

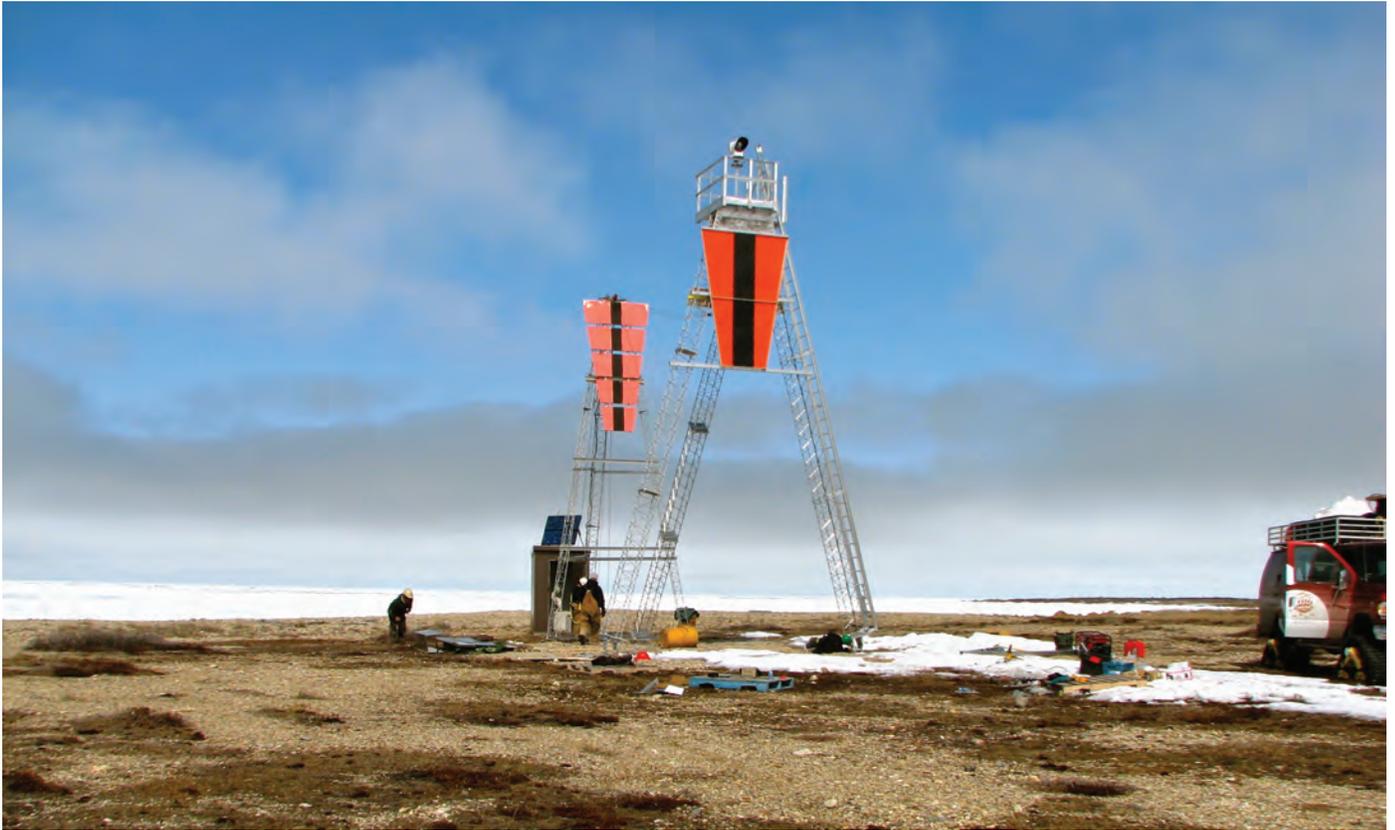


INTRODUCTION & HISTORY

In 1951, Millard Towers was established to provide Canadian government agencies and airports with custom designed elevated structures. Masts were required to withstand the diverse environmental conditions of Canada from coast to coast to coast, and everywhere in between. More than 60 years later, Millard Towers provides engineered tower solutions to clients around the world, while still maintaining the quality standard it has become renowned for.

Towers are engineered in-house and are favoured for their lightweight, durable construction providing easy installation and reliable performance. Probably no mast can be erected more economically than Millard Aluminum Alloy masts. The reason why? The success and longevity of every installation is guaranteed by competent engineering, quality materials, and exhaustive factory and field tests - not a single detail is overlooked.





MODULAR

Sections come in 3 meter lengths and in a variety of sizes to provide support for antennas, day marks, beacons, lamps, reflectors, fog horns, wind sensors, and other communication, navigation and meteorological equipment.

Millard masts are modular to facilitate delivery to remote sites and are light enough to be carried by hand. The prefabricated sections make installation quick and simple, particularly in environments and locations where extra hardware and helpful friends are hard to come by.

When required, the modular design also facilitates the replacement of sections. In the instance where sections become damaged, single sections may be replaced with ease, 3 meters at a time – no need to replace the entire mast. As the design is universal and timeless, replacement sections can be deployed rapidly with limited lead time. This greatly reduces equipment downtime, and material and labour costs.





Lightweight never goes out of style!

ABOVE LEFT: A 30 meter mast begins its 500km journey to site on top of a family sedan.

ABOVE RIGHT: A worker handles a pair of Millard's largest sections with ease. Millard 3 meter sections weigh a meager 7kg to 25kg. A welcome relief for even the most hardened workers!

LIGHTWEIGHT

Because of the extreme lightness of Millard masts, they can be handled and installed by far fewer men and are easy to transport even in the most difficult of circumstances. Where masts must be transported to remote sites by helicopter, ship, or even by hand, no other mast is more economical. Masts can even be assembled in the shop and air lifted in their entirety to site.

The personal safety factor in erection operations is immeasurably increased over steel, welded and riveted designs. Where installers were once faced with the handling of bulky, sharp-cornered and otherwise unwieldy mast sections, they now have light, virtually hazardless sections to work with.

And the best part? Millard masts' buoyant lightweight nature is achieved without compromising strength or durability.



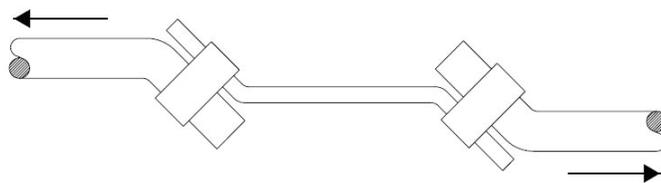


STRENGTH

Granting that a chain is only as strong as its weakest link, it follows that a mast is only as strong as its weakest point - the device used to join vertical and lattice members, at which point masts commonly fail. Typically, masts are secured at these points using welds, bolts, or rivets. So what's the problem? Said joints have their strength greatly reduced by punching or boring holes, or by extreme heating to accommodate welds. Fatigue occurs at a far higher rate, particularly in areas subject to high winds and temperature fluctuations.

So what makes Millard different? Millard uses a structural joint, created through compression. In this way, the mast is 'externally riveted', thus permitting the assembly to retain its full structural properties without prejudice of its connections. Lattice members are able to achieve complete fixity - the sections function as if they were manufactured from one piece of metal rather than many.

The engineering and fabrication methods employed by Millard make its masts well-suited to withstand the harshest wind and ice conditions, while still providing the required support for mounted equipment.



THE ACID TEST – Probably the most conclusive proof of the Millard's structural joint's rigidity is the Acid Test (depicted left). In the test, several joints are linked in series by rods bent to conform to their relationship in the actual mast assembly, then subjected to axial stresses up to 50,000 pounds per square inch. Without exception, joints tested in this way have developed a strength 20 percent greater than the guaranteed yield strength of the rods which they connect. In other words, the joint is the strongest point on the mast.





CORROSION FREE

Millard sections and plates are made from 6061 Aluminum Alloy – a marine grade material that becomes stronger over time through the process of oxidation. Masts retain their structural integrity even after decades of high UV and saltwater exposure.

Coatings used for obstruction banding are non-chrome conversion powder coating which exceed the requirements of AAMA 2603. Typical powder coating lifespan is 30+ years and requires no maintenance. In addition, the environmentally friendly process is ideal for decommissioning. Millard's powder coating process adds longevity to an already robust design.

So pick your site – hot, cold, humid, dry, wind-swept, or coastal – and rest assured knowing Millard masts are maintenance free and will be safe to climb for decades to come.





PHOTOS: Various hinged designs make installation and servicing quick and simple - often requiring just a single technician and basic hand tools.

ENGINEERING

In addition to our standard line of masts, Millard also provides custom engineering services. As an engineering consulting firm, Millard utilizes state-of-the-art technology to design, analyze and fabricate masts, accessories, and foundations to meet unique site and application requirements. Because of these capabilities, Millard is highly sought after by military and governmental agencies around the world to provide one-of-a-kind tower solutions for the most demanding applications.

It's just one of the ways Millard is *TAKING ENGINEERING TO NEW HEIGHTS!*

CSA S37-01 STANDARD:

Would you expect your summer jacket to keep you warm in the winter? Then why expect similar from your masts? Millard builds their masts to CSA S37-01 taking into account site specific environmental conditions, particularly wind and ice loads, thus ensuring masts are reliable and safe for decades to come.

