## OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

## DISCLAIMER



## FAIR USE POLICY



## CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

06816

Distr.
LIMITED

ID/WG.222/6
11 December 1975

ORIGINAL: ENGLISH

UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION

Joint Consultation on the Promotion of
Industrial Management Clinics for the
Least Developed Countries of Africa

Kampala, Uganda,
14 - 19 December 1975

# PLANNING AND SCHEDULING OF PRODUCTION 1/

by

Derek Manderson*

---

* Director, Manderson and Associates, Geneva, Switzerland.

1/ The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the Secretariat of UNIDO. This document has been reproduced without formal editing.

Note: This paper outlines certain basic considerations essential to efficient planning and scheduling of production. Detailed consideration of the individual aspects of the total production control process will be developed during the group discussions in Kampala.

The basic considerations are listed here in simple language. It is important that they do not lose their clarity and simplicity owing to the many technical details that will be advanced during the relevant lectures

## PLANNING AND SCHEDULING OF PRODUCTION

### The framework of reference

The production of goods - industrial, domestic or agricultural - in our complex present-day world, made up of a large number of countries in varying degrees of social and industrial development, has, in the majority of cases passed from the artisanal level to more sophisticated, carefully preplanned and pre-engineered manufacturing.

### Preconditions for adequate and efficient production planning

A number of definite preconditions are necessary to ensure such production planning:

- supply to the manufacturer of the primary means of production on schedule at the point of use
- conversion of these means of production into saleable products
- constant supervision of the pre-planned production schedule and taking corrective measures as required to see that predetermined dates set for each stage of the production process are adhered to
- providing the appropriate technical means to carry out the production operations within the preset time limits
- taking timely corrective action to sub-contract work to outside suppliers if the company's internal rate of output is falling behind schedule through technical manufacturing difficulties, labour problems or other causes of delay.
- in certain cases corrective action of the appropriate nature cannot be taken in the manner necessary within the production area in question because of natural causes over which man has no control (e.g. failure of a grain harvest). In such cases it may be necessary to call for assistance on an international basis.

### Basic principles of sound production planning

Numerous principles go to make up the foundations of sound production planning

- accurate determination of purchasing lead times from primary suppliers
- scheduling the different steps in the total production process to meet delivery-date committments to customers
- quality control of the product components at the different stages of the production process to satisfy the exigencies of client and his committments to his sales organization.

Scheduling of the production process

The degree of refinement of the scheduling process used in an industrial operation will naturally vary with the complexity of the product being made.

- in a small foundry, production scheduling can often be done on a daily basis by the shop foreman.
- in the food industry (e.g. production of powdered milk) production scheduling has to be geared to the maximum milk output of the cow herds which reaches its peak around mid-year.
- in a complex industry such as the manufacture of automobiles the scheduling process is extremely complex and uses computers and all the other refinements of our technically advanced society.

Product-design lead times

The degree of refinement of a product has a major effect on the lead time required for its design and testing.

It is well known that automobile manufacturers plan their new models years in advance to enable them to test them thoroughly and eliminate any inherent technical faults.

On the other hand the lead time necessary to develop a simple plastic toy may be only a matter of weeks.

Inventories

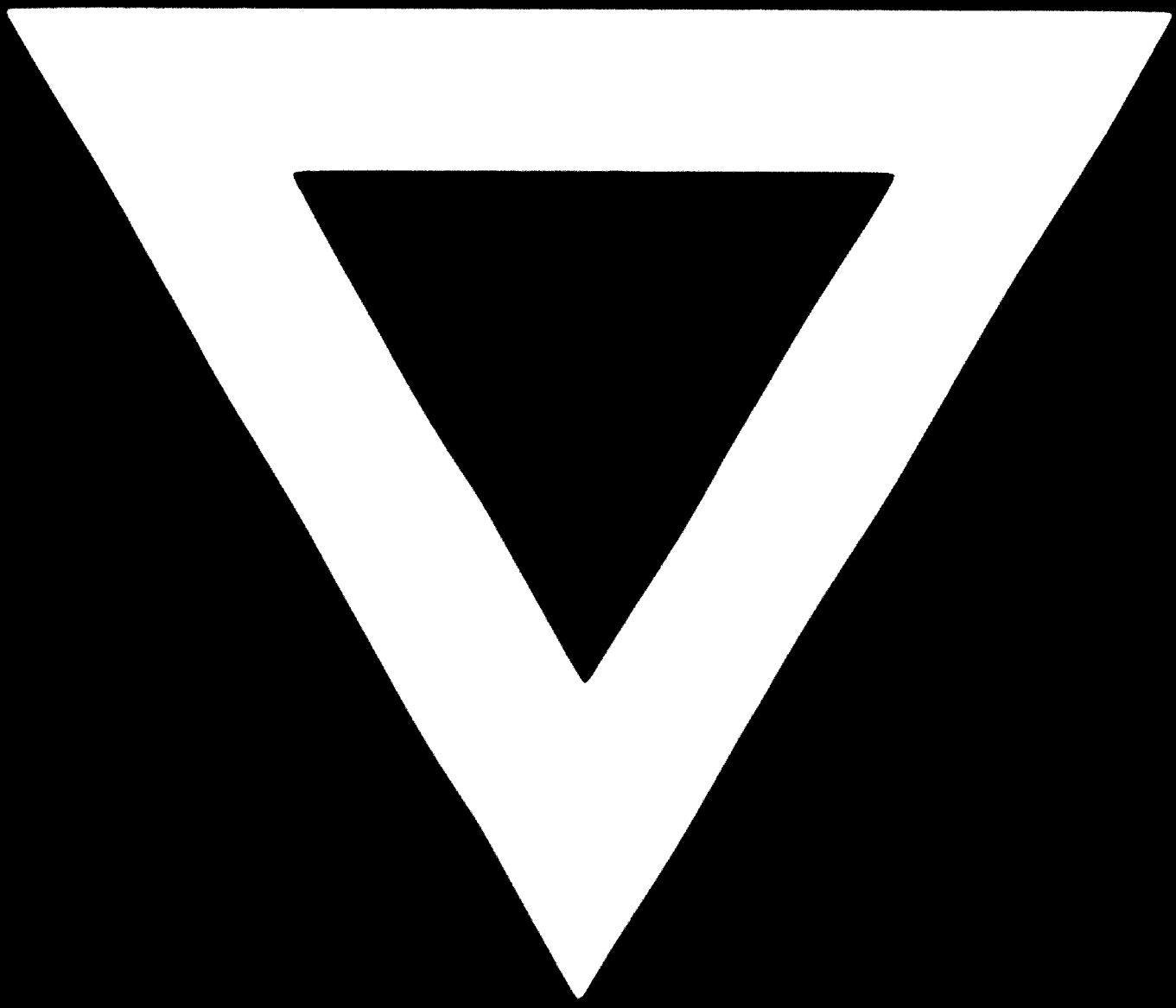
Efficient planning and control of production must naturally take account of the material inventories, both primary products, semi-finished goods and finally saleable articles.

Adequate storage space must be provided for each class of product and the inventory levels maintained at the minimum permissible limits consistent with efficient, economic production.

Organization for efficient production planning

An industrial plant equipped with the most modern equipment cannot produce to pre-determined schedules without the active support of a highly competent group of planning personnel. For this reason it is vital that the people who make up the planning staff form a harmonious group with their activities carefully integrated for smooth and flexible cooperation.

Since many of the other aspects of the total production process have already been discussed in my previous two papers, I shall combine further discussion of the industrial planning process into the elaboration of the considerations discussed therein.



76.02.03