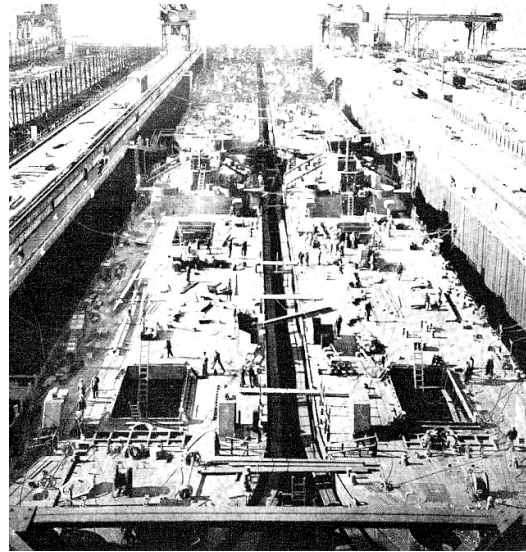


NNS' MOST IMPROBABLE AIRCRAFT CARRIERS

Rube Goldberg Would Have Been Proud...

Newport News Shipbuilding mass-produced eighteen LST's (Landing Ship, Tank) during World War II. The first six NNS-built LST's were constructed simultaneously in the yard's submerged Shipway #11. All were christened on the same day by daughters of shipyard officials. These vessels were given such high priority by the Navy that construction of an ESSEX-Class aircraft carrier was interrupted to make room for them in that shipway.

Little did anyone know that two of these 'no-name' vessels would later be part of a series of experiments that resulted in them briefly becoming makeshift aircraft carriers!



Numerous photographs of these large amphibious landing craft include images of them being driven right up on open beaches to discharge vehicles, cargo and troops. But LST's proved to be very versatile, and served in a wide variety of ways never envisioned by their designers. LST-386 (NNS Hull #416) and LST-393 (NNS Hull #423) were subjected to some very unusual adaptations.

In 1942 and 1943, LST-386 took part in a series of amphibious landings in North Africa, Sicily and Italy. During the initial stages of the Sicily campaign, there was a desperate need for airborne reconnaissance and artillery spotting capabilities. The Army had L-4 Observation airplanes that were particularly suited for this purpose.



These aircraft were military versions of the famous Piper Cub, nick-named "Grasshoppers" because of their ability to hop from place to place while taking off and landing from small unimproved air fields...and even farm land. Nevertheless, the fighting was so close to the beaches that the Grasshoppers could not be based ashore. The few allied aircraft carriers in the Mediterranean were dedicated to providing air cover for the invasion.

Necessity is so often the mother of invention, and this was certainly the case during the invasion of Sicily. LST-386 was quickly put to novel and highly successful use as a mini-carrier.

LST-386 was fitted with a makeshift flight deck, made possible because her superstructure was located well aft. At flank speed on her twin diesels, she could make, at most, 10-1/2 knots. Fortunately, Grasshoppers only required 200-300 feet of runway to become airborne and the 200 foot-long flight deck on LST-386 was more than sufficient to safely launch observation aircraft when the landing craft was headed into the wind.



However, this miniature aircraft carrier could not recover her assigned aircraft. Once her allotment of six L-4 aircraft were launched, she had to depend on a floating crane to bring her birds back home to roost. That's assuming, of course, they could land on the beach or in a small field and be safely recovered.

A total of six LST's operating in the Mediterranean were configured in this manner. Some of them carried as many as ten of the Army's Grasshoppers.

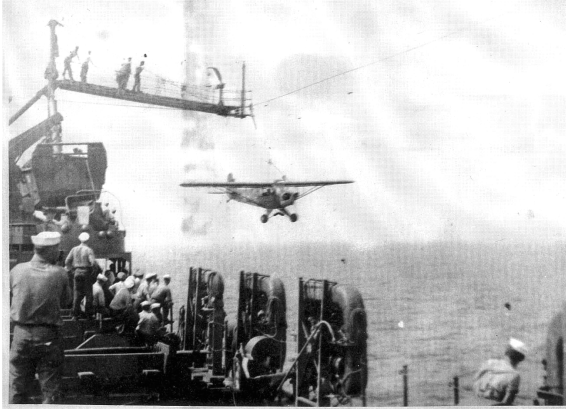
Improbable as the story about LST-386 might seem, another one, involving NNS-built LST-393 is even stranger. She was one of several LST's serving in the Pacific Theatre of

operations that were fitted with one of the most outlandish sea-going rigs of all time. Called the Brodie System, it consisted of an elaborate combination of huge masts and booms, multiple cables, and quick release and retrieval contraptions that would have done Rube Goldberg proud.



The Brodie System, named after its inventor, Army Captain James H. Brodie, was used in combat during the early stages of the Iwo Jima, Saipan and Okinawa invasions. Eight LST's were fitted with the Brodie System before the end of the war, including LST-393.

How the system worked was remarkably simple. It consisted of two 65-foot tall tubular steel masts, each with a fifty foot-long boom protruding horizontally from and extending far out over a LST's port side. Stretched between the booms was a trolley cable that supported the aircraft from a hook mounted above its wing. The forward boom was higher than the aft one, to provide additional lift during takeoffs.



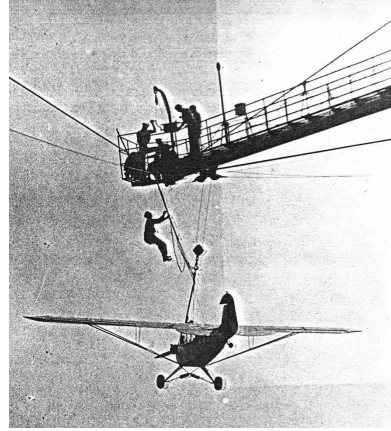
Starting the launch at the aft arm, an L-4 would rev its engine up to full speed while restrained in place by a friction brake. When the "launch" order was given, the plane would be released, speed down almost the full length of the cable and the pilot would then yank a lanyard to disengage from the trolley and fly free. Obviously, timing that release was the difference between success and failure!

Landing was far trickier. Shackled to the trolley was a landing sling consisting of three loops of nylon rope forming a rectangle three feet wide by four feet in depth. The pilot had to engage one of the loops with the hook affixed to the top of his aircraft's wing, just above his head in order to be neatly plucked out of mid-air. Sounds easy, but in practice it was pretty difficult. In addition, the pilot had to know just when to cut his engine, to keep from tearing away the rigging and crashing. If he missed the loops he had to try again.



When the Brodie System was under development, volunteer pilots lined up to participate, sight unseen. But after one look at the awkward rig, most of the candidates politely backed out. Once, when a brave pilot flew off the hook on an underway LST, circled the ship and then re-attached, his actions were observed by the crew of a real carrier just off their port beam. From the carrier came a message: *"We see it, but we don't believe it."*

At sea, there was an additional complication. When a plane approached to be recovered, the LST would turn into the wind to run at flank speed. LST's, being flat-bottomed, would invariably roll...often not gently. Those heavy, 50-foot booms accentuated the roll of the LST as they cut huge arcs in the air. So a pilot had to approach in sort of a porpoise fashion. It was necessary for the pilot to get in sync with the rhythm of the ship as he made his approach, so that when he hooked—or God forbid, missed—the loops, the forward boom would not come crashing down on him.



Even after making a successful snare on what was dubbed as a 'runway on a rope', the pilot's deplaning was somewhat of an adventure, as well! A few years later, the advent of helicopters made such complicated maneuvers obsolete.

Shortly after the end of World War II, many of the 1,052 LST's built were scrapped, including LST-386. A number were transferred to the navies of foreign countries; others were sold for use in various commercial enterprises. One of the latter was LST-393. For a number of years, she served as an automobile ferry, going back and forth between Muskegon, Michigan and Milwaukee, Wisconsin. She was renamed *M/V Highway 16* because she provided a connection for that highway on both sides of Lake Michigan.

After being idle for a number of years in Muskegon, she was purchased by the **USS LST 393 Preservation Association** and faithfully restored to her wartime configuration. Today, this NNS-built vessel is one of only two remaining tangible reminders of the amphibious vessels nick-named "Large Slow Targets" that had significant and often unusual roles in winning World War II.



A number of exterior and interior photographs illustrating the results of her extensive restoration effort can be found on the following web page:

<http://news.webshots.com/album/438723457NoyBwh?start=0>

The following model depicts how LST-386 and LST-393 looked, when completed by the craftsmen of Newport News. LST's mass-produced in the 1940s were 327 feet long, had beams of 50 feet and displaced 3,776 tons. Their twin diesels generated 1,800 horsepower and their nominal crew size was 115-120. Their initial cost was in the \$1.4-1.6 million dollar (1940 dollars) range. LST's built at NNS averaged just 4-1/2 months from keel to delivery.



The next image shows how LST-386 likely appeared during her brief period of service as a mini aircraft carrier. The unarmed, single-seater aircraft she carried were 22 feet long and had a wingspan of 35 feet. Aircraft weight was 1,100 pounds at full load (takeoff) and their maximum speed was 85 MPH. Each L-4 Observation aircraft cost the taxpayers about \$2,300 in the 1940s.



Bill Lee
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