

Boat Motor Overheat

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Warning Signs and Symptoms

- Warning Horn Sounds
- Overboard Water Indicator Doesn't Have Stream of Water
- Motor Operation Limited to 3,000 RPM (SLOW Automatic for Overheat on 70 HP)

Causes

- Thermostat Blocked
- Cooling System Blocked
- Inlet Vanes Blocked
- Water Impeller Damaged

Potential Effects

- Scored Piston Walls / Rings
- Siezed Engine

Mitigation

- Check / Clean Cooling Vanes After Motor Contacts Mud
- Check / Clean Cooling Vanes When Working Around Plastic / Garbage in Water
- Clean Out Cooling System at Thermostat Assembly When Mud Around Cooling System
- Check / Replace Water Pump Assembly as Needed
- Shut Down Motor When Overheating - Tow In
- Run Motor at Low RPM Durning Overheat Warning
- Clean Out Water Indicator Tube When Suspect Clogged
- Motor Tested and In Good Working Order
- Test Water Indicator After Deployment / Training
- Team Training on Mechanical Fixes

Tasks Needed

- Team Training on Motor Overheating Mitigation
- Checksheet of What to Do During Problems on Water (Overheat)
 - On Water Mechanical Water Indication Hose, Nipple
 - Check Inlet Screens - Mud, Garbage, Blockage
 - SLOW, Turn off and let cool
 - Run with Motor cover off
 - Tow, radio for help
 - See Mitigation Section of Boat Overheat Sheet for Additional Stuff
- Mechanical Check of Horn for Overheat Warning

Move to Towing Operations

- Towing Information Sheet
- Tow Kit
- Backing Plate on Bow Eye Check / Test
- Team Training on Towing

Boat Strikes Underwater Object

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Warning Signs and Symptoms

- Charted Underwater Objects
- Shallow Water Area
- Flooded Area
- Poor Navigation
- Off Course Or Not On Planned Route
- Hurrying to Meet Objective / Deadline
- Poor Visability
- Post or Storm Conditions

Causes

- Collision With Unseen Object Under Water Level and Above Bottom

Potential Effects

- Hull Breach - Water Flows Into Hull - Risk Leak in Hull
- Personnel Thrown Forward
- Damage to Prop / Motor / Transom Damaged

Mitigation

- Depth Check In Shallow Areas
- Planning Using Relevant Chart for Area for Underwater Hazards
- Slow Speed Down for Flooded / Unknown Area
- Prop Guards on Motor
- Motor Not Locked Down During Shallow Water Operations
- Lookout Posted To Look for Underwater Objects
- Probe Ahead of Boat In High Danger Areas
- Spare Prop and Attachment Equipment Carried in Boat
- Padded Bench Seat and Rubber Steering Wheel (RIB)
- BLS Medical Kit in Boat
- Navigation Training
- Relevant Charts / Maps of Area

Tasks Needed

- Additional Navigation Training (Advanced Coastal Navigation, GPS, ...)
- Add Check Prop Guards to Initial Boat Checklist / Restaging Checklist
- Info Sheet on Operating in Area With Underwater Hazards
 - Lookout Posting
 - Probing
 - Slow Speed
 - Hardware In Boat for Changing out Prop
- Spare Prop in Boat

Boat Strikes Floating Object

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Warning Signs and Symptoms

- Debris in Water (Flotsam)
- Previously Fast Moving Water
- Flooded Area
- Storm or Post Storm Conditions
- Poor Visibility
- Night Operations

Causes

- Collision With Object Floating on Top of Water

Potential Effects

- Hull Breach - Water Flows Into Hull - Risk Leak in Hull
- Injury to Personnel Thrown Forward
- Damage to Prop / Motor / Transom Damaged

Mitigation

- Adequately Light Area Ahead of Boat
- Upstream Lookout for Objects Getting Swept Downstream
- Slow Speed Down in Low Visibility Area
- Prop Guards on Motor
- Motor Not Locked Down During Shallow Water Operations
- Lookout Posted on Boat To Look for Floating Objects
- Stand Up When Drive for More Visibility at Slow Speeds
- Spare Prop and Attachment Equipment Carried in Boat
- Padded Bench Seat and Rubber Steering Wheel
- BLS Medical Kit in Boat
- Stop Boat and Push Object Away With Paddle
- Stay Out of Water During High Flotsam Periods

Tasks Needed

- Add Check Prop Guards to Initial Boat Checklist / Restaging Checklist
- Info Sheet on Operating in Area With Floating Hazards
 - Lookout Posting
 - Slow Speed
- Hardware In Boat for Changing out Prop
- Spare Prop in Boat

Boat Grounded in Shallow Water

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Warning Signs and Symptoms

- Position Not Known - Poor Navigation
- Shallow Water Area
- Flooded Area
- Tide Level Not Known
- Inexperienced Driver
- Wind / Current Pushes Boat Into Shallow Area

Causes

- Boat Grounded or Stikes Bottom. May Strand Boat and Crew or Destroy Equipment

Potential Effects

- Hull Breach - Water Flows Into Hull - Risk Leak in Hull
- Personell Thrown Forward
- Damage to Prop / Motor and / or Transom Damaged
- Boat Stranded in Location

Mitigation

- Depth Check In Shallow Areas
- Planning Using Relavant Chart for Area for Depth
- Slow Speed Down for Flooded / Unknown Area
- Prop Guards on Motor
- Motor Not Locked Down During Shallow Water Operations
- Lookout Posted for To Look for Exposed Land
- Probe Ahead of Boat In Shallow Water Area
- Spare Prop and Attachment Equipment Carried in Boat
- Padded Bench Seat and Rubber Steering Wheel
- BLS Medical Kit in Boat
- Tide Plan for Training in Bay
- File Training Plan for Training in Bay
- Marine Radio Carried on Each Boat With Spare Batteries
- Training in Unfamiliar Shallow Areas Occurs on a Rising Tide
- GPS Route for Entrance to Slough and Other High Probability Areas
- Look for Mud Trail in Bay - Kicked Up by Propeller in Shallow Conditions
- Tow Kit in Each Boat
- Dual Boat Operations for Shallow Water - Standoff Shallower Boat
- Food, Water, Warm Clothes Carried in Boat

Tasks Needed

- Additional Navigation Training (Advanced Coastal Navigation, GPS, ...)
- Add Check Prop Guards to Initial Boat Checklist / Restaging Checklist
- Info Sheet on Operating in Area With Underwater Hazards
 - Lookout Posting / Probing
 - Slow Speed
 - Hardware In Boat for Changing out Prop
- Spare Prop in Boat
- Info Sheet on What to Do When Boat Grounded

Boat Pinned By Moving Water

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Warning Signs and Symptoms

- Moving Water
- Rocks / Strainers in Water
- Flood Conditions
- White Water
- Narrow Channel
- Inexperienced Driver

Causes

- Boat Pinned Against Obstacle in Water By Moving Current

Potential Effects

- Hull Breach - Water Flows Into Hull - Risk Leak in Hull
- Personnel Pinned Between Boat and Obstruction
- Inflatable Bladder / Skirt Tear or Burst
- Boat Flipped by Current

Mitigation

- Position Downstream Safety
- Avoid Whitewater Regions
- Maintain Motor to Manufacturer Specifications
- Plan Safe Escape Route
- Approach Objects in Current From Downstream
- Training - Powerboat Operator Class
- Wrap Kit Materials in Shallow Water Trailer
- Shore Spotter When Able
- Scout Rapids Before Operations
- Train People on High Side During Operations

Tasks Needed

- Swiftwater Boat Operator Class
- Practice Operating in Current

Waves Upset Boat

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Warning Signs and Symptoms

- Surf or Waves
- Current
- Inexperienced Driver
- Poor Navigation
- Bladder Loss of Air
- Top Heavy Boat
- Hurrying to Meet Objective / Deadline

Causes

- Boat Flipped By Waves or Surf

Potential Effects

- Personnel Thrown into Water and Stranded
- Loose Equipment in Boat Lost
- Boat Flipped by Current

Mitigation

- River Rafting Training
- Boats Sent Out in Pairs
- All Equipment Lanyarded Into Boat
- Boat Driver Training in Surf
- Boat Driver Training in Whitewater
- Rerighting Kit on Boat
- Weather Report for Time of Operations
- Alternate Plan Hi Surf Operations - Stay at Dock
- Train People on High Side During Operations

Tasks Needed

- Swiftwater Boat Operator Class
- Practice Operating in Current
- Boat Driving Practice in Surf