

INDUSTRIAL AUTOMATION

THE fifty-two industrial research associations in Britain have long been an integrated network of research organizations stretching across more than 60 per cent of the country's productive industry. The first formal step in this integration was the agreement, some years ago, that as a matter of policy all research associations should be encouraged to assist one another and, through each other, their industrial members with advice and guidance on technological problems. Each association is thus able to draw on a wide range of technological skills beyond its own. This integration has been fostered, too, by the formation of groups of research associations having similar or related technologies. Thus we have a Committee of Directors of Textile Research Associations and similar groups for the metal and food industries. These groups meet for the exchange of views, for mutual assistance and for the avoidance of unnecessary duplication of research work. Among the textile research associations, collaboration has now reached a point where each association allocates a small proportion of its annual budget to collaborative work of interest to more than one industry. Collaborative enterprises at present include investigations into flame-proofing and into the purification and disposal of effluents and the conservation of water.

A further step was announced on February 6 with the formation by the Committee of Directors of Research Associations of an Industrial Automation Group. This new step has been taken because it is believed that, since rapid progress in the application of automation depends largely on the exchange of information and co-operation between those with expert knowledge of control engineering and those with expert knowledge of particular production technologies and problems, the research associations have a unique part to play. They are already aware of the manufacturing problems of the industries they serve and know of the trends of development taking place in them. The great diversity of problems that exists in different industries makes it especially appropriate that the research associations, integrated as they are and in partnership with Government through the Department of Scientific and Industrial Research, should be expected to play a major part in the future application of automation to industry. Some research associations have already made valuable contributions to the general application of automation procedures both by developing improved machinery and automatic control devices, and by encouraging and assisting their members to apply automation concepts.

The objectives of the new Industrial Automation Group may be summed up as the acceleration of the introduction of automation techniques. To this end it proposes to assist all research associations to set up automation sections; to formulate automation projects or their components that are of common interest to a number of research associations and that would benefit from joint action; to assist in utilizing each research association's specialist facilities related to automation; and to provide a mechanism through which collaborative activities with a bearing on automation can be fostered. It is hoped, too,

that the Group will be able to negotiate special financial support from the Government for the promotion of automation projects. It is expected that the Group will be able to encourage the development of specialist automation projects in the research associations and, through them, in their respective industries by providing a channel of communication between the associations, by conferences and special lectures or demonstrations, and by forging links with professional and technical organizations with similar objectives.

It is intended, initially at least, that the interests of the Industrial Automation Group shall be confined to technical and economic problems. The Committee sponsoring the Group is, of course, aware of the fears that have been expressed about the social consequences that may follow in the wake of the widespread application of automation but is satisfied that such questions are already the concern of other bodies better able to deal with them.

The first meeting of the Industrial Automation Group was held in December when a start was made on the formulation of projects, based on present-day work in the research associations, suitable for collaborative efforts. For example, two years of preliminary research and development at the British Launderers' Research Association have proved the feasibility of auto-racking and packing of customers' bundles of finished laundry. With the addition of a marking system suitable for automatic reading and identification, simplified magnetic data-storage devices for customer information and automatic pricing of bundles on the basis of weight and number of articles (all of which is now under active development), visual identification and manual sorting will be unnecessary. It is easy to see the possible extension of such a development, if successful, into the fields of central engineering stores, mail-order houses, parcel sorting, many forms of packaging, warehousing and dispatching.

At the Warren Spring Laboratory of the Department of Scientific and Industrial Research, which is also represented on the Group, a considerable amount of work is now in progress to apply computers to the control and optimization of chemical and other plant. Provided the problems associated with the provision of suitable measuring devices can be solved it will be possible to apply the technique to a wide variety of processes, the only additional work in each instance being the establishment of a suitable sample technique. The generalization of techniques in this way and the cross-fertilization of technologies, as illustrated by the laundry project, will be an essential function of the Industrial Automation Group.

The chairman of the Group is S. S. Carlisle of the British Scientific Instrument Research Association, and the Machine Tool, Hosiery, Baking, Launderers' and Cotton Silk and Man-made Fibres Research Associations are all represented on it, together with the Warren Spring Laboratory; the United Kingdom Automation Council is represented by J. F. Coales, its chairman.

D. W. HILL

TRADE UNIONS: THE SECOND CALL TO REFORM

AS a complement to an earlier Broadsheet *Trade Unions in a Changing Society* (*Nature*, 200, 817; 1963), which discussed the scope for trade union activity to-day and in the future, Political and Economic Planning has continued its study of Trade Unions with a further Broadsheet entitled *The Structure and Organization of British*

Trade Unions *. In this latest Broadsheet, B. Donoghue, A. Oakley and Janet Alker seek to establish in what ways Union structure and organization are not working effi-

* *Planning*, 29, No. 477; December 2, 1963. *The Structure and Organization of British Trade Unions*. Pp. 431-486. (London: Political and Economic Planning, 1963.) 5s.