

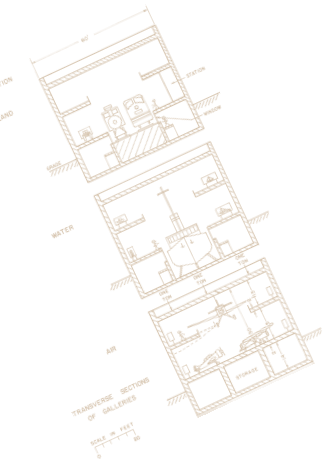
Chapter 2

Building a National Museum of Science and Technology



Secretary of State Judy LaMarsh appointed David Baird director of the new Science and Technology branch of the National Museum in October 1966. He was given the same official status as the directors of the Natural and Human History branches, but he had no museum. He was assigned an office in the Victoria Memorial Museum Building, and was told to consider what a new museum might look like, and what he would need in order to establish one. At this point, it is not clear that Secretary of State officials intended to move ahead immediately with the project. Rather, Undersecretary of State G. G. E. Steele's charge to Dr Baird (as the latter recounted) could be interpreted as a long-term development strategy: what today might be called a visioning exercise.¹ The expectation seems to have been that, while Dr Baird was busy developing a concept for a new museum and building a collection, officials at the Secretary of State would be looking for long-term funding and accommodation for such an institution.

¹ Videotaped interview with Baird, ca 1984. Canada Science and Technology Museum Library Tape #0336.



Dr Baird was not, however, left to reflect on the project for very long. Just a few months after his appointment, departmental officials found a building that they thought could be made into a temporary home for a museum: a warehouse built on St Laurent Boulevard for the local bakery Morrison Lamothe was no longer needed by the company.² It had about 11 000 square metres of floor space and sat on approximately twelve hectares of land.³

The building became available at an opportune time. It was Canada's centennial year, and the federal government was keen to add to its list of celebratory projects. In addition, with the proposal for a new National Museum building at Confederation Park cancelled, the Department of the Secretary of State was no doubt anxious to demonstrate that it had not entirely abandoned its commitment to the institution. These factors, along with active lobbying by the Museum's support and associate committees and the need to find more storage space for the growing collections of all branches of the Museum, contributed to Steele's decision to offer Dr Baird the Morrison Lamothe building as a home for a new National Museum of Science and Technology. The only condition he attached to the deal was that the displays be open to the public by 1967.

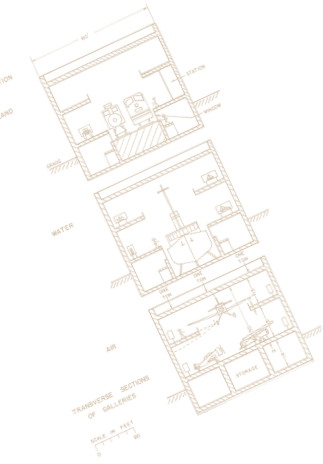
*...for the time being,
the Museum would be
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Always ready for a challenge, Dr Baird accepted the proposal and its deadline, although he insisted that the government provide him with a reasonable budget as well as some staff. Steele apparently consented to these conditions, supplying an initial budget of approximately \$80,000.⁴ With this agreement in place, Dr Baird was given a more-or-less free hand to define, design, and build the National Museum of Science and Technology, which is precisely what he set about doing.

² According to Grete Hale, daughter of G. Cecil Morrison and niece of Dick Lamothe, the Morrison Lamothe bakery had fallen on hard times and the company had to sell their brand new building to remain solvent. Iris Wilson, Profile, “Grete Hale: Her Life and Times as a Contributor Extraordinaire,” *Fifty-Five Plus Magazine* 18, no. 7 (May/June 2007), 16.

³ The precise date is not clear, but by 25 January 1967, Baird had already responded to Steele's request for a usage plan for the building. Memorandum, Baird to Steele, “Proposed Uses for the Morrison Lamothe Building,” 25 January 1967. Canada Science and Technology Museum File A-4000-6.

⁴ Baird interview, Tape #0336.



Cultural Rebirth

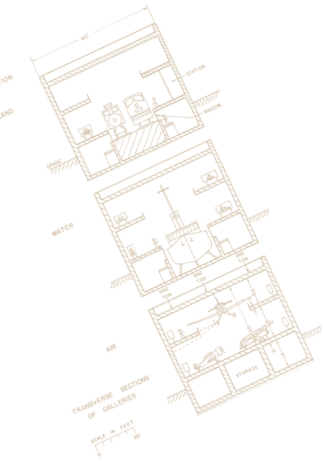
The pressure of the 1967 deadline he had accepted forced Dr Baird to adopt a thoroughly pragmatic approach to creating the new Museum. He had to produce a number of exhibitions quickly, using whichever collections were available or attainable in the near future. In the short term at least, this meant making certain compromises on content and presentation. For example, the initial exhibitions could not cover all of the scientific or technological fields that were, or had been, important in Canada.⁵ Any exhibitions that could be built in time for the opening would not necessarily be large or elaborate. While Dr Baird conceded that, for the time being, the Museum would be “a make-do operation,” he never lost sight of his larger goal: to create a new kind of museum—one that would play a vital cultural and educational role in Canadian society.

Canada’s National Museums

Despite his preoccupation with getting the new Museum in operation by 1967, Dr Baird could not afford to ignore the bigger issues facing museums in Canada in general and the National Museum in particular. While he and his staff were busy transforming the Morrison Lamothe building, the federal government was trying to develop a systematic and comprehensive approach to culture, including museums. Its quest for a coherent cultural policy was driven by two sets of recommendations, which were not always compatible. In its 1951 report, the Royal Commission on National Development in the Arts, Letters and Sciences—the Massey Commission—had told the government that it needed to pay more attention to culture, urging it to create and fund Canadian agencies and institutions to help preserve, disseminate, and promote Canadian achievements in the arts and sciences. This, the commissioners argued, would give more Canadians the opportunity to know themselves and their country. Ultimately, it would also help to create a more independent, unified, and prosperous nation.

In order for the National Museum to contribute effectively to this ambitious project, the Massey Commission stressed that it would have to place much greater emphasis on exhibitions, on education, and on the general dissemination of information to the public. All of these functions fell within the Museum’s mandate, but, as the commissioners gently pointed out, collection, research, and publication clearly took priority over public outreach: the “professional staff devoted themselves primarily to scientific research,” while providing some support to exhibition

⁵ Baird to Steele, 25 January 1967. See also Commentary, “Science Museum Offers Challenge to Professions,” *Chemistry in Canada*, January 1968, 9.



and educational work. This situation could not continue if the National Museum was to play a vital role in Canada's cultural development. Research at the institution, including any new facilities such as a science museum or a botanical garden, had to continue, but also had to be balanced with other critical public functions.⁶

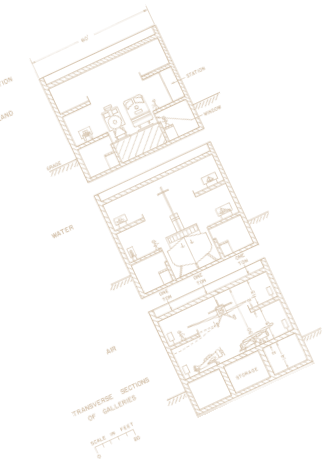
The nationalist cultural agenda of the Massey Commission gained strength through the 1950s and 1960s, as many Canadians became increasingly concerned about the survival of their nation in the face of U.S. domination of Canada's economy and culture, and the rise of Quebec nationalism. The federal government's response to these problems was to try to strengthen and promote Canadian culture.⁷ Expo 67 and related centennial celebrations had provided a convenient justification for many cultural projects, but this was just the beginning. With a new and activist Liberal majority government in place by mid-1968, culture came to be seen as an important tool in the effort to maintain national unity and give Canadians a strong sense of identity and purpose in the world. Museums, like all other federal cultural institutions, would be reshaped and re-invigorated to help serve this goal.



Expo 67: Canada turns one hundred and celebrates with events across the country, from Expo 67 in Montreal to the Pan-American Games in Winnipeg. (CSTM-CN 67490-5)

⁶ Canada, Royal Commission on National Development in the Arts, Letters and Sciences 1949–1951 [Massey Commission], *Report* (Ottawa: King's Printer, 1951), 89, 322. The commissioners understood that research was a critical function and that it provided the foundation for many other activities, including exhibitions and publications. They were only arguing that it, and the work of the professional staff, needed to be more closely linked to public education activities. They assumed that the same principles would apply to the science museum when it was established.

⁷ In 1963, the government of Lester B. Pearson appointed the Royal Commission on Bilingualism and Biculturalism to find ways of making Quebecers feel more a part of Canada, and to counteract the growth of Quebec nationalism. J. M. Bumsted, *The Peoples of Canada: A Post-Confederation History* (Toronto: Oxford University Press, 1992), 330–33. In June 1963, Walter Gordon tabled his famous nationalist budget, which attempted, among other things, to reverse the trend toward U.S. control of Canadian industry. Donald Creighton, *Canada's First Century* (Toronto: Macmillan, First Laurentian Library Edition, 1976), 334. Also in 1964–65, the government initiated the search for, and adopted, a new Canadian flag. Creighton, 336–37.

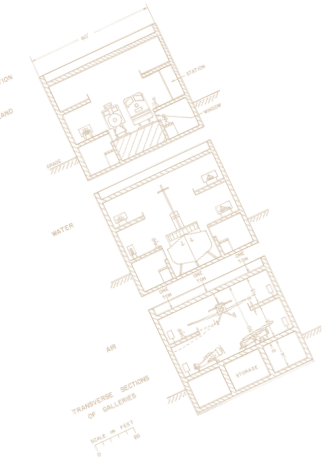


The government's enthusiasm for cultural projects had to be tempered by the more mundane realities of finance and administration. The rapid growth of government and the public service in the postwar decades—the federal government had 46 000 employees in 1939 and 228 000 in 1966—had produced a complicated framework of departments, agencies, and institutions, in which mandates and responsibilities often overlapped. To address this problem, the Diefenbaker government had appointed the Royal Commission on Government Organization in 1960, headed by J. Grant Glassco. Its mandate was to improve efficiency and economy in the federal government, and its approach to reform was characterized by two principal policies: centralization and integration.

Despite the commissions' different mandates, the Glassco Commission focused what little specific attention it paid to the National Museum on one of the same issues raised by the Massey Commission, that is, the role of research and what it called the institution's "exhibitional-educational function." Members of the Glassco Commission argued that the government needed to reconsider the place of scientific research within the National Museum. While they acknowledged that researchers were doing important work in many areas, they also noted the growing gap "between the scientific staff and the exhibitional-educational activities of the Museum." They stated that because scientists "do not exist to contribute to the Museum exhibitions and most of them prefer to have no responsibility for them," exhibition staff often had to look outside the institution to find the research needed to create exhibitions and other public programs. Exhibitions, however, were essential if the Museum was "to be more than a mere repository of objects of interest." The commissioners concluded that "the exhibitional-educational function would be strengthened by divorcing it from active research and reinforcing its ties to relevant disciplines inside and outside the government." The researchers, meanwhile, would "supply a national focus for the fruits of independent research" being undertaken in universities and elsewhere outside of government in their special subjects.⁸

Like the Massey Commission before it, though, the Glassco Commission's influence went beyond its specific recommendations about the National Museum. Whereas the Massey Commission inspired the government to look upon the institution as a valuable tool in its campaign to foster Canadian cultural expression, the Glassco Commission shaped its overall approach to the

⁸ Canada, Royal Commission on Government Organization, *Four Special Areas of Administration* [Glassco Commission], *Report* (Ottawa: Queen's Printer, 1963), 248–49. Despite these criticisms, the traditional definition of the Museum implicit in this analysis remained a powerful standard, and one by which the National Museum of Science and Technology was constantly judged and found wanting by the older "nationals."



administration of the National Museum and its successors. The *National Museums Act* should be seen as a product of both of these influences. When crafting the *Act*, officials rejected the autonomous model favoured by many analysts and by the directors of the National Museum and the National Gallery, which gave each branch a completely separate corporate status, with individual boards of trustees and directors reporting to the minister. Instead, the government opted for an integrated structure, with a single corporation and one board of trustees for all the museums. The corporation would provide common services such as financial administration, human resources, facilities and security, and would control the overall finances of the organization under the watchful eyes of the board, while directors would retain control of the activities of their respective institutions. This structure, the government believed, was efficient and accountable, and yet it left directors enough flexibility and freedom to exercise their professional judgement in setting institutional policies and priorities.⁹

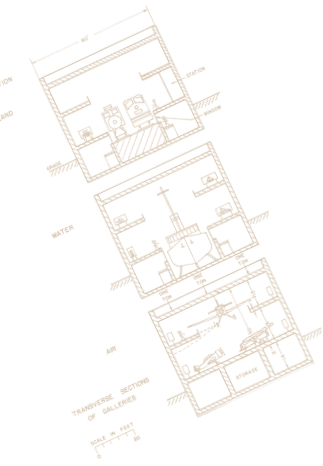
The centralized corporate structure created by the *National Museums Act* was also important from a policy perspective. Since the mid-1960s, with the creation of the Department of the Secretary of State, the government had signalled its determination to craft a systematic and coherent cultural policy. In order to implement that policy, it would need the right legislative tools; that is, ones that offered enough control to ensure compliance with whatever goals it set for its cultural institutions. Thus, while the *National Museums Act* itself offered a very broad and flexible interpretation of purposes for the new corporation and the ways in which those purposes might be furthered, the structure of the corporation made it possible for the government to define how the corporate mandate ought to be interpreted in light of its current cultural policies and priorities.¹⁰



Under construction: Museum workers assemble the planet Earth, part of the introductory exhibition that greeted visitors in November 1967. (CSTM J 19243-8)

⁹ Canada, *An Act to Establish the National Museums of Canada* [*National Museums Act*] (Ottawa: Queen's Printer, 1970), 5406.

¹⁰ *The Report of the Federal Cultural Policy Review Committee* [Applebaum-Hébert Committee] (Ottawa: Supply and Services Canada, 1982) offers a slightly different interpretation of the *Act*, arguing that it was intended to “reduce the burden of housekeeping for the four museums and to provide more cost-effective services,” as well as to give the museums a “more forceful” voice with the central agencies. See page 125.



The *National Museums Act* was proclaimed on 1 April 1968. It created a single corporation—the National Museums of Canada—comprising the National Gallery of Canada, the National Museum of Man (formerly the Human History branch), the National Museum of Natural Sciences (formerly the Natural History branch), and the National Museum of Science and Technology (formerly the Science and Technology branch). The corporation was governed by a fourteen-member board of trustees and managed by a secretary-general. The directors who acted “on behalf of the board” were responsible for the “activities” of their respective museums. The secretary-general, also acting on behalf of the board, managed “the business of the corporation” in all areas not relegated to either the board or the directors. The corporation gave each museum an operating budget and access to the corporate purchase account to fund collecting, although these purchases had to be approved by the board. All monies received by the museums as gifts or rent, or from sales, went into a corporate account.¹¹

In order to accommodate these four very different institutions, and to give directors the freedom to manage their individual institutions, the government made the corporate mission quite general. The new legislation stated that:

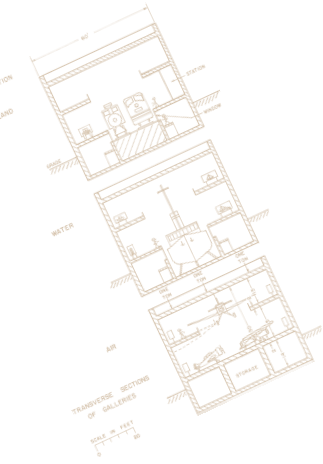
The purposes of the Corporation are to demonstrate the products of nature and the works of man, with special but not exclusive reference to Canada, so as to promote interest therein throughout Canada and to disseminate knowledge thereof.¹²

To fulfill these purposes, the *Act* gave the corporation the mandate to

- (a) collect, classify, preserve and display objects relevant to its purposes;
- (b) undertake or sponsor research relevant to its purposes;
- (c) arrange for and sponsor travelling exhibitions of material in, or related to, its collections;
- (d) arrange for the acquisition or publication and the sale to the public of books, pamphlets, replicas and other materials related to its purposes;
- (e) undertake or sponsor programs for the training of persons in the professions and skills involved in the operation of museums;

¹¹ Two board positions were reserved for the director of the Canada Council and the president of the National Research Council of Canada, who were appointed to their substantive positions by the Governor in Council.

¹² *National Museums Act*, 5406.



- (f) establish adequate liaison with other museums and universities with a view to securing maximum collaboration of all activities in this field and, for such purposes, establish a committee or committees pursuant to section 13;
- (g) arrange for and provide professional and technical services to other organizations whose purposes are similar to any of those of the Corporation, on such terms and conditions as may be approved by the Minister; and
- (h) generally, do and authorize such things as are incidental or conducive to the attainment of the purposes of the Corporation and the exercise of its powers.¹³

The administrative changes resulting from the *Act* were put in place immediately following its proclamation. In the short term, there were no major policy initiatives and the corporation left the directors to proceed with their work according to the priorities they had set for their various institutions. However, this laissez-faire approach did not last very long.

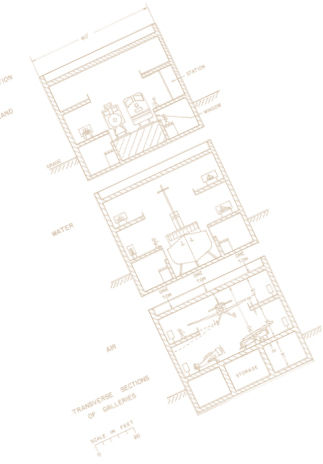
Undercurrents of Change

At the time that Dr Baird took over the Science and Technology branch of the National Museum, it was not just the political and administrative ground that was shifting: the philosophical foundation of museums was also being transformed by profound social change. The postwar boom and the Cold War gave rise to dramatic demographic, economic, political, and cultural developments in most Western, industrialized countries. Unionization helped create a more affluent working class with more disposable income and leisure time, not to mention higher expectations for the future. Prosperity also fuelled the baby boom, suburban development, and the unprecedented growth of the public education system, including universities, across Canada. As a result, many more Canadians were able and, hopefully, inclined to take part in cultural activities.



Engine 6400 enters the Museum building through the open north wall of the Locomotive bay, 1967. CN Rail helped set up the Locomotive bay by donating rolling stock and lending its staff and resources to lay track and move the historic collection into place. (CSTM J 197 1-4)

¹³ *National Museums Act*, 5406–07.



The question remained, though: what kinds of activities would suit the needs and desires of Canadians? The Massey Commission had come down firmly on the side of what one historian has called “an unabashedly traditional, élitist, and nationalistic” view of culture.¹⁴ The same could also be said of the studies carried out by Sheppard and Gutheim,¹⁵ which stated that museums and other cultural institutions had a paternalistic role: to elevate public tastes by educating the newly leisured masses to appreciate the finer things in life, from art and music to science, history, and literature. By doing this, and by highlighting Canadian achievements in all fields, such institutions would also help to counteract the pervasive—and possibly negative—influence of popular culture, especially American popular culture.

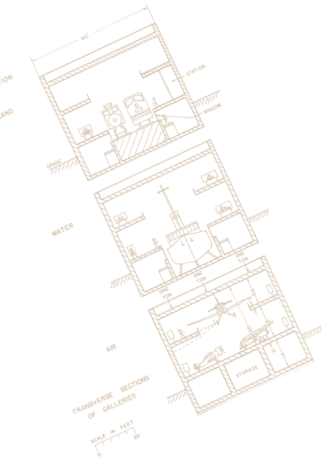
Within the context of the social and political ferment of the 1960s, though, many Canadians had come to question this view of culture and society. This period saw the rise of large, politicized social movements that supported causes such as civil and women’s rights, and opposed colonialism and war. Often highly critical of existing social, political, and cultural institutions and assumptions, these and other groups demanded redress for what they saw as significant imbalances in power, wealth, and influence. Many sought to create a more egalitarian society by constructing a more participatory social and political system in which the ideas, interests, and needs of less advantaged, less powerful groups were given fair consideration.

...the philosophical foundation of museums was also being transformed by profound social change.

This questioning of the status quo was also becoming evident in the academic world. An increasing number of researchers in the humanities and the social sciences began shifting their attention from the elite to the masses. For example, historians began to explore labour and social history, and women’s and native studies emerged as important multidisciplinary fields. Scholars in these disciplines looked at the positive and often unknown contributions that these groups had

¹⁴ Bumsted, *Peoples of Canada*, 390.

¹⁵ In 1965, the federal government appointed Gordon Sheppard to study and make recommendations on cultural policy, including museums. Gordon Sheppard, “A Special Report on the Cultural Policies and Activities of the Government of Canada, 1965–66.” Frederick Gutheim, meanwhile, was commissioned by the same government to examine the plans for a new National Museum complex. Frederick Gutheim, “The National Museum of Canada, Program Planning and Location,” Report for the Department of the Secretary of State, November 1966.



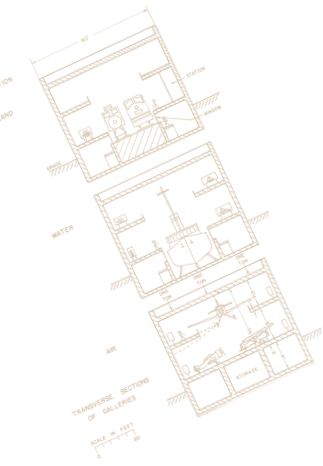
made, and were still making, to their communities, and also examined how they had been systematically excluded from power and influence, and how they fought to gain basic rights for themselves and for other disadvantaged peoples. The expansion of universities, and their increased accessibility to Canadians of all classes and backgrounds, tended to legitimize and reinforce these academic trends, as did the radicalization of campus politics.

Few governments and institutions were immune to these powerful forces of change. Museums certainly felt the impact of this searching social critique. While many in the field continued to believe that museums existed, in the words of Prime Minister Trudeau, “to preserve our past and guarantee our enlightenment in the future,”¹⁶ others were beginning to dispute this received wisdom. They questioned whose past was actually preserved in museums; whether there were groups whose histories had not been recorded; and how accurately museum collections and exhibitions represented the experiences of other—especially non-white and non-Western—ethnic and cultural groups. In addition, critics raised concerns about whether museums were communicating effectively with the public. Were they speaking only to the elite, or were they reaching a wider audience? Were museum exhibitions and programs having the desired effect, that is, were they “enlightening” their visitors?

On the international scene, curators, historians, and managers were already beginning to address the challenges posed by these fundamental questions. Throughout the 1960s and 1970s, new museums were built and existing museums were redeveloped around the world, based on the emerging field of social history. Previously untold stories—of working people, immigrants, minority groups, aboriginal peoples, and of their cultures and communities—were now accessible and could be used to inform collecting, exhibitions, and educational programs. These developments, combined

Throughout the 1960s and 1970s, [museums] were redeveloped... based on the emerging field of social history. Previously untold stories [of various communities] were now accessible...

¹⁶ Attributed to Trudeau by Jeanne Cannizzo in “Reading the National Collections: Museums as Cultural Texts,” in Leslie H. Tepper, ed., *Toward the Twenty-first Century: New Directions for Canada’s National Museums* (Ottawa: Canadian Museum of Civilization, Mercury Series Directorate Paper No. 5, 1989), 155.



with the introduction of new and engaging display and interpretive techniques, provided the foundation for the creation of some very innovative and successful new museums worldwide.¹⁷

The examples set by these new museums were reinforced by the rise of historical theme parks, science centres, and other forms of non-school-based education and entertainment during this period. To engage visitors, these venues often employed lively interpretive techniques such as interactive displays, animation, and re-enactments. Such innovations were sometimes used in conjunction with more traditional artifact or historical displays, to reinforce existing stories or to tell different ones. At their best, these techniques enabled staff to demonstrate complicated processes and events, to place collections and structures within a wider context, to give them a broader meaning, and, possibly, to reach a wider audience. The popularity of many of these sites further prompted museums to re-examine the ways in which they interacted with the public.¹⁸

“The Modern Museum”¹⁹

*The Baird Vision*²⁰

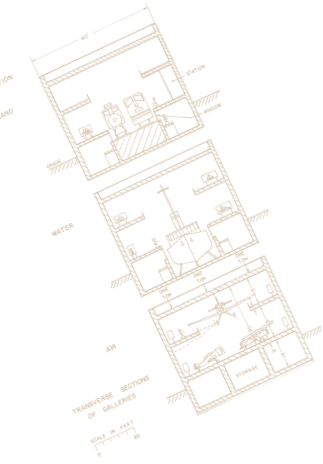
Compared to most of his National Museum colleagues, Dr Baird seems to have been more sensitive to the changing social environment and the impact it was likely to have on museums. In a presentation to the Canadian Museums Association’s annual meeting in May 1969, he noted the success of science centres, the expansion of leisure activities, and how the rise of mass communications had created an increasingly knowledgeable audience. He also pointed out that

¹⁷ This was an era of great change and soul-searching in the international museum community. See Kenneth Hudson, *Museums of Influence* (Cambridge: Cambridge University Press, 1987) for a discussion of the various museological experiments undertaken in the 1960s and 1970s.

¹⁸ Robyn Gillam, *Hall of Mirrors: Museums and the Canadian Public* (Banff: Banff Centre Press, 2001), 76–77, and Warren Leon and Roy Rosensweig, eds., *History Museums in the United States: A Critical Assessment* (Urbana: University of Chicago Press, 1989), xvii–xviii.

¹⁹ This was the title of a paper given by Baird at the Canadian Museums Association’s Annual Meeting in May 1969. Baird framed his remarks, in part, as a response to a paper given by Dr Loris Russell on “Scholarly Research in Museums.” D. M. Baird, “The Modern Museum,” *Museum Round-Up* 37 (January 1970): 34.

²⁰ Baird’s views on the role of museums in society were not entirely new. Many people in the international museum community and in the science museum community had made, or were making, essentially the same arguments about the changing role of museums in society and the need to focus more attention on exhibitions and other public programs. All of the studies commissioned by the government certainly stressed this theme, although they all supported the ongoing need for research as the basis of these public activities.



the importance of much museum-based research had been steadily eroded by the growth of universities and by the government's creation of scientific research establishments in critical areas such as wildlife, agriculture, fisheries, forestry, and defence. He argued that museums, particularly Canada's national museums, needed to reconsider the reasons for their existence in light of these new circumstances. He told his audience, "we now share a common task—to find our place in modern society, to justify the funds that we are asking for from the public and private purses, and to perform a useful function not performed by others."²¹

Dr Baird had already given a great deal of thought to this problem and, by this time, had developed a very clear vision of the proper function and place of museums in modern society. He took as his starting point the "purpose" laid out in the *National Museums Act*, that is, "to demonstrate the products of nature and the works of man ... so as to promote interest therein throughout Canada and to disseminate knowledge thereof." For him, the pivotal word in this sentence was "demonstrate," and he believed that all other museum functions should be interpreted in light of this active verb. Thus, while he acknowledged that collections formed the essential core of museums, he maintained that they "must have a purpose."²² Dr Baird had no doubt about what that purpose was: display and demonstration. Although he defined the term broadly to include display in study areas for the use of scholars, he gave much greater weight to public display for the "education and enlightenment" of visitors. This critical function, he (and many others) felt had been, and was still being, neglected by museums in favour of research and collecting activities.²³

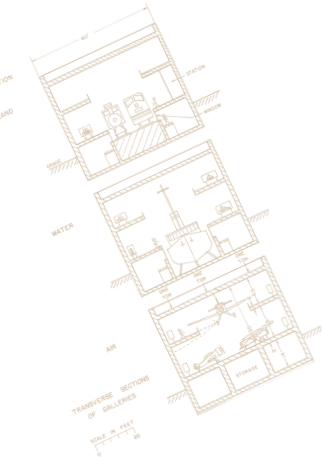


Interacting with technology. A young visitor takes a turn on a rail inspection machine, also known as a speeder, 1967. (CSTM J 19477-16)

²¹ Baird, "Modern Museum," 34. In mentioning research requirements that were being fulfilled by other institutions and agencies, Baird did not note the lack of any significant research on the history of science and technology in Canada.

²² D. M. Baird, "A National Museums Policy," unpublished manuscript, 3 December 1968. Canada Science and Technology Museum Registry Files A-1218-N2, 2.

²³ Baird, "National Museums Policy," 2.



Dr Baird’s emphasis on display and demonstration was a significant departure from existing practice at the National Museum. Curators of natural and human history collections were not opposed to displaying objects, but were adamant that they be exhibited only in carefully controlled environments such as glass showcases, so that the objects could be properly protected and preserved. Open display and active demonstration of artifacts put them at risk, and so such practice could not be reconciled with the fundamental principles of conservation.

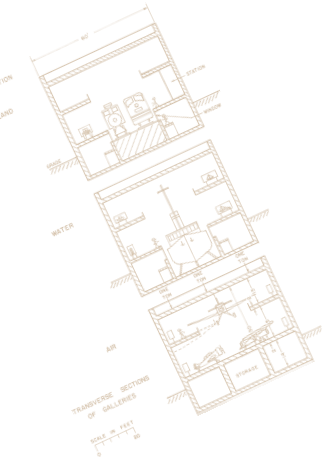
On the subject of research, Dr Baird argued that, with other institutions taking over much of the “pure” scholarly research once carried out by museums, it was an opportune time for Canada’s national museums to redirect their research efforts to serve the primary functions of public education and display. While he recognized that professionally qualified staff “in any field must actively pursue research and scholarly activities to continue to be experts,” he maintained that all museum researchers ought to be able and inclined to contribute to the public-service role of their institutions. This would help museums re-orient their activities, and would also distinguish museum researchers from other scholars working in their fields. Similarly, Dr Baird argued that museum publications needed to be distinct from the publications of other agencies and institutions. While he saw no problem with museum researchers producing articles for publication in scholarly journals, he believed that the museums had to focus their resources on general and popular publications on subjects “of direct museum concern.”²⁴

With this more directed approach to research in place, museum staff would be better equipped to “present superbly designed exhibits,” and to develop and manage the large and significant collections that would provide the foundation for these exhibitions. Equally important, they could maintain a constant flow of new exhibitions, so that many more topics could be presented and many more visitors would want to return regularly rather than once every couple of years. Professional staff would also develop knowledge and skills that would enhance their ability to contribute to various educational programs.²⁵

Dr Baird believed that it was only by taking these steps that the national museums could take their new position at “the centre of the cultural machinery of modern Canadian society.” Here they could focus on the critical functions of protecting and recording the history of the nation, and on acting as a “stimulator of interest” in exploring that past. By helping to “satisfy the

²⁴ Baird, “National Museums Policy,” 3–4, and Baird, “Modern Museum,” 34–36.

²⁵ Baird, “Modern Museum,” 36–37, and Commentary, 9.



tremendous public thirst for knowledge of our history, our country's resources, our artistic and cultural background, and ourselves as members of humankind," the museums would be demonstrating that they did indeed make an important contribution to the welfare of Canada as a nation. This and this alone, Dr Baird asserted, gave them the right to ask for and expect the government to provide additional resources and better facilities.²⁶

The Museum Dr Baird Built

Dr Baird did more than tell his colleagues in the museum community what museums needed to do to become relevant to Canadians: he showed them. From the moment he was given the reins of the new Science and Technology branch, he put his philosophy into practice. He began by establishing the general museum mandate. To minimize overlap with the Human and Natural History branches of the National Museum, he decided that the new Science and Technology Museum could claim the physical sciences and all technologies as its intellectual territory. In a similar vein, he assessed the role of science centres—explaining the principles and processes of science and technology—and decided that the new Museum could fill an obvious gap in this approach by providing the social and historical context for technological change. This, he believed, would help to give visitors a better understanding of the choices they might be asked to make about current technologies such as nuclear energy.²⁷

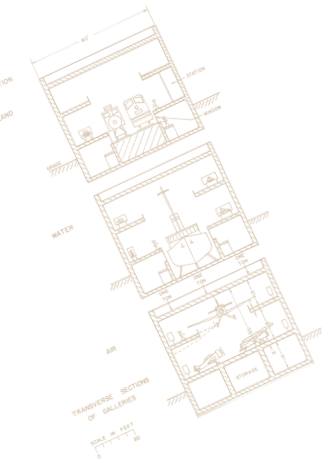
Working within this broad contextual framework, Dr Baird developed two plans. His initial plan had to be very pragmatic, and tailored to fit the 1967 opening. His longer-term strategy was to make the new Museum a truly comprehensive institution that would include all subject areas relevant to Canadian history and to Canadians. He seems to have recognized that the most efficient approach was to craft a short-term plan that would, as much as possible, provide a foundation for future expansion and realization of the new Museum's ambitious mandate.



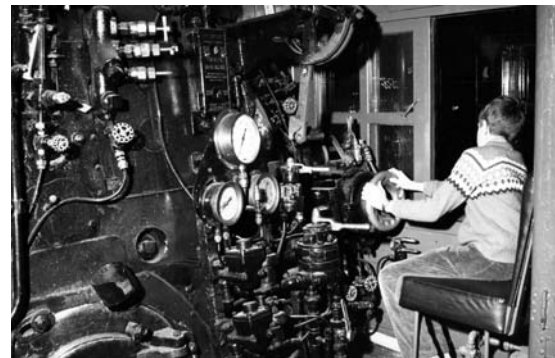
Helping to make traditional displays come alive. Thomas Appleton, Department of Transport historian, briefs guide and educator Mary Smialowski on the SS *Arctic*. (CSTM 7 1-9069)

²⁶ Baird, "Modern Museum," 36–37.

²⁷ Baird interview, Tape #0338.

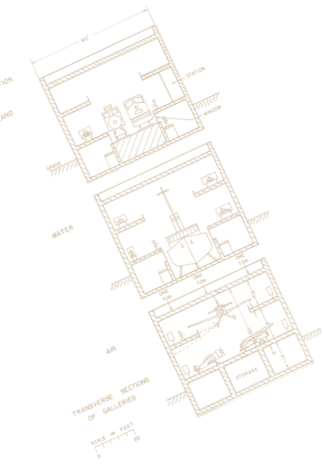


When the National Museum of Science and Technology opened its doors in mid-November 1967,²⁸ it marked the beginning of a new era in Canadian museums. Upon entering the new Museum, visitors were greeted by no fewer than sixteen different displays. As planned, transportation claimed the lion's share of the floor space, with seven steam locomotives on display, as well as five aircraft²⁹ and a number of carriages, automobiles, and railway cars.³⁰ There were also aircraft engines and scale models of ships and aircraft. Agriculture was represented by a fairly large display of ploughing, cultivating, and harvesting equipment, among other things. A number of these displays were built around what were then some of the most significant and rare objects in the collection, including Canadian National Railways locomotive 6400, the 1910 McDowell aircraft, and an Amoskeag fire engine reputed to have been used during the great fire of 1900 in Hull, Quebec. Visitors could also see small displays on meteorology, atomic energy, surveying, communications, and astronomy.



An example of the Museum's open display approach to exhibitions. This openness, though, came at a cost. Over time, many of the gauges and other removable pieces in this locomotive cab were taken by visitors. (CSTM J 1950-4)

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- ²⁸ The official press release is dated 15 November 1967 at 7:30 p.m. but it seems that the doors opened to the public for the first time the next day. The National Museum of Canada, "National Museum News," Press Release NM 407. Canada Science and Technology Museum Records, Miscellaneous.
- ²⁹ In 1964, three major Canadian government aircraft collections—from the Canadian War Museum, the Royal Canadian Air Force, and the National Aviation Museum—were brought together to form the National Aeronautical Collection. In 1966, the government made this collection part of the new Science and Technology branch of the National Museum. The collection was housed in hangars at two Department of National Defence facilities: Uplands and Rockcliffe. The cost of the Uplands space was about \$60,000 per year. To save this expense and to provide additional space, Baird proposed moving that part of the collection to the Morrison Lamothe building until such time as a proper aviation museum building could be constructed at Rockcliffe. Construction of the National Aviation Museum was not completed until 1988, long after Baird's departure from the Museum.
- ³⁰ The area that became the Locomotive bay had to be enclosed as part of initial renovations to the building, in order to provide additional indoor floor space for the locomotive display. Interview with John Corby, 15 September 2003.

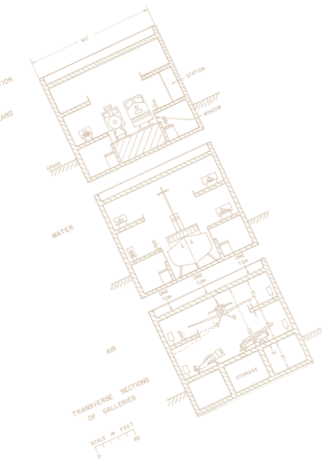


The number of different exhibitions was neither the only nor the most significant feature that distinguished the National Museum of Science and Technology from most other contemporary museums. Rather, visitors immediately discovered that the displays themselves were different. Following the example of other science and technology museums around the world, especially the Chicago Museum of Science and Industry, Dr Baird placed great emphasis on visitor participation.³¹ Thus, while artifacts remained the focal point of most exhibitions, it was crucial that they be displayed in active, innovative, and engaging ways. Gone, for the most part, were glass display cases, barriers, and “Please Do Not Touch” signs. In their place, visitors found operating artifacts that they could see up close and often touch or climb aboard. Where objects were off-limits, the signs read, “You can climb on some things but you can’t climb on me.” In addition to text, visitors found interactive displays that invited their participation in a quiz or experiment that explained a principle or process central to the technology before them.³² The goal was to demystify technology, to inspire understanding and respect, and sometimes awe, but never to intimidate or alienate the visitor by making things unnecessarily complex or obscure.

In its original incarnation, the National Museum of Science and Technology was far from fancy; its small budget and staff and a tight schedule for opening precluded the development of elaborate and expensive exhibitions. Once the institution was open, however, Dr Baird began to put his second, longer-term plan into action. That plan called for a different kind of organizational

³¹ In an interview conducted shortly after the opening, Baird explained his interpretive approach. Museums, he argued, have a serious educational role, and to fulfil that role they need to “be exciting places, where fun is combined with learning, and where there is communication with the public.” In order to accomplish this, museums need to encourage and facilitate “maximum participation” from all their visitors. Commentary, 9. Science and technology museums had a tradition of education through demonstration dating back to at least the early twentieth century, when several museums began to use this technique to explain how technologies worked. The London Science Museum, the Deutsches Museum, and the Technical Museum in Vienna were among the pioneers. In the 1930s, the Palais de la Découverte in Paris and the Chicago Museum of Science and Industry took these techniques one step further by transforming the visitors from observers to actors, placing them at the centre of exhibitions, and making them “part of the show” through what the Chicago Museum’s then-director called “hands-on participation.” Hudson, *Museums of Influence*, 91–104 (direct quotations, 104). In Canada, both J. H. Parkin and the Museum support committee noted the importance of these examples and strongly suggested that a new Canadian museum adopt a similarly participatory and active interpretive approach.

³² This general description comes from a variety of sources, including two early brochures that describe the exhibitions, the National Museum of Canada 15 November 1967 press release, and the Baird interview, Tape #0336. Some of the photos in the brochures give a sense of how sparse some of the exhibitions were.



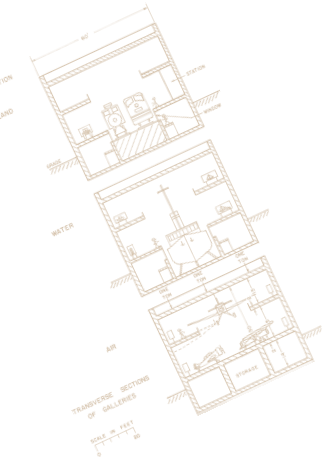
structure and culture than that of the other National Museum branches. As in other museums, Dr Baird wanted curators to cover the important fields of scientific and technological history. He believed that the National Museum of Science and Technology would eventually need about twenty curators, with several assistants to deal with the sixteen main subject areas he had identified.³³

Unlike other museum directors, Dr Baird did not seek out individuals with curatorial or historical backgrounds and training. Instead, he looked for candidates who had technical experience and practical skills. Dr Baird further departed from established National Museum practice in his decision to create a large technical services division within the institution. Although he had used staff from the Common Services branch of the National Museum to design and fabricate the first National Museum of Science and Technology exhibitions, Dr Baird did not want to rely on them in the future. Equally important was a restoration capability—another feature that distinguished the new Museum from the other national museums. Dr Baird wanted artifacts to be displayed in unusual, intriguing, and informative ways, and this often meant repairing, restoring, altering, or adapting artifacts.



Because of the technical nature of its collection and the desire to demonstrate many of the artifacts, the Museum needed a large and highly skilled technical staff. Here, technicians install the telescope after it has been lowered into place through the roof of the observatory dome. Frank Askew, on the right, was an instrument-maker whose principle job was maintaining the telescope. (CSTM 75-639)

³³ It is hard to pin down exactly how many curators Baird envisioned employing. In his 25 January 1967 memorandum to Steele, he mentions the number seven as part of an estimate of the amount of office space required to accommodate staff in the Morrison Lamothe building. This, however, seems a purely pragmatic assessment of what would seem reasonable at the time. Other, later, documents, e.g., the 1978 Swann report, from which the number of staff of twenty is taken, offer a much more coherent and systematic plan for the Museum that includes many more curators and assistants to curators. Peter Swann, “Report on a New National Museum of Science and Technology,” unpublished report prepared for the National Museums of Canada, March 1978, 40.



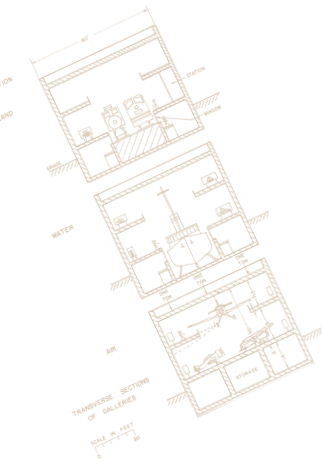
Other functions within the new Museum were more in keeping with established practice within the National Museum. The Registrar's Office looked after cataloguing, controlling, storing, and moving the artifact collection. The Library acquired books and other materials that supported the collection and public programs.

Unfortunately, Dr Baird's ambitious long-term plans for the new Museum had to be curtailed, postponed, or put aside altogether almost from the outset, as a result of financial constraints and shifting government priorities and policies. The Museum advertised positions for five curators in 1967. The subject areas were ground transportation, communications technology, mining technology, industrial technology, and agricultural technology.³⁴ Among the many applicants for these curatorial positions, only one claimed to have museum experience. All had technical training, many were engineers, and most already had well-established careers.

...the Museum remained chronically understaffed, especially in comparison with the other national museums.

By late 1967, the selection board had filled three of the five positions. John Corby, formerly of the National Research Council, became curator of industrial technology. Ernest DeCoste left Bell Canada to take over responsibility for communications technology, and Tom Brown, who had worked for the Ontario government, became curator of agricultural technology. In addition, Robert Bradford, who had been acting curator of aviation and space since the departure of Ken Molson, was appointed curator at around the same time. This first set of appointments set the pattern for hiring curators until the mid-1980s.

³⁴ Job poster for Public Service Commission, Competition No. 67-2153. Miscellaneous historical file from the Director, Curatorial Division. The poster gave university graduation as a qualification, "with many years of responsible experience in one of the above fields of specialization." Candidates would also be considered if they had a suitable combination of education and experience. The poster also mentioned a "strong interest in public education and modern museum practices," although it was not clear exactly what was meant by the latter qualification. This approach to staffing was in keeping with established practice at most science museums during this period. Many adopted this approach because it supported their strong educational traditions and mandates, but it was reinforced and perpetuated by the lack of professional curatorial and academic traditions in the history of science and technology. See Bernard S. Finn, "The Science Museum Today," *Technology and Culture* 6, no. 1 (Winter 1965).



Early in 1968, while the Museum was still in the midst of the hiring process for the curatorial positions, the government imposed a hiring freeze. The two positions that had not yet been filled—curator of mining technology and curator of ground transportation—were left vacant, and no new positions were advertised.³⁵ To fill these and other gaps in coverage, Dr Baird appointed John Dost curator *pro tempore*, responsible for general technology. He then divided up the curatorial subject areas, taking responsibility for eight himself, two of which he shared with John Dost, who was given five. Each of the other curators was assigned two or three subject areas. The original breakdown, which changed over the years,³⁶ was as follows:

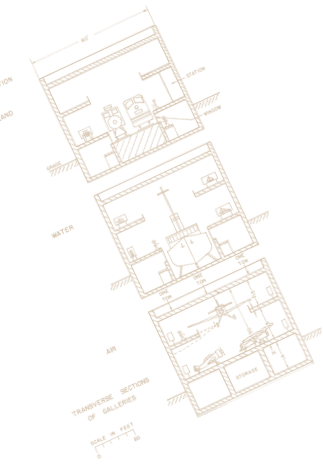
- Tom Brown: agricultural technology, fisheries, and forestry
- John Corby: industrial technology, pulp and paper, and energy technology (excluding atomic and electric power generation and transmission)
- Ernest DeCoste: communications technology, mathematics, and medical electronics
- Robert Bradford: air transportation, rockets and jets
- Dr Baird: astronomy, chemistry, fire engineering, ground transportation, marine technology (shared), mining technology (shared), physics, and exploration and survey
- John Dost: atomic energy, medical technology, electric power generation and transmission, mining technology (shared), and marine technology (shared).³⁷

At the time, staff probably saw this as a stop-gap measure that would no longer be necessary once the hiring freeze was lifted. As it turned out, however, the Museum remained chronically understaffed, especially in comparison with the other national museums. Certain key areas were forced to function with what can only be called a skeleton staff. For example, no new curatorial positions were advertised and opened for competition until the late 1980s, when the ground transportation position was finally filled. When the curatorial section did acquire additional staff,

³⁵ Interview with John Corby, 18 February 2003, and Minutes of staff meeting held 14 March 1968, National Museum of Science and Technology.

³⁶ Land transportation was eventually divided up so that Corby dealt with railways, DeCoste with automobiles, Brown with animal-drawn vehicles and Geoffrey Rider with cycles.

³⁷ Minutes of staff meeting held 10 April 1968, National Museum of Science and Technology, p. 1–2. See also organizational chart from this era. J. J. Dost is listed as Curator *pro tempore* of general technology in the organizational chart.



it was often at a junior level and through indirect means. Despite the freeze still being in effect in 1968, Dr Baird was able to hire two technicians and an assistant curator, Fred Shortt, for the aviation and space division. The government apparently recognized that the transfer of the National Aeronautical Collection to the Museum warranted an exemption. In addition, the government allowed the Museum to hire a registrar to manage all the collections.³⁸

Later, Dr Baird managed to add other curatorial positions, although these were again at a junior level. George Nicholson (1972) and Ian Jackson (1975) were hired as assistants to the curators of agriculture and industrial technology, respectively. In 1974–75, Mary Grey, the information officer who managed the public astronomy program at the Dominion Observatory, moved to the National Museum of Science and Technology, along with the historic telescope. Later in the 1970s, Geoffrey Rider transferred from the Registrar's Office, where he had worked since 1973, to take formal responsibility for graphic arts and printing, initially as an assistant curator. In 1984, he took over responsibility for photography and cycles as well.³⁹

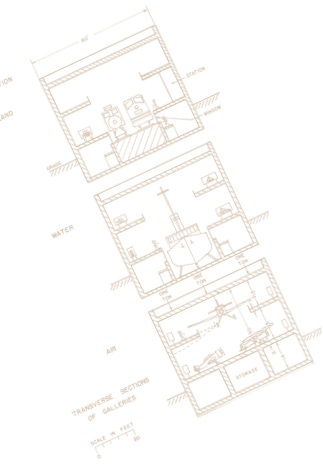


In January 1975, the Museum opened its new observatory housing the historic telescope from the Dominion Observatory. Here, Secretary of State Hugh Faulkner looks through the telescope. Bernard Ostry, Secretary-General of the National Museums of Canada Corporation, and Mary Grey, Information Officer and later Curator of Astronomy and Physical Sciences, look on. (CSTM 75-618)

Despite Dr Baird's insistence on the importance of the Museum's educational function, the National Museum of Science and Technology had no permanent educational staff for about ten years. Instead, the director required that all of his staff contribute to, and participate in, these programs. He also used volunteers to supplement his staff, and often took the lead role in the interviewing and training process. One long-time tour guide named Elizabeth (Billie) Wyles worked as a volunteer for many years before being hired on contract.

³⁸ Minutes of staff meeting held 4 April 1968, National Museum of Science and Technology, p. 1.

³⁹ As a cataloguer, Rider had been responsible for the printing collection, and used the knowledge he developed doing that job to make recommendations on acquisitions in graphic arts technology to Baird, then Ron Tropea, and finally DeCoste.



It was not until 1978 that this informal educational arrangement changed. At that time, the Museum hired its first chief of education services, Jim Cutting, with the goal of implementing “a more systematic approach to tours, to lectures and demonstrations.”⁴⁰ In 1979, Cutting advertised for, and hired, ten contract guides to work at a rate of about \$15 per tour. Wyles was among those hired, and helped the new guides by producing summaries of the tours that had been and were still being offered by the volunteers. Mitzi Hauser joined the Museum as a contract guide at this time.⁴¹

Other areas of the Museum fared better. Despite the apparent shortage of person-years, Dr Baird somehow managed to achieve his goal of building a large technical services capacity at the Museum. His emphasis on interactive components and artifact demonstration, combined with his determination to change at least twenty percent of the exhibition space every year, created a requirement for a large workshop and staff. His ideal was to have at least 42 000 square metres of workshop space to carry out this work, much of which he wanted open to public viewing, as a kind of animated exhibition in its own right.⁴² Initially, though, he focused on creating a core capability by putting Dost in charge of the section, and by hiring a designer, John Arnold, and a variety of other technical staff.⁴³

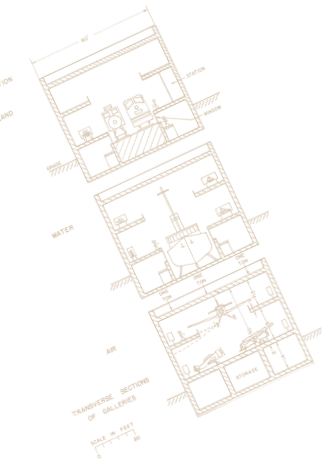
By the end of its second fiscal year (1968–69) the Museum had a total of twenty-nine staff, eight of whom were curatorial (curators, registrar, librarian, director). There were also various secretarial and administrative support positions, and the remainder of the staff worked in technical services. By 1977, total staff numbers had risen to eighty-one, and fifty of the positions were filled by design and display staff, technicians, and workshop support, including fourteen technicians and thirty-three workshop support staff, in addition to three design and display staff. On one level,

⁴⁰ In an early organizational chart there is no box for education and “Guides” are included in a catch-all group that included commissionaires, librarian, records, and registrar, all of whom reported directly to Baird. Canada Science and Technology Museum Registry File A-1001-2. See D. M. Baird, “A Vital Canadian Museum of Science and Technology,” undated document authored by Baird for presentation to the Board of Trustees of the National Museums of Canada, ca 1978–79, 7.

⁴¹ Interview with Hauser, 19 December 2006.

⁴² Swann, “Report on a New National Museum of Science and Technology,” 40–43, and Baird interview, Tape #0336.

⁴³ Among the early members of the technical staff were John Desjardins, Mel Sheldrake, Bud Wickware, Ted Murphy, Cec Murray, Art Walker, Allan McRory, and Noel Petrie. Interviews with Geoff Rider, 19 December 2006, and John Corby, 21 December 2006.



this was in keeping with Dr Baird's emphasis on exhibitions and demonstrations. On another level, however, it is not entirely clear how he was able, or why he chose, to hire in this area when so many important subject areas were without curators, when there was a backlog in cataloguing the collection, and when education was being managed by just one permanent staff member.⁴⁴

Dr Baird's long-term plans were also hampered by a small operating budget. In 1968–69, the Museum's total budget was \$333,000, compared to \$2,130,000 for the National Gallery, \$711,000 for the National Museum of Natural Sciences, and \$818,000 for the National Museum of Man. The National Museum of Science and Technology appropriation amounted to just under five percent of the National Museums of Canada's total program budget for that year.⁴⁵ There were good reasons for this apparent imbalance at the time. The National Museum of Science and Technology was a brand-new museum that had been created almost overnight. The other national museums had been around since the nineteenth century, and had long ago established important roles for themselves and their large professional staffs. The National Museum of Science and Technology, for its part, had only just begun to map out its core activities, to hire the staff needed to pursue them, and to lay claim to the resources required to support them. Moreover, the Museum had yet to gain the respect of the museum community, and there were those within it who questioned Dr Baird's approach to museums and the activities he was promoting, arguing that there was too much showmanship and not enough substance.⁴⁶ In addition to these normal growing pains, all the museums had to cope with the hiring freeze and other financial constraints imposed in 1968.⁴⁷



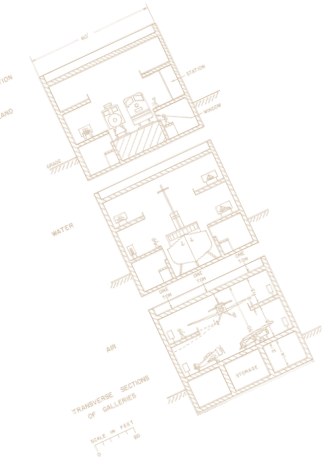
Like all Museum staff, technicians played an active role in public programs. In this 1978 photograph, Ian Christopher, an electronics technologist, operates the linotype machine in the printing exhibition. (CSTM 78-628)

⁴⁴ Swann, "Report on a New National Museum of Science and Technology," 1–4.

⁴⁵ National Museums of Canada, "Program Forecast 1970–71," unpublished administrative document, p. 2.

⁴⁶ Baird interview, Tape #0336.

⁴⁷ "Program Forecast 1970–71," p. 4. This author notes some of the effects of the imposed restraints including reduced hours at the museums.



Although the staffing and financial situations gradually improved during the 1970s, the National Museum of Science and Technology remained the “poor cousin,” never claiming more than eight percent of the National Museums of Canada’s manpower, or ten percent of its budget.⁴⁸ In 1977, the entire budget for the National Museum of Science and Technology was \$2.4 million, of which \$1.5 million was devoted to salaries. The remaining \$900,000 had to be divided among operations, purchases, and all other expenses. Staff numbers peaked in 1975–76 at eighty-five, then fell back to eighty-one by 1977–78. The institution was indeed, “a very modest establishment for a national museum which [was] expected to meet so many needs and serve so many people.”⁴⁹

The Museum also had to cope with the limitations that came from inexperience. Few of the staff had worked in museums before. The curators knew little about collecting or interpreting artifacts and, in most technological subject areas, there was little reliable historical research for them to consult for advice or information. Exhibition design was just emerging from the showcase-and-diorama stage of development, and exhibitions built around large, working technological artifacts posed special challenges. As for the collection, there were few hard-and-fast rules about classifying, cataloguing, and preserving technological objects, and almost no expert sources of advice in this specialized field. Moreover, since the whole idea of restoration of artifacts for demonstration was anathema to traditional museum conservation experts, they were in no position to supply expertise, nor would they have been so inclined, even if they had had the knowledge to give.

Each of these obstacles was significant in its own right; taken together they might well have seemed insurmountable. Fortunately for the Museum, its staff were enthusiastic, committed, and very hard-working. They wasted little time dwelling on their problems or the unfairness of their situation. They simply got on with the job of building the very best museum they could with the resources at their disposal. Their determination was rewarded by the resounding approval of the public, who quickly made the National Museum of Science and Technology the most popular of all the national museums.

⁴⁸ Baird interview, Tape #0338.

⁴⁹ Swann, “Report on a New National Museum of Science and Technology,” 2.