Mountmaking as Preventative Conservation

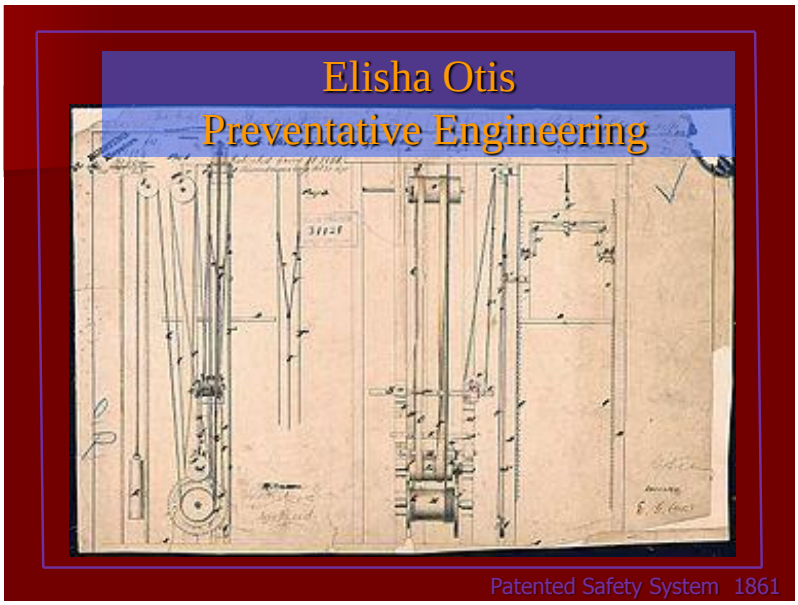
Preventative Conservation encompasses a wide array of specialties, from environmental maintenance to emergency planning. Worldwide organizations promote and hold conferences on the subject, however mountmaking is rarely included. Be that as it may, what makes it attractive as a topic today, is the premise that it's possible to get out on the frontlines of preventative conservation and create systems that can take a hit for the safety and preservation of cultural heritage.

Surely it's self evident that there are few better opportunities to provide for the safety of objects than well designed mount systems that reflect today's standards.

What is less evident are the nature of those standards and how they're defined.

The most common definition of Conservation is: Prevention of loss, damage or neglect.

It's hard to imagine any mountmaker that I've ever met not embracing this criteria in their work. Today's collection care guidelines prioritize these core values in most if not all of what we do. This leads me to the question, "When is mountmaking not Preventative Conservation?" I would say, only when we neglect to try and do better to prevent loss or damage.



There's an intriguing historical footnote tacked onto the success of the Otis elevator company, who remain the largest international manufacturer of lifts. Their business was anchored in the development of the best failsafe breaking system in the world, which they patented in 1861.

It employed a mechanism to lock the elevator in place in case the hoisting ropes failed. And even though that mechanism was rarely needed, having it there in a time of duress was universally acknowledged as being essential.

In the same spirit, the field of mountmaking has the potential to get out on the frontlines of prevention by providing these types of back-up systems in our work. We certainly hope they'll never be needed, but in times of duress, what looked redundant yesterday can look absolutely essential today.

Unfortunately, times of duress do come around every so often, and if we haven't built in backup systems we're liable to get a rude awakening such as this. The 1994 Northridge earthquake in Los Angeles county made this apparent to anyone in the vicinity.

Unfortunately, this Cambodian statue of the God Vishnu didn't have such a system and suffered the consequences seen here.

Appropriately enough, considering that he's the Hindu god of preservation, this wonderful statue has been completely restored and is back on view, firmly attached to its furniture and backed up with a base isolation system underneath it.

Damage to precious objects is not an easy thing to look at, and a most unfortunate way to have to learn what not to do. Sharing this evidence with the public can be a dangerous enterprise, creating the potential to have it get taken out of context and distorted for questionable purposes. But, by not sharing these disasters, we go on about our business less informed and less prepared for what might lie ahead.

In case any of you are thinking, "well that's fine for you, you live in an active seismic zone", I'd ask you to reconsider, as earthquakes aren't limited to the major seismic regions of the world.

Washington DC is only now recovering from the Mineral,Virginia quake in 2011, with the Washington Monument reopening this week after almost three years of structural repairs.

Last week the USGS announced that fracking (coming soon to a community near you) now renders Oklahoma ripe for a 5 point or greater Richter scale earthquake.

Anyone responsible for putting objects on display should keep in mind – Mother Earth is an unpredictable and dynamic host. At some point, whether at home or with objects on loan, our work is likely to be put to the test.

If your still not convinced, consider the two examples shown here.

On the left, this the 15th century statue of Adam in New York City fell over in 2002 when a 4" base underneath its pedestal gave way, resulting in the damage illustrated below.

On the right, in London, 2005, these three vases were knocked over and smashed to bits by a visitor that stumbled coming down the steps.

Certainly, the institutions that own these objects couldn't have predicted these events, but if we can learn anything from hindsight, it's to think like Elisha Otis –

Prepare for what you can't control, using all means available.

On a positive note, after our meeting at the Smithsonian Museums in 2010, Suzanne Genzike and Shelly Uhlir spearheaded the effort to have the papers presented there published in the AIC journal, which came to fruition in 2012 with this publication.

Many thanks for their efforts and to the American Institute for Conservation for recognizing the relevance of this work and publishing it for the broader community.

If you don't have a copy, I strongly encourage you to write to the AIC and request one.

The articles are well done, illuminate a number of wonderful mount systems, and address some of the same issues that I'm talking of here.

So, in the spirit of prevention, and perhaps a little help from Vishnu, I'd like to propose that we take a step towards investigating standards befitting the irreplaceable objects in our care.

Fortunately, the existing standards of structural engineering and conservation are readily accessible, time tested and directly relate to most of what we do.

Cross referencing between the standards of those fields, the most striking deviation that I see too often in our work is such a common practice, and time honored tradition that it consistently flies under the radar – Friction fit mounts.

So, If I could choose a place to start, I'd say let's put an end to friction fit. If we're going to set any standards, rationalizing our methods for the sake of convenience has got to be a thing of the past.

Why not provide the same level of attention to how the mounts are secured, as to what they hold secure?

Threaded anchors really are a simple solution for most circumstances where friction fit is still used – Post Mounts. Most of which typically get jammed into a friction fit hole in a back panel, deck or a build-up.

The beauty of this anchor is that it's an easy surface mount – drill and tap a hole in any of these surfaces, thread this in and with the help of the set screw on the collar you now have a positive lock on the mount.

Providing a continuous connection between mount and furniture ensures a backup system for times of duress, whatever the cause may be. And if they're made with some care, their visual presence can actually ease the transition between the mount and display surface.

Lately, we've begun to more or less mass produce them in regular sizes, creating an inventory that continues to grow, as they can be used and reused multiple times with different mounts.

OK, these anchors are nice, but they bring up a valid point: They're not available off the shelf and they're made on an engine lathe, which most folks don't have access to, potentially putting these out of reach.

A few months ago, we loaned numerous objects to a traveling exhibition and some of the mounts we sent included this anchor system. We sent detailed mount instructions ahead of time to all the host venues, and Bob Hellier, the head of preparations at the Tampa Museum, wrote back to ask where he could get these for his own collection.

After mentioning to him that we machined them on our lathe, it occurred to me that for those who didn't have access to a lathe, or the budget to contract them out, that there might be a way to do this with off the shelf parts.

Using steel parts to maximize strength, I started with a ¼ - 28 set screw an inch long and a 3/16" I.D. locking collar, drilled out to a ¼" I.D. to keep the collar from getting disproportionately large.

After drilling an 1/8" hole thru the ¼" set screw and fitting the two parts together, I plugged the collar's set screw with modeling clay and brazed them into one.

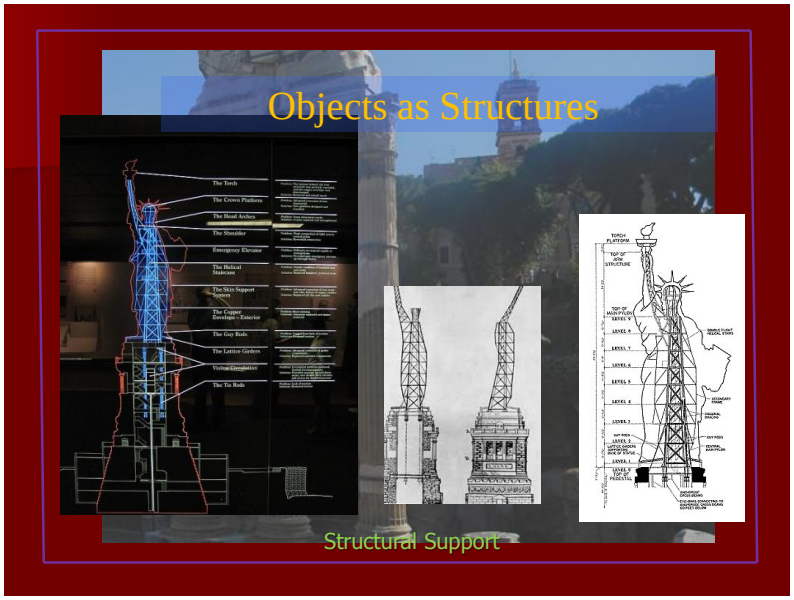
Once they were joined, I extended the set screw in the collar all the way thru the 1/4 – 28 threaded shaft and re-tapped it.

After cleaning it up and beveling the exterior edge, its features and proportions were reasonably close to what we typically machine on the Lathe.

Eventually, I tried this with 3/8 and ½ shafts and was able to keep the proportions in scale without sacrificing strength. I should mention that the only tools used were a drill press, an Oxy Acetyline brazing set up and hand taps – all fairly common items in a mount shop.

Well, we do have a wonderful history of displaying art to draw upon for our own needs, and therein some truly inspiring examples of the standards that I would hope mountmaking might aspire to.

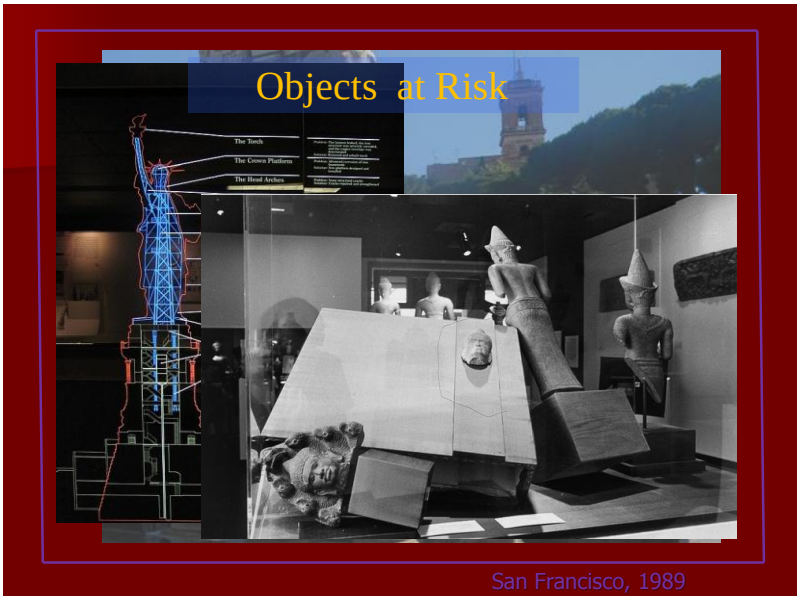
Flaminio Bertholdi's statue of liberty enlightening the world stands as a excellent example. Conservation treatments of the monument have been extensive over the years and kept her in marvelous shape, but her structure itself is a marvel of ingenuity and preparedness that addresses the same issues that we face.



The statue's internal framework is anchored by tie rods into its base, which in turn is physically keyed into the historic battlements of the island.

The veneer is a stretched skin design, now commonly used for aircraft, but novel at its time. It's pinned to a skeletal frame designed by Gustave Eiffel, who happened to factor in an isolation effect for the arm, which I read has a potential displacement of up to five inches to relieve stress at its join, giving it a backup system to deal with winds in the harbor that can occasionally reach up to 100 mph.

The same standards that we're only now trying to establish for collections were in place well over a hundred years ago for this masterpiece.



Today we can ask the question, “What’s the point of anchoring an object to a base that’s not anchored itself?” But this installation method is still common practice throughout the world, and rarely questioned until after damage has occurred.

If the standards of structures visible in the work of Eiffel had been applied here, this would never have happened.

It seems to me that adopting the principles Preventative Conservation for Mountmaking is a process that‘s already begun, and this Forum is a testament to that fact.

And although one could argue both sides of whether mountmaking has a part time or full time relationship with Preventative Conservation, I would say that the former is more a thing of the past, the latter our road to the future.

I hope you’ll agree that with this approach, we can continue to add to each other’s better understanding of what we do, in ways that are innovative, imaginative and most of all well informed.