PT-305 RESTORATION FOR OPERATIONAL PASSENGER SERVICE

April 19, 2017

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Museum Volunteer
Agenda

- Introduction
- History
- Project Timeline
- Restoration
- Underway
Restoration Overview

- Objectives
  - Historically accurate
  - Operational
  - Passenger certification
- Volunteer workforce
PT-305 Vessel Particulars

- Motor Torpedo Boat
- Hull type: hard-chine planing
- Hull material: wood
- Length: 78’
- Beam: 20’ 8”
- Draft: 6’
- Displacement, Full Load: 49 long tons
- Top Speed: 41 kts
- Cruise Speed: ~25 kts
- Propulsion: 3 x 1,500 HP engines
- Fuel: 3000 gal, 100 octane aviation gasoline
- Range:
  - >500 nm @ 25 kts
  - >250 nm @ 41 kts
Inboard Profile

PT-305 HISTORY
Higgins Industries, City Park Plant
Production
From City Park to Bayou St John
Higgins Industries, Industrial Canal Yard
Higgins Industries, Industrial Canal Yard
Higgins Industries WWII Production Data

| Workforce                      | • 75 to 20,000 workers in 5 years  
|                               | • First fully integrated working force of women and men, African Americans and Whites in New Orleans |

| Production Rates               | • ~20,000 boats between 1940-1945  
|                               | • 18 LCVP landing boats per day |

| PT Cost, lead hull            | • $124,000 or $1.7 Million Current Dollars |

Further Reading:

- Graham Haddock and Robert Latorre “A Look Back on 1942 Combatant Production: An Example of Successful Employee Empowerment at Higgins Industries”
- Jerry E. Strahan, “Andrew Jackson Higgins and the Boats That Won World War II”
PT-305, aka "Half Hitch", "Barfly", "USS Sudden Jerk"

- Mediterranean Theater of Operations
- 12-ship squadron
- 1944 to end of war
- 15 men crew
PT-305 and RON 22

June 18, 1944, Invasion of Elba

July 18, 1944
PT-305 sinks a German Flak-lighter
Palamaria Island, Italy
PT-305 and RON 22

August 15, 1944, Operation Dragoon, the invasion of Southern France

September 15, 1944
PT-305 sinks a German Flack-lighter
Point Del Mesco, Italy

April 24, 1945 –
PT-305 sinks an Italian MAS boat
Cape Della Arma, Italy
Post-War
PROJECT TIMELINE
2007 Acquisition
2007-2009 Planning
2009 Restoration Begins
2011
Move to Kushner
2012
Full-rate Restoration
2012
USCG Certification

10 June 2012

PT-305 RESTORATION PROJECT
VESSEL INSPECTION & CERTIFICATION

Kick-Off with U.S. Coast Guard Eighth District
June 2012
2014
Hull
Complete
2015 Engine Installation
2016
Final Outfitting
November 18th
2016
Move from
Kushner
Restoration
Pavilion
Crawl to Port
NOLA
Transfer to Barge
Transit on Mississippi
Arrival at Seabrook Marina
Shakedown at Trinity Yachts
Transit to Boat House
Boat House on Lake Pontchartrain
Arrival at Boat House
RESTORATION
What made the restoration of PT-305 uniquely challenging?

- Planing high performance vessel
- Aviation gasoline (Avgas)
- War boat to passenger boat
- Coast Guard certification
  - Subchapter T (small passenger vessels)
Hull Form
Wood Construction

- Keel
- Double Planking
- Bottom Frames
- Stringer
- Bulkhead

[Image of wooden construction with labels]
Wood Construction

Bottom Frame

Keel
Wood Construction

- Bottom Stringer
- Aluminum Angle
- Bottom Frame
- Chine
- Aluminum Gusset
- Bottom Frame
Wood Construction
Package 4M-2500 Engines

Cylinders: 12 - V angled arrangement
Supercharger: Gear driven - centrifugal
Cooling: Fresh water
Maximum RPM: 2400 rpm, 2000 rpm sustained
Rating: 1500 HP
Avgas Fuel System

- Aft Tank Rm
- Fwd Tank Rm
- Engine Room
- Vents

Hazardous Zone
Liquid Fuel Space
## Avgas System Safety

<table>
<thead>
<tr>
<th>Element</th>
<th>Existing Safeguards and Risk Mitigation</th>
<th>Added Safeguards for Passenger Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avgas Service System</td>
<td>Non-ferrous materials, flame screens</td>
<td>USCG A1 hoses, remote shut-off valves</td>
</tr>
<tr>
<td>Tanks</td>
<td>Aluminum vented tanks</td>
<td>Increased wall thickness and vent sizing</td>
</tr>
<tr>
<td>Ventilation</td>
<td>Powered bilge exhaust</td>
<td>Ignition Protected with increased CFM</td>
</tr>
<tr>
<td>Spark/ignition protection</td>
<td>Proximity only</td>
<td>Class 1 Division 2 components</td>
</tr>
<tr>
<td>Vapor Detection</td>
<td>Manual and portable “sniffers”</td>
<td>Bilge and ventilation system with remote monitoring and shut-offs</td>
</tr>
<tr>
<td>Fire detection</td>
<td>None</td>
<td>Smoke, flame, &amp; heat detectors</td>
</tr>
<tr>
<td>Firefighting</td>
<td>CO₂ system</td>
<td>Modernized USCG approved engineered system</td>
</tr>
<tr>
<td>Operational</td>
<td>Procedures</td>
<td>Ops Manual and training</td>
</tr>
</tbody>
</table>
Auxiliary Fluid Systems

- Seawater
- Bilge
- Firemain
- Potable
- Sewage
- Diesel
Electric Power and Lighting Systems

- 24 VDC System
- 60 Hz AC System
Monitoring and Control

• Enhanced Monitoring:
  • Fire Alarm Control Panel
  • Smoke/Heat/Flame
  • Bilge
  • Flammable Gas
  • Watertight Doors

• Interlocks
  • Engine start and vent
  • CO₂ and vent
New Topside

Seating: 18 PAX

Gangway Embarkation

Passenger area protected by lifelines
WRAP-UP
Operational Planning and Crew Training
List of industry supporters

- ABYC
- Battery World
- BBP
- Bender
- Berard Transport
- B-Line (Eaton)
- Bollinger Shipyards, LLC
- Brammer Machine Shop
- Byrne, Rice & Turner, Inc.
- Canal Barge.
- Carlisle & Finch Co.
- ControlWorx (John H. Carter)
- Coastal Cargo
- Cooper Crouse-Hinds (Eaton)
- Cospolich, Inc.
- Creative Systems, Inc.
- Cummins Mid-South
- Delta T Systems
- Detronics - John H. Carter
- Dometic Corp Marine Division
- Donovan Marine
- Eaton Corporation
- EngineWorx (John H. Carter)
- Federal Signal
- Gibbs & Cox, Inc.
- Hebert Steel
- Heinemann (Eaton)
- Hiller Companies
- Hochiki (John H. Carter)
- International Paint, LLC
- Jason's Cradle Man Overboard Solutions
- Jim-Buoy
- John H Carter Control Work
- Johnson SPX (Mac-Hugh & Assoc.)

- Karl Senner, Inc.
- Key Bank
- Lemoine Marine Refrigeration
- Lopolight
- Marine Exhaust, Inc.
- Marquette Transportation
- Marsh Bellofram
- Moore Industries
- Nematron - John H. Carter
- New Wave Media
- Newmar
- NRE Power Systems
- Panduit
- Pelican Energy Consultants
- Phoenix Contact
- Quality Metal Works, Inc.
- Quality Signals
- Rockwell Automation
- Rose Point Navigation
- Seabrook Marina
- Seachest
- Seacoast Electric
- Sea-Trac Marine Electronics
- Shell Oil
- Stewart & Stevenson-Electro-Motive Diesel (EMD)
- Summit Electric Supply’s Marine Division
- Survivatek
- Trinity Yachts
- Tyco Electronics
- Versabar
- VT Halter Marine, Inc.
- Wärtsilä Ship Power
- West Marine
U.S. Coast Guard

Thank you for your continued support and guidance
Passenger Experience
Thank you

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