

Inspection - S.S. Tutshi - June 19, 1984

On June 19, Mr. Alex Barbour, senior engineer, Restoration Services Division, Parks Canada inspected the S.S. Tutshi located in Carcross, Yukon. Mr. Barbour's one day "bottom to top" inspection gave us a general idea of the Tutshi's structural condition, presence of wood deterioration and measures to ensure protection against public impact and weathering.

The inspection conducted by Mr. Barbour should not be considered as a thorough structural analysis - that requires considerable more time than Mr. Barbour was able to provide this trip. His inspection indicated some major problem areas which must be researched and inspected at length in the future.

It would greatly benefit any future restoration plans if Mr. Barbour could be retained for a minimum of two weeks inspection and consultation of the Tutshi next budget year.

The inspection of the Tutshi was conducted from the hull to the wheelhouse. The following information on that inspection is noted in point form:

- Hull - remove any remaining caulking
- when grids are put on, affix mosquito netting/screens to keep dirt out
 - water marks to be painted in black at midship
 - water marks to be located on bow and painted in black (replace draught marks on bow)
 - Frank has tin for bow replacement

- Cribbing - reinforce #1, 2 & 3 cribbing from the bow
- #4 crib, port & starboard - from the bow
 - #5 crib, port & starboard - from the bow
 - should have bracing to meet planking on hull otherwise the planking on the hull will start to sag
 - to repair bracing, put a wedge on top of the cribbing

Freight deck:

- oil tanks - are they gas free?
- they should be vented
- before public access will be allowed, a certificate from any industrial chemist stating that the oil tanks are gas free is required.

Engine room:

- according to Mr. Barbour, it appears that the S.S. Klondike did not receive any engine parts from the Tutshi as they would not fit
- Klondike might have taken some of the brass valves
- testing balance of supports:
balance should be laid across cross head slide on engine
- the balance of the Tutshi indicated:
 - (1) list to port
 - (2) ½" twist on starboard
 - (3) engine is tipping in
- asbestos problem in engine room (and elsewhere) - it might have to be removed
- on Klondike, they sealed asbestos in impervious duct tape, wrapped with some type of authentic material and then painted the pipes/cylinders
- might have to check with Health & Welfare Canada for an approved sealant for asbestos

bilge in engine room:

- some engine parts are stored in the bilge of the engine room
- a piece of canvas was found in bilge
- this sample will be sent to Alex so the lab can conduct a weight test
- tests done on a sample he had previously obtained from the Tutshi indicated weights of 22, 23, 24 oz.
- while down in the bilge, Alex discovered that the Tutshi is a jet condensing ship
- all steam from the boiler came to a pump in the bilge (starboard side of centre keelson) and was then returned to boiler
- one well in the engine room
- well between king posts needs cleaning
- diagonal bracing slack in bilge between bulkhead #28 and well between 2 king posts

boiler:

- unusual feature on the Tutshi - steam collector on top of the boiler lets steam out of the boiler and separates and water drops back in the boiler - the intention is to get a hotter and dryer steam

- need rain cap on top of funnel (smokestack) bow of freight deck:
- the winch is not original on the bow of the freight deck
- in place of the winch used to be a steam driven capstan (historic photos verify this)
- the capstan that was located here may be the one that is now located just inside the aft freight door (starboard)
- railing on bow of freight deck should be fabricated like the railing on the upper decks
- post and chain railing will not be sufficient to preventing the public (especially young children) from falling off the bow.

Saloon deck

Observation lounge:

- strip of green paint (3 feet) on ceiling which lines up with mark on floor indicates something was once here
- it appears that the observation lounge was extended at some point
- it used to be a full circular lounge, but was extended and squared off
- as proof, can still see deck staples for canvas that are now on the interior of observation lounge deck
- it appears that observation lounge beams always extended to meet outside ones, but after extension they were doubled for greater strength
- bulge in deck around the stairway (starboard and port) might have been put in later

Saloon deck

structure:

The right hand column indicates the state of the structural beam supporting the area indicated; we are moving from bow to stern.

bulkhead - forward of freight deck	up
observation lounge - first decorative pillar at bow of vessel	down
observation lounge - steering gear trunk (4-sided wires and pipes column) - new beam behind box for auxiliary hydraulic steering gear	down
observation lounge - between steering gear column and third decorative pillar (currently missing)	up
observation lounge - between third decorative pillar and 8-sided funnel column	O.K.
observation lounge - from funnel column to electric fireplace bulkhead (storage area)	O.K.
dining area - electric fireplace bulkhead to decorative pillar (towards aft) *beam under decorative pillar is cracked and needs replacing	down
dining area - king post column (opposite pantry) to decorative pillar (free standing radiator located towards aft of this column)	down
smoking room - between sideboard bulkhead and decorative pillar in smoking room	slightly down

Consultation with Alex Barbour on June 20, 1984

A one-day consultation on the S.S. Tutshi was spent with Alex Barbour. Although an outline was prepared before the meeting, the outline was not rigorously adhered to. The following information from the consultation is noted in point form:

Fire Safety

- Mr. Barbour recommended that when passengers are allowed on board, the fence surrounding the Tutshi should be removed. If there is a fire on board and all visitors safely disembark, they must still get by the fence. The heat from the Tutshi would be enough to severely burn or suffocate anyone trapped inside the fence.
- consideration: to extend jetty to include forward freight door (starboard) in order to provide another exit off the freight deck
- standpipe system: will do less damage than sprinkler system to the vessel
- after design and purchase of a standpipe system, a good pipe-fitter could install the system in 2 weeks

Site Plan

- see notes from Alex Barbour
- BR = Boiler Room
ER = Engine Room
Q = Queen Post
- block diagrams should include oil tanks as well as BR and ER
- hull and deck plans should show location of doors and windows
- should be able to make do with between 12 and 15 sheets of drawings
- contact Dan Kosichuk in Winnipeg regarding extant drawings (he did drawings of Keno in Dawson)
- require a structural engineer to do deflection test to certify that Tutshi is safe for public.

Freight Deck

- bilge: (1) should be industrially vacuumed from end to end
(2) every piece of mechanical equipment currently located in the bilge should be brought up and catalogued
(3) this mechanical equipment should be stored for maintenance and later use

- in the aft end of the bilge - appears to be all engine room equipment stored
- in the forward end (bow) of the bilge - appears to be wood and rope reels stored
- in the boiler area of the bilge - appears to be boiler spare parts stored

Engine Room

- engines appear to be missing every moving component with exterior castings remaining only
- external paddlewheel is complete - no parts missing
- all nonferrous material has been removed from the interior engines plus a load of castings has been removed in order to steal nonferrous material inside the machines - all copper and brass missing leaving only iron and steel parts
- Mr. Barbour suggests that after the engine room has been cleaned, all the castings (some castings are in the bilge) should be bolted or set back in place then we could see what is missing on the engines
- there is a possibility of repairing auxiliary pumps, but not the main engines or generator as there are too many parts missing
- in the compound, there are two generators that appear to be very close to the Tutshi's

Asbestos

- asbestos problem: asbestos surrounds the pipes and covers the walls in the galley
- lots of loose asbestos in the bilge, on the freight deck and in the engine room where people have been destroying machinery
- there is a problem with workers tramping asbestos fibre through the VRC and washroom
- We have discussed the asbestos problem at length, but can decide a definite course when asbestos samples return from the lab

Boiler

1. require a funnel cover - should be made out of sheet steel and place right on top of funnel
2. get rubber plugs to plug waste steampipe and whistle pipe

boiler - clean boiler

outside: - smoke side

- water side - inside of pressure vessel

The following is for the inside of boiler:

1. dig out sample (coffeecup size) of the crud that's in the bottom of the water leg
2. get another sample off the heating tubes (inside the boiler - one of the 210) by knocking stuff off the heating tube onto a piece of paper
3. send samples to Drew Chemicals (across Canada) or to YTG chief operating engineer (if there is one). Should indicate to the lab that the samples are from a boiler which is laid up empty and open. The material from the water leg and the heating tubes is 1. silt and 2. seale - what we want to find out is the composition of the material and its long term effects on steel.

The following is for the smoke side which includes everything from the furnace to funnel:

1. punch out (spring loaded tube cleaner) the tubes - 210 of them
2. wirebrush the tubes several times each
3. leave tubes at this point
4. clean out the funnel (before rain cover is put on), sweep down funnel with wire brush (work will require facemask, coveralls/old clothes, gloves, etc.) get a couple of 10 gallon pails to catch debris as it falls out bottom (in bilge)
5. clean out firebox - remove loose brick and store (make sure worker has safety goggles, leather gloves, safety boots because of glass - brick has turned to glass)
6. after brick removed, wirebrush everything - sweep it all into the ash pit
7. clean out ash pit and hopper (cleaning out ash pit and hopper should be final stage of cleaning)
8. go back to tubes and swab them out with paint or a metal protection coating
9. use black tremclad paint (fish oil base paint) and apply one coat only - everything mentioned can be painted with the black tremclad or with a product called MP (Amsoil Co.) - there is an agent in Dawson City.
- paint interior of funnel and interior of firebox
10. install rain cover on funnel

Outside of boiler - a lot will depend on asbestos test

1. vacuum boiler down
2. wash boiler with soapy water
3. when boiler is dry, go around bottom of all boiler feet (feet are in the bilge)
4. after water dry and insulation is repaired, the boiler can be painted with ordinary paint (have to match colour only)
5. boiler feet should be painted with MP or tremclad

It will take approximately three weeks for 2 persons to clean and paint the boiler. Upgrading the boiler in this manner is very labour intensive.

Note: always go up the funnel (with the bosun's chair)
Workers should wear old clothes (Salvation Army garb) or throw-away paper coveralls as the work will be extremely dirty.

Freight deck paint colour:

- the silver is not an original colour
- possibly painted that colour in the 1950's as a heat reflective paint
- Arnold Rods might know date when that colour of paint was first used

catwalk - just paint it

- not worth it to canvas it
- catwalk should be protected and best way to do that is to paint it and keep scuppers (drain pipes) in good condition

- capstan that used to be at bow of freight deck (which winch replaced) might be the one now located at the rear freight door

- chain and post for freight deck railing - see drawing by Alex

transom - paint and repaint when needed

- canvas should stand up for another five years before having to be removed and replaced with new canvas
- take tracing of "TUTSHI VANCOUVER B.C." before too many paintings in order to be able to transfer it to new canvas
- "VANCOUVER B.C." on vessel as it was the nearest port of registry and the Tutshi crossed into B.C. as well

Saloon Deck

battleship linoleum - do not put anything under linoleum (nothing was put under the linoleum on the Klondike)

- looks like a strip of muslin laid down the centre of the saloon deck under the linoleum
- muslin sent to Alex for analysis
- muslin being analyzed for linseed oil and wax to see if waterproofed - soapy water seeping through a seam in the linoleum could cause rot on the under boards

- Note: photograph from Alaska Magazine of the interior shot of dining room shows octagonal serving column opposite pantry with a sink and 2 faucets

- on the opposite side was possibly a steam heated coffee urn

Boat deck

- navigation lights (side lights) are mounted on apparatus that resembles an ironing board
- these "ironing boards" on the Tutshi are missing parts and the navigational lights are missing
- Alex has drawings of these navigational light stands should we wish to repair them at a future date

Texas deck

- Bidlake photo collection - photo of Bidlake and Cap. MacDonald on the texas deck - the "mushroom vents" in the photo (which are not on the texas deck now) are stored in the crawl space of the wheelhouse

Wheelhouse

- Alex has set of drawings for instruments used in the wheelhouse - Bill McBurney put castings out to tender

UTSH

INTERP PROGRAM —

BOILER. —

POSS. |

BILGE SYPHONS —

"

HYDRAULIC STEERING.

"

WHISTLE-PIPE-SYSTEM.

ENGINE ROOM —

SPRINKLER SYSTEM: —

DRY OR WET.

STAND PIPE SYSTEM: —

VIRTUALLY COMPLETE.

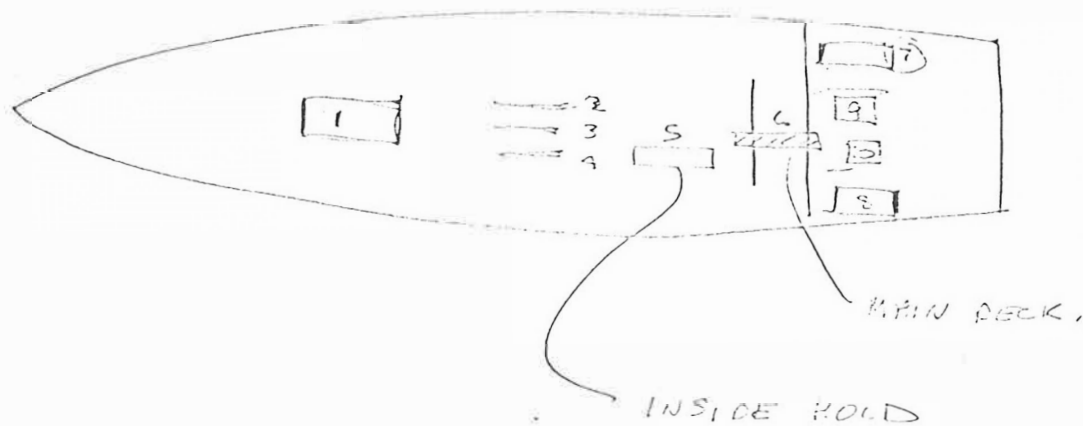
APPROX $\frac{1}{2}$ MONTH TO INSTALL.

3 DAYS TO SORT THRO PIPES

2 DAYS TO DESIGN.

ALBERTOS SAMPLES.

TOTSHI



ALSO GALLEY BULKHEAD
AND STOVE.

Y.T.G. ——— 1ST ———
KELTH & WELFARE 2ND ———

1. boiler
2. main steam pipe
3. main steam pipe
4. main steam pipe
5. inside hold
6. pipe
7. main engine
8. main engine
9. pipes between engine
10. pipes between engine

also galley, galley bulkhead

EXTANT DRAWINGS.

3 WEEKS 3 PEOPLE.
1 at 3 WEEKS / DRAFTING
\$ 35 / HR.

\$ 17 - 25 K.

\$ 12000
1000 / SHEET.

SITE PLAN ——— 1 SHEET.

LONG-HULL-SECTION ———

DECK-LAYOUTS ———

MID-SHIP-SECTION: ———

(OUTRIGER, + BR BLOCK DIAGS. — 1

PHOTO SURVEY + KEY PLAN. 2.

KEEL SON ON Q POST LINE. 1

USE FOR
DEFORMATION STUDIES.
+ INTERPRETATION.

+ STAND PIPE SYSTEM. 1

12 DRAWINGS.

WITH FRAME NUMBERING SYSTEM.

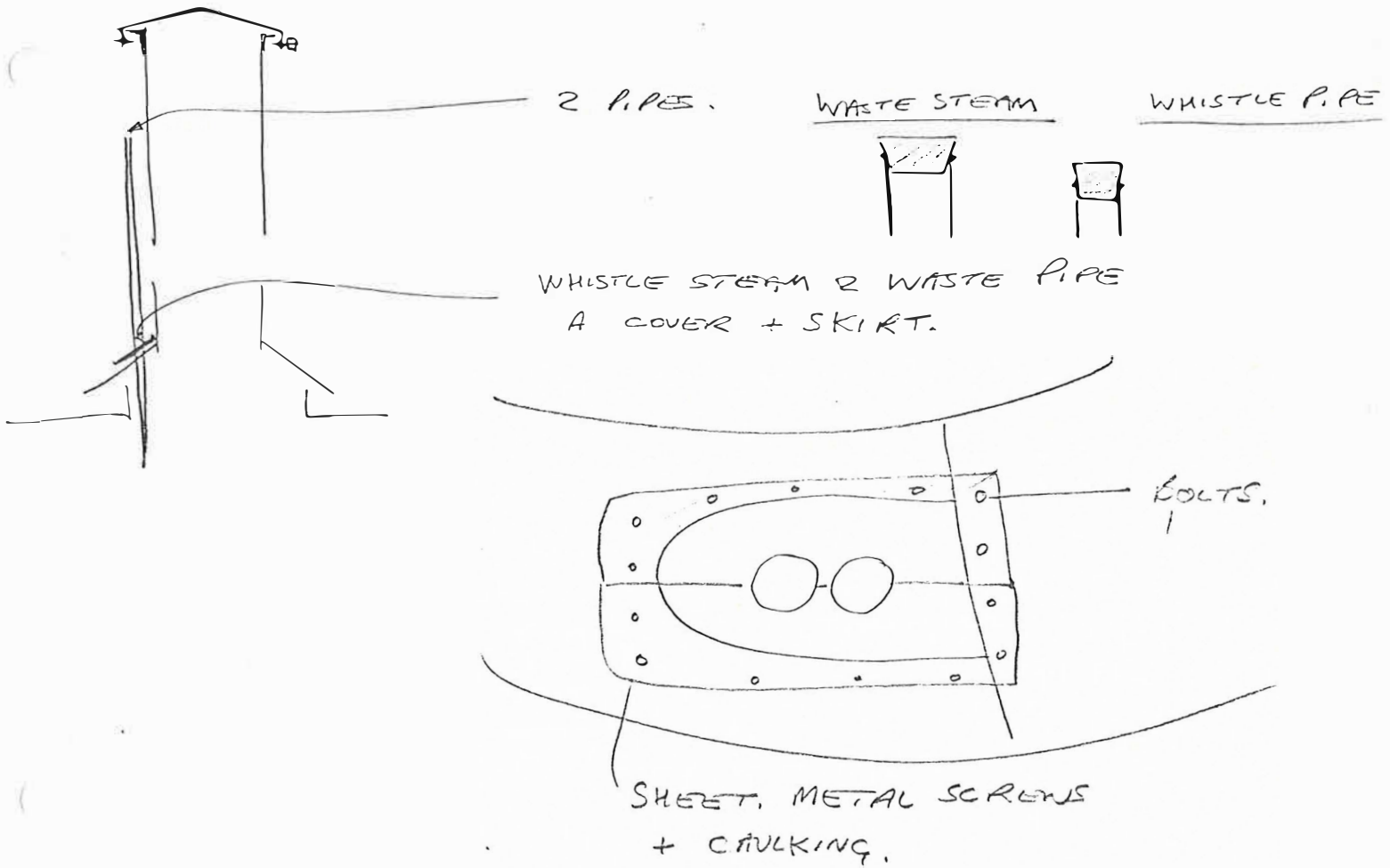
+

GET DANS. ADDRESS:—

BOILER.

FUNNEL COVER. ↑

TUTSHI



OUT:-

AMSOIL NAME

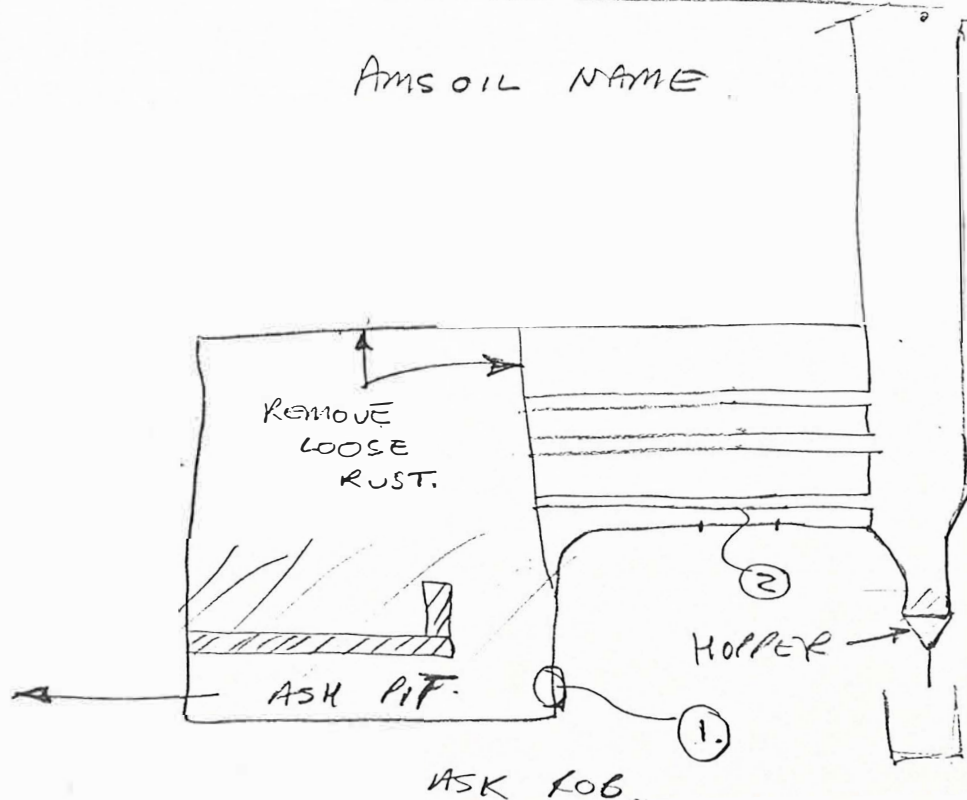
SMOKE SIDE:- ✓

WATER SIDE:- ✓

SAMPLES TO

1) — SILT.

2) SCALE



1924

TUTSHI

1922

SAME

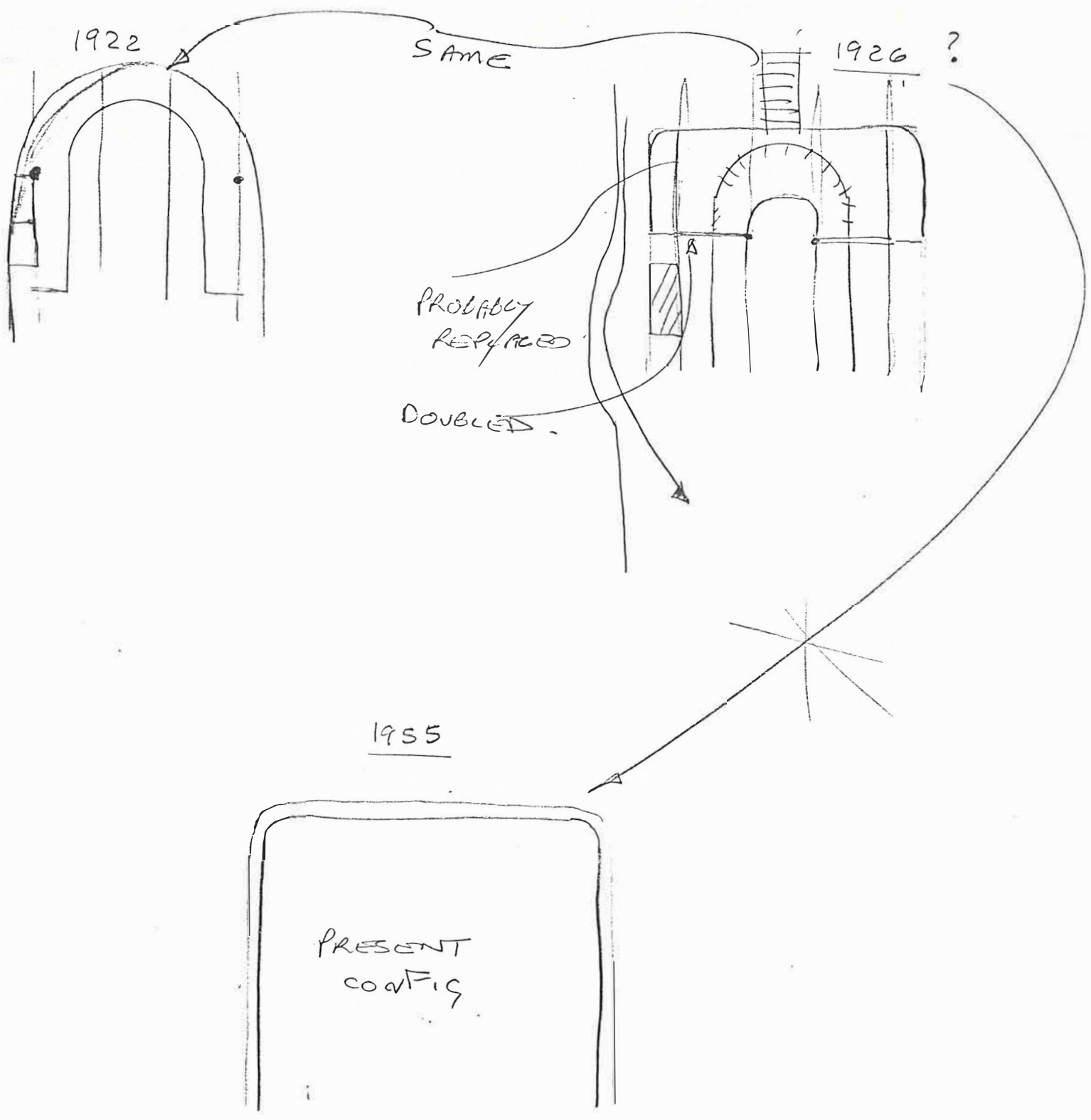
1926 ?

PROBABLY
REPLACED

DOUBLED

1955

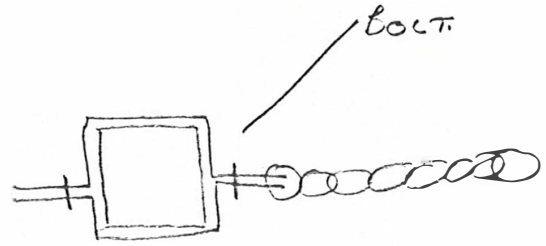
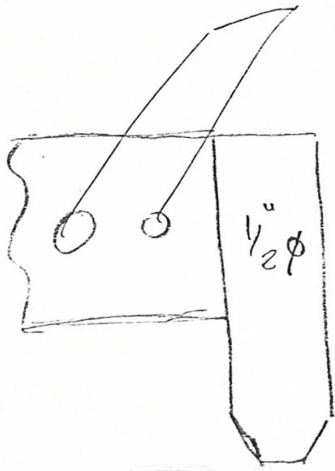
PRESENT
CONFIG



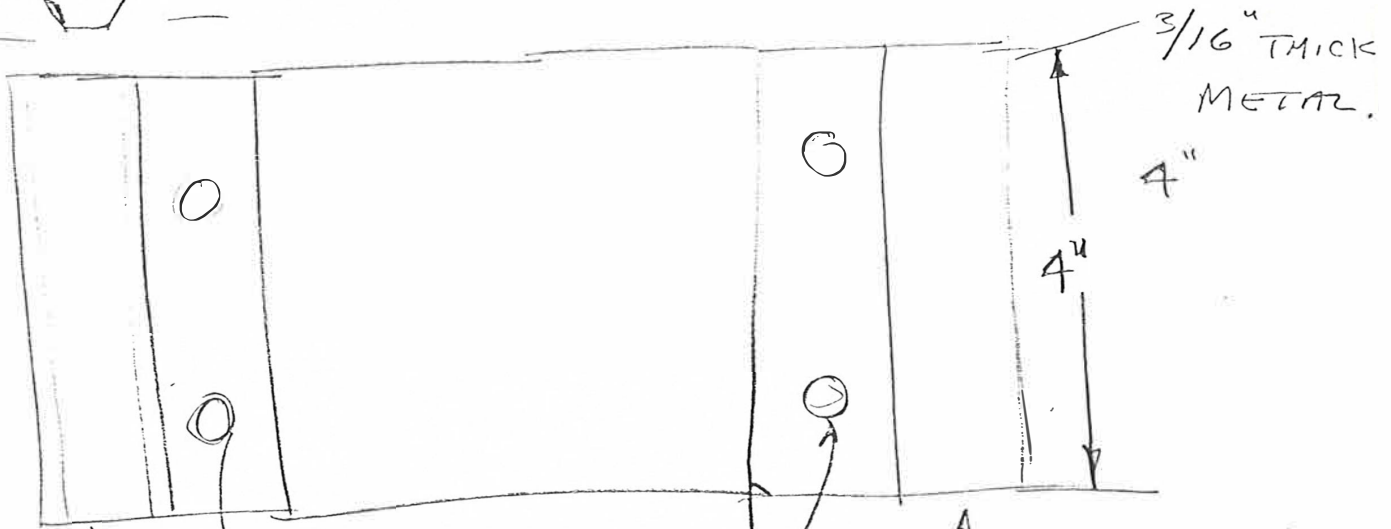
\$ Bow

TJTSK1

BOLTS TO RAILS.



3" + 4" DEEP ON BOTTOM.



2 x $\frac{3}{8}$ BOLTS.

$\frac{5}{8}"$ NTP — PIPE

ABOUT $\frac{1}{2}"$ P.I.V.

TRANSOM

TUTSMI

PANT + REPAINT.

TAKE TEMPLATES of NAME, PORT of REGISTRY.

LINO

NAV: LIGHTS:-

VENTS

