

# The BULLETIN

## CARTELA RESTORATION PROJECT

www.steamshipcartela.com.au

### UPDATE #7

Friday, January 03, 2014

**OVERVIEW** One hundred and one years ago yesterday, a brand new River Steamer completed her maiden voyage with passengers to the Tasman Peninsular. Though launched in September, four months previously, she had been awaiting the installation of her engine and machinery, while the carpenters had been constructing the coach-house.

It's now nearly one year since Cartela last carried passengers as she sits patiently in Brooke Street pier waiting to hear if the plan to use her restoration as the catalysis for a new tourism development and employment opportunity in Franklin will come to fruition.

I ask that all who read this newsletter use the opportunity to discuss this plan widely with their friends. Create a topic of conversation around Cartela and the restoration project. The more widely she is discussed the more likely we are of achieving the target of re-creating a wooden boat building and heritage vessel culture of international renown in Tasmania.

**RIVER STEAMERS** Wind gusts over 60 kilometers an hour at street level tore a one meter by one meter acrylic fuel discount sign from its elevated perch. It spun like a kids toy before its edge struck an elderly lady on the forehead as she exited from her car in front of me. Its early summer and Tasmania's weather is doing what it does best.

Being totally unpredictable.

Why mention this in a newsletter about a boat? Well the reason the River Steamers such as Cartela as a class were recognizable from other vessels was in their design. These vessels of which there were up to 80 over the years had to account for the environment in which they worked. Seems a rather obvious observation, but bear with me.

The "Sheltered Waters" of the Derwent could and do provide some challenging conditions. Although most of the waterways in which they operated were surrounded by land, this could be a blessing, or a curse. Tall hills and deep gully's could funnel and accelerate the wind into gusts from unexpected directions. In most cases the width of the waterways prevented a large "fetch" denying the waves the opportunity to organise into regular crests and troughs. So a confused sea state was the norm for most of the operating area. Apart, that is for the infamous and appropriately named "Storm Bay". This patch of water was open to the south with no intervening land between it and Antarctica, two week's sailing away.

Designing a vessel with the essential ability to be seaworthy in such a variety of difficult conditions while still having the maneuverability to access the numerous jetties of variable qualities encountered around the Peninsular Channel Derwent and Tamar was essential. With access to some rivers and jetty's requiring shallow draft as well. An easy example to illustrate this is the frequent need to reverse off an exposed jetty into any swell, generally ruled out a large, flat transom

stern. Cartela's unusual canoe stern is a perfect example of a design 'fit for purpose'.



Paying their way by carrying an ever larger bulky cargo such as apples, a heavy one such as limestone or that most difficult cargo of all, people. The design of the River Steamers was one of evolution, with occasional bursts of revolution. As a class they faithfully served Tasmania as both truck and bus, until a

serviceable road network was developed in the 1940's.

Cartela remains as the last reminder of that largely under-appreciated group that contributed enormously to building Tasmania.

**ENGINE REFURBISHMENT.** Disassembly and assessment of the Plenty engine is complete at Saunders and Ward engineering in Kingston. While we were pleasantly surprised by the internal condition of the engine on the whole I will outline some of the hurdles we face on this part of the project.

The cylinder head is a collection of three separate castings, each with a working cylinder and valve chest. The



three castings are each very intricately cast and bolted securely together. At present we see no need to separate these casting into individual parts, though now the major task is to make cover plates and individual rubber gaskets to seal every single opening in the castings. This is a huge job. Once the sealed cover plates are in place the cylinder block will be pressure tested. This will involve raising the internal pressure of sections to around 150 psi (10 atmospheres) to ensure that there are no hidden flaws.

The crankshaft of the engine was originally made from a number of component parts with extremely close tolerances. Each journal (the



cylindrical section that connects via a bearing to either the main bearing caps or a con-rod or valve 'big-end') and the webs (the

rectangular sections between the journals) relies on a 'shrink fit'. That is one part was heated the other part cooled until the metal could be forced together then rely on the metal expansion and contraction to maintain the joint. 'Scotch keys', pins intersect the joint have been inserted over the years to reinforce failing shrink fit joints. Most of the journals are deeply worn and show signs of substantial reworking as would be expected over its 50 years of work. There is also an amount of 'run-out' in the crankshaft. Basically it is slightly

bent. All of this means that a new crankshaft will need to be made. Tony Reeve at Saunders and Ward suggests



re-using the webs and recreating the journals from new stock. This will maintain originality and allow use of the normal bearing methods as just milling a new surface on the existing journals and straightening will result in a weaker structure, and possible trouble in years ahead. We are aiming for an engine that in all respects is like a new one with no reason to expect less than another 50 years of service.

The rest of the engine parts will require polishing and painting, but overall the engine sub project is moving forward.

*Ross James*

(Project Manager)

