

# The engineering profession in Europe

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## SYNOPSIS

*European directives being issued to achieve implementation of the Single European Act by 31 December 1992 cover the protection of the freedom of movement of professionals and services. These directives will have an impact on the British engineering profession. Incoming migrants will need to be treated correctly and British engineers will need advice. The engineering institutions are likely to be designated 'competent authorities' for the purpose of implementation, and guidelines will have to be worked out to ensure consistency in applying the regulations.*

*Engineering formation in the rest of Europe differs from that of the United Kingdom, and suspicion of each other's standards is inevitable. Standardisation of syllabuses is not likely, but the mutual recognition of professional qualifications is practicable, using the concept of 'the end product'. The European Federation of National Engineering Associations (FEANI) has already achieved mutual recognition through the practical application of this concept, with the pan-European title of 'European Engineer'. Engineering is in fact the only profession which has achieved a common international title. An extension of the principle to five other countries is being developed by The Engineering Council. It is possible that in time the 'globalisation' of the profession will result from the process that has already begun in Europe.*

## INTRODUCTION

The Treaty of Rome included a clause reading: '... persons practising the liberal professions shall have freedom to move and work within the European Economic Community.'

However this clause has not been fully implemented so far. Barriers remain in that member states do not generally recognise qualifications or professional titles gained in other member states. This is of course a major obstacle to free movement, since professionals often have to re-qualify in whole or in part before they can pursue their profession in another member state. An accountant would in theory have to spend 50 years qualifying and re-qualifying before he could do audits throughout the 12 member states.

It had been the intention of the European Commission to introduce directives, known in the trade as 'sectoral' directives, providing for the rights of members of specific professions to 'move and practise'. This, however, has proved to be a lengthy process and in the implementation of the Single European Act, which comes into force on 31 December 1992, it has been decided to sweep up all those professions not already covered by sectoral directives into one general directive for the professions. Sectoral directives already in existence cover doctors, general nurses and midwives, vets, pharmacists and architects. An example of the slowness of the sectoral directive process are the architects, whose directive took 17 years to come to fruition, and we engineers have had proposals on the table since 1969.

## EUROPEAN DIRECTIVES

One approach to the problem of providing free movement for professionals was the concept of 'harmonisation', which in Euro-speak means standardisation. Under this approach, the intention was to standardise qualifications and titles throughout the Community. However the concept of harmonisation came a cropper in an entirely different context. You will recall examples of absurd attempts to standardise commercial prod-

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ucts – the 'Euro-sausage', 'Euro-chocolate' and so on, but the straw that broke the camel's back was the intriguing case of the 'Cassis de Dijon', when Germany tried to ban this French blackcurrant liqueur because its manufacture did not comply with German purity laws. The French were naturally indignant as one might imagine, and took the matter to the European court, which ruled, after no doubt lengthy tasting sessions, that if the product was acceptable in one member state it should be accepted by all. Harmonisation went out of the window and the concept of 'mutual recognition' came in.

When it comes to harmonising or standardising professional qualifications, you can imagine how difficult it would be to persuade university professors to redesign their degree courses from scratch, to meet some bureaucratic specification – and you could bet that the specification would not match any existing courses, so all of the universities in all 12 states would have to change everything – an impossible business.

Mutual recognition therefore means that, like Cassis de Dijon, if a product – whether it be a consumable or a professional qualification – is accepted by the government of one member state, it must be accepted by all. And that is the basis of the general directive on the professions.

## The general directive

The full title of the general directive is 'A general system for the recognition of higher-education diplomas awarded on completion of professional education of at least 3 years duration'. For obvious reasons it is referred to as 'the general

directive'. It was agreed by the Council of Ministers in December 1988 and is to be implemented by member states by 4 January 1991. It will enable a professional from one member state to become a member of the equivalent profession in another member state without having to re-qualify, using the principle of mutual recognition. The directive applies only to regulated professions – that is, professions whose practice is regulated in some way by law or administrative rules.

The UK has comparatively few professions regulated directly by the state. Most are regulated indirectly by institutions having a Royal Charter, and these are regarded as regulated for the purposes of the general directive. Thus suitably qualified professionals from other member states will have the right to have their qualifications recognised in the UK and to become full members of chartered professional bodies in the UK, using the professional title associated with that body. In very special circumstances, professional bodies will be allowed to ask migrant professionals to take an 'aptitude test' as it is called, or to undergo a period of adaptation not exceeding 3 years, but only when the content of the migrant's education or training has lacked specific topics regarded as essential by the host state body. In such a case, the migrant will have the right to choose whether to take the test or go through the adaptation period, and the professional body will have to be prepared to justify its requirement in detail. Where the length of the migrant's education and training is shorter than is required in the host state, he or she may be required to show evidence of up to 4 years experience as a 'fully qualified' professional in one of the EC states, in addition to education and training.

The Department of Trade and Industry is masterminding the implementation of the general directive in the UK, and the way it sees things working is that a list of competent authorities will be drawn up in each member state – those being the bodies responsible for receiving applications to practise. The Institute of Marine Engineers is already on the provisional list of competent authorities. The professional wishing to move would consult the list for the country to which he or she wanted to go, and apply to the relevant competent authority. That body would then have three choices:

1. to accept the application;
2. to require the professional to produce evidence of professional experience, or to take an aptitude test or a period of supervised practice;
3. to reject the application.

The competent authority's decision must be supported with reasons, and the professional who is rejected or required to go through further hoops will have the right of appeal to a national court or tribunal. And of course exhaustive records and statistics will have to be kept by the appointed competent authorities.

All this means a lot of work for bodies included in the DTI's list of competent authorities, and there is not much time left to prepare. We must be prepared to play our part in the implementation of the general directive if we, as chartered professional institutions, are to provide our members with the support they have every right to expect, and if we are to ensure that the standard of the profession in this country is not to be watered down by the acceptance of migrants having less than the qualifications, training and experience required of our own engineers.

### The engineers' directive

As mentioned earlier with respect to sectoral directives, the engineering profession in Europe has been trying to introduce one since 1969 specifically for engineers. This attempt has not ended with the introduction of the general directive, because it

does not meet the needs of the engineering profession. Specifically:

1. the standard set for the definition of a professional is too low because it takes no account of training or experience;
2. because of this, national titles might have to be given to migrants who do not meet the standards we impose on our own people;
3. the arrangements and procedures needed to apply adaptation periods or aptitude tests are excessively complicated and cumbersome.

The European Council of Ministers accepted these problems when it accepted the general directive, and requested the European Commission to pursue the introduction of a sectoral directive for engineers. The Commission duly asked FEANI to co-ordinate the views of several leading European bodies of engineering educators, employers and professional associations in drafting the essential content of an engineers' directive. Drafting is nearly complete, and if it is successful, the engineering profession will be excluded from the terms of the general directive and governed by the engineers' directive.

### The second general directive

Just to complicate matters further, there is one more professional directive which affects engineers. This is known at present as the second, or complementary directive and is intended to cover all professions, trades and occupations which require an individual to hold a certificate or a diploma before being permitted to practise. In effect this includes anyone who requires even a certificate of primary education through to a qualification just short of a 3 year university degree or the equivalent. Incorporated engineers and engineering technicians in this country would therefore be covered by the complementary directive. However this directive is currently in first draft form only, and most European Community states, including the United Kingdom, have strong objections to the wording. It is likely to be extensively reworded and the author can therefore say little more about it except that the engineers in this country, through the British National Committee for International Engineering Affairs, have already advised the government that we would prefer to have our non-chartered engineers covered by a further secular directive. We are keeping in close touch with the Department of Employment to ensure that the outcome is acceptable.

## EDUCATION AND TRAINING

The traditions of education and training of professional engineers in this country and the Republic of Ireland are very different from those of our European partners. In Britain, the standard route to becoming a professional engineer was for many years the apprenticeship with part-time study leading to a professional qualification such as the old Higher National Certificate or one of a series of certificates from the Department of Trade or its predecessors. With further experience, the engineer was then accepted by his professional institution as a corporate member and awarded the designation of chartered marine engineer, or chartered electrical engineer, etc. Of course we always had professional engineers possessing university degrees but until the late 1950s this was not the general rule. On the continent, although there were apprenticeships, the accepted route to professional engineer status was the university. Courses tended to be longer than the 3 years which was usual in British universities (excluding Scotland where it has been 4 years for a long time), and often included significant periods of

practical training within the university. Today, although the standard professional engineer's education in this country is a university degree and many courses are being extended to 4 years, many are still 3 years and we still require a period of supervised training and a further period of professional experience before registering an engineer as chartered. This is rarely achieved in less than 7 years after completing secondary education at the age of 18 plus. Our continental colleagues however have courses of 4, 5 and even 6 years at university at the end of which a diploma is awarded which entitles the graduate to call himself by the professional title of his country – ingénieur diplômé, Dipl Ing, etc. Although the continental courses include periods of practical training within the university, few if any of them include any training in industry, and none of them require relevant or responsible experience to be acquired before the diploma and title are awarded.

It cannot therefore be denied that there is a gulf between the British system of engineering formation and those of our continental partners. Our system is well understood and often admired on the continent but the gulf is not about to be bridged by standardisation of syllabuses and would be difficult to contain within the provisions of the general directive.

## FEANI AND THE EUROPEAN ENGINEER

Many readers will know that there are several international organisations for professional engineers. The British National Committee for International Engineering Affairs is the representative of the British profession in three of them: the World Federation of Engineering Organisations, the Commonwealth Engineers' Council and the European Federation of National Engineering Associations, or FEANI, to use the French initials.

FEANI was founded in 1951, pre-dating the formation of the European Economic Community. It now incorporates 20 European countries including all those in Western Europe plus Malta and Cyprus and of course all of the Common Market countries. In the past year several of the Eastern European countries have made contact with a view to joining FEANI, so it seems likely to expand still further.

From the beginning, FEANI's aim was 'To secure the recognition of European engineering titles, in order to facilitate the freedom of engineers to move and practise within and outside Europe.' In this it anticipated the Treaty of Rome.

To realise this aim, a register was set up in 1970 but the requirements for individual engineers to qualify for registration proved difficult to define in terms which were either applicable or acceptable to all of the member countries, because of the wide variations in approach which I have already mentioned. The register, therefore, never came to fruition as it was intended to be a comprehensive list covering the majority of the professional engineers of the FEANI countries. No more than approx 2000 engineers ever registered in the 16 years that the old register existed.

It was therefore discontinued and a new register introduced which includes two groups. Group 1 registers engineers who have a minimum of a 3 year university degree plus 1 year of training, or a 4 year degree or equivalent qualifications. Engineers registered in Group 1 and having a further 3 years of professional experience may be awarded the title of European Engineer or 'Eur Ing'. Group 2 registration is open to engineers with lower academic qualifications but as yet this group does not have an associated title. The new FEANI register was launched in Paris in late 1987 with the honorary award of the first 60 Eur Ing titles to eminent engineers from all 20 countries. Ten of those titles were awarded to distinguished British engineers.

The concept on which the Eur Ing title was based was quite simple. It concentrated on the concept of 'the end product',

rather than any particular formation. Once an acceptable end product is defined a number of different routes to achieving it can be seen to be equally valid. After all, it is most unlikely that the practising professional engineers of an entire nation will, by definition, be of inferior quality to those of its neighbours.

The minimum standard for the Eur Ing title was set at a 7 year formation package of education, training and experience, the training being properly monitored by a professional body and the experience element certified as being in the appropriate engineering environment and at an appropriate level. This is a slightly less stringent standard than the British chartered engineer concept, and our monitoring and validation framework satisfies FEANI requirements. British chartered engineers who qualified through other than university routes have also been accepted by FEANI as meeting the requirements for the Eur Ing title.

We have therefore been able to offer our chartered engineers a ready-made route to Eur Ing whereas most of the other FEANI countries have had to set up special monitoring committees and registration systems to process applications from their own nationals.

Of course we have had to set up a registration system too, but with the advantage of having the engineering institutions already in being, which makes for relatively rapid dissemination of information to individual engineers, and a ready-made system of monitoring applications.

We opened the register at the beginning of 1988 – 2 years ago – and so far (April 1990) approx 3000 British engineers have registered out of 4500 in the whole of FEANI.

The numbers registered with FEANI are still not great compared with the total number of registered professional engineers in Europe, which is about 1M, but I find it interesting that the British are very much in the lead with 60% of all registrations. If nothing else this indicates the relative level of British engineers' awareness of, and commitment to, the idea of the single market.

There are of course several reasons why people should want to register – I know several octogenarians, quite a few from the USA, Australia, New Zealand, Singapore, Hong Kong, India, and other countries, few of whom seem to have any intention of practising in Europe, so one is forced to the rather uncharitable conclusion that we still have a number of pot hunters in the profession. But the vast majority have a good practical reason for registering – that is the acceptability of the FEANI 'passport' as proof of professional engineering status in all 20 FEANI countries and indeed to an increasing extent outside Europe. The Engineering Council has already concluded a Memorandum of Understanding with Australia, Canada, Ireland, New Zealand and the USA on the mutual recognition of accredited degrees, and FEANI is working with the USA to produce a similar agreement. Other members of the World Federation of Engineering Organisations are very interested in pursuing this concept, and though it is bound to take quite a long time, it seems to me that the eventual outcome is going to be the mutual recognition not only of degrees but of professional titles for engineers throughout the world, which can only be of benefit in this age of greater international co-operation and multi-national companies.

## CONCLUSION

I hope this has provided an idea of the scope and intentions of the European Commission general directive on the professions, how the engineering profession in Europe is organised, how the British profession fits in, and how the European federation, FEANI, is trying to achieve the best mechanism for regulating the profession in the single market after 1992.

## Discussion

**G J Roy (The Institute of Marine Engineers)** The procedures for chartered engineers to obtain registration as a European engineer through the British National Committee and FEANI operate smoothly. What is the Engineering Council's attitude to the acceptance of individuals with European qualifications and registered with FEANI as European engineers, for registration as chartered engineers?

Is the registered European engineer automatically eligible for registration as a chartered engineer, particularly as chartered engineers with Higher National Certificates, and similar qualifications, are accepted for European engineer registration?

**P Hector (British National Committee for International Engineering Affairs)** If a European engineer, whether he has a title or is an engineer who happens to be a European and is a professional engineer, wants to become a chartered engineer then he has to, at the moment, go through exactly the same process as a British engineer. When he applies to the appropriate chartered engineering institution for corporate membership, he goes through that institution's procedures and eventually, if corporate membership is awarded, his name goes forward to the Engineering Council for registration on the chartered engineering register at stage three, with all the procedures that that involves. So the British National Committee does not actually process applications for CEng status from outside the UK. Under the general directive of course, that process has to be amended slightly because we cannot, for example, have a two or three stage examination system for a person who has already obtained a degree before making him a corporate member. That sort of procedure cannot be applied to a Dip Ing from Germany; they will have to assess his qualifications on a basis of what he produces and have adaptation periods or aptitude tests and so on.

**G Roy (The Institute of Marine Engineers)** What about academic qualifications? In other words what is the power of a nominated and authorised institution of the Engineering Council to nominate a European engineer for chartered engineer status if he meets all that institution's requirements?

**P Hector (British National Committee for International Engineering Affairs)** If he meets all the institution's requirements, and has qualifications acceptable to the qualifications experts in the Engineering Council, who have, in fact, a great deal of knowledge about European degrees, and indeed in the world, along with the institutions who do a great deal of the accreditation themselves, then the Engineering Council will accept him for chartered engineer status. Thus, increasingly with engineers from Europe, if the qualifications he possesses have been obtained from schools on the FEANI approved list, and I do not mean schools in the British sense of the word but schools that are approved by FEANI, then that makes it very much easier, in fact almost automatic, that that qualification will be accepted, and if he has a European engineer title then that adds even more weight to his application to be a chartered engineer, should he want to be.

**G J Roy (The Institute of Marine Engineers)** You have stated, and it is true, that FEANI will accept the chartered engineer who has registered prior to 1973 and has an HNC or similar qualifications which would not be accepted for char-

tered status now, and yet there are situations where the Engineering Council will not accept a European engineer with a qualification that is not listed on the FEANI list, that is in fact a good qualification and has been accepted in the past.

**P Hector (British National Committee for International Engineering Affairs)** I think that you are talking about a specific case that I do not have any knowledge of. Are we talking about HTS qualifications or Dutch DEOT? In the case of the HTS, which are the Higher Technical Schools in Holland, which for many years were not accepted by the Dutch professional engineers as providing an acceptable qualification for a professional engineer title in Holland, that situation was accepted by the CEI in the old days and, as far as I know, HTS qualifications, until quite recently, were not accepted by the Engineering Council. HTS qualifications that have been obtained after a particular date, I am not quite sure what it is but it is relatively recent, are now acceptable for chartered engineer status. We wrote to the Dutch about a year ago and they are accepted, now that the HTS are on the FEANI list, because they have improved the quality of their courses, but I did not know of any 'old' HTS graduate, if you like, who has been accepted for CEng status, unless he had some additional qualifications as well or was accepted through a mature candidate scheme.

**DM Long (The Institute of Marine Engineers)** You describe the effect of the general directive on professional engineers, but I gather there has been a second directive which may be aimed at incorporated engineers and engineering technicians. Could you tell us something about that and the impact that it is likely to have?

**P Hector (British National Committee for International Engineering Affairs)** It is a draft document at the moment, and it provides for the freedom of movement and so on, in the same way that the general directive does, but for people in occupations, vocations and jobs where the entry standard is less than a three year university degree or its equivalent. Now some of our incorporated engineers of course, about 10%, have university degrees, so technically they could be covered by the general directive on the professions. Until last week, the view of the institutions representing incorporated engineers was that either all incorporated engineers should be included under the general directive, the first general directive, or none of them should be, and they would have preferred all of them to be, in fact they would still prefer all of them to be, but they have now said that they are willing to consider university qualified incorporated engineers, people being covered by the directive and not the rest. Whether that decision will stand up to further consideration and debate I do not know, the British National Committee will certainly be considering this at its meeting next week. So it is not clear at the moment whether incorporated engineers broadly will fall under the terms of the second general directive or the first. Engineering technicians would certainly fall under the terms of the second directive and there is a certain amount of resistance to people with that sort of qualification, which requires a fair amount of fairly hard work after you leave school at 16 to acquire. From those people who have been lumped together with, I use the example of a chimney sweep who I do not think needs any qualifications at all in this country while in Germany he does need a certificate, as you need a certificate for practically everything in Germany,

the 'also rans' there is this resistance to being lumped together with all the others. However, I do not see it in those terms at all. I think it would have been simpler if we had only had one general directive that states that if you are qualified for a job in one country, whether it is a professional job, a trade job or whatever you like to call it, then you should be accepted in all the others and that would have been the end of it. However, by having two directives we created a league system, if you like, with the top division for the professionals and the second division for the others, which is unfortunate. In the draft second directive, a complementary directive, the wording is not ac-

cepted by many of the member states, including the UK, and the British National Committee has discussed this at some length and is advising the Department of Employment, who are the action officer, if you like, for the second directive, as opposed to the DTI. We have advised the Department of Employment that we would rather have a sectoral directive for incorporated engineers and engineering technicians rather than have them covered by the complementary directive. It is all very well to say that, I might add, but getting a sectoral directive, as we have seen with professional engineers, is not an easy process and whether we will ever achieve it is another question.

