The S.S. Minto.

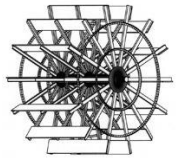
Part 2: The Model

A Presentation of ***RHJRail***

The *Minto* – Model built by RHJ in 1972 (53 years ago, and counting)

RHJ Rail

The Model



Contents

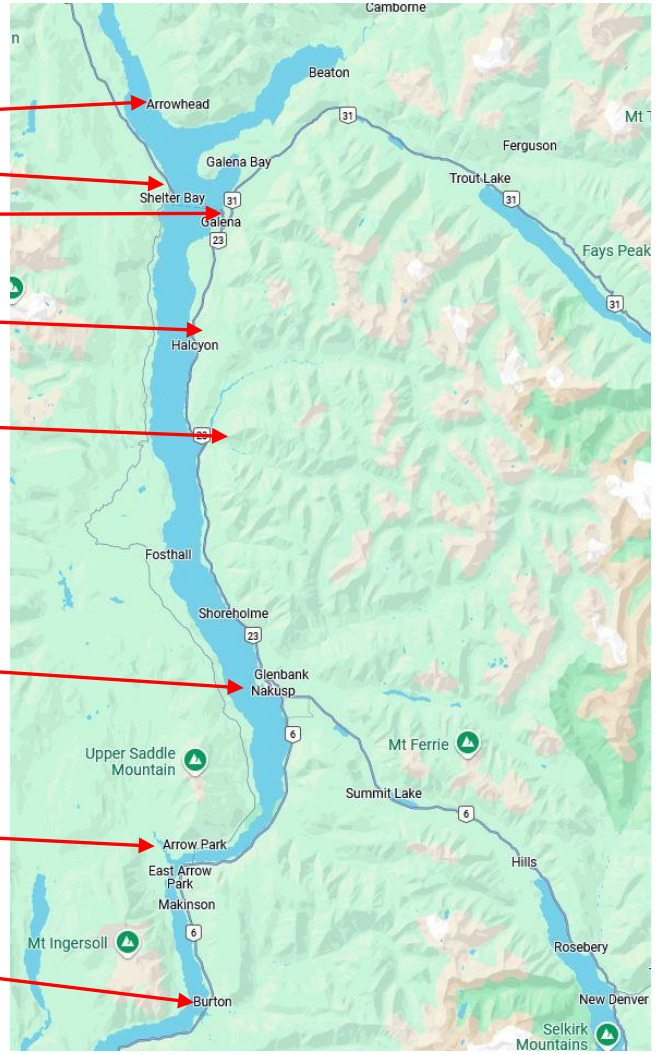
NOTE: Click on the **logo** at the lower left to return to the **Contents**
PgDn to advance to the next slide.
PgUp to back up one slide
For **pdf viewing**, enable Full Page View and click away!

RHJ Rail

Images with this movie icon are videos and will play in **PowerPoint Show** (.ppsx) mode.
Use your PgDn key a second time on the page to start the video.
They will **n0t play in pdf mode**.

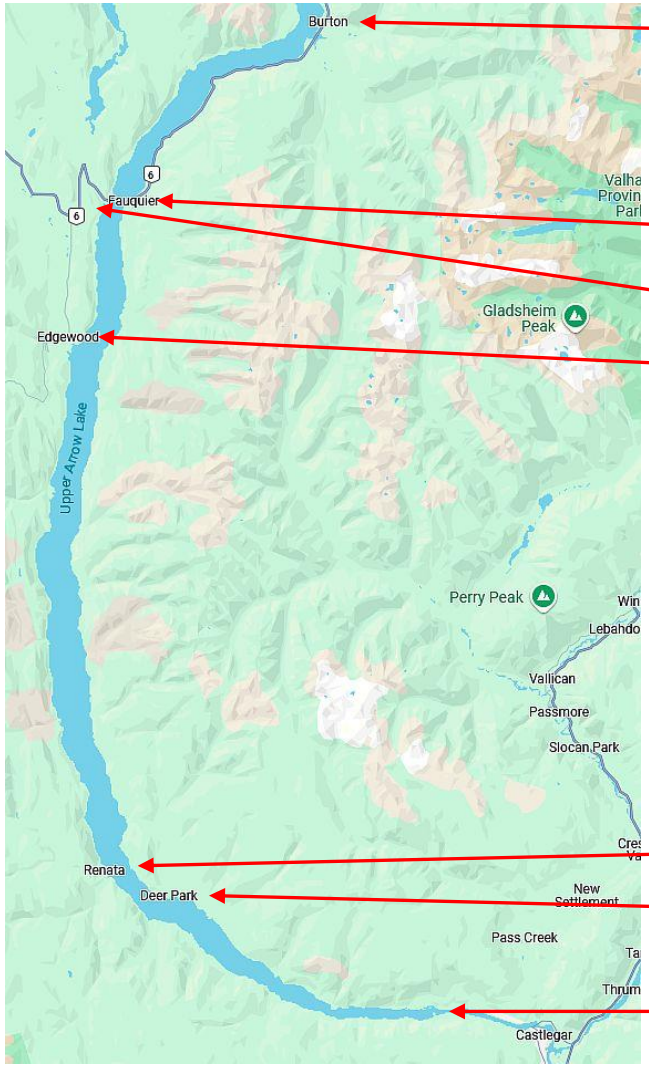
S.S. Minto – Route (1898 – 1954)

Upper Arrow Lake



Arrowhead
Shelter Bay
Galena Bay
Halcion
St. Leon
Nakusp
Arrow Park
Burton

Lower Arrow Lake



Burton
Fauquier
Needles
Edgewood
Renata
Deer Park
Robson

[2]

RHJ Rail

S.S. Minto. - Time Line 1898-1984

1898 — S.S. Minto — April 23, 1954

1940 1942 RHJ on Minto 1954

1968 Hugh Keenlyside Dam (Robson)

1973 Mica Dam

1984 Revelstoke Dam

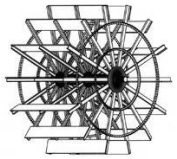
26 inches over-all, including the stern wheel and frame, in HO scale

Arrow Lakes development –After the boats were long gone, much development took place:

- Some settlements were moved or destroyed
- Modern road construction took place
- Dam construction took place
- Lake levels rose considerably
- There was a new MV ferry between Shelter Bay and Galena Bay the newly built Highway 23.

RHJ Rail

S.S. Minto - Summary



S. S. MINTO.

829 gross tons. Hull: 162 x 30 x 6 feet. Launched in 1898 by CPR at Nakusp, B.C. Built by Bertram Iron Works at Toronto and sent by rail, in more than 1000 parts, to Vancouver, thence to Nakusp where it was assembled for service between Arrowhead and Robson (134 miles, about 12 hours).

- Last trip: 1954-04-23
- Withdrawn: 1954-04-24
- Distance travelled: Over 2.5 million miles
- Disposition: Sold for scrap, 1965;
  Towed to Galena Bay and burned, 1968-08-01

HO scale model by R. H. Johnson, built 1972. Operating stern wheel (when built), wood, cardstock and brass construction; few commercial parts.

RHJ Rail

S S. Minto - Plans

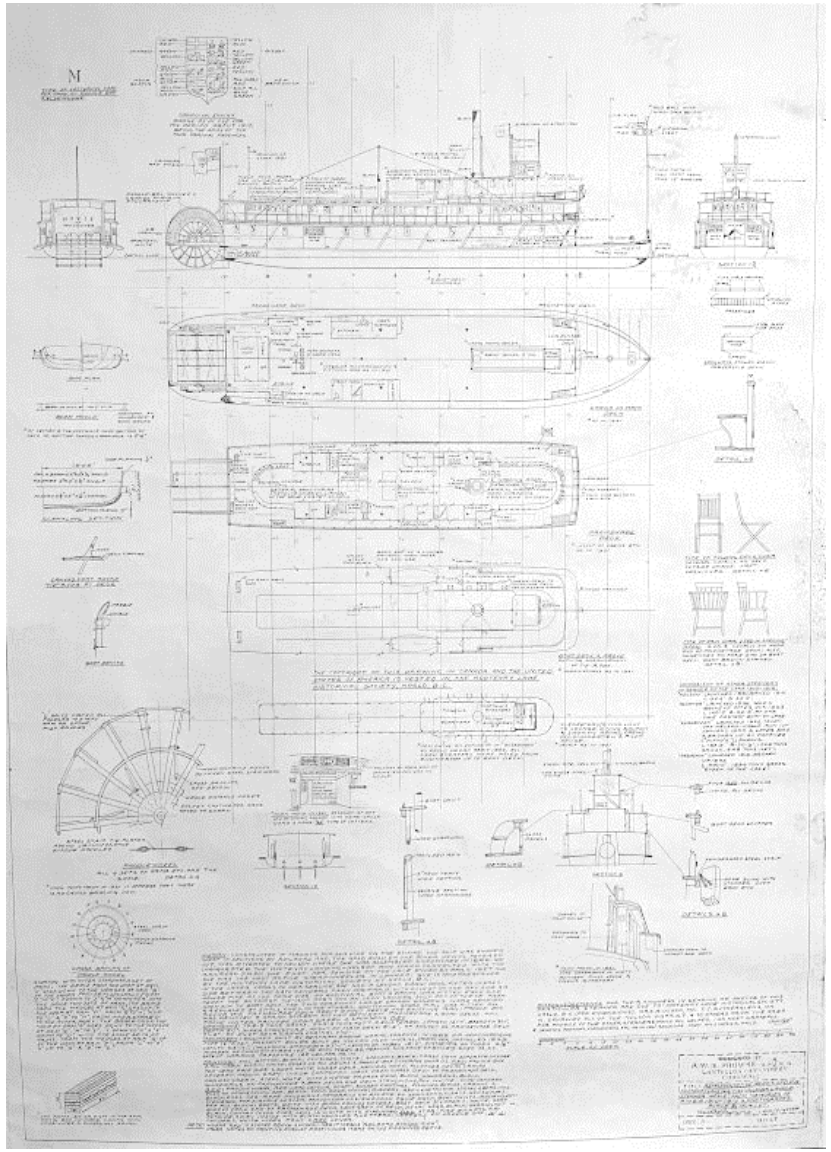
The first thing to do was to collect information about the ***Minto***. This involved plans, blueprints and photographic material.

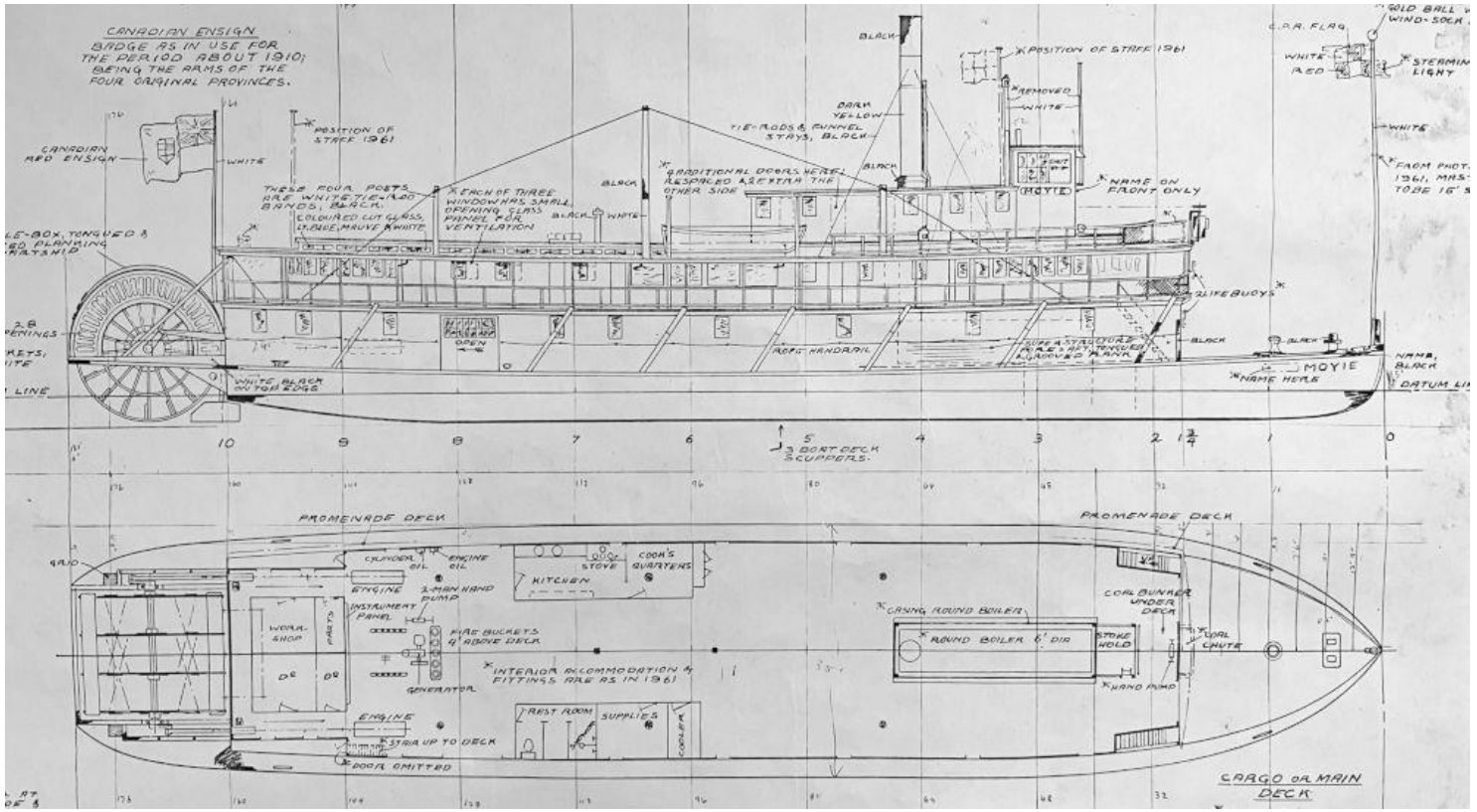
- It turned out that there were many books, references, publications and on-line articles (actually, not so many of the latter in 1972!).
- The most important source was drawings, plans, and blueprints with full information, shapes, and dimensions – *about the* ***Moyie***!
- In the early days (c. 1900+), sternwheelers were common on the interior lakes of BC. Most were CPR boats.
- Some boats on different lakes were built (nearly) to the same specs.
- The ***Minto*** was a "sister ship" to the ***Moyie*** which has been preserved at Kaslo BC.
- The ***Minto*** had the same dimensions as the ***Moyie*** but was slightly lighter in weight.

The *Moyie* at Kaslo B.C.

RHJ Rail

S.S. Minto - Plans

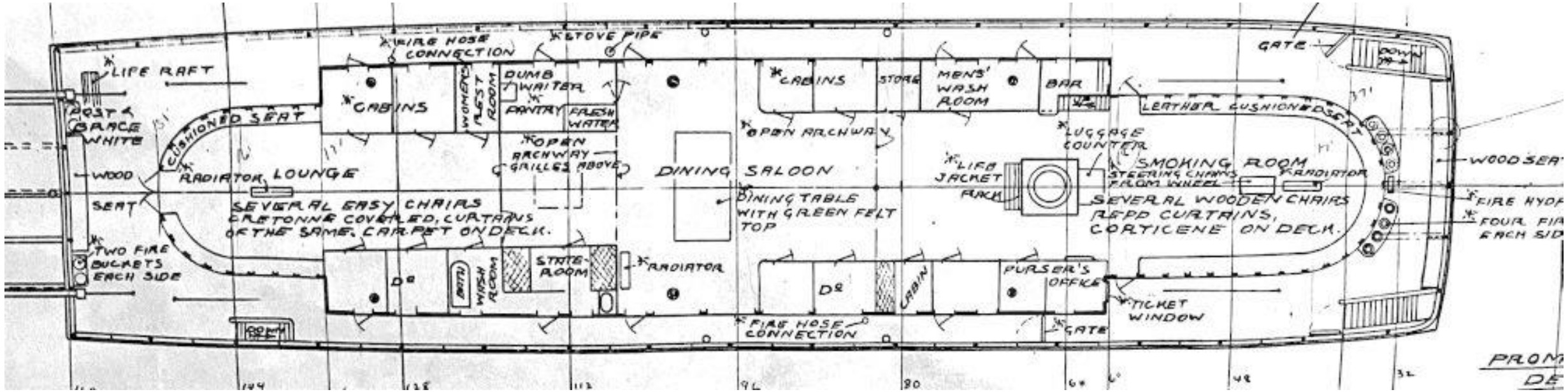




Blueprint Copy of Plans of the *Moyie*

RHJ Rail

S.S. Minto - Plans



Main Deck - *Moyie*

The passenger deck on the ***Minto*** had a slightly different layout but it was the same size and had the same functions as that of the ***Moyie.***

RHJ Rail

S.S. Minto - Plans

Hull

The first consideration (even before drawing the plans) was to decide whether to build a water-line model or a full-depth hull model.

The difference is significant:

- A water-line model can sit on a layout or display and look like its floating.
  - For a stern-wheeler, this means that the stern wheel has to be modeled without the lower (under-water) parts and thus cannot realistically be displayed on shore or have a rotating wheel.
- A full-depth hull looks like the real thing but does not look as good sitting on a scenic water surface because it sits too high.
- Prototype boats were, of course, built to full-hull design.
- Boats preserved today (***Sicamous***, ***Moyie***) are full-hull and are not floating but displayed on the shore.
- Only the full-hull design can have a realistic rotating stern wheel.

It was finally decided to make the full-hull version.

Two hulls were constructed, one for the ***Minto*** and one for the ***Bonnington*** (a model was never built).

The hull serves as the platform or frame on which the rest of the boat is built.

S.S. Minto - Plans

Patterns

Working from plans, blueprints and photos, patterns were designed and cut to shape for each horizontal and vertical component.

This included decks, walls, and other components.

These were drawn to HO scale and many were traced onto the final material for cutting, gluing and painting.

RHJ Rail

S.S. Minto - Construction

Materials used:

- Wood for hull
- Cardboard (Bristol Board) – comes in different thicknesses, for walls and roofs.
- Glue (white glue mostly)
- HO code 100 nickel-silver rail for all the structural beams at the stern.
- Brass tubing, bars, and the like, mostly for the mechanism and the smoke stack.
- Rubber tubing to connect brass tubes used in mechanism.
- Drive motor and gears from some toy or model of the time; not model railroad parts.
- Cardboard for paddle-wheel boards.
- “IBM” punch cards for rings around paddle-wheel; used a compass with Xacto blade to cut circles to fine, precise dimensions.
- Wood screws and washers.
- Paints of various colors.
- “Bridal” netting for under railings.
- Few commercial parts: anchor, capstan, ship’s wheel, captain figure, life boats, stairs and maybe a few more.

S.S. Minto - Construction

Hull

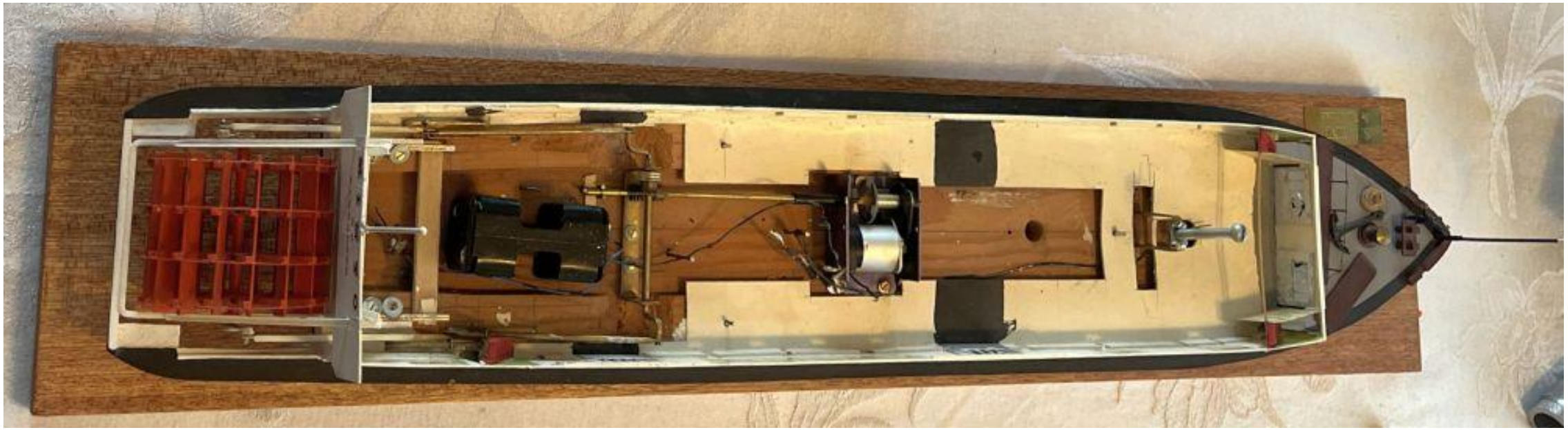
The hull was made from a fir shelf with spruce additions along the edges as the boat does not have a flat and level deck, but it does have a flat bottom.

Much carving, plaining and sanding were required to ensure both the side and front and rear profiles were as near as possible to the patterns.

Hull of the *Bonnington* – same construction as for the *Minto,* but larger

RHJ Rail

S.S. Minto - Construction



Hull used as base for the mechanism, paddle-wheel, walls and details for main cargo deck (at front).

RHJ Rail

S.S. Minto - Construction

Passenger deck cut to shape from pattern; walls, railings, details added.

RHJ Rail

S.S. Minto - Construction

The boat deck showing cabins at the rear and the Pilot House at the front.

The “boat” deck. Cut using patterns, details added, pilot house constructed at front.

The rear wall of the pilot house with its flagstaff can be seen towards the right of the photo.

The whole boat was designed in layers so it could be disassembled to access the mechanism, adjust the alignment of the various parts and add or repair details.

RHJ Rail

S.S. Minto - Construction

The various levels of the boat laid out in order from the bottom up.

Hull and main deck

Base, wiring, connections

Passenger deck

Passenger deck roof and boat deck

Cabins and Pilot House deck

Cabin deck roof

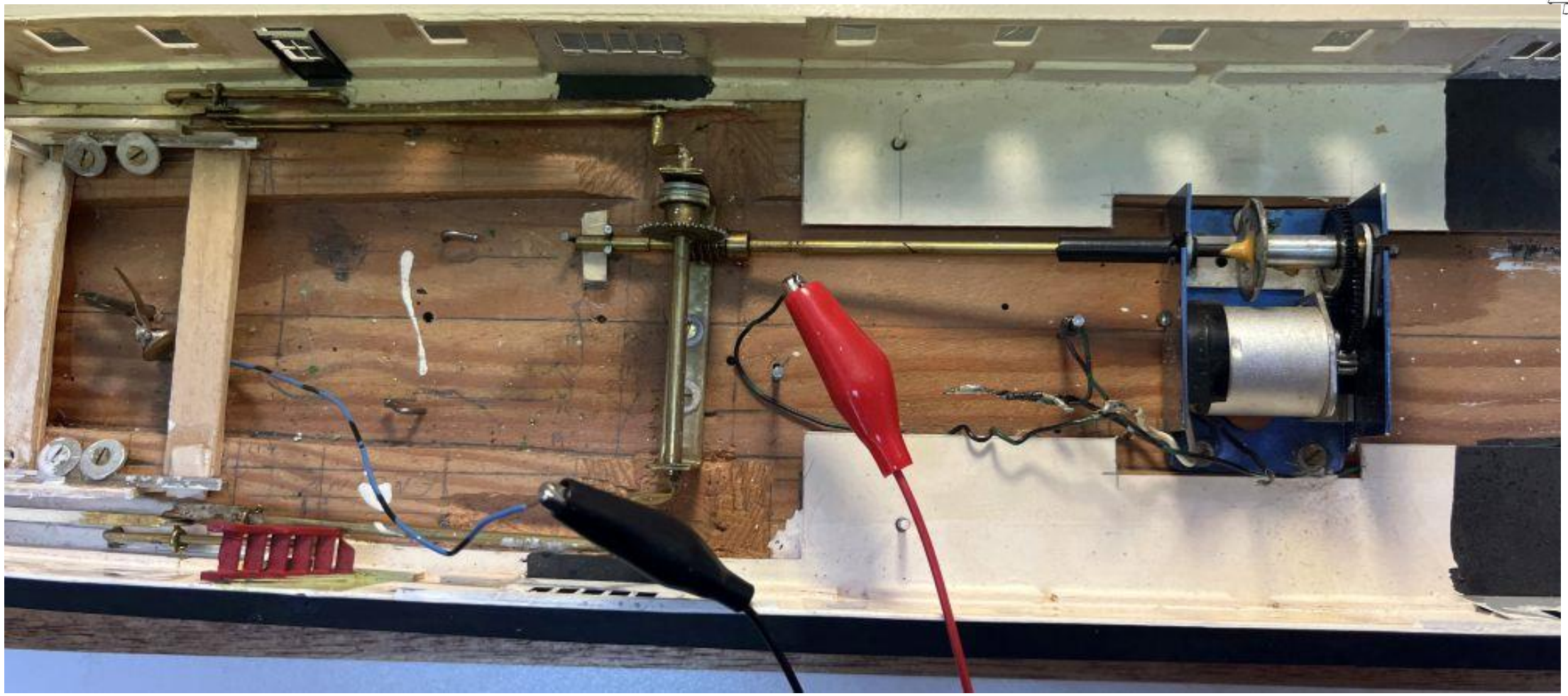
Smoke Stack

Goes through all layers and into the hull to provide proper alignment for everything.

The boat was designed to be disassembled for maintenance and detailing.

RHJ Rail

S.S. Minto - Construction



The mechanism built directly on the hull used very crude parts by today's standards.

RHJ Rail

S.S. Minto - Construction

The hull pattern shown alongside the finished boat.

S.S. Minto - Construction

Some of the patterns drawn from the “blueprint” along side the hull of the *Bonnington* for comparison.

RHJ Rail

S.S. Minto - Construction

A view from the rear. Note the absence of a paddle-wheel cover of any kind.

This was a rather distinctive feature of the ***Minto***.

Possibly, this was to allow the crew to access the paddle-wheel to combat ice build-up in the winter.

The air was sometimes colder than the water. Water scooped up by the paddle-wheel could drop down and freeze to the various parts of the paddle wheel exposed to the elements.

The ***Minto*** ran all-year round if it could.

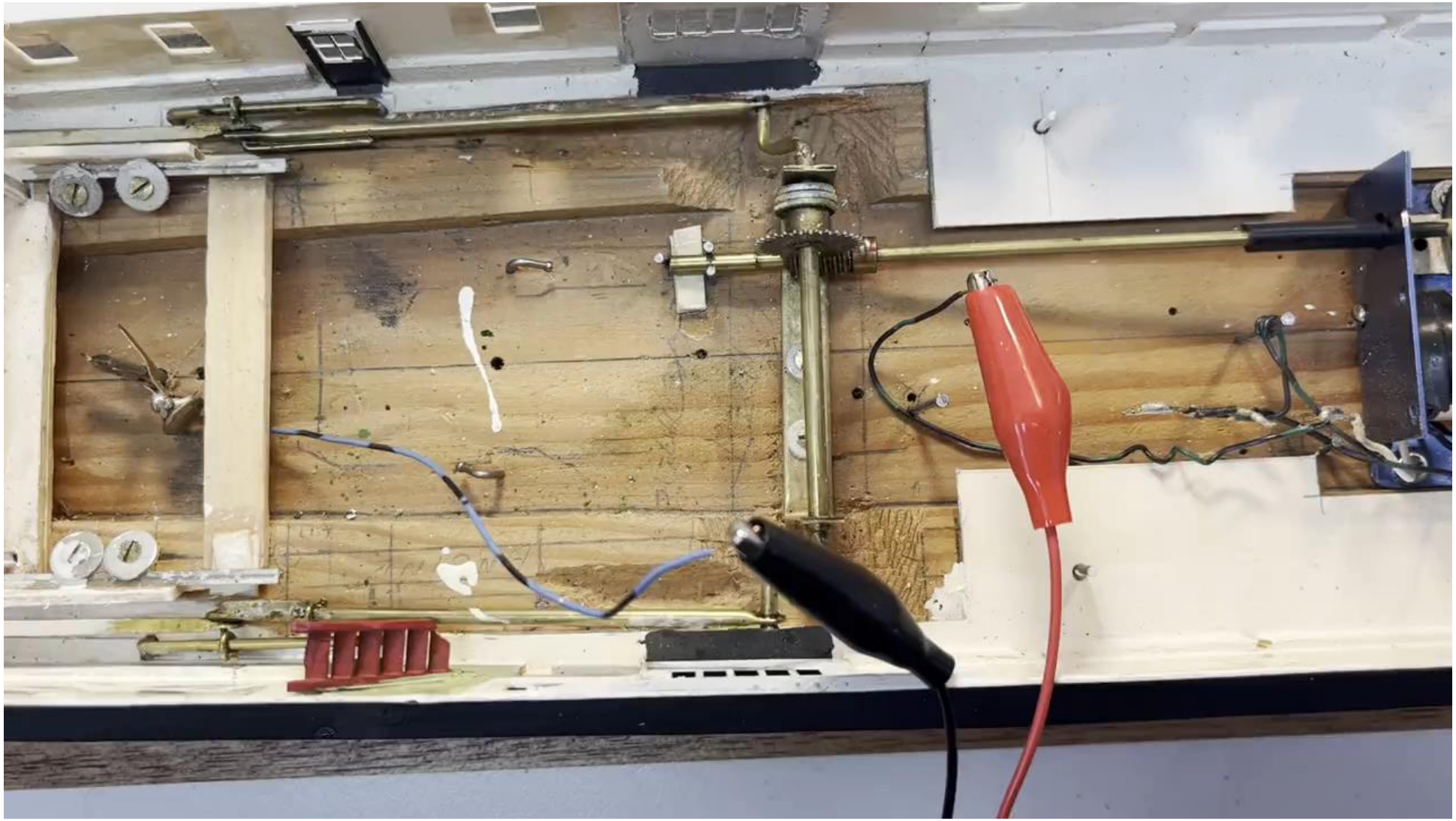
RHJ Rail

S.S. Minto - Construction

The Finished Model

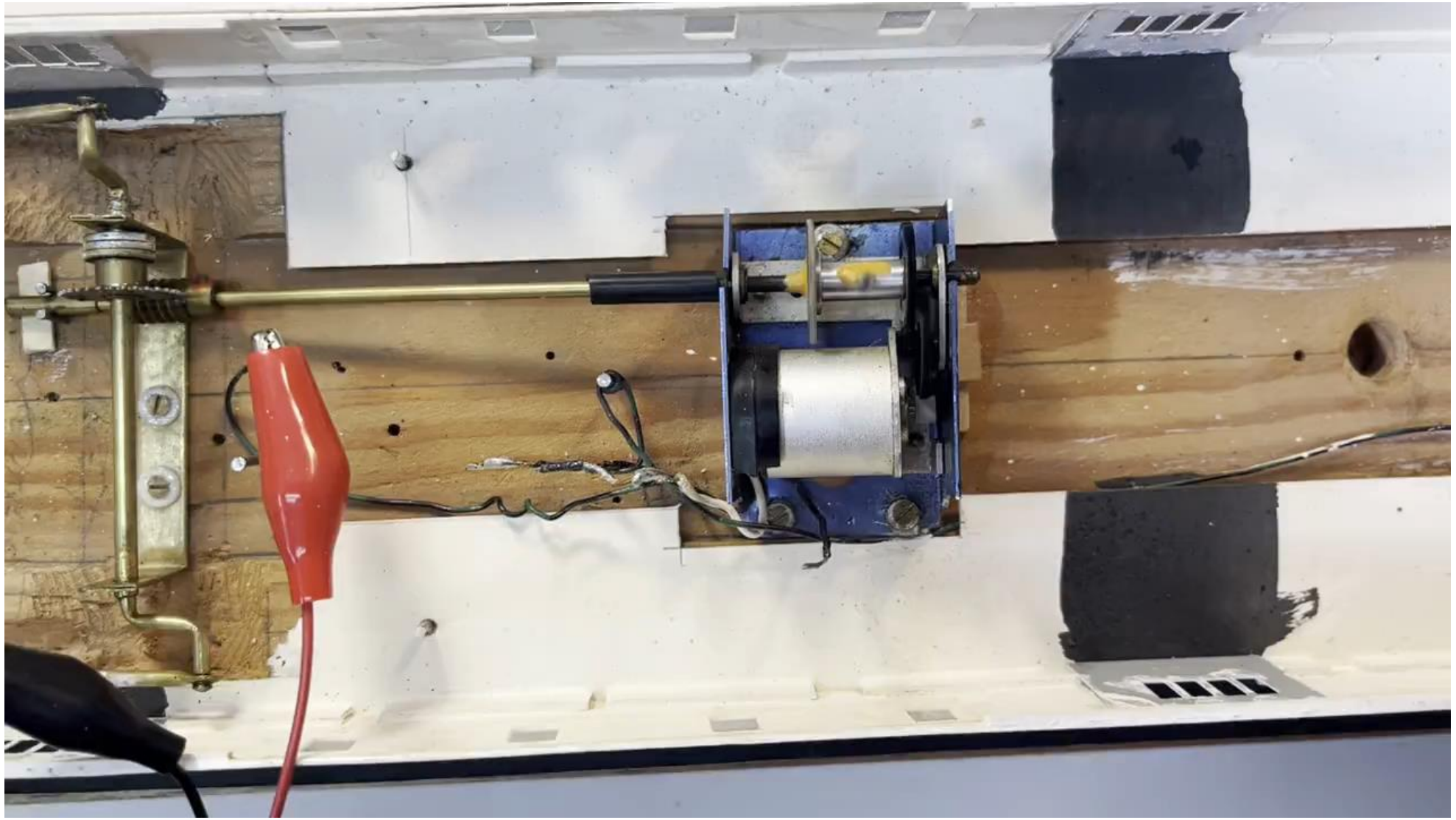
RHJ Rail

S.S. Minto - Mechanism



RHJ Rail

S.S. Minto - Mechanism



RHJ Rail

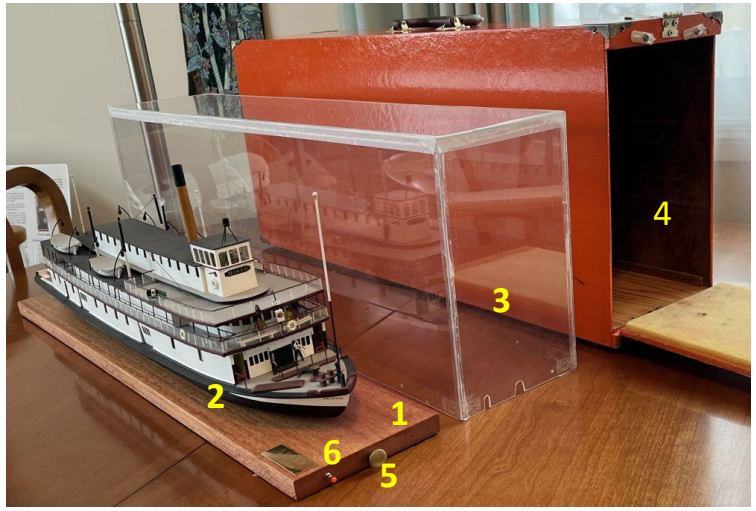
S.S. Minto – Display

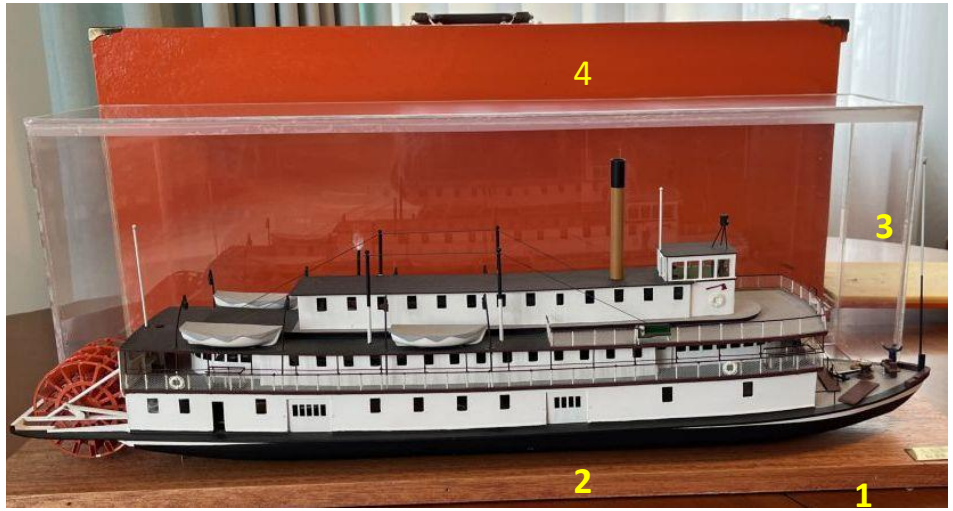
Once you have the model finished (2), you have to decide what to do with it! It is really too large to display as part of a home layout unless the layout was built with that in mind. Even then, it takes up a lot of space! Of four possible options, three were considered (and eventually used) by ***RHJ Rail***:

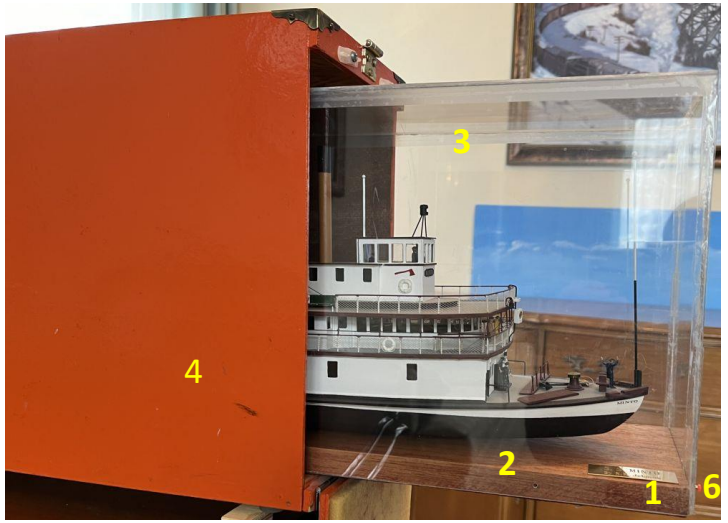
1. Build a box (4) to store it in! The box is 28 ½ inches long.

   - A special base (1) was made for the hull, wiring for operation and felt on the bottom so it wouldn't scratch anything it was set on, and a handle for moving the base was added. (5) A pushbutton was added to activate the stern wheel. (6)

   - A clear acrylic inner case (3) was made to protect the boat and to serve as a display cover.







The *Minto* stored in its container box.

RHJ Rail

S.S. Minto – Display

2. Actually build a home layout to accommodate the model.

- This was never done as it would take up too much space, even for a large home layout.

3. Build an entire modular layout to accommodate the model

- This was done using a complete set of modules constructed with a large lake, a space to store the model on the beach (like the ***Moyie*** in *Kaslo*), and operating tracks with a spur down to the wharf, reminiscent of the prototype at *Arrowhead* and at *Nakusp*.

The *Minto* Displayed on the Reverse-Loop Modules

RHJ Rail

S.S. Minto– Display

4. Make room on the main floor of the house for the boat to be displayed and use a back panel from the modular layout as a backdrop.

The *Minto* Displayed on the Dining Room Buffet

RHJ Rail

S.S. Minto– Display

Like this!

RHJ Rail

S.S. Minto - Display

The *Minto* Displayed on the Reverse-Loop Modules

RHJ Rail

S.S. Minto - Other Models

Other models of The Minto:

- Brian Pate (Vancouver area) – HO scale, very detailed
- Al Love (Calgary) – HO scale, much better than the ***RHJ Rail*** Version; got idea from RHJ
- Revelstoke Railway Museum, very large scale model (5+ feet long), very detailed
- Revelstoke Railway Museum – diorama HO scale

Photo credit: Bruce Watson

Revelstoke Railway Museum
(Diorama)

Brian Pate

Revelstoke Railway Museum
(Large scale, very detailed)

RHJ Rail

S.S. Minto - Other Models

Note the wood hull rather than the metal-clad hull of the prototype.

Model by Brian Pate; Photo credit: MRH Magazine

RHJ Rail

S.S. Minto - Other Models

Revelstoke Railway Museum

Photo Credit: Richard Johnson

RHJ Rail

Fun Facts

- The model was built in 1972 when standards were not up to what they are today.
- The mechanism was entirely designed by the presenter using methods and materials that are primitive by today's standards.
- This was the first (and only) time that the presenter used the quartered drive mechanism to drive the wheel, rather than the other way round, where the wheels drive the side rods, as is the universal practice on smaller gauge locomotives today. Live steam works the other way round.
- The support beams for the wheel and its mechanism were made from HO gauge code 100 rail cut, hammered, drilled and soldered as needed.
- Some consideration has been given to the idea of going back and super-detailing the model but there is some preference for leaving it as built in 1972.

RHJ Rail

References

The Arrow Lakes		
Arrow Lakes Reservoir		(BC Hydro) [10]
Steamboats of the Arrow Lakes		(Complete list of all 20)
S.S. Lytton	1890 - 1904	Dismantled
S.S. Nakusp	1895 – 1897	Destroyed by fire at Arrowhead, Dec. 23, 1896
S.S. Trail	1896 – 1900	Destroyed by fire at Robson, June 1900
S.S. Kootenay	1897 – 1919	Retired 1919, sold 1920
S.S. Rossland	1898 – 1916	Sank at Nakusp, 1917
S.S. Minto	1898 – 1954	Out of Service (best on-line reference for the Minto)
S.S. Bonnington	1911 – 1931	Out of Service

THE KÜTNE READER- Adventures in Kootenaiana (Article about Nakusp and area)

Paddlewheelers on the Frontier, Art Downs, 1972 [1]
Paddlewheelers on the Frontier, Art Downs, 1971, Volume 2 [2]
Sternwheelers and Steam Tugs, Robert D. Turner, 1984 [3]
Commemorative Calendar, Arrow Lakes Historical Society, 1992 [4]
Train Master –The railway Art of Max Jacquiard, Barrie Sanford, 2012 [5]
Google and Google Maps [6]
Wikipedia [7]
BC Archives [8]
Canadian Rail, a publication of the C.R.H.A., No. 268, May 1974, page 1, “The Lady of the Lake”, Rev. Leighton Straight (Calgary) [9]

The End

RHJ Rail

The End

RHJ Rail

The End, but not for this model!

A Presentation of ***RHJRail***

RHJ Rail