import substitution

MONI MUKHERJEE

Here are some clean indications of our potentiality to substitute imported spares etc. vis-a-vis impossibilities for substitution of some specified items.

The paper mills established so far produce mainly writing and printing papers. There is only one mill which is producing newsprint papers. All the major mills are integrated with pulp mills. The raw materials, generally available in our country, produce fibres of comparatively short lengths. As we all know the quality of the end products mainly depends on raw material, how fibres are extracted and treated and how the treated fibres are processed so as to form sheets of paper. There are certain qualities of papers which cannot be made from pulp consisting of short fibres. For manufacturing such papers, we have to import suitable pulp.

For extraction of fibres from raw materials, practically all the mills use sulphate process. Very little quantity of sulphur and or its compounds being available in our country, we have to depend on import for their chemical.

For manufacture of pulp and of paper, various types of processes are to be used. We all know that the raw materials available in our country are not the same as that available in other countries. For processing our raw materials we are more or less following the processes used in other countries. We then depend on imported knowhow.

Machinery is required to carry the processes. Hitherto practically all kinds of machinery had been imported. A few foreign firms have however established their manufacturing units in our country, but all the designs are still imported and all kinds of machinery and spares are not yet available.

The machinery is operated by persons who have got no engineering training. The paper industry has been established and developed by foreigners and the way of manning the machinery practised by them is still followed. This is an imported idea and that is the first thing to be substituted. The present operators should be given necessary engineering training to let them know what they are handling and how these are to be operated. The breakdowns will definitely be minimised. We may not at the present moment so much substitute the import but we can definitely reduce the volume of import.

The scientists at first invent a process and then engineers design suitable machinery to carry the process. Almost anything may be manufactured by the team, but the main aim of any industry is to manufacture a thing which can earn profit. For this purpose, the scientists and the engineers have to compromise. The scientists have got wide scope to modify the process, but the engineers have limited scope to manufacture machinery due to limitation of facilities available in our country. At present, the following facilities and materials are not available.

1. Balancing machine for balancing rolls etc.
2. Stainless steel for not only to increase the life. of machinery but also to reduce contamination.
3. Chilled cast iron rolls.
4. Big lathes and grinders for M.G. Cylinders.
5. Foundry to cast M.G. Cylinders, roll shells etc.
6. Heavy antifriction bearings.
7. Copper, zinc, tin, lead, nickel, chromium etc (some are available only in limited quantity).

Instead of discussing all items which are imported, let us restrict ourselves to machinery only and proceed from one section to the other of a paper Mill integrated with its own pulp mill. Raw Material preparation plant—Bamboo is the main raw material. In order to facilitate quick and uniform delignification by digestion, the bamboo has to be reduced to small uniform pieces of chips. Wood chippers are used to chip bamboo and such chippers are now manufactured in our country. There are points for and against use of such chippers. But until something better is available we have to remain satisfied with the present equipment. To manufacture chippers, antifriction bearings have yet to be imported. Special steel is required for the knives ; this steel has also to be imported, but there is every likely that such steel will be available locally in near future.

The present method of chipping dry bamboo produces appreciable quantity of slivers and dust. These are

screened out and uptil now, these are not utilised. The loss is appreciable. In case, the scientists develop some process and say that chips from green bamboo will be suitable, the wastage as slivers and dust will be greatly reduced and the life of knives will be longer. It may even be possible to use knives made of steel available in our country. Screens are now manufactured in our country, but with imported antifriction bearings.

Delignification plant—Digestors are used for delignification. Generally vertical digestors suitable for batch operation with direct indirect heating system is used. Such digestors are available locally. Two continuous type digestors of Kamyr design are now being installed —one at Ranigunj and another one at Kankinara. These are designed to deal with bamboo, hardwood etc. At Belagola continuous type digestor of Pandya design was being used for digesting bagasse. It is not possible for us yet to manufacture continuous type digestor to deal with bamboo, hard wood etc. Blow tanks, heat recovery equipment may be manufactured locally.

Screening and washing plant—suitable equipment are now available in our country, but the wires are yet to be imported.

Bleaching plant—Quite a large number of equipment are available at present. It is expected that sometime next year stainless steel will be available from Durgapur. It will then be possible to manufacture all items locally.

Stock preparation plant—Hydropulpers, Beaters, Refiners etc. may now be manufactured in our country.

Paper Making Plant—(a) Constant parts—practically all items may be manufactured locally.

(b) Wire parts—it is not possible yet to manufacture majority of the parts which are required for machine with speed above 100 M/mins. Manufacture is not possible till we instal balancing machine and shell casting equipment.

(c) Press part—Same remarks as above. Stonite rolls are also to be manufactured to make us self sufficient.

(d) Dryer part—Cast iron dryers of 1250 mm. diameter are now manufactured locally, but it has yet to be observed how they behave on high speed machines.

(e) M.G. Dryer—It is not possible as yet to manufacture M.G. Cylinders locally.

(f) Calendering Machine—It is not possible as yet to manufacture the rolls locally.

(g) Drum reeling machine—This can be manufactured locally, but without balancing.

(h) Felt rolls, paper rolls for high speed machine cannot be made until we have proper bleaching machine.

Auxiliaries—Vacuum pumps, stock pumps, water pumps, drive units excepting variable speed motor, hood, suction fans, blowers etc. may now be manufactured locally.

Finishing Machines—Slitter rewinders, sheet cutters, guillotines etc. are yet to be manufactured locally.

The Facilities and the materials listed earlier are not difficult to be arranged by either public or private sectors. When we get these, quite a large number of imported machinery and components may be substituted.

With the present facilities available in our country, many a machine and components for small scale mills may be substituted. It is for this reason I plead for small scale pulp and paper making mills. Some time back, the Paper Mills Association was collecting various information regarding possibilities of import substitution I hope that this Association has formulated a scheme. We, of course, do not know as yet about the result. With co-ordinated effort, practically all may be substituted in near future, excepting anti-friction bearings ; but we may avoid such bearings in many cases.