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Survey Report no: [REDACTED]

Name of Vessel: "[REDACTED]"

Type of Vessel: Monterey 355 SY, FRP (fibre reinforced plastic) constructed, Deep V hull shape, twin diesel engine, motorboat.

Type of survey: Pre-purchase

At the request of:

[REDACTED]

This survey was carried out on [REDACTED] at Port Hamble Marina, Hamble, Hampshire on the hard standing area. The above named being a prospective purchaser of the vessel.



Limitations:

- ✚ Where access is restricted by fixed panels, linings etc. it was not possible to examine and I cannot say those areas are free from defects.
- ✚ This report has been prepared for the use of the commissioning client and no liability is extended to others who may see it.
- ✚ In some cases it is not possible to detect latent and hidden defects without destructive testing which is not possible without the Owner's consent.

Scope of Survey:

- ✚ This is a Pre-Purchase Survey and its purpose is to establish the structural and general condition of the vessel. Where items of equipment have been tested this will be stated in the text.
- ✚ Camera equipment was used in places to view normally inaccessible areas and the pictures analysed to identify any issues.
- ✚ A general inspection of the engine and installation will be made; this is a visual inspection only. It should be appreciated that some components may appear serviceable but found to be defective when the engine is run for a long period of time.
- ✚ The vessel was surveyed out of the water and tests carried out as described to ascertain any possible sources of water ingress.
- ✚ The hatches and port lights were not leak tested with a hose.

Recommendations and advisory notes:

- ✚ Recommendations will be restricted to those defects which should be rectified before vessel is used, (or within a given time span if specified), and items which may affect insurability. These will not be made concerning cosmetic or other minor defects, although relevant suggestions may be made in the text.
- ✚ ***Recommendations will be printed in bold italics for quick reference.***
- ✚ The recommendations are contained in the body of report in order that they may be read in context, and are also listed as part of the conclusions at the end of this Report.
- ✚ **Advisory notes** are suggestions to prevent a problem getting worse or general advice and do not have to be carried out before the vessel is used nor should affect the boats current insurability.

Conditions of Survey:

Vessel was examined on [REDACTED] at the premises of MDL Marina, Hamble Point, the weather was fine, dry and warm. An engineer was fitting batteries on the vessel for the first hour of the survey.

No special conditions affected the survey other than as described in the text.



Information is reported in the Sections below, followed by recommendations and conclusions.

Hull, Deck and Structure.

1. Details of Subject Vessel, (General Description, Dimensions, Registration etc.).
2. Hull below Waterline including keel
3. Topsides above Waterline including Rubbing Strake etc.
4. Deck Moulding.
5. Coach roof and wheel house mouldings
6. Cockpit.
7. Hull/Deck Join.
8. Bulkheads and Structural Stiffening including Internal Mouldings.

Steering, Stern Gear, and Skin Fittings etc.

9. Rudder and Steering.
10. Stern Gear.
11. Cathodic Protection.
12. Skin Fittings and other through Hull Apertures.

On Deck.

13. Main Companionway and other Accesses to Accommodation.
14. Ports Windows etc.
15. Pulpit, Stanchions, Pushpit, Lifelines and Jackstays.
16. Ground Tackle and Mooring Arrangements.
17. Other Deck Gear and Fittings.
18. Davits and Boarding Ladders.

Safety.

19. Navigation Lights.
20. Bilge Pumping Arrangements.
21. Fire fighting Equipment.
22. Lifesaving and Emergency Equipment.

Engine.

23. Engine and Installation.
24. Fuel System.

Accommodation and onboard Systems.

25. Accommodation General.
26. Gas Installation.
27. Fresh Water Tanks and Delivery.
28. Heads.
29. Electrical Installation.
30. Electronic and Navigation Equipment.
31. Heating & Refrigeration



1. Details of subject vessel:

The Monterey 355 is an American built fast motorboat with the open plan cabin below. She is fitted with twin diesel engines and outdrives. Built by Seabring Marine Industries, d.b.a Monterey Boats, 1579 SW 18th Street, Williston, Florida. The owners manual states boats built after 2005 have a lifetime limited structural hull warranty for the purchasing owner and this is transferable for a fee to a new owner as a 10 year limited structural hull warranty.

Manufacturers' information from owners manual (not verified by measurement)

Length Overall	35'3" / 10.75m
Beam:	11'3" / 3.43m
Draft with drive down	3'4" / 1.02m
Dry Weight	14,200lbs / 6441kgs
CE Specification	B – offshore 10 people max plus luggage = 8181kgs

The CE category is a rating system used in the EU to rate the seaworthiness of a (sailing / motor) boat. This CE category is mainly used by European boat builders although some US sailboat builders start to build boats to this specification. The European Directive specifying the CE Categories for recreational boats between 2.5 and 24 meter in length is the EU Recreational Craft Directive (RCD).

The CE category B: Offshore.

Designed for offshore where conditions up to, and including, wind force 8 (Beaufort) and wave height of 4 meter (13' ft).

Boat specific information

Registration	██████████
HIN Number	US-RGFCD █████ J708
Year of Build	October 2007, 2008 model

2. Hull below Waterline including keel:

- a) Construction of the hull below the waterline is solid FRP with, either side, a single chine (hard angle of side and bottom) and 2 spray rails (mouldings in the FRP to stop spray rising high up the boat. It is white gelcoat and covered in what appears to be Gel Shield or similar – 2 layers of green and light grey and at least 2 layers of grey antifouling.
- b) The vessel was seen sitting on wooden blocks supported in a cradle. No signs of distortion were noted in the hull and no signs of major damage or repair except as noted.



- c) Light hammer sounding was carried out (not heavy enough to damage the anti-fouling) of the hull at regular intervals approximately 500mm spacing all over.
- d) The antifouling was removed in 36 patches approximately 50mm x 50mm at random around the hull below the water line and on the spray rails. While scraping I was looking for evidence of wicking, blistering, cracking or damage and once removed all patches were checked with 10x magnification.
- e) Moisture readings were taken where the antifouling was removed using a capacitance type moisture meter of Sovereign Quantum type, operating in both shallow and deep reading modes. The meter was first checked for correct calibration.
The readings recorded below are from the meter operating in the shallow and also deep mode on the relative scale 0-100.

The readings are relative and **do not** express moisture content as a percentage of dry weight. High moisture content is not generally a structural defect, and is to be expected in older boats. However where some moisture has been absorbed the likelihood of moisture related problems occurring is higher, and the actual state of the laminate cannot be completely guaranteed without destructive testing followed by chemical analysis. The opinion given in this survey is based on all the evidence available at the time but without destructive testing.

The conditions prevailing when the readings were taken were as follows:

Air Temperature:	21.8°C
Relative Humidity:	47.4%
Time ashore	Unknown, possibly over winter
In summary the weather conditions for obtaining moisture readings were good	

Readings were as follows:

Meter	Range below waterline.	Range above waterline.
Sovereign Quantum, Scale A, 0-100 Shallow mode	13 – 15 / transom 14 -16	12
Deep Mode	11 – 12 / transom 19	11

These readings need to be considered in conjunction with the period the vessel has been ashore and the weather conditions when obtained. As a rule of thumb you can expect the levels to drop by one range after a few weeks ashore.



The difference between readings above the water line (normally dry) and below should be noted.

The interpretation of the readings in shallow mode range;

- 0 – 15 : For all practical purposes may be considered dry.
- 16 - 20: Some moisture present at low levels but of no great concern.
- 21 - 30: Considered medium, but those at the top of the range i.e 30 are at the point where the risk of moisture related defects developing is significant.
- 31- 45 Considered high and at a level where the risk of moisture related defects being present but not yet physically detectable is significant.
- 46 – 60 Very High and will usually be accompanied by physically detectable signs. Likely to be accompanied by a significant increase when switching to deep mode.
- 61 – 100 extremely high and indicative of possible laminate damage in addition to osmotic blistering. Likely to be accompanied by a significant increase when switching to deep mode.

Advisory notes:- The transom reading will be higher than the hull because there is ply wood inside. Always storing the boat ashore out of season to allow some natural drying out to occur will contribute significantly to maintaining condition.

- f) On the port side, upper spray rail. 1.3m from the bow are hairline cracks running along the rail for 1.2m x 40mm spread. These are visible through the antifouling and when scraped off, in the gel coat.
- g) Inside the boat, at the level of the upper spray rail there are two 25mm cracks at the edges of the visible fibre glass bond and along the bottom of the small plywood panel under berth support (floor) where it is bonded to the hull.

Advisory notes:- It is probably that the spray rail hairline cracks and hairline cracks inboard are from the boat hitting a wave or flexing around the hard point of the floor. To repair this is a quick job for a competent FRP repaired and as access is available inboard without removing anything it should be a few hundred euros to put right. The owner may wish to claim against the hull warranty. The repairs should be made to prevent water entering the laminates.

3. Topsides above Waterline including Rubbing Strake:

- a) These are constructed of solid FRP with cored panels inside in places. It is finished in white gelcoat with the top half sprayed blue.
- b) Top side moulding found in generally good condition with some minor abrasions on the starboard side below the aft window possibly where a fender has been. The stripes above



the waterline, which are a vinyl, have been repaired and needed further cosmetic repair forward

- c) The topsides were lightly hammer sounded and no indication of voids found. Moisture readings were taken and recorded as above.
- d) There is a rubber rubbing strake with chrome insert. There was no major damage noted to this.
- e) There is a hairline surface crack about 90 mm long running vertically in front of the HIN number which is on the starboard side of the swim platform.

Advisory note: The hairline crack is very minor issue and probably best kept polished unless an invisible repair can made.

4. Deck moulding:

- a) The deck is of solid FRP with some sandwich stiffening below. Access to the underside was restricted by headlining panels. The transom swimming platform has an imitation teak covering made from a type of plastic. It is a very good copy.
- b) A large storage locker under the aft facing seat is supported on pistons.
- c) The whole deck was carefully tested underfoot for signs of delaminating or other structural defects.
- d) The silicon sealant around the outer edges of the plastic teak is coming away.
- e) Apart from that noted above, no faults found.

5. Coachroof and wheel house mouldings:

- a) Constructed as part of the deck moulding and finished in the same way. Access to the underside was restricted by headlining panels. A radar arch is attached.
- b) The whole area was carefully tested underfoot for signs of delaminating or other structural defects.
- c) Hand rails were tested with a lever.
- d) No faults found.

6. Cockpit:

- a) Constructed as part of the deck moulding
- b) Drainage is via 6 drains under the engine covers, plastic skin fittings attached to hoses that join into each other and then exit either side of the hull above the water line. Access to the inside of the hull was restricted by engine insulation. Elsewhere, tested and secure with one clip at each fitting.
- c) The cockpit base (sole) has a small engine access hatch in a large engine access hatch that is electrically operated. There are gulleys around these to prevent water entering below.
- d) Under the seats are draining storage lockers.



- e) The transom gate is kept open and shut by magnets. The rubber bumper is missing from the transom for when the gate is shut. The screw left in place has chipped the door with a 10mm gel chip which is cosmetic only.

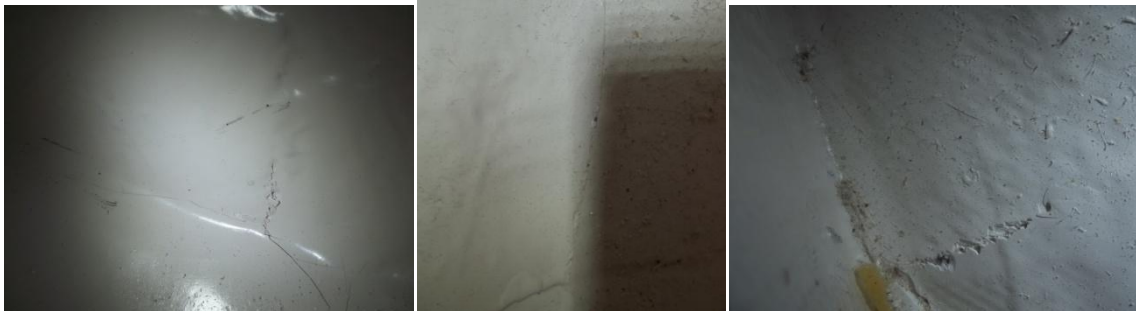
7. Hull/Deck Join:

- a) This is a mechanical joint whereby the deck is screwed to the hull with sealant or bonding paste between. The screws being either part of or behind the rubbing strip.
- b) Access to the joint was restricted to the anchor locker and from the cockpit locker.
- c) There are no signs of damage or leaks at the joint.

8. Bulkheads and Structural Stiffening including Internal Mouldings:

This is a Monocoque (single box) construction and a number of components contribute to the overall structure.

- a) The hull and deck mouldings are robust in the first place. And inner liner forms the cabin sole and furniture bases. This is delaminating to the hull.
- b) All possible access was checked, lockers, under berths and the floors and inner mouldings for signs of delamination and cracks.
- c) As noted in section 2 above, accessed from the aft locker below the main berth to the port side, there is signs of minor cracks of the bonding.



Note these cracks are only 25mm long

- d) In the anchor locker the small bulkhead / stiffening mounted aft of the windlass, the port corner upper corner has cracked. This is more cosmetic than structural as there is still plenty of other support in this area.



Advisory note: For cosmetics sake, the anchor locker bulkhead could be painted with a gelcoat paint. Likewise the inner hull section, or in this area FRP lamination could be applied for further strengthening.

9. Rudder and Steering:

- a) The wheel steering is power assisted and connects to the starboard drive. All connections were checked where possible and found secure. No signs of any leaks. Steering operated fully lock to lock but without the power assist as engines were not run.
- b) Bow thruster mounted in professionally installed tube. Operated briefly at helm without problems.

10. Stern Gear:

- a) The vessel is fitted with twin Volvo Penta duo prop drives. They are connected externally by a stainless steel rod. The drives are painted black.
- b) The bellows, hoses and clips were checked where possible by lifting and turning the drives. The clips were tested with a hammer. No faults noted.
- c) There propellers were scraped in places to check the condition of the metal below.
- d) The gear operation was not checked as this is an electric operation which connects to cable and the engines were not run.
- e) There was no sign of corrosion or damage to the legs.
- f) The fixing bolts to the transom were visually checked and hammer tested where accessible. No faults noted.

11. Cathodic Protection:

- a) There are anodes fitted to the top of the stern drives (underwater section). These are partially wasted.
- b) Further anodes are fitted to the underside of the fixing bracket. These are very wasted.
- c) An anode is fitted to the connecting sharp this is partially wasted.
- d) The anodes were tested for continuity to the propeller, shaft and stern gland.
- e) The bow thruster has an anode fitted to the propeller fixing, this is partially wasted

Recommendation: As a minimum the bracket anode should be replaced before the boat is used much more.



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12. Skin Fittings and other through Hull Apertures:

Some thru hulls may not be reported below but will be with relevant systems sections. No skin fittings or valves were dismantled as part of this survey but the following routine tests were carried out:

- ✚ Examination from outside and inside the boat. Checked for de-zincification
- ✚ All valves open and closed to their full extent where possible.
- ✚ Any fixing bolts hammer tested where accessible.
- ✚ Bodies of metal valves or sea cocks tested with a hammer inside the boat and external parts hammer tested outside the boat.
- ✚ Fittings aggressively tested inside the boat for security in the hull.
- ✚ Hose clips inspected and hoses aggressively tested for security. 2 clips correctly fitted below water line on outlet spigot unless noted.
- ✚ Lying fair to hull unless noted

Below Waterline:

- a) There is only one through hull fitting below the waterline, this is for the waste tank pump out. It has a black plastic material ball valve fitted This is a plastic material. Plastic is not normally suitable for underwater skin fittings as they could break off. As the boat is built to CE, I presume this is Marelon or similar approved plastic but could find no marking.

Above waterline

All skin fittings on the water line are chromed stainless steel. They were all checked where possible internally but access was limited due to furniture.

13. Main Companionway and other Access to Accommodation:

These were all checked;

- ✚ to be lying fair to the deck
- ✚ fixings were randomly tested with screw driver for tightness
- ✚ frames checked for damage
- ✚ a secure method of closure
- ✚ correctly fitted hinges
- ✚ glazing checked for damage
- ✚ gaskets checked

All found ok unless noted. The hatches were not hose tested for leaks.

- a) Companion way is a sliding Perspex door.
- b) Forward saloon is a Bomar round hatch, with 3 catches and hinged aft.



14. Ports, Windows etc.:

The same checks as section 14. above were carried out. All found ok unless noted. The ports and windows were not hose tested for leaks.

- a) There are 6 opening Bomar portlights below the deck level in plastic frames. These have 3 clips and hinge above.
- b) There are two half circle Bomar hatches in the coach roof, these are securely fitted.

15. Pulpit, Stanchions, Pushpit, Lifelines and Jackstays:

These are tested under full body weight where practical.

- a) This is a single piece combining side rail and forward rails and pulpit, made of stainless steel tubing bolted through the deck with washers below.
- b) All found secure.

16. Ground Tackle and Mooring Arrangements:

- a) The Main Anchor is a Lewmar Delta 35KG Plough type anchor attached to 8mm galvanised chain with a stainless steel swivel joint. The chain is attached to 3 strand warp, the attachment is good and it is tied off at the bitter end. There is an electric pillar windlass operable from deck and cabin.
- b) The chain was checked in the locker and not for corroded.
- c) The windlass was not operated as the engine was not running.
- d) Mooring cleats were checked with crowbar and found secure.
- e) No other anchors were seen.

17. Other Deck Gear and Fittings:

- a) There is a starboard windscreen wiper that works.
- b) The screens and gate to coachroof were secure.
- c) The canopy was has no rips or tears noted and the screens are intact.
- d) A search light is fitted and was seen working.

18. Davits and Boarding Ladders:

- a) Vessel has permanently attached stainless steel boarding ladder which extends below the waterline and is securely attached. It is stowed in the transom lift up locker.

19. Navigation Lights:

Vessel fitted with lights of correct size, securely mounted and seen working unless noted.

- a) White on stern
- b) Port and starboard on coach roof – Starboard light is not working
- c) Steaming light on mast.
- d) Mooring light on mast

Recommendation: Fix the starboard light to comply with shipping regulations.



20. Bilge Pumping Arrangements:

- a) There are 3 electric bilge pumps, all operable on float switches or permanently on. Two in the engine compartment and one in the cabin area. The cabin one is a *Rule* 1100GPH submersible and the two engine compartment ones *Rule* submersible 1500 GPH. The second engine bilge pump labelled "Emergency Pump" has an audible alarm when running as the float switch is positioned higher.
- b) They were all tested on both settings and float switches worked.

21. Fire-fighting Equipment:

- a) The engine compartment has an automatic HFC gas 8.5cuft extinguisher with indicator lamp and manual override at the helm station. This was manufactured in October 2007 and should be serviced every 5 years.
- b) In the galley drawer is a 950g hand held Powder extinguisher, expiring end 2012.

Advisory note: There are no regulations in the UK relating to fire fighting equipment. I would advise carrying at least 1 extra 1KG 34A 8B rated Powder fire extinguisher in the cockpit area.

22. Lifesaving and Emergency Equipment:

The following was noted aboard

None

Advisory notes

- The RNLI operate an excellent free inspection and advice service concerning levels of safety equipment (SEA Check) and can be contacted on 08003280600 or via the RNLI website, www.rnli.org.uk.
- The RYA also publishes a booklet, G16, "The Boat Safety Handbook" and this specifies levels of Safety Equipment for different categories of use. Booklet is obtainable from nautical bookshops or direct from the RYA, www.rya.org.uk.

Recommendation - this vessel be equipped with safety equipment to the level appropriate to proposed use.



23. Engine and Installation:

- a) The vessel has two Volvo Penta D4 260KA marine diesel engines. Numbers Port – 869539 2004014323, Starboard – 869540 2004011410. Engine hours are 122 port and 121 starboard.
- b) The engine compartment is lined with fire retardant material in places.
- c) The bilges are generally clean. There was some water in the engine bilge.
- d) The engines are very clean with little corrosion and no signs of leaks of oil or water noted.
- e) The owner advises the engines are regularly serviced, last serviced January 2011. I have not seen invoices to back this up.
- f) Both Intercooler units – part of the air intake system with sea water running through to cool the air – have minor corrosion at the base of the forward gaskets. This indicates that they are starting to scale up.
- g) The port engine mounts forward on both engine shave some minor corrosion on them. These mounts are under the engine block drain points and the corrosion is likely to be caused when the engines are drained down.
- h) The engine compartment has two extractor fans and ventilation is natural through the vents high up on the topsides.

Advisory note: The intercoolers should be descaled at the next service.



Leak under intercooler gasket

Advisory Note: Purchaser should check receipts for servicing.



24. Fuel System:

- a) A stainless steel or aluminium tank is mounted forward of the engine behind a wooden panel. The top is accessible through a narrow gap. No signs of corrosion were noted. The installation is professional.
- b) The hoses are all marine fuel hoses.
- c) There are two fillers and it is possible the tank is separated internally.
- d) The shut off valves in the fuel lines are on the top of the tank and only accessible from the engine compartment.
- e) The tank vents high on either topside.
- f) No signs of leaks on the diesel system.

25. Accommodation General:

Clean and tidy with no signs of major damage anywhere. All lights worked as did microwave, electric cooker, monitor (although no input signal), DVD and radio. The cushions in the cockpit all appear in good condition.

26. Gas Installation:

There is no gas system aboard

27. Fresh Water Tanks and Delivery.

- a) Filler is on transom.
- b) A 240V and engine heater water calorifier is fitted in the engine compartment.
- c) Taps were turned on and operated.
- d) No signs of leaks were noted.

28. Heads:

- a) Toilet is an electric, fresh water flush with a waste holding tank. This can be pumped out from shore through the transom or through hull at sea with macerator pump.
- b) All clips on hoses that were accessible were checked and found secure. There were no excessive smells on the boat.
- c) Grey water from the shower goes to a collection box under the saloon with a pump out overboard.
- d) Neither heads nor shower pump were operated as boat is ashore.



29. Electrical Installation:

DC circuits

- a) 4 110ah batteries are fitted, 2 have been checked and have labels attached showing batteries are good although indicator lights are dim. The other two are showing green on their indicators.
- b) These are strapped down in the engine compartment correctly.
- c) All terminals are tight and greased but have no rubber insulation covers.
- d) All wiring appears original and everything operates through circuit breakers.
- e) There is a 12V - 240V inverter is fitted which, although appears in the engine compartment not to operate, as no lights illuminate, it has a remote switch in the saloon electrical cupboard that illuminates and therefore is presumed to work but socket was not tested.
- f) All lights and circuits operated i.e fridge on 12v, cockpit lights etc, no faults found.

240v Circuits

- a) There is a socket on the transom for shore power with a 30ma circuit breaker. Shore power was connected.
- b) The electrical panel has circuit breakers for the power and all circuits.
- c) All items operated, i.e fridges on 240V and no faults found.

There are switches for generator and air-conditioning but these items are not fitted.

Advisory note: Fit insulation caps to battery terminals to prevent accidental short circuit when in the engine area.

30. Electronic and Navigation Equipment:

The following was seen aboard operating

- a) Sea me Radar
- b) GPS chart plotter – Raymarine C80 – No chart seen – hull fitting in engine compartment
- c) VHF – DSC type Raymarine
- d) Depth and Log – transducers on transom – ST40 Bidata
- e) Binnacle compass

31. Heating and refrigeration

- a) Front loading fridge in cockpit – 240V and 12V seen working on both
 - b) Front loading fridge in saloon – 240V and 12V seen working on both
- No heating seen.



RECOMMENDATIONS and CONCLUSIONS:

List of Recommendations:

The Recommendations made in the Report are listed below with their respective section numbers. *All Recommendations should be carried out before use of vessel or as stated.*

11. Cathodic Protection:

Recommendation: As a minimum the bracket anode should be replaced before the boat is used much more.

19. Navigation Lights:

Recommendation: Fix the starboard light to comply with shipping regulations.

22. Lifesaving and Emergency Equipment:

Recommendation - this vessel be equipped with safety equipment to the level appropriate to proposed use.

Conclusions:

Cariad is a very clean well equipped example from what has been checked. The hull is very dry and the minor stress cracking is not indicative of bigger faults, an isolated case. The engines, drives and systems from what has been checked are all good.

Note: The purchaser is under taking a sea trial with the broker that the surveyor cannot attend. I suggest checking the following.

- a) Engines start from cold with not too much smoke – Volvo engines do smoke at start up but it should clear after engines reach operating temperature which is 80°C.
- b) Check oil pressure is around 40lbs psi.
- c) When engines are warm shut down and restart. They should start immediately.
- d) Do a standing start, i.e stationary to max throttle, there should not be too much smoke and she should plane quickly.
- e) Test windlass.
- f) Test trim tab operation.
- g) Test normal operation of engines.



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