

# Answers to questions raised at the Symposium on Trackless Mining in Metal Mines

## Questions by J. C. Steinhobel

- (1) When rubber-tyred equipment is used for the delivery of stores and items of equipment, how is heavy material—pipes, rails, timber support, ventilation columns, etc.—dealt with?
- (2) Over what distances is it possible to convey men and material by rubber-tyred vehicles (i.e., over 10 000 feet)?
- (3) How many men can be conveyed, over say 10 000 feet, per hour?
- (4) How many vehicles would be required for the transportation of 3500 men through a long straight haulage or tunnel over a distance of 15 000 feet in 2½ hours?
- (5) For the conditions mentioned in (4), the speed of present rail transport is limited to about 15 miles per hour. Could rubber-tyred units double this?

## Answers by C. F. Hews

I should first like to point out that the main feature of a highly mechanized mine is the relatively small

number of people involved in its operation. In addition, minimum use is made of such items as rails, timbers, and columns. Thus, the necessity of providing transport for large numbers of people or large quantities of supplies is minimized.

- (1) In mixed mines (conventional and mechanized), heavy supplies are handled by conventional rail-haulage equipment. In the mechanized areas themselves, a main feature is the lack of heavy equipment required. Air and water pipe, ventilation tubing, drill steel, etc., in these areas are carried on Unimog 416 trucks. Some of these trucks are fitted with hydraulic utility cranes of 1000 pound capacity.
- (2) It is possible to convey men and materials over any distance. The limiting factor is time per trip and the associated cost. At one mine, we extended our services to 10 000 linear feet of ramp.
- (3) Very few. Ramp mining is efficient only at shallow depths

from the ramp portal. At 1800 feet vertical depth, the ramp distance is 9000 feet and one-way travelling time 20 minutes. The number of men delivered is a function of the number of personnel carriers. We used seven 24-man-capacity vehicles to handle 168 men per shift to an average depth of 1000 feet. The men were transported direct to their work areas in 12 to 15 minutes from the time they left surface.

- (4) I should not attempt to do this with trackless equipment. As I mentioned in the presentation, in a situation where repetitive trips over 1500 feet on the same level are required, conventional rail-mounted man cars are more economical.
- (5) No. As discussed during the question period, the roadway conditions must be perfect to permit operating in third or fourth gear; otherwise, severe maintenance problems will result.

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