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Coping with De-industrialization: The Nova Scotia Department of Technical Education, 1907-1930

FROM ITS CREATION IN 1907 UNTIL 1930, the Nova Scotia Department of Technical Education underwent a major transformation in its direction and its programs. Since Nova Scotia experienced economic devastation during this period, significant change in a provincial agency for industrial development comes as little surprise and the Department of Technical Education might have been expected to deteriorate or even to disappear entirely. In fact, the Technical Education Director, F.H. Sexton, revitalized and expanded his Department. He borrowed from the pedagogy of the new education and he adopted new ideas and methods for labour management to create programs designed to alleviate the distress caused by depression and de-industrialization. At first the changes were gradual. In the early 1910s a few new courses were introduced in the evening technical schools, largely at the instigation of the Local Council of Women in Halifax. But when the war threatened the virtual closure of the Department, Sexton's new approach emerged more clearly in the form of a retraining program for disabled soldiers. At the end of the war the Department introduced programs to train Nova Scotians for emigration, and to help those who stayed at home to weather the depression.

The extent of the changes in the Department of Technical Education must be measured against the ambitions of its early promoters. Although the campaign for government-supported technical education was never a popular crusade, its promoters believed that it held the key to a great industrial future for the province. In the late 1870s a handful of young Nova Scotian scientists returned to Dalhousie University after study in Germany, filled with admiration for German industrial progress. They shared the widely held belief that this progress must be attributed to Germany's system of technical education.[1] In 1882, one of their number, Dr. J. Gordon MacGregor, professor of physics at Dalhousie, castigated Nova Scotia's failure to provide technical education at a time when it was "the verdict of all nations that without Technical Schools no nation can maintain an advantageous position in the face of modern competition". He argued that a visitor to Nova Scotia would find unproductive farms, inefficient mines and a few factories run by "imported skill. Managers, foremen, even skilled workmen, are usually either foreigners or have been educated abroad.

1 Walter J. Chute, *Chemistry at Dalhousie, A History of the Chemistry Department at Dalhousie University* (Halifax, 1971), pp. 9-12; J.H.L. Johnston, *A Short History of the Physics Department, Dalhousie University, 1838-1956* (Halifax, 1971), p. 48.

The hewers of wood and drawers of water are home educated Nova Scotians".[2] During the 1880s and 1890s the scientists found little support for their plans to bring German-style technical education to Nova Scotia, but in 1901 the Nova Scotia Mining Society, the principal lobbying group for the Nova Scotia mining industry, joined the campaign. Although the Mining Society was used to getting its way with the provincial government, education was a sensitive political issue in Nova Scotia and it took the Society six years to persuade the provincial government to support its demands.[3]

The political sensitivity surrounding public education in the province was highlighted by the Society's attempt in 1902 to persuade the government to appoint a commission to investigate the entire education system. The Legislature's Mines and Minerals and its Education committees, provincial education officials including School Superintendent A.H. MacKay, and a group of Dalhousie University science professors all supported the demand for an education commission, but despite the large Liberal majority in the Legislature the provincial government failed to establish one. Nonetheless, the Mining Society kept the matter of educational reform before the government and broadened support for the necessary legislation. While coal was the most important mineral in the Nova Scotian economy, members of the Mining Society argued that gold had as great a potential value as coal, but that to develop that potential, scientifically trained engineers were needed.[4] At the Society's Annual meeting in 1906 Premier Murray announced that he was prepared to consider the establishment of a government-supported technical college if the province's colleges could be persuaded to accept the idea. The Society orchestrated the final push for the legislation. A.A. Hayward, general manager of the Golden Group Mining Company's mine in Waverley, was president of the Mining Society and an active member of its technical education committee for several years. He lobbied the Halifax Board of Trade, whose membership overlapped substantially with the Society's, and gained the active support of its president, A.M. Bell. Hayward also contacted the presidents of the province's five colleges, Dalhousie, Acadia, King's, Saint Mary's and St. Francis Xavier, as well as Mount Allison in New Brunswick, and hammered out the details of an acceptable compromise. On 20 April 1906 "the government received a joint delegation of representatives of all the colleges of Nova Scotia, of the Mining Society and of the Board of Trade in advocacy of a government technical school".[5]

2 J.G. MacGregor, *Technical Education at Home and Abroad* (Halifax, 1982), pp. 26-7.

3 Alex McNeil, "The Aim and Scope of the Mining Society of Nova Scotia", *Proceedings and Transactions of the Mining Society of Nova Scotia* (*MSJ*), vol. VII, 1902-3, pp. 61-4. McNeil described the relationship of the Society to the Provincial government as one of "mutual sympathy and confidence and cordial cooperation".

4 Alex McNeil, "Technical Education" and Discussion, *ibid.*, vol. VI, 1901-2, pp. 62-74.

5 *Halifax Herald*, 21 April 1906.

When the Nova Scotia Technical Education Act was passed in 1907 its advocates predicted that government-supported technical education would bring many benefits to Nova Scotia. Skilled workers would improve productivity. Professional engineers would ensure that the most up-to-date processes were used. Industrialists would have access to government research laboratories to solve the most perplexing problems. Yet the new Department of Technical Education faced serious constraints from its inception.[6] Although the Nova Scotia Technical Education Act could correctly claim to be the first general legislation in the field, the province lagged behind New Brunswick, Ontario and Quebec in providing significant financial support for post-secondary technical training. The School of Practical Science at the University of Toronto, the Ecole polytechnique at Laval, and the engineering departments at McGill University and the University of New Brunswick were all well established and receiving provincial support by 1890.[7] The presence of five colleges in Nova Scotia, and Mount Allison just across the border in New Brunswick, all of them eager for provincial funds to support expanded science programs, made this option a political liability for the Nova Scotia government. However, since the Mining Society's most insistent demand was for a college to train mining engineers, the Act provided for the establishment of a technical college in Halifax to train professional engineers and to conduct industrial research.

In the compromise worked out with the province's denominational colleges it was agreed that the technical college would offer only the final two years of an engineering degree.[8] Unlike the situation at the University of Toronto and McGill, this compromise, in effect, permanently separated pure and applied science in Nova Scotia and cut engineering students off from the broader educational opportunities available in a university. The college was also to be built on a shoestring — for about a tenth of the cost of the Montreal Technical High School completed a few years earlier.[9] Premier Murray told members of the Mining Society that what he had in mind was an institution modelled on the Massachusetts Institute of Technology but on the scale of the Nova Scotia Agriculture College.[10] The Act also provided for the creation of local technical schools to teach courses at the secondary level tailored to the specific needs of local industry. When the legislation was introduced, Murray told the legislature

6 For a somewhat different interpretation of the Act and its significance see Donald MacLeod, "Practicality Ascendant: The Origins and Establishment of Technical Education in Nova Scotia", *Acadiensis*, XV, 2 (Spring 1986), pp. 53-92.

7 Robin S. Harris, *A History of Higher Education in Canada 1663- 1960* (Toronto, 1976), pp. 72-3, 103, 166-8.

8 For a full discussion of the efforts of the Nova Scotia Mining Society to reach a compromise with the denominational colleges, see Janet Guildford, "Technical Education in Nova Scotia, 1880-1930", M.A. thesis, Dalhousie University, 1983, pp. 75-80.

9 Nova Scotia, *Debates and Proceedings of the House of Assembly*, 2 April 1907, p. 290.

10 Premier Murray's Address to the Annual Meeting of the Mining Society, *Proceedings and Transactions of the Nova Scotia Mining Society*, vol. XI, 1906-7, pp. 136-50.

that he planned to have two schools constructed immediately, in Glace Bay and Halifax,[11] but money was never provided for these schools nor for any others. The third provision of the act was administrative. The coal mining and engineering schools then functioning under the Department of Public Works and Mines were moved under the new umbrella of the Department of Technical Education.

The timing of the act was unfortunate. Previous and continuing merger movements had already weakened Nova Scotian industry, and the legislation coincided with the depression of 1907, from which Nova Scotian industry never fully recovered.[12] It also came right on the heels of a provincial government survey of the Nova Scotian gold fields which ended any hopes of a provincial gold rush. The disappointment about the gold mining survey added special irony to the timing since it had been the gold mining interests within the Mining Society who had pushed hardest to have the legislation passed.[13]

The provisions of the Act did not integrate the three technical education programs it created nor did it integrate the new Technical Education Department with the public school system. The new structure was not designed to provide for continuous progress from one technical education program to another, nor was the option of a technical or vocational secondary education available for students completing primary school. In 1907 Nova Scotia did not have an education ministry; the provincial cabinet, sitting as the Council of Public Instruction, made policy decisions regarding public education. There was, therefore, no department of education. The fledgling provincial education bureaucracy consisted of the superintendent and a modest clerical staff, one inspector for each county, and the staff of the Normal School in Truro. The relationship of the Director of Technical Education and the School Superintendent was cordial and characterized by co-operation, but it had little institutional basis. Although the Director's annual report was appended to the Superintendent's, the Director dealt directly with the provincial Council of Public Instruction. The Department of Technical Education's budget was small, $30,000 for the first year of operation, but it was administered by the Director.[14] This institutional autonomy was increased by the fact that the Department of Technical Education worked almost entirely with adults. It is therefore very difficult to tie the Nova Scotia Technical Education Act very closely to the movement for vocational secondary education in other parts of Canada, which

11 J. Nolan Reilly, "The Emergence of Class Consciousness in Industrial Nova Scotia: A Study of Amherst, 1891-1925", Ph.D. thesis, Dalhousie University, 1983, p. 47.

12 See discussion of technical education in *MSJ*, vols. VI-XII.

13 Nova Scotia, *Debates and Proceedings of the House of Assembly*, 26 February 1907, pp. 100-1.

14 Annual Report of the Director of Technical Education, Appendix to *The Annual Report of the Superintendent of Education for Nova Scotia* (DTE), 1907, p. 80.

was directed toward adolescents.[15]

Frederic H. Sexton was appointed first Director of Technical Education and he took up his duties with energy and enthusiasm. Sexton had graduated from the Massachusetts Institute of Technology (MIT) in 1901 with a Bachelor of Science degree. From MIT he went directly to the General Electric Company's laboratory at Schenectady, New York, which was in the vanguard of applied scientific research under the direction of Charles Steinmetz, a German immigrant and moderate socialist, who actively promoted technical education for both managers and workers.[16] The Schenectady experience exposed Sexton to elements of progressive reform such as scientific management, industrial psychology and worker education, which were being introduced at the General Electric laboratory during his time there.[17] His later work certainly reflected these influences. In 1904 Sexton joined the teaching staff of the short-lived Mining School at Dalhousie University and in Halifax he was active in promoting and teaching extension courses for workers and served on the Mining Society's technical education committee.[18] Sexton's principal qualification for the Director's job lay in his commitment to the value of applied science to the improvement of industry and after his appointment he immediately enlisted the support of both business and labour leaders for the creation of technical education programs. It would be wrong to regard his appointment as a sign of support for extensive educational reforms, since the structural and financial constraints of the Technical Education Act limited the scope of the new department. Nonetheless, as Sexton's appointment suggests, its early programs did reflect the industrial enthusiasms of its promoters.

The provisions of the Technical Education Act presented Sexton with three separate jobs: the administration of the Mining Schools and the creation of both the Local Technical Schools and the Nova Scotia Technical College. The Mining Schools, which had been founded in the 1880s, required little attention.[19] After an investigation of this program Sexton made a few minor changes, then allowed it to function much as it always had until demand dried up entirely in the hard times of the 1920s and the mining schools dwindled away.[20] The creation of technical schools was more demanding. Sexton was a perennial

15 Timothy Dunn, "Vocationalism and its promoters in British Columbia, 1900-1929", *Journal of Educational Thought*, 14, 2 (August 1980), pp. 92-107.

16 Dalhousie University, Minutes of the Board of Governors, 14 August 1903, Dalhousie University Archives (DUA); David F. Noble, *America by Design: Science, Technology and the Rise of Corporate Capitalism* (New York, 1979), pp. 47-9; James Gilbert, *Designing the Industrial State. The Intellectual Pursuit of Collectivism in America, 1880-1940* (Chicago, 1972), ch. 7.

17 Noble, *America by Design*, p. 112; Gilbert, *Designing the Industrial State*, ch. 7.

18 For information about Sexton's extension work at Dalhousie see Dalhousie University, Minutes of the Board of Governors, 14 August 1903, DUA; Sexton also served on the technical education committee of the Mining Society from 1904-1908 when it disbanded.

19 Guildford, "Technical Education", pp. 87-8.

20 DTE, 1908, p. 104.

optimist and he never lost sight of his goal of fully equipped full-time technical schools. Without the money to build new schools immediately, Sexton developed an interim plan. He established evening classes for workers already employed in industry. Experienced workers and managers were hired as part-time teachers. The Department of Technical Education supplied equipment and apparatus; the local authorities provided accomodation, heat, light and janitorial service. Ten courses were offered in the 1907-8 term in Halifax, Sydney and New Glasgow: Business English, Practical Arithmetic, Practical Mathematics, Mechanical Drawing, Machine Drawing, Architectural Drawing, Elementary Electricity and Magnetism, Mechanism, Surveying and Plotting, and Chemistry. Amherst offered courses the following year in "splendid new rooms...by far the best equipped and lighted quarters now supplied for this work". Sexton was delighted with the success of these schools. In the first year 429 students attended classes and the Nova Scotia Steel and Coal Company and I. Matheson Company, a large foundry, made attendance at evening classes compulsory for apprentices. In 1909-10, 22 courses organized into four occupational programs were offered. Nearly 800 students were enrolled. The Nova Scotia Technical College opened for classes in 1909 and, in 1910, 28 engineering students were enrolled and short courses were offered during the winter for workers in land surveying and highway construction.[21]

The highwater mark of industrial education in Nova Scotia as its original promoters understood it was 1910. All three of the Department of Technical Education programs — the coal mining schools, the evening technical schools and the Nova Scotia Technical College — were operating smoothly. There was a demand for the programs, and Sexton believed that students who took the courses were well received by Nova Scotian employers in mining and manufacturing.[22] The stress was on job-specific skills. A further boost for supporters of technical education in Nova Scotia was the appointment of a federal Royal Commission on Industrial Training and Technical Education in 1910, which they hoped would recommend a massive infusion of federal funds for provincial technical education programs.

Sexton was very interested in the Royal Commission. He had been federal Labour Minister Mackenzie King's first choice to chair the Commission, but King was nervous that Sexton's American citizenship would create political repercussions and instead chose James W. Robertson, an active promoter of technical education, and a Canadian citizen, for the job.[23] When the commissioners arrived in Halifax in the summer of 1911 Sexton greeted them enthusiastically, and they welcomed his participation in the Nova Scotian hearings and invited him to travel with them to Europe to investigate technical

21 *Ibid.*, p. 83.

22 DTE, 1910, pp. 156-74.

23 David Stanley Enns, "Technical Education and Industrial Training in Early Twentieth Century Canada: The Royal Commission of 1910", M.A. thesis, Dalhousie University, 1982, p. 15.

education there. Robertson was pleased when the provincial government allowed Sexton to accept the invitation, and thanked Sexton for his contribution as a sort of informal consultant.[24] In his own presentation to the Commission, Sexton revealed a new dimension in his approach to technical education. He argued that Nova Scotia had a special right to federal grants for education because of the large number of Nova Scotians who, after being trained at the expense of the provincial government, emigrated to other parts of Canada:

> There has already been too great a drain on the eastern provinces by the west. Professional men, statesmen, teachers, farmers and artisans have been trained in the sturdy conservative life of the east only to give the fruits of their training and ideals to the west. It would not be fair for the east to still further train her workmen by a highly expensive series of technical schools and then give the added industrial efficiency of those men to the west.[25]

The final report of the commissioners extolled the value of education in maintaining social harmony and teaching responsible attitudes, especially to adolescents, and thus strengthened Sexton's belief in the social value of education and technical education in particular.[26]

Although no money for technical education came from the federal government for almost a decade, Sexton launched the Department of Technical Education on a new course as he translated his belief in the social value of technical education into practical programs. The philosophy that animated Sexton's programs was a mixture of the "new education" and new approaches to industrial management. The pedagogy of the "new education" emphasized the importance of teaching the whole child, not just the intellect, of fostering physical and emotional well-being and development. This approach increased the role of the school in the child's life and permitted the school to assume tasks previously performed in the home and the workplace through the adoption of practical courses like manual training, physical drill and domestic science.[27] In the early 1890s Nova Scotia's School Superintendent, A.H. MacKay, espoused a version of the new education for provincial schools and persuaded the Council of Public Instruction to add manual training as an optional subject in the school curriculum. But Sexton's work was with adults, not children or adolescents. His students were industrial workers. In the 1910s new approaches to labour

24 DTE, 1907, pp. 80-2; 1909, p. 156.

25 *Report of the Royal Commission on Industrial Training and Technical Education* (Ottawa, 1913-4), p. 56.

26 *Ibid.*

27 For a discussion of the "new education" see Robert M. Stamp, *The Schools of Ontario 1876-1976* (Toronto, 1982), esp. ch. 3.

management were developing along lines quite similar to the new pedagogy. Both vocational guidance based on psychological testing and industrial psychology made strides in the United States. Sexton's careful attention to industrial developments in the United States kept him up-to-date, and he was an enthusiastic admirer of the work being done.[28]

The first concrete indication that Sexton was beginning to initiate new programs which stressed the social value of technical education emerged in response to the demands of the Local Council of Women for a technical school for women. The Council, a national umbrella group for women's organizations with quite autonomous local affiliates, espoused a number of progressive and feminist causes early in the 20th century. May Sexton, an MIT graduate like her husband Frederic, was active in the work of the Local Council. In 1908 she raised the problems facing female factory workers in Halifax with members of the Council, and she proposed technical education as the solution. May Sexton's address prompted the Halifax Council to investigate the position of factory women in the city and to survey the opinions of the mothers of schoolgirls about technical training for women. The Local Council concluded that a women's technical school was necessary to provide women with the training they needed to move into more satisfying and higher paying jobs.[29] Although Frederic Sexton was unable to persuade the provincial government to provide the funds for a technical school of any sort, he shared his wife's interest in educational and social reform and he was sympathetic to the Council's proposal. In 1910 his Department began to offer needlework classes for women through the Local Technical Schools in Amherst, Halifax and New Glasgow. Sexton's annual report for 1911 carefully explained that these classes were not intended for professional garment workers, but were for women who wanted to sew for themselves and their families, especially "women of the poorer classes".[30] The emphasis was on self sufficiency and thrift, not on helping women to enter the paid work force. Although the emphasis was on domestic skills, and not on training for paid work as they had advocated, the Local Council of Women actively supported the Department's courses in household subjects.[31] In 1913 Sydney and Yarmouth added needlework courses and Halifax expanded its program to include an evening class in Household Economy and Home Decoration. Sexton reported that "The instruction covered the principles of nutrition, the proper methods of cooking and serving plain foods, and the most economical distribution of a slender income and advice as to how to decorate a

28 Sexton presented enthusiastic reports on these developments virtually every year in his DTE.

29 I would like to thank Ernest R. Forbes for his generosity in sharing "Edith Archibald and the Feminist Movement of Nova Scotia", which provides a full discussion of the Local Council of Women's campaign for a provincially supported technical training school for women.

30 DTE, 1910, p. 174.

31 DTE, 1912, p. 125.

house tastefully with small means".[32] The homemaking classes "met with a ready reception", and 175 women enrolled in these courses in Amherst, Halifax and New Glasgow in the first year of operation.[33] Although the homemaking courses compromised the goal of the Local Council of Women to improve women's access to financially rewarding work, they did offer new educational opportunities for women, which could be interpreted as improving women's position. For the Department of Technical Education the homemaking classes represented a departure from the idea of training industrial workers in the skills required to develop the natural resources of Nova Scotia, and they broadened support for its programs.

The war offered Sexton a unique opportunity to develop technical education programs with a social purpose, but at the same time it represented a serious threat to the continuation of his Department. The Nova Scotia Technical College in Halifax was closed down early in the war as students enlisted. During the war years the College was used by the Red Cross which was firmly in the control of the Local Council of Women, an organization in which May Sexton continued to be very active. The Halifax Red Cross operated a convalescent hospital for wounded soldiers, and Frederic Sexton began to develop educational programs to assist with the rehabilitation of the patients at the hospital.[34] In 1915 the federal Military Hospital Commission invited him to provide retraining programs for wounded soldiers returning from the battlefields. Military hospital personnel had quickly decided that rest and entertainment were not the best treatment for the wounded, and the Military Hospitals Commission, therefore, sought a new therapy in vocational training. The work was organized into two divisions: one section used vocational training solely for its therapeutic value in military convalescent homes, the other section trained those veterans whose disabilities prevented them from returning to their former civilian occupations. This division makes explicit the attitude that vocational training was intended to heal the whole person, not simply to provide the technical skills and scientific principles required for specific occupations. The retraining programs also offered an opportunity to use vocational guidance, which was just beginning to become popular with both educators and those involved in the field of industrial psychology.[35]

Sexton was sympathetic to the problems faced by returned soldiers and recognized the difficulties they faced in adjusting to civilian life. It was more difficult, he felt, to demobilize an army than to mobilize it. Each soldier had to face the consequences of his return: "Behind him in the trenches lies the glorious comradeship of the boys, the great mass-action of the army; for months, perhaps

32 DTE, 1913, p. 127.

33 Ibid.; DTE, 1914, p. 104. Complete enrolment returns were not made for each centre each year, but the general trend was to increased participation.

34 Forbes, "Edith Archibald".

35 DTE, 1918, p. 124.

even for years, he had not had to think for himself or his dependents; his food and raiment have been the chief concern of others".[36] At the end of the war the program had expanded to become a broadly based retraining program for veterans, and under Sexton's direction the Nova Scotia Technical College was an active centre for the retraining program from 1915 until 1921. During the war most of the civilian courses ground to a halt. The department's short courses and correspondance courses were abandoned and the Murray Laboratory was used for retraining courses in auto mechanics. The program widened Sexton's professional horizons, and its success fully vindicated his faith in the ability of technical education to produce a happier and more productive society.[37]

As the war drew to a close Sexton considered leaving the Nova Scotia Department of Technical Education. Progress in the field of technical education in the United States impressed him, and in July 1918 he wrote to T.B. Kidner, formerly Provincial Supervisor of Manual Training, who had joined the Federal Board of Vocational Education in Washington, and asked for help in finding a new job.[38] There is no evidence to suggest that his position in Nova Scotia was threatened or that his relationship with the Council of Public Instruction was becoming strained, but we can speculate about his reasons for wanting to move on. More than a decade had passed since the establishment of his department in 1907, yet the provincial government seemed no closer to the creation of full-time secondary technical schools, the chief thrust of technical education legislation in other jurisdictions; and the recommendations of the Liberal-appointed Royal Commission were unlikely to be implemented by the federal Union government. After the completion of the veteran's retraining program Sexton would again be administering a small sub-department of the provincial school system. Still a relatively young man, with impressive credentials and a vital interest in the latest developments in his field, it was reasonable that Sexton should want to work in the expanding and challenging Federal Board of Vocational Education in the United States. The use of the term "vocational education", in fact, was suggestive of the differences in the approach the Americans were taking. The American proponents of vocational testing and education believed that the key to industrial harmony lay in finding the appropriate work for each individual, and training him or her for that work. Vocational education, most broadly interpreted, would, therefore, ensure a happier and more productive society, just as Sexton himself believed.[39] Sexton was unable to find the kind of position he was looking for in the United States, and he spent the 1920s revitalizing his programs and applying his concept of technical education to a region devastated by the process of de-industrialization. The programs which he developed in

36 DTE, 1917, p. 129.

37 DTE, 1920, p. 130.

38 Sexton to Kidner, 26 July 1918, Nova Scotia Technical College Papers, MG 17, vol. 2 (1918), Public Archives of Nova Scotia (PANS).

39 Noble, *America by Design*, pp. 296-7.

Nova Scotia were unique not because his ideas about education were unprecedented, but because he applied them to the problems of de-industrialization instead of to the work of creating harmonious industrial relations in an expanding economy. It should also be stressed that his work was with adults, not with the adolescents who were the principal interest of vocational educators elsewhere.

By 1920 the Department of Technical Education already looked very different than it had in 1910. Until 1922 the Technical College and Murray Laboratory were occupied by veterans and were, therefore, unable to assist with the immediate post-war needs of Nova Scotian industry. Laboratory ore-testing, for example, could not resume until then. And while there was a 25 per cent increase in the number of evening classes between 1918 and 1920, it was dressmaking that led the way, followed by English, mathematics, bookkeeping, and automobile mechanics.[40] Classes in automobile operation, which taught students how to perform simple car repairs, were also becoming popular. These courses were another variant on the theme of thrift and self-sufficiency first demonstrated by the homemaking classes.

Hopes for a substantial increase in technical education programs flickered briefly in 1919 with the passage of the long-awaited federal Act for the Promotion of Technical Education. After the first reading of the Act Sexton was optimistic that he would finally be able to establish full-time technical high schools. The federal government was not so open-handed. All federal grants had to be matched by provincial spending. There were severe restrictions on capital spending, and no federal money was available for vocational teacher training or for work at the college level. In 1929, when the Act was scheduled to expire, Nova Scotia had spent only $287,000 of the $662,000 allocated to it. Although the province was allowed five more years to spend the money, Sexton pointed out that in order to claim it the Nova Scotia government would have to spend $150,000 a year, more than double the amount it had spent in the 1928-9 year.[41] Sexton's only success in increasing Nova Scotia's federal grant was the result of an astute political move rather than through a genuine expansion of the services of his department. In 1922 he brought the Victoria School of Art and Design, a private Halifax art school, under the wing of the Department of Technical Education and persuaded the Director of Technical Education for the Dominion Department of Labour to recognize the school as an institution of secondary vocational education. The Art School was thus entitled to grants, or "refunds" as they were called under the Act, from the Dominion Treasury. In 1925 the school's name was changed to the Nova Scotia College of Art and Design and Sexton reported that there was an increased emphasis on industrial and applied art and a rapid growth in enrolment.[42]

40 DTE, 1920, p. 145.

41 DTE, 1920, pp. 131-2; 1929, p. 173.

42 DTE, 1923, p. 144; 1925, p. 128.

The economic depression of the 1920s eliminated any hope of an industrial future for Nova Scotia and technical education could no longer be promoted as an industrial strategy by even its most zealous supporters. In the spring and summer of 1920 the bubble of wartime prosperity collapsed and every industry in the province was affected. The industrial centres of Amherst, Pictou County and Cape Breton, where Sexton had begun the evening technical schools for industrial workers, were hard hit. These areas, which had invested heavily in the new mining and manufacturing industries under the auspices of the National Policy, suffered greatly as factories closed and workers were left jobless. The coal markets of central Canada, lost during the war, were not regained. The national coal market had shrunk and the older Nova Scotian mines produced less efficiently than their competitors in the United States. With the completion of the major part of Canadian railway building, iron and steel markets were also contracting. Reduced tariff protection and increased freight rates exacerbated the problems of Nova Scotian industry. Staples fared no better. The demand for fish, agricultural and forest products stimulated by the war declined as European production resumed. New American protective tariffs and the weakness of the local economy combined to reduce even further the demand for Nova Scotian staples.[43]

For many Nova Scotian workers the province's highway building in the 1920s must have been very welcome. Despite reduced provincial government revenue, highway construction represented a larger and larger percentage of the provincial budget in the twenties. Some of the money for roads also came from the federal government. Road work had always been an important source of cash for people in rural areas as well as an integral part of the system of political patronage in Nova Scotia. Even so, the increase in spending in the 1920s was significant. In 1916 the province spent $235,000 on roads, which represented 13.4 per cent of its annual expenditure. By 1926 the amount had increased to $1,858,756, nearly a third of the provincial budget.[44] The introduction of the automobile and the program of roadbuilding which accompanied it were important developments in the social and economic life of the province. In fact, the introduction of the automobile serves as a metaphor for the integration of the Nova Scotia economy into the national economy in a role as consumer. Automobiles, with few exceptions, were produced outside the province and as cars gradually replaced traditional Nova Scotian forms of transportation, like the coastal schooner and horse-drawn carriage, foundries, tanneries, carriage-

43 T.W. Acheson, "The National Policy and the Industrialization of the Maritimes, 1880-1910", *Acadiensis*, I, 2 (Spring 1972), pp. 3-28; David Frank, "The Cape Breton Coal Industry and the Rise and Fall of the British Empire Steel Corporation", *Acadiensis*, VII, 2 (Autumn 1973), pp. 3-34; L.D. McCann, "The Mercantile- Industrial Transition in the Metal Towns of Pictou County, 1857- 1931", *Acadiensis*, X, 2 (Spring 1981), pp. 29-64; Ernest R. Forbes, *The Maritime Rights Movement 1919-1927, A Study in Canadian Regionalism* (Montreal, 1979); Ruth Fulton Grant, *The Canadian Atlantic Fishery* (Toronto, 1934).

44 Nova Scotia, *Journal of the House of Assembly*, App. I, Financial Returns, 1916, 1926.

makers, shipyards and sawmills went out of business. By the 1920s this trend toward centralized production and regionalized distribution was well-established in Nova Scotian communities and a dependence on imported consumer goods of all kinds had replaced a reliance on goods of home or local manufacture.[45]

No program of highway construction could hope to offset the impact of these changes and the rate of outmigration from the province accelerated significantly. In 1921 the population of the three Maritime provinces was 1,000,300. The Dominion Bureau of Statistics calculated that 147,000 Maritime residents left the region between 1921-31, and the peak of that emigration has been placed between 1920 and 1925.[46] Early in the decade there were also demonstrations of social and political discontent by those who stayed in the province. The Maritime Rights Movement was directed principally at the federal government, but popular dissatisfaction with the traditional government and business leadership in the province was manifested in greater militancy among unionists and a lively interest in socialist politics.[47]

The severity of the depression in Nova Scotia in the 1920s virtually eliminated the demand for trained industrial workers in the province. The Nova Scotian government, although concerned with decreasing tax revenues, did not reduce its expenditure for technical training. The maintenance of these programs can be attributed to the symbolic value of the Department of Technical Education, a visible sign of Nova Scotia's commitment to modernity despite the economic setbacks it was experiencing, as well as to increased acceptance of schools as the site of all learning. Under Sexton's direction, the Department continued its trend away from the industrial courses of the pre-war years, and introduced new programs designed to alleviate the distress caused by massive layoffs, chronic unemployment, and out-migration. The curriculum of the Nova Scotia Technical College was modernized, new courses were developed for the evening technical schools, and short courses were begun in the maintenance of imported technology. Sexton also expanded his own professional activities to include the promotion of vocational guidance in Nova Scotian high schools as well as training for juvenile delinquents and the mentally retarded, further reflecting the shift of the Department away from training industrial workers.

The Technical College had been completely neglected during the war, and in 1922, as normal operations resumed, Sexton turned his attention to broadening

45 This process is described by Eva Scott in "Bridgewater and the National Policy", unpublished manuscript, Atlantic Canada Seminar File, Gorsebrook Institute, St. Mary's University, 1979, in which she reports the closing of a number of local manufacturing companies in the early years of the century, including grain and woolen mills, tanneries and a carriage maker.

46 Forbes, *Maritime Rights*, p. 65; S.A. Saunders, *The Economic History of the Maritime Provinces* (Fredericton, 1984), p. 103.

47 Forbes, *Maritime Rights*, ch. 3; David Frank and Nolan Reilly, "The Emergence of the Socialist Movement in the Maritimes", *Labour/Le Travailleur*, 4 (1979), pp. 85-113; Frank, "Cape Breton Coal Industry", p. 34; Reilly, "A Study of Amherst", chs. 5-6.

the engineering curriculum and to refurbishing the laboratories. As always he was attentive to trends elsewhere. By the 1920s engineering schools in the United States were introducing social science courses, especially as they related to the management of the workforce.[48] Two courses in industrial economics were established at the Technical College in 1922, one on the economic organization of modern society, the second addressing the major problems of business administration. In 1923 a course in Technical English was added. Sexton hoped that these changes would help new engineers become "well poised executives".[49] This approach represented a fundamental change from the role for the college foreseen by the Mining Society in the first decade of the century when the application of scientific principles to the problems of the mining industry was held to be of utmost importance.

By the late 1920s there were few jobs for engineers in Nova Scotia and by expanding the curriculum Sexton hoped to expand job opportunities for graduates both inside and outside Nova Scotia. For most the jobs would be outside the province. Between 1912 and 1924, 163 engineers graduated from the College, but only 50, fewer than a third, remained in the province. In 1925 all the graduates of the College found jobs, but the following year Sexton reported a continent-wide surplus of trained engineers and noted that the graduates could find employment in executive, sales and administrative jobs. For this reason, when the Technical College began to offer an honours program in 1930, it included classes in industrial management.[50] The three-month short courses, which continued to be offered at the Technical College each winter, also reflected the lack of opportunities for industrial employment. Before the war these courses usually taught industrial subjects, but by the late 1920s they were teaching Nova Scotians how to repair imported cars and imported electrical machinery. Courses in Telephony were also conducted in conjunction with the Maritime Telephone and Telegraph Company. Most of the students who completed the short courses remained in the province and Sexton considered them extremely valuable for that reason. He also believed they offered older workers a way out of dead end jobs.[51]

The evening Technical Schools continued to be the most popular programs of the Department. But not in Amherst. That town, which had been one of the first to establish evening classes, was especially hard hit by the depression of the 1920s, and abandoned the work entirely after the 1924 term. Other towns chose, instead, to change the curriculum offered in the evening technical schools. In 1930 there were almost 2,000 students enrolled in evening classes across the province, but even in industrial towns like Glace Bay most of the courses taught aspects of housekeeping. In 1929 Glace Bay held classes in home nursing, two

48 Noble, *America by Design*, pp. 40-1.

49 DTE, 1922, p. 109.

50 DTE, 1924, pp. 155ff.; 1926, p. 139; 1930, p. 141.

51 DTE, 1927, pp. 137-8; 1923, p. 145; 1921, p. 119.

levels of domestic science and three levels of dressmaking. Stenography, typewriting and bookkeeping were also taught. In many towns Automobile Operation continued to be popular.[52]

In a fitting conclusion to a decade in which the Department of Technical Education had abandoned the task of training industrial workers, Sexton reported in 1930 that his Department, in association with the Council of Public Instruction, had begun to pay half the cost of three part-time teachers for the Halifax Industrial School, a reform school for Protestant boys. The teachers provided instruction in woodworking, building repair, printing and shoe repair.[53] Sexton was enthusiastic about this work: "As a matter of fact, vocational education seems clearly to be the direct salvation of this group if they are to be reformed or directed to positions of responsible citizenship".[54] He also noted in his report that the Nova Scotia Training School for backward boys and girls, begun in 1920 by the Imperial Order of the Daughters of the Empire, had established a farm at Brookside, near Truro, with a vocational unit and predicted that the new school "should prove to be a great step forward for the province in both social and educational redemption".[55] The language of social redemption and the salvation of juvenile delinquents had not featured prominently in the campaign for technical education, which had stressed the need for scientifically trained industrial workers and engineers. The economic climate of Nova Scotia had changed significantly since the first and more optimistic decade of the 20th century, and under the innovative direction of Frederic Sexton the very latest approaches to technical and vocational education were being applied to a new set of problems, those associated with the depression. As a missionary for these ideas Sexton joined two professors from McGill University in teaching Vocational Guidance at the Nova Scotia Summer School for teachers in 1930.[56]

Little in the Department of Technical Education's programs was actually new in the 1920s. Structurally and administratively the Department was unchanged. The federal Act for the Promotion of Technical Education provided a new source of income, although not enough to provide for a significant expansion. But a return to the plans laid in 1907 reminds us that in practice much had changed in 23 years. While it would be exceedingly difficult to prove that technical education assisted in the industrial development of Nova Scotia there is considerably more evidence to suggest that the institutions set up for that purpose were used explicitly and practically to address the social problems of a discarded workforce as the industrial structures in the province were disman-

52 DTE, 1925, p. 171; 1930, pp. 183-7.

53 DTE, 1930, p. 154.

54 *Ibid.*, p. 155.

55 *Ibid.*, p. 144.

56 Dhivendra Verma, "Frederic H. Sexton: Dean of Vocational Education", *Journal of Education*, sixth ser., VI, 3 (1979), pp. 18-26.

tled. By the 1920s little remained of Nova Scotia's attempt to create an industrial economy and under Sexton's direction the Department of Technical Education had become a sophisticated agency for the distribution of relief to the province. It was closely linked, through its training courses, to the program of highway building which provided short term employment. The courses in homemaking and automobile operation prepared people to live with less cash income. Short courses helped workers to find jobs in the new growth area in the economy — the servicing of imported equipment. Another expanding field, clerical work, was also represented in the evening technical schools. Finally, the Nova Scotia Technical College in particular, but other courses as well, trained Nova Scotians in skills they could take with them when they left home.

Unlike public education administrators who tried for years to change the school system in the province, Sexton apparently faced little opposition to his innovations. But this fact must not lead us to conclude that Sexton was a powerful figure, or even that he had substantial support for his ideas. Instead it may very well suggest just how limited the interest in technical education was in Nova Scotia. The Technical Education Act in 1907 had not embodied the goals of its early promoters for a systematic, well-integrated system of technical education. Such a half-hearted approach was unable to make much impact. Significantly, the provincial government's contribution to the Department of Technical Education increased substantially less than the federal share. In 1921 Nova Scotia paid $63,305.53; in 1929, $93,325.29. During the same period the federal government's payments rose from $22,771.11 to $70,000.[57] The provincial government had little need to interfere in Sexton's work since it cost the province so little.

Sexton's innovations cannot be dismissed entirely. While Sexton was obviously motivated by his own need for permanent employment, his concern with the victims of industrial dislocation was genuine. Borrowing from educational and industrial psychology he had found a new role for the Department of Technical Education. In that new role social management pre-empted economic development. But Sexton's solution to the problem of de-industrialization did not offer the hope of change. The educational and management models he adapted to the Nova Scotian situation were implicity models of social control. Democratic decision making did not feature prominently in them. Rather, the expert, in the employ of the state, would ensure the stability of the society through programs of social amelioration. One could argue that Sexton widened the constituency for this approach to social management through his work. In 1930, when the Superintendent of Schools appointed a committee to revise the provincial public school curriculum to bring it into line with the ideas of progressive education, he chose Frederic Sexton as its chairman.

57 DTE, 1921, p. 141; DTE, 1930, pp. 173-4.