

SCIENCE MUSEUM GROUP

POLICY AND PROCEDURES FOR SELECTING AND OPERATING HISTORIC OBJECTS FROM THE COLLECTIONS OF THE SCIENCE MUSEUM GROUP

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This document to be read in conjunction with associated Policies and procedures:	
Related Science Museum Documentation:	Science Museum Collecting Policy, 10 July 2007
	Science Museum Group, Corporate Plan - Annual
	Collections Management Policy, National Museum of Science & Industry, April 2005
	Science Museum Conservation Policy, 2013
	Science Museum Preventive Conservation Policy, 2010

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1. Policy Statement

The Science Museum Group (SMG), through its institutions the Science Museum, National Railway Museum, National Media Museum and Museum of Science and Industry, holds one of the world's pre- eminent collections in science, technology, industry, transport and medicine. These collections provide an unequalled record of the first and second industrial revolutions and beyond. They contain not only unique icons of international significance but also the everyday items that show the impact of science on how human lives are lived.

As leaders in science and technology communication and learning, the SMG remains committed to operating historic objects, recognising that the high levels of interest and the educational value in "working objects" make a meaningful connection between the museum's visitors and the collections. The value of operating a historic object for public understanding of the science and technology it demonstrates will be taken into account within the decision-making process.

The SMG's selection, risk assessment and review processes (based on the tenets of the National Heritage Act, 1983) are to ensure that working objects are used in a safe, secure and sustainable way, according to best practice, now and for the future, letting the importance and condition of the object and the quality of the evidence for an earlier state guide the decision.

2. Procedure

The procedure for selecting an object for operation follows detailed proposal and selection criteria.

2.1 Proposal

At each museum an object may be proposed for operation by staff from any department as all are stakeholders in the museum's vision. Additionally, proposals may come from outside groups - researchers, engineers, special interest groups, artists and filmmakers.

Each operation will be approved by the appropriate museum management team (see Appendix A) after consideration of all of the following:

- the object's cultural significance, which is the aesthetic, historic, scientific, social or spiritual value that it has for past, present and future generations. Objects which are considered rare will not be considered for operation as use is mutually incompatible with preservation of the whole.
- the significance of the object's function(s), including its alterations, repairs and modifications, if any. Any new use of an object will be compatible with original function with minimal change to fabric, respect of meanings and associations and continuation of practices which contribute to the cultural significance of that object.
- the object's current condition and state of preservation, the likely impact of wear to significant parts, the need to update to current safety standards and the requirement to remove hazardous materials and/or functions. Objects which are beyond their economic life (ie: in a state of accelerated wear) will not be chosen for operation unless physical integrity is deemed insignificant in relation to significant function.
- the benefit to the public and to the museum, in order to inspire innovation, engage understanding, motivate learning or preserve the collections. Publicity, direct revenue generation, sponsorship attraction or special interest group gratification may be considered as supplemental reasons for proposal for operation but are not acceptable motivations on their own.
- the resources required for maintaining the functionality for both the short and long term. Money, time, facilities, equipment and skilled staff are required for treatments, maintenance and repair programmes. Thorough documentation including photography of all processes from decision-making to maintenance logs and handling requirements must be kept and be made accessible. Where resources cannot be committed to the long-term maintenance, repair and replacement programme, an object shall not be selected for operation.
- museum needs in terms of frequency of operation and number of objects operating. One operating object can be a focus for visitors but several operating objects can become a distraction or have minimal impact on public programmes
- restrictions of museum context (available space, exhibit design, health & safety requirements).
- opportunities to record through the media of film and photography the return to operation, use and maintenance in order to maintain knowledge of craft and traditional skills.

2.2 Selection

A "working object" can be anything that originally had an operational function and can be either stationary or mobile.

Operating a working object can mean anything from demonstrating only one particular function to running the full functional complexity.

Every object in the collections with an operational function is assumed to be suitable to be a working object unless it is considered "rare". Rare is defined as unique, an icon, of incomparable significance, nationally important or bearing important historic evidence such as developmental information, significant use, original fabric.

The decision about whether an object is considered rare and therefore not a "working object" will be made by the relevant curator and endorsed by the relevant Head of Collections.

2.2.1 Selecting Functions for display and research

The selection of functions for display, educational, research and access purposes will be driven by an explicit evaluation of the significance of different functions. Operation will contribute to building individual and meaningful connections with science and technology through:

- adding to the understanding of function, purpose and significance
- showing the sensory aspects of sound, sight, feel and smell
- illustrating technological, social and/or economic change
- preserving significant function
- preserving or rediscovering traditional skills associated with the fabrication, operation and repair of working objects
- inspiring and sustaining an interest in science, industry, engineering, history and/or museums

2.2.2 Risk Factors

Risk factors which must be considered are:

- possible loss of historic information, including significant evidence of use, during restoration to working order
- potential replacement of original parts or alterations of original design for operational or health and safety reasons and regulations or through wear caused by operation
- potential difficulty in determining originality of parts or original appearance
- increasingly unavailable historic materials and craft skills making accurate reproduction of parts or appearance difficult or impossible
- potential deterioration of historic fabric caused by the substitution of modern materials and techniques
- potential increased deterioration of historic fabric caused by uncontrollable operational environments, particularly outdoors, or through accident, inappropriate use or abuse or insufficiently trained operators
- insufficient resources allocated to restore an object to working order or to completing the project as a result of underestimating needed allocation, escalating costs, project shortfall or changing priorities and long-term plans.
- imbalance of resources required to maintain and demonstrate the working object and to train the operators against the return in benefit to the museum in terms of public interest or educational value.
- non-refundable costs of minimising risk through loss or damage to an working object as the museum may not be able to find the resources to purchase commercial insurance (see Appendix B)

3. Selection Process

3.1 Curatorial, Conservation and Information Assessments

The Curatorial Assessment will be the responsibility of the relevant curator, with input from the relevant Head of Collections, and will define what the object is and what its function(s) were/are. It will fully detail an object's history and provenance and will include research into similar objects to enable comparisons of rarity, condition, integrity and interpretive potential.

The Conservation Assessment will be the responsibility of the relevant Conservation & Collections Care Manager/site conservator and will focus on the material(s) of the object and its condition and functionality. It will include a description of the physical fabric and function(s), analysis of samples as required, identification of alterations and an appraisal of the wear level(s). It will outline the resource implications for treatment, maintenance, environment, security, health & safety regulations, access, exhibition, storage, handling and object movement, with input from relevant museum departments (see Appendix A).

The Information Assessment will be the responsibility of the Collections Information Manager and will assess the issues of indemnity and insurance and the financial and legal responsibilities of the museum.

3.2 Statement of Significance

A statement of significance, drawn from the curatorial, conservation and information assessments, will give a reasoned clear summary describing the values, meaning and importance of the object. It will include:

- cultural significance- context, history and uses
- significant values- aesthetic, historic, scientific, social, spiritual
- significant alterations, modifications and repairs

It will be the responsibility of the relevant curator to produce the statement which will be a formal document retained as part of the historic record of the object, filed in a format designated by Collections Documentation.

3.3 Conservation Objectives

The conservation objectives, based on the conservation assessment, will outline all aspects of the object's care and use, so that treatment and operation does not compromise the significance of the object

- The level of operation acceptable for the object's preservation will be established:
 - no operation
 - mothball, shutdown or freeze
 - minimal operation - for maintenance purposes only under tightly controlled conditions
 - low levels of operation for occasional demonstration under controlled conditions
 - medium levels of operation for infrequent demonstration under medium controls
 - high levels of operation for regular demonstration
- The appearance objectives appropriate for the object will be defined.
- The proposed future use will be determined:
 - permanent display, including demonstration on or off-site, visitor access or static exhibit

- long-term loan for operation or demonstration
- temporary display, including demonstration, visitor access or static exhibit
- storage

The conservation objectives will be detailed in an itemised Conservation Management Plan produced by the relevant Conservation manager/ Conservator and will be used to inform the treatment plan.

3.4 Treatment Plan

The treatment plan will establish all potential options to satisfy the conservation objectives including:

- alterations required for compliance with regulations, including removal of hazardous materials
- preservation of internal components
- safety and stability of the object
- works to achieve appearance
- replacement of like with like or with modern materials, and conservation, retention or disposal of original components depending on an assessment of their significance
- use of traditional skills or modern methods for repairs and replacement manufacture

The treatment plan will determine the resources required for all the treatment options:

- skills
- equipment
- materials
- space
- continued availability and commitment of resources
- projected maintenance including tasks, schedules, costs, skills and supplies
- future sources of suppliers

The treatment plan will identify the options for operation and display and/or storage with details of space, resources and logistics included for each option.

The final stage of the treatment plan will be to select the approach to be implemented after review of the options. This review will be undertaken by the initiator of the proposed project, the relevant curator, the relevant Conservation manager and the Collections Information Manager. Resource considerations, both for achieving and sustaining the decision, will be a priority.

Where significant resources are required, or the assessment of the nature and cost of treatment cannot be confirmed without detailed inspection, a two stage Treatment Plan will be developed, to allow for an initial feasibility study before a final decision on operation is made. In these cases, approval for the decision of the curatorial and conservation teams will be sought from the Executive and the Board of Trustees.

The Treatment Plan will be included in the Conservation Activity in MIMSXYG¹.

The final decision will be endorsed by the appropriate museum executive managers (Appendix A) and the justifications for the decision will be a formal document retained as part of the historic record of the object.

3.5 Treatment Implementation

The treatment implementation will include both the treatments as specified by the Treatment Plan and the production of an Operating and Handling Guideline and Inspection Record and Maintenance Plan.

The Operating and Handling Guideline will include:

- parameters and limits of operation
- operation methods
- authorised operators and required training
- operation logbook template
- moving and handling instructions
- identified hazards

The Inspection Record and Maintenance Plan will include:

- inspection plan and schedule
- maintenance plan and schedule
- specified fuels and lubricants
- the treatment plan decision to replace like with like or with modern alternatives
- inspection record and maintenance record templates

1. All reference to MIMSY XG is to be read as KeEMU for MOSI documentation

4. Operation

The Operational Logbook, produced as part of the Operating and Handling Guideline, and the Inspection and Maintenance records, based on the Inspection Record and Maintenance Plan, are to be rigorously kept and updated throughout the object's working life and the documents retained as part of its historic and technical record.

Resources, allocated as determined in the treatment planning, will ensure that the Inspection Record and Maintenance Plan can be carried out as specified. Where adequate resources cease to be available for ongoing maintenance, necessary repairs or legislated modifications, a review of the operational plan will be held.

Periodic reviews will also be undertaken to determine whether an object should continue to be operated, whether the operation should or must, by reason of changing regulations or legislation, be modified or whether the object is no longer suitable for operation.

A project manager or project owner will be given the responsibility for the programme for continued operation of the historic object and will conduct the reviews consulting with all relevant stakeholders,

The programme and methodology for operating an object will not be modified or altered without review.

4.1 Records

Treatment and operating records will be kept in these formats:

- Initial and on-going object treatment in the Conservation Activity in MIMSY XG
- Up-to-date maintenance record in the Working Object Database, Conservation Server which can then be linked to MIMSY as a separate MS Excel file. This file can be retrieved and edited inside MIMSY or independently as a common MS Excel file.
- Maintenance history in the hard-copy Logbook held in the object's green file.
- Where there is a statutory requirement for a specific format of record this will be adopted as the standard for SMG record keeping (for instance a Rail Vehicle Maintenance & Operation Policy)

Appendix A

Selection Management Teams

Science Museum

Collections Group

Head of Collections

Head of Conservation & Collections Care, SMG Head of Corporate & Collections Information, SMG Head of Library & Archives

Head of Security

- The Conservation Assessment will be the responsibility of the relevant Conservation Manager, with input from Logistics, Security and the Collections Hazards Management Group.

National Railway Museum

Collections Development Group

Head of Knowledge & Collections Senior Curator Rail Vehicle Collections Engineering & Rail Operations Manager Collections Information Manager/Officer Curator of Railways Curator, Archive & Library Collections Head of Exhibitions & Design Learning Manager Professor of Railway Studies

- The Conservation Assessment will be the responsibility of the Conservator and/or the Engineering & Rail Operations Manager with input from the Senior Curator, Rail Vehicles Collections; Head of Knowledge & Collections; Collections Development Group.

National Media Museum

Collections Group

Head of Collections & Exhibitions Conservator Curator of Photographs Curator of Photographs & Photographic Technology Curator of Film & Broadcast Collections Information Manager/Officer

- The Conservation Assessment will be the responsibility of the Conservator with input from the relevant subject Curator, Head of Collections & Knowledge and the Collections Hazards Management Group.

Museum of Science and Industry

Collections Department

Head of Collections Conservation & Collections Care Manager Conservator Curator of Industrial Heritage Curator of Science & Technology

- The Conservation Assessment will be the responsibility of the Conservation & Collections Care Manager with input from the Conservator, relevant subject Curator, Head of Collections and the Collections Hazards Management Group.

Appendix B

The factors which must be considered before proposing to operate an object on loan in

Collections Information must be consulted before any object on loan in is considered for operation. The owner's approval will have to be sought and obtained in writing. In the case of some historic loans, it may prove difficult or impossible to identify a current owner.

The Government Indemnity Scheme does not cover loss or damage arising while objects on loan are driven, piloted, flown, sailed, ridden, operated and so on unless the Secretary of State has given specific written approval permitting indemnity to apply while a borrowed object is in motion or exhibited as a working display or while it has to be set in motion in order to maintain it in running order. Written approval must be sought from the Secretary of State before the object is operated but the Government Indemnity Scheme does not cover loss or damage arising or flowing from normal wear and tear.

Resources must be allocated from a pre-determined budget in order to care for a borrowed object during preparation for/and operation by purchasing commercial insurance. Commercial insurance may only cover the asset value of the object in the event of loss or damage and not the losses due to repair, restoration or operation.

Appendix C

Research Documentation and Reference Material

Bailey M and Glithero J, 'Learning through Conservation: The *Braddyll* Locomotive Project' in *Proceedings of the Industrial Collections Care and Conservation Conference* (United Kingdom Institute for Conservation, Cardiff, 1997).

Bailey M and Glithero J, *The Engineering and History of Rocket* (National Railway Museum, 2000).

Bailey M and Glithero J, 'Learning through Restoration: the *Samson* Locomotive Project' in *Early Railways* (London, 2001).

Baird, David M., "Restoration in Transportation Museums", *Preservation and Conservation, Yearbook of the International Association of Transport Museums, Volume 7, Gdansk 1980*, pp.78-85

Barr, Joanna, "The Conservation of Working Objects: Development of a Conservation Management Tool", *Artlab Australia 2006*

Bracegirdle, Robert, "Preservation of Public Service Transport Vehicles. The Problems of Keeping Vintage Vehicles in Running Order", *Yearbook of the International Association of Transport Museums, Volume 13/14, 1986-1987*, pp.55-72

Brodie, Francis E., "Clocks and Watches, A Re-Appraisal?", *Restoration: Is It Acceptable?*, British Museum Occasional Paper 99, ed. A. Oddy, 1994, pp. 27-32

Child, Robert, "Putting Things in Context: The Ethics of Working Collections", *Restoration: Is It Acceptable?*, British Museum Occasional Paper 99, ed. A. Oddy, 1994, pp. 139-143

Coulls, Anthony, "Conservation or Restoration? there's room for both!", www.oldglory.co.uk, October 2002

Crotty, David, "Aeroplane or Artefact? Restoration and Conservation of Aircraft", [hands ON hands OFF](http://hands.ONhands.OFF), Scienceworks, pp.16-19

Deck, Clara, "Conservation of Big Stuff at The Henry Ford: past, present and future", The Henry Ford Museum, BigStuff unpublished proceedings, 2004 (available BigStuff website)

Gibbon, R., "Controlled Operation or Wrecking? The Use of Objects from the National Railway Museum's Collections", *Industrial Collections, proceedings of the conference 9-11April, 1997*, pp.17-25

Leskard, Marta, "Fair Use: National Museum of Science & Technology", *International Institute for Conservation- Canadian Group unpublished proceedings, 15-18 May, 1987*

McManus, Edward, "A Restoration Philosophy: A Conservation Position Paper" National Air and Space Museum, Smithsonian Institution, 1990

Mann, Peter Robert., "Working Exhibits and the Destruction of Evidence in the Science Museum", *The International Journal of Museum Management and Curatorship*, 1989, pp. 369-387

Mann, Peter Robert, "The Restoration of Vehicles for Use in Research, Exhibition and Demonstration", *Restoration: Is It Acceptable?*, British Museum Occasional Paper 99, ed.

A. Oddy, 1994, pp.131-138

Mikesh, Robert C., "Aircraft Preservation", *Preservation and Conservation, Yearbook of the International Association of Transport Museums, Volume 7, Gdansk 1980*, pp.49-65

Mitchell, Gillian, "Application of the Burra Charter to large technology objects: a freelance conservator's experiences", *BigStuff unpublished proceedings, 2004* (available BigStuff website)

Moncrieff, Anne, "Conservation of Industrial Collections", unpublished proceedings of Standard Threads, International Institute for Conservation- Canadian Group Workshop, 1992

Newey, Hazel, "Conserving Scientific and Industrial Heritage: A Pragmatic Approach", *Industrial Collections, proceedings of the conference 9-11 April, 1997*, pp. 159-165

Newey, Hazel and Meehan, Peter, "The Conservation of an 1895 Panhard et Levassor and a Prototype Austin seven Motorcar: New Approaches to the Preservation of Vehicles" *The Conservator*, Number 23, 1999, pp. 11-21

Rees, Jim, *The Steam Locomotive as an Historic Building*, unpublished paper delivered at Scottish Railway Collections Conference, Falkirk 2006

Rolland-Villemot, B. & Forrieres, C., "The Different Contributors and Their Role in the Conservation, Care and Maintenance of Industrial Collections", *Industrial Collections, proceedings of the conference 9-11 April, 1997*, pp. 51-58

Thurrowgood, D. & Hallam, D., "Preserving significance: Why the journey mattered more than the car", National Museum of Australia, *BigStuff unpublished proceedings, 2004* (available BigStuff website)

Wain, Alison, "Large technology projects- success and sustainability", Australian War memorial, *BigStuff07 unpublished proceedings, 2007*, pp.12-15

Wain, Alison, "A well-planned operation", Australian War Memorial, *BigStuff unpublished proceedings, 2004* (available BigStuff website)

Ware, Michael E. "Restoration of Motor Cars", *Preservation and Conservation, Yearbook of the International Association of Transport Museums, Volume 7, Gdansk 1980*, pp.21-34

Weston, Margaret, "Restoration", *Preservation and Conservation, Yearbook of the International Association of Transport Museums, Volume 7, Gdansk 1980*, pp.9-20

White, John, "Conservation and large technological artefacts: a curatorial perspective", Australian War Memorial, *BigStuff unpublished proceedings, 2004* (available BigStuff website)

The Burra Charter: The Australian ICOMOS Charter for places of cultural significance, 1999

"Preservation Policy", The Henry Ford Museum & Greenfield Village Policy & Procedure Memorandum No. 25a, 3/2001 (available CoOL website)

Appendix D

Selection and authorisation for working objects request form

Action	Action By: (note name)	Statements and/or reference documents to be appended
Object number and description		
Proposal for use including frequency	Proposer:	
Information Assessment (confirm legal status of ownership)	Collections Information Manager:	
Cultural significance and rarity (Policy sections 2.1 and 3.2)	Collection curator:	
Significance of the object's functions (Policy sections 2.1 and 2.2.1)	Collection curator:	
Benefit for public (Policy section 2.1)	Collection curator/proposer:	
Risk: Potential loss of historic information/ replacement parts/ skills to repair/ insufficient resources to restore/ imbalance of resources required to maintain and demonstrate against museum benefit (Policy Section 2.2.2)	Collection curator/ conservator/ engineer:	
Risk: Potential H&S implications for public	Collection curator in consultation with H&S Advisor/ Security	
Gallery/building/ museum restrictions (Policy section 2.1)	Collection curator in consultation with Museum managers	
Current condition (conservation assessment/ report) (Policy section 2.1, 3.3)	Senior site conservator:	
Implementation resources required (Policy section 3.1)	Senior site conservator/ Collections Information Manager	
Conservation management plan (Policy section 3.1 and 3.2)	Senior site conservator:	

Treatment Plan with costings (Policy section 3.4)	Senior site conservator/ Engineer:	
Operating and Handling Guideline (Policy section 3.1, 3.3) This can be part of the Conservation management plan	Senior site conservator and Engineer.	
Maintenance resource required. Which team will operate and maintain (Policy section 2.1)	Senior conservator/ Engineer/ Maintenance	
Working object review for object – interval recommendation (ie full review following this Policy)	Collection Curator	
Completed proposal sent to	Collection	Date of CG: / /

Museum Collections Group as detailed in Appendix A	curator:	
Proposal accepted or rejected by Museum Collections Group – result to curator and proposer	Head of Collections:	
Following review the below are required as part of the ongoing object records for all operations		
All working object request papers (Policy and section 4.1)	Collection curator.	
Treatment Implementation (Policy section 3.5)	Senior site conservator	
Operating and Handling Guideline - reviews	Lead manager for operation of object, conservator, curator	
Inspection Record and Maintenance Plan (Policy section 3.5)	Lead manager for operation of object	