CHAPTER SIX

JAMES TAIT AND THE NORTHAMPTON COLLEGE OF
ADVANCED TECHNOLOGY, LONDON, 1957-1966

The CAT inaugurated

James Sharp Tait took up the appointment of Principal of the
Northampton, at the age of 44, on the first of January 1957. That same
day the College was designated a College of Advanced Technology, although
this fact was not given substance until the meeting of the Governing Body
on 25th March, when a copy of a letter from the Ministry of Education
addressed to the London County Council and dated 19th February, 1957,
was received. Thus on 1st January, 1957, the Northampton College of
Advanced Technology, London, was inaugurated and the Northampton
Polytechnic ceased to exist, and, within it, so too did the unofficial but long
established titles, Northampton Engineering College and Northampton Day
College of Ophthalmic Optics.

Tait was, of course, no stranger to the College, for he had been Head
of the Department of Electrical Engineering from 1947 to 1951.
Subsequently he had been Principal of Woolwich Polytechnic from 1951 to
1956. Of outstanding ability, the right man in post at the right time for his
immense initiative and drive to have most effect, James Tait was also most
fortunate to be enabled to lead the College to full University status in nine
years upon a flood-tide of national concentration of resources on higher
education particularly in science and engineering. Soon after his
appointment, Dr. Tait was able to write a foreword in the N’lon of June,
1957, in which he stated that “the Northampton stands on the threshold of
the new developments envisaged in the White Paper on Technical
Education and resulting from the urgent demands of industry for highly
skilled technologists” One of the early obvious signs of enhanced status
was the off-loading to other colleges of lower level courses. The two
exceptions were the National College of Horology courses and those in
ophthalmic optics. The National College was allowed to die out as it was
wholly devoted to lower level work, not having met, in any particular, the
aspirations of the Ministry of Education in setting it up. Details are given in
chapter five. The Ophthalmic Optics courses were retained pending either
the upgrading of the entrance level of the students, or subsequent removal
to a “satellite” college to be erected in Bunhill Row. For its part, the College

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urged retention of the Department of Ophthalmic Optics on the grounds that the College had held an unique position in the training of opticians since the last century, this thriving Department by 1957 providing, it was said, 75% of the Ophthalmic Optics education of the entire country. The British Optical Association, the Institute of Optical Science and the Spectacle Makers Company, by the following year, agreed some raising in standard in their professional entrance level.

By June 1957, in addition to the Diploma in Technology courses already running in Applied Physics (then an enrolment of 44 students) and Electrical Engineering (with 23 students), the Hives Council also approved Dip.Tech. courses in Mechanical, Production, Aeronautical and Civil Engineering, Industrial Chemistry and Applied Mathematics. Consideration was given to the preference of industry that these courses be “double-banked” or “butt-ended” sandwich courses of six month’s duration with the College group of students changing over with those in industry in February, the pattern being September to February, February to July. This led to increased academic staffing: 122 in 1967/68 rising to 161 in 1958/59. The entry level was, as for degree courses, five “ordinary level” General Certificate of Education passes, of which one must be English and two “advanced level” passes. Alternatively, the Ordinary National Certificate with 60% marks in every subject in the final year. In spite of the removal of the course catering for G.C.E. “advanced” level subjects, the student numbers increased in 1957-58 over the previous year. Full-time engineering 292 (246), full-time optics 176 (171), post-graduate students 14 (8). In 1959 twenty posts were approved at the new grade of Principal Lecturer, a scale between Senior Lecturer and Reader.

Confirmation of advanced college status involved a revision of the constitution of the Governing Body to include five representatives appointed by the L.C.C., one each by the County Councils of Essex, Hertfordshire and Middlesex, one from the University of London, four by the Skinners’ Company, one by the Saddlers’ Company, three by the City Parochial Foundation and six cooptative members. Not less than six of the governors must have current industrial or professional experience related to the work of the College. There were to be, also, advisory committees representing industry and professional bodies in each technology. The Annual Report for 1957-58 records the setting up of the first two of these.

Residential accommodation for students was a condition of the award of advanced college status and hopes that the site of the former Martyrs Church at the corner of Wyclif Street and St. John Street might be
acquired for this purpose were not to be realised and ugly blocks of flats were erected instead. Residential and other building programmes are recorded in chapter eight.

Research developed in this period and the grade of Reader was introduced into the CATs. Doctors A.W. Gillies and G.A. Garreau were the first appointed. One example of a research project of this time was a grant of £12,000 over several years for the construction and development of an ultrasonic camera. The grant was made to F.Y. Poynton, Dr. C.N. Smyth, and J.F. Sayers, from the Paul fund administered by The Royal Society. The resulting instrument was eventually transferred to University College Hospital for testing by Dr. Smyth. By 1961 there were 26 Research Assistants in the College. The Board of Studies, in session 1958-59 recommended that the College Diploma in Engineering which had been awarded since 1905 to students successfully completing the full-time course, be discontinued. Very few students enrolled only for the Diploma, most full-time students taking the internal B.Sc. (Eng.) Lond. In its stead a new post-graduate Diploma of N.C.A.T. was instituted. At the same time the National Council for Technological Awards announced its higher award as Membership of the College of Technologists (M.C.T.), to be awarded for three years post-graduate study or research related to the candidate’s industrial activity. The first two Northampton students registered for M.C.T. in 1959 are Tait, who was a member of the Hive Council from the outset, was made a member of the Court of the College of Technologists.

Consultant Lecturers from industry and research laboratories began to be appointed in 1962 and their duties included lecturing, assisting in planning and advising on research equipment, supervising research and assisting in keeping the academic department up to date on current industrial practice. One day per week throughout the session was to be the norm, by permission of the employer, in return for a nominal stipend. Science Research Council grants increased in number and a Research Sub-Committee of the Academic Board was set up. In addition to Research Students, funding was provided, from September 1963, to enable the appointment of Research Fellows and Senior Research Fellows. In 1968, Experimental Officers and Senior Experimental Officers were provided for. Their function would be “to design and make apparatus and to carry out research programmes, etc.” The records of the CAT period show a considerable increase in foreign tours by academic staff, for Tait made official visits to many overseas technological institutions and encouraged other academic staff likewise to become better informed.
Department of Social and Industrial Studies

The National Council for Technological Awards insisted that in order to help fit students for future responsibilities "the course must include liberal studies and some instruction in the principles of industrial organisation." The Governing Body was in full agreement with this concept, and believed that it should eventually permeate all the courses including full-time engineering degree and ophthalmic optics courses. At the Northampton the Liberal Studies aim, at the outset, was to enable students to communicate in good English, oral and written, and to enable them to take part in group discussions, to effectively chair meetings, and to comprehend scientific management principles. In 1961 Alvin C. Leyton, was appointed Head of the Department of Social and Industrial Studies and an Advisory Committee for Management and Liberal Studies was set up. Since 1957, he had been Senior Lecturer in Liberal Studies; also E.H. Horrocks had been appointed as Lecturer in English as early as September 1946. The 1960-61 Annual Report, however, records that the Department of Social and Industrial Studies was to be responsible for existing Liberal and Social Studies for College courses, for classes in Industrial Administration and part-time Management courses. "It is the intention of the Governors to develop Management Studies at the College to the highest level." At first there was a sandwich course for the post-graduate Diploma of the College and the Diploma of the British Institute of Management (3 years). There was also a full-time one year post-graduate course in management.

In 1962 a Report of the Management Advisory Committee estimated that 75%, at least, of the undergraduate students on Diploma in Technology courses were potential management material. The Committee looked to a demand for 300 to 500 places for management postgraduate students per annum from students in all the CATs. This would involve recruitment of a strong staff mostly at Senior Lecturer or Reader Level together with using the services of external experts part-time. Thus the main development of the Department was seen to be in the field of management although it was realised that this would include study of the human sciences:— politics, economics, sociology, philosophy and psychology. It was then resolved that Management and Social Science would be a more appropriate name. By 1966 separation into two Departments, each under a professor was resolved upon. The Departments were named a) Management Studies and b) Social Science and Humanities.
Mathematics

The first Chairs of the new University went to nearly all existing Heads of Departments, with effect from 1st March 1966, which was in advance of the University’s Charter. Professor A. Geary, retiring on 31st December 1966, became Professor Emeritus of The City University. He had joined the College staff in 1926, having attained a first class in the Cambridge Mathematics Tripos in 1913-15 (St. John's). In 1928 he was awarded M.Sc. (Lond.). His appointment was Responsible Lecturer in Mathematics in the Department of Physics and Mathematics of which the Principal was the Head, becoming the first Head of Mathematics on the formation of a full department in 1931. He was a born teacher and the co-author of several very successful textbooks, such as Technical Mathematics and Advanced Mathematics for Technical Students.

Geary was foremost in promoting and a founder member of the Institute of Mathematics and its Applications (1964). This stemmed from meetings of applied mathematicians held at the Northampton and elsewhere from May 1959 onwards and inevitably known as The Geary Committee.4

He was of course responsible for the developments in computing which were pioneer and were within his department.

Mathematics — The Computer

As was noted in the last chapter, in 1955, as a result of Lord Halsbury’s visits to the College in connection with a summer school on computing, the possibility arose that the National Research Development Corporation, of which Halsbury was Director, might instal a Ferranti Pegasus Electronic Computer in the College. This was achieved and opened by Lord Halsbury in 1957, remaining the property of NRDC on permanent loan to the College. Use was shared between the College and the Corporation, the College being responsible for the upkeep and operation of it.

L.T.G. Clarke, Senior Lecturer in the Mathematics Department, assumed charge of the Computer and C.C. Leighton, an ex-pupil of the National College of Horology, was appointed Technician at the beginning of September 1957, assisted by two programming clerks. The plan was to sell surplus “time” externally. In this Clarke was successful for the Pegasus became fully used during the day. It was used for research by staff and research students, external bodies and colleges, etc. and for industrial use as well as for instruction purposes. Each year surplus income after deduction of salaries and expenses was refunded to NRDC to the total of
£60,000. By this time, too, the computing staff had grown and a college computer fund in excess of £18,000 had been accumulated from the College share of the income.

Clarke was a founder member of the British Computer Society (1967) and the Governing Body encouraged the Society by granting free use of College rooms for its meetings. He later became Chairman of the B.C.S. Library Committee and the Society's Library was housed in the Skinners' Library from 1967 until the exercise proved to be too much of a drain on University library resources.

The Pegasus was finally made a gift to the College, by which time the College had had its new I.C.T. 1905 computer inaugurated (on 15th March 1965), by Lord Bowden, Minister of State for Education and Science. The I.C.T. 1905 cost £186,000 plus £12,000 for air conditioning and installation costs, additionally an analogue computer and digital-analogue link cost a further £85,000. To meet these costs a special grant of £180,000 was known to be forthcoming, the College Computer fund was allocated, and arrangements were made for short-term hiring of facilities on the College computer to B.P. Ltd.

**Ophthalmic Optics**

Protracted discussion between the College, the professional associations and the Ministry of Education eventually led to the retention of Ophthalmic Optics within the College of Advanced Technology. A raised entry level was essential and took effect from September 1960; it then became a minimum of two "advanced" level passes (one in physics) and three "ordinary" level passes (one in English). In all these discussions the professional bodies objected strongly to the proposal that Ophthalmic Optics courses should be withdrawn from the Northampton and become the province of a lower level college. At one stage the L.C.C. had the notion that all dispensing optics instruction should be centred on the Bunhill Row college and the Northampton Ophthalmic Optics students should attend there for the dispensing element in their courses. The College had other ideas, expecting the new college to be a "satellite" or "feeder" college. The solution was the transfer of Dispensing Optics courses only to the City College of Further Education, Bunhill Row, at the end of the 1963-64 session, retaining the dispensing part of the Ophthalmic Optics courses at Clerkenwell.3

There was an effect on student numbers, of course, both from the raising of entry standards and of the removal of courses elsewhere. The total numbers of optics students in the College fell from 196 in 1958-59, to
167 in 1963-64 and, in 1964-65 to 152 on the upgraded ophthalmic optics courses.

In 1961 the College made an abortive proposal to have effect from September 1962, that the London Refraction Hospital full-time instructors of Northampton students should become members of the staff of the College. Instead, the capitation fee system with annual payments continued. Regular visitations by the General Optical Council, under section six of the Opticians Act of 1958, became a beneficial influence in this period.

On the 24th April 1964 an Open Day was held to celebrate the sixtieth anniversary of the commencement of full-time Ophthalmic Optics courses and a laboratory was, very properly, named after the late Edgar Finchem. The location was the Cranwood Annexe where the entire department was then housed. On June 1st 1964, J. Walton, a former student who had been teaching in the Department for twenty years and who, for four years following the retirement of Mr. Swaine had been Head, sadly died at the age of fifty. R.J. Fletcher, who had been a lecturer in the Department since 1950, became Acting Head.

Aeronautics

Aeronautical Engineering as a separate department was mooted in 1967 and made effective in the following year, with H.W. Franklin as Acting Head. Grigori Aleksandrovich Tokaty was appointed Reader in Aerodynamics in 1958, having been educated at the Zhukovsky Academy of Aeronautics in Moscow and having taught there. He also had experience in rocketry. After unpaid leave of absence in the U.S.A., where he held a similar appointment, in 1960 he took up the post of Head of the Department that a year later became known as the Department of Aeronautics and Space Technology. S. Buchanan was appointed Deputy Head at the same time. The rather grandiose title was changed to Department of Aeronautics in 1966.

From 1959 the Cranfield College of Aeronautics had co-operated in providing a Flight Testing course, of two weeks duration, for second year aeronautics students, which obviously could not be provided on an urban site. On the 12th February 1964 an aeronautical laboratory was renamed “The Handley Page Laboratory”, when relatives of the late Sir Frederick Handley Page watched Lord Mills. K.B.E., unveil a bronze bust presented by the company to the College. Thus a fruitful link of many years standing was formally acknowledged. A year later a new Diploma in Technology course in Airline Engineering was commenced.
Engineering

In 1964 it was reported to the Governing Body that the Department of Civil and Mechanical Engineering was unduly large and diversified to be successfully supervised by one Head of Department. The total academic staff in the Department was likely to rise from 66 to 160 and there were already 32 technicians. There were two separate sandwich courses, two separate full time courses, two Boards of Studies and some 140 sponsoring industrial organisations with which to maintain liaison. A split into two departments, one devoted to Civil and the other to Mechanical Engineering was resolved upon. Aeronautical Engineering had already been split off into a separate department, as we have seen.

As to the two Diploma in Technology courses, mentioned above, that in Civil Engineering was not immediately accepted by the industry, being taken up in 1959/60 for the first time, by nine students, following considerable efforts by Oakden. Professor Oakden retired after being awarded one of the first Chairs in the new university and thus became one of the first two Emeritus Professors of The City University. On 1st of January 1966 J.C. Levy became Head of the new Department of Mechanical Engineering and on the first of August P.O. Wolf, of Imperial College was appointed Professor and Head of the Department of Civil Engineering.

Production Technology and Control Engineering

There had not been a Head of the Engineering Production and Instrument Engineering Department since the resignation of F.H. Perkins in 1941, the two sections having developed separately under Responsible Lecturers. By 1958 this separation was seen to be unreal, with duplication of apparatus and machinery and overlap in work. The two sections were combined to form the Department of Production Technology and Control Engineering, with the appointment, from May 1959, of G.M. Eveleigh Williams as Head; “to develop the technology of manufacture or industrial engineering.” Courses were to be organised in a) Measurement and automatic control, b) Production organisation, and c) Production methods and processes. The Department moved to the newly acquired Walmsley House in Summer, 1966.

Electrical Engineering

During the academic year 1959/60 British Insulated Callenders Cables Ltd., presented the College with a 500 kV 500 kVA transformer together
with ancillary equipment valued at £30,000. This had to be stored by the L.C.C. until such time as new buildings could be erected in Spencer Street. After 1963 the department became known as the Department of Electrical and Electronic Engineering. Under Dr. Soper the department developed in importance, with large numbers of students.

Applied Chemistry

Dr. J. Leicester, who had been Head of the Department of Applied Chemistry since September 1956, resigned at the end of April 1961 on his appointment as Principal of the Northern Polytechnic; just as his predecessor had become Principal of the Borough Polytechnic. Dr. D.J. Alner, Principal Lecturer in the Department was appointed Head.

Physics

Physics was entirely a service department until the 1950s. F.Y. Poyntton, the Head of Department, formed a Physics Advisory Group to develop applied physics courses in order to change this state of affairs. The resulting Diploma in Technology Applied Physics course was most successful.

F.D. Edwards, a graduate of the College and a member of the Physics Department staff up to 1921, died in 1966. He was founder of the Edwards High Vacuum Company, Ltd., and Edwards Educational Trust, and was generous in aiding students in financial difficulties. With G.A. Whipple, a member of the Governing Body, he was joint founder of the Worshipful Company of Scientific Instrument Makers.

The Skinners' Library

Designation as a College of Advanced Technology involved a clear requirement for the College to provide a library adequate to support teaching and research. The Northampton did not possess such a library, for, sixty years after its opening in 1896 with 1,700 volumes, it had, by 1956, only 4,514 volumes, possessed no bound sets of periodicals at all, and did not even hold basic sources such as Chemical Abstracts. Arguably, it was one of the poorest provided of the C.A.T. libraries, and of low status within the College, for the Librarian was not a member of the Academic Board. This library of four and a half thousand volumes, be it noted, served a student population of 6,785 (1957-58). It is true that only 409 of these were full-time students, (238 engineering and 171 optics), but that year the
output was 1 Ph.D., 2 M.Sc.s., 75 B.Sc. (Eng.) (5 firsts), 30 two year optics diplomas and 23 engineering four year diplomas. In that year, too, of a total College income of £298,310, the library grant was £1,757 or .5%.

Concern for the state of the Library did not begin to produce results until January 1958 when Dr. J. Leicester, Head of the Chemistry Department, addressed a letter to the Principal on its inadequacy. The "Hives" Council had reported unfavourably and agreement to the proposed Dip.Tech. in Industrial Chemistry was subject to urgent attention being given to strengthening the Chemistry section of the library. A Library Advisory Committee was set up under the chairmanship of Beresford Ingram with W.P.G. Harris, the Librarian, as Secretary and the Principal as an ex-officio member, as was the Finsbury Public Librarian. The terms of reference were "to advise the Principal on the organisation and running of the library", not "to advise the Librarian" or the Academic Board!

There was a long history of over-involvement of the Public Library that probably adversely affected the development of the College Library. In 1910 the Finsbury Borough Librarian communicated a resolution of his Committee that students be granted permission to borrow technical books, which was unusual at that time. In 1968 the Borough Librarian proposed, and the Advisory Committee accepted, that the College Library should concentrate on the purchase of postgraduate and research material and on the provision of one copy of all recommended text books and that the public library should provide multiple copies of recommended class text books for loan to College staff and students!  When the newly appointed Borough Librarian of the enlarged Borough of Islington first attended the Advisory Committee in May 1965 he announced the ending of this possibly unconstitutional arrangement.

The College Library slowly evolved in this period with additional grants of £2,000 in 1959-60, £3,000 in the following year and £2,600 in 1961-62. The number of books added in a year grew from 293 in 1957 to 2242 in 1964-5. During 1962-63 some 1,000 books and journals were moved to the Cranwood Annexe and a branch library was opened to serve the Optics Department, thus easing some of the growing space problems, as had the use of nearby classrooms as overflow reading rooms from 1968. Some short back-runs of journals were acquired and there was a limited adoption of microforms and the start of a photocopying service.

Following a survey of library use, the practice of allowing "indefinite loans" [sic] of books and periodicals was ended, a recall system was instituted and a "reference only" copy of each book in demand was
provided. In January 1961 we read, the "institution of a departmental library was not approved in view of the College policy of centralizing library facilities. Special laboratory manuals, however, could be obtained from departmental and not library funds."

By October 1963, a new library of 24,090 square feet was planned. The Library Association's 1963 "Standards for Library Service in Colleges of Technology" space standard was 48,000 square feet for the planned growth of the Northampton! It was not until 1964 that the Librarian consulted with the architect on how best to plan the space already allocated for he had not been asked to prepare the architect's brief! By 1965-66 funding was the lowest of any C.A.T. at 1.9% of College income as against 4.9% then achieved by Chelsea College and 6% recommended in the Parry Report on Libraries.

Industrial Liaison Officer

In an attempt to enable industry to make maximum use of the advisory and educational services offered by technological institutions the Ministry of Technology began to finance a scheme for the provision of Industrial liaison officers in colleges. The Ministry undertook to finance two thirds of the salary and administrative expenses of the post. The area to be covered in the case of the Northampton included the City of London. A.D. Fitness was appointed from 1st January, 1966. The visiting of sandwich course students in industry, however, was to remain the task of their specialist lecturer supervisors. Government support was withdrawn in 1973, and by session 1975-76 this office was phased out.

Sandwich Courses

The College was, at this time, concerned with "works periods" for students in two ways. Firstly, there were the full-time engineering degree course students for whom annual arrangements had been made for over sixty years. Secondly, there were the Diploma in Technology course students for whom arrangements were made from the late 1950's. The latter, of whom there were very many more, and for whom industrial training programmes had to be planned in advance, were visited at their industrial work place, twice each year. The numbers provided with industrial experience were:-

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<table>
<thead>
<tr>
<th>Works Period</th>
<th>Full-time Engineering Course Students Placed</th>
<th>Number of British Firms</th>
<th>Students of IAESTE Scheme Placed</th>
<th>Dip.Tech Students Placed</th>
<th>Academic Staff Establishment</th>
</tr>
</thead>
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<tr>
<td>1956-57</td>
<td>111</td>
<td>71</td>
<td>14</td>
<td>67</td>
<td>109</td>
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<tr>
<td>1957-58</td>
<td>162</td>
<td>?</td>
<td>26</td>
<td>247</td>
<td>122</td>
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<tr>
<td>1958-59</td>
<td>207</td>
<td>117</td>
<td>23</td>
<td>490</td>
<td>151</td>
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<tr>
<td>1959-60</td>
<td>280</td>
<td>?</td>
<td>25</td>
<td>674</td>
<td>172</td>
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<tr>
<td>1960-61</td>
<td>207</td>
<td>?</td>
<td>28</td>
<td>826</td>
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<td>142</td>
<td>94</td>
<td>27</td>
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<td>123</td>
<td>86</td>
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<td>245</td>
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<tr>
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<td>120</td>
<td>76</td>
<td>25</td>
<td>1201</td>
<td>245</td>
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</tbody>
</table>

In September, 1965, the first students were admitted to courses for B.Sc. degrees of the new University. These were, naturally enough, based on both the previous B.Sc. Eng. (London) degree courses and the Diploma in Technology courses.

Social and Recreative Activities

The termination of purely non-student "social" activities led to the formation of The Northampton Exiles: an independent sports club for cricket and tennis organised by the former polytechnic club members who were not students. From 1958-59 they rented sports facilities at Palmers Green when they were not required for student use.

"Direct Grant" Status

There is no doubt that, in this period, once again, the College was well advised and proved to be in close touch with that body of technological educational thought that carried the day. The two main strands; of university level studies and close links with industry, are aired in the Ministry of Education Report, Education in 1958, as also is the awareness that the real contribution of the advanced colleges had differed from that of the universities in a fundamental way. "The Colleges of Advanced

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Technology have made a remarkably successful start... They looked back to a time when technological education in the universities was not well developed and when it was in any case denied to large numbers of able people because they could not afford it." These people, the report acknowledges, were catered for, in part, by colleges of this sort and great strides have been taken. "This success, however, great as it has been, is not enough to ensure the future well-being of the colleges of advanced technology. Circumstances are changing." The report noted that the CATs were drawing students not only from those who left school early and studied part-time up to the age of eighteen or nineteen, but increasingly from sixth formers with "A" level G.C.E., in other words, full university level education. "To what extent", it continued, "should they imitate universities and in what respects should they differ from them." It would be unwise, the Ministry considered, to be too precise at so early a stage. It was clear, however, that emulation of universities must extend to high academic standards, staff conditions of service and the conduct of research. "The main justification for their existence, however, will be not in their ability to copy the universities but in their success in marking out for themselves a distinct place in the educational system. For this purpose their principal instrument is their intimate link with industry."10

James Tait was at this time appointed to membership of the Governmental Advisory Council on Scientific Policy that had been set up in 1947 to advise the Lord President of the Council on national scientific planning. Tait was very conscious of the problems of growth, and in an effort to draw together new academic staff of divergent backgrounds and to knit them into a "college", he set up a scheme of annual staff weekend conferences. These were held, in the main, alternately at Oxford or Cambridge, with weekend residence in a College. There were keynote speakers, ample scope for discussion, wives attended as full members of the conference, there was some social activity and the weekends proved to be a very great success. They continued until 1977 but there was insufficient support for their continuance thereafter. At this time the academic establishment was always somewhat higher than the numbers in post, for it was a period of shortage of well-qualified technical teachers. Tait was appointed by the Ministry to be a member of the Governing Body of the Further Education Staff College, which was established in November 1960 with the main objective of improving the efficiency of Further Education Colleges.

A memorandum from the Ministry of Education, coinciding with a statement by the Minister in the House, 22nd June 1961, noted problems
caused by the success of the CATs. In particular means was needed to attract sufficiently highly qualified staff, therefore CAT academic salaries should match those in universities. The colleges should be national institutions, financed at least on a triennial basis with fully independent Governing Bodies which included academic staff representatives. Developments must be co-ordinated with those in universities.

In 1961 the Government set up a Committee on Higher Education under Lord Robbins. The terms of reference were: “To review the pattern of full-time higher education in Great Britain and in the light of national needs and resources to advise Her Majesty’s Government on what principles its long-term development should be based. In particular, to advise, in the light of these principles, whether there should be any changes in that pattern, whether any new types of institution are desirable and whether any modification should be made in the present arrangement for planning and co-ordinating the development of the various types of institution.”

Sir David Eccles, Minister of Education on 27th June 1962, attended the first meeting between Chairman and Principals of the Colleges of Advanced Technology, the Ministry and the Chairman of the U.G.C. at the Ministry. Subsequent meetings were at the Northampton. The Chairman was one of the Chairmen of Governors by rotation, with James Tait as Secretary. Sir David Eccles’ message was brief and unequivocal: the CATs had a vital role to play in increasing the supply of qualified scientific and technological manpower which alone would enable Britian to keep her place in the world. The desirable size for a CAT appeared to be 3,000 to 5,000 total student body. As to the desirable removal of disparity between universities and CATs, tuition fees in the latter were to be raised to £60 from September 1963 as a first step towards equalisation.

Whilst much had to await the findings of the Robbins Committee, at least matters of finance and of independent Governing Bodies could be dealt with very rapidly. The London County Council was also ready to accept change. “The Colleges of Advanced Technology should be given university status and the power to award degrees, and should be financed through the University Grants Committee. They should retain their distinctive character and tradition and should not be integrated with existing universities.”

Thus the first major step in the evolution from CAT to university lay in the matter of governance of the College, and it was the award of “direct grant” status from 1st April 1962. The three London CATs were “aided” colleges of the L.C.C. with existing independent governing bodies, so the
change for them was not great. In the case of provincially based CATs such as those at Birmingham and Salford, however, the change was very great, for Local Education Authority control had been an ever present reality. There was a reception given to the L.C.C. by the three London CATs and held at Skinners' Hall on 28th June 1962, in recognition of a fruitful relationship of sixty years, then ending. Sir David Eccles, Minister of Education, attended together with the representatives of the L.C.C. and the full Governing Bodies and Academic Boards of Battersea, Chelsea, and the Northampton.

The Scheme needed only minor amendment at this stage to provide for slightly differing representation from 1st October 1962. It was adjusted to allow five representatives from Local Education Authorities (not less than four of whom to be L.C.C.), one from the Regional Advisory Council, one from City Parochial Foundation, two from the University of London, four from the Skinners' Company and one from Saddlers', four from the Academic Board of the College, one from the Ministry of Education, the Principal ex-officio and co-opted members. The Governors objected to a Ministry of Education representative but were overruled by the Minister, and H.W. French, an inspector who became a valuable member, was appointed.

The Board of Studies for 1961-62 had consisted of the Principal, Vice-Principal, the Heads of Departments, the Librarian and W. Chellingsworth, G.A. Garreau, A.W. Gillies, B.M. Hayward and M.H. Heppenstall. The new arrangements meant legal recognition of the Academic Board that was to replace the Board of Studies. The first Academic Staff Association Representatives elected to the Academic Board (1962-63) were, W. Chellingsworth, R.A. Duckworth, B.M. Hayward, M.H. Heppenstall, and A.E. Laxton. The other members were the Principal, the Vice-Principal, the College Secretary, the Heads of Departments and 3 co-opted members. The Academic Board representatives elected to the new Governing Body were W. Chellingsworth, A. Geary, M.H. Heppenstall and C.W. Trow.

The Robbins Report

The Report of the Committee on Higher Education, chaired by Lord Robbins, was published in October 1963. Its major recommendation that the Colleges of Advanced Technology should, in general, become technological universities, was to provide the accolade of full university status to the Northampton. Thus, in 1966 the sealing of the Charter of The
City University provided the logical culmination of seventy years of educational development that had commenced under the far-sighted guidance of Mullineux Walmsley. Although alternatives were discussed at the time, with hindsight one can appreciate that nothing other than being constituted as degree granting universities could afford the status that the colleges specialising in advanced technology so sadly lacked in this country. The other factors that can be discerned at this distance in time are that there were not enough suitable teachers then available, not enough British students then or since wishing to benefit from the enormously expanded provision then set in train, and not enough science teachers in schools to encourage suitable applicants. But, as of 1963, the three London Colleges of Advanced Technology, at least, were fully worthy of university status and were poised to meet the needs of British industry for an increased flow of highly trained engineers and scientists. The Robbins Report reinforced the heady air of success, then such a marked feature of the London CAT. In all essentials it advocated building upon the successful developments of the recent past.

The aim, according to Robbins, was to evolve the Colleges of Advanced Technology into institutions having charters and enjoying the usual forms of university government, being independently run by their own senates and councils under the University Grants Committee. The colleges were to continue to be devoted to teaching and research in technology, with postgraduate studies increasing to between fifteen and twenty per cent. Awarding their own degrees at first and higher levels, the new technological universities would also be strengthened in the spheres of pure science and social and humane studies.15

The Report noted that the Northampton had 1,400 full-time advanced students in 1962-63,16 a total one hundred in excess of any other College of Advanced Technology. In the longer term 3,000 to 5,000 students was to be the aim.17 Because of the tendency to enrol some of the weaker students who might have been rejected by another college of London University, the Northampton had an emphasis on teaching and the Report approved this: "More teaching should be undertaken in small classes; lectures should normally be devoted to the exposition of principles to large audiences."16 Of course Robbins also urged that the balance between teaching and research in universities should be maintained and the Northampton clearly had some way to go in this area. Another matter of direct relevance was the emphasis on residential accommodation for students to house two thirds of all additional students coming into higher education.17 Before the end of the year the Government had accepted the findings of Robbins.
Meetings followed between Chairmen and Principals of CATs, officers of the Ministry of Education and Sir John Wolfenden, Chairman of the University Grants Committee. Progress was steady in the resolution of problems and the sorting out of details. The decision of the Northampton to stay in London was applauded as being more likely to enable continuing and developing links with industry than a move to a rural site would be. There was, after all, the experience of the “new” universities developing in isolation.

Sir John Cass College and The College of Aeronautics

There were meetings, too, with other colleges interested in becoming affiliated with the proposed new university. Affiliation, however, was not really a likely outcome, for the experience of the Northampton as an “institution with recognised teachers” yet not a full college of the University of London had highlighted the unsatisfactory nature of any arrangement other than full integration in the longer term. But the major candidates for a relationship, namely Sir John Cass College and The College of Aeronautics, Cranfield, were each concerned to retain its own identity and there were other problems. In the case of Sir John Cass College there were three major attractions for the Northampton. These were, firstly, that the Cass College had a subject spectrum that could supplement that of the Northampton, providing additional university level expertise in chemistry, physics, mathematics and metallurgy, as well as botany and zoology; secondly, the Cass College was situated in Jewry Street and could thus provide a ready made base in the City to house the proposed business school of the new university; and thirdly, the Sir John Cass Foundation possessed a site in Hackney that could possibly be developed to provide student residences. Cass was a suitable partner, being an aided polytechnic engaged in teaching for internal London University degrees just as the Northampton was. The terms of the Cass Foundation, however, precluded funds being reallocated to the new university (for there were also school level commitments), and, without such funding there was no reason at all why the Ministry should agree to add another college to those designated to draw upon U.G.C. resources.

The other major possibility for amalgamation with the new university was the College of Aeronautics, Cranfield, a National College that, unlike the National College of Horology, had developed its higher level work. The subject interests of the courses (not only aeronautics but also production engineering), the link whereby Northampton aeronautical engineering students had field courses at Cranfield, and the six hundred acres upon
which the largely residential college was sited in Bedfordshire, were the attractive features. There were but three hundred students to absorb and the large site could accommodate aeronautical engineering and hydraulic, high voltage and nuclear studies from Clerkenwell, where they are activities taking up expensive central city space. In the event, nothing came of Cranfield's discussions with this or other universities and the problem was resolved by its development as a School of a new Cranfield Institute of Technology, a University Institution directly funded by the Department of Education and Science.

The Academic Advisory Committee

It would appear that the Governing Body was at all times helpful in its discussions and advice at this period. On the odd occasion one senses other interests peeping through as, for example, when one governor stated that any major development of management courses in London would be based upon the London School of Economics and not the Northampton. The Robbins Committee Report laid down the requirement that the CATs would each have an Academic Advisory Committee with an external Chairman, just as the "ordinary" new universities had had, to approve the drafting of the charter and to approve the courses, etc.

In this matter, too, the embryo City University was fortunate, for those chosen proved to be in tune with the aims and objects of the existing institution as it had evolved to date. The College was to continue to do what it could do best conditioned and extended by its new status. The A.A.C. members were Dr. C.I.C. Bosanquet, Vice-Chancellor of the University of Newcastle-upon-Tyne, Professor R.O. Kapp of University College and sometime Dean of the Faculty of Engineering of London University and a member of the Governing Body, Professor F.W. Paish of the London School of Economics, Professor A.W. Skempton of Imperial College, who was replaced in June 1965 by Professor J.G. Ball, also of Imperial College, Sir Gordon Sutherland, Director of the National Physical Laboratory and subsequently Master of Emmanuel College Cambridge and Sir David Watherston of Tube Investments, Ltd., and James Tait. The first meeting of the A.A.C. was held on 8th May 1964. Inter alia it was decided that any extension of the existing range of College work should be gradual, it being adequate, initially, for the new University. Significantly, for the future, approval was given to a recommendation that came to the A.A.C. from the Academic Board, that an advisory committee on the feasibility of inaugurating degree courses in Ophthalmic Optics be set up. It was the opinion of the A.A.C. that the charter should specifically reflect the
technological character of the new university and yet enable the development of other fields of study and research. This was done by suitable wording in the charter without the violation of the English language perpetrated elsewhere by the use of a title, technological university. Either we have an university or we do not!

**The Coming of University Status**

On the 31st March 1965, the Department of Education and Science gave up the “direct grant” relationship and the College was placed under the University Grants Committee from 1st April 1965, for the Government had accepted the Robbins Committee Recommendations. The Governing Body expressed “very sincere appreciation for the friendship, help and courtesy of the Officers of the Department of Education and Science”, adding “there is no doubt that the rapid evolution of the CATs to university status owes a very great deal to their understanding”.

A University Grants Committee visitation of 1965 was reported as “glad to see that we were not encroaching on the Arts end of the educational spectrum because other institutions had been doing this much better for a longer time.”

Much time and effort were expended to seek to ensure that the Charter would not be a strait jacket for future development and yet would guide the new university along lines then considered desirable. Perhaps too much effort gets expended on these admittedly important legal formalities, for they are always susceptible of change on proper application to the Privy Council. The Charter Committee comprised: Oliver Thompson, A.N. Gilkes, R. McKinnon Wood, Sir Michael Turner, H.W. French, W. Chollingsworth, M.H. Hopponstall and James Tait. There was, however, some opposition to the provisions of the charter that delayed approval by the Privy Council. The delay caused academic problems relating to the award of degrees, but these were not serious for higher degrees continued to be registered with London University and, obviously with first degree candidates being registered either three or four years ahead, there was no problem for the students.

The objections came from various sources, including the University of London, Sir John Cass College (making a final bid for affiliation) and the Association of University Teachers. The objection of the University is discussed in chapter seven. The University Grants Committee had earlier secured eight Senate representatives on Council in place of the six proposed and the other A.U.T. points were readily dealt with. Student representation on Council and Senate is discussed in chapter seven. The
Charter of The City University was approved on the sixth of April 1966 and the Report of the Academic Advisory Committee was presented to the Governing Body on 23rd May 1966. Professor Kapp, who, as Chairman, had so wisely guided the discussions of the A.A.C. was by then, unfortunately, deceased and Sir David Waterston acted in his place. There were no surprises in the Report for a draft version had been presented in January of the same year, discussed and acted on where appropriate. The A.A.C. upheld the decision to remain in London. It considered and rejected federation with the University of London on the grounds that the Nothampton was different; “because of its aims and the way of conducting its affairs this College has more kinship with industry than with traditional university life.” The City University was unanimously agreed upon as the name. The A.A.C. noted that it did not have to look to academic standards as the College had been an institution with “recognised teachers” preparing students for internal degrees of London University since the early 1900’s. They recorded agreement with the decision not to create an arts faculty, but expressed approval for a wide and deep range of general studies, “as a leaven to the scientific education of all graduates.”

The Departmental structure then evolving was approved by the A.A.C. including a separate Department of Management leaving “Social Science to concentrate on undergraduate studies which have particular reference to technology, including hybrid courses.” The proposed courses were agreed including B.Sc. in Ophthalmic Optics and Bachelor’s degrees in Statistics, Computer Science, Social Science, Economics with Technology, and Philosophy with Physics, among others. The postgraduate proportion was to be twenty per cent. The proposed composition of Boards of Studies was stated as:- the Head of Department, the Professors, Readers and Senior Lecturers plus one third of this number elected by Departmental Staff plus a member from each other Department involved. There were, the Report noted, 1800 students taking degree courses in session 1965-66; on the sites likely to be available the numbers could rise to 2,000 in 1966-67 and 2,900 by 1970-71. The sites proposed are outlined in chapter eight.

Conclusion

Evolution from College of Advanced Technology to University, then, was the obvious and proper course for the Nothampton to follow. James Tait and Oliver Thompson met all the pressures of the exacting roles of Principal and Chairman of the Governing Body, respectively, with wisdom and untiring dedication to the end in view. They were not alone in this,
being supported by a large group of interested people, a growing College, academic, administrative and executive working to the same objective. The support of the City of London was a very positive factor and the College moved into its new role with élan, even persuading H.R.H. Prince Philip, Duke of Edinburgh to attend a Guest Night Dinner on 6th July 1965 as principal guest and speaker.

Some of the major changes to follow were not to be academic but administrative. For the interim, the Council of the University agreed that the Vice-Chancellor and Principal, (a post to which they had appointed James Tait), should allocate departmentally the income available for that purpose for the year ending 31st July 1967, “as in the past.” For the future, the role of the Principal would evolve into that of a Vice-Chancellor, with “a general responsibility to the Council for maintaining and promoting the efficiency and good order of the University,” to use the words in the Charter. The late Professor Kapp expressed his view of the position of Vice-Chancellor:- “a pivotal position, both academically and administratively. A pivot is a place where forces meet, not from where they emanate. In industry and commerce a higher executive is not a dictator, but a pivot. The things that are done on his instructions are not many, the things that cannot be done without his assent are numerous.”

To quote Oliver Thompson, by then Pro-Chancellor speaking at the first Council Meeting on 26th September, 1966:- “In constituting the Council, and its powers, we have again had in mind the analogy of a board of directors of an industrial concern. Not so big as to be unwieldy, but large enough to provide for a wide range of talent and helpfulness. Each member from outside the University has been selected, as far as possible, for his particular width of interest or for some particular expertise to make us a thoroughly catholic, outward looking body with our roots widespread. Unlike some other Universities the Senate representation on the Council is not more than one third and it was felt that more than this proportion would have impaired the extent of the University’s external associations.” This would not have been accorded universal agreement and there will have been some creakings in the machinery of governance and administration in adapting from Technical College to University.

The meeting of the 26th September 1966 to which reference has been made was the last meeting of the old Governing Body and the first meeting of the Council of The City University. The Chairman wrote at the end of session 1965-66:- “Everybody concerned with the new University must acknowledge their debt to the past and resolve to do no less well for the future.”
References

1. TAIT; James S. Foreword. N’lon, June 1957.

15. Committee on Higher Education /bid. p.281, para 60.


17. Committee on Higher Education /bid. p.287, para 129.

