L.11 : OPPORTUNITIES AND CHALLENGES FOR A NEW INDUSTRIAL REVOLUTION OF FOUNDRY INDUSTRY IN HOWRAH

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Introduction

Howrah is the birth place of foundry industry in India. This industry in Howrah flourished up to the first half of this century and then the slump began which still continues. There are about 500 foundries in Howrah, most of which are in a state of poor health. Such a situation has led to the economic depression of Howrah region and surely contributed adversely to the economic well being of West Bengal as well as that of India.

The liberalisation of Indian economy has provided the Indian industries with opportunities and challanges. The developed nations trimmed their foundry industry drastically for high cost of production due to :

a) high labour cost,
b) stringent environmental laws, and
c) acute shortage of workers and engineers willing to work in the foundries.

Products of foundries and forge shops are however, absolutely essential for any machine building industry. Under these circumstances, the developed nations are forced to source these products from the developing nations where the labour cost is still reasonably low. Thus, industrial experts like Dr. M.N.Dastur, have been suggesting that there will be global market opportunity for Indian foundries and forgeshops provided they are able to accept the challanges of the free market forces.

Requirement of the global market

Requirement of the global market can be enumerated as :

a) internationally acceptable quality and the consistency in quality
b) production in bulk quantity with committed on-schedule supply
c) good surface appearance for improved asthetic value, and
d) globally competitive price

With the tremendous improvements achieved in the foundry industry, China will be the most important exporter of castings and forgings in the near future. Indian foundries have to compete with China to get their share of global market. It is a stiff challenge which Indian foundries with vast technical man power resources have to accept, to earn the precious foreign exchange.

Uniqueness of Howrah Foundries

Majority of howrah foundries were established during the days of British Raj. Naturally, most of them are old and suffer from technological obsolescence. Foundries in Howrah are run either by artisan entrepreneurs or by '*Gala Mal*' operators (Supplies only the molten metal). Both these groups are ill-equipped to run an export oriented, technology based modern business. Management techniques required to control the quality of the production and finance are not available to them. Being small, they cannot afford to employ knowledgeable managers.

Apart from the obsolete capital equipments, the shed structure and layout of most of the Howrah foundries are poor. Both these become a hindrance to smooth materials handling and hence the production.

The above together with badly maintained roads, poor telecommunication system and the reluctance of financial institutions and banks to provide the much needed financial support to small scale foundries are not conducive to the development of foundries today.

On the positive side, Howrah possesses an intelligent and trained foundry artisan group who are not averse to work in the foundries. These people are amenable to retraining for the absorption of newer technologies.

It has been suggested that for a quality product, the input materials will have to be of good quality. For smooth operations, the availability of input materials is also important. There are several integrated steel plants not for from Howrah with good railway network system. For the production of special grade castings a private sector company has set up a plant to produce low sulphur, low phosphorus, low manganese pig iron at Kharagpur not far from Howrah.

Another important raw material for foundries is coke which so far been supplied by the public sector companies like DPL or BCCL. Foundries complain that the coke produced by the above companies contain high ash (> 30%) and show low shatter index. After liberalisation, private sector companies located not far from Howrah are coming up to produce high grade coke. It is thus apparent that for the manufacture of quality castings, input material is not a hindrance to Howrah foundries.

During the hey days of the foundry industry in Howrah a considerable number of machine shops came into existence for finishing the castings produced. At present there are more than 2000 such machine shops who would gladly accept jobs related to finishing of castings. Most of these machine shops are operated by owner themselves having high mechanical skill. These machine shops can be used cost effectively to produce a vast quantity of exportable semi finished castings. When integrated steel plants like DSP and RSP were erected, a considerable quantity of machine component castings were supplied by Howrah foundries. However, currently, the bulk of the castings produced in Howrah are low value items such as rain water pipes and fittings, manhole frames and covers and small

sized ingot moulds. But skill and expertise for machine component castings is still available in Howrah. What is not available is the equipment and knowledge to produce these castings in bulk quantity. The improvement in power, availability of abundant water, co-operative attitude of the trade unions certainly make Howrah unique for the revival of foundry industry.

Suggestions for action

It is important that the foundry industry in Howrah immediately starts improving its image in India and in abroad. The idea that if you want an ordinary casting at a cheap price or some odd jobbing castings for which no other foundries in India is interested, you come to Howrah. Such an image is highly detrimental for the industry and an all out effort must be directed to alter this image.

Next in the list of importance comes the lack of real concern for improvement on the part of owner-entrepreneurs of Howrah foundries. Only a receptive and dynamic mind can evaluate and accept the modern ideas. The revival of the foundry industry in Howrah can really start if the owner-entrepreneurs are interested enough to provide the necessary impetus.

A lot has been said about ISO 9000 for the quality evaluation of a foundry. ISO 9000 is perhaps a entry pass into the export market but does not establish anyone as the exporter. Planning, control and constant improvement both in finance and product quality is necessary for the establishment as an exporter. For this, a total commitment of the top man of a technological improvement should be directed mainly towards indigenous knowledge base. Howrah is particularly fortunate to be located near knowledge banks such as IIT-Kharagpur, NIFFT-Ranchi and NML-Jamshedpur. There are also a number of experts available in the area who are competent to advise about the requirements.

The technological requirements for the new industrial revolution of foundry industry in Howrah are :

a) production of high value, thin walled castings
b) production of dimensionally accurate castings with excellent surface finish and good internal soundness in high grade materials.
c) medium volume production lines with on-line sand and molten metal control systems.
d) chemical bonded sand technology for mould and core production
e) computer applications in foundry processes especially in methoding to obtain the first pour right castings for minimizing the wasteful rejection. Perhaps this one is the most important for the prosperity of foundries.

The production of thin walled, dimensionally accurate castings in bulk points to the technology import involving Disamatic or high pressure moulding lines. Even in those cases where complicated coring is involved, indigenous EPC technology at far less cost may be useful.

The non-availability of correct input materials for the production of quality molten metal used to be a big problem with the foundry industry. With good quality pig iron and coke now available, the foundries in Howrah can easily produce primary metal in a cupola provided the design and operation of the cupola is improved. This metal can then be treated in coreless holding furnaces to superheat and correct the chemistry for S.G and C. G iron production.

Very little importance is given to moulding sand quality and its preparation. A Canadian survey conducted recently clearly showed that more than 75% of casting defects are caused due to improper sand. Also for the development of chemically bonded sand technology, clay-free graded sand is essential. Serious thoughts must be given by the foundry fraternity in West Bengal for the establishment of a sand washing and grading set up. Regeneration or reclamation of used sand should also be considered.

Marketing is a problem for small foundries in Howrah area. Foundries should be able to obtain expertise of reputed marketing organisations at reasonable cost.

The productivity of Indian foundry workers is 12-20 tons/man/year while those of China and Japan are 10 tons/man/year and 80-100 tons/man/year respectively. If we consider the wage of Howrah foundry workers, we can easily be competitive in the world market.

Conclusion

It is evident from the foregoing that Howrah foundries occupy a unique position. Foundries expertise and input materials are easily available but the owner-entrepreneurs have to be motivated and appropriate technology have to be adopted in order to produce castings of international quality. The adopted technology must lead to improvement in quality, productivity, profitability and environment of Howrah foundry conglomerate. Pollution should not be considered locally but should be considered regionally or even nationally. The adopted technology must also be able to generate employment for the economic benefit of Howrah as well that of West Bengal and hence that of India.

If the above challenges are met and help is obtained from banks or financial institutions for proper finance management, marketing organisations for marketing and sales and public relation experts for image building then the new industrial revolution for foundry industry in Howrah can begin.