

Interlude - Oil Filter Failure

From: **Jack Townsend**

Sent: Sun 5/09/10 1:28 AM
CC&J,

We had a bit of a near miss on Interlude today.

During today's L2 class I asked Steve, Kate, and Jim to board Interlude and do the regular pre-sail engine checks and have each one start the engine and test the gears to familiarize themselves with Interlude. We ran the engine for approximately 10 minutes or less (total) then went on to some other orientation items. Later in the salon Kate McRae notice a small puddle of oil below the engine hatch on the salon floor. We investigated and found oil in the engine bilge and a film of oil in the engine compartment. We checked the dipstick which did not register any oil. We put in 1 qt of oil (takes 2.2 qts per change/filter). Then we started the engine to see if we could find the leak - we were amazed - the oil was coming out of the filter at the engine/filter seal - the rubber gasket had failed - see pictures. We replaced the oil filter (with the last one onboard - you need some more) and put more oil in, then ran the engine for a while to ensure there were no further problems. There were none. We put a couple of diapers in the engine bilge but did not try to clean it out (long day and this happened right when we were about to leave - we (I) had run out of energy).

Interlude is okay and still available for L2 classes - just needs a little clean-up (say tomorrow after the L4 class :).

Thank you - thank you Kate McRae for seeing that small puddle of oil - had it been overlooked it could have been a real problem for us - see DO below.

Doomsday Outlook (glass half empty) - I am very happy we caught this had we not and the next class did their oil check and buttoned up the engine compartment the potential for the oil to drain out and the engine to overheat while the class was doing other prep work would have been very high. If the oil had drained out the engine would have overheated, and without oil on the hot moving parts, it would have seized and we would need to spend a lot of \$ on repair or replacement. I doubt anyone would have heard (seen) the oil low pressure alarm especially if they were elsewhere on the boat. Note: most diesels run at 60 to 35 PSI oil pressure, high end when cold and low end when at running temps - most diesels can run even at a low oil pressure of 5 to 10 PSI (although they would sustain premature wear) but naturally this is not advisable. Interlude and Overture are equipped with idiot lights not oil pressure gauges so I am not sure when the light/alarm would go off (20 psi?). Also I believe they are only equipped with a lights not audio alarms, so you would need to be there to see the light come on. We can fix that by installing a light/alarm combo for the engine panel and possibly add a slave unit to the salon area - an easy enough install job

Blame - *This was not the fault of anyone in ASI doing an oil change.* This is the first time I have seen a gasket failure of this type so I checked the filter gasket. On every filter I have seen the gasket is a hard but malleable rubber that is held in place by the metal body crimped against the rubber ring - and it may also be adhered to the metal body in some additional way. As you can see from the pictures the rubber gasket, due to the internal pressures of 60 psi had blown out of the engine facing seal area, allowing the leak. The rubber was also soft to the touch and it easily came away from the filter body. This problem was due to a manufactures defect - rare - but anything can happen. The blame lays with the product not the installer, and no I didn't change the oil and filter on the Interlude.

What I learned from this - typically I clean the engine mating surface, then put a little clean oil on the filter gasket before screwing the filter into place and then I hand tighten. From now on I will inspect the rubber gasket and make sure it is firmly in place and it shows no visible defects before I put it on the engine, something I used to take for granted. I will also add a visual inspection of the filter/gasket area on my pre-sail engine check/inspection. Maybe feel around the seal area for a bulge of rubber. I may never see this type of failure again but I will never forget it either.

Thanks again Kate for those sharp eyes and that inquisitive nature of yours.

Jack

See included two pictures below of Interlude's oil filter on engine, note the rubber seal:



