

# Baker & Provan Engineering News

Heavy Engineering & Reclamation Specialists



## July 2008 Newsletter

### ■ Upgrade of Australian Navy Equipment

As the OEM, Baker & Provan is currently installing an enhancement to the Australian Navy ANZAC Ship Boat Cranes. The work involves changes to the electrical control and hydraulic systems to deliver a range of benefits including increased hoisting speeds to improve safety when operating in heavy sea conditions. Preliminary testing has been very positive. Next week we are looking forward to successfully completing testing - the final step in providing full conformance with the revised specification. Pending successful completion on the lead ship in Western Australia, the remainder of the ANZAC Class fleet will be modified over the next 12 months.



Baker & Provan has various mechanical OEM equipment on the Royal Australian Navy (RAN) ships and offers a full support package to be able to service, support, modify and upgrade the equipment, to ensure the RAN can continue to receive the through life support benefits on its initial investment.



### ■ Delicate Repair of an Expensive Component



Baker & Provan's reclamation capability means that it is often called on to repair some intricate components. The picture to the left shows the screw from a compressor. The raised leading edge on the flights, which is critical to maintain compressor efficiency, was completely worn. This leading (sealing) edge was required to be built up to approximately 1mm wide and 3mm high. Baker & Provan took the challenge of rebuilding this sealing edge, while ensuring the precision machined steel flights on the screw did not distort. Baker & Provan successfully developed a low temperature welding

procedure to eliminate distortion. The sealing edge was built up and using a CNC machine, the helical flights were machined on either side of the sealing edge, leaving the required 1mm width by 3mm height helical strip.

### ■ Metal Removal in its Finest Form

From time to time, Baker & Provan, or more accurately, its skilled operators, are required to manufacture some interesting work pieces. The picture below shows the rough outline of a webbed spindle forging. The top half of the forging has been rough machined, with the bottom half of the forging outlined and ready for metal removal. The job requirements were to eliminate sharp corners in the webbing in order to eliminate stress concentrations. The removal of metal for this forging is not dissimilar to an artist or skilled hand carving out a sculpture out of solid. While machining is not considered an art, it is a skill in 3D programming and execution of the CNC machine to achieve the finished component.



This webbed spindle was crafted by Michael, Raju and Norberto.

## BAKER & PROVAN

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