

our import substitution programme

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The West Coast Paper Mills, Dandeli, in the attempt of 'Import Substitution', considered the problem in three aspects namely, by casting or fabricating an identical part, by reconditioning worn out imported parts and by selecting an alternative material. What has been done in Mills Workshop and other indigenous manufacturers has been described section-wise in detail. The results achieved are encouraging. Indigenous manufacture of felts & wires is briefly dealt.

India is on the road to industrialisation. But to-day's economic condition, the after-effect of devaluation, the rising cost of commodities, the shortage of foreign exchange, the high cost of production etc. have compelled us to orientate our thinking in a different way. The way in which we can utilise our human resources, our skill and talent, our personnel and workers and to make best use of our machinery and equipment, our money and material, so that we need not depend on foreign countries for food and material, commodities and machineries etc. No country can be fully industrialised unless its each industry can grow and develop on its own. So long, the major industries of our country used to depend mainly on imported equipment and spare parts. But it is high time that we produce our goods without depending on foreign countries i.e., to go ahead for import substitution.

Concentrating my attention to Paper Industry, I would like to state about West Coast Paper Mill's Ltd. only. In fact, we are very much conscious about 'Import Substitution' for the past few years.

How an imported item can be substituted? We consider the following :

- (i) by casting or fabricating an identical part,
- (ii) by reconditioning worn-out parts which were originally imported.
- (iii) by selecting an alternative type of material in making a part, which was originally imported.

When any spare is required, firstly we consider if it can be manufactured in our Workshop. If not, we try whether it can be manufactured in neighbouring workshops. If not we send our enquiry to different paper mill plant manufacturers. If it is not available in India, our last resort is to go for import.

To implement the ideas, we first take the drawing of the Spare Parts. Drawing is taken from the Spares, which are kept in Stores. In some cases, when the plant is shut either for over-hauling or changing machine clothing or forced shut, we take the drawing of required equipment or spare parts. When we receive any new equipment or spare parts from abroad, we take the drawing before installing the equipment or parts. Whether the spare parts or equipment is manufactured in our workshop or in neighbouring workshop or procured from market, we are to complete the drawing in all respects, including material specification.

Our workshop is reasonably big one, where job planning is done well in advance and job orders are attended to very efficiently. For the expansion of our workshop, we are trying to get a bigger lathe, dynamic balancing machine etc. Every job is inspected by the concerned Departmental head. We are having Metal Spraying Equipment for reconditioning the worn-out parts and thereby we save the expenses of getting a new part. We are also reconditioning Refiner Rotors. The cost of each job is also calculated. The following are some of the items manufactured in our workshop.

Pulp Mill Dept :

- (1) Chipper Fly Knives—Experimental
- (2) Chipper Dead knives—Experimental
- (3) Chain Links for Bamboo Conveyor
- (4) Wear Plates for Chipper
- (5) Re-Chipper Screen
- (6) Pulp Valves
- (7) Sprockets for B. S. Washers
- (8) Steam Ejector for Chlorine Gassifier
- (9) Shaft for Agitators
- (10) Centri-Cleaner for Unbleached Pulp

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Paper Machine Dept :

- (1) Spring Plates for Breast Roll
- (2) Shaft and Impellers for various pumps
- (3) Bearing Housing for Strainer Gear Box
- (4) Felt Conditioner Shoes
- (5) Drive Sprockets for Save-All
- (6) Edge Cutter Nozzles
- (7) Wire Tension Brackets
- (8) Staff Valves
- (9) Register (Fourdrinier) Rails
- (10) Dryer Cylinder End Cover

Soda Recovery Dept :

- (1) Shaft and Impeller for various pumps
- (2) Agitators
- (3) 2nd I.D. Fan Rotor
- (4) Tyres for Lime Slacker
- (5) Soot blower inlet valve
- (6) Mandrells for Tube Expanders
- (7) Various sprockets and gears
- (8) Tomlinson Boiler Gauge Glass Assembly
- (9) Spares for Spray Gun
- (10) Surface Condenser

Our effort is equally vigorous in getting equipment and spares fabricated from neighbouring workshops or procuring them from any part of India. So far, we have used a number of such items, some of which are named below :

Pulp Mill :

- (1) Chipper knives, (2) Positive Feeding Device for the Chipper, (3) Grinding Wheels for Grinding Chipper Knives, (4) Rechipper Screen, (5) Screen Insert for Centrifugal Screen, (6) B.S. Washer (Dorr-Oliver's), (7) Kirloskar Compressor, (8) Stock Valves, (9) Pumps for Bleach Liquor, Caustic solution etc., (10) Vacuum Filter Suction Head, Spur Wheel, Trunion Journal etc.

Paper Machine :

- (1) Various Stock Valves, (2) Various pumps, impellers etc., (3) Suction Box and tops, (4) Paper Machine Wires, (5) Strips for Doctor Blades, (6) End cover for Dryer Cylinder, (7) Tambour Roll, (8) Drive belt conditioning and jointing solution, (9) Knives for Rewinder and slitter and sheet cutter, (10) Compressors etc.

Soda Recovery :

- (1) S.S. Impellers, (2) Evaporator and Surface Condenser tubes, (3) O.D.S. Pumps, (4) Air Ports—Primary and Secondary, (5) Soot Blower parts, (6) Geared Motor, (7) Audco Valves, (8) Lime Slaker, (9) Various sprockets and gears, (10) Compressor etc.

The manufacture of paper machinery is a special field of engineering ; requirement of a particular mill is so varied and specific that a plant and machinery manufacturer is to give utmost consideration in the lay-out, design and construction. Unlike a factory producing serial machines or meant for mass production a factory making parts, components or equipment for a paper mill requires a large project and design staff and it will have to conform to the demands of individual mill.

Ever since the first paper machine was built, there are so many improvements and modifications in its design, layout ; items of equipments that it is not an easy job to manufacture standardised items which can serve all the Paper Mills. But the time has come now for Plant & Paper Machineries manufacturer to give serious thought about how far standardisation can be effected so that his factory can produce goods at a less cost and serve various paper mills of India. In fact this requires a well planning and experience. I believe, organisations like Bertram-Scot (Ind.) Pvt. Ltd., Calcutta, M/s. Paper Mill Plant & Machinery Ltd., Bombay, Utmal, Kansbahal, M/s. Tata Johnson, Jamshedpur or Walchandnagar Industries Ltd., Walchandnagar etc. are working on the above lines.

While trying with indigenous product, we find the cost of the same is high in comparison with imported item and also the quality is inferior. Paper Mill Plant Manufacturer should consider the following points :—

- (1) Improvement of product quality and standards
- (2) Reduction in operating costs and losses
- (3) Reduction in production line obstacles and down-time losses
- (4) To improve production
- (5) To eliminate unnecessary works and waste control.

While we are on Import Substitution Programme, some times we find difficult to get a particular item.

in its exact material. Say for Chipper Knives, we know the material is alloy steel and brinell hardness is 700. But we do not know the full specification of alloy-steel. So while sending our enquiries we send sample of worn out knives. Out of various chipper knives, we have received from various parties we find that the performance of more than one party is quite satisfactory.

Rewinder and Slitter knives and sheet cutter knives obtained from indigenous sources have also given satisfactory performance.

For the screen plates of Centrifugal Screen, we had to spend lots of time to select a party, who can supply the screen plates, exactly as per our specification. However, M/s. N. J. Metal Screen Mfg. Ltd., Bombay is to supply us the same. For the Cone part of Centri-cleaner, we are to substitute Ceramic for stainless steel. We are yet to get good quality chlorine valves. We have tried diaphragm type valve, S.S. Valve, but the performance is not satisfactory.

Chlorine Injector which was one of the consumable imported items is being substituted with local made injector made of polyester to be supplied by M/s. Navlakha, Poona. The solution required for jointing the joints of tiles of Bleaching Tower has been very successfully substituted.

Rotameter glass tubes, ball races and screen are not yet available from Indian market.

In the S. Recovery Dept. various parts like Primary and Secondary air-ports, soot blower, pumps, sprockets and spur wheel, gauge glass mounting, Audco-valves, Evaporator and surface condenser tubes, etc. are being made in our workshop or neighbouring workshops or procured from the market. We have fabricated one I.D. Fan Impeller in our workshop and the same has been rubberlined at Bombay.

Refractory for lining the hearth of boiler supplied by one local suppliers was not found successful. High pressure boiler valves, gauge glasses etc. are still being imported.

Coming over to the use of various pumps, we are satisfied with several manufacturers in India.

For handling black liquor, we used to import Labour Pumps having S.S. Impellers; instead we have tried S. S. Impeller of M/s. Nitin Engineering Co., Bombay which is reasonably good. Impellers

coated with S.S. supplied by another party did not give proper service.

For a Paper Mill of any magnitude, machine clothing i.e. Felts, wires, various wire covers etc. are the most important and also the maximum amount of Foreign Exchange is spent for the same. So, it is the high time, that these should be manufactured in our country. If other countries like U.S.A. where wool is imported from Australia is manufacturing felts and exporting them to various countries, then, why we in India can not do the same? It is not impossible that we can not manufacture felts in India. Thanks to M/s. Dinesh Felts, Baroda for their Giant venture to manufacture felts in India. But considering our requirement, few more mills are required to cater our needs for felts in this country.

Time has come when the so-called conventional felts are to be discarded and instead Synthetic felts are to be used for many reasons. India, with its famous textile industry and textile products and also with its Terelyne factory and wool industry can easily go ahead in manufacturing synthetic press and dryer felts. The huge amount of foreign exchange consumed every year for importing felts should be gauged and instead C.C.I. should think in granting licence to import equipment and machinery for starting felt mills in this country.

Messrs. Shalimar Wires & Industries Ltd., Calcutta should be congratulated for taking their lead in manufacturing Paper machine wires for the first time in India. With the start up of a new mill, there should always be teething trouble and M/s. Shalimar Wires & Industries Ltd. are no exception. But I had been told that with the co-operation of the user of their wires, they have come to know about the defects of their wires and in these days most of the defects are being rectified. In West Coast Paper Mills Ltd., Dandeli, while trying their wires, we have seen in 2 cases that the edges of the wires were tight and slackness in the middle and the wires creased immediately while starting the wire. On the whole, the performance is not bad and we will give our best co-operation to them.

It is pleasing to learn that M/s. Shalimar Wires & Industries Ltd. have been given sufficient licence to import phosphor bronze so that they can cater most of the needs of our country. But, I would point out, Wire Manufacturers should be very particular

in improving the quality of their products. Because of the user of paper machine wires of poor quality if the machine is to shut for frequent repairs or change of wires, it would mean the heavy down time losses.

Another factory in Jaipur has also started manufacturing wires. According to C.C.I., both these factories will be capable of meeting our demands.

But, to cater the need of various wire covers like Brown stock washer, vacuum filter, wire covers, couch broke thickener etc. few more wire manufacturers other than the two are required.

Amongst the various imported items which we have substituted for Paper Machine are Stock Pumps, Chemical Handling Pumps, Pump spares, thickener under wire, Suction Box and tops, various grinding wheels, dryer cylinder and covers, Tambour roll etc. and these are reasonably good. For Doctor Blade, we are purchasing strips of spring steel and making doctor blades as per our required sizes.

For conditioning Drive Belt we have found one solution.

We have also tried Frictional liners for Aero-Clutches. But the same is not upto our satisfaction ; because the material sintered cast iron is not being found out. The Deva Metal ring used for sealing steam in a rotary union of Dryer Cylinder is still being imported, because of not knowing the exact metallurgical specification. We find it difficult to get the same from indigenous sources. Alternatively, we are to try the same ring, made of hard carbon. Turbo Flex hose or steam expansion joints are still being imported by us, because of not getting any substitute. Suction Couch and Press Calender bowls, Rewinder and Slitters etc. are not yet being manufactured in India as far as we know.

Coming over to Instrument Spares, these are so varied and specific. It is very difficult to substitute the spares unless we change the complete equipment of indigenous make. We have already procured various types of thermometers, temperature cum pressure recorders, pH meter etc. We are quite satisfied with the Manufacturers like M/s. J. N. Marshall, Poona, Toshniwal Bros., Bombay, Krishna Instrument, Bombay. The Pressure Gauges of Guru (Larsen & Toubro) are reasonably good. We are told that M/s. Guru will like to

manufacture Diaphragm Pressure Gauge soon. The spare diaphragms which we get from various supplies seem to be very costly. Circular charts are obtained from M/s. Technograph Corp., Bombay. But, we are yet to substitute Roll Charts.

It is pleasing to note that M/s. Taylor Instruments, Fasidabad, will start manufacturing various instruments like indicator, controller, flow meter etc. M/s. J. N. Marshall, Poona or Teshniwal Bros, Bombay, Mahindra & Mahindra, Bombay etc. also can cater our Instruments requirement to a great extent.

To other items like various packings, oil seals, Gaskets, cup-packing, double cup packing, 'O' rings etc. are being obtained locally.

The various rubber lining jobs are being done by a Bombay firm which is satisfactory.

With the growth of Industry and the standard of living and increase in education, consumption of paper increases. It is therefore, the high time for Paper Mill Plant Machineries Manufacturers to increase their existing manufacturing capacity, to improve the quality of their products and also to lower the cost of production with increased efficiency. It is not necessary that big manufacturers will grow only, it is equally important that small manufacturers also can help the paper industry by serving various special spare parts or supplying prefabricated parts and auxiliary equipment to big manufacturers.

To start with indigenous products may not be as good as imported parts ; may be the cost will be more, but unless various mills at least try once with indigenous product, machineries manufacturers can never grow and develop. So, it is the joint responsibility that a Paper Mill should always come forward with such venture and give all co-operation to machineries manufacturer and try indigenous product. If the trial is successful, it is all right ; otherwise, the defects are to be pointed out to the manufacturers so that they can improve upon the quality and also reduce the cost of their product. If there is a full co-operation and good understanding between the two, I am sure that there could be 100% substitute for imported items within 5 years.