

# Marine Diesel Maintenance Checklist

1

*What needs to be done to keep the complete system in good condition*

## Value of the Maintenance Log

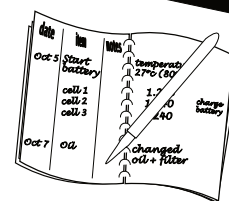
One of the most important, and easiest, ways to ensure the health and longevity of all mechanical equipment on a boat is to keep a Maintenance Log. The more comprehensive and detailed, the more useful the logbook becomes over time.

A Maintenance Log has four main functions:

- early warning of potential problems by highlighting trends.

Most problems develop slowly and are simple to correct if caught early

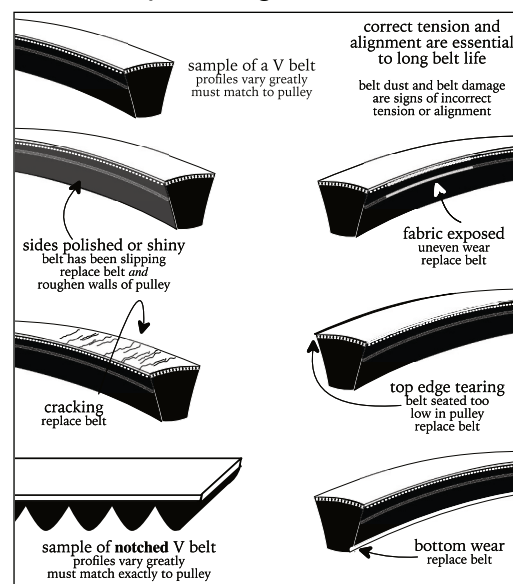
- time and details of any changes in performance
- recording details of work done and equipment serviced
- system history – what was done, when, how and by whom



## Engine Essentials

- ☐ visual engine room inspection
- ☐ check engine oil level
- ☐ check coolant/antifreeze & top up
- ☐ check transmission fluid level
- ☐ inspect *condition* of belts – alternator, coolant & raw water pump
- ☐ inspect pulleys (sheaves)
- ☐ check alignment of belts & pulleys
- ☐ check *tension* of alternator & raw water pump belts
- ☐ check condition of hoses, hose clamps & anti-chafe
- ☐ check condition of engine room insulation

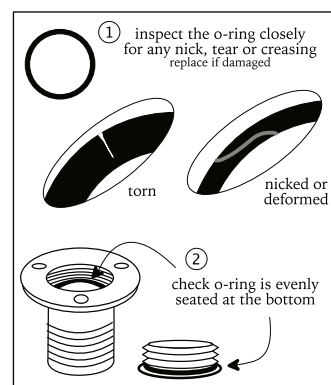
### Inspect Engine Belts



## Diesel Fuel

- ☐ inspect fuel deck filler fitting and o-ring
- ☐ add biocide to the fuel tank(s), if needed
- ☐ check diesel tank(s) for contamination

### Inspect the Deck Filler O-Ring



excerpted from: Marine Diesel Basics 1:

Maintenance, Lay-Up, Winter Protection, Tropical Storage, Spring Recommission

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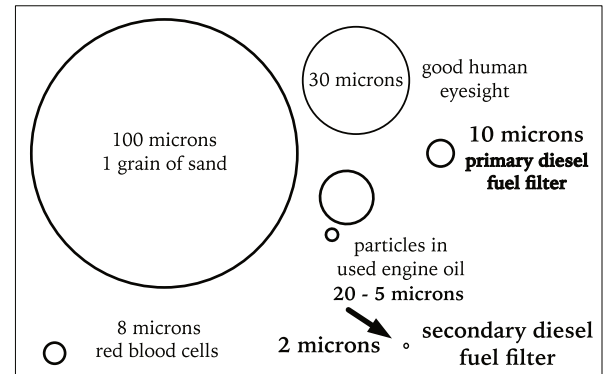
What needs to be done to keep the complete **system** in good condition

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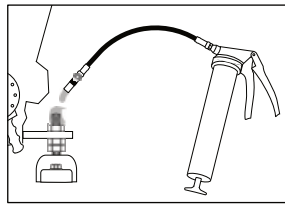
## Diesel Fuel cont.

- ☐ change the primary fuel filter (use 10 micron filter)
- ☐ change the secondary fuel filter (use 2 micron filter)
- ☐ clean away any dirt around injection pump & injectors
- ☐ bleed the diesel system, after work done on fuel system

## How Small is Small?



## Grease Engine Mount Threads



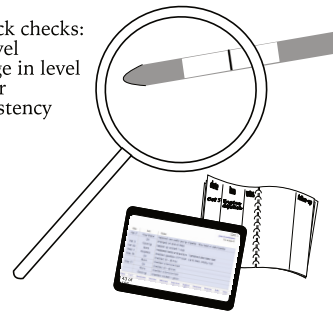
## Lubrication

- ☐ check engine oil level
- ☐ dipstick diagnostics – engine oil
- ☐ check transmission fluid
- ☐ dipstick diagnostics – transmission fluid
- ☐ change the engine oil & filter
- ☐ change the transmission fluid
- ☐ grease the control cable ends and engine mount threads

## Dipstick Diagnostics

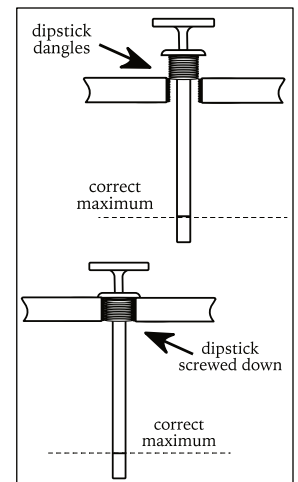
Dipsticks are invaluable tools for early detection of problems

5 quick checks:  
oil level  
change in level  
colour  
consistency  
smell



write results the Maintenance Log  
helps identify changes and trends

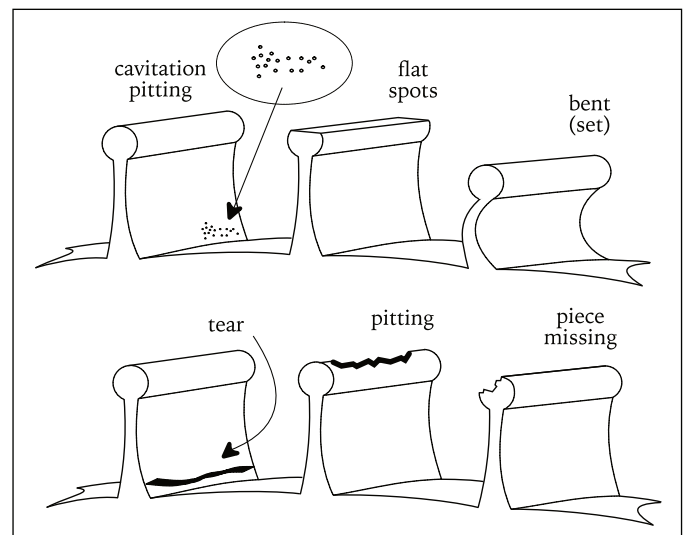
## Gearbox dipstick - dangles or screwed down?



## Raw Water Cooling

- ☐ clean thruhull of any build-up of marine growth
- ☐ check emergency plug tied to every seacock
- ☐ check every seacock opens/closes smoothly
- ☐ inspect raw water strainer
- ☐ inspect raw water pump & impeller
- ☐ check and change heat exchanger anode(s)
- ☐ flush and clean the syphon break
- ☐ inspect water injection port of exhaust riser

## Inspect Rubber/Nitrile Impeller



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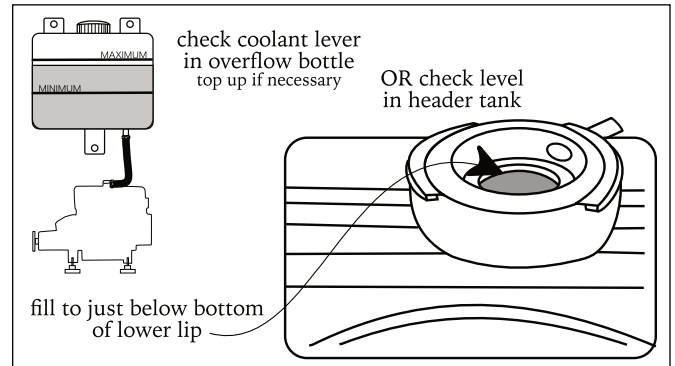
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## Coolant/Antifreeze

- ☐ check coolant/antifreeze level in header tank or overflow bottle
- ☐ inspect condition of coolant
- ☐ drain and replace worn-out coolant/antifreeze

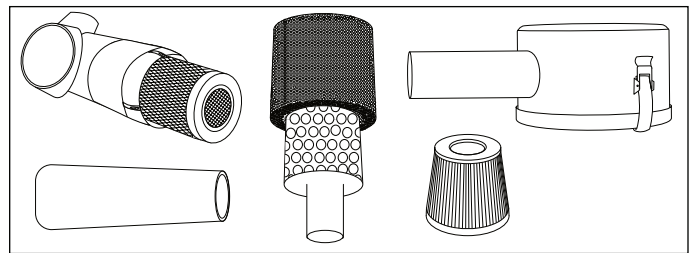
### Check Coolant/Antifreeze Level



## Breathing – Air Intake & Exhaust

- ☐ clean the air filter
- ☐ check adequate air flow through engine room
- ☐ inspect & repair sound insulation

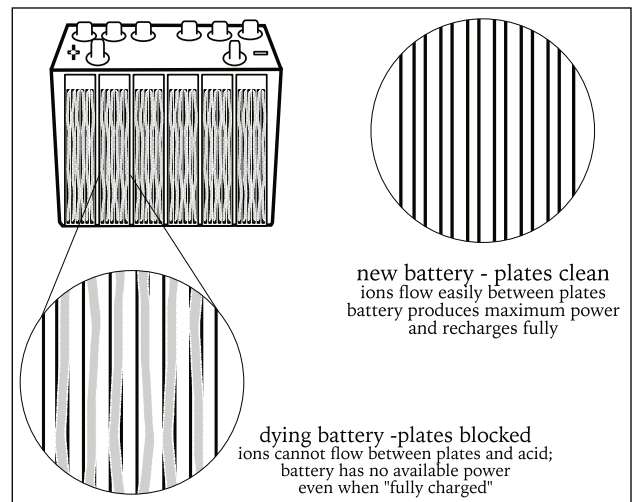
### Types of Air Cleaners/Air Intakes



## Electrical

- ☐ keep battery terminal connections tight
- ☐ keep battery(s) charged
- ☐ check battery open circuit voltage with a multimeter
- ☐ clean battery tops & terminals
- ☐ check electrolyte levels in wet-cell batteries
- ☐ add water to unsealed wet cell battery
- ☐ check specific gravity of a wet-cell battery
- ☐ load testing a 12 volt battery

### Battery Sulphation



excerpted from: Marine Diesel Basics 1:  
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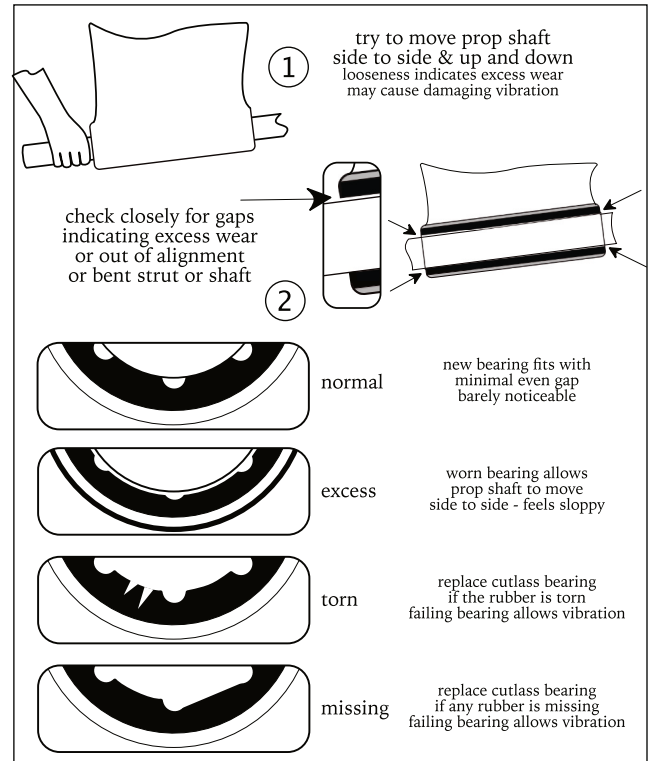
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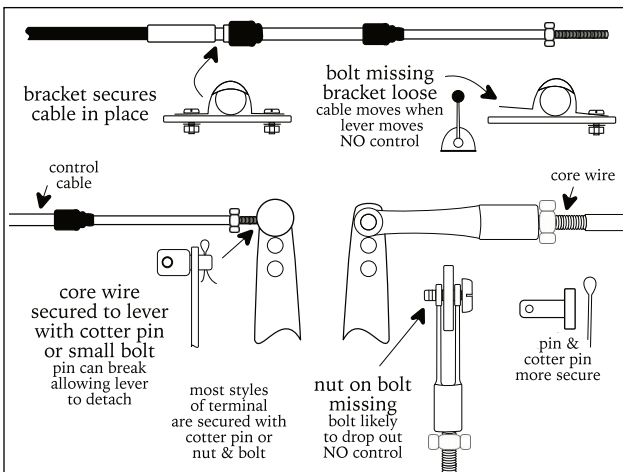
## Drive Train

- ☐ inspect control cable terminals
- ☐ check coupling between transmission & prop shaft
- ☐ inspect stern gland/stuffing box/ shaft seal
- ☐ inspect the propeller shaft
- ☐ inspect the strut
- ☐ inspect the cutlass bearing
- ☐ inspect the propeller anode
- ☐ scrape the propeller, strut & shaft
- ☐ inspect the propeller
- ☐ inspect the propeller nuts and cotter pin
- ☐ inspect a folding propeller
- ☐ inspect the anode on a feathering propeller
- ☐ inspect the propeller shaft

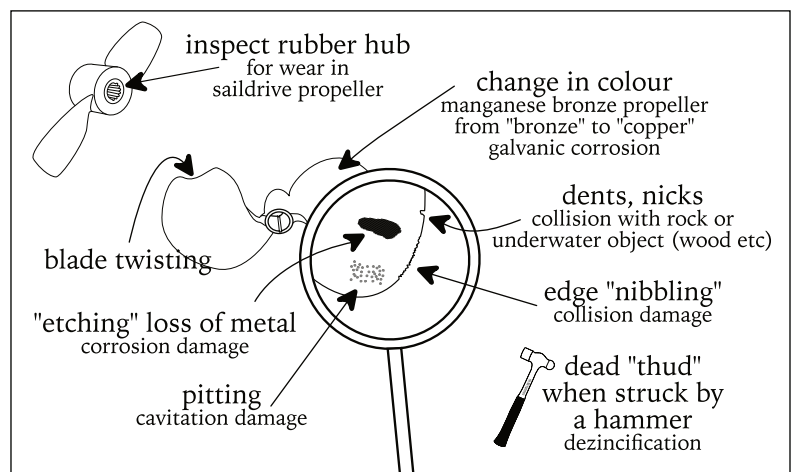
### Inspect the Cutlass Bearing



### Inspect Control Cable Terminals



### Inspect a Bronze-manganese Propeller



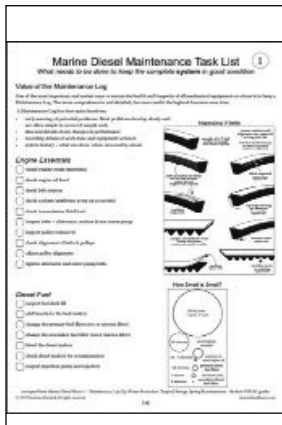
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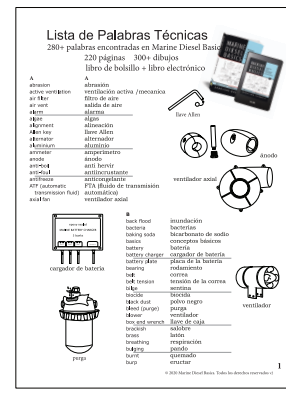
Get more help: [www.marinedieselbasics.com](http://www.marinedieselbasics.com)

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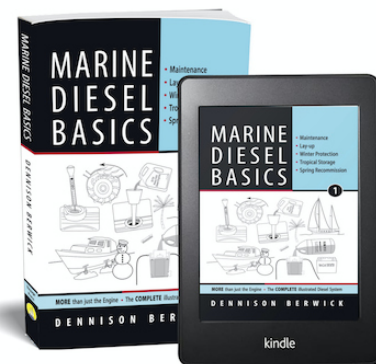
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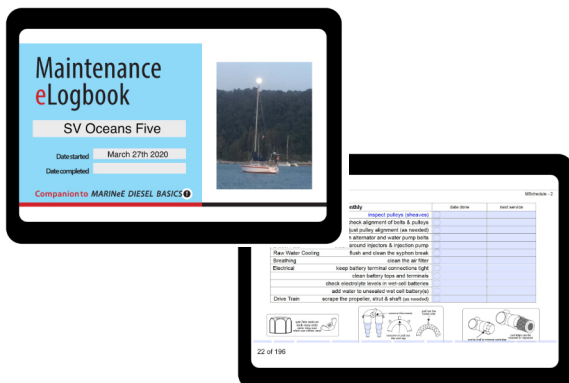
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