Notes

There is a high reject rate of plastic inserts coming from MG 251, as found in the Assembly, MG403 – it seems to be somewhere between 12% to 20% reject rate, depending on which plastic insert.

You also discover that the molding dies are very old and some of the mold cavities are closed off because of previous poor quality, which further reduces the yield rates from the standard expectations. Dies for P90, P120B, and P135 each have one cavity closed off. The manager thinks that more should be closed off, based on his expertise and the age of these dies.

New plastic injection molding dies cost $25,000 each or $30,000 each if they are designed for quick changeover. The lead time for manufacturing these dies by an outside tool and die company is 6 weeks each.

One of the four molding machines, M101, has a record of high unscheduled repair and downtime. It seems to need some minor adjustments several times per week, which is causing low uptime for it. The molding supervisor would like to see the machine have a complete overhaul. The manager would like to purchase a new 250-ton molding machine. The cost to overhaul is estimated to $100,000, and the cost of a new machine is $250,000.

The Purchasing Manager tells you that there is better grade plastic resin that could be used, but it is more expensive. The better materials are RP515 at $0.28 per pound or RP625 at $0.30 per pound; the current material in use is RP502 at $0.26 per pound; the quality ranking order is RP625 > RP515 > RP502.  The manager believes the best material, RP625, would reduce some of the scrapped parts generated by MG251. He is not sure how RP515 would do.

The Plant Manager informs you that a second shift has not been approved at this time, but could be as a last resort. There is a 15% shift premium paid to those who work on the 2nd shift. Overtime could also be used, possibly 2 extra hours per day and up to 10 hours on Saturdays. OT earns employees an additional half-time for hours over 40 per week.

The setup times (die changeover) in both blanking and molding are in the three and half to four and a half hour range. I asked the manager what it would take to modify these dies with quick clamps and other mechanisms so that you could reduce the setup times. The manager said that to modify existing dies would cost about $10,000 each. Your research in this area confirms this number is in the ballpark and that setup times can be reduced to about 0.5 to 1.0 hours.

There is a capital budget for MLD250, of which $325,000 is available for MLD251. You can purchase machines, tools, overhauls and tool upgrades with this budget.

The Marketing Analyst says that the demand rate of customer orders has not increased substantially in the last quarter, nor does he think that it is going to rise much soon. He still stands by his long term forecast over the next five years.