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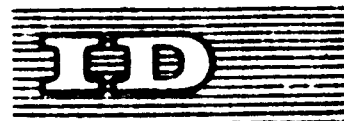
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Seminar on the Furniture
and Joinery Industries

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FURNITURE INDUSTRY IN INDIA 1/

by

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In India conventional building construction with brick masonry walling and tile roofing was in vogue up to the end of the year 1950. Because of rising standards of living crash programmes of Housing Scheme came up and reinforced cement concrete replaced the conventional type of constructions. Government sponsored forest based industries came into existence because of multiple construction activities and to further accelerate constructional activities attention had to be paid to the growing demands of a major industry like manufacture of joinery, furniture and other timber products. In recent years there has been a tremendous set back in the production of cement and iron because of acute power shortages and this has further necessitated maximisation of timber for use in the Housing Schemes for construction. This has also, in a way, helped the exploitation of the country's forests for a maximum yield.

In the Northern and Eastern parts of the country many joinery and furniture manufacturing industries have been established, the biggest being the Government Joinery Mills, Kashmir and Hindustan Housing Factory in Delhi. These factories are equipped with the modern seasoning kilns and preservative treatment plants. The machinery in these enterprises is mostly semi-automatic with high precision. There is no specific furniture manufacturing factory but both joinery and furniture manufacture is done almost on the same machinery. The Government Joinery Mill in Kashmir, considered biggest in Asia, is discussed in detail below:-

The Mill is equipped with imported Swedish machinery. There is a saw mill having two giant horizontal sawing machines and about half a dozen vertical band saws. Log pond is available for adequate storage and water seasoning of timber.

There is a lumber yard for air drying and sorting of timber also with re-sawing facilities. The seasoning chamber consists of a battery of five kilns where both hard and soft species can be seasoned. There is an impregnation cylinder for the treatment of timber. The machine halls have cross cutting machines, surface and thickness planers, five cutters and three cutter moulders, gluing wheels, tenoning machines, mortising machines, adjusting saws, knot boring machines, sanders and assembling units.

There is a separate furniture section where painting and cushioning is done. Adequate facilities for sanding and spray painting is available.

There is a pre-fabrication timber section where components of hutments are made under close factory supervision.

RAW MATERIAL

In almost all parts of the country the raw material for joinery manufacture is the teak wood (*tectone grandis*). This is one of the species of hardwoods available in abundance in the country. In conventional panelled doors, teak wood is used for styles, tops, bottoms, lock rails, and even as panels. In other form of door manufacture only the honey-comb is made out of teak while hardwood and plywood replaces the other components. The flush door was used greatly earlier but due to the failure of plywood facings, due to monsoon rains, engineers and architects had to switch to the panelled type of doors. The life expectancy to the panelled doors with preservative treatment has been noted to be twice, and even three times, compared to the flush type of doors in practically all parts of the country. In Northern India *cedrus deodora*, a soft specie, is widely used for joinery manufacture, this being more economical than teak panelled or flush doors. The Government Joinery Mills, Kashmir, as discussed in detail earlier, utilizes *cedrus deodora* as raw material as this specie grows in abundance in this State. The joinery stock manufactured in this mill is used throughout the country. Aerolite glue, a 'CIBA' product is used exclusively. The panelled doors are manufactured out of *cedrus deodora* logs "having a grit of 55" and up, The lumber being kiln seasoned to a moisture content of 16-20% and preservation treatment given with Arsenic, Copper, Sulphate Chrome solution at a pressure ranging from 125 to 150 psi. Door and window frames are also manufactured to the same from similar material. Some of the types of doors and windows manufactured by this factory and used almost everywhere in the country are given below:

Panelled doors:

(Cedrus Deodora timber)

- 1) Two top panels with one bottom panel.
Styles, top and bottom
 $1\frac{1}{2}'' \times 4''$ or $1\frac{1}{4}'' \times 4''$
Lock rail and bottom rails
 $1\frac{1}{2}'' \times 6''$ or $1\frac{1}{4}'' \times 6''$
Panels single or glued
 $\frac{1}{4}''$, $\frac{5}{8}''$ or $\frac{3}{4}''$.
- 2) One single panel above and below the lock rail.
Styles, top and bottom
 $1\frac{1}{2}'' \times 5''$ or $1\frac{1}{4}'' \times 5''$
Lock rail and bottom rails
 $1\frac{1}{2}'' \times 6''$ or $1\frac{1}{4}'' \times 6''$
Panel single or glued
 $\frac{5}{8}''$ or $\frac{3}{4}''$.
- 3) Three panelled, four panelled, five panelled and six panelled doors.
Styles top and bottom
 $1\frac{1}{2}'' \times 4''$ or $1\frac{1}{4}'' \times 4''$
Lock rail and bottom rail
 $1\frac{1}{2}'' \times 4''$ or $1\frac{1}{4}'' \times 4''$
panels $\frac{1}{4}''$, $\frac{5}{8}''$ or $\frac{3}{4}''$

Windows are manufactured to any size with or without cross bars. The conventional type of windows have the following sections of cedrus deodora timber:-

Styles, top and bottom: $4'' \times 1\frac{1}{2}''$ or $4'' \times 1\frac{1}{4}''$ with or without sash bars.

In the case of glazed windows where one piece of glass is used the bottom rail is used between 6"-8" of width. Seasoning and pressure treatment is followed in similar manner as that for doors.

Steps are afoot to try Douglas treated fir to replace even cedrus deodora or pine wood joinery. In this case the moisture content has to be maintained at 6-10% with a greater retention of the preservation salt. Since Douglas fir is 25% to 30% cheaper than cedrus deodora the economy in the construction activities warrants early replacement of pine or deodar. Experiments are being conducted along these lines and the recommendations of the Forest Research Institute at Dehradun are being followed.

To meet the increasing demands of joinery, factories are being constructed by the Government of India in the Northern parts of the country with facilities like rail heads, subsidised raw materials and availability of technical and managerial manpower. By the end of 1980 India will have 10 joinery manufacturing units both in the public and private sector.

In India furniture is mostly manufactured by small scale industries and these operations also play a significant role in manufacturing and supplying a large number of components. The objective for the development of small scale industries in India is to provide employment, to meet a substantial part of the increased demand for common consumer goods, like furniture, and to provide the basis for a progressive and efficient decentralised sector closely related with other timber industries. Emphasis has been laid upon promoting these industries in rural areas and towns. With the increase in hydro-electric and thermal power potential there is scope for the mechanization of the furniture industry but, as explained earlier, furniture and joinery are manufactured on the same floor in most of the joinery mills throughout the country, in addition to the small hand manufactured furniture in urban areas.

The traditional ornamental type of furniture continues to be manufactured. The wood carved furniture and other types manufactured in Western and Southern parts of the country still fetch a good deal of business. This type of furniture is famous throughout the world as the trade had its origin back in the Moghual period in India.

In Northern India Kartarpur (Punjab) furniture is famous throughout the country because of its peculiar design, durability and texture. In Government joinery mills, Kashmir and Hindustan housing factory furniture is manufactured on the same floor as that of joinery. There are other small ancillary units working in villages and towns where furniture is manufactured by hand. Only wood turning lathes are used for the manufacture of superior types of furniture.

The bamboo and willow cane furniture is also manufactured in the Northern and Western parts of the country. This is simply a hand woven type of furniture and provides employment to a large section of the people.

In Northern India (Jammu & Kashmir), a principal and the hard specie of timber, is used for the manufacture of furniture. In some cases even ash, *Fraxinus floribunda*, is used. This also belongs to the hardwood specie family. For a lower types of furniture, *tectona grandis*, and even *cedrus deodora* is used. Jammu falls makes the best type of furniture with wood carving which is a speciality in Northern India (Kashmir).

In furniture factories, as explained above, both hard and soft species are air dried, or kiln seasoned, to a moisture content of 10-12%. The component parts are cut, planed and moulded by the joinery machinery. In this process, mostly planers, tenoning, mortising machines and sanders are used. A special type of glue called 'CIBA' is used for strong and tough joints during the assembling stage. Painting and polishing is done manually, or with paint and varnish sprayers. All upholstery is done by hand.

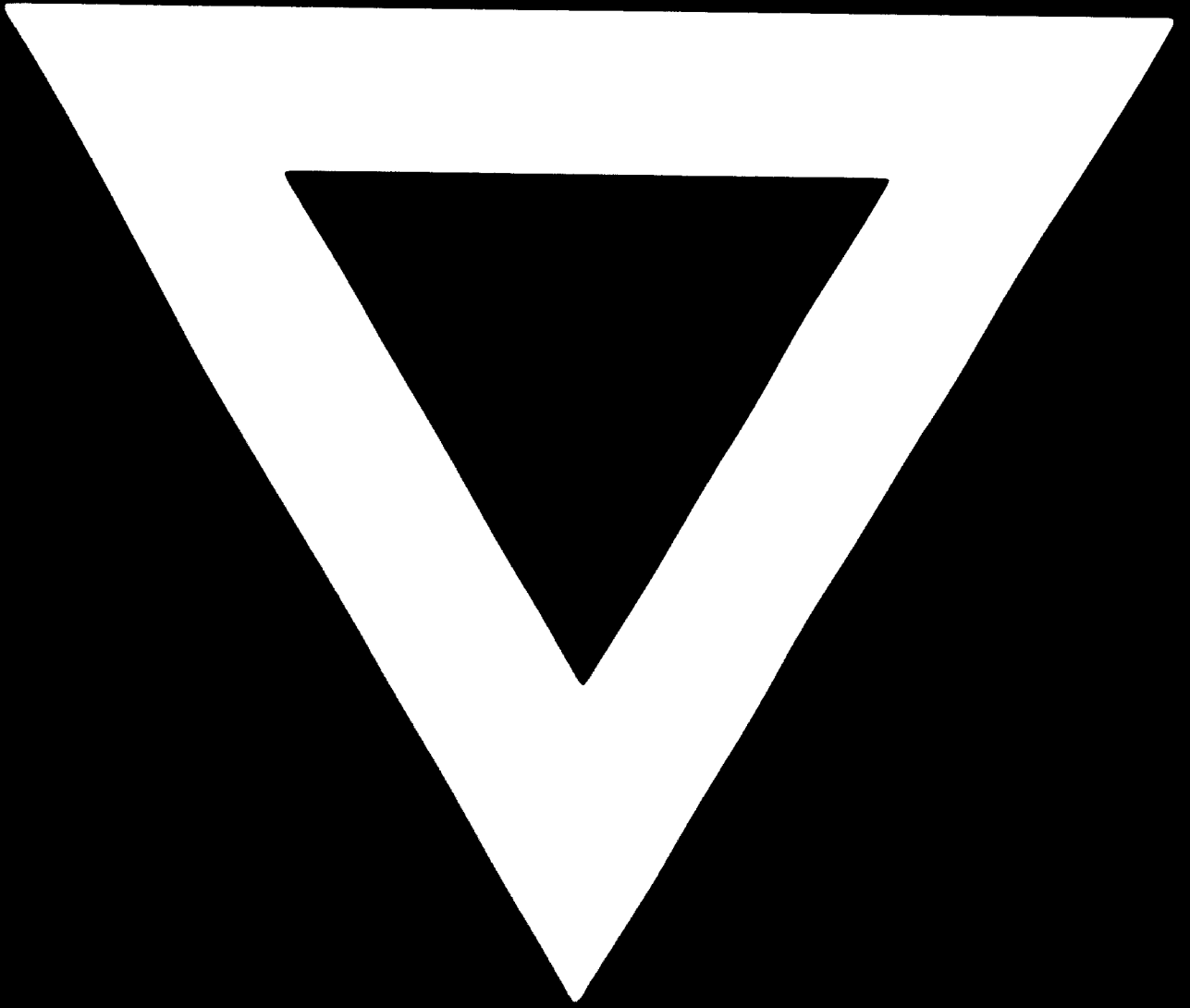
In joinery manufacturing units which utilise both hard and soft species as raw material, cut ends are normally used for the manufacture of furniture. This minimizes the wastages to a considerable extent and helps in greater utilization of the rated capacities of joinery operations. There is no specific furniture manufacturing factory in India equipped with all the requisite machinery.

In other forms of modern furniture, both for residential and office use the Swedish straight type or furniture with roundings and curves is manufactured. Modern types of furniture with tapestry and high density foam is used for upholstery.

Furniture in some parts of the country consisting of steel frames and components with raxine and foam upholstery is not uncommon. Plastic sheets for table tops and other forms of furniture is very common too.

Because of rising living standards the furniture industry in India has a greater scope for expansion. In the country itself at least half a dozen semi-automatic factories will be required to meet the increasing demands. There is also an unlimited demand for the export of furniture in knocked down condition to countries such as Sri Lanka, Iran and Singapore. Experts from Iran and Singapore have already visited the country on many occasions to make this trade become a reality.

Problems requiring technical assistance both in joinery and furniture are covered by the topics to be discussed in the Seminar.



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