

U.S. Coast Guard/Honda BF225 Outboard Engine Age Exploration Study

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Genesis

- **Coast Guard bought over 1,000 BF-225 outboards**
- **For 25' Defender Class boats (2 each)**
- **Good warrantee, but large maintenance package**
- **Weekend: 200 hrs/year.**
- **Coast Guard: 500-1500 hrs/year**
- **Currently: \$4.05M/year including 11,000 gals of used oil**
- **\$238,000/year on Iridium spark plugs alone**
- **2005: Asked MTTC to study possible maintenance extension.**
- **Must be approved by Honda/Tokyo**



Project Plan

- **Two-Phase:**
 - **Carefully Monitored In-Tank Testing**
 - 8,000 Gallon Tank at Valvoline Labs, Ashland KY
 - Visited 3 sites, developed an Operational Profile
 - Computer used Op Profile to cycle engines constantly
 - Oil Sample every 100 hours, constant other engine parameters
 - Run for 1650 hours, no maintenance except oil makeup
 - Could have run for more
 - Conducted extensive rating teardown and parts analysis
 - **At-Sea Testing**
 - 8 Different stations, one boat each, one engine each boat
 - 4 Port, 4 Starboard, “Times 2” and “Times 4”
 - Jan 07 to Jan 08. Visited each boat twice. Complete data download
 - Two engines given rating teardown and part analysis



Results

- **Valvoline testing completed in mid-2007**
- **At-Sea Testing completed in March 2008**
- **Recommendations delivered to USCG in April 2008**
- **If approved by Honda will save USCG \$2.5M/year**
- **Of 14 Maintenance Cards, 13 have recommended extensions**
- **Draft recommendations discussed with operators: Complete agreement**
- **Use of Anti-Seize is a side benefit**
- **Honda participated in teardowns, but no reactions yet.**

