News and views

PHYSICISTS AND MILITARY MOBILIZATION

DRAFT DEFERMENT OF PHYSICS STUDENTS

The Selective Service System, at this writing, is calling up 50,000 men per month. This rate may be raised. Specific regulations for occupational deferments and for the cases of students in advanced fields of learning have not yet been issued. The Selective Service Act of 1948, now operative, states in its preamble the intent of the Congress that "adequate provision for national security requires maximum effort in the fields of scientific research and development, and the fullest possible utilization of the Nation's technological, scientific, and other critical manpower resources". To implement this intent, Sec. 6(h) says "The President is authorized, under such rules and regulations as he may prescribe, to provide for the deferment . . . of any or all categories of persons whose employment in industry, agriculture, . . . , or whose activity in study, research, or medical, scientific, or other endeavors is found to be necessary to the maintenance of the national health, safety, or interest".

Since, in general, physicists can give best service to the nation in a nonuniformed rather than uniformed capacity, it is desirable at present to seek their deferment in most cases. This applies to students certainly because the number of physicists available is now insufficient for the work they must be called upon to do in a national emergency.

The Act provides that any person who, while satisfactorily pursuing a full-time course of instruction at a college or university, is ordered to report for induction may have his induction postponed until the end of his academic year.

The above is about all there is to go by in dealing with the cases of I-A students. Pending the issuance of detailed regulations and formal procedure for the guidance of local boards, where the authority resides, it is desirable for department heads to write the local board in each case a letter requesting deferment—or at least postponement of induction—of anyone who is a high grade student of physics. This applies to undergraduate majors and graduate students. The letter can refer to the intent of Congress quoted above, mention some of the war-connected uses of the trained physicist, and suggest that no doubt detailed deferment procedures in such cases only await time for drafting and issuance.

When requests for postponement, deferment, or appeal fail, a full statement of the case should be made to the Director, Headquarters, Selective Service System, 1712 G Street, N.W., Washington 25, D. C., with a request that the case be reopened. It is believed that such a request will receive serious consideration.

It is known that advisory committees appointed by General Hershey in the physical sciences and other fields have been working on regulations governing the cases of students. It remains to be seen what is finally approved and issued.

It is possible that an interim emergency procedure may be announced to prevent inductions of students up to the time the academic year opens, after which postponements are provided by the Act. Newspapers should be watched for such an action.

DEFERMENT OF PHYSICIST MEMBERS OF MILITARY RESERVES

On August 3, the Department of Defense announced its policy on the deferment of members of the several Reserves for occupational reasons. The policy recognizes the existence of occupations and activities from which men should not be called immediately to service in uniform. Among the occupations listed with the aid of the Department of Labor is that of "physicist". For deferment, it is not enough to be in a critical occupation. The occupation must also be necessary to an essential activity. A list of essential activities has been prepared by the Department of Commerce. While it is mainly a broad list of industries, "Educational Services", including "establishments furnishing formal academic and technical courses", is one item. The occupation "teacher (critical occupations only)" also appears on the first list. This clearly includes teachers of physics.

The policy statement explains that "Initial deferments of Reservists . . . may not exceed a period of six months, and no extension may be for more than a period of six months". This provision is understandable from the point of view of the Services but is bound to cause administrative difficulty which it should have been possible to avoid in many cases by a more farsighted, long range policy.

Applications for deferment of call to active duty should be made when the Reservist receives his call and be made in writing. The request may be made either by the Reservist or his employer. Very prompt action is strongly recommended.

Requests for delays in call should be addressed as follows:

Army—Requests for delays in call to active duty should be made by a member of the Army Organized Reserve Corps through his unit commander or unit instructor to the commanding general of the Army area in which he resides.

Navy—Requests for delays in call to active duty by Naval Reserve officers should be addressed to the Chief, Bureau of Naval Personnel. Nonaviators will send requests via their district commandant. Aviation officers should send their requests via the Chief of Naval Air Reserve Training, Naval Air Station, Glenview, Illinois. Requests for deferment by enlisted personnel should be addressed to their naval district commandant by nonaviation personnel, and to the Chief of Naval Air Reserve Training, Naval Air Station, Glenview, Illinois by enlisted aviation personnel.

Marine Corps—All requests for delays in call to active duty must come from the individual through the chain of command, starting with the local inspector instructor.

Air Force—Requests for delays in call of Air Force Reserves should be made to the headquarters of the num-

bered Air Force for the area in which the Reservist resides.

National Guard—Requests for delays in call of Army and Air Force National Guardsmen should be made to the Adjutant General of the state concerned.

ON TEACHING PHYSICS

AAPT MEETING REPORTED

The summer meeting of the American Association of Physics Teachers (held June 20, 21, 22 at Wesleyan University in Middletown, Connecticut) was unique in many ways. For one thing, the meeting was completely a physics teachers meeting. No other organization or society was meeting in that vicinity at the time. This was a first for the physics teachers, some one hundred and fifty of whom were registered from at least twenty-five different states and Canada, and from over eighty different institutions. Of the registrants, about forty-five were accompanied by their wives or families, so well over two hundred were present, and the pleasingly cosmopolitan nature of the meetings contributed toward the friendly and informal tone of all the sessions. All this was made possible by the excellent program arranged, which everyone found stimulating and valuable, and above all by the graciously provided environment of that ideal campus of Connecticut Wesleyan. Nothing but praise was heard for the local setting.

Formal meetings began Tuesday afternoon. In discovering that the Scott Laboratory housed a vigorous research as well as teaching program, many of the visitors also learned how piezoelectricity was pronounced, even if they might not have followed all the details of the ten excellent demonstrations on the meaning and applications of this crystal phenomenon which were given by advanced students of Wesleyan under the direction of Professor Van Dyke. The film "Crystal Clear", presented by courtesy of the Bell Telephone Laboratories, charmed even the wives of physics teachers, several of whom may have been attending physics lectures for the first time in their lives.

At the banquet Tuesday evening President Roller presided and in introducing the speaker, L. W. McKeehan of Yale, proposed a problem for him, the particulars of which might be misunderstood in print, so they will not be given here. The problem was solved, however, and in the formal paper on teaching by publication a vigorous case was made for simple statements in physics, and in texts in particular. Flourishes (chit-chat) should be segregated in foot notes. The speaker also pointed out that unless physicists learned to concentrate their ideas better, librarians would soon be forced to use jet propulsion in making their rounds.

Wednesday morning in many respects provided the high lights of the meeting. Introduced by R. M. Sutton of Haverford, Professor Eaton of Wesleyan showed definitely that lecture demonstration in physics is an art. No one there failed to glimpse a new standard of excellence in the experiments performed. Possibilities of timing, visibility, simplicity, economy of motion and words were evident to a degree few can attain. We will try to imitate. Eric Rogers supplied the expected touch of drama and suspense—but he got written up in *Life*. Three internationally famous lecturers, Benjamin Snow, Arthur Foley, and Pohl of Göttingen, had their methods described by former students. Not one of the teachers present but felt the challenge of this meeting.

The pace of the Wednesday and Thursday afternoon sessions was sufficiently leisurely so that no alarm clock was needed. These two sessions were devoted to contributed papers and provided for the listeners a number of fine ideas, many of which will shortly be reported in more detail in the *American Journal of Physics*.

The papers presented Thursday morning were constructively interesting. Teachers present from the western schools were pleased to have Dr. Knapp of the Wesleyan Psychology Department announce statistics indicating that a larger percentage of students from western schools become scientists than do those from eastern schools. Some were puzzled perhaps by the fact that a larger percentage of scientists came from Republican rather than Democratic parentage. How this may influence the teaching of physics was left to the audience. All agreed that statistics can be interesting.

It was unanimously felt that such a meeting would be very desirable another year though the high standard set by Wesleyan in its Middletown setting would not be easy to attain elsewhere. R. F. Paton

PIEZOELECTRICITY

The first session of the AAPT meeting on Tuesday afternoon was devoted to a symposium on piezoelectricity. In his introductory remarks, W. G. Cady of Wesleyan University, the presiding officer, gave a brief account of the field's historical development. Emphasis was laid on the example thus offered of scientific reasoning and of cooperation between scientists. Present trends in piezoelectric research and applications were summarized.

Among the most important and instructive lines of research is that concerned with the "ferroelectrics". These are piezoelectric crystals, of which the first to be discovered was Rochelle salt and the latest barium titanate. Their dielectric properties offer a very striking and significant analogy to the ferromagnetism of such materials as iron.

Suggestions were offered concerning the treatment of piezoelectricity in physics texts, with the recommendation that the subject be introduced, if at all, in the chapter on dielectrics.

The second feature on the program, by K. S. Van Dyke of Wesleyan, was "Ten Demonstrations in Piezoelectricity". These experiments, some of which were shown for the first time in public, had been prepared and were demonstrated by members of Professor Van Dyke's class in electronics. They included the bouncing of steel balls from the end of a vibrating quartz rod, the "ringing" of a quartz resonator after the exciting current had ceased, the spinning and sliding of a quartz sphere on a track, the production of a jet of liquid by ultrasonic radiation from a concave barium titanate transducer (received through the kindness of The Brush