

A significant quantity of production is raised through 2m<sup>3</sup> LHD and small size pneumatic loaders. This could, perhaps, be attributed to the more easy availability of spares for the equipments. The transport equipments - dumpers - are also of smaller size (13 tons operated by diesel oil).

The ground control system techniques, though relatively better, also need modernisation. The use of rock bolt / cable bolt supports are quite wide; at the same time, the risk of accidents are more as mine dressing is done practically manually with miners just standing under the rock.

The opencast mines, on the other hand, use relatively modern technology, though this has not kept pace with the advancements. The shovels / excavators and dumpers, the main equipments, are of smaller size. The exception is the bauxite mines of NALCO which, as noted, introduced modern technology.

### *Operations with Problems*

**Gold:** Kolar is currently undergoing operational problems because of exhausting reserves, poor grades and workings at ultra depth. The production cost is almost twice the prevailing market price. **The operations at Kolar are in need of funding and technological support, lest it might get closed.** Intensive probing of the deposit in the area is also required.

An enormous size of placer gold deposit has been located in Kerala bearing only 0.18 gm per ton. **As the deposit is of lean grade, the experience of its working abroad will be of immense use to India particularly because placer gold deposit has not been worked in the country so far.**

**Copper:** Operational problems at Mosaboni (Bihar) are also primarily on account of depth. The copper deposit here is known to exist at deeper levels and therefore it is now imperative to invest in further exploration. Underground operations at Ambaji (Bihar) could not be started though an open pit mine operates by the side. The presence of weak walls and highly variable shape, size and grade of the deposit are the factors which are likely to make the underground mining a difficult proposition. The multimetal ore will also pose recovery problems. **Therefore, in case of such a project, support not only in equity participation, mine design but R & D is also required.**

### *Mining of Small Deposits*

A large number of nonferrous lean grade pockety deposits exist all over the country. Such small deposits are not self supporting in general and need support in areas such as mobile crushing, custom milling and metallurgy. Since the country is deficient in nonferrous metals, fast development of such deposits is contemplated. Another factor causing interest to the GOI in this area is the immense employment potential of such mining.