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## ~Batch D

### Preview

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**Directions** Please read and react to this information, as directed by your seminar facilitator.

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**Introduction** You are an auditor for a regional alliance of quality organizations. You have accepted a contract to audit the operational quality of a regional microbrewery, Gingery Brewery, three hours north of Seattle.

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**The client** The family that owns Gingery Brewery has stressed quality over marketing strategies. They hired Donald McLean as new manager of marketing and distribution at the end of the third quarter of last fiscal year. Hop and Ginger Lee have enough confidence in McLean to offer him a profit-sharing plan, and a yearly bonus as incentive for increased market share.

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**Communication pattern** Distributors of Gingery Brewery's products communicate with brewery people through the same method that retailers use to reach distributors: order forms handed to a truck driver. On occasion Don McLean gets a frantic phone call from a frustrated wholesaler. He rarely meets one in person, however. He's too busy adapting *Marketing Week* articles to his regional operations.

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## Background — Gingery Brewery

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<b>Business plan</b>	Donald McLean's business plan is very simple: he intends to manage the marketing and distribution of Gingery Brewery as best he can to maximize profits going into his profit-sharing plan.
<b>Rosy prospects</b>	Orders from distributors began to rise during Don's second month at the brewery. One month later, orders for <i>forty gross</i> of root beer per week eclipsed the four-gross orders from only three months earlier.
<b>Brewery backlog</b>	About two weeks before Christmas, Gingery Brewery shipped out thirty grosses of Ninja Ginja root beer, backlogging ten gross from the 40-gross orders. The plant manager told Don it takes two weeks from a brewing decision until that root beer was bottled and packed for shipping to distributors.
<b>Brewery inventory</b>	Don had kept a few weeks' supply of root beer in the brewery storage shed. Recent order increases depleted all stock in hand by the week before Thanksgiving, two weeks after the sudden rise occurred. Letters from teenagers mentioned the plug for Ninja Ginja root beer by the "Wholeagains" music video.
<b>Reactions</b>	By Thanksgiving weekend, Don had back orders for nine gross of Ninja Ginja root beer, with new orders for an additional 24 gross. However, he had to fill a 20-gross backlog from the previous week. He could ship only 15 gross toward the new orders, despite the plant manager's incentives for brewery workers to work double-time. Brewery batches were up to 70 gross or more by Christmas, but back orders remained. By the first week of January, Don breathed a sigh of relief as he finally erased the Ninja Ginja backlog. Funny though, Don's distributors ordered only 19 gross of root beer in mid-January. Two weeks before Groundhog's Day, the Ninja Ginja orders suddenly fell to zero, foreshadowing a very cold and distant Spring!

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## Brewery Log — Ninja Ginja Root Beer

**Introduction** Donald McLean, marketing and distribution manager of Gingery Brewery maintained a log for each business week in each quarter of last fiscal year.

**Weekly log** This log is a record of Ninja Ginja root beer in stock, ordered, shipped, and brewed weekly from October through the first week of March in this fiscal year. Amounts appear by the gross (twelve dozen).

Week	In Stock	Ordered by dtbrs.	Shipments		Brewed by GB	Comments of GB marketing and distribution manager, Donald McLean
			New	Backlog		
4	12	4	4	0	4	“Flat rate of change, again...”
5	12	8	8	0	4	“We need to brew up to eight gross.”
6	8	20	12	0	4	“We’d better increase the brew order!”
7	0	20	0	8	8	“We’re getting behind and behinder...”
8	0	24	15	20	35	“...hoppin’ gingerly to the Ninja beat!”
9	0	30	26	9	35	“I’m a hero to the workers at GB.”
10	0	40	31	4	35	“Gotta get that backlog down to zero.”
11	0	40	26	9	35	“Can’t catch up with those back orders.”
14	0	60	60	0	70	“I wonder how I’ll look on the cover of <i>Marketing Week</i> ...”
15	10	19	19	0	70	“Whoa—some of the order slips came in with canceled lot numbers!”
16	61	0	0	0	39	“Boss—halt brewing for a week or two: we’ve got a discontinuity...”
17	100	0	0	0	31	“This was temporary, I was sure.”
18-21	131	0	0	0	4	“The discontinuity persisted... ! Those distributors stuck it to us. Retailers haven’t bought enough root beer. Teen dudes are fickle dead-heads: no loyalty!”
22	135	0	0	0	0	“I drove over to Gino Vitale’s warehouse to look into our crisis. He showed me 135 truckloads of root beer! He felt jerked around. If the retailers had only been more alert and warned us...”

### Operating question

Do we have enough root beer in stock to fill the new orders?

- If yes, then ship the new orders, and brew root beer to store in stock.
- If no, then ship what we have in stock ( $S = I$ ), and backlog the remainder ( $B = O - N$ ) to following week.

## Spreadsheet Secrets

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**Introduction** Data in the earlier table have been adapted from descriptions of the beer game in Peter M. Senge's book, *The Fifth Discipline*.

The log appeared without the benefit of the automatic calculations of a spreadsheet program. If you wish to study the data more closely, then the secret calculations behind the cells in the log are available.

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**Formulas** These formulas apply to the Brewery log:

If  $\text{InStock} < 12$ , then  $\text{Brewed} = 12 - \text{InStock}$  [ideally, at least]

$\text{Backlog [to following week]} = \text{Ordered} - \text{New}$

$\text{new InStock} = (\text{old InStock} + \text{Brewed}) - (\text{New} + \text{Backlog})$

$\text{new Brewed} = \text{New} + \text{old Backlog}$  [else tell boss to increase brew yield]

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