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**Logistics Management Consultants**

## Dispensing with the Stopwatch

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In cooperation with a number of our clients, DMA have now developed a computer model that can generate synthetic time standards for order assembly. This tool reduces the time required to maintain standards by at least 50%. In addition it gives management the facility to model different warehouse layouts, so that the most efficient solution can be identified.

As an example of the potential of this program, we have modelled a simple manual cage picking operation in one of our client sites, and asked various "What If" questions.

**What if:** The picker's route is changed from picking along one side of the aisle followed by the other side (snake picking), to picking either side of the aisle (cross picking)?

In this case the work content decreased by 5.1%. The pick rate increased from 131 items per hour to 138. A substantial increase in productivity - simply by changing the pick route.

**What if:** Cross picking is continued, but the merchandise to be picked increases in size, filling 15% more cages?

The work content increases by 5.8% and the pick rate drops from 138 items per hour down to 130 items per hour.

**What if:** The picker has to visit 10% more locations to pick the same number of items?

Here we have the classic situation where the number of product lines increases but the quantity picked remains constant. The model suggests that in this situation the work content will increase by 3%. The picker has to work harder to achieve the same output rate in items per hour.

**What if:** The pick route was halved in length by the introduction of two level pick locations and the operator is still expected to cross pick along the aisle?

In this situation it will take longer to obtain merchandise from the second level. The system takes this into account. The pick rate will fall marginally from 138 items per hour to 137. This may come as a surprise because the distance walked between locations has always been looked upon as wasted effort, but, at this site, the increase in difficulty of picking from the second level outweighs the reduction in the distance walked.

**What if:** The quantity of items picked from each location increases by 20%?

As expected, the work content reduces by 5.3%. This amount is really quite small in relation to the volume increase.

These "what if" questions can continue indefinitely, thus allowing management to test different work practices and methods of working until the optimum solution is reached. Naturally, the above answers would apply to a particular Depot only. The Model is tailored to each site, or even each section of the warehouse, so that the different possibilities can be evaluated.

By testing all the different possible combinations, the ideal method of picking can be found, and the effects of volume increases, additional lines, etc., can be evaluated before capital is invested. The model is not restricted to manual picking. Truck picking can also be modelled, and the approach has also been extended to cover both internal transport and goods inwards.

Seasonal variations in throughput can also be considered. Christmas volume increases often lead to difficulties in controlling and monitoring operator performance, but with such a tool, most situations can be evaluated and the appropriate modified standards issued.

The modelling system can be written on any conventional spreadsheet package Lotus, Excel or even Supercalc Version 5. The training time for a manager to be able to operate the system effectively is about two hours. This mainly covers the interpretation of the data, not the physical operation of the system. The "what if" questions outlined above took about three minutes each to change the data in the model (in fact, it took longer to think the question up than get the answer!).

Using this approach, the cost of introducing and then maintaining an effective labour cost control system can be significantly reduced - sometimes by as much as 50%!

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**DMA** are specialist consultants to the distributive trades. They are extensively concerned with productivity improvement projects covering both warehouse and transport operations. For further information please contact: Patrick Madigan at [dma2000@eircom.net](mailto:dma2000@eircom.net)

Telephone:      Patrick Madigan 00 353 (0) 872 41 42 43  
                  Peter Fox            00 44 (0) 7710 630 180  
                  Mike Mulleady 00 44 (0) 7885 408 630  
                  Ralph Drew            00 44 (0) 1452 812 614