

Equal Opportunities Commission
Overseas House, Quay Street, Manchester M3 3HN.
Tel: 061-833 9244

Regional Office for Scotland
249 West George Street, Glasgow G2 4QE.

Regional Office for Wales
Caerwys House, Windsor Lane, Cardiff CF1 1LB.

The Engineering Council
Canberra House, 10-16 Maltravers Street, London WC2R 3ER.
Tel: 01-240 7891

EOC 214/7.5K/01/84



WISE '84
WOMEN INTO SCIENCE AND ENGINEERING

What is WISE Year all about?





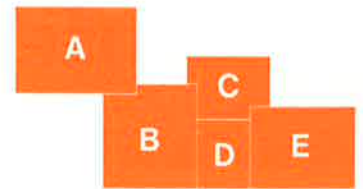
A Fiona Bickmore, Electronic Engineer.
Photo courtesy of the Plessey Company.

B Using a milling machine during workshop training.
Photo courtesy of WES, Loughborough University of Technology.

C Course members working in the engineering drawing classroom.
Photo courtesy of Norwich City College of Further and Higher Education.

D Caroline Ritson, Engineer.
Photo courtesy of Scotsman Publications.

E Lt. Sharon Dearle, Army Aircraft Engineer.
Photo courtesy of J. Walsh, Andover, Hants.



From all the information available it is clear that in the present economic climate, the sciences, engineering and technology offer better prospects for employment than many areas which have previously attracted girls and women. If they are to have true equality of opportunity, it is essential to make them aware of this fact and to encourage them into these areas of work.

Women can no longer afford to ignore the opportunities which the engineering and science-related professions open up for them and, at the same time, the engineering industry can no longer afford to neglect the talent and ability which women have to offer.

By launching WISE '84 the Equal Opportunities Commission (EOC) and the Engineering Council aim to draw attention to career opportunities for girls and women in the engineering industry and in those professions requiring science qualifications, and to alert education and industry to the need to create an environment which is attractive to and supportive of girls and women.

The aims of the EOC and the Council are complementary : the EOC seeks to promote equality of opportunity and the Council is seeking to promote the opportunities offered by engineering. Both organisations, from slightly different standpoints, are concerned about the waste of women's potential in an area of national importance.



What is the problem?

The failure of girls to take up opportunities for employment in engineering and science-related professions is a cause of great concern. Figures for the engineering industry show that in 1980 women formed only 21.5% of the total engineering workforce and 94% of all women working in engineering were employed as operators, as clerical staff and in unskilled grades. Only 2.5% of the scientists and technologists in the engineering profession are women and only a very small number of women are employed as technicians.

This marked under-representation of girls and women in engineering and science-related professions often stems

from the outdated notion that such work should be carried out by men – a belief inappropriate in today's social and economic situation. Nevertheless, it has influenced actual practices associated with science and engineering and is still reflected in the advice offered to girls and women by their careers advisers, teachers and industry in general.

At school, a differential curriculum where science is generally regarded as a boys' subject often leads girls to make narrow option choices without considering how these relate to actual job opportunities available to them later on. Of the total number of pupils taking physics at 'O' level in 1981, girls formed only 25.5%, and this figure dropped to 19.5% for 'A' level entries!

Trainers and employers therefore assume that in the engineering context they will be dealing with boys, an attitude which may lead to male-orientated course information and content, which can have the effect of discouraging even those girls who are qualified from using their qualifications in the engineering field.

In fact, by rejecting what science and technology has to offer girls are effectively closing the door on a whole range of careers. This is particularly true at the present time when the introduction of new technology into many sectors of industry is increasing the demand for a technologically skilled workforce.

Compared with the figures for 1980, an expansion of 14.3% in jobs for engineers and scientists and 12.5% in those for technicians and draughtsmen is predicted by 1990. The



engineering profession will therefore require a significant intake of young people to match its future requirements. Despite a shrinkage in the engineering manufacturing industry the numbers of scientists and technologists have actually increased in real terms since 1979. The indications are that parts of the industry are slimming down and adopting more modern techniques including new technology. This points to the need for change in the traditional picture of engineering as seen by young people and their advisers. The introduction of new technology means that the industry needs versatile young people of the right calibre at all levels.

What can be done about it?

Unless positive steps are taken by all parties – educators, trainers and employers – we shall continue to perpetuate an irrational situation whereby girls and women with the potential to work in professional engineering jobs are discouraged from doing so, whilst engineering employers may be short of qualified technicians and of graduate engineers especially in the electronic and electrical fields.

WISE '84 invites all interested parties to join in this important campaign, to discuss the issues and to put forward proposals for positive action. In this way WISE hopes to stimulate the development of projects in all sectors of education and industry to encourage girls and women to pursue careers in engineering, science and technology.

Already the realisation that girls are missing out when it comes to employment opportunities has led to work with girls and science in schools, and in further and higher education. Some of the schemes which have been identified involve:

In schools

Preparation of teaching materials, posters, etc, on girls and science Re-assessment of teaching methods and curriculum content School-engineering industry link schemes Careers events and women speakers on opportunities in science and engineering, exhibitions and competitions.

In Further and Higher Education

Residential taster courses for sixth form girls Courses for women only in non-traditional subjects such as engineering, electronics, computing Courses for women seeking to return to or re-train in science and technology.

In Industry

Development of links with schools to promote careers in engineering Preparation of recruitment material which is particularly attractive to women and which addresses them directly Positive action to develop the careers of women employees.



Photo courtesy of The Engineering Careers Information Service.

It is essential that involvement and support for the aims of WISE '84 are translated into practical action to encourage girls and women into science and engineering. If you would like to join in the campaign but are unsure of the type of project which your school/organisation could develop the EOC can provide ideas and a contact list of individuals and groups who will help with WISE events.

The EOC's main contribution to WISE will be two major advertising campaigns. The first on Information Technology takes place early in 1984 and involves the distribution of role-model leaflets, guidelines for teachers, and posters. The second campaign on Engineering is planned for September, and it's hoped that material prepared by various organisations for WISE will be included in the information packs, which will be sent directly to primary and secondary schools and will be available to others on request.

The EOC and the Council will also be involved in a number of employers' conferences and various careers events related to the WISE theme.

A full programme of WISE '84 events will be available in January and updated at regular intervals.

What of the future?

The need to encourage girls and women into science and engineering will not end when WISE '84 draws to a close. It is essential that the work developed during the year by schools, colleges and employers is continued and extended if WISE is to be successful and if the aims of WISE '84 are ultimately to be achieved.