



President's Message

I sincerely hope that those members who were able to visit the Saugus Iron Works with us enjoyed the experience as much as I did. Even though these iron works had ceased operations over a century before MCMA was founded, it was easy to see that those earlier generations had plenty of mechanical aptitude and ingenuity of their own. We are, by the way, always looking for interesting speakers or "side trips" to incorporate into our Quarterly meetings, so please don't hesitate to pass along to us any ideas you may have.

On another note, you may have been aware that Member Dick O'Meara, who passed away earlier this year, had for quite some time handled the printing of our Annual Report. We asked Member Russ Johnson to produce this year's report, and copies were distributed at our July Meeting. Russ and his son Ken (also a Member) did an excellent job on the report, and we thank them for their efforts.

Recent Happenings

Our July Quarterly Meeting was held at the Continental Restaurant in Saugus, where we enjoyed an excellent buffet lunch followed by an abbreviated business meeting. We then travelled the short distance to the Saugus Iron Works, a National Historic Site maintained by the National Parks Service, where we were treated to a detailed tour of the facility. These Iron Works date to the mid-1600s, and were the first integrated iron works in the Colonies, though a smaller facility for smelting iron (in what is now Quincy) actually pre-dated the Saugus site. The site was "re-discovered" in the mid-1900s, and detailed replicas of the blast furnace, forge, and rolling and slitting mills were constructed on the original foundations. We were actually able to witness demonstrations of some of these water-wheel-powered operations. The tour was interesting and informative, and was thoroughly appreciated by our members.



Helping Others

Our largest grant of 2010, some \$15,000.00, was a little unusual in that it was used for the purchase of materials rather than equipment. Specifically, we were asked by **Old Sturbridge Village** (OSV) to help them repair a circa 1870 covered bridge that occupies a key location within their 371-acre "museum campus". [We learned later that the bridge uses an *Ithiel Town* truss design. Town, you may recall, was a member of MCMA.] OSV maintains over 125

structures, many of them with historical significance, and they are constantly adjusting their priorities to make best use of their limited resources to meet these maintenance demands. Early last year their Vermont Covered Bridge *[it had originally been located in Drummerston, VT]* moved to the top of the priority list. In investigating a pronounced "lean", severe deterioration of the substructure was found at both abutments, and OSV was forced to close the bridge for safety reasons. *[Ironically, the problem was partially self-inflicted after the bridge had actually floated off its abutments during a 1957 flood of the Quinebaug River that it spans. Though it was "recaptured" and towed back into place, the bridge was subsequently secured more substantially onto its abutments and into its embankments. While that solved the floatation problem, it introduced a soil-contact issue that contributed to the decay.]*



OSV had previously obtained a commitment for "matching funds" from another entity, and upon receipt of MCMA's grant they were able to exercise that commitment to partially offset labor costs, and drew upon their own budget for the remainder. (Total cost was approximately \$50,000.00.) Most of the work, mainly the substructure repairs and replacement of the deck planking, was completed by OSV's in-house carpenters, and some of that needed to be done while lying prone beneath the structure due to the limited clearance from the water. Replacement of

the cedar-shingle roof was also undertaken, though that work was outsourced to an experienced contractor. OSV took the opportunity to use the project as a teaching tool, inviting carpentry students from the local Tantasqua Regional High School to closely observe the work. *[This class, putting to use what they had learned, returned later in the year to replace the cedar-shingle roof on another of OSV's structures.]* The project was a complete success, and the bridge was back in service in June for the pedestrians who use it constantly and the horse-drawn wagon that crosses it numerous times each day.

Old Sturbridge Village, the largest outdoor museum in the Northeast, depicts life in a rural New England town of the early 1800's, with more than 40 original buildings restored and brought to the museum from all over New England. It maintains a commitment to develop and offer programs for schoolchildren, partners with schools throughout New England, and works with them to provide intelligent, age-appropriate learning experiences so students can explore and experience early American life. It's not "just for kids" of course, as the museum is of interest to all ages, and OSV offers adult workshops for many of the crafts that are on display (such as blacksmithing, pottery, textiles, woodworking, etc.) If you have never been to Old Sturbridge Village, you really should look into it.



MCMA Present...



In this issue we are focused on our current Vice President Mr. **Richard B. Adams**, who joined MCMA in 1993 and has given generously of his time from the start. Prior to his current position, Rich served on our Bicentennial Committee, helped with the major re-write of our By-Laws in 1998, served on (and for a time, chaired) our Membership Committee, and served three terms on our Board of Government.

Born in Salem and raised in Saugus, Rich graduated from Saugus High School, then supplemented his education with Programming and Computerized Numerical Control courses at Northeastern University, and a variety of technical courses (spread over six years) at Wentworth Institute. He also completed a 5-year apprenticeship to become a Massachusetts State-certified Patternmaker. Throughout the period of his education and training, Rich worked at United Industries, Inc., the business founded by his father **Robert H. Adams** (also a member of MCMA), with whom Rich had a close working and personal relationship. Rich went on to gain extensive, hands-on experience with every piece of machinery at the company prior to eventually assuming control from his father in the late-1980s.



United Industries, located in Everett, is a manufacturer of models, patterns, prototypes and development tooling. It works with product development teams at major New England companies to provide engineering test models, patterns for investment castings, molds for plastics production, and even cutaway models for



demonstrations. It also works with a daunting variety of materials that range from wood, plastics and fiberglass to space age metals. To support and enable these wide-ranging capabilities, Rich's shop is necessarily packed with specialized equipment, only a fraction of which might be engaged in the projects of the moment. *[One example is Laminated Object Manufacturing, in which one thickness of adhesive-coated paper or plastic is laid down, then cut away where needed by computer-guided laser, followed by successive layers and cuttings until the three-dimensional object is completed. Another is Electrical Discharge Machining, which "cuts" even ultra-hard metals to an extremely high degree of accuracy without ever actually touching the metal.]* This is a successful company and an extremely interesting one. It is also an operation that demands highly qualified and multi-skilled personnel *and* management.



Rich and his wife Paula have two children (Heather and Christopher) and six grandchildren, and they now live in Gilmanston NH. They enjoy motorcycling, snowmobiling, shooting and traveling, while Rich is an avid model maker, and for a time was a keen builder of boats, especially sailboats. In addition to his MCMA activities, Rich is active in Rotary International, the American Motorcycle Association and the Association of Professional Model Makers. As accomplished an individual as he may be, however, Rich's standing in this organization has more to do with his outgoing personality, his enthusiasm for MCMA, and an upbeat, positive attitude that never wavers.

... and MCMA Past



We like, when we can, to show some connection between the subjects of the past and present members we feature in these newsletters. Connecting Rich Adams the *patternmaker* with **Arioeh Wentworth** the *soapstone worker* (the occupation each listed in our signature book) may be a reach, but here it is:

Arioeh Wentworth was born in 1813 in Rollinsford NH, and was educated in the district school and at Franklin Academy in Dover, while working summers on his father's farm. He came from a well-known family (three generations of uncles had served as royal governors of NH), and his father had ambitions for him to attend Dartmouth College and study law. At age 20 however, Arioeh moved to Boston to seek employment, initially in a granite yard where he hoped to learn the "granite business", and later in a soapstone shop, which at the time was a somewhat undeveloped industry. His employer's business failed the following year, but Arioeh was able to lease the property, and he worked energetically to make the business a success. He was helped by a quick and clear insight into machinery, and was able to invent or improve many of the machines, tools and processes necessary to his business. It did become a success, and Arioeh ran it until 1850 when, with an eye on the materials demanded for upscale homes and buildings in Boston, he switched his focus to marble. Here again, he was able to build a successful enterprise, helped in part by his mechanical ingenuity as he built machinery to cut and fashion ornate moldings. His business, employing over 300 workers, became the largest and most important in its line in Boston.

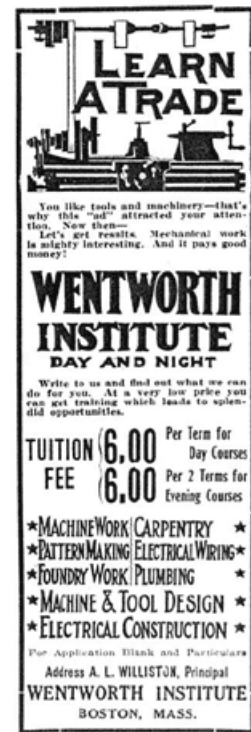


Wentworth retired in 1886, and in addition to travelling widely [*while in his 80s he travelled to, among other places, San Francisco, Japan, China, Egypt and Europe*], he proceeded to multiply his already considerable fortune with savvy investments in Boston real estate. At his death in

1903 he owned more than 50 commercial properties, and was said to be the top taxpayer in Boston among those who had actually earned their money. He left a \$7 million estate, and directed in his will that the bulk of it be used to "found a school to furnish education in the mechanical arts", naming seven directors to oversee his request. His daughter contested the will, and eventually she and the directors agreed to split the estate equally.



Wentworth Institute was incorporated in 1904, and in 1911 opened its doors to 242 students. The advertisement pictured to the right shows the courses offered, at \$6 per term, and you will of course note that *Patternmaking* is among them. [*The directors had considered making the school tuition-free, but decided to charge just enough to discourage unmotivated students from applying.*] Despite his success, Arioeh Wentworth, who joined MCMA in 1847, felt he had often struggled in his career due to lack of technical training. The school he founded (now the fully-accredited Wentworth Institute of Technology) has been able, over the past 100 years, to provide that technical training and education for many thousands of young men and women... Rich Adams among them.



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