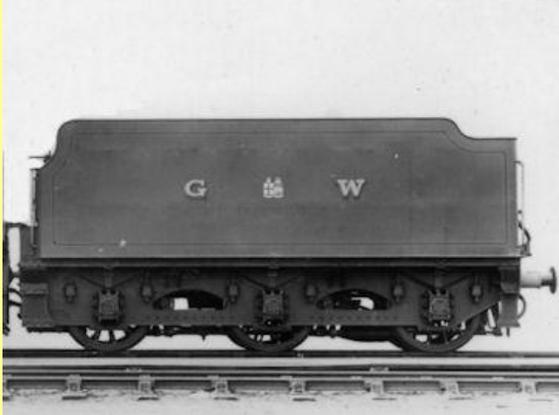


The Tender.

For the County class a new design of tender was produced. Its style was reminiscent of the L.M.S., especially below the running plate. The tank was of welded construction with slab sides, whose lines reflected those of the standard G.W.R., Collett 4000 gallon pattern. The design did not meet with the whole-hearted approval of G.W.R. enginemen, notably the locker doors!

Although there is a restored Hawksworth tender at Didcot (originally attached to 6998 'Burton Agnes Hall', when she arrived, but presently attached to 5051 'Earl Bathurst') it is not compatible with a County class locomotive, being built to the narrower (8' 0") width congruent with the Collett cab, whereas that attached to a County was built to the full width of the loading gauge, i.e. 8' 6".



Hawksworth tender for County as built in 1945. (Terry McCarthy Collection).



Rear view of County tender - 1016 'County of Hants', Wolverhampton Low Level, 18/09/1948. (Courtesy M. Whitehouse Collection).

As a result the Project has always been aware that it is probable that a new tender would have to be manufactured. To this end, research and design work has produced drawings for a new-build tender with a capacity of 4,400 gallons of water, which are being worked on, with potential manufacturers to develop a work schedule for production. New frames will probably be constructed by an outside contractor, while the tank is likely to be constructed at Didcot.

The tender is not a high priority at present, but where opportunities and funding permit work at a lower level continues.

Given the number of common, standard G.W.R. parts incorporated into the Hawksworth tender, the Project were grateful to be allocated a Collett tender, rusted beyond reasonable repair, which could be used as the source for a number of standard parts. Dismantling this tender has been a separate work stream.

2007

28 October - Commenced strip of Collett donor tender – could not burn out old rivets.

18 November - Tender makes good progress with one crossbeam and two hangers released to store.

25 November - Tender continues to make progress with rear crossbeam and two hangers/brackets and vacuum brake cylinder released to store and some superstructure/underframe rivets removed. Found bottom cover for tender vacuum cylinder.

09 December - Stripped tender brake vacuum cylinder. Cleaned four trunion brackets, four brake cylinder ties, one brake cylinder head and six wheel bearing covers.

2008

Between January and June, when the tender body was separated from the frames and lifted off, those components that were easily removed were duly 'harvested':



February 2008 - Some of the parts 'harvested' from the Collett tender allocated to the Project. Bits shown include - water scoop equipment, tender air vents, brake rods, steps, springs. etc.

Many of the smaller components have been cleaned, sandblasted and etch-primed and placed in storage. Altogether, it is estimated that the Project now has the majority of parts to construct the underframe.



Comparison - Collett tender steps and those on a Hawksworth tender - compatible, thus useful for new-build.



19/04/08- Various restored and primed small parts for the tender - items shown for brake and spring structures.



07/06/08 - Collett tender frames revealed following lift of tender body. Items to be reused - wheel sets, horn guides, vacuum-brake cylinder. Likely the longerons to rear usable, as well as two cross members.

14/06/08 - wasted front-end of tender frames - unusable. A clear indication of what 40 years open storage in Barry and Didcot can do to unprotected steel.



14/06/08 - rear buffer beam - not compatible with County tender, but buffers usable.



14/06/08 - tender draw hook - usable once extracted.



14/06/08 Water scoop bracket - usable.

September 2008 - Collett tender carcass to be moved to Centre sidings for cutting-up. Final harvest of useful items. notably wheel-sets and horn guides.

October 2008 - One tender brake hanger and two crossbeams derusted and primed.

Martin Beard plans for tender underframe virtually complete - pricing of steel for tender - 71 separate pieces of steel required - all committed to CAD program.

December 2008 - Two (of six) corroded brake cross beam bearings removed. Screw heads in stubs need weld-deposit and rethreading. Other four show wear, but threads serviceable.

Completed derusting of two brake pull rods - two more to do.

Welding of cracked vacuum-brake cylinder - unsuccessful. As weld and steel forming cylinder cooled, small cracks developed. Likely to require new barrel.



13/12/2008 - weld in vacuum-brake cylinder - note cracks developing in and from weld.

Last two brake hanger brackets cleaned and primed.

Donor tender underframe awaiting removal prior to final cutting-up and retrieval of remaining useful parts:



20/12/08 - remains of Collett tender - axle boxes, wheels and steps yet to be removed from carcass. (Terry McCarthy)



20/12/2008 - Buffers, wheels and draw hook for future use on 1014. (Terry McCarthy)

Meanwhile design work for new tender superstructure sheets continues.

2009

Strategic aim for 2009:

We can proceed with costing and procuring the tender superstructure steel. Provisional costings suggest the tender underframe to be about £40k for construction and 24k for outstanding parts. A method statement for the final strip of the Collett donor has been completed.

January - weld repairs to threaded stubs on one brake cross beam completed.

Now needs to be rethreaded. Thereafter, all three cross beams to be rebushed.



17/01/2009 - Weld built-up on corroded cross beam stub. This will be rethreaded for further use.

Tender brake cylinder crack repair - 13/12/08 - might be recoverable using a different procedure.

February - The final strip of the Collett donor tender has started in Centre Sidings. Both buffers, the coupling hook and accessories, the two side draw bars, the water scoop gear and numerous small parts have been removed. The tender must now be demounted from the wheels for work to continue safely. The crane-lift scheduled did not happen, consequently progress has been slower than hoped.

Planning of superstructure continues - over 50 drawings have been completed. Once they are done, suitable steel will be costed and ordered thus taking the opportunities presented by relatively low steel prices.

March - Final strip of Collett tender started. Crane lift essential to remove frame angles and horn guides unavailable, thus work slowed on that front.

Buffers, coupling hook, spring hangers and cups - derusting, cleaning and application of primer.



14/03/2009 - buffers dismantled in readiness for cleaning etc.



14/03/2009 - tender draw hook - derusted and cleaning ready for painting.



28/03/2009 - Buffers almost finished - only one collar to be primed. Newly manufactured steps prepared for mounting on collar.

A set of springs, believed to be for the tender, have been 'dumped' in West Yard by a carrier - no paperwork seems to be present!

April - Derusting of items reclaimed from Collett tender continues. Buffers reassembled.

AutoCAD of a new 8' 6" Hawksworth tender superstructure complete. Next stage - costing of steel to fabricate the tender body.

May - tender springs delivered, one set broken so returned to manufacturer.

Project offered and accepted a slot at the end of number 4 road to construct tender. Contacts being made with steel supplier for costings.

June - progress limited. Tender steel pricing continues - welders see no great difficulty in constructing tender.

July - significant progress reported!

Costings obtained for tender steel - supplied as a kit of parts, fitted and shaped. Construction to be broken down into three phases:

- Construction of the base
- Internal structure
- External sheeting.

Progress will be determined by finance.

Dismantling of donor tender chassis undertaken, courtesy of a lift from a depot crane. Wheels released and axleboxes removed for cleaning. Later in month, removal of horn glides authorised.



04/07/2009 - Tender wheels released from donor Collett underframe for future use on new Hawksworth tender, standing in the Centre Sidings.



04/07/2009 - axle boxes and top pads removed from tender underframe and transported to shop for cleaning etc.



04/07/2009 - Vacuum reservoir removed from frames.



04/07/2009 - Tender frames at Centre Sidings, following lift and removal of most items required for Hawksworth tender reconstruction. Implications of removal of horn glides led to discussions as to the potential use of the frames in another project - removal of horn glides (carefully!) authorised later in the month.

Meanwhile work commenced on the task of cleaning part retrieved and assessing needs for the eventual manufacture of the Hawksworth tender.



18/07/2009 - axlebox tops after cleaning. Little damage or substantial wear was evident, although the white metal pads will need replacement.



18/07/2009 - Two repaired spring pad retainers. Now have seven out of the twelve required - five to be sought from store or manufactured.

Repairs have started on the brake crossbeams - six new bearing to be ordered.

August - Progress on-going.

Planning for the tender superstructure continues. With the dismantling of the donor tender being completed, assessments being made as to the suitability of the central frame as the basis for the new-build tender underframes.



Consideration being given to producing the underframes from a set of laser cut parts produced off-site (similar to the plans for the new superstructure), with final assembly undertaken at Didcot on a suitable surface.

08/08/2009 - stripped tender underframe, focusing upon the central frame.

Meanwhile the final items to be released from the donor tender frames - the Collett-pattern horns - were successfully removed, having caused no damage to the frames in the process.



08/08/2009 - Horns laid out after removal from frames, in readiness for examination and cleaning.



08/08/2009 - Examination of horn wearing faces suggests they are in good order.



08/08/2009 - some of the 72 horn bolts recovered. All to be cleaned and rethreaded, but are suitable for further use - a large saving! Two will require further attention on the lathe.

Six tender axlebox bearings are now available and cleaning continues. To date all top sections have been cleaned and three of the boxes have been attended to.

So far as the tender was concerned, nearly all 'Work Week' targets were achieved. Subsequently, work continues on reconditioning all relevant tender parts.

September

The tender strip is complete. Ladder frame removed from carcass and its conversion has begun with some welding work.

The water scoop gear, are in process of cleaning, de-rusting and painting. The scoop will not be operative, but being a distinctive feature of a G.W.R. tender it will be fixed in place within the chassis. Various repairs were required, but the task is almost complete.

Once this is finished all components will have been cleaned etc. in readiness for assembling a complete Hawksworth tender.



19/09/2009 - Water scoop components laid out in readiness for cleaning etc.

Planning for the superstructure has continued apace, to the point that ordering steel is contemplated before the end of 2009, with a likely delivery in 2010. The order will reflect plans for the tender body being constructed in three phases, the steel being cut to meet the needs of each phase. Commencement of construction will be determined by the challenge presented by the production of a rolling locomotive chassis, for the latter will have to be moved forward into the space formerly occupied by 'Lady of Legend'. The tender superstructure will be assembled, thereafter, in the space cleared behind the locomotive, in the works.

Design work and planning for manufacture of the tender chassis is well in-hand.

October

Main activity - planning for the new tender. During the middle part of the month the first order for tender superstructure steel made - another three to follow covering cutting and forming the steel for the three phases of construction. Additionally, plans being formulated for the construction process in Didcot Railway Works - space being negotiated.

Meanwhile work continues on refurbishing tender components, notably the water scoop apparatus.



10/10/2009 - Fixed part of water scoop apparatus derusted, cleaned and primed and ready for storage.



24/10/2009 - Repair to water scoop. Subsequently, completely derusted, cleaned and primed. Support struts and brackets similarly processed.

In addition, work continues on tender brake cross beam sleeve bearings. Brake hangers being drilled to size before creating a sliding fit on cross beam sleeves.

Fettling of axleboxes continues. Need to manufacture six BSW studs and 5 of the 6 cover plates.

November

Derusting of 'bits' continues - notably the axlebox oil underkeeps and movable water scoop. Two new water scoop stays have been completed.

Confirmed, steel plate delivery for phase 1 of tender construction to be delivered in New Year. In addition, we have two firm backers for the tender superstructure parts.

December

Yet more part derusted and stored:



19/12/2009 - water scoop lifting arm, following derusting and priming. *(Terry McCarthy)*



19/12/2009 - tender parts associated with water scoop hanging up to dry - another use for the Pooley Van! *(Terry McCarthy)*

2010

Strategy for the year.

The tender superstructure steel is funded, designed and ordered and a second major workstream will start for it as soon as both construction and steel storage space can be created in the Locomotive Works. Having stripped the Collett donor tender, and with the welder and plater experience gained on the superstructure construction, we have been persuaded that we should also build the tender underframe, in-house, at a considerable saving on the estimated £40k for construction, although about £24k is needed for outstanding parts. Construction will start after the superstructure is completed.

January

Tranche 1 of steel for new tender body produced. Short-term storage problems at Didcot means that steel is being stored at Tadley's until it can be unloaded.

Discussions as to the location of tender construction at Didcot continue - suggestions being considered with and by new acting Locomotive & Preservation Manager.

KWG completed draft drawings for front and rear dragboxes. Concluded that these probably need to be cast not fabricated. Patterns will be complex and the castings large and heavy - however this mirrors A1 Trust's experience, with whom we are consulting over the design file for the tender for the V.A.B.

Meanwhile work continues on tender components. Cleaning of tender axlebox underkeeps commenced. More water scoop parts derusted and cleaned, e.g. water scoop rod. A new water scoop plate has also been delivered.



30/01/2010 - water scoop rod, derusted and primed.



30/01/2010 - newly delivered and primed water scoop plate.

February

Progress on the tender seems muted at present but the planning continues. Draft drawings for the tender front and rear drag boxes and subsequent calculations suggest fabrication will be difficult. The most likely solution is to cast them, but this is both complex and likely to be expensive.

Discussions continue as to the best, agreed location for constructing the new tender - a flat site is required.

Meanwhile, some of the components for the new tender are beginning to arrive at Didcot. Many more are in the 'pipeline', presenting slight storage issues!



27/02/2010 - newly delivered laser cut steel components for the new-build Hawksworth tender for 1014.

Work started on clean the recovered axlebox underkeeps.



13/02/2010 - completed brake cross-shaft bearings.

By the middle of the month three out of the six brake cross-shaft bearing had been replaced, not without difficulty, as Gary Davies indicated (re: January 2009).

March

So far this month progress has been encouraging. While discussions continue as to the exact location of the construction of the tender, the ladder frame from the Collett tender, given to and stripped by the project, was moved into the works, but was repositioned outside, between numbers 2 & 3 roads. Once modified, it should form the basis for the new tender chassis.

Meanwhile, by 13/03/2010, three out of six axlebox underkeeps have been cleaned properly, with work continuing up to the end of the month.

All brake cross shaft bearings have been completed and await fitting.

Deliveries of parts for the new tender's superstructure continue.

April

Having been placed in a convenient position modifications to the Collett tender ladder frame to Hawksworth specifications have started. The rear sandwich stretcher has been removed. Rear angle plate to be renewed and depth will be reduced in depth.



06/05/2010 - Ladder frame from Collett tender being modified to Hawksworth specification. (Terry McCarthy)

Location of the new-build tender virtually agreed - allocated space soon to be released by completion of 6023. Steel for tender arriving and being stored.

Brake cross shaft bearing have been completed. Fitted to the cross shafts and placed in store.



03/03/2010 - Brake cross shaft bearing being finished.



03/04/2010 - Gary with bearing cup fitted to brake cross shaft.

May

Planning for the new build tender continues - location of tasks agreed. A new complication has emerged, i.e. the need to fit an air pump and receivers either in or on the tender. The Clan Line Group have been contacted for advice about the air pump issues.

Stripping of the donor tender frame has been completed. The welders are now making a replacement 'U' shaped angle.



29/05/2010 - old, rusted 'U' shaped angle as removed from underframe.



29/05/2010 - replacement 'U' shaped angle being manufactured.

June

Stripping and repairing ladder frame continues. Frames being needle gunned to remove loose scale.

Welders completed the replacement 'U' shaped angle and angle plates joining lead stringer to cross stays. New cross stay plate ordered - will be drilled ready for riveting during Work Week.

Once we have a viable ladder frame, it will be sandblasted clean and painted.



19/06/2010 - A posed illustration of the needle gunning operation - ear defenders would be used in reality.



19/06/2010 - tender wheel set - new steel tyres fitted.

July

The wheels have now been sheeted to protect them from the elements while they await construction of the new tender underframe.

Repairs to the tender ladder continue. Needle gunning completed and front brackets fettled. Steel for front stringer sandwich delivered, sandwich made and set-up ready for drilling and riveting, hopefully during Work Week.

A pattern maker has been located to produce the patterns for casting the drag boxes - KWG is working on the drawings.

Issue of steel work for the new tender exercise minds for much of the month. The plate shown opposite, 1 square metre in size required four to carry it, with difficulty, through the passenger tunnel and Didcot Railway Centre public entrance on to the site. Considered a Health and Safety hazard, so large plate such as these will be delivered to Didcot West Yard and tripped into the depot by rail and unloaded by crane where required. NB. These are not the largest plates to be delivered for the Hawksworth tender 'kit', but they are the largest that can be carried. Smaller piece of steel for the task are being being stored in the ISO container - now almost full!



31/07/2010 - steel plate for Hawksworth tender base. Latter needs eight such sheets which will be assembled on a flat steel base prior to being moved indoors for the rest of the tender to be built on it.



31/07/2010 - Ring for the tender box filter sand blasted clean



31/07/2010 - Previously shaped rear steps back plate being drilled to take the steps harvested from the Collett tender.



31/07/2010 - Completed steps. Steps temporarily bolted to back plate - to be riveted during Work Week.

August

Work Week - Riveting was undertaken on tender components including the rear step plates. The sandwich plate for the ladder frame was set up, drilled and the majority of the plates riveted. Furthermore, the mounting plate for the water scoop was welded to the plinth.



06/08/2010 - Rear tender steps - steps riveted to the backplate.



06/08/2010 - sandwich plates riveted to the tender ladder.



06/08/2010 - riveting on tender ladder frame.

Planning in relation to three essential needs for the new-build tender saw positive progress:

1. Pricing the front stretchers and spacer for the tender frame;
2. Keith Gilbert has completed the preliminary drawing for the tender front drag box - to be passed on to the pattern maker for pricing.
3. Confirmation has been received that 1014's tender will be constructed on No. 4 Road in the Didcot Railway Centre works. In the short term, this is contingent on moving 1014's frames forward into the position formerly occupied by 6023.

Manufacture of the water scoop support tube is complete. This will be a non-functioning feature of the tender underside, but one which will ensure the tender *looks* complete.



21/08/2010 - Completed water scoop support tube.

September

Preliminary drawings for tender front drag box passed to pattern maker for pricing - box pattern and multi-cores £1,600. Casting in steel - about £3,000. Machining to be carried out in-house.

Front stretchers and spacer for frames ordered from Tadley - cost £570.

Vacuum reservoir/cylinder examined and deemed repairable. Reconditioning commenced - derusted, studs cleaned and painted in primer. Drain nipple needs to be removed and a replacement fitted.



25/09/2010 - Vacuum reservoir or cylinder following reconditioning.



25/09/2010 - Internal view of an installed tender filter (from 4079) showing one of the two filters we are considering updating to a more effective system.

Reconditioning of tender axle boxes - three out of six completed to date.
Need to price four axle box cover plates (we have two).



25/09/2010 - Reconditioned axle boxes prior to storage.



25/09/2010 - Working on the new tender filter box casing.

Tender filter box housing progressing.
Decision required before proceeding further, whether we retain the original specification, or design something more efficient and effective.

Work on the tender frame awaits the return of the crane (loaned to the Project by 3650 Group) so the frames can be turned over - considered easier to work on the frames if they are inverted.

Future reports on the tender will be found under the heading/button 'New Tender Build'.