The Care of Industrial Artifacts C2CC Webinar
Clara Deck
Senior Conservator, The Henry Ford
MOVING/HANDLING
STORAGE
DOCUMENTATION
DISPLAY INDOORS
DISPLAY OUTDOORS
RESTORATION
OPERATION
“Spirit of Windsor” Locomotive Engine 5588 in Windsor, Ontario, Canada
Montreal Locomotive Works, 1911     On display sine 1962
1904 Westinghouse Generator.
THF # 29.1654.1 @ TEPCO in Tokyo, Japan since 2001
"Corning Glass Ribbon Machine, 1928" - Corning Glass Works  THF #90.349.1
"1928 Junkers W33 "Bremen" Airplane" - Junkers Aircraft and Engine Works Ltd. - Rank 1

THF #36.676.1.1
Model #16 Tower Clock - Seth Thomas Clock Company

THF #88.0.1379.1
"Dymaxion House“ 1945 – R. Buckminster Fuller, Dymaxion Houses Inc . THF # 91.401.
"1937 LaSalle Coupe" THF #81.9.1
Pullford Farm Tractor Converted from 1923 Ford Model T Automobile - Rank 3 THF #98.67.1
"1906 Locomobile "Old 16" Race Car"
THF #97.9.1.1
"Bell & Howell "Filmosound 179" 16mm Sound Projector  THF # 99.10.3
"Desk Stand Telephone", circa 1905    THF #38.239.9
Rub elbows with history.
"Westinghouse Portable Steam Engine No. 345, Used by Henry Ford" - THF # 13.1.1
Museum construction 1934
This 'Gasteam' engine is one of nine units which furnished the power to produce millions of motor cars at the Highland Park Plant.
"Avery Steam Traction Engine, circa 1916" THF #00.106.24
30-horsepower, weighs 23 tons!
"Allegheny Steam Locomotive, 1941" Lima Locomotive Works - Rank 1 THF #56.50.1
Moving/ Handling/Storage

• Loans
• New displays
• Into storage
1904 Westinghouse Generator **Weighs 7,525 lbs** @ TEPCO in Tokyo, Japan since 2001
Benjamin Franklin: In Search of a Better World exhibition by Minnesota historical Society 2009

"Ramage Hand-lever Printing Press, circa 1809" THF # 30.1218.1
Drill Press  ca 1845 Plymouth Tack & Rivet Works.
THF #00.534.2
"Romani (Gypsy) Wagon or Caravan, circa 1895"  37.194.1
SP-400™ CORROSION INHIBITOR, 10 WT OZ

No. 03282 | Item# 1003481

DESCRIPTION:
Long-term indoor/outdoor corrosion inhibitor that provides protection of all equipment subject to heat, humidity, chemicals or severely corrosive atmospheres. Use on machined surfaces & assemblies subjected to long periods of storage. Indoor/Outdoor protection up to 2 years.

APPLICATIONS:
Motors, shafts, equipment exposed to elements, outdoor storage of raw materials & finished stock.
Ca 1600-1909 Drill Press - Stanley family THF #30.2000.10.1
Weight Capacity for U-Line H1211 pallet

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<th>Floor</th>
<th>Fork</th>
<th>Rack</th>
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<tbody>
<tr>
<td>Capacity</td>
<td>30,000</td>
<td>5,000</td>
<td>2,000</td>
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DuraGreen DGP404834-C Plastic Pallet Pack  1,000 lb. capacity
In 1932 low-pressure rubber tires were introduced for farm tractors.
Three phase, synchronous converter THF #29.1333.222
- Ca 1850 Nail Cutting Machine
  THF #00.698.2
  Height  60.25  in
  Width    50   in
  Depth  51.25  in
Bipolar Dynamo - Edison General Electric Company  9 FT TALL, 12 FT DEEP, 8 FT WIDE. THF # 30.1309.8 The largest, most powerful version of Edison's belt-driven dynamo.
Uline Pallet Truck Scale - 48 x 27", 5,000 lbs. x 1 lb.

Basic, easy-to-use truck weighs and moves pallets with ease.

- Fork height: 3 1/3" lowered, 7 1/2" raised, 220° steering arc.
- Rechargeable battery included - Operates up to 60 hours.
- LB/KG/OZ convertible.
- Large, easy-to-read 2" LCD display.
- Use with Pallet Truck Stop.
- View video.

<table>
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<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
<th>FORK SIZE L x W</th>
<th>CAPACITY/ACCURACY</th>
<th>SHPG. LBS.</th>
<th>PRICE EACH</th>
<th>ADD TO CART</th>
</tr>
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<tbody>
<tr>
<td>H-1679</td>
<td>Standard</td>
<td>48 x 27&quot;</td>
<td>5,000 lbs. x 1 lb.</td>
<td>375</td>
<td>$1,595</td>
<td>ADD</td>
</tr>
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LIMITED 1 YEAR WARRANTY

Hillman Rollers
Drill Press – made by Silver and Gay. THF #31.1086.1 11.5 feet tall, weighs about 8500 lbs
Moving video
"Stover Windmill, circa 1883". THF #93.197.1
DOCUMENTATION

• UNDERSTAND YOUR MACHINE: TRADE LITERATURE, PRIMARY SOURCES, PHOTO ARCHIVES.

• “as Found” statement. Statement re: goals of restoration

• POTENTIAL HAZARDS: HEAVY METALS LIKE LEAD, MERCURY, CADMIUM
DISPLAY INDOORS
"Caterpillar Model 10 Tractor, 1929" – Caterpillar Tractor Company - Rank 2  THF #78.125.1
"Dickson Beam Engine, 1811" THF #28.761.1
This is the earliest rotative engine in the Museum's collections. It is one of the finest early 19th century steam engine in existence. Used to drive machinery at the James Pearsall Silk Mill in Taunton, Somerset, England, the engine operated there from 1823 to 1928.
"Aermotor Windmill, circa 1910" - Aermotor Company - Rank 3   THF #90.312.1
Buzz Saw - Aermotor Company  THF #90.312.2
It takes a ribbon of molten glass and blows it into moving molds, making 600 or 700 glass casings a minute.
"Mcnaught Compound Beam Engine, 1873" - Harrison & Clayton
THF # 32.167.1
"Allegheny Steam Locomotive, 1941" - Lima Locomotive Works, THF # 56.50.1
Wheel press, used in the operation and maintenance of steam locomotives. Uses water pressure to push wheel centers off axles. THF # 00.1619.1
NILES
BEMENT POND CO
NILES TOOL WORKS
HAMILTON OHIO
MAINTENANCE CLEANING
Surface plate with hand tools in Bagley Avenue Shop, Greenfield Village April 6, 2017.
Re-polished again in spring 2016.
Two years ago tried lacquering: resulted in worse failure where lacquer was nicked, so this year (2015) we merely re-polished (did not achieve overall bright finish). Applied tannic acid warm in 3 applications and then applied warmed paste wax of Renaissance microcrystalline mixed with carbon black pigment, and minor amounts of petrauaba wax and CRC Sp-400 corrosion inhibitor, to achieve rich lustrous sheen.
Tannic Acid Coating for Rusted Iron Artifacts, Canadian Conservation Institute (CCI) Notes 9/5
"F. E. Reed & Company Lathe, Used by Henry Ford, circa 1894"   THF #00.4.3020
DISPLAY OUTDOORS
Grand Trunk Western 75003 Caboose - Durand Union Station - Durand, MI
In 1964, the City of Windsor, in partnership with a group of former Royal Air Force and Royal Canadian Air Force veterans, purchased a Lancaster Bomber, Serial No. FM212, from the Canadian government. It was erected as a memorial in this location and dedicated in July 1965 to the men and women who served in the RAF and RCAF and paid the ultimate sacrifice. The historic aircraft is a memorial to those brave souls for forty years. However, exposure to the elements impaired the structural integrity of FM212 and the decision was made to relocate the aircraft to Windsor Airport. Currently, the home of the Canadian Historical Aircraft Association, the Lancaster resides in a former WWII Royal Canadian Air Force training facility, which was known as Elementary Flying Training School No. 7. Restoration is underway to return the Lancaster to its wartime configuration as a gift to all who served and the citizens of Windsor.

Full scale replicas of Spitfire and Hurricane aircraft were installed to replace the Lancaster. As a final parting tribute to the Lancaster Memorial, a full scale Lancaster bomber cement curb surrounds these replicas. When viewed from the air, the memory of Lancaster Serial No. FM212 remains in outline, watching over its Spitfire and Hurricane squadron mates. They continue to serve as centerpieces at memorial services such as the Battle of Britain Day and the November 11th Remembrance Day Ceremony.

“Per Ardua ad Astra”
Through Struggle to the Stars
- The motto of the Royal Air Force and The Royal Canadian Air Force.

Photo of Lancaster Bomber, Jackson Park, 2003, by George Mock

Photo of bombardier Lancaster, Jackson Park, 2003, by George Mack
Care of Machinery Artifacts Displayed or Stored Outside - Canadian Conservation Institute (CCI) Notes 15/2

CCI Note 15/2 is part of CCI Notes Series 15 (Modern Materials and Industrial Collections)

Introduction

Many small museum collections are published in large collections of artifacts. Often, the need to store these collections is underestimated. The value of these collections is undervalued, as they are stored in a manner that is not optimal. These collections can deteriorate if they are stored in a manner that is not optimal. As well, preservation procedures should not be neglected.

The procedures outlined in this note are designed to help museum staff store and display artifacts. The procedures are based on a combination of technical expertise and the latest conservation practices.
Canadian Conservation Institute (CCI) Notes

CCI Notes deal with topics of interest to those who care for cultural objects. Intended for a broad audience, the Notes offer practical advice about issues and questions related to the care, handling and storage of cultural objects. Many Notes are illustrated and provide bibliographies as well as suggestions for contacting suppliers. Written by CCI staff, there are currently over 100 Notes in this ever-expanding series.

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- Preventive Conservation
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"Port Huron Steam Traction Engine, "Longfellow," 1916" – Port Huron Engine & Thresher Company - Rank 3 THF #94.0.8.1
RESTORATION
"International Harvester Manure Spreader, circa 1905" - International Harvester Company - Rank 2 THF #93.163.1
c. 1860 Putnam planer, after treatment
"Stationary Steam Engine, 1848" - Franklin Machine Works - Rank 1   THF #27.165.1
"Sholes & Glidden Desk Typewriter, Model No. 1, 1873-1876" – Rank 1 THF #00.711.10
"Chariot Made by William Ross for Angelica Campbell, 1792-1802"
THF #29.1126.79.1
Nickel-plating versus chrome-plating
c. 1855 Gothic Beam Engine, in Greenfield Village early 1970s
"Gothic Revival Beam Engine, circa 1855" - I.P. Morris, Towne and Company, Novelty Iron Works - Rank 1  THF #30.489.1
"Predicta Television Receiver, 1958-1960" - Philco Corporation - Rank 2   THF #88.252.1
"Baldwin Locomotive Works Steam Locomotive, 1897" - Baldwin Locomotive Works
Rebuilt in Ford Motor Co workshops in 1921 and again at Greenfield Village- Rank 3  THF #30.235.2
The majestic 1897 Baldwin Locomotive that now runs on the tracks at Greenfield Village’s Weiser Railroad represents one of the toughest restorations we’ve ever undertaken. Follow our team as they document the meticulous, multi-year process of revitalizing the historic locomotive.
Left, in September 2007, the disassembly of the locomotive begins as the cab is lifted from the chassis. Right, in December 2007, the boiler assembly was removed to provide access to the sections to be replaced. (Photos by John Engfehr.)
"Hay Wagon, Made 1911 in the Pennsylvania Style" – Gruber Wagon Works - Rank 3  THF #85.131.1
OPERATION
"1931 Bugatti Type 41 Royale Convertible" THF #58.86.1
"Corliss Steam Engine, 1859"

THF #29.403.1
"Triple Expansion Steam Engine, 1891" - Dickson Manufacturing Company, Van Vleck, John, et al. - Rank 1   THF #29.111.1
LOCOMOTIVE VIDEO
Port Huron, Displayed outdoors for many decades. 1st restored in Greenfield Village 1981
Port Huron engine with water wagon and c 1905 Westinghouse thresher at “Fall Harvest Days” in Greenfield Village
Plow - James Oliver, South Bend Iron Works, et al. - Rank 4   THF #24.22.2

“MARRIED WITH 24.21.3 WHEN BOTH WERE JUDGED TO BE IN POOR CONDITION (ca.1985)”
Thomas Edison’s Menlo Park Lab in Greenfield Village
Demonstration Bergmann Tin Foil Phonograph ( #105)   THF #29.2112.1
OPERATING THE BERGMANN TIN-FOIL PHONOGRAPH
Artifact # 29.2112.1.1

This phonograph is one of 9 known to still exist from an original production of perhaps 50 to 200 machines of this particular Bergmann type. It is rare and valuable. Ranked 1.

If you have any trouble, please don’t force the machine or tinker with it yourself!
- Call your supervisor, they will notify HOM Radio 804
- Clara Deck at extension 2568 from Conservation will fix any stylus or diaphragm damage.

✓ Please have clean hands when handling any collection artifact.
✓ Cover the phonograph at the end of the day.
✓ Visitors should not be allowed to handle the artifact.
✓ ALWAYS RECORD TURNING THE WHEEL CLOCKWISE.

Note: Our tin foil supply is also valuable and is difficult to re-order. Please be conservative in the amount you use.

To Replace Foil:

1. Remove the clips holding the bar in place (and remember where they are!)
2. Lift stylus arm off the brass mandrel cylinder.
3. Remove old foil. (No, it really can’t be reused practically speaking.)
4. Lift up a new piece of foil taking care not to bend it too much.
5. Slip the foil under the cylinder and wrap it gently around the cylinder, smoothing as you wrap.
6. Replace holding bar and clips.

Note: keep the plastic sleeve on the clips in proper position so it grips the brass mandrel (fig A.)

To Start Recording:

1. Make sure stylus arm is OFF.
2. Rewind turning the wheel counterclockwise to position the stylus at the left edge of the foil or at the point just beyond the last recording.
COVER PICTURE: Mary Pickford re-enacts first phonograph recording on World's first phonograph during Edison Day at New York World's Fair. She spoke “Mary had a little lamb” into the horn, the words Mr. Edison had shouted into it 60 years before. Photo shows, left to right, Miss Pickford, Mrs. John E. Sloan (Mr. Edison's daughter), Eugene C. Reed, Assistant Vice-President of Thomas A. Edison, Inc., Thomas Edison Sloan (Mr. Edison's grandson) and John B. Kennedy, radio commentator.

Edison Day at New York World's Fair Draws Thousands of Visitors
Bill Ptacek’s reproduction reproducer arm
"Tinfoil Phonograph, 1878-1879" - S. Bergmann (Firm) - Rank 2
THF #00.1382.489 Photographed in early 1980s
After one quarter century of exhibition in Menlo Park Library
Experimental Apparatus
for illustrating the principle of
Edisuns Speaking Phonograph
Pat. Feb. 19th 1878
Bad Stuff
Hazardous materials in Museum Collections
Asbestos
"Edison Kinetoscope with Kinetophone, 1912-1913“  THF #29.460.14
Asbestos

- Alcohol Iron - Monitor Sad Iron Company  THF # 00.4.3098
In operational use by Greenfield Village staff to make candlesticks with the public since the mid 1990's (1994?). Turret tooling set up by John Bowditch. CMD 7/18/01.
Steam pipes old asbestos-coverings re-covered
Dymaxion House
Radioactive materials
Radioactive parts

• Radioluminescent Buttons (ca. 1930s)

http://www.orau.org/PTP/collection.htm

Military Compass (1981)
"Footwarmer, circa 1900"
CAUTION
RADIO-ACTIVE
"RADIIUM MINING SAMPLES"

NOV 17, 2014
PCB

Cummins LI-600

Photo from "Diesel-Electric Locomotive", Foell and Thompson, 1946.

Fluorescent light ballasts

Capacitors
Automatic Assembly System - Bodine Corp. ca 1984
THF #92.179.1   (Metal bending break in front of it)
Lead
SECTIONS OF SUBMARINE CABLES

CAUTION:
Lead Corrosion
Mercury

http://www.epa.gov/mercury/spills/index.htm
"Thomson-Houston Oscillating Meter, 1888-1892"
THF #29.1980.9
Rodent pests, bird and bat guano in storage areas.
Mold
Cadmium corrosion
Fuel, matches
Battery safety
Electric clock ruined by blown up battery
BIG STUFF

A SITE FOR THE PRESERVATION AND DISPLAY OF LARGE TECHNOLOGY AND INDUSTRIAL HERITAGE

Big Stuff is a site for people interested in the preservation and display of large technology and industrial heritage. We are a community of museum professionals, academics, consultants/contractors, volunteers and private owners who come together every three years for a conference to talk about the challenges of large technology conservation, and our ideas and innovations for solving these challenges.

We welcome people who want to get involved - please contribute to our blog, share details of your large technology based project or organisation, join our volunteer conference organising team - or suggest another way we can collaborate to save and enjoy old machines. Students are especially welcome!

Our ISSN number for the conference series is ISSN 1207-2845.
Big Stuff conferences presentation themes:
- Shape and Unity of Large Technology sites and collections
- Authenticity, originality, interpretation strategies
- Tangible and intangible values of industrial heritage
- Use and non-use
- Agendas and conflicts around Big Stuff
- Significance of Large Technology Objects collections
- Practicality and sustainability (practical tips and solutions)

http://bigstuff.omeka.net/
At this time, we are working to confirm details of the conference in TUCS pencil in early November 2018 for the conference. We are looking forward to follow-up emails from us.

Call for 2018 Proposals
Welcome to the National Association of Automobile Museums (NAAM). NAAM is dedicated to serving automobile museums across the country, from small to large. Important benefits include annual three-day conferences with sessions by pros in the field, tours to museums and private collections, and excellent networking. You can stay connected all year. The NAAM quarterly e-news features instructional articles, updates about association activities and news about member museums. The Member’s Area of this website is a valuable tool for exchanging ideas and gathering information about a variety of topics. Plus, email announcements offer important reminders about services and activities. Thank you for making NAAM your “go-to” resource in an ever-changing environment.
NEW: Post-conference Opportunity for Spring Conference Attendees:

All HRA members attending the conference in Strasburg are invited to visit the Rockhill Trolley Museum and the East Broad Top Railroad in Rockhill Furnace on Sunday April 15 after the conclusion of the official convention at Strasburg. Members of the Friends of the East Broad Top will be offering a tour of the East Broad Top Railroad shops and roundhouse at 10:00AM, lasting approximately until 11:30 AM. Several trolleys from the collection at the Rockhill museum will be running for the day.組織者提供可轉換尺寸的車票售賣及票務管理等服務。