Model Shop aids in instrument design, production

With Tek's newest family of instruments recently introduced, it's interesting to look behind the scenes at one of the groups that helped make them possible.

The Engineering Model Shop is responsible in one way or another for dealing with everything that Tek produces. The group evolved out the early efforts of its current manager, Slim Sorenson, who saw a need to help engineers transform ideas into working models.

Out of these early efforts has evolved a fully equipped model shop which supports all engineering functions at Tektronix.

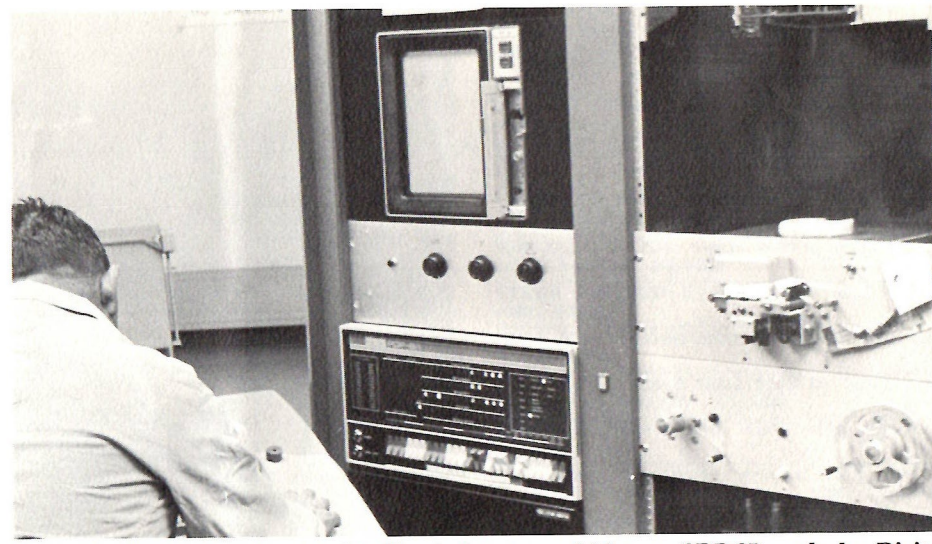
The model shop is made up of four groups including:

Advanced Products and Components Support; Product Design Support; Pre-Production Engineering Support; and Engineering Tooling and Devices. These groups are supported by 67 employees and four managers.

The first of these groups, Advanced Products and Components, is headed up by Les Wold. It builds and tests future instruments and components. Its subgroups, like Integrated Circuits and Mechanical Design, work with engineering teams in a support role. The group's goal is to assist in designing instruments with fewer parts, making them easier to assemble, and to produce new and better components.

Rex Gordon manages the Product Design Support Group, whose job it is to support engineering ideas through to, and including "A" phase. This group also works with specific teams of engineers.

In addition they provide instrument and accessories support; and work with Display Devices Development on all engineering functions from concept to production. In this phase, sufficient instruments are built to prove out their planned functions. Instruments are environmentally tested at this stage.



Shown is the Engineering Model Shop's latest acquisition, a PDP-8I made by Digital Equipment Corporation. It is used with numerically-controlled equipment.

Fred Smith's group, Pre-Production Engineering Support, handles all A and B phase parts. The purpose of this group is to build the mechanical parts in quantity to prove out both the drawings, and the eventual producibility of the instrument parts. These are pre-pilot evaluation runs.

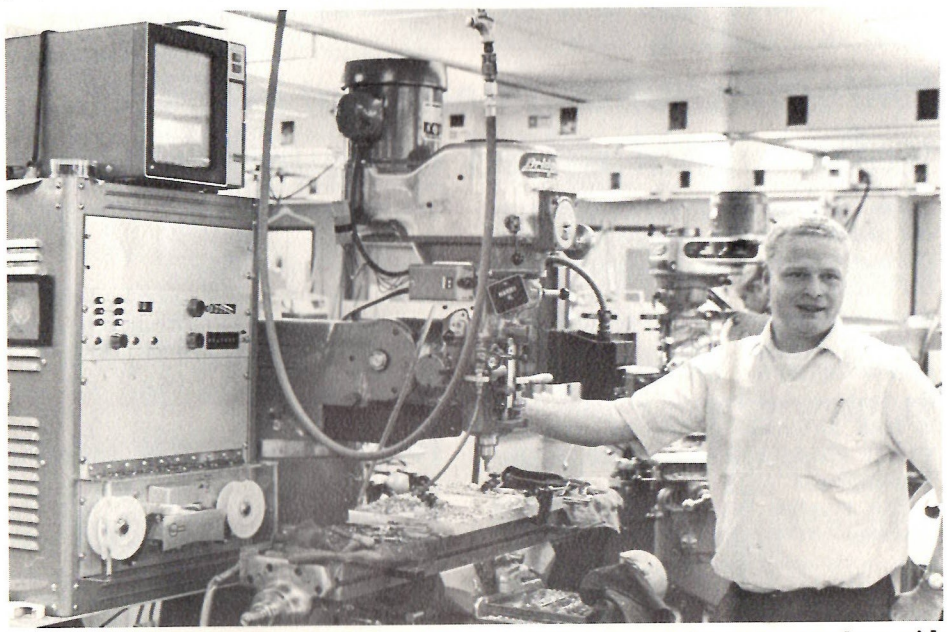
Providing tooling support for the first three groups is Engineering Devices Tooling and Maintenance. Duane Maxwell manages this group, which builds blanking dies, injection molds, and hydroperm masters. They also build fixtures, jigs and test gear for engineering groups in the Technical Center.

During the peak load, prior to the introduction of the new instruments, the Engineering Model Shop's moving average workload was an impossible 9000 hours per week, which necessitated 13-hour shifts five days a week, plus eight hours on Saturday. This workload has been maintained until very recently.

To assist them in meeting demands the Engineering Model Shop has bought a new PDP-8I computer built by Digital Equipment Corporation. The computer allows the operator to take dimensions directly off the engineering blueprints and duplicate them on a punched tape, which can be used by a numerically-controlled milling machine, or on the new 20-turret Strippit punch press, which blanks and punches sheet metal parts.

Time is also saved with the new computer, because it is no longer necessary to make a template, which is like a pattern. Instead of this "steel pattern," the computer takes the dimensions from the engineering blueprints and punches a tape, which can be put on the Strippitt machine. This same tape can be turned over to Manufacturing if a quantity of parts of a certain type are needed.

Thus, thanks to innovations like electronic tracing mills, which can duplicate three-dimensional parts from existing parts; numerically-controlled machines, and the latest in grinding equipment, the model shop has been able to substantially reduce the time between when the engineer evolves an idea, and the time it takes to produce a workable model, which may become a workable, producible part for new products.



Les Wold, who heads up Advanced Products and Components Support poses here with one of the Engineering Model Shop's numerically-controlled drillers.