Tek-sponsored Explorers have unique opportunity

By INGRID LOUISELLE

Boy Scout Week, February 8-14, highlights the many aspects of Scouting that boys can enjoy from primary grades through high school.

The Explorer Scout group, or Explorer Post, is one of the last stages in Scouting. Open to boys 14 to 18 years of age, the Explorer activity offers youngsters the chance to begin preparing for careers in a variety of specialized fields.

In the Portland area, one of the most active specialty posts is sponsored by Tektronix, Inc., the Beaverton electronic-instrument manufacturer.

Some 20 members of the company's Engineering staff, from vice presidents through design engineers and technicians, devote their time and talents to the Post, actively instructing classes and overseeing the boys' individual projects.

A typical meeting-night of Tektronix Explorer Post 876 finds the 60-odd boys arriving at the company's engineering building by 7 p.m. Breaking into eight or nine small groups, the Explorers meet with their instructors for about an hour and a half of class work and projects.

At the end of the evening, the boys convene in the auditorium for the group's business meeting, where plans are made for future activities, tours, social events and fund-raising projects. The meeting is run by the boys themselves, with Robert Rules of Order more or less in effect to keep the attention of the 60 restless minds in the gathering.

One of the most active members of the Post's advisory staff is "Sandy" Sanford, who retired recently from Tek's Conventional Instrument Engineering group. As Chief Instructor for the Explorers, Sandy is preparing to publish a set of teaching materials that will standardize the basic curriculum for Post 876

Each instructor will be asked to cover the fundamentals, but he will also be free to branch out, expand on the materials and follow the lines of curiosity of his students.

Sandy's predecessor as chief instructor was another Tek engineer, Don Clark, of Conventional Instrument. He began compiling the materials and Sandy has continued to update and revise, edit and organize, and has the manual almost ready for publication.

He points out that the lack of guidelines can mean freedom to tailor class sessions to the boys' questions, but it can also make for "holes" in the learning pattern, with important material taking a back seat to "ad Hoc" ideas.

The four-year Explorer program offers four divisions or ranks, from the beginning Apprentices through Technician 1st and 2nd class to the advanced Engineer level. Along the way, the boy may also branch out into other specialty fields associated with electronics.

In the entry-level classes, the Apprentices are taught the basics of schematic drawings and symbols, tool and hardware familiarity, soldering, Ohms Law, basic circuitry, sheet metal fabrication and other mathematical and technical fundamentals.

Under the guidance of an advisor, Apprentices may work on simple individual projects, such as building a small switch or circuit. Emphasis is on each boy's understanding of the electronic principles involved in his project, and why they work, rather than on how complex he can make it.

During their second and third years in the Post, the boys in Technician 1st and 2nd class ranks develop their knowledge of electronics by working with more of the theoretical aspects of the science. They are truly exploring, their minds pushing at the frontiers of design and following up their ideas for original projects.

Working from scratch, one of the more advanced subgroups in the Post painstakingly build a laser device--a machine that generates an intense beam of light.

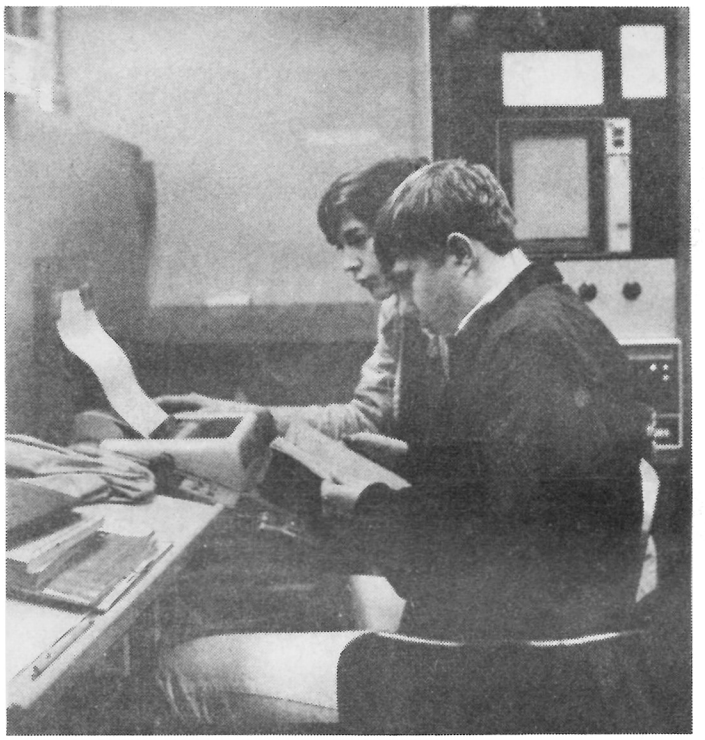
While a couple of the boys were learning the art of glass-blowing to form the necessary tubing, others were carefully machining the metal frame and structural parts, using techniques they had learned in their metalshop studies.

Russ Fillinger, Chairman of the Post's advisory committee, stresses that even though the laser has not yet been fully effective, the process of making it is more significant than whether it works or not. It represents the boys' creative thinking and accomplishment in the practical aspects of putting electronics to work.

Russ is manager of one of Tek's special engineering groups, and has been active in Tek's Explorer Post since its beginning in 1965. He is currently advisor for a small group of boys who are concentrating on the intricacies of computer programming. Working in teams and using the Tek time-sharing equipment, the boys try their hands at writing basic programs in computer language, and devising and solving mathematical problems with the aid of the "electronic brain."

"One of the most difficult things about working with these boys," Russ says, "is trying to stay ahead of their thinking, or even keeping up! Some of our instructors come away from a session with their advanced boys, shaking their heads and saying 'whew, they sure ask some deep questions.' It's a challenge for the advisors as well as for the boys."

MEMBERS of Explorer Post double-check program being written on teletype console unit. Time-sharing terminal keyboard is wired to computer in Seattle.



Verne McAdams, the Post's Chief Advisor and a Tektronix engineer in Electromechanical Development, adds a wry second to that statement. "Trying to keep track of these kids and their ideas is like trying to corral so many fleas on a hound dog!" (He peered into a classroom full of young faces, whose attention was more or less directed to the lecture being given at the chalkboard; a couple of the boys were doodling on scratch paper, completing what looked suspiciously like circuit diagrams, probably for projects they hoped to work on later in the evening.)

All of the advisors are agreed that the Explorer program at Tek is probably unique in Oregon, and does a real service both for the boys and for the field of electronic engineering.

By offering youngsters the chance to work in the many facets of the field, the Explorer Post can help them plan careers and aim their academic studies toward a professional degree

"Even if the boy tries the Post out for six months and decides electronics is not his bag," Verne McAdams says, "he will have had the experience and can go confidently on to other things."
engineering.