



### Featured Company: Western Steel & Metals, Inc.

#### Boom or Bust

**Western Steel & Metals Inc.**, in San Diego, CA, is one company that has an indirect impact on the lives of millions of people.

Western Steel specializes in structural steel fabrications. However, they are called upon to solve problems in very diverse industrial markets, from repairing ships for the U.S. Navy to reconstructing bridges in southern California to prevent catastrophic failures due to earthquakes.

With the types of jobs Western Steel tackles, they need to make sure their quality of workmanship meets the highest standards possible.

Keeping this in mind, Hugh Winthrop, Production Manager, enlisted the Meta-Lax Stress Relief and Weld Conditioning process

in 1988, to add another element of high quality to the company standards.



**Expected weld distortion never occurred thanks to Meta-Lax weld conditioning. Navy inspectors were amazed at the quality and straightness.**

On example of this high quality work occurred after the U.S.S. St. Louis, a Navy personnel carrier, was loading its cargo before heading out to sea. During operation the 70 ton capacity crane, which has a 65-ft. long cargo boom, was overloaded and bent in half. The boom needed to be repaired before the ship could set out. Major problem!

The main purpose of the boom is to unload LCM8 boats into the sea, enabling the transportation of troops to shore.

Western Steel was then drafted by the Navy for the emergency repair. The boom was taken off the ship and transported to Western Steel to begin the urgent

---

Article was *Customer Approved* Prior to Initial Publication.  
Published Article Appeared in: Meta-Lax Facts Volume 3, No. 3

## Boom or Bust

---

repair. The job at hand was to cut out the bent section of the boom and replace it. What made the entire project a major challenge was that they needed to maintain straightness over the entire length and have the ship ready to sail within two days. Not an easy task.

With the boom being 65-ft. long 30-in. diameter and ½-in. thick, weld distortion was sure to be a problem. Western Steel was up to the test!

Phase one was to take two “C” sections and weld them down the middle to create the new full round 15-ft. boom. Hugh elaborated, “With the help of the Meta-Lax equipment, we were able to vibrate the boom during welding. **We sustained absolutely no distortion.**”

Phase two was to reattach the new section of the boom to the two remaining segments.

Western Steel welded on the boom for two straight days to finish the repairs.

**“We were able to increase our weld speed by 25% and maintain the straightness because of the Meta-Lax treatment,” said Hugh. “The Navy inspectors came out to look at it and were amazed.”**

Western Steel has also taken on very important projects of retrofitting bridges in California with additional supports, to insure they will not crumble during earthquakes. Talk about something that affects millions of people!

One bridge that needed repair recently was the San Diego River Bridge on the Old Pacific Highway. The bridge was first built

in 1933. At that time there was not much attention paid to the possibility of damage due to earthquakes. Since then technology has advanced and ways have been found to enhance the existing structures of bridges to make them safer.

Enter, Western Steel! Structures called snubbers needed to be constructed, then bolted on to the existing bridge beams. The purpose of the snubbers are to assure that the bridge’s steel girders do not fall off the pilings and crumble to the ground.

Eight snubbers in all are required, four for each end of the bridge. Each snubber consisted of a ¾-in. plate, 8-ft. in length, and 18-inches wide. Welded perpendicular to the plate were 18-in. long by 1-in. thick gussets.

Hugh knew that **without using Meta-Lax during the welding process the structure would distort something awful.** “There was not any consideration of even attempting to do the job without using Meta-Lax weld conditioning,” Hugh said.

“The snubbers had to be flat, because they were being bolted to the existing beams. If they were warped, we would have changed the shape of the bridge beam. **We utilized the Meta-Lax vibration during welding and we had no problems at all,**” indicated Hugh. The job was completed in successful fashion.

As you can tell Western Steel relies on its Meta-Lax system to help them in jobs relating to national defense and the lives of millions of citizens.

(page 2 of 2)

---

**Article was Customer Approved Prior to Initial Publication.**

Published Article Appeared in: Meta-Lax Facts Volume 3, No. 3