Seabee Pre-buy Inspection

NOTE: BEFORE YOU PUT YOUR MONEY DOWN, It is always a good idea to have a reputable Seabee mechanic do a pre-buy inspection for you. It may cost a bit but it will save you money in the long run. Also, get a title search done. You can check with AOPA or SPA for the names of title search companies. This is a must! Too many Seabees from the past have had liens against them with the future owner not realizing he (or she) is responsible once the sale is made!! Protect yourself. It is very cheap insurance against liability. Check the logbooks (airframe, engine and propeller) for currency and that ALL AD's have been complied with. A sign off such as "All AD's complied with" doesn't hack it. All AD's must be entered separately and signed by a licensed A&P mechanic. A list of all pertinent AD's for the Seabee is available on the Seabee website (**www.republicseabee.com**). Check the logbook against the airplane itself to make sure the work was done. Some will be difficult to ascertain, such as internal engine AD's, but they must be signed off for legality. Because no two Seabee's are alike, airplane accessories such as starters, generators, vacuum pumps, etc. must be searched on the FAA website for AD compliance. Check with your IA for a complete list of AD's for your accessories. They have a neat CD that has all that stuff on it.

> **Note**: Once you take possession of your Seabee, it's a good idea to get all the model numbers and serial numbers of the airframe, engine, propeller and accessories written down and printed out for future reference. You will need them for any future work.

If you use the same mechanic all the time give him (or her) a copy for their records. Once you decide to buy, get a thorough check out with a qualified Seabee instructor! Take as much time as you need to get comfortable with the Seabee. Instructors are around and insurance companies require it before insurance can be obtained. Most insurance companies require at least ten water landings and ten airport landings with the qualified instructor before insuring you. That is the bare minimum! I flew with my instructor for a solid week every day. In addition to the above items, the mechanic (and you) should use a good flashlight and mirror to check the following:

- ❑ Open ALL access panels as if you were doing an annual inspection (that's really what you are doing)
- ❑ Check hull for cleanliness
- ❑ Check for corrosion inside aft hull compartment under water rudder
- ❑ Check for cracks in the landing gear knuckles. Look underneath the knuckles.
- ❑ Check for cracks in the main gear actuator "H" fitting under the rear seats. (Use a flashlight and mirror)
- ❑ Check the upper control rod from the main gear actuator where it attaches to the main gear coupling. The control arm on the cross tube has been known to crack due to bad welds or corrosion.
- ❑ Jack Seabee up and retract gear to see that operation is smooth and has no binding
- ❑ While the gear is up check for play in the through-bolts (two on each side) most Seabees have some play but very little play should be evident
- ❑ Check gear mechanism under rear seats during retraction/extension
- ❑ Check for cracks and corrosion on the wheels
- ❑ Check brake system for leaks
- ❑ Remove the strut fairings and check wing strut fittings for cracks and corrosion (wing to strut, fuselage to strut) This is an AD that must be done each 25 hours or 6 months.

> **Note**: You must look under the rear floor at the strut fittings as well. They go through the fuselage there.

- ❑ Use a mirror and flashlight to check under the floor at the hat sections (horizontal beams top and bottom) for cracks and corrosion
- ❑ Check for cracks in elevator flanges (tube sockets)
- ❑ Check elevator trim system carefully. Especially at the rear aft compartment Boden cables
- ❑ Check the trim system by the forward trim crank, it should be smooth with no binding
- ❑ Check trim cables in the aft compartment (above the water rudder compartment) as it is activated. Check that there is no broken cable strands. This is a two-man job.
- ❑ Check trim tab gear boxes (there are two; one on each side of the lower horizontal stabilizer).
- ❑ Check for cracks at the base of the vertical stabilizer (four bolts on aft vertical spar)
- ❑ Check the forward vertical stabilizer attach bolt for security and integrity. This bolt is inline with the vertical spar and can be seen through the left-hand hand hole under the left horizontal stabilizer.
- ❑ Check/remove the hull plugs.
- ❑ Check the step hull drain for fuel staining. Any fuel bladder leak will be evident there.
- ❑ Check other drains for fluid leakage (hydraulic fluid, fuel)
- ❑ Check for hydraulic leaks under the floor forward of the front seats. Use a mirror/flash light
- ❑ Check the flap actuators in the wings for leaks and wear. Move the flaps down and check for play.
- ❑ Check all hydraulic hoses for flexibility. They should not be stiff; a sure sign of cracked hoses.
- ❑ Check tailwheel actuator for hydraulic leaks and wear.
- ❑ Check tailwheel while jacked up. Any play left and right should be suspect

  Note: It appears to be normal for the tail wheel to "sag" in the retracted position. This seems to be a Seabee-ism. Some do, some don't.

- ❑ Check wing attach bolts under access panels on inboard wings for corrosion
- ❑ Check flight controls (ailerons. elevators, rudder) for loose bushings at the hinges
- ❑ Check aileron control horns in the left and right outer wing. To get a good view the aileron pushrod must be disconnected and the aileron allowed to droop down out of the way. Let the mechanic do this.
- ❑ Check all cables for fraying. Any fraying through a fare lead is automatic replacement
- ❑ Check all cables and pulleys for wear and fraying. Cable marks on pulleys require replacement.
- ❑ Take the wing floats off and check for cracks on the upper end. The wing float “boxes” in the wing should be sound and free from cracks. There are two relief holes drilled into the upper end of the float strut that act as a weak link to allow the float to break off instead of bending the wing. Check for cracks around these holes. The relief holes are a mandatory requirement per Republic Service Bulletin #12.
- ❑ Check water rudder for looseness on the top bellcrank (inside aft compartment)
- ❑ Check the battery and forward nose area for corrosion from battery acid. There should be none.
- ❑ Check the water rudder “T” bar on top of the water rudder tube (inside the aft fuselage)
- ❑ Check cable tensions. The Republic book says 20# (+ or – 5#). Water rudder cables and Tail Wheel cables are just hand tight.

  WARNING: The Air Rudder cable tension must be checked in two places; forward of the cable junction just forward of the tail wheel compartment and aft of the junction. The tail wheel cable and water rudder tension could affect the aft Air Rudder cable.

- ❑ Check the over all condition of the fuselage, wings and tail section. Look for corrosion. When aluminum corrodes it usually “bubbles” the paint. Look for that.

- ❑ Run the engine and make sure all the gauges work. Do a runup and check the magnetos. Check the reversing lever while the engine is running at 1000 RPM. Do not operate the reverse lever with the engine stopped!
- ❑ While the engine is warm, do a compression check.
- ❑ Check the engine oil for cleanliness. Look and feel the oil for metal and carbon.
- ❑ Check the propeller for nicks in the blades. Twist the prop blades and check for a slight movement either way. Check the reversing valve and propeller seals for oil leaks.
- ❑ With a Hartzell/Lycoming reversing propeller, check the clearance on the carbon block inside the Beta ring. Clearance should be no more than 0.010". Check that the ring is relatively dry.
- ❑ Check all the radios, lights and accessories for proper operation. Check the ELT.
- ❑ Okay, if you are happy or more importantly if your mechanic is happy, haggle over the price and write a check!

This list is probably missing a few items. Let your mechanic do his (or her) job and any additions to this list will be welcomed. If you have any questions e-mail me at smestler@pbtcomm.net. Keep in mind that no two Seabee's are alike so there will be items that differ from the list above. You and your mechanic have the final word in the integrity and mechanical condition of your Seabee. Fly safely!