Atlantic Shore Line
Locomotive 100
Curatorial Report no. 2
1 – 16 January 2007
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Seashore Trolley Museum

Recently you received a report of the structural and body changes that we have observed in our work on ASL 100. We had mentioned that some of the things had not been done up to the best standards, in particular the babbitting of the motor armature bearings (and just discovered yesterday, the journal bearings).

Our Historian, O.R. Cummings, sent me the following very appropriate commentary:

> "Donald: I think it essential to remember that the Atlantic Shore Line Railway, the Atlantic Shore Railway and the York Utilities Company were effectively poverty-stricken and repairs to rolling stock were made in the most economical manner. Fix it -- and no matter how it looks! The important thing with No. 100 was to keep it going and earning revenue.
> ORC"

Lots of things have happened - In the two weeks since you received report No. 1, much has happened which we want to share with you. It's been a fascinating project, especially as we delve into the depths of 100's mechanical innards. During this time we found areas which we thought were going to be problems, were excellent <u>but</u> we've found that the elements have taken their toll on the trucks. Read on . . . . .

<u>The motors</u> – On 11 January, AC Electric's truck picked up the four GE80 Form A motors and its GE CP 30 air compressor, loaded by **Dean Look** at the controls of the *Pettibone*. In preparation for this, the motors were temporarily re-assembled so the parts would stay together. Before that the brushholders were removed and cleaned, as were the wood brushholder yokes[1]. We scraped off literally a garbage pailful of ook[2] from the cases. All the special 1 ⅛ x 5 ½ special shoulder bolts were sandblasted by **Norm Down** and others. Because it is awkward installing the bolts when the motors are mounted, we wanted them to be as easy as possible so all the threads on bolts and their heavy hex nuts were chased and lubricated. Then they, the commutator cover and inspection plates were all primed with 545 epoxy and finished with durable *Awlgrip* Jet Black enamel. When they were installed in the frame LPS Anti-seize was put on the threads to make them easy to disassemble. When they come back from AC, we will install the proper heavy split lock washers.

<u>Correcting eroded heads</u> – The heads of 13 of these original bolts had corroded so badly that it was necessary for **Dean** to make new ones.[3] Using our American lathe, he turned the remains of the head round; then turned on a 1 ½ in. coarse thread. On to that he screwed a large 1 ½ in. square nut (of which we had quite a number in stock). This was then tack-welded in place. He then turned the shoulder on the bottom of the new head. The last steps were to:

1. Mill the head 1 ⅞ in. sq. with the Bridgeport milling machine.
2. Mill the thickness of the head just slightly higher than the original had been
3. Turn a chamfer on the top of the head to match the original
4. Fill the hole in the top of the head with weld
5. Mill the welding flat.

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[1] Carefully cleaned by Doug Carrier
[2] A combination of sand, crater grease and oil
[3] This preserved the majority of the original 'fabric'

Remaking the square-headed motor frame bolts
Dean Look welding

We will still have to get a few new bolts to replace those which had to be destroyed to remove them. (Many had built up so much rust that nothing would knock them out. Two of the armature bearing saddles[4] were cracked so **Chuck Griffith** re-welded them with 'castaloy'.

Although we told AC that time was not important, we are awaiting their estimate of what they believe will be needed to bring the motors up to a durable standard.[5] When the motors went to AC, I sent them a long checklist of concerns. Roger Paradie has read them and finds nothing out of the line with them.

The last stand of the last pinion

In the last report, we described the pinions and how they came off. The pinion on the no. 1 motor had refused to come loose despite gentle heating, intense pulling and beating. In fact we broke two pinion pullers in the process!

Don Landry volunteered the use of a 35-ton hydraulic puller he could borrow from his place of employment. After some small modifications were made, he set it up and applied tension. This was not enough so the 'rosebud' heating tip was applied to one side of the pinion and more tension applied, eventually it came off with a bang.

Don Landry pulling the pinion.

[4] The commutator end of motors 2 and 3.
[5] We have asked their Shop Supt., Roger Paradie, to send us a copy of their specs but have not received them yet.

We think success came this time because the heat was more concentrated—on one 'groove' between the teeth—rather than generally with the gas flame we used before. That method apparently allowed the heat to sink in to the shaft, allowing it to expand with the pinion. We do have some concern that the heat treatment of the pinion may have been affected but other 'opinions' are that we're not going to put the service on it that would wear it out anyway.

As we wondered why this pinion was so resistant, Don 'opined' that it was probably installed using too much heat rather than the gentler method of placing it in boiling water, that we traditionally use. This motor is on the only original A.S.L. axle, meaning it possibly may have been on longer than the others, although motor repairs are not necessarily related to axle work. The pinion is a Nuttall, a subsidiary of Westinghouse Electric.

With this pinion removal we were then able to send the motors to AC Electric. It had to be done so we could take off the worn armature bearing to be sent out for re-babbitting.

Babbitting update – Today I contacted Walt Kelsey of American Power Service, the company whose E-mail is APS@babbittrepair.com so that means they do know quite a bit about babbitting. I described the type of bearings we wanted re-babbitted and asked him if he could give me a rough estimate of what this would cost: His reply was about $1,100 each. (for eight bearings!!) He said that there would have to be a lot of milling and boring out and it would take a lot of time. I then went on to explain that we would do the machine work and the picture changed completely: $1,800 for the babbitting including 8 journal brasses—a much more reasonable price. It was difficult to describe the journal bearing over the phone so I sent him a couple of photos, so tomorrow the estimate will be refined.

Prior to the bearings going down there, We will need to braze and re-bore the dowel pin holes, some of which have been elongated by slipping within the bearing caps.

Brushholders – (8) All are in good condition. There are basically two different types, one being a later improved version. Five are the old style (two different types), one-piece cast bronze housing with music wire springs and loops for pulling the brush 'hammers' back. The other are malleable iron castings with a renewable brush box at the front. Because there is a certain amount of ash in a brush to control its hardness, this is abrasive and tends to wear the brush boxes to the point where the brush will rattle. This portion bolts on to the front of the main housing. The springs are of the 'clock spring' type—flat steel or phosphor bronze. All brushholders were sandblasted to clean them up. The malleable iron ones were then primed and finish painted with aluminium paint to keep them from rusting further. This was also done to the steel clock springs.

Generally the brushholders are in very good condition with all springs working and seem to have the correct tension. The housings have been subjected to various 'episodes' which have burned some holes in them but not enough to require repairs.

Clock spring an older type brushholders

GE specifies the brushes for this type of motor to be ½ in. thick x 1 ⅞ in. wide x 2 ¼ in. high. There are two of these in each brushholder or four per motor. There is a variety including two motors with 'blocks' nearly 4 in. wide.

Waste not – All bearings in the motors and the trucks were packed with what we presume to be wool waste.[6] Over time, especially if exposed to water or not regularly lubricated, it tends to turn from a springy texture to a solid lump: 'gook'[7]. In order to be effective, it is necessary for the waste to be springy, pushing tightly against the shaft. Wool remains springy when it is properly saturated whereas cotton waste becomes limp and will not maintain proper contact with the bearing surface.[8]This will all be replaced with new wool waste at $8.00/lb. Between the very large waste 'boxes' on each motor: 2 for the armatures and 2 top ones for the axles. Underneath the motor are two more very large ones for the axles. Each journal bearing also has a large capacity for wool.

On to the trucks - As soon as the motors left the box, the area was cleaned up and the flangeways in the floor cleared of years of dirt build up.
The weekend previous to the motors leaving, **Bill Pollman** and **Randy Bogucki** volunteered to start disassembling 100's Alco trucks. Both are adept at the discrete use of the cutting torch, knew how to swing a sledge hammer and hit the end of a punch or cold chisel, the major skills needed to disassemble a 'rust-welded' truck frame.

Their first job was to make it possible to remove the wheel sets and journal boxes. Unlike most trucks which have a short casting or strap of some sort holding the bottom of the pedestal in which the journal box is mounted, 100's trucks have a long steel bar ½ x 2 in. extending from the just under the frame at one end of the truck, down under the journal box at that end, across the bottom of the frame, but turned at a 90^{o} angle to the frame, under the second box, turned back parallel to the frame and up to the underframe. It was only fastened by a small bolt through the frame at each end and another to the bottom of the pedestal casting next to the journal box. So, one long bar tied everything on one side together.

On Friday, 12 January, **Chuck** arrived fairly early in the afternoon and was anxious to go to work. After the usual warming-up ritual for the *Pettibone* he rolled the trucks to the yard behind the Shop. Then the big chain slings were attached, one at each corner of the bolster and the frame lifted up. With a crash, the wheel and axle sets, the journal boxes, equalizer bars and associated coil springs fell out, leaving just the frame including the transom, bolster and associated brake rigging.

The equalizer bars, two per set separated by castings, are supposed to just be setting on top of the journal boxes—nothing holding them in the notch in the top of the box except their weight. However, several had rusted in place and required considerable beating and prying to get them to come loose.

[6] The Goodall Mills, big customers of the ASL, were worsted mills so this may have been a source of the waste.
[7] A technical term describing deteriorated trolley waste.
[8] When I was given the tour of the Manx Electric Railway Shops in Douglas, I was quite surprised to see they used generous quantities of cotton waste in their journals. That seemed strange when there are so many sheep grazing the hills of the Isle. I sent the transit commissioner of the Isle my comments on this. After all, they've only been running trams since 1893 (the same ones), so what can they know???!!! Will I live long enough to say "I told you so" to them??

Lifting the truck frame

Equalizers, springs, journal boxes and wheel sets

Most of the equalizer coil spring sets came out of their bottom mounting ‘cups’ but several also were stuck with a major buildup of rust and required a bit of ‘persuasion’.

A place for 1160’s truck - Before the truck frames were brought back in, we took advantage of the room in the box to bring in the long-delayed frame for Connecticut Company 1160’s Standard O50 truck. This one had been blasted, primed and painted several years ago and virtually all of its parts received the same treatment. Additionally it has new springs and wear plates. So this will be assembled over the winter before its mate (now a pattern) receives the same treatment. It was placed on two sturdy steel horses-one across each end, which put it at a convenient working height.

Then 100’s frames were also returned, each of the three trucks having about 3 ft. between them. The box is a bit tight on the sides especially as parts are removed. They can’t be taken too far away or they can loose their identity. Running the A-frame hoist up and down the line of trucks is also a ‘just barely’ situation.

This past weekend: 13-14 January, **Bill** and **Randy** ‘attacked’ the actual frames. The first task was to resume one started the week before—removing the elliptical bolster springs. These come in pairs, tied together at the end by bolts through eyes on the end. They are made up of a stack of individual curved ‘leaves’ (plates), of spring steel bound together by a heavy strap (band) in the center. The bolster on which the car (locomotive) body rests sits on these which, in turn, are supported by a heavy ‘swing’ link underneath. In some sense it’s a ‘bomb’ waiting to go off because the swing link pivot pin at the top and the bearings at each end are bolted to the transom. These bolts had disintegrated so there was not much holding the springs down.

Randy Bogucki driving out swing link bracket bolt
Squeezing the bolster elliptic springs

To release the tension, it was necessary to make a loop of chain around the entire transom including a 20-Ton hydraulic jack resting on the bolster next to the swing link pin. On the first try, it didn't work well: the jack was low on oil so it didn't have much lift and nothing seemed to move anyway. The next try was more successful: better jack and some other assistance from another jack. Then the bolts which held the bearings for the swing link were cut, the jack released and *voila*, the spring was no longer under tension (or is it pressure?) There's nothing like experience because the other three sets came out in no time with minimal effort. Releasing and removing the springs also revealed a lot of things we really didn't want to see and which difficult, if not impossible to evaluate properly when the trucks were under the body.

Truck components and their condition (Most dimensions will be measured more accurately during the steel replacement process.) (Numbers I parentheses are how many per truck.)

- Truck bolsters (1) seem to be in excellent condition with little corrosion. Center bearings look like new and there is virtually no wear anywhere.
- Double - Elliptic (bolster) springs (two sets) – Under each side end of the bolster are actually four springs making a double 'full elliptic' set. One spring arches up at the center and the other arches down, with the ends of each pair bent to form a 'football' shaped loop through which 'binding' bolts holds both pairs together. On our first inspection of the trucks, what little we could see of the springs was not encouraging and that was confirmed when the bolsters were removed. The springs on the no. 1 truck virtually disintegrated into a pile of barely recognizable scrap iron when they were removed. Corrosion had eaten away at the lower leaves and forced them apart, breaking the binding clamps. Those on the no. 2 truck have been released but not removed as yet, but possibly are marginally better.

  Dimensions:

Disintegrated elliptical bolster springs

- Spring seats (2) – short heavy casting (channel-shaped) on which the binding strap of each spring rests. From what we have seen, they seem to be in good shape. Beneath that is a short block of oak about 2 in. thick, and 8 in. square. Apparently this is some sort of shim, possibly added as the spring flattens with age. We aren't sure if it was always there.
- Spring planks (1) – a shallow channel (8 x 2 ¼ x 85 in.) running across the truck, supported on each end by the swing links. There is a hole in the middle for the kingpin[9]. As noted in the last report, the pins were too short to extend down that far. Normally they would extend far enough to have a 'keeper' put through them to keep the truck from falling off in a major derailment.[10] The channel faces up so, when the bolster and elliptical springs were taken out, it revealed a sorry sight. The channel, like so many other areas we are now getting used to finding, was full of rust flakes and dirt, all of which held moisture, accelerating corrosion. On the no. 1 truck the plank (channel) is bowed upward about 2 inches in the center and the 'legs' of the channel are badly corroded away. At some time it appears as though the channel was reinforced by the addition heavy plates, (1 in. x 7 ½ x 24 in) one on each side, laid on the channel. It was difficult to determine if they were welded in place or what appeared to be a weld was rust build-up. If they were not welded in place, they would provide no reinforcement. Anyway, on the no. 1 truck, it wasn't enough because of the bend. Also, why didn't it go all the way across from one end to the other? Further, what caused the bend because operational stresses would all be downward? The plank on the other end is straight but we have not yet examined it to give a good assessment of its condition. Very likely it will require replacement.
- Transoms (1 pair) – are the heavy beams which tie the truck together, side-to-side, in the middle. They consist of two channels facing each other, separated by the area for the bolster, 10 in. x 3 ½ in. x 79 in. with a ⅝ in. thick web. All four channels are badly corroded but on the no. 1 truck again, they are also bent. We have not yet found a modern-day equivalent for these channels should we decide to replace them. On the inside of each channel (the base) are two wear plates 4 x 13 ¾ in. about ¼ in. thick, fastened to the channel with flat-head rivets. Against these a heavy channel on the bolster rubs as the springs allow the bolster to work up and down. All of the plates have accumulated a large amount of rust build-up behind them which has caused at least one to break away and disappear. Normally these would be made of an abrasion-resistant steel but we have not checked this yet. (Incidentally during the disassembly they found a journal packing iron, badly rusted jammed within the transom, an artifact of the Y.U.CO. We wonder if they're still missing it?)
- Swing links
    - Pins (4) – These are (once) round rods which allow the bolsters to sway slightly from side to side as the car moves.[11] They are 1 ¾ x 18 in., apparently mild steel with a pin in each end to keep

[9] At least there is one in the no. 1 truck. Details in the no. 2 truck in this area are concealed under a thick layer of dirt and rust.
[10] You may recall that the presence a kingpin of the proper length with a keeper would have prevented Connco open car 838's embarrassing 'de-truck-ment' this past summer.
[11] Ted Santarelli used to was eloquent about swing-links but I have never figured out just what their virtues are. Can anybody tell us?

them in place. All the upper ones have large flat spots worn in them and the lower one that I have seen is badly corroded. Should be replaced.
    - Swing link pin bearings (4) – These castings are bolted to the top legs of the transom and have a hole through them through which the pin is placed. They have worn to an oval shape. Randy thinks they would be hard to build up. On these trucks they have not been bushed.
    - Swing links (4 pairs) – These are 'dog-bone' shaped links about 24 in. long with the pins through each end forming a "U" which is closed to an "O" when the upper pin is inserted. The one set of two I observed seems to be ok.
- Equalizer bars (2 pairs) – These are all in good shape with a small amount of corrosion built up at the ends where they seat on top of the journal boxes.
- Equalizer springs (4 sets) – These coil springs come in pairs—an outer with heavier wire and an inner of lighter wire. One is inside the other. There is some corrosion on the bottoms, especially the smaller inner ones. To be examined. Outer spring: 1 in. wire, 7 in. O.D., 7 turns. Inner spring: ⅝ in. wire, 4 ⅞ in. O.D. Both springs are 11 ¾ in. high.
- Equalizer spring caps (4 upper and 4 lower)
    - Upper – held to the truck frame with a ¾ in. square-headed bolt. All in good shape. Within each is a steel disc about 6 ¾ in. diameter x ¼ in thick which must be some sort of 'pad' against the cap. There is a still-shiny spot worn in the top center of each where the mounting bolt rubbed.
    - Lower – Many of these have cracked due to the rust build-up within them. Beneath the spring is a wood disc of unknown thickness and possibly a steel disc. We have not 'dissected' nor evaluated them yet. Uncertain if the broken-off parts can be replaced by brazing in some sort of replacement or a new casting has to be made.
- Truck frame- (1) This large rectangle (79 x 120 in.) is of 1 ¼ or 1 ½ x 4 in. steel. Appears to be in good shape.
- Arch bar (2) – Flat steel bar in good shape. ⅝ x 4 in. 108 in. end-to-end, 13 in. 'deep'.

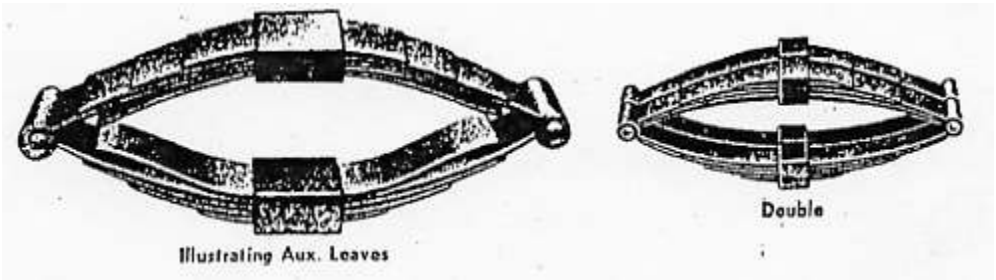
Detail more on the elliptic springs – What was once a common spring, certainly found on many cars in our collection and other types of vehicles of the period. That is no longer the case. I called three companies in the Boston area who no longer do the work. Finally I called the company which made the new springs for 1160's trucks in 1999: the Beall Manufacturing, Inc. of East Alton, IL. (618-259-8154) (FAX 618-259-7953) They still are willing and able to do so again and sent me a specification sheet for me to fill out giving the dimensions. One of these is the 'loaded' height. We really have no idea of what this was but can guess that it is probably about 1 in. less than the 'free' height.[12] The same goes for the length, which they call the 'center distance', free and loaded.

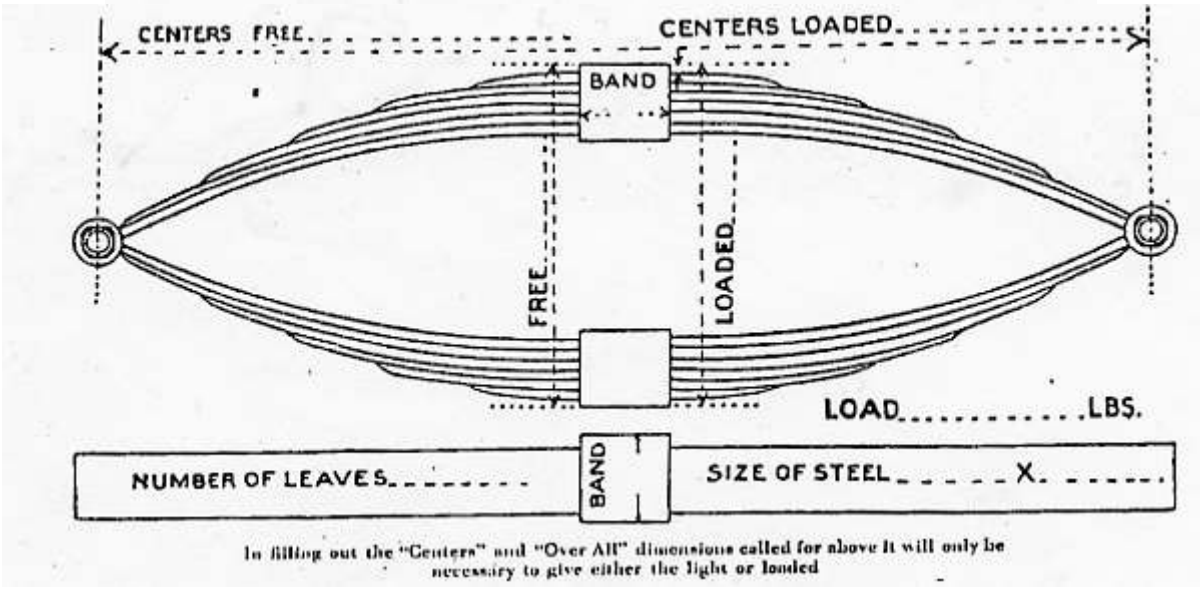
Dimensions:
Center length 30 in.
Height 10 in. (to outside of bands)
Plate (leaf) lengths plates are 3 in. wide and about ¼ in. thick

1. 25 in.
2. 32 in. (also the one forming the loop at the end for the bolt and which holds the upper and lower springs together.
3. 28 in.
4. 22 in.
5. 16 in.
6. 12 in.

Bands Steel is 3 in. wide, 3 ¼ x 2 ½ in. high

[12] On 1160 we had all these dimensions from Connco/Standard Truck Co. prints. This was fortunate because these springs were even worse than 100's.





More evaluation of other components will take place as further disassembly is done. Many of the bolts have corroded and/or crystallized and should be replaced.

What do we do now?
As mentioned, we did not believe we were going to run into anything of this nature when the project started. We could sort of patch things back together and call it good, but given their location and our storage conditions, there is no question that deterioration would continue as condensation forms so frequently. The rust buildup would break more fasteners and the integrity of the structure would be more compromised.

We have an excellent pair working on the disassembly and today **Bill Pollman** said he was very interested in finding out how trucks went together. (Although he works daily on locomotives in the Boston Engine Terminal, he never gets into trucks. Wouldn't it be nice to have more like that!?!?)

If nothing else, the hardware should be replaced. One of the more time-consuming parts of this job has been to remove the rust-welded bolts. So, once that is done, it's not that much more work to overhaul the components.

Blasting and priming - When AC Electric's truck was here on 11 January, I noticed on the side a listing of their services including sandblasting.

Loading 100's motors on AC Electric's truck

Today I checked with Roger Paradie, their Shop Superintendent about whether they do it for non-motor work. He said they would be glad to. Their shop rate is $65/hour. They have a cabinet that is about 7 x 8 ft. which is just big enough to take the largest piece, the truck frame if stood on edge and set diagonally. We could send them such awkward pieces as the motor suspension bars (which we must evaluate in case we decide to replace them), the arch bars and other pieces too large to put in our blaster. Possibly even some of the smaller components could go to better utilize our own staff. T.B.D. We also discussed priming them so they don't rust before they get reassembled. They are limited on their V.O.C.[13] emissions so have been experimenting with different kinds of paint. At present they're looking at something water-based. We're going to negotiate just what will work best for both of us.

Anyway, this seems like a reasonable rate especially because we wouldn't have the mess of blasting and they will transport to and from their shop.

Wheels, axles, journals, journal boxes, etc.

The wheel sets are now lined up on track 2 next to those for Bullet cars.

The first job regarding them was to remove the journal boxes which remained with them when the trucks were removed. We wanted to make sure everything was identified as to location. It was quite difficult to get them off because they were solidly backed with gooey (or is it ookey) waste that was getting stiffer as the temperature dropped during last Saturday afternoon. The sequence was:

1. Pull out the waste using a cotter pin puller as the hook.
2. Put a small jack under the box to raise it about 3 in.
3. Pull the wedge or 'keeper' (a steel casting which keeps the journal 'brass' in place) These were 'glued' to the journal surface with the cold oil.
4. Pull the journal brass (actually bronze) out.
5. Stamp each part with its location, *e.g.* 1C (axle 1, commutator side), 1G axle 1, gear side)
6. Remove the journal box

Condition of components:

- Journal boxes (8) – None appear to be cracked or worn.[14] They are still covered with much grease and 'ook' so it is hard to tell their condition in the dust guard area.
- Wedges (8) – all are in excellent condition
- Journal brasses (8) – The actual castings are in good shape. They are '3 ¾ x 7' size. However there is virtually no babbitt remaining on them. This has worn off over time. None seem to have overheated.

[13] Volatile organic compounds

[14] It is not uncommon to find that in their vertical movement, to have worn through the side.

- Journal surface (8) – All look very good.

To prevent any corrosion on these excellent surfaces, they were immediately coated with Texaco Rustproof type L. L = light so it was easily brushed on. At the same time the axle bearing seats were recoated.

This is a very important practice. I have noticed far too many journals which have rusted badly when a few minutes' care would have prevented this!

Information on the end of the axles – Each time an axle is machined, it is stamped on the end. Below is what we found, which gives a bit of history of the car. Very likely this work was done at Town House. (Diameters should be re-checked)

No. 1 3007 C.T. K. A.S.RY. (CTK must have been the person in Town House who did the work. This must have been done before 1 February 1923, when York Utilities was formed. 3.672 in. diam. X 7 in.
No. 2 3010 11-24-23 Y.U.CO. (early in the life of Y.U.CO.) 3.674 diam.
No. 3 N15339 7.12.24 Y.U.CO. CAMBRIA OH [Open hearth] SPECIAL 6 23 3.633 and 3.700 in.
No. 4 32265 8.8.27 CARNAGIE TOUGHENED 2016 3 26 3012 3.515 and 3.529 in.

It would be a good policy to re-babbitt the journal brasses to fit the axle journals. There are at lest three different styles although the measurements appear to be the same: ARA 3 ¾ x 7 and AARD 3 ¾ x 7 "45 National"

Wheels – As may have been stated before, we do not propose to do anything with the wheels which are in usable, but worn condition.

Curatorial displays
In the main box we have enlarged and placed photos of 100, 101 and 102 in their various configurations. This will help us and our membership and visitors understand the larger changes as well as give the 'big picture'.

In the other box, where the mechanical work is proceeding, we have enlarged, laminated and put up a set of excellent photographs of trucks made by the Boston Elevated Railway in 1935 to educate their employees on properly identifying truck parts. The trucks illustrated are: Brill 27 MCB 2X, BRILL 77E1 and Standard C35P. All components are labeled on the drawings and we have a key posted next to the illustrations. Although these are not the same trucks as 100's, the principles are the same. Also next to the Standard O50 truck for 1160 is an illustration from the Standard company catalogue and labeled photos taken of the other truck.

The Cab
Norman Down recently removed the matchboard on the cab's right side. It is in pretty good shape but contained a multitude of nails, most of which didn't seem to be doing much good. It was necessary to remove these boards for several reasons:

1. We need to get at the vertical stay rod inside when we re-install the cab as we need to weld back (with a new piece) the 18 in. or so that we had to cut off when the cab was removed. This will have to be within the cab wall since we can't lift the cab high enough to clear the deck.
2. When we reinstall the boards, for preservation purposes, it is important to prime and paint the inner surface. This will help seal the wood against moisture on all surfaces.
3. It will be easier to more thoroughly remove the original, very tough lead-based original paint.

We also need samples to take to Building Conservation Associates (BCA) for analysis of the colors.

We noticed that the framework behind the siding is in good condition except cracked and requires gluing.

Missing builders plate

While looking at replacing the deteriorated leather hand straps in Manchester car 38, I happened to notice its beautiful Laconia Car Company builders plate obviously missing in 100. (Only its outline shows now.) Does anybody have one they would like to put on permanent loan in 100?

The wood

Although we have given Barnstormers! a 50% deposit on the wood for the body, we have not heard anything from them as yet about their delivery schedule. We hope to see some of the fabrication in progress so we can record it for the history of 100.