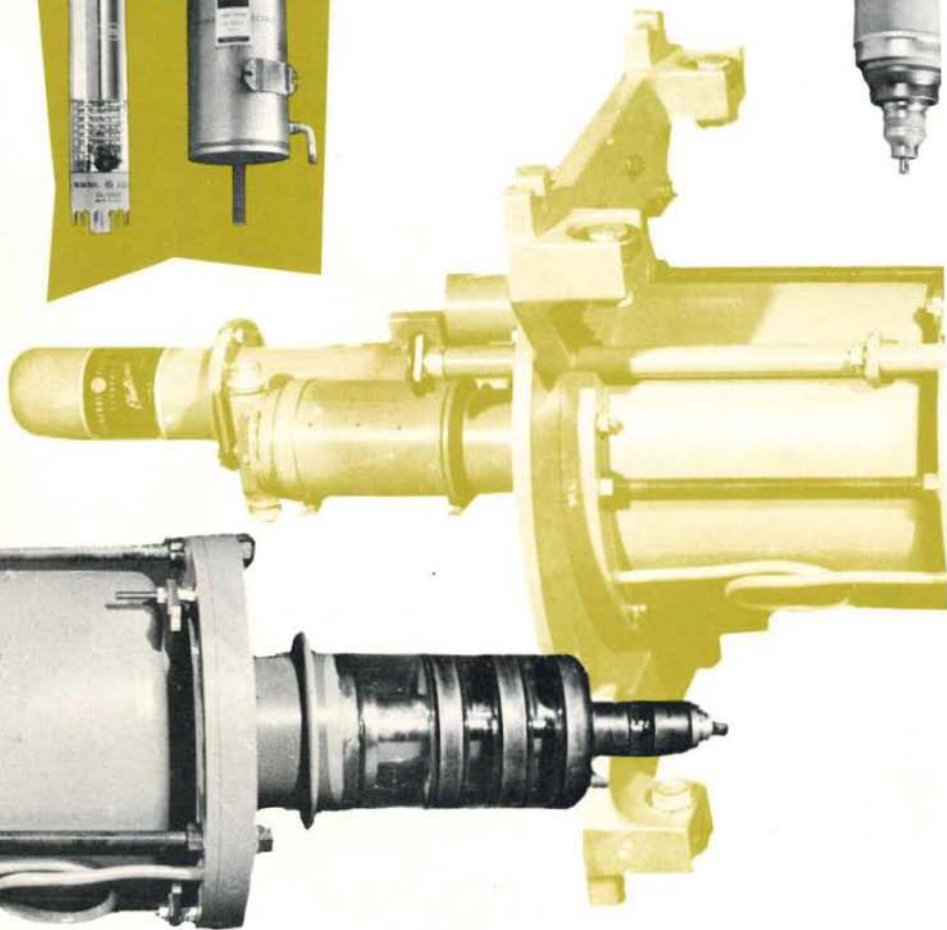




MANUFACTURING
SERVICES

Bulletin

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MANUFACTURING SERVICES

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COMING EVENTS

4th Welding Show, sponsored by the
American Welding Society
Memorial Auditorium
Buffalo, N. Y. May 9-11

Design Engineering Show
Convention Hall
Philadelphia, Penna. May 14-17

Material Handling Institute 1956
Exposition
Public Auditorium
Cleveland, Ohio June 5-8

Instrument Society of America
Instrument-Automation Conference
Coliseum Building



SCHEDULING

The art of planning the use
of your productive elements
so as to obtain the greatest
long range profit from
your business



FIRST PRODUCTRON INSTALLATION SCHEDULE

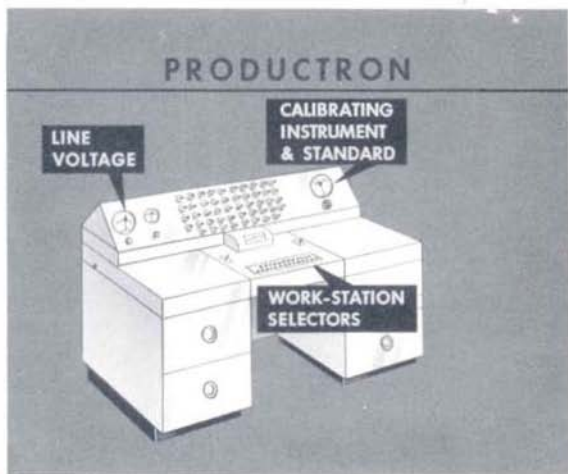
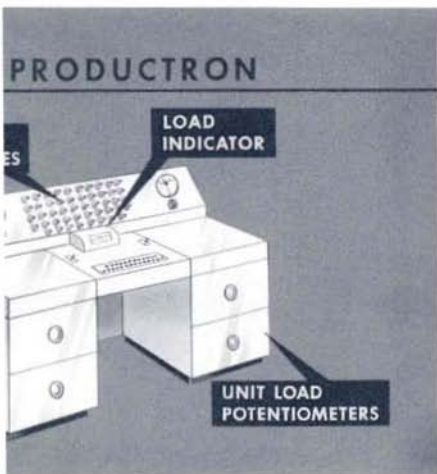
*Appliance Motor Department places order for
new Product of Technical Products Department*

Productron, the economical G-E desk-size computer ideally suited to handle the load-capacity problems in production scheduling, has found its first permanent home. The Appliance Motor Department of DeKalb, Illinois, has ordered the first unit from the Industrial Computer Section, Technical Products Department in Syracuse, for delivery this fall. Not only is this the first order for the computer, but it is the first special purpose computer to be manufactured to customer order by the newly-organized Industrial Computer Section.

The size of an ordinary office desk, *Productron* operates on standard 115 volt a-c power without accessory equipment, such as air conditioning, usually required at computer installations. The computer is simple in design, easy to operate, and contains only proven components. Its

placed in the office or on the factory floor and it consumes less current than a desk set. Normal service and maintenance costs will be negligible. Seven electronic tubes should be replaced annually, several small dry cells and an electronic vibrator chopper may need replacement twice a year; but these measures are required for continuous use, and to insure maximum effectiveness of operation. The initial cost of the unit is approximately \$12,000 as compared to an original estimate of \$15,000. In quantity production even this nominal figure will be reduced.

The computer can be used to analyze the impact of 50 different production schedules, they affect 25 work stations, or combinations such as 100 production stations. Once the unit has been calibrated, three steps represent the operating procedure:

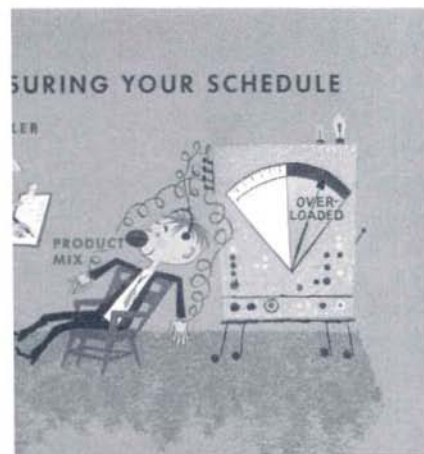


the dials across the top of the sole, depress the work station selector the area on which the load impact equired, and read the meter indicating the load. ie sum of all the loads of the prod- on the particular station being red are accumulated and read on the t instrument as hours of load on particular station. The operator s down this reading and by actu- button causes the computer to read instantly the value for the next sta-

tion. A trained operator can record all the work station value in approximately two minutes.

HOW IT OPERATES

As a brief example of how the *Productron* computer works, let us assume that we will assemble four different products in a plant. Each unit of product has a different work load impact on any one work station (single punch press or an entire packaging department). It is important to have a constant work load on each station to minimize peaks and valleys in work demand. To achieve this end, it is necessary to know what the work load for each station will be if a certain number of each product is to be manufactured. The memory of this analog computer consists of some 1250 variable resistors. The computer multiplies the number of products by the appropriate work factor for each station in the memory. All of the products of any work station are then automatically added together to give a total in hours, or equivalent units of measure, of the work load on that station produced by all the products in that



SCHEDULE

A statement of the desired output during a set of time periods



LOAD IMPACT

The time required by each product on each productive element for every time period

the unit load impact table is set up as follows:

(Models)	A	B	C	D
Lathes	.410	.510	.750	.880
Drills	.240	.310	.450	.520
Punch presses	.190	.240	.350	.370
Die casting	.450	.550	.150	.170

In addition, we should know the available capacities in the plant with which we are working. In our problem, we have 16 lathes, 20 mills, 10 punch presses, and eight die casting machines. We will also assume the machine's utilization is 75 percent. Once these factors have been calculated and programmed, *Productron* is ready to tackle problems of computing the load on each station for different production schedules.

PLANNED SCHEDULE OF EACH MODEL

	Planned Production	100 Models	200 Models
Lathes	480	260	520
Mills	600	155	302
Punch press	300	118	231
Die casting	240	135	265

As shown by the above, the lathes are overloaded when 200 of each model are

scheduled. By trials the operator establish and recommend an optimum of the different models.

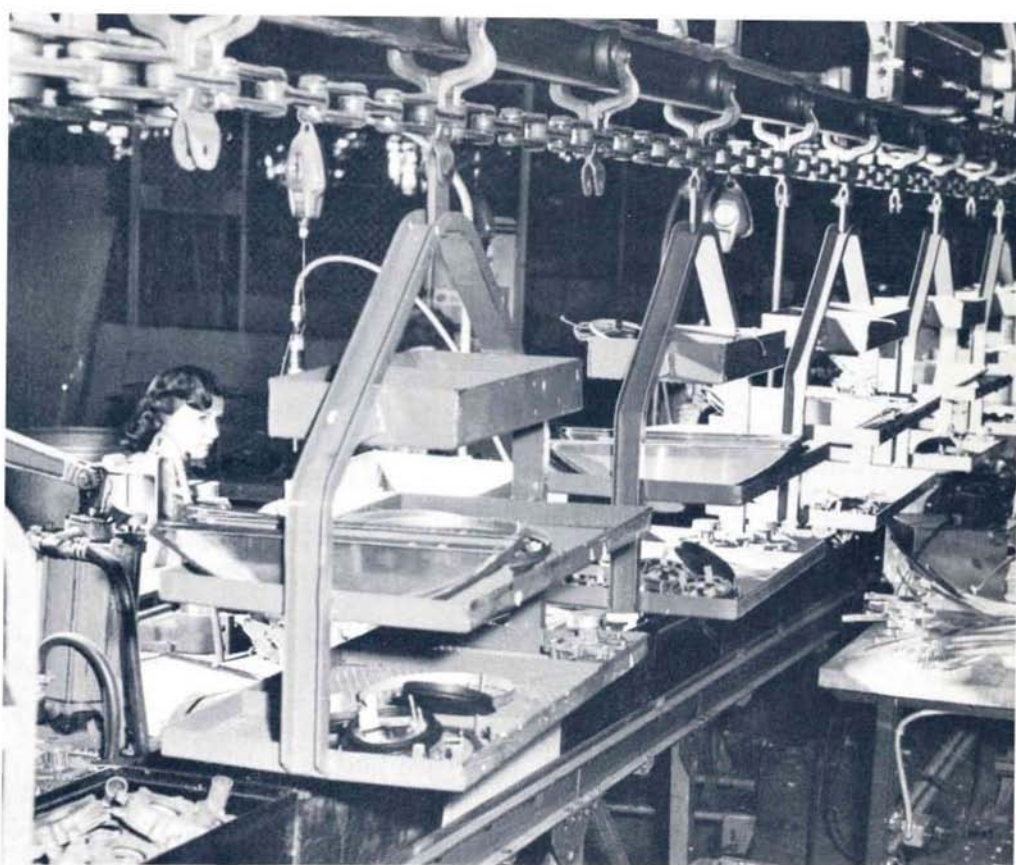
This is a simple explanation of a cal loading problem, but the *Productron* computer is flexible and versatile, other problems such as materials, erosion, budget synthesis, and linear grams are other suitable application:

Once it has been in operation atpliance Motor, still other uses ma developed for this new tool. To the duction man, the *Productron* comput the first solid evidence that low-easy to operate computers can be de oped for his special needs and requirements. ▲

LOAD CAPACITY ANALYSIS

is the means for measuring the feasibility of a scheduling plan





Benefits of Adjustable Speed Drives on Production Control

by J. E. Oram
Systems Application Engineering Section
Apparatus Sales Division

This is the third of a series of articles on adjustable-speed drives for production machinery.

One of the greatest problems facing industry today is to increase productivity to keep pace with the ever-increasing demand for goods. For example, it has been predicted that the consumption of electric energy will be almost doubled in the next decade, and that industrial production will be increased by approxi-

of available production workers is expected to be increased by only four percent. In other words, production must be increased nearly 50 percent with effectively the same number of production workers as we now have, since it is quite likely that working hours per week will be less by that time. The only answer to