

ROCKETS AND MISSILES

Help for Rocketeers

Past attempts to snuff out rocketry progress and development of science pioneers may be repeated due to negative legislation that will force youngsters to experiment secretly.

By DAVID PURSGLOVE

► AMERICA FACES the danger of seeing a large segment of its young science enthusiasts forced underground into secret societies, running from the police, hiding from their own parents, and not daring to divulge their activities to adults who could guide them and perhaps even save their lives.

This is the fear of responsible educators, scientists and military men who are counting on today's young scientists and amateur rocketeers for tomorrow's leadership.

Officials of the Department of Labor, U.S. Office of Education, science and rocketry experts at the Pentagon, and military service leaders have told SCIENCE SERVICE the frenzy of alarm over the great increase in student rocketry during the past six months threatens to rob the nation's already-too-small scientific and technical manpower pool of many brains that are potentially among the best.

Self-appointed safety experts, they say, have rushed into print with ominous warnings and demands for negative legislation without offering any solid, constructive suggestions. Recognized safety authorities have been pressured into making hasty statements before they have had opportunity to study enough of the real hazards of rocketry to be able to formulate helpful plans.

And a helpful plan is what is most needed at present, educators agree.

Clear minds, worried but not rattled by the increasing negative attitude toward amateur rocketry, are now working from several directions toward a plan of national, community, school and home help and protection for the missilemen-to-be.

Organized Study of the Problem

The organizations working intensively on those plans that seem to have the best chances of being put into action include the Department of Health, Education and Welfare; Department of Defense; Department of Labor, which is not only interested in protecting our manpower reserves but also hopes to learn of new safety measures that can be employed in industry; Science Clubs of America and the American Rocket Society.

Many smaller groups as well as private industries also are working toward community and national programs to help the youngsters learn about rocketry in a safe manner.

One surprising conclusion can be drawn from a study of these plans in their formative stages: they not only do not conflict,

but actually agree with each other on all major points, although proposed methods of implementation vary from group to group. Perhaps the reason can be explained by the urgent need—spring will soon bring thousands of youngsters and their rockets outdoors—to protect life and limb and at the same time build our scientific reserve.

Most of the plans are being built within the framework of an outline proposed by an Army missiles expert who himself was once the victim of a negative attitude toward rocketry and was forced to "hide from the cops" on more than one occasion.

Lt. Col. Charles M. Parkin Jr., Engineer Research and Development Laboratories, Fort Belvoir, Va., has recently become the idol and counselor of teen-agers from coast to coast.

Expert Help Available

His job as Army Ballistic Missile Agency project officer and assistant liaison officer between Fort Belvoir and Redstone Arsenal, Huntsville, Ala., keeps him hard at work in the very heart of our military rocket program.

However, missile engineer Parkin is most

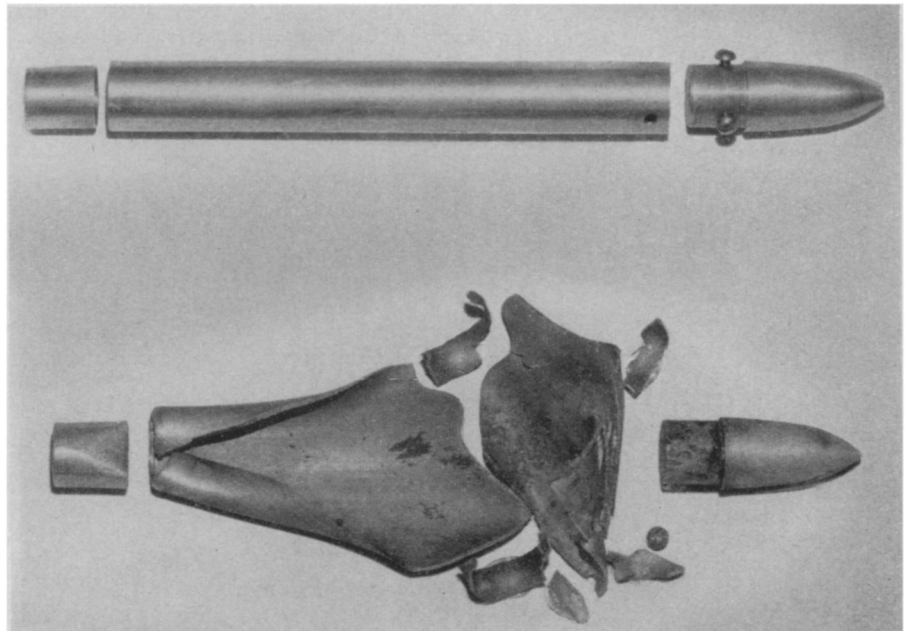
widely known for the other 40 hours of his 80-hour work week.

Hundreds of high school students in Washington and nearby Maryland and Virginia have witnessed Col. Parkin's demonstrations of rocketry safety techniques and, under his guidance at night and on week ends, have developed count-down techniques covering every aspect of safety. He has helped them build safe static firing stands for pre-flight testing that has spotted many unsafe rockets before they were delivered to launching sites.

The nation's press has been filled with pictures of rocket launchings by his proteges at A. P. Hill Military Reservation south of Washington. Not every launching has resulted in a successful flight, but on the other hand there has yet to be a single injury, thanks to student-designed safety measures.

The A. P. Hill launching procedures and other safe amateur count-down practices are likened to Cape Canaveral firings in a form letter used by Col. Parkin to answer part of the 200 letters he receives each week from students and youth leaders requesting rocketry safety information:

"Rocketry can be learned and tried in absolute safety without in any way lessening the excitement of the experiments. (Do you hear of anyone being killed by a failure of a Jupiter or Vanguard firing? And yet, these rockets are taller than a three-story building. The scientists, technicians, and



WRONG FUEL SPELLS DISASTER—A well-constructed amateur rocket, such as the seven-inch, heavy-gauge aluminum student rocket shown at the top, can be a safe, instructive scientific instrument when handled properly. Lt. Col. Charles M. Parkin Jr., who warns against blasting caps and black powder as dangerous fuels, "launched" an identical model inside a container. Fragments at the bottom resulted from loading with a small charge of black powder.

engineers all know the safety procedures involved and practice them.)”

The form letter covers all aspects of rocketry safety and answers most of the questions asked. However, Col. Parkin finds time to give a personal answer to many of the problems that cannot be covered routinely. He urges amateurs who have a rocket ready for firing to mark their letters at the top with a red X.

These letters are given immediate attention, frequently by telephone, the moment Col. Parkin receives them. He questions the amateur about his rocket, fuel and safety count-down. While still on the telephone, the missile expert decides whether the rocket and proposed launching conditions are safe and advises accordingly.

Besides his almost constant close work with amateur rocketry groups in the Washington area, Col. Parkin has also worked with other groups and, perhaps more important, educators and science youth leaders in all parts of the nation. He is among those who fear that stringent controls will drive rocketry amateurs underground, as was the case with America's rocket pioneers in the 1930's. However, some controls, instigated within a plan of guidance and help, are necessary safeguards.

Now a close friend of Dr. Wernher von Braun, young Charles Parkin was firing home-made rockets in Pittsburgh and Lancaster, Pa., in the early 1930's about the same time young Wernher von Braun was firing his experimental models in Germany. Col. Parkin points to a statement used several times by Dr. von Braun in contrasting Germany's rapid rise in rocketry to America's comparative lateness in the field. Col. Parkin quotes Dr. von Braun as saying:

“The main difference, Chuck, is that I had the support of my government at the same time you were having to run from your police.”

Promise of Amateur Rocketry

Col. Parkin believes there are three important aspects of amateur rocketry, two of which are often overlooked, that must be considered in developing any official policy:

1. Rocketry can be safer than driving an automobile, or it can be the most dangerous enterprise imagined, depending on how it is conducted. All recognized safety precautions must be observed.

2. The outlawing of amateur rocketry or the imposition of impossibly stringent controls will succeed only in forcing youngsters to perform experiments in secret, without the benefit of competent guidance. “Soon the only reports we would have on the status of amateur rocketry would be hospital reports.”

3. When students are given a goal, a plan and the right kind of supervision, their experiments can develop among the students the kind of scientific knowledge and leadership that we desperately need. “At the very least, amateur rocketry conducted along scientific research lines will inspire a greater number of youngsters to a more interested and concentrated study of science and to a more thoughtful consideration of science as a career.”

These are the same three points that have been reiterated to SCIENCE SERVICE by the responsible officials of those Government and private agencies trying to develop a satisfactory plan of help and protection for rocketry students.

Offer Advice and Instruction

Here is Col. Parkin's outline as currently being considered by Federal and private groups:

1. Assign an officer to the Office of Assistant to the Secretary of Defense for Guided Missiles. As a start, this officer will organize, with the help of Government, industry and private organizations, high schools and science clubs, missile and rocket clubs within the Washington, D. C. area.

2. Later, national expansion will be accomplished through the sections of the American Rocket Society. The objectives of these clubs will be to stimulate and motivate the youth and to encourage them to enter scientific fields connected with research, development, engineering and production of guided missiles.

3. These objectives will be accomplished through formal classes, individual and group projects, static test firings, live firings and exhibits of projects to the Government and to the public. The officer assigned will be chairman of the Advisory Committee for Missile and Rocket Amateurs.

4. The Advisory Committee for Missile and Rocket Amateurs of the National Capital Section of the American Rocket Society will help organize missile and rocket clubs within the high schools of the Washington, D.C., area.

In addition, science clubs of the Washington, D.C., area will be encouraged to cultivate the skills and talents of their interested members in fields connected with the missiles and rockets. Additional information and publicity will be passed on from time to time through the press and radio.

5. The Advisory Committee will assist the missile and rocket clubs and the science clubs in securing instructors and textbooks.

6. During the course of instruction, groups will be supervised while they construct models.

7. Upon completion, the projects will be evaluated. If evaluation indicates static firing as the next step, then the project will be statically tested. The static firing will be conducted at the high schools under high school supervision if stands and pits are available or at nearby commercial or service facilities under their supervision.

8. The Advisory Committee can help the high schools by assisting them in securing static test facilities. After static firings, live firings will be arranged at nearby service facilities.

Based on Col. Parkin's plan and suggestions from this writer, the workshop on the school's contribution to safety of the President's Conference on Occupational Safety on March 27 recommended a national program to encourage high school students to conduct rocket experiments under supervision, in the belief that students “will not be dissuaded from their desire to experiment by mere laws.”

Science News Letter, April 5, 1958

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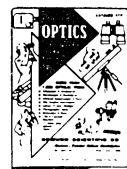
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