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The Month in Focus

ONE OF THE recurring questions in engineering education is the place of highly specialized training. The armed services, in their various college programs, have answered this question in a variety of ways; but in each case the answer has been dictated by a definite and specific need. Doubtless some of the changes which war training programs have brought about in engineering curricula can be advantageously retained in postwar engineering education. But since in times of peace engineering students are trained for general fields rather than for the needs of a single company, it is doubtful whether a high degree of specialization during undergraduate years is a desirable feature.

In general, industry has expressed itself as favoring broader, fundamental engineering education during the first four years. Beyond this period industry itself is probably best equipped to give or to supervise the specialized training which is demanded of its engineering personnel. This does not, of course, eliminate the necessity of graduate training in college; but such training best serves its purpose with men who are to occupy research positions and positions involving highly specialized technical skill.

Far too many engineering students pass through their undergraduate years without a sufficient realization of the relationship between their courses and the ultimate character of the professions for which they are preparing themselves. This is unfortunate—unfortunate for the students and unfortunate for industry.

Some engineering colleges feel that they have met this difficulty through cooperative systems in which the student alternates classroom and laboratory work with practical experience in industry. Some institutions encourage their students to take summer work in the appropriate engineering fields. It is beside the point here to attempt to decide which of these systems is the better. The fact is that whatever the system (or lack of system), the situation can be greatly improved by closer and more sustained cooperation between colleges and industry. Under normal conditions, the college should concentrate

the four years of undergraduate training on engineering and science fundamentals. Industry, for its part, should begin its indoctrination programs to stimulate interest early in the students' college career; and it should become acquainted with the men at about the time when they are choosing the engineering field in which they wish to work, not waiting until they are seniors on the eve of graduation and looking for jobs.

At present these ideas cannot be put into practice to the fullest extent. The future of men in the service training programs is determined, at least for the duration. (The special problems which will grow out of their situation at the end of the war will be serious; but they should not affect the permanent character of engineering education, since in the nature of things they will be of limited duration). For civilians, the principal deterrent is the draft situation. Most students graduate from college at the age of 20 to 22. Present Selective Service regulations (as of March 1) make it difficult to employ and hold these men. Under the quota system of student deferment the California Institute of Technology, for instance, is allowed deferment for only about 47 students; and it is doubtful whether industry will be in a position to employ these men upon graduation. The difficulty is that while they are deferred until the end of their undergraduate work, there is no assurance that deferment will be continued so that they can take positions in industry. In February, for example, several companies canceled offers which they had made to graduating seniors because it was impossible to obtain further deferment for them. Industry is not likely to be willing to embark on a program of closer and more intensive cooperation with engineering colleges unless there is reasonable assurance of results in the way of promising recruits.

Nevertheless, though such a program of closer cooperation may be impracticable at the present time, it is still a highly desirable end to work for as part of the inevitable readjustments which will be made in engineering education when the war is won.