

TECHNOLOGICAL HUMANISM

From PROF. D. G. TUCKER,* D.S.C., MEMBER

IT is to be hoped that the publication of Sir Eric Ashby's lecture in the September *Journal* (p. 478) will help electrical engineers to appreciate the importance of broadening the engineer's education and will encourage those responsible for technological education to 'do something about it'.

But the implication that nothing is being done at present is quite unjustified. Sir Eric states '... some English technical colleges have introduced an *element* of the humanities into their courses'.† It was clear, however, from the Easter 1958 conference at Cambridge‡ that *many* technical colleges have

* Dr. Tucker is Professor of Electrical Engineering in the University of Birmingham

† Italics due to the present writer

‡ 'Liberal Studies in Technical Education', Board of Extra-Mural Studies, University of Cambridge

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introduced a *great deal* of the humanities into their courses.

Sir Eric also says '... universities in Britain are not yet persuaded that the humanities are an essential ingredient in higher technological education. Many universities do indeed arrange opportunities for students to broaden their interests through voluntary attendance at lectures on art and music and the like. This is admirable, but it is a very different thing from recognizing certain humanistic studies as an integral part of a technologist's formal higher education.' For years, however, the Electrical Engineering Department of the University of Birmingham have made humanistic studies an integral part of the electrical engineer's education.* For the past two years, indeed, courses totalling about 72 hours of *scheduled* class time have been provided, and success in the

* D. G. TUCKER: 'Broader Education in a Technological Department', *Universities Quarterly*, November 1958

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various examinations on these courses has been an essential part in the award of a degree.

The difficulty of finding time in the time-table for such courses is usually greatly exaggerated. The important thing in technological education is to *educate* the technologist. A great deal of the conventional technological courses has no great educational value and is unlikely to be used by the engineer in his later career. If he should want it later he ought to be able to learn it for himself; or he could attend a suitable postgraduate course, of which an encouraging number are now available. Thus a dispassionate review of syllabuses will readily show where room for broader education can be found.

Should broader education be provided for the university as a whole, or separately in each department? There seems to be need for effort at both levels. Open lectures on a wide range of topics are provided in all universities, but it is at the departmental level that efforts in broader education can be made to have the greatest effect.

In a large university, students inevitably attach their loyalty to their department, and therefore their departmental staff are in the strongest position to influence the students in their thoughts and plans. Thus in any broader education courses it is essential for the departmental staff to take a large share in the teaching and discussion. If these courses were left *entirely* to specialists from other departments or from outside the university, the students might be forgiven for doubting their relevance to the life of an engineer.

The courses in the Electrical Engineering Department Birmingham follow remarkably closely the pattern recommended by Sir Eric. Informal discussion groups deal with such topics as the use of English (covering the students' own composition, speaking, and dramatic reading) and the influence of the industrial revolution on literature, society and institutions.

Formal lecture courses are given on design in engineering (to emphasize the breadth of interest in the engineer's life and the wide considerations of design) and on government and management in relation to the technologist (covering technologists in management, government research and its influence on industry, and innovation in small firms).

In the final undergraduate year, a comprehensive course* of about 44 lectures is given on the historical, sociological, economic and scientific background of technology, and on engineering production problems. In these courses as a whole, the Department's own staff provide about one-third of all the instruction, the remainder being provided by other departments in the Faculties of Science, Arts, and Commerce, and by outside speakers.

These courses are examined by means of vacation essays (in which a surprisingly high standard is reached by many students) and formal examinations. Some informal but prepared discussion meetings are organized by the students without help from the staff, and the standard reached is quite good. Impromptu discussions are, however, usually very poor. The courses are still experimental, and efforts are being made to improve them in many ways.

* D. A. Bell, 'Birmingham's Background', *Technology*, August 1958, p. 166

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