

APS to Consider Whether It Should Discuss Public Issues

The 24 000 members of The American Physical Society will soon consider proposals that their organization broaden its purpose and aims to include discussion of public issues. A discussion of this matter by the membership-at-large is tentatively scheduled for the society's annual meeting in Chicago, from 29 Jan.-1 Feb. Copies of a constitutional amendment, proposed by a group of members and oriented toward discussion of public issues, and ballots for voting on the adoption of this amendment will subsequently be distributed to the APS membership.

In recent months the APS council has received suggestions from several APS members that the APS should encourage discussions of public issues at meetings and in its publications. APS president Charles Townes has also received a petition proposing an amendment to the constitution, signed by more than 1% of the APS membership (a requirement for proposing an amendment). The proposed amendment is designed to allow the membership-at-large to initiate a vote of APS members on any issue of concern to APS and on the public stand the society should take on these issues. This proposed amendment states:

Under Article III add the section: "6, *Resolutions*. The members may express their opinion, will, or intent on any matter of concern to the society by voting on one or several resolutions formally presented for their consideration. The procedures required for this action shall be the same as those specified for amending this constitution, with the following changes. The council may require additions to the ballot form to allow the registration of an abstaining vote on any question. The executive secretary shall prepare and distribute along with the ballots a summary of the arguments pro and con. The adoption of any proposed resolution shall require the affirmative votes of a majority of the members voting on that resolution."

RESONANCES

Federal support of higher education from 1963 to 1966 indicates increasing emphasis on nonscience activities, and within science, a definite trend toward education, notes a recent National Science Foundation report. In 1963 science accounted for 94% of federal academic support but in 1966 for only 72% as a result of a ninefold increase in nonscience support (mostly facilities in developing institutions). Within science, support for R&D grew by 55% while support for other activities (mostly education) more than doubled.

... **meanwhile US R&D expenditures** are about three times as great as that for all Western Europe, reports the Organization for Economic Coöperation and Development. The US has one and a half times the scientific and technical manpower of Western Europe and leads all other non-communist nations in spending 3.4% of its gross national product on R&D; second is Britain with 2.3%.

The waste of competitive spacemanship should end, urged President Johnson on 10 Oct. in proclaiming the start of the treaty to limit military activities in space. In again offering to collaborate with the Russians, the President said the expense of resources caused by duplicated or overlapping effort should give way to partnership.

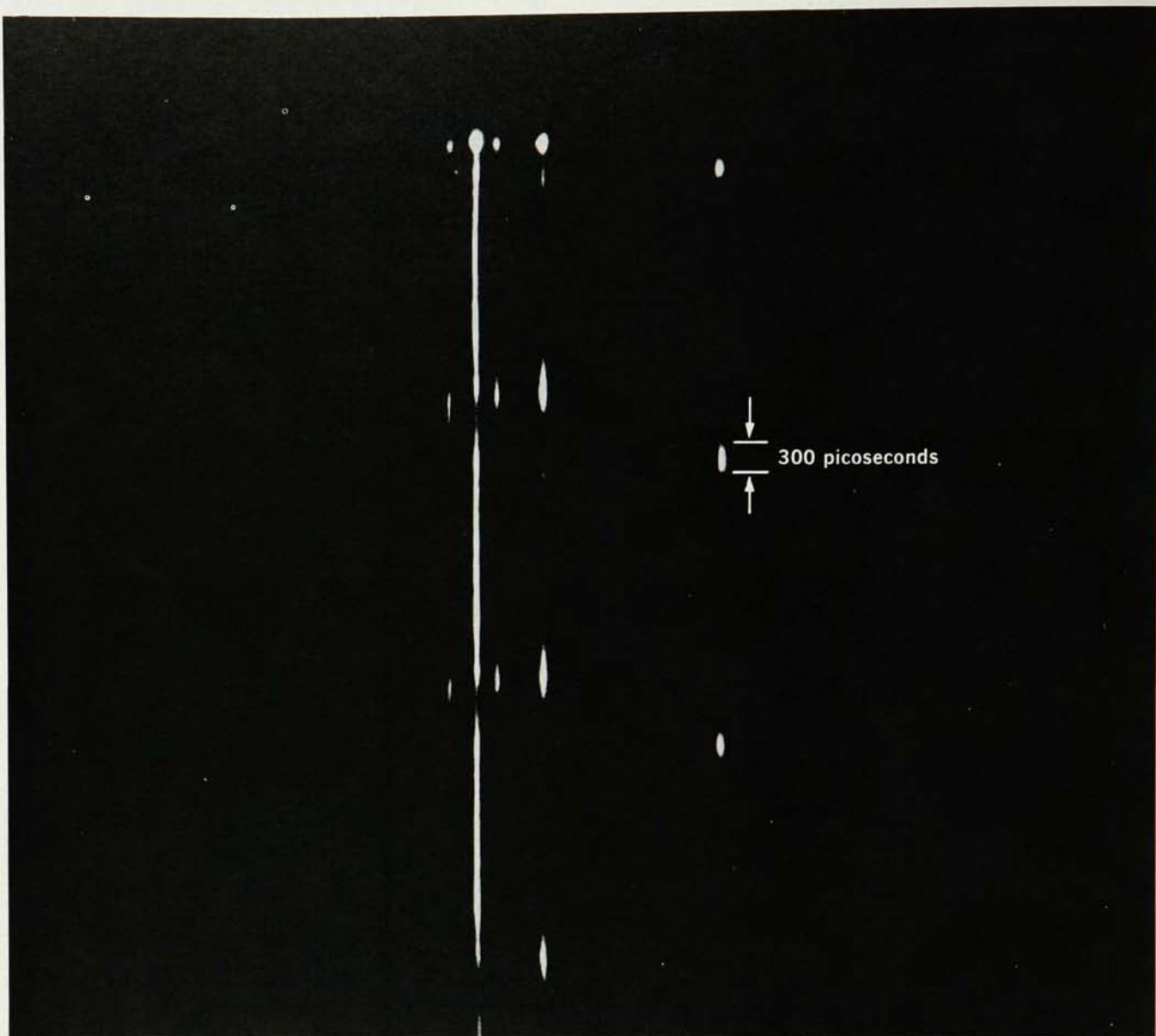
Since the issue is a very important one, bearing not only on the content of APS meetings and publications but on the very nature of the society itself, *PHYSICS TODAY*, at the request of The American Physical Society, will publish a sample of letters to the editor expressive of different shades of opinion on the proposed amendment (not on specific public issues). Further discussion of this issue appears in the November *Bulletin of The American Physical Society*.

Physics Students in the Army: A Lab Tour of Duty

A draftee performs nuclear research on a 3-MeV Van de Graaff, another studies thermodynamics of flame reactions, another measures nuclear radiation under all detonation conditions.

With the step-up in the Vietnam war and higher draft levels, many local boards across the country are calling up increasing numbers of physics students and young industrial scientists for service in the armed forces. Most of these men, the army told *PHYSICS TODAY*, are sent not to fighting areas, but to military laboratories where, during their two-year tour of duty, they work as scientific and engineering assistants (S&E's) to civilian and army scientists. At the present time, over 1100 students and scientists are working in the S&E program, including several hundred physics, astronomy and geophysics assistants. In a recent visit to the army's Cold Regions Research and Engineering Laboratory at Hanover, N.H., we found these physics students generally highly appreciated by their scientist advisors and glad to

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be acquiring new technical skills. They all, however, were anxious to return to their professional careers.

Despite criticism of the program by some segments of the military and others, the army as well as civilian scientists directing S&E projects testify to its success. The S&E contributes importantly to defense research, say the latter, and at the same time is given opportunity to continue his scientific training. He can take courses at a neighboring university or through the US Armed Forces Institute, he associates with senior scientists in many disciplines and (most important to the military) he learns how scientific work is fitted to defense needs. Some critics of the program, however, maintain that student draftees (if they are drafted at all) should go into the army as fighting soldiers and not as scientists. Others assert that civilian scientists, not draftees, should perform the army's defense research.

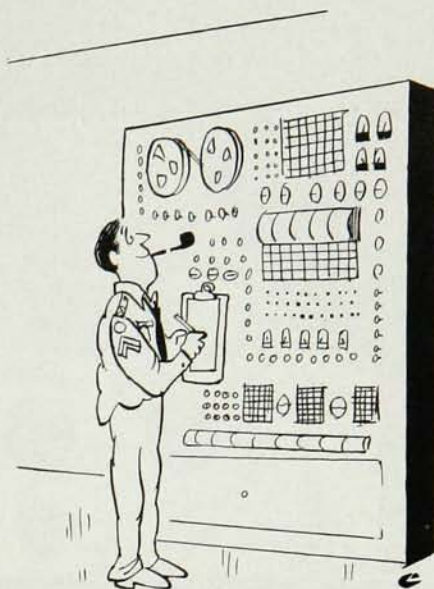
Once a physics student is inducted, he reports to a reception station where he takes a series of aptitude tests and is interviewed about his education and interests. If he has at least a BS in physics (also astronomy, astrophysics, biophysics, geophysics or nuclear-reactor technology), he fills out a special qualification form that is forwarded to the Department of the Army. There the student's record is evaluated, and the army may issue him assignment instructions to a military laboratory. Military requirements prohibit establishment of a policy that assures inductees that their military duty will be served in their area of choice or training. Nevertheless a large fraction of draftees having a BS in the physical sciences serve in the S&E program, and the army notes that physics S&E's are continually in short supply though it usually has a surplus of biology students.

Cold Regions Laboratory. Almost 70 S&E's work at the Army Cold Regions Laboratory in Hanover, N.H. The installation is one of the few laboratories in the world that addresses itself wholly to research in snow, ice and frozen ground. Physics research includes such activities as solid-state studies of ice and structure of liquids in the presence of solid surfaces. At

the laboratory an S&E usually goes from private to specialist fifth class during his two-year service. His monthly pay averages \$70 without dependents and \$105 with dependents. He lives off the base, and the only military duty he may be involved in is raising and lowering the flag. Some S&E's augment their army pay with civilian part-time jobs and about 15% take courses through the Armed Forces Institute. A few stay on at the laboratory when their tours of duty are ended.

"The S&E's work area is directed," says Andrew Assur, laboratory chief scientist. "But within that area he has freedom to roam wherever he wants." Do the student draftees make good soldiers? "We get a good random sampling of graduates from US universities," says Assur. "The highly individualistic S&E's often make disorderly soldiers, but they are often the most creative ones here. The new S&E is brought in at a junior professional level and he has to learn to engage in a human dialog. Many feel they are not being compensated adequately for their work, some feel an underutilization of their talents. When they come here, they have to overcome a block in their minds. They must become self-propelled to be productive. Altogether we feel they make a great contribution to the laboratory."

S&E reactions. Linwood Bracy, a graduate of Olivet College in Michigan, wants to teach physics in a small college some day. He told us, "The army experience definitely set me back two years. But here I learn a lot of laboratory techniques such as handling electronic apparatus and working with the computer. At the moment, I am studying the coefficient of restitution for ice." "I was disappointed that my career was halted," said Thomas Nasman, who was working with Westinghouse and who had planned to go on to graduate school. "But my experience here has cleared my thinking and definitely turned me toward applied research." Daryl Hatfield, who was doing telemetry data reduction at White Sands, N.M. missile range before being drafted, had appealed unsuccessfully to Washington for a draft deferment. "As it turned out, I feel I am better off being drafted," he said.



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"Getting drafted changes everybody's life aims. I work in photointerpretation here, and I may continue this work when I get out." Norman Craig, who was studying geophysics and engineering at Whittier College in California, is now working on avalanche prediction studies at the laboratory. "For my own professional use, I doubt if this information will be useful," he said. "Yet I'm getting a good training in handling statistics, and I work closely with a cross section of scientists in many fields."

Almost All Congressional Committees Studying R&D

A recent Library of Congress study of congressional involvement in federal research and development has indicated that virtually every committee in both Senate and House is concerned with some form of technology. Basing its analysis on the number of pertinent publications on R&D issued by each committee during the 88th and part of the 89th Congresses (1963-65), the study shows that two joint, 20 House and 16 Senate committees exercised some jurisdiction over various aspects of the \$15.5 billion annual federal expenditure for R&D. On the House side, the most active R&D committees were Appropriations, Government Operations, Interstate and For-