

An Association of leading mould and die makers in Sri Lanka was formed in August 2005 with the blessings of the Industries Ministry primarily to enhance the quality and the number of moulds and dies made in Sri Lanka.

A mould or a die is a key component used in almost all the manufacturing industries to enhance its production capability. A mould or a die is needed to manufacture any component from a safety pin to a sophisticated component used in aerospace industry. If you have a look around you, telephones, computers, automobiles, washing machines, cellular phones, soap tablets or a chocolate slab, an endless list of articles, are made economically using dies and moulds. It is calculated that around 15,000 to 30,000 moulds and dies are employed for the production of several parts assembled in an automobile. That alone will give the reader an idea of the demand for moulds and dies globally. Sri Lanka being a small economy compared with the global scenario needs to boost its mould and die making capacity if it is to become a prominent stakeholder in global economy.

After the formation of "Mould and Die Makers Association" representations were made to the Industries Ministry and the then Minister Kumara Welgama (he himself a prominent businessman) realized the importance of this sector and extended his fullest co-operation. This is now undertaken by Minister Rishard Bathiudeen with keen enthusiasm. Upon our request a link was made with India where several personnel involved in the mould and die making sector were given one month's training at Indo-German Tool Room in India's Arungabad.

Fifty percent of the cost was borne by the Ministry and the balance was borne by the participants. When this program was in full flight we realized the importance of establishing our own institute.

There also the Ministry came forward setting up a Task Force headed by the Industries Ministry Secretary and with the participation of the Mould and Die Makers Association President and the General Secretary, the Engineering Faculty Dean, Moratuwa University Mechanical Engineering Faculty Head of Department and a Finance Ministry representative, along with several key players from the industry itself, to prepare short-term and long-term goals for the development of this sector. A five year and a 10 year development plan were envisaged with specific goals.

It must be mentioned that the tireless work undertaken by SLMDA President L L Buddadasa and the SLMDA General Secretary K H Janaka Mangala as well as the Moratuwa University CAD/CAM Centre Senior Lecturer played a vital role in preparing the development plan. Also the keen support from Industries Ministry Secretary K Piyathilaka and Industries Ministry Director Epa Dayaratna were instrumental in reaching agreement to sign a memorandum of understanding between the Industries Ministry, SLMDA and the Moratuwa University to set up a Die and Mould Facilitation and Training Centre. The Industries Ministry provides financial

resources to set up the centre while the Moratuwa University provides the infrastructure and administration and SLMDA links the industry with the centre as well as providing expertise and jobs for the sustainability of the centre.

Initially a four axis CNC Machining Centre, an EDM Machine and a CNC Lathe were imported to commence work and latest software like "Mould Flow", "Pro/Engineer" were purchased for nearly Rs 32 million provided out of the Rs 100 million total allocation.

This centre will support mould makers who are not equipped with sophisticated C.N.C machinery as well as undertake designing and programming of tool paths using the latest software and also will undertake flow path analysis and flow gate designing using mould flow software. The Centre will undertake Training CNC Machine Operators as well as Designers already employed in the sector for a reasonable fee by conducting part time and full time courses for CNC and Software Training.

This centre will provide training to Mechanical Engineering Undergraduates at the Moratuwa University thereby attracting professionals to the Die and Mould Sector. As the Centre is located inside the Moratuwa University premises, the Mould and Die Facilitation Centre acts as an independent body to avoid unnecessary red tape.

Before conclusion we must evaluate the present state of the Mould and Die Industry in Sri Lanka.

Almost up to the new millennium dies and moulds were made using conventional workshop machinery such as lathes, milling machines, shaping machines etc. Special machines adopted by the mould makers were engravers and copy milling machines to deviate from an ordinary workshop.

Though C.N.C Technology was there before in the western world it took time for us to catch up for obvious reasons.

By using old technology accuracy level, repeatability on multi cavity moulds was compromised to a great degree. C.N.C technology (Computerized Numerically Controlled) revolutionized the entire machining capabilities as X,Y,Z Axes could be traversed to an accuracy level within Microns (One Thousandth of a Millimetre) as the commands for movements came through a computer and repeatability is dead accurate, thus eliminating most of the nightmares of the old Mould and Die Maker.

Government policy for implementing Zero Duty for advanced technology using machinery also helped a lot for Sri Lanka to enter the C.N.C era. Still then CNC machinery as well as sophisticated software used to program the machines are very expensive. For example, one software purchased when setting up the Die and Mould Facilitation Centre amounts to US \$ 60,000 in the international market and that amount is close to seven million Rupees. Each and every mould maker in Sri Lanka cannot afford to buy this software for himself. The reader will understand the usefulness of setting up this Centre from this example alone.

Where does Sri Lanka stand in the die and mould sector right now? To be frank we are insignificant in the global scenario and locally, we make around 18 percent of the country's requirements. The balance is imported from China, India, Singapore, Japan, Korea etc. Some multinational companies get down their moulds from the west which is rather expensive.

All over the world the special steels and accessories used for making dies and moulds are available. The machinery is also freely available though expensive. So if a country is rich in human resources with skilled and well trained personnel it can flourish in this market, which is lucrative. Sri Lanka is blessed with talented and to an extent English literate youth as the garage mechanic era of the mould and die makers workshop is something of the past and in a modern mould making facility it is somewhat a job involving modern automatic CNC machinery, computers and software.

Fresh passing out Science and English educated youth should be attracted to this industry.

There is a global demand for CNC Machine Operators, Mould Designers and Programmers etc. Western countries can afford to have all other infrastructure but skilful personnel, paving the way to our Engineers passing out of Universities, the German Tech and ATI being offered permanent resident status in those countries above other professionals.

If we can keep these trained people to ourselves by investing in high tech machinery and accessories and give proper training, we can create a mould and die making hub in Sri Lanka as our youth have a reputation for grabbing knowledge with ease.

The brain drain will continue but if we keep training more and more we too will be left with talented people in Moratuwa University.

The die and mould Facilitation Centre is a step in the right direction if everybody concerned contributes to the sustainability of this national cause.

~ www.dailynews.lk ~ By K P Sarath De Silva