

# Appendix

## The Complete List of Historic Mechanical Engineering Landmarks

The landmarks program is an ongoing endeavor and new objects / sites are added each year. Please note that this list reflects information received by the ASME History & Heritage Committee as of 2013. Actual locations and present status of landmarks may vary.

LM no.	Title	Date	Location
1	Ferries & Cliff House Cable Railway Power House	1887	Cable Car Museum,(Washington and Mason Streets), San Francisco, CA.
2	Leavitt-Riedler Pumping Engine	1894	Chestnut Hill Pumping Station, Boston, MA
3	A.B. Wood Screw Pump	1914	New Orleans Sewage & Water Board, New Orleans, LA
4	Portsmouth-Kittery Naval Shipbuilding Activity	1774	Portsmouth Naval Yard, Portsmouth, NH
5	Boyden Hydraulic Turbines	1871	Harmony Mill No. 3, Cohoes, NY
6	Curtis 5000-kilowatt Vertical Turbine	1903	General Electric, Schenectady, New York
7	Saugus Ironworks	1647	National Park Service Historic Site, Saugus, MA
8	Pioneer Oil Refinery California Star Oil Works Co.	1876	Chevron of Standard Oil, Navell, CA
9	Chesapeake & Delaware Canal Scoop Wheel & Engines	1850	Old Lock Pump House, Chesapeake City, MD
10	Reciprocating Steam Engines, USS Texas	1914	San Jacinto Battleground State Park, La Porte, TX
11	Paige Compositor	1877	Mark Twain House, Hartford, CT
12	Reynolds-Corliss Pumping Engine	1917	Main St. Pumping Station, Jacksonville, FL
13	Childs-Irving Hydroelectric Project	1909	(Near Childs, AZ) no longer in operation
14	Hanford B Reactor	1944	Dept. of Energy, Richland, WA
15	Magma Copper Mine Air Conditioning System	1937	(Tuscon, AZ) no longer in operation

<b>LM no.</b>	<b>Title</b>	<b>Date</b>	<b>Location</b>
16	Manitou & Pike's Peak Cog Railway	1891	Cog Rail Depot, Colorado Springs, CO
17	Edgar Station, Edison Electric Illuminating Co.	1923	Bridge Street at Fore River, Weymouth, MA
18	Mount Washington Cog Railway	1869	Marshfield Base Station, Mt. Washington, NH
19	Folsom Power House #1	1895	Sacramento, CA
20	Crawler Transporters of Launch Complex 39	1962	Kennedy Space Center, Cape Canaveral, FL
21	Fairmount Water Works	1815	Philadelphia, PA
22	Vertical Reciprocating Steam Engines, USS <i>Olympia</i>	1892	Independence Seaport Museum, Philadelphia, PA
23	Pit-Cast Jib Crane	1905	Sloss Furnace Museum, Birmingham, AL
24	State Line Generating Unit 1	1929	(Hammond, IN) no longer in operation
25	Pratt Institute Power Plant	1887	Brooklyn, NY
26	Monongahela Incline	1870	near Station Square, Pittsburgh, PA
27	Duquesne Incline	1877	near Station Square, Pittsburgh, PA
28	Great Falls Raceway and Power System	1792	Great Falls Visitors' Center, Paterson, NJ
29	Vulcan Street Power Plant	1882	Appleton, WI
30	Wilkinson Mill	1810	Slater Mill Museum, Pawtucket, RI
31	Interborough Rapid Transit System (Original Line)	1904	The Transit Museum, Brooklyn, NY
32	Baltimore & Ohio Railroad Old Main Line	1828	Mt. Clare Station, Baltimore, MD
33	Ringwood Manor Iron Complex	1740	Ringwood, NJ
34	Joshua Hendy Iron Works	1906	Iron Man Museum, within the Northrop Grumman Marine Systems Plant in Sunnyvale, CA
35	Hacienda La Esperanza Sugar Mill Steam Engine	1861	Conservation Trust of Puerto Rico, San Juan, PR
36	RL-10 Rocket Engine	1958	National Air & Space Museum, Washington, DC
37	A.O. Smith Automatic Frame Plant	1906	(Milwaukee, WI) no longer exists
38	Morris Canal Scotch (Reaction) Turbine	1850	Greenwich Township, NJ
39	Experimental Breeder Reactor I	1951	Idaho National Engineering Laboratory, Arco, ID
40	Drake Oil Well	1859	Drake Oil Well Museum, Titusville, PA

<b>LM no.</b>	<b>Title</b>	<b>Date</b>	<b>Location</b>
41	Springfield Armory	1794	Springfield Armory National Historic Site, Springfield, MA
42	East Wells (Oneida St) power plant	1918	(Milwaukee, WI) no longer exists
43	Watkins Woolen Mill	1868	Lawson, MO
44	Fusion Welded Test Boiler Drum	1930	ABB Combustion Engineering, Chattanooga, TN
45	Georgetown Steam Plant	1906	National Historic Site, Seattle, WI
46	Commonwealth Building Heat Pump	1948	Portland, OR
47	Shippingport Nuclear Power Station	1958	Duquesne Light Company, Shippingport, PA
48	Edison 'Jumbo' Engine-driver Dynamo	1882	The Henry Ford, Dearborn, MI
49	Marine-type Triple-expansion, Engine-driven Dynamo	1891	The Henry Ford, Dearborn, MI
50	Cooperative Fuel Research Engine	1928	Waukesha Engine Historical Society, Waukesha, WI
51	Port Washington Power Plant	1935	Wisconsin Energy Corporation, Milwaukee, WI
52	Saturn V Rocket (Kennedy Space Center Visitor Complex)	1967	Kennedy Space Center, Orlando, FL
53	Saturn V Rocket	1967	Lyndon B. Johnson Space Center, Clear Lake, TX
54	Saturn V Rocket	1967	US Space & Rocket Center, Huntsville, AL
55	Blood Heat Exchanger	1957	SUNY Buffalo, Amherst, NY
56	Rocky River Pumped-storage Hydroelectric Plant	1929	New Milford, CT
57	Kaplan Turbine	1929	York Haven Hydroelectric Station, PA
58	Pioneer Zephyr	1934	Museum of Science & Industry, Chicago, IL
59	Chestnut Street Pumping Engine	1913	Erie, PA
60	Holt Caterpillar Tractor	1918	Pioneer Museum / Haggin Gallery, Stockton, CA
61	Michigan-Lake Superior Power Hydroelectric Plant	1902	Sault Ste. Marie, MI
62	Southern Pacific #4294 Cab-in-Front Steam Locomotive	1944	California Railroad Museum, Sacramento, CA
63	Jackson Ferry Shot Tower	1807	Shot Tower Historic State Park, Austinville, VA

<b>LM no.</b>	<b>Title</b>	<b>Date</b>	<b>Location</b>
64	Graue Mill	1852	Graue Mill & Museum, Oak Brook, IL
65	Evinrude Outboard Motor	1909	Outboard Marine Corp., Milwaukee, WI
66	Mount Wilson Observatory, 100-inch Hooker Telescope	1906-1924	Mt. Wilson Observatory, Pasadena, CA
67	Hiwassee Dam Unit 2 Reversible Pump-Turbine	1956	Murphy, NC
68	Edison Experimental Recording Phonograph	1877	Edison National Historic Site, West Orange, NJ
69	Creusot Steam Hammer	1876	Le Creusot, France
70	Newcomen Engine	1712	Friends of Dartmouth Museum Association, Devon, England
71	ALCOA 50,000-ton Hydraulic Forging Press	1954	ALCOA, Cleveland, OH
72	Rotating-arm Model Test Facility	1945	Davidson Laboratory, Stevens Institute of Technology, Hoboken, NJ
73	<i>Turbinia</i>	1897	Tyne and Wear Museums Service, Newcastle-upon-Tyne, England
74	Anderson-Barngrover Cont. Rotary Pressure Sterilizer	1920	FMC Food Tech, Chicago, IL
75	Alden Research Laboratory Rotating Boom	1908	Holden, MA
76	AC Electrification NY, New Haven & Hartford	1907	(Cos Cob, CT) no longer in operation
77	Worthington Horizontal Cross-Compound Pumping Engine	1925	York Water Co., York, PA
78	Electro-Motive FT Freight-service Diesel-Electric Locomotive	1939-1940	National Museum of Transportation, St. Louis, MO
79	Lombard Steam Log Hauler	1910	Patten Lumberman's Museum, Patten, ME
80	Aberdeen Range & Proving Ground	1943	US Army Test & Evaluation Command, Aberdeen, MD
81	Corning Ribbon Machine	1926	The Henry Ford, Dearborn, MI
82	FMC Citrus Juice Extractor	1947	(Lakeland, FL) no longer exists
83	Pennsylvania RR GG1 Electric Locomotive # 4800	1943	Railroad Museum of Pennsylvania, Strasburg, PA

LM no.	Title	Date	Location
84	Reed Gold Mine Ten-Stamp Mill	1895	Midland, NC
85	PACECO Container Crane	1959	Port of Nanjing, China
86	Owens AR Bottle Machine	1912	(Toledo, OH) no longer exists
87	NS <i>Savannah</i>	1962	Pier 13, Baltimore, MD
88	Xerography	1949	Battelle Memorial Institute, Columbus, OH
89	Wyman-Gordon 50,000-ton Hydraulic Forging Press	1954	Worcester, MA
90	IBM 350 RAMAC Disk File	1956	IBM History Site, San Jose, CA
91	Archimedes' Screw Pump	1890	Cargill Salt Co., Newark, CA
92	Stanford Linear Accelerator Center	1962	Stanford University, Menlo Park, CA
93	<i>Holland</i> Tunnel Ventilation System	1920	Port Authority of New York & New Jersey
94	Norfolk & Western # 611, Class J Steam Locomotive	1941	Virginia Museum of Transportation, Roanoke, VA
95	Sikorsky VS-300 Helicopter	1939	The Henry Ford, Dearborn, MI
96	Quincy Mining Company No. 2 Mine Hoist	1920	Hancock, MI
97	SS <i>Great Britain</i>	1843	Great Western Dock, Bristol, England
98	SS <i>Jeremiah O'Brien</i>	1943	National Liberty Ship Memorial, San Francisco, CA
99	Idols Station, Fries Manufacturing & Power Company	1898	Winston-Salem, NC
100	Belle Isle Gas Turbine	1949	General Electric, Schenectady, New York
101	St. Charles Avenue Streetcar Line	1835	New Orleans, LA
102	Atlas Launch Vehicle	1957	Gillespie Fields Airport, El Cajon, CA
103	First Hot Isostatic Processing Vessels	1956	Battelle Memorial Institute, Columbus, OH
104	Basic-Oxygen Steel Making Vessel	1955	(Trenton, MI) no longer in operation
105	Detroit Edison District Heating System, Beacon Street	1903	Detroit, MI
106	Cornwall Iron Furnace	1742	Cornwall, PA
107	Lowell Power Canal System and Pawtucket Gatehouse	1796	Lowell, MA

<b>LM no.</b>	<b>Title</b>	<b>Date</b>	<b>Location</b>
108	Jacobs Engine Brake Retarder	1957	Jacobs Manufacturing Company, Bloomfield, CT
109	Geysers Unit 1	1960	Calpine- The Geysers, Geysersville, CA
110	Harris-Corliss Steam Engine	1895	Randall Bros. Inc., Atlanta, GA
111	Boulton & Watt Rotative Steam Engine	1785	Power House Museum, Sydney, Australia
112	TV Emery Rice Steam Engine	1873	American Merchant Marine Museum, Kings Point, Long Island, NY
113	Fairbanks Exploration Company Gold Dredge No. 8	1927	National Historic Site, near Fairbanks, AK
114	Pitney Bowes Model M Postage Meter	1920	Pitney Bowes Inc., Danbury, CT
115	Disneyland Monorail System	1959	Anaheim, CA
116	McKinley Climatic Laboratory	1944	Eglin Air Force Base, FL
117	Icing Research Tunnel, NASA Glenn Research Center	1944	Cleveland, OH
118	Samson Mine Reversible Waterwheel & Man Engine	1837	Niedarachsen, Germany
119	American Precision Museum	1966	Windsor, VT
120	Robbins & Lawrence Machine Shop	1846	American Precision Museum, Windsor, VT
121	Holly Fire Protection and Water System	1863	Lockport, NY
122	Holly District Heating System	1877	Lockport, NY
123	Kingsbury Thrust Bearing	1911	Holtwood Hydroelectric Power Plant, Holtwood, PA
124	Chapin Mine Pump	1893	National Historic Site, Iron Mountain, MI
125	Pullman Sleeping Car Glengyle	1911	Age of Steam Railroad Museum, Dallas, TX
126	Westmoreland Iron Works	1850	(Westmoreland, NY) no longer in operation
127	Big Brutus Mine Shovel	1962	West Mineral, KS
128	Vallecitos Boiling Water Reactor	1957	Pleasanton, CA
129	Holyoke Water Power System	1859	Holyoke Heritage State Park, Holyoke, MA
130	Stirling Water-tube Boilers	1906	Crown America, Inc., Dalton, GA

<b>LM no.</b>	<b>Title</b>	<b>Date</b>	<b>Location</b>
131	Roosa Master Diesel Fuel-Injection Pump	1947	Stanadyne Corp., Windsor, CT
132	Chicago Burlington & Quincy Railroad Roundhouse	1858	National Historic Site, Aurora, IL
133	Buckeye Steam Traction Ditcher	1902	Hancock Historical Museum, Findlay, OH
134	Geared Locomotives of Heisler, Shay, Climax	1872	Roaring Camp Railroads, Felton, CA
135	Neuchâtel Gas Turbine	1939	ALSTOM Power Service, Birr, Switzerland
136	AAR Railroad-wheel Dynamometer	1955	Association of American Railroads, Pueblo, CO
137	Texas & Pacific #610 Lima Superpower Steam Locomotive	1927	Texas State Railroad Historic Park, Rusk, TX
138	ASME Boiler and Pressure Vessel Code	1915	The Henry Ford, Dearborn, MI
139	Roebing 80-ton Wire Rope Machine	1893	Historical Industrial Complex, Trenton, NJ
140	Arnold AFB Wind Tunnel	1955	Arnold Air Force Base, TN
141	Browning Firearms Collection	1878	Ogden Union Station Museum, Ogden, UT
142	Pierce-Donachy Ventricular Assist Device (aka Penn-State Heart Assist Pump)	1973-1980	Hershey Medical Center, Hershey, PA
143	USS <i>Cairo</i> Engine & Boilers	1862	Vicksburg National Military Park, Vicksburg, MS
144	Curtis 500-kilowatt Vertical Turbine	1903	Indianapolis, IN
145	Southern Gas Association-PCRC Analog Facility	1956	Southwest Research Inst., San Antonio, TX
146	National Soil Dynamics Laboratory	1935	USDA Agricultural Research Service, Auburn, AL
147	Baltimore & Ohio #4500, freight locomotive USRA 2-8-2A	1918	B&O Railroad Museum, Baltimore, MD
148	Atlantic Coast Line #1504, passenger locomotive USRA 4-6-2A	1919	Prime Osborn Convention Ctr, Jacksonville FL
149	Hydromatic Propeller	1938	New England Air Museum at Bradley International Airport, Windsor Locks, CT
150	Pin-Ticketing Machine	1902	Avery Dennison / Monarch Marking Systems, Miamisburg, OH

<b>LM no.</b>	<b>Title</b>	<b>Date</b>	<b>Location</b>
151	Victoria Dutch Windmill	1840s	Victoria, TX
152	Jeep Model MB	1941	Chrysler Motors, Toledo, OH
153	Cruquius Pumping Station	1849	Haarlemmermeer, The Netherlands
154	Greens Bayou Generator Plant	1949	Houston, TX
155	Milam High-rise Air Conditioned Building	1928	Milam GP Limited, San Antonio, TX
156	Lookout Mountain Incline Railway	1895	Lookout Mtn., TN
157	Pelton Waterwheel Collection	c.1880	Nevada County Historical Society, Grass Valley, CA
158	Fresno Scraper	1883	San Joaquin County Historical Society and Museum, Lodi, CA
159	Nassawango Iron Furnace	1828	Snow Hill, MD
160	ABACUS II Integrated-Circuit Wire Bonder	1972	Texas Instruments, Dallas, TX
161	Q-R-S Marking Piano	1912	QRS Music, Buffalo, NY
162	<i>Apollo 14</i> Space Command Module	1968	Kennedy Space Center, Astronaut Hall of Fame, Titusville, FL
163	Meter-type gas odorizer	1937	Peerless Mfg. Co., Dallas, TX
164	New England Museum of Wireless and Steam	1964	East Greenwich, RI
165	Old Mill in Nantucket	1746	Nantucket Historical Assoc., Nantucket, MA
166	Milwaukee River Flushing Station	1888	Milwaukee, WI
167	Ginaca Pineapple Processing Machine	1911	Dole Co., Honolulu, HI
168	Pegasus 3 Engine BS 916	1960	Rolls-Royce, Bristol, England
169	Cryogenic Cooling System, Fermilab Tevatron	1983	Fermi National Laboratories, Batavia, IL
170	Advanced Engine Test Facility	1964	Marshall Space Flight Center, Huntsville, AL
171	Voyager Spacecraft Interplanetary Explorers	1972-1977	Jet Propulsion Lab, Pasadena, CA
172	Bay City Walking Dredge	1924	Collier-Seminole State Park, Naples, FL
173	Burton Farmers Gin Mill	1914	Burton Cotton Gin Museum, Burton, TX
174	Crown Cork and Soda Filling Machine	1892	Crown Cork & Seal, Baltimore, MD
175	Bergen County Steam Collection	1987	Bergen County Technical Schools, Hackensack, NJ



LM no.	Title	Date	Location
176	Union Pacific Big Boy 4023 Centennial 6900	1941	Kenefick Park, Omaha, NE
177	Barker Turbine / Hacienda Buena Vista	1853	Conservation Trust of Puerto Rico, Ponce, PR
178	Boeing 367-80	1954	Udvar-Hazy Center, National Air & Space Museum, Chantilly, VA
179	Newell Shredder	1969	The Shredder Co., Canutillo, TX
180	Johnstown Incline	1891	Johnstown, PA
181	BF Clyde's Cider Mill	1898	Old Mystic, CT
182	Knight Foundry and Machine Shop	1873	Sutter Creek, CA
183	Wright Field 5-foot Wind Tunnel	1921	Wright Patterson Air Force Base, OH
184	Gravimetric Coal Feeder	1957	Stock Equipment Co., Cleveland, OH
185	Ljunstrom Air Preheater	1920	Museum of Technology, Stockholm, Sweden
186	Steamboat William G. Mather	1925	East 9th St. Pier, Cleveland, OH
187	NASA Ames Unitary Plan Wind Tunnel	1956	Moffett Field, CA
188	Garfield Thomas Water Tunnel	1949	Penn State University, College Station, PA
189	Montgomery Glider	1883	Hiller Aircraft Museum, San Carlos, CA
190	Hart-Parr Tractor	1903	Floyd County Historical Museum, Charles City, IA
191	SS <i>Badger</i> Carferry	1952	Lake Michigan Ferry Service, Ludington, MI
192	Thermo King© Model C Refrigeration Unit	1940	Thermo King Corp., Minneapolis, MN
193	Alligator Amphibian	1940	US Marine Corps Air-Ground Museum, Quantico, VA
194	Kew Bridge Cornish Beam Engines	1975	Kew Bridge Steam Museum, Brentford, Middlesex, England
195	Bay Area Rapid Transit System	1972	San Francisco, CA
196	Bessemer Conversion Engine	1900	West Michigan Old Engine Club, Rockford, MI
197	David Taylor Model Basin	1939	Bethesda, MD
198	Ultra High Pressure Apparatus for the Production of Diamonds	1954	General Electric, Schenectady, NY

<b>LM no.</b>	<b>Title</b>	<b>Date</b>	<b>Location</b>
199	Hulett Ore Unloader	1912	Whiskey Island, Cleveland, OH (item dismantled)
200	Paddle Steamer Uri	1901	Lucerne, Switzerland
201	Cooper Agricultural Steam Engine Collection	1860-1883	Knox County Historical Society, Mount Vernon, OH
202	William Tod Rolling-Mill Engine	1914	Tod Engine Heritage Park, Youngstown, OH
203	Siegfried Marcus Car	1875	Technical Museum, Vienna, Austria
204	Kinne Water Turbine Collection	1907-1937	Jefferson County Historical Society, Watertown, NY
205	Peterborough Hydraulic (Canal) Lift Lock	1904	Peterborough, Ontario, Canada
206	Merrill Wheel-Balancing System	1945	Merrill Engineering Laboratories, Englewood, CO
207	Refrigeration Research Museum	1890-1960	Refrigeration Research Inc., Brighton, MI
208	Fairbanks Morse Y-VA Diesel Engine	1924	Useppa Isl. Historical Society, Useppa, FL
209	USS <i>Albacore</i> (AGSS-569)	1953	Portsmouth Maritime Museum, Portsmouth, NH
210	Link C-3 Flight Trainer	1935	Roberson Museum and Science Center, Binghamton, NY
211	Tokaido Shinkansen	1964	Tokyo, Japan
212	EIMCO Rocker Shovel	1938	Old Park City, UT
213	George W. Woodruff School of Mechanical Engineering, Georgia Tech University	1888	Atlanta, GA
214	Colvin Run Mill	1810	Great Falls, VA
215	Coolspring Power Museum	1890-1929	Coolspring, PA
216	Arecibo Observatory Radiotelescope	1963	National Astronomy and Ionosphere Center, Arecibo Observatory, Puerto Rico
217	Radio City Music Hall Hydraulic Stage	1932	New York, NY
218	Apollo Lunar Module LM-13	1972	Cradle of Aviation Museum, Garden City, Long Island, NY
219	Hughes H-4 Hercules Flying Boat (aka "Spruce Goose")	1947	Evergreen Aviation Museum, McMinnville, OR

<b>LM no.</b>	<b>Title</b>	<b>Date</b>	<b>Location</b>
220	Pilatusbahn	1882	Mount Pilatus, Switzerland
221	Brandywine Powder Mills	1803-1921	Hagley Museum Complex, Wilmington, DE
222	Ditch Witch Service Line Trencher	1952	Ditch Witch Museum & Heritage Center, Perry, OK
223	Solar Energy Conversion Laboratory (now part of the Erich Farber Archives)	1954	University of Florida, Gainesville, FL
224	Wright Flyer III	1905	Dayton History at Carillon Historic Park, Dayton, OH
225	Rumely Companies' Agricultural Products	1908	La Porte, IN
226	Eddystone Station Unit 1	1960	Eddystone, PA
227	First Ram-Type Blowout Preventer (BOP)	1922	Cameron World Headquarters, Houston, TX
228	Philo 6 Electric Generating Unit	1957	(Zanesville, OH) no longer exists
229	Montana Western 31 (Great Northern Railway Gasoline-Electric Rail Motor Car)	1925	Mid-Continent Railway Historical Society, North Freedom, WI
230	Lapeyre Automatic Shrimp Peeling Machine	1949	Maritime & Seafood Industry Museum, Biloxi, MS
231	LeTourneau "Mountain Mover" Scraper	1922	R.G. LeTourneau Museum, LeTourneau University, Longview, TX
232	Reuleaux Collection of Kinematic Mechanisms	1882	Sibley School of Mechanical and Aerospace Engineering, Cornell University, Ithaca, NY
233	Model T Ford	1908-1927	The Henry Ford, Dearborn, MI
234	United States Standard Screw Threads	1864	The Franklin Institute, Philadelphia, PA
235	Ottmar Mergenthaler's Square Base Linotype Machine	1890	International Printing Museum, Carson, CA
236	Birome Ballpoint Pen Collection	1938-1948	Centro Argentino de Ingenieros, Buenos Aires, Argentina
237	Eiffel Drop Test Machine & Wind Tunnel	1903, 1912	Paris, France
238	Grumman Wild-cat "Sto-wing" folding mechanism	1942	Air Zoo, Kalamazoo, MI
239	Hughes Glomar Explorer	1974	(Houston, TX) no longer exists

<b>LM no.</b>	<b>Title</b>	<b>Date</b>	<b>Location</b>
240	GMV-Cooper Bessemer Integral Angle Gas-Engine Compressor	1944	Knox County Historical Society, Mount Vernon, OH
241	Noria al-Muhammadiyya	1361	Downstream from Hama, Syria
242	Split Hopkinson Pressure Bar	1962	Southwest Research Institute., San Antonio, TX
243	Digital Micromirror Device	1996	Texas Instruments, Plano, TX
244	Johnson Controls Multi-Zone Automatic Temperature Control System	1895	Johnson Controls, Milwaukee, WI
245	John Penn & Sons Oscillating Steam Engine	1841	Aboard the paddle steamer <i>Diesbar</i> , Dresden, Germany
246	Hughes Two-Cone Drill Bit	1909	Baker Hughes / Hughes Christensen, The Woodlands, TX
247	Belle of Louisville	1914	Louisville, KY
248	Southern Railway Spencer Shops	1896	Spencer, NC
249	Sholes & Glidden 'Type Writer'	1873	Milwaukee Public Museum, Milwaukee, WI
250	Mr. Charlie Oil Rig	1953	The Rig Museum, Morgan City, LA
251	Nineteenth-Century Textile Machinery Collection	1820-1900	American Textile History Museum, Lowell, MA

# Further Reading

The following are a mix of classic early, popular, and scholarly accounts of aspects of the history of mechanical engineering. The list is not meant to be definitive; it merely provides some suggestions to those interested in pursuing the subject further.

American Society of Mechanical Engineers. *Landmarks in Mechanical Engineering*. Lafayette, IN: Purdue University Press, 1996.

Baynes, Ken and Francis Pugh. *The Art of the Engineer*. New York: Overlook Press, 1981.

Bautista, Paz E., M. Ceccarelli, Otero J. Echavarri, and Sanz Munoz. *A Brief Illustrated History of Machines And Mechanisms*. Dordrecht: Springer, Dordrecht, 2010.

Brown, John K. *The Baldwin Locomotive Works, 1831-1915: A Study in American Industrial Practice*. Baltimore, MD: Johns Hopkins University Press, 1995.

Burstall, Aubrey F. *A History of Mechanical Engineering*. London: Faber and Faber, 1963.

Calvert, Monte A. *The Mechanical Engineer in America, 1830-1910: Professional Cultures in Conflict*. Baltimore, MD: Johns Hopkins Press, 1967.

Constant, Edward W. *The Origins of the Turbojet Revolution*. Baltimore, MD: Johns Hopkins University Press, 1980.

Cooper, Gail. *Air Conditioning America: Engineers and the Controlled Environment, 1900-1960*. Baltimore, MD: Johns Hopkins University Press, 1998.

Cummins, C. L., Jr. *Internal Fire: The Internal Combustion Engine, 1673-1900*. Lake Oswego, OR: Carnot Press, 1976.

Gordon Robert B., and Patrick M. Malone. *The Texture of Industry*. New York: Oxford University Press, 1994.

Herman, Arthur. *Freedom's Forge: How American Business Produced Victory in World War II*. New York: Random House, 2012.

- Hills, Richard L. *Power from Steam: A History of the Stationary Steam Engine*. Cambridge: Cambridge University Press, 1989.
- Hounshell, David A. *From the American System to Mass Production: 1800-1932*. Baltimore, MD: Johns Hopkins University Press, 1984.
- Hartenberg, Richard S., ed. *National Historical Mechanical Engineering Landmarks*. New York: American Society of Mechanical Engineers, 1980.
- Hunter, Louis C. *A History of Industrial Power in the United States, 1780-1930*, vol. 1, *Waterpower in the Century of the Steam Engine*. Charlottesville, VA: University Press of Virginia, 1979.
- - -. *A History of Industrial Power in the United States, 1780-1930*, vol. 2, *Steam Power*. Charlottesville, VA: University Press of Virginia, 1979.
- - -. and Lynwood Bryant. *A History of Industrial Power in the United States, 1780-1930*, vol. 3, *The Transmission of Power*. Cambridge, MA: The MIT Press, 1991.
- - -. *Steamboats on the Western Rivers: An Economic and Technological History*. Cambridge, MA: Harvard University Press, 1949. Reprint edition by Dover Publications, 1993.
- Institution of Mechanical Engineers. *Engineering Heritage: Highlights from the History of Mechanical Engineering*, 2 vols. London: Heinemann on behalf of the Institution of Mechanical Engineers, 1963-1966.
- Jeremy, David J. *Transatlantic Industrial Revolution: The Diffusion of Textile Technologies between Britain and America, 1770-1830s*. Cambridge, MA: Merrimack Valley Textile Museum and MIT Press, 1981.
- Lamb, J. Parker. *Perfecting the American Steam Locomotive*. Bloomington, IN: Indiana University Press, 2003.
- Meikel, Jeffrey L. *Twentieth-Century Limited: Industrial Design in America, 1925-1939*, 2<sup>nd</sup> ed. Philadelphia, PA: Temple University Press, 2001.
- Misa, Thomas. *A Nation of Steel: The Making of Modern America, 1865-1925*. Baltimore, MD: Johns Hopkins University Press, 1995.

- Morris, Charles R. *The Dawn of Innovation: The First American Industrial Revolution*. New York: PublicAffairs, 2012.
- Reynolds, Terry S., *Stronger Than a Hundred Men: A History of the Vertical Water Wheel*. Baltimore, MD: Johns Hopkins University Press, 1983.
- Sinclair, Bruce. *A Centennial History of the American Society of Mechanical Engineers, 1880-1980*. Toronto: University of Toronto Press, 1980.
- Singer, Charles, E. J. Holmyard, A. R. Hall, and T. I. Williams, eds. *A History of Technology*, 7 vols. Oxford: Clarendon Press, 1954-1959, 1978.
- Strandh, Sigvard. *The History of the Machine*. New York: A & W Publishers, 1979.
- Thurston, Robert H. *A History of the Growth of the Steam Engine*. New York: D. Appleton & Co., 1878.
- Usher, Abbott Payson. *A History of Mechanical Inventions*. New York: McGraw-Hill 1929 (repr. Dover, 2011).
- Vincenti, Walter. *What Engineers Know and How They Know It*. Baltimore, MD: Johns Hopkins University Press, 1990.

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