Extraction of Wood from High Altitudes

By R. S. Sawhney*

The problem of extraction of wood from the high altitudes (i. e. Himalayan region) has for many years baffled the wit and imagination of the Technologists/experts/foresters resulting in an inordinate delay in the materialisation of the Scheme for the manufacture of newsprint and drainage of Foreign Exchange to the tune of several crores all these years. The Himalayan region abounds in soft woods (spruce/fir/pine) which form Al material for the newsprint. Till today only hardwood (Boswellia Serrata) has been used for the mechanical pulping in the National Newsprint & Paper Mills Limited, Nepanagar (M. P.) - the only Newsprint Mill in the country.

News regarding the putting up of a Newsprint Mill at Nangal (Punjab) utilizing the conifers by M/s. Karamchand Thapar & Bros. in partnership with M/s. Abitibi Power/Paper Co., Canada (one of the biggest Newsprint Manufacturers) and of its going in production in early 1968, which appeared in the Press have been very heartening and more than welcome.

As far as the extraction/subsequent transportation of wood is concerned, we may have roads till the altitude possible—may resort to transportation by River—may go in for aerial ropeways—may use Helicopters or may go in for Balloon Logging. The last two, the Helicopter and Balloon Logging seem to be radically new and revolutionary concepts and would come to our rescue when normal/conventional methods fail due to exorbitant costs involved and the difficult/inaccessible mountain regions. Both have been tried in foreign countries and quite encouraging/promising results have been reported and are expected to find better/greater industrial acceptance still in times ahead.

The use of Helicopters has been tried in U. S. A. and till recently in Norway. Transportation by Helicopter (payload being 2.5 m^3 at a time) of 1000 m^3 Timber from Telemark forests supposed to be inaccessible is being planned by S.D. Cappelen (OSLO). Depending upon the success of the operation, much of the future Timber would go by Air. The Helicopter Logging though a little costlier than our normal/conventional methods in good terrain but is a possible economic/technically feasible alternative on rugged mountains. The Helicopter may have a payload of 1-2 tons. The trees after debarking are converted into logs and weighed to the equivalent payload for the best utilisation of the Helicopters, transportation capacity. At tree felling site 2 men keep the loads ready whereas the 3rd man directs the Helicopter to the desired load to be lifted so as to avoid time loss. On reaching the unloading site the Helicopter gets down to 16—18 ft. above water surface for unloading and then the pilot gets back to the felling site.

Balloon Logging has been tried earlier in Sweden and till recently in U.S.A. and Canada. It is a very new and novel development and seems to be a major break through and would open up a new era in logging. In U.S.A. Balloon Logging has been tried at Bohemia Lumber Co., Culp Creek-Oregon by M/s. Goodyear Aerospace Corp., Akron, Ohio. In Canada Balloon Logging has been tried by M/s. Macmillan Blocdel and Powell River Ltd., Vancouver, B. C. at their sproat Lake Division. The balloons of the size 100 by 40 ft. were supplied by U. K. Atomic Energy authority.

In Balloon Logging main components are a Steel Tower yarder and a balloon of 75,000, $ft.^3$

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capacity filled with helium and being made of two 110 ft. cigar shaped balloons joined at the nose, a big horizontal fin joining the two sections at the tail, vertical tail fins on each side help in providing the desired stability. The vee-balloon flying at 500 ft. height serves as a skyanchor, whereby a winched cable pulls logs from steep hill side to a flat loading area. The balloon can move more than a ton of logs.

World's largest balloon — (137 feet long 52 feet diameter) capacity 156,000 Ft.^{3} costing $ 42,000 payload of 3 tons using Helium (Designed by Mr. C. Matheson-President Air-Reel Transport and manufactured by Air-Borne Industries) will be soon employed for Logging especially in the West Coast (British Columbia).

Various advantages resulting from Balloon Logging are enumerated below :-

1. Lifting effect of sky-lion system and minimum cable rigging.
2. Less of costly roads over rugged/rocky slopes and roads only essential for access to logging area.
3. Practically no or little soil damage/ erosion due to less of roads, improved logging practices, broken terrains not much of a headache.
4. Less of log breakage and subsequent, waste and better forest utilisation.
5. Less of damage to standing trees, better choice, flexibility in harvesting of desired species.
6. Greater speed in yarding and appreciable increases in yarding distances (i.e. 3000 ft.)
7. More output with a smaller crew.
8. More safety for the logging crews.
9. Better, faster reproduction of forests on logged tracts.
10. High winds, gales (40-50 mph) not much of a problem (due to Modern aerodynamic balloons).
11. Substantial savings in logging costs and increased industry's harvesting potential.

As yet, no cost figures involved in helicopter and balloon logging are available, but the high initial cost should not in any way deter us from going in for these spectacular methods of logging.

It appears that these two techniques, the use of helicopters and balloon especially in the Himalayan region singly or combined seem to hold a great promise and are a big answer in logging/ wood handling and would make economically accessible the vast/tremendous forests till now supposed to be beyond reach and yet unexploited.

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