Title: Changing Visitor Expectation at the Canada Science and Technology Museum Corporation

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Text

INTRODUCTION

People feel a strong connection to the past through objects. It is the way we express our cultural differences, our religious differences and our aesthetic differences. We inherit objects and we pass them on to our children. In them we imbue our personal history and link it to something much bigger and more enduring than our own lives. While these personal items may be small, there are objects of larger size and significance which are passed on through society or government or institutions; and very often make up the collections of Museums. As custodians of these objects, Museums serve as the medium through which they are preserved and interpreted. It is not surprising, therefore, that Museums must act as arbiters in disputes over aesthetics, significance and relevance. It is the Museum's interpretation which determines the final state of the object.

The problem with historic objects, for Museums, is that they do not exist purely as an object; but more as a physical representation of the era, society, belief, or event to which they are linked. Whereas the ideal of Conservation is to preserve the materials and the form with minimal intervention; the subjective and the "aesthetic" considerations of preserving and interpreting the objects for the public, are often at odds with this. An archaeological object displayed in an "as found" condition; is much more likely to meet with public acceptance than is an aircraft or a locomotive in a similar condition. Understanding the reasons behind this, and tracing the origins of it; help us to analyze our own priorities and therefore to begin to change not only our expectations, but those of our visiting public.

THE CHALLENGE

Visitors to Museums of industrial technology or transportation collections, very often expect to see the objects looking as they did when new, they expect them to be on permanent display, and they expect to be able to experience them personally through touching or climbing or seeing them in operation. The truth is that people do experience the world through their senses; so the desire to touch and see and smell an operating locomotive, for instance, is not incomprehensible. A further truth is that there is tremendous value in experiencing historic technology this way. So how do we reconcile this with the fact that modern Conservation is a profession tied to the principles of preserving objects and their history of use, with minimal intervention and loss of originality?

Conservation is a relatively new profession and indeed continues to evolve and define itself, particularly in fields like ours. Our biggest challenge may be that minimal intervention has not always been a goal of Museum preservation; and the evidence of masses of restored objects in the collections of Museums worldwide confirms this unequivocally. Further, these restored objects demonstrate that the aesthetic for technological objects had been firmly established prior to modern Conservation, and that the visitor expectation for this is well entrenched. Since the visitor is largely unaware of the intentions and scientific principles behind Conservation, the responsibility for changing their expectations and indeed the accepted aesthetic for large objects, rests with us.

In the case of technological objects, the visitor might assume that because they are big and were built for strength or speed; they do not deteriorate with age and use. Museums have perpetuated this myth by displaying industrial objects looking as new, and often by operating them. The same cannot be said of ethnographic or archaeological objects, nor of smaller social history objects such as costumes or domestic technology. So what is the root of the aesthetic to display transportation pieces and large machinery in this manner?

One logical reason our technological history is displayed this way, is that while a coveted costume or piece of inlaid furniture or painting may be cherished and cared for through generations; an obsolete piece of machinery or a tool, or a defunct vehicle might just as easily be left to decay outside or in a field or a ditch. When these pieces are recovered, they are in need of cleaning and repair; and so this is what we have done. It was not a deliberate attempt to falsify or to misrepresent; but merely a desire to return the object to a condition similar to and more representative of, its useful lifetime.

Another possible reason, and a less noble one, is the desire of Curators and Conservators, to display objects that look nice. Within the field of Conservation there are different and very subjective interpretations of what the goal of a conservation treatment should be. Although we follow a Code of Ethics, the extent to which treatments are taken is very much a decision of the Conservator and the “owner” or Curator. Degrees of removal of an original finish, of in-painting, or re-painting, polishing, replacement of missing parts; all of these decisions are made on a case-by-case basis. Often it is the aesthetics of the Curator or Conservator that decides this. Always, it is subjective.

What is it that influences us? Is it that, in this day of revenue generation and pleasing the public, we feel that we have to put on a good show? This pressure certainly exists today in major Canadian Museums. It is a battle for the visitor dollar, up against competition like theme parks and movies and shopping centres. Programming and special events take floor space from exhibitions; and exhibitions must be “marketable” and showy. Displays must link to Twitter and You Tube, and must appeal to a

generation whose attention span generally precludes any in-depth understanding. Our Public Programming divisions are telling us that the visitors want to see bigger events and more interactive displays; but all this is at the expense of safeguarding the collection, and at odds with Conservation's prime goals.

CSTMC EXPERIENCE

CSTMC has by no means solved these problems. What we are doing, with each case we review, is reaching a clearer understanding of what our goals should be with respect to interpreting objects for the visitor. For us, the crux of the issue rests with two key assumptions: that restoration does have a very important role in Museums; and that Conservation and Restoration are not always at odds with each other. What must be clearly and objectively defined, is a set of criteria to be met before an object undergoes restoration. These criteria cannot be based on a Curator's opinion, or a personal preference; but must be objective and take into consideration the technology, history, social context and future significance of the artefact. An excellent paper on this was written by Joanna Barr in 2006 entitled "The Conservation of Working Objects: Development of a Conservation management Tool". While this paper deals with Operational artefacts, the principles for deciding when to operate and when to restore are very similar and transferrable.

Borrowing the ideas from this 2006 paper, I updated the 1987 version of the Conservation Policy for CSTMC; and introduced a process to rationalize restoration vs. conservation. The criteria identified in this process are:

1. How does the object fit within the Museum's mandate.
2. Aesthetic value : scale, colour, texture, materials, smells;
3. Historic value: age, provenance, association with people, places or events;
4. Scientific value: rarity, original materials, technology, manufacturing techniques. alterations or modifications; and
5. Social value: spiritual, political or cultural meaning for a particular group.
6. Future value: the potential value of the information contained in the object.

Once Museum decision-makers have worked through the process, the implications of restoration and conservation become more evident; and the decisions to restore or conserve, more objective and responsible. Once the public is made aware of these decisions and how they are arrived at; it engages them both physically and intellectually.

EXAMPLES FOR DISCUSSION:

AVIATION MUSEUM

The first two objects for discussion are examples of aircraft, for which Conservation was the agreed approach. The rationale for choosing

conservation over restoration was different for each; and yet the process for developing that rationale was the same.

Borel Morane:
A history of the conservation of this aircraft is on the Museum website at http://www.aviation.technomuses.ca. It was acquired in 2005 and is the first aircraft in the collection to have been entirely conserved. It is one of a very few with historic fabric, and the only one displayed as an iconic relic rather than in a condition of past use.

The Museum's Borel-Morane was imported into the United States in 1912 and it is the oldest known surviving aircraft to have flown in Canada. Georges Mestach, an early Belgian exhibition pilot, was one of a handful of Europeans to fly in North America at that time and in 1911 was the first aviator to have flown at Quebec City. He and his manager/mechanic, Ernest Mathis, unloaded the Borel-Morane in New Orleans from the ship that carried it across the Atlantic. Soon after, they began exhibition flying throughout the continent with stops that included Winnipeg, Quebec and Sherbrooke. However, the Borel-Morane proved no match for Winnipeg's stiff prairie wind and Mestach badly damaged the aircraft in a crash against a fence. The machine's checkered career also included a crash at an air meet near Chicago that resulted in North America's first midair collision fatality.
The damaged aircraft was then sold in 1913 because of import duty irregularities. Mestach continued to fly for the new owner until the aircraft was purchased in 1914 by Earl S. Daugherty of Long Beach, California, an early American exhibition pilot. Although Daugherty suffered a fatal aerial accident in 1928, the aircraft remained in his family's possession until purchased by the Museum in 2002.

Although the fusillage and wings were structurally intact, there were numerous areas of damage. Most important for us, was the presence of most of the historic fabric on the wings. Although the exact date of the fabric was not known, analysis of the doping layer by the Canadian Conservation Institute, showed that it was cellulose nitrate dope, over cotton fabric which, though historic, is not original to its earliest state. Some of the hardware was lost, the tires were a disaster, and the propeller broken. Balancing the equation was the fact that it was a significant iconic aircraft, with most of its parts intact, and that it had most of the historic fabric in a relatively good state of preservation.

Measured against the six criteria for conservation vs. restoration;
1. Mandate of the Museum: To foster scientific and technological literacy throughout Canada by establishing, maintaining and developing a collection of scientific and technological objects, with special but not exclusive reference to Canada, and by demonstrating the products and processes of science and technology and their economic, social and cultural relationships with society. The Borel Morane met all of the goals of the mandate statement

2. Aesthetic value: while the aircraft was largely complete, was structurally intact and stable, and retained most of its historic fabric and dope; its aesthetic value is linked to the quality of original materials and to the rarity of finding this kind of material preserved in this context. There is a huge educational value in seeing and smelling original materials, and a visual value in appreciating the way those materials age.
3. Historic value: the aircraft obviously has significant value to the history of aviation in Canada; and a well-documented provenance. Altering anything on the aircraft to repair, improve or replace; would result in the loss of some of the "story" behind that aircraft.
4. Scientific value: the primary scientific value for this aircraft is in the original materials and construction techniques. Repairs from previous accidents are in evidence in the wings, and in the fusillage; preserving not only the structure of the aircraft, but the repair and maintenance routines from the airmen who flew and serviced them.
5. Social value: Culturally, the extremely well documented provenance and importance to the history of aviation in Canada, are embodied in this iconic aircraft. Spiritually it is a testament to the pioneer aviators and to their descendents. Politically, it was a triumph for the Canada Museum of Aviation & Space to purchase this from its American owner and bring it back to Canada where it's historic significance is so relevant.
6. Future value: just as today's analytical tools and techniques are advanced beyond the imagination of a generation ago; so future generations will develop techniques to better understand the original materials and their deterioration.

Resistance to the idea of conserving had come from a variety of sources, including restoration staff and senior staff. It was a true departure from the accepted way of doing things at the Aviation Museum: namely restoration projects with conservation of some small elements or components. The Borel Morane proved an excellent catalyst for discussing with staff and then demonstrating to the public, that in some cases the importance of an aircraft is more than just the technology; it is the history, the materials and techniques of manufacture, and in this case particularly, the context.

The aircraft was exhibited initially with an adjacent exhibit on Conservation consisting of graphic and text panels explaining the role of Conservation. It served as a bridge of understanding between the deteriorated- looking aircraft and the replica displayed next to it. An appreciation for the antiquity of the aircraft was the goal; and visitor feedback proved that the goal was met.

The second project was slightly more contentious to resolve, but the dialogue during that resolution was more interesting:

Northrop Delta

This was originally proposed as a restoration project. An external group had expressed an interest in restoring the aircraft, and from the perspective of our Curator at the time; it offered the opportunity to gather together and inventory what parts we had, and to have an aircraft restored for us.

The Northrop Delta , built by Canadian Vickers in Montreal, was the first stressed skin all-metal aircraft to be built in Canada. It is notable as the first low-wing monoplane in Canada, and also the first use of the then new plastic Perspex. The test flight of the prototype took place on August 16th 1936. These aircraft were regarded with some suspicion as curious tales were told of their apparently erratic behaviour and then un-known characteristics. Pilots spoke well of them, however, and they performed extremely well in the photographic missions for which they were intended, as they were commissioned by the RCAF to photo-document and map the Canadian North. The Northrop Delta was chosen over British and Canadian aircraft, based on its speed (195 mph) and reported manoeuvrability. Canadian Vickers Manager Richard Moffett obtained a sales and then a manufacturing license to produce the Canadian Delta for the RCAF.

Initially a prototype was constructed based on bare components shipped from Inglewood CA to Montreal. The engineers at Vickers built three more by hand-forming and laboriously bending steel over the Alclad flanging. Furthermore they adapted the Delta to fly on twin Vickers Type 75 floats as well as Vickers Type F streamlined skis. At this time, warlike appendages were also added, though this was not widely known outside of the RCAF and Vickers: A .30 calibre Browning machine gun was installed in one wing, and bomb racks were fitted.

Four more Delta were delivered in November 1937: Delta Mark II's (of which ours is one). The chief external difference was the incorporation of extra windows in the cockpit sides under the existing windows, to improve the view from the very wide cockpit in flying photo "lines". Windows were also placed in the cockpit floor, and the Mark II's had provision to put armament in the wings, bomb racks and guns. At this time, the three original airplanes were returned to Vickers to have these extra windows added so that they became Mark IA's.

With the impending outbreak of WW II, the Canadian Air Force was so strapped for machines, that the Deltas were brought into action as armed coastal patrols. Canada did not officially declare war until September 10, 1939, but the Deltas were on active service on the 3rd. On August 27th, six Deltas departed from Ottawa to Sydney Nova Scotia. Four arrived safely, but one force-landed in Maine and was accompanied by another to render assistance. Delta 673, which had force-landed in Maine, was temporarily repaired and flew back to Megantic, Quebec for an engine change.

On September 14th, No. 8 General purpose Squadron became No. 8 Bomber Reconnaissance Squadron. This was also the day that Flight sergeant Doan and LAC Rennie left Megantic in Delta 673 for Sydney. They never reached their destination, and despite searches along the flight-route, no trace was found of the airplane or crew.

No. 8 BR ranged over the Atlantic ocean between Nova Scotia and Newfoundland, but experienced problems with the floats and ocean landings. The floats were twisted in ocean swells, and the fittings corroded in salt water. Pilots reported that attempting to take off into ocean swells resulted in popping rivets "akin to machine-gun fire". During the summer and fall of 1940, eight more Canadian Deltas were built for the RCAF, but these were gradually replaced by Canadian built Bristol Bolingbrokes and the Deltas transferred to the west coast.

A total of twenty Northrops were built at Vickers Aircraft Department in Montreal, bringing the company up to full capacity for its works during WWII. At this time, the company moved to Cartierville and became Canadair Ltd. Of these twenty; five were destroyed in accidents (three of them fatal), two were removed from service, and the remaining thirteen were sent to schools on the decree of the 1941 Secretary of Defence. These instructional airframes were disassembled and reassembled over and over , and some survived as late as February 1945.

The wreckage of Delta 673 was found in July 11th 1958, forty miles north of Fredericton New Brunswick. No evidence of the crew was ever found and F/S Doan and LAC Rennie became the RCAF's first casualties. The aircraft was acquired by the Canada Aviation Museum in 1966.

The question of whether to conserve or restore centred around the results of the research, and specifically the fact that this was the first Canadian aviation casualty of WWII. The aircraft is significant not only for its technological advancements, but because of the way in which it had been lost and found again. Placing the object within the guidelines for restoration/conservation, the conclusion seemed unarguable:

1. The Museum's mandate of preservation and research was clearly met by preserving this aircraft in its relic state.
2. Aesthetic value is low for being a representative of the technology; but the aircraft has immense aesthetic value as a crash-site icon.
3. Historic value is high based on its service record and the role it played in Canadian topographical mapping and military response.
4. Scientific value: This is the last surviving example of the Canadian built Northrop Delta. It has scientific and technological significance as the first stressed-skin low-wing aircraft built in Canada and could therefore illustrate manufacturing techniques; and was the first Canadian built aircraft to use Perspex, of which some remains in the window frames. Through evidence of modifications for mapping and for armament, its service history is manifested in the wreckage.
5. Social value is implicit in a crash-site involving loss of life. The aircraft is a symbol of Canada's commitment to the war, and a symbol for the Canadian people, of the sacrifice of the military personnel who served and died in the war. Spiritually, it is a memorial for the families and survivors of those airmen who lost their lives.
6. Future value of this aircraft is difficult to measure. As a source of reference, research and reproduction, it has a high value to future

generations. Interpreted as a crash-site memorial, it could have tremendous value as a historical "document".

With this much history in the remains of the aircraft, it is an iconic object representative of much more than just the technology. Many parts are missing, including the wings, engines, all interior components and the floats; so that restoration would involve replacement of more than half of the aircraft and this would have to be based on historic documents and plans making it "generic". Further, taking into consideration that it is the last known one in existence, a strong case was made to preserve it "as is" and keep the history of the aircraft intact. Our hope is to display the wreckage with an interpretive diorama and a history of the working life and significance of the aircraft; and of the airmen who died in it. While we do not have the funding to carry this out in the near future, I would not anticipate any resistance from visitors once the story of the aircraft was explained.

SCIENCE & TECHNOLOGY MUSEUM

The third example of changing visitor experience, comes from the collection of the Science and Technology Museum. This is an example of a very easy way to change visitor expectation; and while it may seem a little absurd in the context of this conference; the solution to our problem has been so simple and so inexpensive, that it bears relating.

The Governor General Rail Cars

These two cars are an important part of our rail collection. They are not on display, but are accessible to the public through guided tours. Over the years, they have been used inappropriately for past Presidents' entertaining, and for many tours both official and unofficial. We have struggled with numerous different types of carpet runners and rubber runners down the hallways; and with ropes to keep people out of the compartments. All of these had their problems, and in the end we decided to re-evaluate our procedures for tours.

The cars are significant to Canadian History and illustrate our long-standing relationship with England and the Royal Family. They were built in 1927 in the Montreal rail yards of the Canadian Car & Foundry Co. Of standard design, they were the first all steel cars to be used by the Governor General. The exterior was painted Royal purple with the royal crest applied in gold accented by gold cluster leaves and gold striping along the sides of the cars. The interior design was influenced by the wife of the then Governor General, the Marquess of Willingdon . Colour schemes were tailored for Lady Willington, who had a fondness for lilac.

The first run with the GG was March of 1928. The details of this tour are shrouded in secrecy, with documentation at the time using various code names for the GG and his destinations. This was apparently necessary because of the perceived threat from the strong Canadian Nationalism movement, combined with anti-British sentiment that evolved after WWI.

With the Great Depression in Canada, of 1929; fiscal restraint led to a movement for the accountability of government railway expenditures. Previous agreements by both national Railway companies (Canadian National and Canadian Pacific), to transport the GG cars at no charge, were re-negotiated and a tariff of $1 per mile was assigned. This led to conflict between CN and CP and the Government which was not resolved until the early 1940s. However, in the meantime, the GG cars travelled extensively throughout the 1930s with trips to the Maritimes, Western Canada and the Eastern US as well as several trips around Ontario and Quebec.

Two major modifications during the 1930s were the 1935 exterior painting of both cars to standard CN green, including removal of the gold leaf clusters and stripes; and secondly, the addition of air conditioning to both cars on May 19th 1937.

In 1939, the cars provided accommodations to King George and Queen Elizabeth I on their Royal Tour of Canada. Incidentally, we also have in our collection, the automobile that was used during this tour. The tour marked the first visit to Canada of a reigning British monarch. Both rail cars were repainted in Royal blue, with the royal coat of arms applied to each side of the car. At the request of His Majesty, a buzzer system was installed between royal cars and the engineer's cab so that the royal couple could be alerted when large crowds were standing beside the tracks , and they could then move to the rear platform to greet the crowd. This buzzer system does not exist today, but there is no record of when it was removed.

Service of the cars during the war was somewhat controversial, as the Railway companies were obviously concerned with operational and maintenance costs, and felt that service of the special train took away from the war effort. Nonetheless, there were some significant trips by Princess Alice and the Governor General in 1942, and then Princess Alice's trip to Toronto in 1943. Both of these trips were intended as war effort public relations, according to the official GG documents.

The 1950s were the decade for Royal Visits to Canada. The Royal Tour of 1951 for Princess Elizabeth and the Duke of Edinburgh, followed by and 1958 visit of Princess Margaret to Eastern Canada and finally the 1959 tour of Queen Elizabeth and Prince Philip. This was the last time the cars acted as the official cars for the GG and carried members of the Royal household.

The last official function of the GG cars was for the funeral of Governor General George Vanier in 1967. The cars transported the body from Ottawa to a burial site in Quebec City. By now the coming of high speed light weight trains meant that the GG cars were outdated and possibly unsafe. Two new cars were built to replace them, and the originals were

re-named #3 and #4 and donated to the Museum after being used to convey VIPs to and 1967 Expo celebrations.

They had one last moment of glory in 1977, when they carried the Royals to Wakefield on October 16th, pulled by the Museum's 1201 Locomotive. In preparation for this, the cars were taken to the CN shops in Montreal to be "restored". This largely included repainting the exterior, re-carpeting the interior, and replacing worn curtains and upholstery trimmings. None of the essentials were altered at this time. Since that time, only minor repairs have been undertaken

The Cars have always been an attraction for visitors, and it has been a challenge to both make them accessible, and to protect them. The only way to experience the object is to walk through it; and this is something we are all familiar with when opening historic houses or structures to the public. Prior to the summer tour season this year, we priced various systems for protecting the carpets (the runners were constantly creeping and tripping people); all proved to be difficult to install, and expensive. So , we ran a pilot project this year, to ask visitors to wear disposable "booties" while touring the cars. These are the type of disposable foot-coverings that are common in Canada in the winter months, where professional offices such as Doctors or Dentists, request patients to leave winter boots at the door. The immediate correlation most visitors make with these booties, is that of a "professional visit". Secondly, it provides an extra few minutes for the tour guides to reiterate the rules of conduct once inside the cars. It was an incredibly simple solution, and far less intrusive than replacing the carpet runners. The cars look much nicer without the added carpet runners, there are no more tripping hazards, and visitor feedback has shown that the overall impression given to visitors is that this is a privilege. We calculated that we could purchase approximately a five year supply of booties for the same cost as replacing the rubber carpet runner in one of the cars.

AGRICULTURE MUSEUM

The final example is from the collection of the Agriculture Museum:
Farmall Tractor: The 1938 tractor was acquired in 1989 in good original condition, though suffering from decades of neglect in a farmer's field. The tractor had a well documented provenance and a documented history of use since the donor was a family member of the original purchaser. The decision to conserve what was left of the original finish, was based on the fact that it retained a surprisingly high proportion of its original paint and structure. At the time there was little conflict over this decision since the new Curator of Agriculture was much in favour of conservation rather than restoration. There was some concern about a structural repair that was necessary to the frame of the tractor; but this was successfully TiG welded by one of our aircraft mechanics, with the loss of only about 2.5 cms either side of the weld.

Where conflict was anticipated, was in the exhibit; where a conserved "relic" would be introduced into a display featuring all restored tractors. In the end the appearance of the tractor was never questioned by visitors; and in fact we had the very rewarding experience of having the son of the original owner (himself an elderly gentleman) comment to Museum staff, that he recognized a repair that he had carried out on the broken tool box when he was a young man working on the farm. Had the tractor undergone restoration, this small element of the history of the object would have been lost forever.

CONCLUSION

If imitation is the sincerest form of flattery, then restoration is a close second. The desire to look after something of beauty or value has shaped the way conservation defines itself today. The loving care restorers put into objects is a measure of their dedication to that object. However, the homage that restoration pays to the object itself, is often at the cost of the history and more ethereal significance that Museums are obligated to preserve as the "context" of the object. While Conservation as a profession has more than a few skeletons in the closet (questionable materials, treatments, and over-treatments); the trend today, world-wide, is definitely toward preserving the original rather than restoring. We had thought that the visitor would reject this trend; and, as Canadians do; were not addressing the problem head-on but rather trying to circumvent it and prevent a confrontation. What has become evident to me, through these examples and other such experiences; is that it is not the visitor who is dictating the expectations; it is us that have underestimated the willingness of visitors to interpret artefacts in a preserved state rather than view them restored.

From a Conservation perspective, preserving the original materials should always be the priority of a Museum. CSTMC receives more requests to see original paint schemes, fittings and lay-outs, than anything else. Model-makers, restorers, researchers, collectors and veterans use the national collection as a reference source. Nowhere else is this information going to be protected and preserved. Any time an object has been restored, no matter how "faithful to the original" it is, there is a loss of authenticity. One of our colleagues at Vintage wings Canada tells me that he is sad when he visits our collection because it feels like a graveyard. The truth is that he does visit regularly to verify layout, parts or measurements, and sometimes he comes looking for parts to borrow or use (which he doesn't get).

In reviewing these case studies for this presentation, it is obvious to me that our expectation of resistance from the visitor has been largely exaggerated. The public is quite willing to accept a conserved object in a deteriorated state, and to accept restrictions on access; as long as these are explained and interpreted. The Museum visitor demographic is changing, particularly at the Aviation Museum. This seems to me a perfect time to introduce new ideas about display expectations. In retrospect, it is

the expectations of museum staff that have been more difficult to change; but changing, they are.

With each example of this restoration/conservation debate, we have come closer to a solid understanding of how we make these decisions and how we can disseminate this process to the public. Each time we display a conserved object rather than a restored one, we re-define the aesthetic and change the status quo a little bit more. Perhaps with time, we shall have the public clamouring for more unrestored relics.

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