CHAPTER FIVE

1947-1956 AND J. ERIC RICHARDSON

Rapid change and development characterised the next period in the history of the College. After the initial phases of establishment and long consolidation, the constraints imposed by the following period of “total” war, were finally removed. Great social and economic needs for developing technological education were then apparent and the Northampton was poised for expansion to meet the challenge. On the first of April 1947, John Eric Richardson, Ph.D., B.Eng., M.I.E.E., A.M.I.Mech.E., Principal of the Royal Technical College, Salford, took up the appointment of Principal. He had served an apprenticeship in electrical engineering and had become a journeyman electrical engineer before entering Liverpool University to read for the Bachelor of Engineering degree in which he achieved first class honours in 1931; a Ph.D. followed in 1933. From 1933-37 he was chief lecturer in electrical engineering at the Municipal Technical College, Hull and Head of the Engineering Department there, 1937-1941, Principal of the Municipal Technical College, Oldham, 1942-44 and at Salford, 1944-47.

The whole time that Dr. Richardson spent at Clerkenwell, expansion was in the air. When he left after nine years to become Director of the Regent Street Polytechnic he had seen the first three of the six phases of a new building development realised, phases four and five under active discussion, and the sixth postponed. On his departure he noted that the College was likely to be recognised as a College of Advanced Technology and Diploma in Technology courses introduced, which he considered would make the College “so attractive that there may well have to be a limit to the numbers admitted. One highly beneficial effect of the new status,” he wrote, “will be to eliminate the “out-county” obstacles, so that students from all over the country may apply freely for admission . . . Another effect of the new status will probably be a reduction in the duration of the full-time course by the elimination of the present First Year. Entry will thus be limited to the post-G.C.E. Advanced level as is common with most universities. On the other hand, we can expect to see a very considerable increase in courses operating on a six month’s sandwich basis.”

Thus this brief period set the scene for the move from a polytechnic to a fully university level institution. Of the spectrum of courses reaching from technical to technological, from City and Guilds and G.C.E. “O” level to undergraduate and post-graduate, only those of university standard were to
remain in the college. At the same time the last vestiges of the polytechnic concept on the “social side” were to vanish. But all this was to take a little time. The importance of the period 1947-1956 was that it was one in which, developing what had already been achieved academically and being granted a suitable building development, the College was enabled to move into the subsequent College of Advanced Technology stage.

The factors that gave rise to this development had been made explicit in the Report of Lord Eustace Percy’s Departmental Committee on Higher Technological Education, 1945, and were then taken up in Ministry of Education Circular 87, 1946. The “Percy” report recommended:-

1. A limited number of technical colleges should be selected as Colleges of Technology in which there should be developed full-time technological courses of a standard comparable with that of an university degree as well as facilities for more advanced study and research. At the same time these colleges should continue to provide part-time courses of an advanced character leading to Higher National Certificate and other qualifications of a similar standard.

2. Regional Advisory Councils should be established to co-ordinate technological studies in Universities, Colleges of Technology and other technical colleges of each region.

3. Regional Academic Boards were proposed.

4. A National Council for Technology should be set up.

5. This National Council should award suitable qualifications in co-operation with individual colleges. The Committee was divided as to whether the award should be B.Sc.Tech or a Diploma. They agreed that the higher award should be M.Tech.

6. Management studies should be a part of all such courses in the final two years and one institution at least should be selected as a centre for the post-graduate study of industrial administration.

7. Teachers in technological subjects should have the opportunity of returning to industry for substantial periods, as well as to obtain experience abroad both in industry and in teaching.

8. There should be provision in Universities and Colleges of Technology for refresher courses for teachers.

Additionally, 1944 Education Act requirements for Further Education, were still being digested by the London County Council, and the L.C.C. proposals were not in conflict with the “Percy” proposals. In brief, the
L.C.C. had decided to grade the colleges with which they were concerned as a) Central Colleges providing for advanced work and having a catchment area of the whole London Region, b) Local Colleges providing for intermediate grades and c) County Colleges. Eight London colleges were named as central colleges and Northampton Polytechnic “would be developed as a peak engineering college in the County” with 3000 students. All O.N.C. and craft courses would be removed from its curriculum.

In all these impending changes the Northampton Polytechnic was fortunate in being closely in touch with government thinking on technological education. The link was Samuel Laws. On his retirement in 1947 the Governing Body had taken the unprecedented step of co-opting their ex-Principal to their counsels. This can hardly have been comfortable for his successor, but in the event there was no conflict. Laws had been a member of the “Percy” Committee, his contribution to which was obviously deeply conditioned by his long experience at the Northampton Polytechnic. Note, for example, the report’s emphasis on university level engineering work, on sandwich courses, and on part-time avenues to higher technological qualification. The following years will have shown the reverse of the coin with his advice to the Governing Body being conditioned by his knowledge of wider national needs.

In their January 1948 meeting, the Governing Body considered the implications of Ministry of Education Circular 155, which sought to encourage building programmes for technical education. They noted that since 1925 the College had had an expansion in accommodation of 36% to house a fourfold expansion in educational activity. Richardson suggested lodging detailed proposals with the London County Council and with the Ministry of Education as soon as possible. In exactly five months, he was able to report that a scheme of proposed phased extensions to cost £424,730 had been forwarded for approval. Getting the plans approved and put into practice was another matter and that is fully discussed in chapter eight. The first phase, hotted accommodation, was in use on 10th July 1950. Phases two and three were formally opened on 7th May 1956. Further development came after Richardson’s time at Clerkenwell, but it was soundly based on the site plan then put forward.

**The City Parochial Foundation**

The Education Act of 1944 laid down a statutory system of public education including leisure provision, and, in 1951, the C.P.F. set about plans for withdrawing its main grants. The Governing Body once again
assured the Foundation that it was still assisting “the poorer classes,” surely “tongue in cheek”. The Foundation made application to the Royal Courts of Justice for leave to withdraw the Central Scheme. This was not successful at this time.

The London County Council

In 1951 the L.C.C. inspectors proposed that young members of teaching staff should attend an L.C.C. course on fundamental principles of teaching. In this matter it is fair to state that the 1949-50 Annual Report of the College had noted: “it is an interesting, though unsatisfactory, fact that out of a full-time teaching establishment of ninety-four . . . only twenty-four had been appointed prior to 1945.” The 1951 L.C.C. Inspector’s Report urged that the hall and gymnasium should be made available for their original purposes, or alternative accommodation be made available, (this problem stemmed from the delayed starting date for the next building phase); that teaching loads of University “recognised teachers” be decreased, and that the stock of modern books in the library be increased.

Central Control

Just as the power of local authorities in the control of education grew at the expense of the voluntary agencies in the preceding decades, the late forties and fifties were marked by a great extension of state control at the expense of the local authorities. This was not surprising in view of the trend toward collectivisation then apparent in national policies. A Labour government was in power from 1945 to 1951 and the following Conservative government did not reverse the process. Increased central funding was necessary in order to move toward the ending of local control over higher technological education; a control that might sometimes restrain necessary development with the motive of keeping down spending based on local rates.

Ministry of Education Circular 256 of 14th July 1952, therefore, arranged to increase the governmental grant for higher education from 60% to 75% for approved arrangements for advanced technological study and research in technical colleges. The two pre-conditions for advanced technology grants were:

1. The Minister will require to be satisfied that the courses meet industrial needs and that suitably qualified students are available. The Minister will also take into account local and regional needs and will ensure that proposed courses fit in with the national pattern.
2. The College applying must be regarded as suitable for advanced technology, i.e. it must have a high standard of accommodation and equipment, must be staffed by highly qualified teachers, have a good proportion of advanced work, facilities for teaching to a high standard in the fundamental sciences as well as in technology and must provide opportunities for research.

In due course, the Ministry approved for 75% grant, the full-time Engineering B.Sc. and Diploma courses. As to the part-time courses the B.Sc. (Eng.) 3rd to 7th years, H.N.C. courses in mechanical, civil, electrical and production engineering, in applied physics and in applied chemistry were approved as were part-time post-advanced courses. Omitted were all ophthalmic optics courses.

Other features of the period included the ending of entrance scholarships, the growth of post-advanced courses and the ending of low level courses, the growth of research and the appointment of Research Assistants. The entrance scholarships were no longer necessary after 1946-47 because the Education Act of 1944 provided free entry. Thus the endowments for scholarships available to day students in engineering and ophthalmic optics were thereafter directed to aiding students financially during their industrial year. The post-advanced courses included subjects such as: Liquid fuels, their properties and utilisation, Wave guide propagation, Contact lenses and the Electron microscope and its applications. As to lower level courses, furriery courses were transferred to Barrett Street L.C.C. Trade School in autumn 1953. Growing interest in research was indicated by the regular listing of research projects and papers in the annual report for the first time in 1949-50.

The conduct of research was not easy, for in 1953 the L.C.C. still required lecturers to teach an average of 720 hours per session irrespective of the level of the work. This had stemmed from the introduction of the superannuation scheme when permanent full-time teaching was defined in this fashion. Ministry of Education Circular 94, however, provided some relief from teaching duties to enable the conduct of research. The first such relief, of five hours per week, was granted in 1948 to three members of staff: R.J. Wilkins, to continue research on the theory and design of reinforced concrete with special reference to the forces in members embedded in concrete; to Dr. R.J. Barnes, to proceed with research on x-ray and electron diffraction, and E.F. Fincham, to pursue research into the determination of dimensions of the eye by x-ray and optical methods.

Research Assistants were appointed from 1953 and were normally two
year appointments at £350 per annum. Those appointed were to do six hours' teaching or supervisory work each week in addition to research. Miss Jennifer L. Farrow, a final year student in the full-time engineering course was appointed Research Assistant in the Electrical Engineering Department from the following session. By 1955 there were seven Research Assistants, including two funded by Research Associations.

Sandwich Courses

Sandwich courses continued to be a feature of the Northampton's educational pattern, but naturally there were difficulties with London University over four year courses within an organisation in which the other colleges conformed to a three year pattern. The sandwich courses continued to evolve and became categorised as College-based, where the students were not committed to subsequent employment with a given employer, but for whom the College made the arrangements for works experience, and Industry-based, where young people employed by firms were released to take the sandwich courses. In the case of the former the grants were two thirds of the normal and wages were paid for the works period. In the case of the industry-based students it was assumed that the Industry had a direct responsibility, not only to pay wages during the works period, but also to pay some form of maintenance during the College periods. If this did not happen the Local Education Authority would consider limited assistance based on parental income.

In 1949 the College joined the International Association for Exchange of Students for Technical Experience and sent its first ten students abroad on this scheme in that year. Based on Imperial College the IAESTE scheme later appeared to become too little geared to the needs of the Northampton and the College reverted to its own arrangements that had never actually entirely ceased to be used. The College Secretary, T.H. Holmes had taken over the task of industrial placements by this time and his work in this area was most effective. Between 1949 and 1961 the total student placements in industry in any one year ranged from 112 to 280 students, the numbers placed abroad ranged from 14 to 28 and the number of U.K. firms involved ranged from 71 to 120.

Ophthalmic Optics

Following the resignation of H.H. Emsley, C.L. Redding, Lecturer and Chief Assistant, was appointed Head of the Department of Ophthalmic Optics in 1946, a post he held until 1950 when William Swaine was
appointed. Swaine was then Chief Lecturer in Charge, Physics and Ophthalmic Optics, West Ham Municipal College and four years later that college closed its optics classes and additional students attended the Northampton. The period was marked by rising educational standards. The Association of Dispensing Opticians, for example, proposed two year courses, the first year full time and the second year a three evening per week course. Entry level was to be G.C.E. “O” level and the starting date October 1952. The B.O.A. and the S.M.C. in 1951-52 required more clinical practice in the final year of courses. This led to the extension of the London Refraction Hospital element in the courses and third year students then spent two days a week at lectures and practical work at college and three days a week in clinical practice at the hospital.

Improved educational standards followed the Report of the Interdepartmental Committee set up under the chairmanship of Lord Crook in 1949. Published in 1952 (Cmnd. 8531) the Crook Report called for the setting up of a General Optical Council to establish and maintain registers of ophthalmic and dispensing opticians. The minimum qualification for a Dispensing Optician was to be a Dispensing Certificate of the B.O.A., N.O.A., or S.M.C. and the minimum qualification for registration as an Ophthalmic Optician was to be the Diploma of one of these bodies. The College representatives giving evidence to the Crook Committee had been Richardson, Swaine and Redding and they had hoped that the Optical Diploma of Northampton Polytechnic would be accepted for registration as Ophthalmic Optician. The very reason that led them to adopt this hope was probably the one that prevented it:- “the Polytechnic trains more optical students than all other training institutions added together.” Thus a co-ordinating body was set up to deal with examinations and training with powers of inspection, criticism and enforcement in relation to courses. The General Optical Council was set up in 1958.

In 1953 the Society of Opticians member firms made an arrangement whereby they would pay their trainee’s wages and college fees whilst they undertook a four year course at the Northampton. This was to be for the F.B.O.A. or F.S.M.C. and for the first three years would be 2½ days a week, and for the fourth year a five days a week clinical training at the London Refraction Hospital.

In common with other departments at this time, Ophthalmic Optics set up specialist courses. 1952-53 saw an experimental trial of a contact lenses course comprising twelve lectures and twelve demonstrations. Sixty students enrolled and the course was continued.
The Polytechnic Optical Society, which had ceased with the advent of the war, was revived in 1947 and consisted of past and present students of the Department. Its purpose was to encourage the presentation of papers and to initiate research. Membership was around one hundred.

Physics

The Physics Department, which as the Department of Physics and Mathematics had been under the direction of the Principal had had a "responsible lecturer" in charge appointed in 1925. This was F.Y. Poynton, who became Head of the Department in 1937. In 1965 he joined with Dr. C.N. Smyth and J.F. Sayers in a successful application to the R.W. Paul Instrument Fund, administered by the Royal Society, for a grant to finance a project to develop an ultrasonic camera. At this time the government was placing in colleges electron microscopes, specially developed for them by Metropolitan Vickers, and an instrument was delivered in September 1949.

Electrical Engineering

Dr. James Sharp Tait, later to become the first Vice-Chancellor of The City University, was Head of the Department of Electrical Engineering from December 1947 until the end of August 1951, when he was appointed Principal of the Woolwich Polytechnic. He was previously Head of the Electrical and Radio Engineering Department at the Municipal Technical College, Portsmouth, 1946-47, Lecturer in Electrical Engineering Royal Technical College Glasgow, 1935-46, being seconded to Stow College of Engineering, Glasgow 1943-45 for the education of Engineering Cadets. He served a full apprenticeship in Mechanical Engineering and later he had industrial experience with the Central Electricity Board, Scotland, during the war.

R.P. Howgrave Graham who had, like Walmsley, started as a Demonstrator at Finsbury Technical College, retired in 1947. He was lecturing full-time at the Northampton 1915-1945 and then part-time until 1947. He was a kindly, gracious personality, and on retirement became Assistant Keeper of the Muniments in the Library of Westminster Abbey, receiving the Reginald Taylor prize and medal for his research on the dating of parts of the building. His book on French cathedrals was published in 1959, the year of his death.

The Institution of Electrical Engineers, in July 1964, gave recognition, retrospective to 1961, to the Diploma in Electrical Engineering of the Northampton for exemption from their examinations.
Dr. Percival Frederick Soper, B.Sc. (Eng.), M.I.E.E., then Head of the Electrical Engineering Department at Nottingham and District Technical College, was appointed to succeed Dr. Tait.

Chemistry

Dr. J.E. Garside was the Head of the Applied Chemistry Department from 1946 until 1956 when he left to become Principal of the Borough Polytechnic. On his departure the Governing Body resolved “that he be thanked very cordially for his vigorous and successful work.” He had been a lecturer in the department since 1937. His successor was Dr. James Leicester, M.Sc., M.Sc.Tech., F.R.I.C., then Senior Lecturer in Inorganic Chemistry at the Woolwich Polytechnic. In 1950 it was reported that the Regional Advisory Council did not recommend any addition to the list of Colleges providing courses leading to graduate professional qualifications in chemical engineering “with the possible exception of later inclusion of the Northampton Polytechnic.” In the following year Royal Institute of Chemistry recognition of courses for the purposes of Associateship of the Institute could be granted only for a temporary period pending increased staffing, increased supply of chemistry books in the Library and improved laboratory facilities.

Aeronautical Engineering

The Handley Page links continued with Sir Frederick Handley Page delivering the Walsmsley Memorial Lecture in 1949 on “The practical training of engineers.” R.J. Wilkins, a member of the teaching staff, was acting in a part-time advisory capacity to Handley Page, Ltd., in 1948. R.S. Stafford, F.R.Ae.S., and ex-student of the Northampton, Technical Director of Handley Page, Ltd., since 1953, became a Governor of the College in 1954. In the same year he announced the award of “Stafford” prizes to meritorious aeronautics students, funded by his company. In 1955 J.A.G. Hearnden, formerly an engineer with Handley Page, Ltd., was appointed designer draughtsman to develop a sonic wind tunnel in the college.

Civil & Mechanical Engineering

The Regional Advisory Council encouraged the setting up of an advanced course in Engineering Metrology in 1950 51, to serve the needs of the region as a whole. Following this the Association of Metrologists was set up and free accommodation for meetings was provided. In 1955 J.C.
Levy, later to become Head of the Department of Mechanical Engineering, conducted research into cumulative damage in fatigue of metals for the Ministry of Supply. He had been appointed in 1951 and had spent a year at the University of Illinois on unpaid leave of absence.

Mathematics
Under Alfred Geary, Mathematics developed into the service department with class contact hours second only to Civil and Mechanical Engineering, by then the largest department in the College. Statistics teaching was introduced and programming for computers. In 1955 a successful summer school on the application of electronic digital computers and calculators to accountancy, costing and managerial control was opened by Lord Halsbury. This summer school was said to have played an important part in the formation of the London Computer Group and the British Computer Society. Subsequently one of the earliest Ferranti Pegasus Computers (the eighth produced) was installed in the College.

The Skinners' Library
The history of the University Library rightly belongs to later sections of this book, for it was altogether inadequate until the end of the period covered by this chapter. In 1927 the Inspectors had indicated the necessity for "more regular and methodical attention than it has received in the past" and as late as 1951 it was found wanting. The book fund had grown from £37 in 1897-98 to only £1,378 in 1956-57. Library accommodation had grown from 1,100 square feet to 3,700 square feet. Opened on 16th November 1955 by Mr. R.C. Hubbard, Master of the Skinners' Company, the new Skinners' Library was furnished by the generous donation of £5,000 from the Company. This sum provided the curtains and the fine oak furniture which is still in use in the University.

The Social Side & Sports
By 1957, there being no internal non-student social activity, the remaining 150 social members, being in the main local residents in the Palmers Green area with no connection with the Northampton, were given notice of termination of facilities. The effectiveness of this notice was delayed for a while following protests from a local Member of Parliament. Nevertheless, the final end of the polytechnic concept occurred at this point in time. The "social fee" of one shilling was abolished for students from session 1957-58. The sports facilities thus became fully College facilities.
The Lady Superintendent, Miss Muddock, retired at the end of August 1949 and the post was not filled, partly because Domestic Economy classes, for which she was responsible were not restarted after the war. Since 1939, too, the Swimming Bath had not been open to the general public, which, of course, made up the majority of the pre-war, 40,000 to 75,000 annual attendances at sixpence per visit. In April 1951 the swimming bath was re-opened after alterations, but now for staff, students and school lettings. The lease of the North Circular Road playing fields was renewed for 21 years at £521 p.a. after extended discussion on liability for the banks of Pymmes Brook. The old gymnasium, however, was lost in the rebuilding scheme and its replacement was dropped from Richardson’s schemes I to III. The lower floor aeronautical engineering workshops were lofty and were marked on the plans (future gymnasium), but housed the wind tunnel instead.

The Old N'Ions War Memorial Travelling Bursary

The N’Ions is the Association of past students of the Northampton and The City University. It was founded in 1909. When, after the second world war, a suitable memorial to the war dead was considered, it was resolved to adopt the proposals of the Old N’Ions and initially to leave the matter in their hands. The Committee of Management, under the trust deed was, in the first place, charged with the duty of installing in the College a commemorative plaque to those Old N’Ions killed in the war. This was carried out on 7th October 1949 after a service of dedication in the Martyrs’ Memorial Church, that formerly stood in St. John Street on the corner of Wyclif Street. The plaque now has its permanent place in the Students’ Union. The second and main object of the Fund is to assist undergraduates and graduates to visit other countries to observe and evaluate the methods and procedures employed by other nationals in the industry of the student’s choice, and to gain some experience and knowledge of the ways of other peoples.

The first award was in 1951. A brief examination of the reports of the travels reveals that the aims and objects of the scheme are very well met. The level of the writing and presentation was apparently not seriously considered in the past, at least one of the reports being a single sheet of paper! There were honourable exceptions to this stricture, for example those of Ewan F. Somerscales (1953) and M.J. Mortimer Hawkins (1960). Some years there are two awards.
The Organ

The old Great Hall ceiling collapsed in 1938 putting the organ out of use. Repairs were of a temporary nature only and later shrapnel and debris pierced the roof which was often not watertight during the war period. War Damage Commission payments of only some £330 were forthcoming for repairs to the organ and so there was a proposal to dispense with it. Principal Richardson, however, keenly contested this, supported by forty members of the staff, and secured a Governing Body vote of £4,250 to reconstruct the organ and install it in the new Great Hall after rebuilding. The reconstruction was carried out by N.P. Mander of London using as many of the original pipes as possible, and the reinstallation was supervised voluntarily by Mr. L.N. Bennett of Carshalton. The entire organ of 2,400 pipes had cost only £1,145 in 1897. Built by J.J. Binns of Leeds, it was originally blown by a high pressure hydraulic engine which wore out by 1933 and was replaced by an electric blower. Under Richardson’s scheme the new hall was built at the gallery level of the old hall and the opposite way round.\(^6\)

The Astronomical Observatory

Richardson’s rebuilding scheme included the provision of an observatory on the south-east corner of the library block roof. He had been concerned that the College possessed a Howard Grubb 5 inch aperture telescope that had been stored unused for over half a century. It was first used on 7th March, 1957! The provenance of the instrument, appropriately, was closely connected with Ophthalmic Optic education. Originally, it was presented to William H.E. Thornthwaite, a Fellow of the Royal Astronomical Society, in 1900. Born in Canonbury in 1850, the son of an optician, Thornthwaite was a prime mover in the establishment of the first professional examinations for opticians in this country and these were held in the old Great Hall of the Northampton Institute in 1898. In recognition, the Worshipful Company of Spectacle Makers presented him with a specially manufactured, British, equatorial telescope. He deposited it at Clerkenwell in 1901 and in 1907 transferred it to the College for a nominal sum.\(^6\)

The University Clock

Made by Messrs. E. Dent & Co. (the makers of Big Ben), and completed in 1901, the turret clock cost £260, of which the makers donated £50! The bells cost £404 and were made by J. Warner & Sons. The fine
Westminster chimes have been the subject of complaint from time to time over the years. In 1927 the Governing Body resolved that a local doctor who suffered from insomnia "be informed that some years ago the striking of the clock during the night was stopped and that this led to an appeal for the resumption of chimes and this was done", so they would take no action. Following the post-war restoration, a mechanism was installed in 1951 for silencing the chimes, to meet requests from local residents, between 9.45pm and 7.15am and the Borough Council recorded its appreciation.

The original case of the turret clock had been made of oak and this was dismantled in September 1939 after parts had fallen in the road. The bare projecting girders remained until the post-war period. The clock mechanism and chiming bells were in good condition and were safely stored. In 1950 an estimate of £1,063 from Messrs. Gillett & Johnson for providing and fixing a case in metal, overhauling the clock and providing electrical rewinding gear for the clock mechanism was accepted.

Accuracy of the order of plus or minus one second in seven days was achieved in 1954 when an "Invar" pendulum designed by H.F. Harrison of the Instrument Engineering staff and machined in the college workshops was installed.

Skinners' Hall

Meetings of the Governing Body and later of the Council of the University have, from the beginning, been held at Skinners' Hall. When war damage made this impracticable, meetings were held at other Livery Halls instead. More recently, since Dr. Richardson introduced the idea, one meeting per annum has been held in the University.

The National College of Horology and Instrument Technology

Just as the first world war found Britain short of skilled optical workers because the industry had been importing from Europe, so the second world war found Britain short of skilled clock and instrument makers with the industry importing from Switzerland. In the former case the Northampton set up its Technical Optics department and in the latter the National College of Horology and Instrument Technology resulted. The Percy Committee report had provided for National Colleges for industries of high importance that required the training of relatively small numbers of technicians. Such colleges were to be located at existing technical colleges whose normal work included the specialist subject concerned. There was to be 100% grant aid.
On 21st June 1946, an inaugural luncheon provided by Sir Allan Gordon Smith, Chairman of the Governors, signalled the establishment of the National College of Horology. The Principal was to be Director and Robert Andrew Fell, M.A. was appointed Head of the College in January 1947. Fell spent the first six months gaining experience of the horological industry at home and abroad before opening the College in some ground floor rooms of the Mountford Building on 6th October 1947.

The course was a general one of three years' duration and there were fifteen students. By 1949-50 the total number of students in all years was 36 and the Governors expressed anxiety about the non-provision of advanced courses. Richardson encouraged the pitching of the instruction at a low level believing that the industry was not ready for advanced workers. The first Diplomas were presented by the Minister of Education in 1950 and by 1957 Lord Hailsham, then Minister of Education, wrote to the then Chairman of Governors of the National College agreeing that the remaining course should be transferred to the Northampton and the National College as an entity should come to an end, and this happened in 1960.

Conclusion

The space age was inaugurated by the successful Russian 'sputnik' launch on October 4th, 1957. This had been preceded by a race to develop advanced technologies, electronic, optical, materials, etc., a race not only between America and Russia but also involving the other advanced countries of the world. It continued at some intensity for nearly twenty years. British reaction is illustrated in the great surge forward in technological educational provision from 1956. At the end of February of that year a government white paper on Technical Education was issued. It reviewed the needs of industry for technical and scientific personnel and the numbers then forthcoming from universities and technical colleges. It announced the government's intention to pursue a vigorous policy of expansion of technical education and named the Northampton Polytechnic and twenty-three other colleges at which it was intended to develop advanced work. There was to be a five-year programme to increase output by about a half and day-release numbers were to double. Seventy million pounds was to be made available for building extensions. The L.C.C. was reminded that Northampton Polytechnic's building schemes 4 to 6 remained to be carried out.

It was a "crash" programme and concern was expressed, with nine of the twenty four colleges being in London, as to where to find sufficient
students of the right calibre. Meanwhile the National Council for Technological Awards, under the Chairmanship of Lord Hives of Rolls Royce, Ltd., had issued a memorandum on the recognition of Diploma in Technology Courses. These were to be equivalent to honours degree standard, either full time or sandwich and the awards were to be characterised as Dip.Tech.(Eng.) or Dip.Tech. and to be graded first or second class honours or pass. The full-time courses were to be of not less than three years duration with an aggregate of not less than a year spent in industry and the sandwich courses were to last at least four years. The minimum age at entry was to be 18 and entrants were to be required to have two G.C.E. passes at “A” level and 3 at “O” level.

The “Hives Council” required that courses include a substantial programme of advanced studies, together with liberal studies and principles of industrial organisation. Formal application to the “Hives Council” was necessary and a good library, social amenities and residential facilities would be expected and the Northampton Polytechnic either had or was planning these. On the 21st June 1956 it was announced in Parliament that to the existing three types of college, “Local”, “Regional” and “Area” was to be added “College of Advanced Technology”.

Ministry of Education Circular 305 announced the conditions that colleges would be required to fulfil before achieving formal designation as Colleges of Advanced Technology. At the same time it was made clear that close adherence to the conditions would be required.
These included:

1. The College must provide a broad range and substantial volume of technological and allied work exclusively at advanced level including research and postgraduate work.

2. The constitution of the Governing Body should be such that it includes strong direct representation of industry, reasonable representation of authorities who regularly contribute substantial numbers of students to the college, and universities and professional technological interests.

3. An Advisory Committee representing in particular industry and the appropriate professional bodies, should be established for each technology studied in the College.

4. The Governing Body must have freedom to spend within the heads of annual estimates approved by the local authority aiding the College.

5. Staff must have qualifications and experience appropriate to the level of their work. Teaching conditions and hours should approximate to
those for work of equivalent standard at the universities and should allow for research.

6. Accommodation must include adequate space for library, staff rooms, private study and student union activities.

7. Residential accommodation must be provided, the initial aim being to allow each student to be in residence for at least one year of a full-time course or one academic session of a sandwich course.

The Governing Body informed the Ministry and the L.C.C. that they wished to meet the conditions for designation. As to residential accommodation, consideration was given to the Spencer Street site and the top two floors of the Connaught Building yet to be erected. Reluctantly it was noted that Optics instruction would apparently need to be removed from the College. Also to go elsewhere, the Governing Body resolved, were:- O.N.C., City and Guilds and craft courses including watch and clock repair work.

The Minister of Education asked that L.C.C. Hackney Technical College be used for rapid off-loading of lower level courses from the Northampton by autumn 1957. Meanwhile the College pressed on with preparation of sandwich courses for approval by the Ministry. It was reported that Applied Physics Dip.Tech. Course was already operating, that Electrical Engineering would start in January 1957 and session 1957-58 would see the start of Mechanical, Civil, Aeronautical and Production Engineering, Instrument Technology and Applied Chemistry Diploma in Technology Courses. There was, at this time, growing opposition in the College, the British Optical Association and the Worshipful Company of Spectacle Makers, to the proposed move of Ophthalmic Optics to a lower level college. Indeed, the B.O.A. recommended that, “as a matter of policy, the examining institutions should agree to raising the standard of their examinations in course of time and to requiring G.C.E. Advanced level or equivalent as an entry condition.” Meanwhile at the Northampton it was resolved that there be no further admission of lower level students except in optics.

Richardson left the Northampton almost exactly sixty years after it first opened and he left it in very good shape to commence its second sixty years. In recognition of his contribution, particularly in the initiation and supervision of the extensions schemes one to three, he was awarded The City University Degree of Doctor of Science Honoris Causa in 1979.
References

   Committee on Higher (Chairman, Technology)
   Education Lord Eustace Percy)
   Polytechnic
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