require a chipper or a drier which reduces the cost of the plant by 25%.

Summary: These boards can be made to any desired thickness and density. The demand for the product is from building contractors, furniture -makers, and similar many other industries and individuals. It has wide range of uses because it can be worked by normal Carpentry tools and cut by the hand saw and mechanical saw. With standard shells it gives a rough surface but if small particles are used, you get a smooth face which can be sanded and polished.

It gives a pleasing colour and attractive appearance. Here in the manufacture of this only the plant will have to be imported and all other required raw materials are available indigenously. This will be a very good industry and prove useful to start in economically under-developed areas.

I. CAPITAL INVESTMENTS

A. Fixed Capital

		Rs.
1. Land about 4 acres ...		10,000
2. Built up area - 20,000 sq. ft. @ 16/= ...		3,20,00
3. *Equipment, furniture and fixtures:*		
(a) Principal items, sieve shaker, mixture sprayer, hot platen, press, trimmer, Drum sender etc. ...	7,00,000	
(b) Furniture & fixtures	20,000	
(c) Erection charges ...	70,000	
		7,90,000
		11,20,000

B. Working Capital for 3 months

Direct material, Direct labour manufacturing over-head, contingencies, sales cost etc. say ...	5,71,000
	16,91,800

II. RAW MATERIALS & SUPPLIES/ MONTH

Groundnut shells 740 tons @ 20/ton, Urea formaldehyde Resin (synthetic)	14,800
62 tons @ 2,500	1,55,000
Hardener 5 tons @ 1,000 ...	5,000
Hardware and packing materials ...	11,000
	1,85,800

III. OTHER EXPENDITURE/MONTH

	Rs.
Electric power (Approximately 50 H. P.) ...	1,200
Transport charges	1,000
Fuel for the boiler	500
Water for steam generation & other use	500
Repair and replacements ...	1,000
Insurance, stationery & others	500
Sand paper	400
Lubricant	100
	5,000

IV. MEN POWER/MONTH

(One shift operation)

(a) *Direct Labour:*

Skilled workers including machinists & carpenters	...	12	1,050
Other different staff	...	5	850
Semi-skilled staff ...	...	75	3,750
Unskilled ...	...	40	1,500
			7,150

(b) *Indirect Labour:*

Manager & supervisers	...	3	1,200
Office staff and ...	...	6	860
Others	...	5	420
			9,630

V. TOTAL COST OF PRODUCTION/ MONTH

(a) Direct materials & supplies (Head II) ...	1,75,800
Other expenditure (Head III)....	5,000
Manpower (Head IV) ...	9,630
Depreciation on building 5" per annum	1,333
Depreciation on machinery 10% annum	6,000
Interest of 6½% on the capital investment/annum/month ...	8,809
Contingencies and sales cost	5,000
Excise duty (anticipated) ...	6,000
	2,17,572
(*i. e.*, cost per sq. ft. comes to 79 paise)	
(b) Sales Revenue/month To the sale of 2,75,000 sq. ft. of boards, @ 0.87/sq. ft. ...	2,39,250
	21,678

Profit per annum will be Rs. 2,60,136—10%

Machinery can be had from:

M/s. Industries Machines Gumb H,
Chibehans B, Hemburg-1,
West Germany.

Address of Synthetic Resin Suppliers:

M/s. Ciba of India Ltd.,
Post Box 479,
Bombay-1.

M/s. Parrex Ltd.,
Briemer Strasse 44,
Munich-2,
West Germany.

M/s. Allied Resine & Chemicals (P) Ltd.,
10-1, Eligin Road.,
Calcutta.

SCHEME FOR THE MANUFACTURE OF STRAW BOARD

INTRODUCTION

The demand for Straw Board is increasing rapidly. It is consumed for various purposes, such as, for making boxes for shoes, hosiery and other items, for book-binding, for making registers, for flat files in Government offices, for sale of textile goods etc., etc.

Various straws of rice, wheat, barley, maize and sugarcane bagasse are available in abundance in many parts of the country. In several areas, substantial quantities of these are surplus after meeting the requirement for cattle fodder, but not large enough to set up large scale straw board or paper factories. Transport costs to longer distances would render the raw material cost uneconomic for bigger factories. Therefore setting up small scale straw board units would be the ideal thing for such areas, resulting in profitable use of the surplus agricultural residues, giving employment to local people and catering to local markets. Such units can be established on a competitive basis to large scale units.

The scheme is based on use of machinery up to the stage of making wet board and use of manual labour and natural heat of the sun for drying the same. This requires lot of open space which is usually available in rural areas. This results in saving in initial investment required for a fully automatic drying plant and also recurring expenditure for fuel.

Working season has been taken as ten months only to allow for a rainy season of 2 months, when drying of the board would be difficult. This will depend upon the locality.

By substituting part of the straw with other raw materials like waste paper, jute waste etc. Where available at reasonable prices, other kinds of boards like mill boards, grey boards etc. could also be produced. Sugarcane bagasse can also be used in place of straw.

Besides availability of raw materials, supply of cheap power and source of clean water in sufficient quantity are also important factors in selecting the site for any proposed new unit. The discharge of effluent (waste water) without causing any public or health nuisance must also be arranged before hand. In general, there should be a river whose water is not used for drinking purposes, or some nullahs in which most of the effluent could be disposed off by absorption in the soil and evaporation, or the main underground drains of the town should be of sufficient capacity to take this quantity of effluent water.

SCHEME FOR THE MANUFACTURE OF STRAW BOARD

(2 tons/day of 24 hours).

3 Tons capacity preferable.

II. Land & Building

	Rs.
a) Land — 2 acres	10,000
b) Building 10,000 sq. ft. at Rs. 10/- per sq. ft.	1,00,000
Total ...	1,10,000

III. Details of plant & equipment

Complete plant comprising mainly of the following items.

		Rs
1.	Rotary spherical digester 10 ft. dia with accessories	
2.	Two breaker beaters-800 lbs. capacity each	
3.	One washing potcher	
4.	One vibrating type flat acreen ...	
5.	One foundrinier type board machine complete with accessories ...	
6.	Two stockchest agitators ...	
7.	One hydraulic press with pump ...	
8.	Three stock pumps ...	
9.	One Calendering machine ...	
10.	One rotary slitting machine ...	
11.	One straw cutter	
		1,25 000
12.	Electric motors & transformer (total H.P. 125)	25,000
13.	Boiler and accessories	25,000
14.	Testing equipment & office furniture	10,000
15.	Water supply and storage ...	25,000
16.	Auxiliary equipment such as pipes, valves, platforms, trolleys, etc. ...	20,000
	Total ...	2,30,000
	Erection and installation roughly 10% on above, say ...	25,000
	Total ...	2,55,000

IV. Details of staff & labour

			Monthly salary and wages
1.	Chemical Engineer-cum-Manager ...	1	500
2.	Foreman-cum-board machine operators	3	600
3.	Fitters-cum-machanics ...	3	300
4.	Straw choppers	6	300
5.	Boiler attendants	3	300
6.	Beater operators	6	450
7.	Digester operators	3	300
8.	Press operators	3	180
9.	Calender operators	3	225
10.	Unskilled workers for loading digesters, beaters, drying, packing etc.	30	1,500
11.	Office staff	6	600
12.	Peon 1 & darwan 2	3	180
			5,435
		or say	5,500

V. Raw Material Requirements per month

	Monthly
1. Straw 85 tons @ Rs. 60/- per ton...	5,100
2. Chemicals-lime, soda ash size, starch etc. ...	2,200
	7,300

IV. Other recurring expenditure per month

1. Power at 1.5 As per unit ...	4,200
2. Fuel, coal 20 tons @ Rs. 50/-per ton.	1,000
3. Wires, felts, hessian etc. ...	1,500
4. Contingencies	500
	7,200

VII. Working capital for 3 months

(IV + V + VI) X 3 60,000

VIII. Profit & loss account-yearly

(Based on ten months production only)

	Debit		Credit	
1.	Salary and wages of 37 skilled workers for 12 months ...	48,000		
2.	Salary and wages of 30 unskilled workers for 10 months	15,000		
3.	Other recurring expenditure for 10 months ...	1,45,000		
4.	Interest on total capital investment at 6% ...	25,500	By sale of 500 tons of straw Board at Rs. 800 per ton	
5.	Depreciation of machinery at 10%	25,500		
6.	Depreciation on building at 5%	5,000		
7.	Maintenance and repairs at 5% on machinery ...	12,750		
8.	Tax, insurance etc. at 1% on total investment ...	4,250		
9.	Excise duty at Rs. 100 for ton	50,000		
		3,31,000		4,00,000
10.	Net profit	69,000		
		4,00,000		4,00,000

Net profit is roughly 16% on total investment.

PROMOTIONAL MEASURES SUGGESTED BY EXPORT PLAN COMMITTEE

Exports of handicrafts are expected to exceed the target of Rs. 32 Crores set for 1970-71, the last year of the Fourth Five Year Plan, as a result of various measures proposed to be undertaken. Taking into consideration the phenomenal increase in the exports of Indian handicrafts from Rs. 8 crores at the beginning of the First Plan to Rs. 25·8 crores in 1964-65 and the wide scope for new markets and further exploitation of existing markets, the Handicraft Export Plan Committee, set up by the Union Ministry of Commerce, has found that there is enormous potential for pushing up the exports.

The Committee, headed by Shri D. C. Das, Secretary, Ministry of Social Security, and including top people concerned with the various aspects of handicrafts industry and trade, had made a three-month intensive study to plan the development of the exports of handicrafts.

The Committee, has recommended the formation of consortia of exportors to penetrate new markets and to strengthen India's competitive position in the existing markets. It has said that the scheme of the Handicrafts and Handlooms Export Corporation to establish wholesale depots providng facilities to the exporters for booking business and retail outlets showing exclusive and new items should be vigorously pursued. The Corporation has recently set up a show-window, 'SONA-THE GOLDEN ONE' in New York which is very popular.

The Committee has suggested the setting up 50 exportoriented production centres in the Fourth Plan period in India to back the export drive. A beginning should be made with 10 model production centres dealing with the crafts which are most popular abroad. These production centres should be established in the existing crafts producing areas and would be like industrial estates where craftsmen would be brought together at one centre and have the benefit of such common facilities as designing, use of improved tools and techniques, bulk purchase of raw materials, etc., Thus the Centre, while guaranteeing the preservation of the individuality and initiative of the craftsmen, would make available to them all technical services needed for improvement. This would make for large scale quality production guaranteeing a steady supply to foreign buyers.

For a proper organisation of the handicrafts export trade, the Committee says that it is vital that sufficient attention should be devoted to accommodation for artisans and various measures for their welfare, steps to preserve the traditional skills of old master craftsmen and arrangements for the training of apprentices by them and financial assistance for exporters as well as artisans. Continuous market studies have to be made to regulate the exports, trade as well as to offer commercial intelligence to exporters. It has suggested a committe to advise on market surveys and studies and other export promotion measures including publicity. To ensure the continuity of the export market, the Committee says that there should be quality control and pre-shipment inspection, selectivity of exporters and removal of malpractices and unhealthy competition.

The Committee says that in the context of changing market demands a number of handicrafts items need transformation. As design plays a very important part in the exportability of a craft, it has suggested close liaison and collaboration with art and design institutions, both in India and abroad, opportunities for Indian designers to study foreign trends, and the setting up of information posts abroad to provide design guidance.

The Committee feels that Indian craftsmen need considerable assistance in using improved tools to reduce the uncreative aspects of handicrafts production and to increase the scope for more attention to its artistic side. It is therefore suggested that certain tools which are not available should be imported and others supplied to artisans at subsidised rates. In design, tools and techniques and in certain aspects of organisation the Committee advises that that the experience of Japan would be most useful for India. Master craftsmen may also be sent abroad to study there. Government may consider collaboration proposals for putting up factories in certain crafts to produce goods in large scale for export.

The Committee lays stress on the importance of continuous and economic availability of raw materials, both imported and indigenous. It suggests that the Central and State Governments should provide financial and technical assistance in the procurement, warehousing and distribution of raw materials. It says that the supply of raw materials now being imported by State agencies should be stepped up to cover the important materials needed by the handicrafts industries.

The Committee has also suggested that various incentives are required to step up crafts exports which include more liberal foreign exchange provisions for exporters going abroad on business, permission to overstay in contingencies, raising the value of permissible gift parcels to Rs. 150 from Rs. 50 and increasing the present limit of Rs. 10,000 available to foreign tourists for buying precious stones and jewellery.

The Committee has called for a selective approach in the development of trade with East European countries to which by virtue of special trade arrangements it is possible to increase our exports considerably.

ESTABLISHMENT OF SMALL AND MEDIUM SCALE INDUSTRIES IN SOMALIA IN COLLABORATION WITH SOMALIS

The Government of Somalia, with the help of an industrial consultant provided by the United States Operations Mission, has brought out a few more brochures on investment opportunities in various trades, including dry cleaning plants, Men's leather shoe factories Woman's leather shoe factories, candy and confectionery factories and stores, glue manufacturing plants, concrete block plants, bone meal plants, slaughter house and meat packing plants and tire recapping.

As you would be knowing already, Somalia's First Five year Plan had already been drafted. Feasibility reports prepared are given below:

1. Terry towels.
2. Confectionery.
3. Bonemeal, glue and fats.
4. Garments.
5. Paints.
6. Pre-cast concrete products.
7. Warp knitted fabrics.
8. Aluminium utensils.
9. Glass bottles and tumblers.
10. Buckets.
11. Laundry soap.
12. Toilet soap.
14. Wire nails. tack and wood screws.
14. Wood furniture.
15. Razor blades.

Indian parties interested in establishing some of these manufacturing units in Somalia may contact the Embassy of India, Mogadiscio so far as investment concessions to be granted to foreign capital by the Somali Government they are liberal and have been codified in the Fiscal Facilities Law 1956 and the Foreign investment law, 1960. Copies of these laws can be had on application. In a nut-shell, the Fiscal Facilities Law provides fiscal exemptions for new industries, consisting of 10 years exemption from income-tax and the necessary protection to the new industries by limiting the import permits for similar goods imported from other countries. The foreign investment law gurantees that the property of the foreign invester is free from nationalisation, expropriation or any other form of compulsory transfer; it also provides that profits may be repatriated each year upto 15 % of the capital invested and that the initial capital may be freely transferred abroad after 5 years. ★

STATE AWARDS FOR EXPORTS

In order to encourage industry, trade and commerce in the state, the Government have, in consultation with the Chambers of Commerce, instituted a scheme of State awards and have constituted a Prize Award Committee consisting of both official and non-official members under the Chairmanship of the Sheriff of Madras. The Committee will institute prizes, certificates, medals or other insignia of distinction for any particular year or years for the whole state or any part of it, for any of the business avocations and adjudicate the winners.

To begin with, it is proposed to award prizes for record export from this State for the assessment year 1965 or the participant's, financial year which comes up for assessment in 1965 viz. accounting year 1963-64. Exporters who desire their name to be considered for the award can get in touch with the Madras State Prize Distribution Committee, 175/1, Mount Road, Madras-2 and furnish replies to the questionnaire before 15-11-1965.

INDIAN STANDARDS INSTITUTION CERTIFICATION

The Indian Standards Institution granted fifteen licences during July to manufacturers for use of Indian Standards Institution certification mark in respect of their products.

The products for which licences were issued, include galvanised iron and steel wire for telegraph and telephone purposes, mild steel for general engineering purposes, wooden metric scales, dye-based fountain pen inks, domestic refrigerators and balanced feed mixtures for cattle.

Indian Standards Institution certification on products is an assurance that these have been produced in accordance with the requirements of Indian Standards under a well-defined system of inspection, testing and quality control. The products, as actually marketed, are continuously checked by Indian Standards Institution to see whether they conform to the standards.

Complaints about the quality of the certified products can be brought to the notice of the Indian Standards Institution as well as to the licencees.

BONDING GLASS WITH RUBBER

A method for *Chemically bonding glass with rubber*, has recently been discovered by ESSO Research & Engineering Company, Linden, N. J., U. S. A. Glass fibre, though recognised in the rubber industry as a potentially ideal reinforcing textile for rubber for its great strength, resistance to stretch growth, non-flammability, chemical inertness and retention of strength at elevated temperatures, was finding, however, limited commercial applications due to its interfilament chafing failures and failure in fibre to rubber adhesion during flexing.

Capability of glass cord to retain its strength at elevated temperatures provides an edge over steel-wire or organic tyre cords for use in aircraft tyre reinforcement. Certain aircraft tyres are required to withstand temperatures in the neighbourhood of 450 F. due to the many factors. Whereas at such temperatures, organic tyre cords lose strength rapidly (for example, nylon melts at 482 F.) and steel wire has disadvanges including low elongation and heavy weight, glass fibre bonding loses little strength up to 600 F. and is still quite strong even at 1200 F. Also glass cord is much more extensible and only one-third as heavy as steel wire.

Possible applications for the improved fibrous glass bonding technique include truck and passenger car tyres, drive belting, conveyer belting, hoses and rubber storage bins.

ELECTRIC MOTOR HAS NO BEARINGS

Small electric motors without bearings, commutators or brushes and requiring no maintenance, lubrication or suppression, being manufactured by a British firm, are said to be comparatively inexpensive as actuator motors and to have an extremely high torque/inertia ratio. The motors will reach full rated speed and torque in under 1/100 second, and can be stopped or reversed in approximately the same time.

The motors suffer no damage from accidental over-voltages-surges or prolonged overrating-and are said to be particularly suitable for applications where step-by-step rotation is required. Up to 1,200 precisely determined positions can be selected in any one rotation.

Manufacturers and their agents or representatives:

Evershed & Vignoles Ltd.,
Devonshire Works,
Dukes Avenue,
London, W. 4.

Jost's Engineering Co., Ltd.,
Gt. Social Building,
Sir P. Mehta Road,
Bombay-1.

SPACE-SAVINC EFFLUENT PROCESS FOR INDUSTRIAL PLANTS

An automatic effluent process for industrial plants, which occupies only a quarter of the area required by alternative methods and requires a low capital investment, is being produced by a British firm.

The process, which is designed for the removal of toxic contaminants, the settling of suspended solids, effluent neutralization and the recirculation of water to the manufacturing process, involves three stages.

In the first, the effluent is neutralized by the addition of alkalines, if acidic, or by acids, if alkaline. Flocculant chemicals are then added under controlled pH. (Hydrogen/ion concentration) conditions to enable fine, floating particles (if any) to coalesce into larger particles and eventually settle. In the third stage, the settling process is accelerated by the addition of further chemicals.

The water is then transferred to a settling tank, where it remains for two hours to allow the particles to settle in the form of a sludge. The clear liquid is either recirculated to the manufacturing process or discharged into a sewer or river.

Manufacturers and their agents or representatives:

Water Engineering Ltd.,
Burwood Works,
Guildford Street,
Chertsey, Surrey, England.

Paterson Engineering Co. (India) Pvt. Ltd.,
21, Theatre Road,
Calcutta.

BEATING NATURE AT HER OWN GAME

A modern process enabling large quartz crystals to be grown in 21 days—against Nature's 3,000,000 years—has recently been brought into use in Britain.

Crystals-Similar to the ones used in the early days of the crystal radio sets-are still used in modern telecommunications to keep big broadcasting stations and airliners' radios on their exact frequency, and to control long-distance telephone, teleprinter and television links.

A new factory is producing more than half the crystals used in Britain, and 20 per cent. of those used in Europe.

The man-made quartz has distinct advanges over that produced by Nature. In fact, the new plant was developed to overcome certain features associated with natural quartz. It is expensive; the natural stones are irregular in shape and carry unwanted minerals; and large pieces for the manufacture of frequency control devices are rare. In contrast, the cultured quartz is regular in shape and virtually free from defects.

Manufacturers and their agents or representatives:

Standard Telephones & Cables Ltd.,
Harlow,
Essex,
England.

Martin Burn Ltd.,
12, Mission Row,
Calcutta-1.

Jost's Engineering Co. Ltd.,
Gt. Social Building,
Sir P. Mehta Road,
Bombay-1.

AUTOMATIC MACHINE PRODUCES PRECISION CASTINGS

Castings made automatically on a new machine developed in Britain have proved to be so accurate that the machining normally undertaken afterwards is no longer necessary. Instead the castings are ready for immediate production line assembly.

Considerable reduction in wastage of raw materials over conventional casting techniques is claimed. Normally 50 per cent of the metal used in conventional casting processes needs to be machined away to give the component the required precision and shape.

Not only are the castings from the new machine much more accurate, but they can be produced at speed. The machine can therefore be attached directly into the normal production line.

Manufacturers and their agents or representatives:

Redman Tools Ltd.,
Worcester,
England.

SPEEDING UP POWER PRESSES

The operating speed of a new range of power presses is said to have been speeded up by 80 per cent. as a result of replacing the orthodox mechanical clutch with an epicyclic fly wheel unit and a pneumatically-operated disc brake.

The machines, which are of 20, 32 and 50 ton capacities, are claimed to have several other new features. They can be run in either direction and the cycle can be stopped in any position throughout the 360° cycle. Only 85° of crankshaft rotation is needed before the crankshaft comes to rest, once the arresting action has been initiated.

Manufacturers:

Samuel Griffiths (Willenhall) Ltd.,
John Harper Street,
Willenhall,
Staffordshire,
England.

NEW PLANT MAY MEAN CHEAPER STEEL

Hydrogen and other gases causing defects in molten steel are now being removed by a degassing plant that continuously syphons the steel through a vacuum chamber. This contrasts with the established method of degassing steel in separate batches.

The pilot degassing plant utilizing this technique is operating at a steel works in Northern England. Its commissioning is claimed to herald cheaper, quicker and more compact methods of producing many types of steel.

Manufacturers:

Low Moor Alloy Steelworks Ltd.,
Low Moor,
Bradford,
Yorkshire,
England.

PACKAGING PAPER PROTECTS AGAINST RUST

A rust-preventing packaging paper, which provides long-term protection has been introduced by a British firm. Unlike most existing rust inhibiting papers, the new product is not surface-coated, but inpregnated with a specially formulated quick-acting chemical.

Because it is impregnated, both sides of the paper are equally effective and cannot damage critically-machined surfaces by contact abrasion

or by depositing loose powder particles. Similarly, it will not adhere to the packaged article when wet and the preparation cannot be rubbed off.

The new paper prevents rust on ferrous metals by giving off a rust inhibiting vapour which is effective up to a distance of at least 12 in. It is claimed to be particularly suitable for export packaging since it resists corrosion even under conditions of high humidity. The paper is suitable for a wide variety of applications. For example, in the engineering and motor industries, where manufactured or part finished components are packed before storage or despatch.

Manufacturers:

Leonard Stace Ltd.
Cloucester Road,
Cheltenham,
England.

AUTOMATIC CAN-MAKING MACHINE

An automatic can-making machine, which can be quickly converted to handle different sizes is being produced by a British firm.

It has a variable speed drive to allow the rate of production to be adjusted to suit individual requirements up to a maximum of 150 cans per minute. The machine can handle cans between 211/16 in. and 7 in. in diameter and between 2 in. and 9 in. high. For irregular shaped cantainers the machine can handle a maximum blank length of 22½ in.

The hopper for the body blanks has a suction feed from an integral vacuum pump. From the hopper, blanks pass through a flexing and grain breaking attachment with an independent motor drive, to two reciprocating feed bars with spring loaded "fingers". These carry the blank through each station on the machine.

The first station performs the notching operation, but hole piercing operations to suit the can being manufactured can also be incorporated if necessary.

The blank next passes to the hook forming station, where hooks are formed on left and right hand edges. The blank is then taken through a fluxing station where flux is applied in the correct position for subsequent soldering either on the inside or outside of the seam. If soldering is not required an automatic nozzle applicator can be fitted at this station to apply side seam cement in a warm state.

In the final body forming station the blank is wrapped round a stationary mandrel by body forming wings. The mandrel expands to engage the two hooks and contracts to release the body after the hooks have been closed by an anvil to form the side seam.

Manufacturers and their agents or representatives:

Moon Bros. Ltd.,
Beaufort Road,
Birkenhead,
Cheshire,
England.

Francis Klein & Co. Pvt. Ltd.,
1, India Exchange Place,
Calcutta.

For further information, where the names of local agents of the manufacturers are not given, please contact the nearest office of the British High Commission, Economic & Commercial Division, in India. The addresses are: Minister (Economic & Commercial), British High Commission, Economic & Commercial Division, 1, Harrington Street, Calcutta-16; Counsellor (Commercial), British Deputy High Commissioner, Mercantile Bank Building, Mahatma Gandhi Road, Bombay-1; and British Deputy High Commission, Economic & Commercial Division, 6, Armenian Street, Madras-1.

THE PROBLEM SOLVING INSTITUTE

The primary function of the Industries department is to spark and foster industrial development and in this task, the officers of the department have a vital role to play; it should be their endeavour to render effective and fruitful service to intending entrepreneurs by affording proper guidance that would successfully lead them to establish industrial units. This important aspect of their duty was emphasized by Sri T. A. S. Balakrishnan, Director of Industries and Commerce, Madras, when he inaugurated on 8—8—1965 the problem Solving 2-day Institute organised for the Officers of the department.

Heads of the other departments were invited to participate in the seminar and explain their functions and work where these had a bearing and in so far as they related to industries. The Commissioner of Labour, Deputy Chief Inspector of Factories, Assistant Director of Public Health, Officers from the Small Industries Service Institute, National Small Industries Corporation and National Productivity Council took part in the proceedings. The novel seminar was also of the nature of a 'help toward self-help' forum in as much as it provided an opportunity to the junior officers to get together with the experts, senior officers and colleagues of the department to exchange ideas with them and get clarifications and solutions for the problems which usually or unusually confront them in their day-to-day official works.

The Director of Industries and Commerce in his inaugural address impressed upon the officers their primary duty of affording quick and through guidance to the public who seek their service and told them that any delay or 'run-around' treatment would only cause annoyance and put out the enthusiasm of the entrepreneurs in starting new industries. He stated that, though the details about the rules, regulations and procedures were available in a large number of publications, the public approached with the good hope of getting the desired information across the table of an officer. In order to be of fruitful service to such people, the Director said, the officers of the department should essentially equip themselves with all the necessary information as to advise them on all matters relevant to the setting up of industries. The Director of Industries reite-

rated that the successful functioning of an officer depended upon the amount of background and knowledge and experience that he was able to secure and also on his adequate response and prompt service to the needy public. He expressed the hope that the information and knowledge obtained in the seminar, which was primarily arranged to acquaint the junior officers with the various works and activities of the department, would be of practical use to all the officers in running their units very efficiently, in rendering good service to the public and gain credit for themselves as well as for the Government.

In the basic Session of the Seminar, instructive lectures touching almost all the points relating to the rules and regulations, the procedures to be followed on various matters in their official works were given by the senior officers of the department. The subjects covered in the lectures included Office Administration, Controlled Commodities, Imports and Exports, Small Industries and Defence Orders, Industrial Estates, Role of the Construction Branch, Handicrafts, Industrial Co-operatives, Cost Accounting and Production Planning, Registration of Industrial Units and State aid to industries.

In the Course Session, Officers of other departments spoke on the problem of Labour, Employment Opportunities, Factories Act, Public Health in Fatories, Role of the National Small Industries Corporation and the Small Industries Service Institute.

The Role playing Session of the Seminar provided an interesting round-table discussion on the problems encountered by an intending entrepreneur in starting an industry-from idea to running.

The Problem Solving 2-day Institute concluded with the valedictory address by Sri. R. Venkataraman, Minister for Industries who exhorted the officers of the Industries department to keep abreast of the developments and to render proper and prompt service to entrepreneurs on all aspects of setting up industries. The Minister complimented the officers for the achievements made so far.

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Industrial Estate,
Guindy, Madras-32.

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   By post ... Rs. 2.60

* (Published by the Central Small Industries Organisation, Government of India, New Delhi).

LIST OF INDUSTRIES IN RESPECT OF WHICH APPLICATIONS FOR LICENCES UNDER THE INDUSTRIES (DEVELOPMENT AND REGULATION) ACT, 1951 MAY ORDINARILY BE REJECTED WITHOUT REFERENCE TO THE LICENSING COMMITTEE TILL THE 31st DECEMBER, 1965.

A—ENGINEERING INDUSTRIES

1. Adding and calculating machines.
2. Aerial—net type.
3. Aerial—telescope type (except expansion schemes)
4. Agricultural tractors.
5. Air compressors (expansion schemes for compressors upto 700 cfm. will be permitted).
6. Air conditioning and refrigeration machinery for industrial use, including water coolers and ice plants.
7. Amplifiers (P.A. equipment).
8. Antimony (except for expansion schemes).
9. All automobile ancillaries except the following :—
   - (*i*) Bus body and specialised bodies for trucks and truck-mounted equipment.
   - (*ii*) Carburettors.
   - (*iii*) Control cables.
   - (*iv*) Door locks and locking devices.
   - (*v*) Drag links.
   - (*vi*) Flywheel magnetos.
   - (*vii*) Front suspension and springing.
   - (*viii*) Shock absorbers.
   - (*ix*) Tie rod ends.
   - (*x*) Wiper arm blades.

   (expansion or diversification in the range of the same products of the existing units will be considered)
10. Automobile leaf springs.
11. Ball and roller bearings (except expansion schemes for making uneconomic units economic).
12. Bare copper conductors.
13. Bare copper strips.
14. Bicycle and bicycle parts (except when expansion of bicycle tube valves is desirable for making the unit an economic one).
15. Bifurcated rivets.
16. Bolts, nuts and rivets.
17. Brass / copper extruded pipes and tubes / extruded rods and sections and sheets / circles/strips.
18. Builders hardware.
19. Car lifts.
20. Cast iron castings industry (commercial castings for sale to public).
21. Cast iron pipes including sun pipes.
22. Chaff cutter blades.
23. Cinema arc carbon.
24. Circles / sheets and rods of stainless steel.
25. Coal washery plants.
26. Coated abrasives.
27. Collapsible tubes and rigid containers.
28. Commercial (Vehicles except expansion schemes).
29. Conductors (ACSR/ AA).
30. Conduit pipes.
31. Conveyors (except diversification).
32. Conveyor belting.

33. Copper wire for non-electrical purposes.
34. Cotton and hair belting.
35. Data processing machines (except for expansion and diversification of existing units).
36. Diamond drill bits.
37. Domestic utensils.
38. Domestic refrigerators.
39. Drums and barrels and tin containers excepting those for manufacturers' own consumption.
40. Dry battery.
41. Electric fans.
42. Electric lamps- GLS and others.
43. Expanded metal.
44. Ferro-manganese.
45. Flash light and torch containers.
46. Fluorescent lamps.
47. Fork lift trucks and the like (expansion or diversification in the range of the same products of the existing units will be considered).
48. Grinding wheels.
49. Hand—stapling machines.
50. Heavy earth-moving equipment (only shovels).
51. Hollow ware and tubular rivets (except expansion of the existing units).
52. Household appliances (such as electric irons, heaters and the like).
53. H. T. bolts and nuts (except expansion).
54 Hurricane lanterns.
55. H. T. Switch—gears 33 K. V. and above.
56. Industrial fans and blowers.
57. Internal combustion engines including petrol / kerosene and marine engines (except expansion schemes).
58. Jeep type vehicles.
59. Kerbside petrol pumps.
60. Metal clad electrical switches upto 200 amps.
61. Meters-single and polyphase.
62. Miniature lamps (except automobile headlight lamps).
63. Motor Cycles, Scooters, Mopeds Autocycles and three wheelers (except expansion schemes).
64. Non-ferrous alloys.
65. Non-ferrous castings (including pressure die castings).
66. Oil filter elements.
67. Paper and pump making plants upto 50 tons per day capacity including wire cloth for paper machinery.
68. Passenger cars and station wagons.
69. Plates and sheets (MS) (excluding cold rolled sheets).
70. Power tillers (except expansion of existing units).
71. Pressure gauges.
72. Railway wagons (except expansion schemes).
73. Razor blades (except expansion of existing units).
74. Road rollers (expansion of existing units will be considered).
75. Roller chains for automobiles, motor cycles and scooters, etc.
76. Rolling shutters.
77. Room air-conditioners.
78. Rubber-ply transmission belting.
79. Solvent extraction plants.
80. Saws of all types including hacksaw blades.
81. Sealed compressors.
82. Sewing machines-domestic and parts thereof; and sewing machine needles both domestic and industrial.
83. Steel pipes and tubes (welded) -excepting expansion schemes of existing manufacturers.
84. Steel Sheets (black)-Galvanising and corrugation of (except for main producers).
85. Steel measuring tapes.
86. Steel-rerolled products including wire rods.
87. Steering wheels for automobiles.
88. Storage battery.
89. Stranded wire.
90. Sugar mill machinery (except milling plants and centrifugals).
91. Tea processing machinery.
92. Tin plates.
93. Trailers (except expansion of existing units).
94. Tungsten carbide tips and intermediates thereof.
95. Tungsten wire filaments.
96. Twist drills.
97. Typewriters (except expansion).
98. Utensils of stainless steel.
99. Vacuum cleaners.
100. V. I. R. & P. V. C. Cables (except power cables).
101. Washing machinery (except industrial washing and dry cleaning machines).
102. Water meters (except expansion schemes).
103 Welding electrodes (except expansion of existing units).
104. Welded wire mesh.
105. Winding wires.
106. Wire - M. S. Med / H. C. & Special wire
107. Wire nails.
108. Wire ropes (except expansion schemes).
109. Wood screws.
110. X-ray equipment (except expansion).
111. Zinc sheets / strips.

B—NON-ENGINEERING INDUSTRIES

1. Abrasive grains.
2. Acetic acid.
3. Activated bleaching earth.
4. Art silk weaving, hosiery, twisting, doubling and synthetic yarn crimping/ stretching by other than primary yarn manufacturers.
5. Asbestos cement products and sheets
6. Az-o dyes.
7. Barium carbonate.
8. Barium Chloride.
9. Barium nitrate.
10. Barium sulphate.
11. Basic dyes.
12. Beer.
13. Beta naphthylamine.
14. Bichromates.
15. Blanc fixe.
16. Bleaching powder.
17. Blow-moulded containers and other similar products manufactured by the blow moulding technique which is normally called extrusion blow moulding and which consists of extruding a tube into a mould and blowing air to form the finished product.
18. Borax and boric acid.
19. Bottles and vials (excluding penicillin vials).
20. Brake fluid.
21. Calcined petroleum coke.
22. Calcium carbide.
23. Calcium carbonate (precipitated and activated).
24. Camel back.
25. Camphor.
26. Carbon black.
27. Carbon - dioxide gas (other than by-product carbon - dioxide).
28. Card staves.
29. Cashew kernels (applications from new areas to be considered on merits).
30. Cellulose acetate flakes for moulding powder.
31. Cellulose film (cellophane).
32. Chip Board (Particle board).
33. Copper sulphate.
34. Cosmetic and toiletries.
35. Cotton mesh fabrics.
36. D. D. T. (excepting for expansion).
37. Detonators.
38. Dissolved acetylene gas.

39. Drugs and Pharmaceuticals:.
    (*i*) Antibiotics - penicillin, stepto-mycine and tetracycline (expansion for expansion).
    (*ii*) Bismuth salts.
    (*iii*) Chloral hydrate.
    (*iv*) Empty hard gelatine capsules.
    (*v*) Salicylic acid-sodium salicylate, acetyle salicyclic acid.
    (*vi*) Sulpha drugs.
    (*vii*) Surgical adhesive tapes.
40. Dyes-all types falling under Sch. Ind. No. 21 (including Vat dyes).
41. East Indian tanned (semi-tanned) kips and skins.
42. Fast colour bases.
43. Fire works and paper caps.
44. Gelatine (edible, photographic and technical, except pharmaceutical).
45. Glass, mineral wool and allied products.
46. Glass fibre and products thereof.
47. Glass-hollow-ware (semi-automatic).
48. Glass shells for tubes and lamps.
49. Glass-table and pressed ware.
50. Glass tubes for fluorescent lamps.
51. Glass tubes and rods, sheet glass, glass-bottles, wired/figured and rolled glass.
52. Glass-ware-laboratory.
53. Glazed tiles.
54. Graphite electrodes.
55. Greases (except for speciality greases).
56. Grinding wheels.
57. H. T./L. T. Insulators.
58. Hoses (vacuum brake).
59. Hoses-other types.
60. Hydrogen peroxide.
61. Industrial explosives.
62. Items produced by the compression moulding technique such as bottle caps, buttons, lamp shades, etc.
63. Jute bobbins.
64. Jute shuttles.
65. Laminates (industrial and decorative including malamine laminates).
66. Lead oxides.
67. Manganese dioxide.
68. Manufacture of polyester sheets for buttons and the processing of these sheets so produced to manufacture buttons.
69. Matches-safety.
70. Menthol.
71. Methanol.
72. Midget electrodes (electrodes for battery cells).
73. Mono-filaments from polyolafins.
74. Myrobalan extract.
75. Naphthols.
*76. Newsprint.
77. Nitric acid.
78. Nylon textile yarn.
79. Organic pigments.
80. Oxygen gas (as applied for cutting and welding for steel only).
*81. Paper and paper board.
82. Penicillin vials.
83. Pesticidal formulations (except formulations based on Melathion).
84. P. F. moulding powder.
85. Phenol.
86. Photographic raw film and paper.
87. Phthalic anhydride.
88. Pitch fibre pipes.
89. Polyethylene films (i. e. films with a thickness of less than 1 mm and products made from the films such as bags, etc.).
90. Polypropylene.
91. Potassium chlorate.
92. Potassium permanganate.
93. Processing (including printing) of cotton textiles.
94. P. V. C. (except for expansion).
*95. Pulp (Paper and rayon grade).
96. Rayon tyre and cord yarn.
97. Reclaimed rubber.
98. Refractories.
99. Refrigeration gases.
100. Rubber accelerators and antioxidants.
101. Safety fuse.
102. Sanitary ware.
103. Soap (except for expansion of uneconomic units).
104. Sodium aluminate.
105. Sodium bicarbonate.
106. Sodium hydrosulphite and derivatives.
107. Sodium sulphite, bi-sulphite and sulphide.
108. Sodium thio sulphate.
109. Spectacle frames made from sheets by the fabrication technique or by injection moulding.
110. Sulphuric acid.
111. Sulphuric black.
112. Sulphur dioxide.
113. Sulphur dyes.
114. Synthetic rubber (SBR types).
115. Synthetic tops.
116. Textiles made of art silk.
117. Tyres and tubes (automobiles).
118. Tyres and tubes (Bicycles)
119. Vacuum flasks.
120. Vanaspathi (except expansion of small and medium size units to achieve economic capacity).
121. Various finished products which could be manufactured from expanded (foamed) polystyrene beads.
122. Vegetable oil industry (oil milling).
123. Viscose filament yarn.
124. Viscose tyre yarn.
125. V & Fan belts.
126. Wood tops.
127. Woolen and shoddy yarn (except expansion schemes).
128. Woolen / worsted cloth.
129. Worsted yarn.
130. Zinc oxide.

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* Applications for substantial expansion from existing units as well as applications for setting up of new units in areas, where raw materials resources have remained untapped, would be considered on merit.

AN ILLUSTRATIVE LIST OF INDUSTRIES IN RESPECT OF WHICH APPLICATIONS FOR LICENCES UNDER THE INDUSTRIES (DEVELOPMENT & REGULATION) ACT, 1951 WILL BE CONSIDERED ON MERITS TILL 31st DECEMBER, 1965.

ENGINEERING INDUSTRIES

1. Agricultural machinery (except tractors and power tillers)
2. Air rifles.
3. Alloy steels.
4. Aluminium ingots.
5. Aluminium strips / sheets / circles / foils / extruded rods and sections.
6. Antimony (expansion cases only).
7. Automobile ancillaries :—
   - (*i*) Bus body and specialised bodies for trucks and truck-mounted equipment.
   - (*ii*) Carburettors.
   - (*iii*) Control cables.
   - (*iv*) Door locks and locking devices.
   - (*v*) Drag Links.
   - (*vi*) Flywheel magnetos.
   - (*vii*) Front suspension and springing.
   - (*viii*) Shock absorbers.
   - (*ix*) Tie rod ends.
   - (*x*) Wiper arm blades.
8. Barbed wire.
9. Biscuits & bread making machinery.
10. Boats and crafts.
11. Boilers.
12. Ceramic machinery.
13. Chemicals & pharmaceutical plants & equipments.
14. Chip board and fibre board plants.
15. Cigarette making and tobacco machinery.
16. Crawler tractors.
17. Dairy machinery.
18. Electric furnaces.
19. Electric motors (above 10 H. P.)
20. Electric transmission line hardware (high & low voltage).
21. Electrical measuring instruments.
22. Electronic components.
23. Electronic measuring & testing equipments.
24. Ferro-silicon and ferro alloys (excluding ferro-manganese).
25. Flour mill machinery.
26. Fractional horse power motors.
27. Garage equipment (except jacks and lifts and hoists).
28. Grinding media balls.
29. Hand tools, namely spanners, wrenches and pliers (all types), sockets, hammers and screw drivers.
30. Harvesters and the like (excluding agricultural tractors and power tillers)
31. Heavy earth moving equipment (except shovels):—
   - (*i*) Crawler tractor.
   - (*ii*) Motorised dumpers.
   - (*iii*) Motorised scrapers.
   - (*iv*) Motorised graders.
   - (*v*) Dump trucks.
   - (*vi*) Loaders.
   - (*vii*) Wheeled dozers.
32. Industrial centrifuges.
33. Industrial gas plants.
34. Industrial sewing machines and sewing machine parts.
35. Jute machinery:
   - (*i*) Carding engines.
   - (*ii*) Drawing frames.
   - (*iii*) H. S. Centrifugal spinning frames.
   - (*iv*) H. S. High draft first drawing frames.
   - (*v*) H. S. draft second drawing frames.
   - (*vi*) Jute machinery and parts (including 10 Jute sliver spinning frames).
   - (*vii*) Self doffing sliver spinning frames.
   - (*viii*) Spinning frames.
36. Light house equipment.
37. Machine screws (socket head, allen and other specialised types)
38. Machine tools.
39. Malleable cast iron castings.
40. Malleable pipes fittings.
41. Medical/surgical instruments equipment and appliances.
42. Metallurgical machinery.
43. Oil firing equipment.
44. Oil separators.
45. Oxygen & acetylene plants.
46. Paper & pump making plant (above 50 tons capacity).
47. Photoflash lamps.
48. Pig iron.
49. Plastic industrial machinery.
50. Power-driven pumps.
51. Power factor correction capacitor.
52. Power rectifiers.
53. Rolls.
54. Rubber machinery.
55. Scooters and auto-cycles.
56. Shots and grits.
57. Small tools (threading tools, milling cutters & reamers).
58. Speed reduction units.
59. Steel castings.
60. Steel files.
61. Steel forgings (proposals for producing heavier forgings only).
62. Steel ingots/billets (by concast and electric furnace).
63. Steel pipes and tubes (seamless and expansions in welded to make existing units economic).
64. Steel structurals.
65. Steel strips-cold rolled.
66. Switchgear and control gear (below 33 K.V.).
   - (*i*) H. T. Switchgear (below 33 K.V.)
   - (*ii*) Iron clad switches and switch-fuse units.
   - (*iii*) L. T. Switchgear.
   - (*iv*) Motor control gear.
67. Textile machinery.
68. Tool bits (lathe tools).
69. Transformers.
70. Transmission line towers (expansion only).
71. Well-boring equipment.

NON-ENGINEERING INDUSTRIES

1. Activated Carbon (only superior grade).
2. Alcohol-industrial.
3. Bromine.
4. Canned fruits and fruit products.
5. Cement.
6. Chlorinated parafin.
7. Cocoa Powder.
8. Cotton seed oil.

9. Dextrose powder.
10. Essential drugs & pharmaceuticals.
11. Fatty Acids.
12. Glycerine.
13. Liquid glucose.
14. Metallic stearates.
15. Milk powder.
16. Nitrogenous fertilisers.
17. Paints, enamels and varnishes.
18. Sodium cyanide, potassium cyanide, double cyanide of sodium and potassium ferro-cyanide and ferri-cyanide, etc. (by producers of acrylic plastics only).
19. Pressed porcelain excepting insulators.
20. Solvent extraction of oil cakes / rice bran.
21. Superphosphates (applications are to be considered only where by-product sulphuric acid is available).
22. Urea (technical grade).

LIST OF LICENCES ISSUED UNDER THE INDUSTRIES (DEVELOPMENT & REGULATION) ACT, 1951 DURING THE MONTH OF JULY, 1965

IN MADRAS STATE AND PONDICHERRY ONLY

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. 24 (1)—Paper-writing, printing and wrapping			
Seshasayee Paper & Boards Ltd., Pallipalayam P. O., Salem Dist. (Pallipalayam)	Printing and writing paper ...	tonnes p.a. ... 6,400	L/24(1) (102)/SE/65 LI (III) 28-6-65
	Pulp ... ... (S. E.)	... 6,400	
Schd. Ind. No. 8 (C-3)—Grinding wheels and abrasives			
Corborundum Universal Ltd., Madras. (Madras State)	Grinding wheels and other bonded-abrasives ... (S. E.)	tons p.a. 700	L/8(C-3)(1)/LEI (B)/65 2-7-65
Schd. Ind. No. 4 (2)—Internal Combustion engines			
The Enfield India Ltd., Post Bag No. 5284, Tiruvottiyur, Madras-19. (Madras State)	Engines for industrial, agricultural and other applications... (S. E.)	nos. 40,000 p. a. on double shift	L/4(2)/11/EEI/65 29-6-65
Schd. Ind. No. 19 (14)—Miscellaneous Chemicals			
Indian Oxygen Ltd., 48/1, Diamond Harbour Road, Calcutta-27. (Madras).	Oxygen—per annum after expansion ... ... (S. E.)	m. cu. ft. ... 100	L/19(14)/8/65—LI(I) 25-6-65
Schd. Ind. No. 23 (1)—Cotton Textiles			
Shri S. Sivaraman, 94, Perumal Koil Street, Pondicherry. (Pondicherry)	Manufacture of cotton yarn ... (N. U.)	spindles 12,000	L/23(1)/994/Tex (H)/65 12-7-65

(*Contd.*)

(*Contd.*)

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. 25—Sugar				
The Deccan Sugar & Abkhari Co. Ltd., Managing Agents: M/s. Parry & Co. Ltd., P. B. No. 12, Madras. (Pugalur, Tiruchirapally District)	Sugarcane per day after expansion (S. E.)		tonnes 1,500	L/25/N-109/65 28-6-65
New Horizon Sugar Mills Ltd., P. B. No. 29, 25, Rue Francis Martin, Pondicherry. Sacrur (Ariour), Pondicherry.	do	do	1,500	L/25/N-111/65 28-6-65
North Arcot District Co-operative Sugar Mills Ltd., Vadapudupet, North Arcot Dist. (Vadapudupet, North Arcot Dist.)	do	do	1,250	L/25/N-130/65 6-7-65
Kallakurichi Co-operative Sugar Mills Ltd., Moongilthurapattur P.O., Kallakurichi, South Arcot Dist. (Moongilthurapattur, Kallakurichi, South Arcot Dist.)	do	do	1,250	L/25/N-131/65 6-7-65
Schd. Ind. No. 36 (3)—Matches				
Garmegam Match Works, P O. Box No. 17, Sattur. (Ellayirampannai)	Safety matches ... (C. O. B.)	...	p. a. 2,16,000 gross boxes of 50's	L/36(3)/3/65-L, Ind. II 1-7-65
Schd. Ind. No. 1-A (7)—Other products of Iron and Steel				
The Indian Steel Rolling Mills Ltd., Oriental Buildings, 108, Armenian Street, Madras-1. (Madras)	Continuous wire rod mill (Shifting of a part of the undertaking from Nagapatnam to Madras) (Shifting)			L/1 A(7)/N-297/65 22-7-65
Schd. Ind. No. 23 (1)—Cotton Textiles				
Annamalaiar Mills Private Ltd., Dindigul. (Madras State)	Manufacture of cotton cloth ... (S. E.)		Automatic looms 100	L/23(1)/989/65/Tex(H) 27-6-65

STATEMENT SHOWING LETTERS OF INTENT ISSUED DURING THE MONTH OF JULY 1965 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			Letter (of intent) No. and date
Tube Products of India, 52/53, Jehangir Street, Madras-1. (Madras State)	E. R. W. Steel tubes (S. E.)	...	tonnes p. a. 21,000	No. E. I. (M)-7 (32) (2124/1964)/64 29-6-65
Rambal Private Ltd., Lattice Bridge Road, Adyar, Madras-20. (Thiruvanmiyur)			capacity p. a. lakhs Nos.	
	Taps ...	...	2·50	5-41/64-MEI 13-7-65
	Threading dies ...	...	1·00	
	Chasers ...	...	0·20	
	Machine slitting saws (N. U.)	...	1·00	

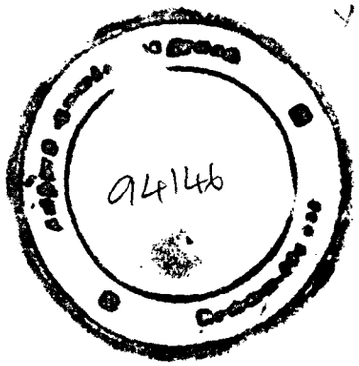
STATEMENT SHOWING THE CHANGES EFFECTED IN THE NAMES OF OWNERS UNDERTAKINGS DURING THE MONTH OF JULY 1965

Licence No. and date	Name of the original owner/ undertaking	Name of the new owner/ undertaking
L/23(1)/652/64-Tex (B) 18-1-64 (N. U.) (Madras State)	*Licensee* Shri P. S. Rangaswamy, Coimbatore.	*Undertaking* M/s. Sri Sathyanarayana Spinning & Weaving Mills Limited.
L/1 A (7)/5/61-EI (M) 8-6-61 (N. U.) (Madras State)	M/s. Walker & Creig (Coonoor) Private Ltd., Nilgiri.	*To be implemented by*: M/s. Shaw Wallace & Co. Ltd., Calcutta.

STATEMENT SHOWING THE LICENSES REVOKED DURING THE MONTH OF JULY 1965

Licence No. and date	Name of the party	Article of manufacture
L/28/4/55 L/10 (2)/3 21-7-55 (N. A.) (Madras) (Surrendered)	M/s. Addison & Co. Ltd., Madras-2.	Compression sprayers, wheel barrow type sprayers, Rocker sprayers, Rotary dust guns, power driven pumps.

JL
V8m2W, N46
K/S 3



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