National Welding Seminar-1988 24th-26th November '88 Cochin

—*Key Note Address*

by

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In a situation, where the country desires to march into the 21st century, many people would consider welding as a non-sophisticated technology. To a common man, welding is the joining together of metals, a routine work using workers with practical work knowledge and a steady hand but not necessarily very knowledgeable. Generally, it is not considered a high tech field. We forget that not so long ago when some of us were youngsters, welding was considered only as a temporary repair job. Welded ships were built for the first time during the second World War and it was said that these were being built for two or three voyages and were thus disposable ships. We heard of some of three ships breaking into two on high seas. But in reality, the average life of the 'Liberty' ships built during the war was found to be ten to fifteen years and because of the low cost, they were the most cost effective vessels, for a number of years after the war.

Today, welding has come a long way from the position existing in the forties. The welded joint is accepted as stronger than the base metal itself. Steel sections as thick as 80 cms are being butt welded employing special processes. New techniques such as Laser Beam Welding and Electron Beam Welding are being developed to suit welding of precision jobs and difficult to weld materials. Also welding in outer space is being experimented upon. Thus, the message is very clear that any technology can become sophisticated, provided we feel the necessity for its development.

In India, so far very little original work has been done in the R&D field of welding. I find that our Shipyard continues to import some welding consumables even today. One reason for consumables manufacturers not caring to produce the requisite material may be the lack of demand for certain type of products. This may be true with welding hardwares also. So far, whatever work in R&D that has been done in this country, relate mostly to import substitution. However, a time has come when our R&D has to be directed to creating new techniques and leave import substitution through transfer of technology.

It is true that institutions like the Welding Research Institute, Trichy have a great potential for advanced research work. But effective steps are yet to be taken to make optimum use of such facilities available in this country. Perhaps professional bodies like the Indian Institute of Welding can play the role of a co-ordinating agency, bridging the gap between the research facilities and the needs of the welding industry.

I find urgent need for assuring quality of equipments and consumables being manufactured in this country. Quite often, we experience a problem of inconsistency in quality of welding consumables. This has happened even in the case of reputed manufacturers with multinational backing. While these products may have approvals from agencies like BIS, Lloyds etc., there is no guarantee for consistency in their performance. The user industry is often put into great difficulties in the form of loss of production on account of this problem. Already the existing productivity level in this country is low. In the case of welding, it is about one third of that of countries like Japan and South Korea. While managerial and worker related factors are partly responsible for our low productivity, we cannot ignore the effect of quality of indigenous welding equipment and consumables on our welding productivity levels. I hope that new entrants in the field particularly those with foreign links will bear this in mind and introduce the latest equipment and technology.

Another aspect, where India is lagging behind is the limited availability of technical courses on welding technology in our Universities. A few institutions do offer courses at the post graduate level. But enough opportunities do not exist at the undergraduate level. I am happy to learn that the Indian Institute of Welding has introduced their Associate Membership Examination which may eventually be recognised at the level of AMIE. Another area which deserves attention is the training and qualification tests of welders. With the large number of welding processes and procedures avilable, it becomes a really critical task to choose the apt processes and have the welders and machine operators trained and tested before putting them on sophisticated jobs for pressure vessels and offshore work. This is an area where many of the industries, especially the medium and small size fabricators face problems. Sometimes, even some of the welders already engaged in production work, may need some re-orientation. Competent training establishments should be available in all the regions of the country, where the training and testing of practising welders can be taken up in a systematic way.

I am aware that the people who matter in the welding industry of this country are all assembled here. Some of you are from the research field, others are manufacturers of equipment and consumables, and of course there are the end users. During these three days of deliberations, you will be discussing a number of specialised topics and I am sure that all of you will benefit from this. I do hope that during these deliberations, you will consider some positive and practical measures to enable this country to develop and further strengthen the existing frame work of research as well as find out an effective system of quality assurance for welding products.

I wish this Seminar all success.