



Version 4.0
Shop Floor Control FAQ

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Q: When a BOM or Manufacturing Order Route is executed, when are the materials dispensed?

There are four kinds of materials that may be consumed/dispensed during the assembly of a BOM or Manufacturing Order route.

1. Parts, Sub-Assemblies or Child Manufacturing Orders from the materials list. This depends on how the BOM or Manufacturing Order Bill of Manufacturing is defined. The Bill of Manufacturing associates material from to BOM or Manufacturing Order with a specific Operation in the route.
 - a. When an Operation is ‘Started’ and it has associated material, a quantity of material relative to the quantity of finished Items is placed in WIP. For example, if the order is for 5 lamps, and each lamp requires 2 screws at the Operation ASSEMBLE, Starting 3 lamps at ASSEMBLE puts 6 screws in WIP.
 - b. When an Operation is ‘Completed’, MISys SBM dispenses any quantity in WIP (and any additional quantity required from stock if insufficient WIP), and increases the quantity of completed assembled items for that Operation.
 - c. When a component Item is ‘Scrapped’ during an operation, the quantity specified is immediately consumed/dispensed but does not change the number of completed assemblies.
 - d. When an entire Assembly is ‘Scrapped’, the number of completed assemblies for that Operation is decreased by the quantity specified.
2. Work Center Resources. The consumption of Work Center resources depends on whether that resource is set to be consumed by item or by runtime. If by runtime, the resource item is consumed as time is logged against the Operation using that Work Center in the Shop Operations form – if you complete the Operation all-at-once it asks for the runtime to complete and uses this value to compute consumed resources. If by item, the resource item is consumed/dispensed only at Complete and depends on the number of items completed. Note that Work Center Resource items can be either labor or other item types***
3. Directly dispensed Labor. When the user cause Labor to be directly dispensed via the Shop Operations form, . Combined with ‘
4. Consumable Items associated with a Tool. Note tools are associated with a specific Operation not directly with a Work center. The tool used for an Operation depends on what is actually done at the Operation AND with which Work Center is being used. E.g. drilling a .25” hole uses a different bit than a .5” hole. The consumption of an Item associated with a Tool (e.g. a drill bit) is controlled manually by the user. When an operation is completed, if the cycle count or time exceeds the defined counts or time for maintenance or replacement, MISys SBM will prompt the user that Maintenance or Replacement is needed. In the case of replacement, the user then can click the Dispense toolbar button to actually dispense/consume the Item associated with the Tool. Note that the cycles or time used to determine maintenance or replacement cannot vary by

Q: How are the timing values associated with an Operation in the Route used to determine the predicted runtime?

There are four timing values associated with each Operation in a Route for either a BOM or a Manufacturing Order. The initial values for all 4 come from the default values for the same parameters in the Work Center associated with the Operation. The values and usage are as follows:

1. Run Time – the amount of time, in minutes per item, which specifies the normal amount of time that that Operation requires when actually performing the Operation.
2. Setup Time – the amount of time, in minutes per batch, to setup the Work Center prior to the operation. For example, if the Batch Size is 100 and 99 Items are being produced; the Setup (time and expense) is used once. If 101 Items are being produced, then the Setup (time and expense) is used twice. By setting the Batch Size equal to zero (0) you indicate that the Setup time should be used once regardless of the production quantity
3. Queue Time - the amount of time, in minutes, to queue up the Operation prior to running. Note that Setup Time and Queue Time are additive.
4. Wait Time - the amount of time, in minutes after the Operation is completed before the next Operation in the Route can Start.

Note that all of the above times are only used to compute the nominal extended time for the entire Route for the estimated costs and capacity planning purposes; when the user Starts or Completes the Operation for a

Manufacturing Order via the Shop Operation User Interface the actual Run Time is entered for costing only. The capacity plan is determined only by the actual Route with nominal time; it does not change the start times and computed runtimes for capacity planning purposes.

Q: How does applying overlap to an Operation in a Route work?

Overlap for an Operation determines whether or not that Operation can begin before the previous Operation is completed. If Overlap is unchecked for an Operation, all items must be completed for the previous Operation before any Items for this Operation can be started. If Overlap is checked for an Operation, a quantity of items less than or equal to the number of items completed in the previous Operation may be started in this.

Q: What happens when you uncheck the 'Milestone' checkbox for an Operation in a Route?

The Milestone checkbox is used to control the enforced order of Operations in a Route. If an Operation has the Milestone checkbox checked; that Operation must be completed in order, that is before subsequent Operations can be started. If Milestone is unchecked, the associated Operation (and another other non-Milestone Operations) can be done in any Order prior to the start of the next Milestone type Operation.

Q: How can you limit who can advance an Operation?

For example, there are QA steps and only QA people can pass them. Only a qualified user can perform Shop Operations at that step. Another example is only painters can do painting in the paint shop.

Q: What happens if I have two shift splits in a Shift and their times overlap?

If two or more Shift Splits overlap in time (e.g. Split 'First' starts at 8:00AM and ends at 5:00PM and Split 'Second' starts at 4:00PM and ends at 12:00AM) the overlap does not effect the total time available. In the example given, a Work center associated with this Shift would have a total of 16 hours available time on a particular date (from 8:00AM until 12:00AM).

Q: What kind of Bar Coding can be utilized with Shop Floor Control?

Bar coding can be used with direct single Shop Operations and Batch Shop Operations. In the case of direct Shop Operations, the user interface provides a button to display a special form which is optimized for input from a Barcode reading using a keyboard wedge. The keyboard wedge capability can be used with most Barcode readers. For Batch Shop Operations, barcode input works similarly to Physical Inventory and Stock Transfer batches – MISys SBM comes with a program designed for use with the Worth Data barcode scanners and must be loaded into the scanner.

Q: How does Shop Floor Control work with the Available to Promise capability in MPS/MRP?

In other words, is the answer provided by Available-To-Promise based on both available/lead time of the required materials AND the available open time of applicable Work centers? MISys SBM 4.0's Available-To-Promise functionality (part of the optional MRP module) uses the routing info from BOMs and Manufacturing Orders with routes into account to compute lead times but it does not automatically fix capacity planning issues; it cannot project/reschedule free time slots if the existing production schedule has overloads/conflicts – this is full finite capacity planning. This is no different than the way Available-To-Promise works with schedules – MISys SBM uses the schedule as it exists (including existing shortages) and just indicates the next available time to produce some quantity based on the lead times.

Q: Can Shop Floor Control be used without Advanced Production?

Yes! The primary value is that you can use Shop Floor Control Routes to document the production process and compute more accurate lead times for BOMs and hence Work Orders. You can reschedule a WO/BOM from the new Shop Operations production schedule – but you can only control the start date and time for the whole process, not individual steps like for Manufacturing Orders. Another advantage of defining routes for BOMs is that normal Stock Assembly Transfers will consume the Work Center resources for the BOM route and so give better control over inventory usage.

Q: How can I determine my actual costs to build an assembly using Shop Floor Control?

This can be done much more accurately when Manufacturing Orders (part of the Advanced Production module) are combined with Shop Floor Control.

With Manufacturing Orders alone, the actual cost of an Order includes:

1. Material added on-the-fly to the Order's materials list
2. Scrapped material
3. Labor items that are in the Order's material list

When Manufacturing Orders are combined with Shop Floor Control, the actual cost includes all of the above cost tracking PLUS:

4. Resources (labor and material) consumed by use of the Work Centers by either runtime or units completed for each Operation in the Order's Route
5. Direct Labor entered with Direct Shop Operations on all Operations in the Route.

Note that because of the ability to record Direct Labor and use of the Route to associated Work Center Resources, the actual cost for an Order is much more precisely computed.

Q: How do I handle outside processing during the assembly process?

Shop Floor Control facilitates Outside Processing during manufacturing by creating a special 'Work Center' to perform the Outside Process and associating a Resource Item with the Work Center with the optional PO field referencing a standing PO for the Vendor doing the Outside Processing.

As an example, suppose a step in the assembly process required a part to be electro-plated by an outside vendor before continuing to the next Operation. You can control the Outside Processing by creating a Work Center named 'Outside Plating', creating a Resource Item associated with the Work Center which specified the unit (e.g. ft²) plating cost per Item in the Route, and then associating the Resource Item with a blanket PO created for the vendor that does the plating. When you need to do the plating in the route, create an Operation named 'Plate' and associated the 'Outside Plating' Work Center with that Operation. When that step is Completed via a Direct Shop Operation, the PO will automatically relieve the indicated Purchase Order (as if you had received the subcontracted Item against the PO) and it's cost will be included in the cost of the Work Order or Manufacturing Order.

Q: Does the MISys SBM Shop Floor Control module do Finite Capacity Planning?

No, MISys SBM 4.0 provides tools to recognize capacity overloads and manually adjust the production schedule. Full Finite Capacity Planning is a very complex capability which requires many parameters to work effectively and that is normally only provided by very expensive planning tools that are dedicated to this one capability. An example of such a tool is PlanetTogether (see <http://www.planettogether.com/>).