

led to a quick demand for engineers who could not be supplied in sufficient numbers by the few existing university departments. So most rose from shop floor workers and craftsmen to become engineers — a process that carried little prestige. But in Ireland — which generally escaped the rigours of industrial revolution — most engineers were civil engineers, with university degrees, who provided roads, bridges and other services for the community and carried a corresponding high status.

Indeed the pervading nature of the differing prestiges of Irish and British engineers is explained by the fact that in 1958, 95% of those achieving engineering status in Ireland did so through university

degrees. In Britain, the proportion was still only 39%, the rest achieving chartered status via part-time exams set by the professional engineering institutions. Only in recent years has Britain approached Irish levels for university educated engineers. For instance, in 1974, the figure had reached 90% in the UK, and 93% in Ireland.

Thus a picture can be seen of an original, well-established prestige for engineers in Ireland, leading constantly to better students and eventually to an even higher status. And certainly a thorough confidence in its engineers and technologists, combined with its recent industrial re-birth, indicates a strong financial future for Ireland.

It is then all the more vital to have the right quality of technical manpower to sustain this industrial growth. As Matt O'Donovan, of the Institute of Engineers of Ireland, stated: "It is important that we are training not just for existing industry but to initiate new industry".

It is this last capability that is particularly absent in Britain at present and which must be restored through the proposals of the Finniston committee of inquiry into the UK's manufacturing industry. However it is hard to see how it can find a way to cut through effectively the damaging spiral of engineers' low status, producing poorer levels of student intakes and eventual graduates, and resulting in even lower status for engineers. □

How industry lost an enthusiastic engineer

Robin McKie tells how one technologist's enthusiasm and ambition turned to disillusionment

For Barry Francis, engineering was his only choice of career since the age of nine. It seemed an obvious selection for a youth fired by an early enthusiasm for constructing crystal radio sets and who eventually ended up building hi-fi systems as a hobby.

So after he took O and A levels at Goring Hall, Sussex, he entered Middlesex Polytechnic for his main engineering course and later transferred to Manchester University for a postgraduate diploma in semiconductor electronics. Then in 1969, Barry moved to industry where he began work as a research engineer for Hawker Siddeley at Hatfield.

And almost immediately disillusion set in. "I discovered rather quickly that I would not be pushing back the boundaries of discovery every week. Instead I found myself working on projects that would not come to fruition for 10 to 15 years", he said.

Although the work — designing special instrument displays for vertical take-off jets — provided reasonably fulfilling employment in a limited fashion, it was also clear that the aircraft construction industry was far from healthy. So, with no immediate job satisfaction and no obvious career path, Barry left Hawker Siddeley after only 18 months and moved into mainstream engineering.

At Control Systems, Uxbridge, he was appointed a senior research engineer jointly in charge of a project team of 15 technicians, programmers and engineers who were designing a small business computer to control payroll, invoicing and other office chores for companies of up to 100 employees.

Sadly, although the work again was reasonably fulfilling, disillusion quickly set in once more. A particular problem lay with the firm's controlling company which eventually seemed to lose interest in the project and the team found itself

increasingly pushed lower and lower on lists of priorities.

However, more importantly, Barry believes that although the project was a reasonably modest undertaking, it required more in terms of human resources than the company could then provide.

These experiences, plus involvement as a writer for engineering journals, led 34-year-old Barry to the view that a major flaw in UK industry is its amateurishness. This is not the particular fault of its exponents but there can be little doubt, he feels, that British scientists, technologists and engineers have a poor feeling for industry.

And a major portion of the blame must lie with UK universities and polytechnics. "My own education did not in any way prepare me for industry's requirements. There was no design, management or marketing training — and these are crucial for you cannot just build a piece of equipment in isolation without knowing if there is a need or a sales potential for it. Really, at university and college, we were just being prepared as glorified technicians".

Generally Britain can be seen as a nation that cobbles things together to produce a solution under pressure. Often budget constraints can help to find more effective production methods but all too frequently initiatives are lost to other countries who are capable of more adventurous and stylish marketing and design systems.

After his two depressing experiences in industry, Barry left to be a writer and associate editor for various engineering magazines before later moving on to his present occupation as a public relations consultant. And from his story it is hard to avoid the view that British industry, because of its very make-up, lost someone of ambition and drive who is now unlikely to return. "In a sense I cannot move back at the moment without having to make a big financial sacrifice. In fact, if I went into

industry again, I reckon my income would be halved."

This view has often been endorsed by various studies of engineers' conditions in industry. For instance, Peter Lawrence, of Southampton University's engineering department, recently produced a paper which showed that salaries in the UK were greatly below the levels of those in Germany. In 1976, the average salary for an engineer in the UK was £5510 while in Germany it was £12,119 — and at that time the cost of living was only 36.4% higher than in Britain.

Similar discrepancies in awards exist in most other European countries, including Ireland. As Professor Scanlon, head of University College Dublin's electrical engineering department put it: "I can give more to a PhD student in Ireland than industry gives as a salary in the UK".

Of course poor salaries reflect the low status of engineers in Britain — a view backed by Barry Francis. "Not enough bright kids are going into engineering", he said. "They see lawyers and doctors living well and decide to follow them.

"However once you have put this right and have raised the prestige of engineers, the bright children will start coming in, and then we'll eventually get better British products and an improved industrial performance".

But even if conditions were improved, there would still be difficulties in attracting the return of former engineers such as Barry Francis. All too often, these people find their conditions and trainings badly out of date and discover there is no system for updating engineers in recent technological developments. Proposals — such as one-month university courses — are now being considered by the Finniston committee and the Science Research Council is also set to launch a trial project on these lines.

Only when a total package of proposals on these lines is implemented can Britain then hope to attract the talent and ability needed to restore its technological and industrial strength. □