Focus: MRP

MRP

Tying production orders and purchase requisitions to sales forecasts to ensure that materials (raw and finished) are available when needed.
MRP System Inputs and Outputs

Planning VS execution

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Key Term Review

**Independent Requirement:** the sales forecast (or in some strategies customer orders) that must be fulfilled during a given period.
- Stated in terms of finished good.
- Entered as sales forecasts and visible in finished goods material detail.

**Dependent Requirement:** the requirements for materials necessary to achieve the independent requirements.
- Stated in terms of raw materials.
- Visible in raw materials goods material detail.

Execution essentials

Sales forecasts entered for the same period override one another.
- Newly entered sales forecasts (same period) are interpreted as replacing the previous forecast.

**Lot size:** a fixed quantity of materials that can typically be thought of as a 'batching size' in planning. In ERP, a minimum and/or maximum lot size can be set for a material.
**Scenario**

A company makes 6 products (P1-P6). No existing inventory exists. They enter a sales forecast for 75,000 units P1 and 100,000 units P2. They run MRP. The purchase reqs. are converted to POs and the materials arrive. All planned orders for P1 are released to production.

At this point a new sales forecast is entered for 100,000 units P1 and 75,000 units P2. What happens?

**Answer**
Scenario

A company makes 6 products (P1-P6). No existing inventory exists. They enter a sales forecast for 75,000 units P1 and 100,000 units P2. They run MRP. The purchase reqs. are converted to POs and the materials arrive. All planned orders for P1 are released to production.

At this point a new sales forecast is entered for 100,000 units P1 and 75,000 units P2. MRP is run. What happens?

Answer
**Scenario**

Same company. P1 has 75,000 units in stock, P2 has no units in stock but 25,000 units currently in production and planned orders for 50,000 more units. Planned order lot size for all products is 25,000.

New Sales forecast: 50,000 units P1; 50,000 units P2.

MRP is run. What happens?

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**Answer**
**Scenario**

Same company. P1 and P2 are both out of stock. New Sales forecast: 100,000 units of each. MRP is run. PRs $\Rightarrow$ POs.

All P1 planned orders converted to production orders. Nothing done with P2 (yet).

New sales forecast entered for 100,000 units of P3 (only). MRP is run.

What happens to the planned orders for P2?

**Answer**
Last Scenario

Same company. All products out of stock. New Sales forecast: 100,000 units of each. MRP is run.
Sales forecast changed to 50,000 units of each and MRP is run.
What happened to the purchase requisitions from the first MRP run.

Answer
In the context of ERPsim

Whenever doing sales forecasts (after the first), must keep in mind:

- Existing inventory levels
- Existing production orders

Planned orders and purchase requisitions are planning documents and so will be changed as a result of an MRP run.

Production orders and purchase orders are execution documents are unaffected by an MRP run (although they affect MRP).