

## **TOYO SPECIAL STEEL CO., LTD. (A)**

Mr. Akira Ishii, manager of the Production Control Section at the Nagoya Plant of Toyo Special Steel Manufacturing Co., Ltd. came to doubt about the current way of production control which sought after minimization of inventory. His doubt could be summarized in that the plant could achieve more improvement in cost reduction and productivity while satisfying short-notice customer orders better if it would reserve some extra inventory of semifinished products.

### **COMPANY PROFILE AND MARKET CONDITION**

#### **COMPANY PROFILE**

Toyo Special Steel Co., Ltd. was one of the leading special steel manufacturers in Japan. Its sales for 1986 amounted to about 150 billion yen and profit 4 billion yen (before tax). Toyo's major product line was hot-rolled special steel items and its sales had been remaining stable for the past few years affected by the maturation of automobile, electric appliance and machine tool industries which were the main customers of the company.

As of early 1987, the company had three plants for production of various special steel products. The Nagoya Plant, one of the three plants, assumed charge of melting and rolling of stainless steel products which accounted for more than one third of the company's total sales. The current monthly output of the Nagoya Plant was about 12,000 tons.

#### **PRODUCTS AND MARKET**

Special steel in general was defined as "steel having special characteristics to suit certain uses by means of containing alloy compounds". (For example, engine valves of automobile required special steel with high heat resistance containing a lot of manganese, nickel and chromium.)

While ordinary steel, which was mass-produced by giant iron and steel manufacturers (e.g. Shin Nippon Steel Corporation or Nippon Kokan K.K.) was used for construction of buildings, hulls of ships, vehicle bodies or the like, special steel was used for engine parts, ball bearings, and some parts of electric appliances which were required to have high degree of resistance against heat, corrosion, shock, wear and tear, etc. Since special steel was mostly used under severe conditions, stricter standards than those for ordinary steel were required on ingredient composition, product size, mechanical characteristics (hardness, viscosity, etc.), surface condition and others. Because of such strict standards, a slight change in specification of a finished product often led to a modification in specification of special steel, the material. Accordingly, specifications of special steel had been less standardized as compared with those of ordinary steel, and special steel tended to be produced in small lots of varied types. Among of all, stainless steel, the product of the Nagoya Plant, extensively had such tendency.

Special steel ordered by one customer for certain use had some specifications different from those of special steel required by other customers for the similar use, while they often shared other common specifications. It was not seldom that either of ingredient composition, product size, surface condition, etc., was same if a use or a client was common. Because the steel produced by the Nagoya Plant was

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This case was prepared by Professor Keinosuke Ono of Keio Business School, and Lecturer Tatsuyuki Negoro of Sanno College and Mr. Hirofumi Inoue of Keio Business School, as a basis for class discussion. Names and figures are disguised. (April, 1987; Revised in Feb., 1993)