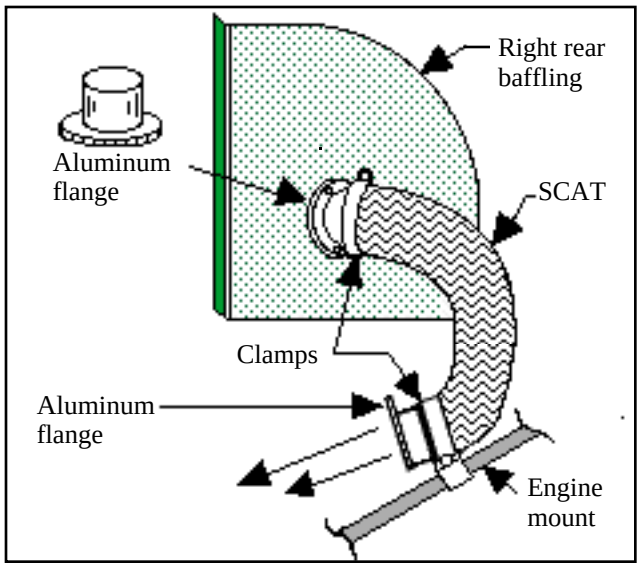
Oil Temperature Sensor Blast Tube for the Cessna 120/140/140A Planes

All* of the planes were supposed to have the oil temperature blast tube. Its purpose was to cool the oil temperature sensor and oil screen housings in order to present a slightly lower temperature on the gage. There is some confusion when you look it up because Cessna made errors in their parts books. There is one issue of the manual where the blast tube is shown, but not called out in the parts listing and there is one parts book that shows the tube, and calls it out, but they forgot to show the holes in the baffling for it. Through the years, the tube changed, starting small and getting bigger.

Is it required? Is it needed? Lots of controversy on this subject. I flew my plane without one for years but the almost-to-the-redline indication all the time is worrisome. While changing to the "new" engine, I added it. Advantages? It gives you a margin between not so hot and too hot which allows you to do more things on hot days. It gives you a like comparison when discussing with others what their oil temp was on a particular trip on a hot day, and that lets you determine if it is a hot day engine or blowby. Recommended to be used? Yes, with reluctance.

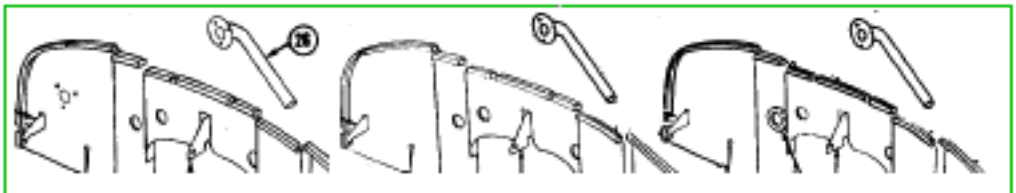
It is ridiculous to pay the price of a "real" tube made by Cessna. This sketch indicates a simple way to accomplish the task of cooling with SCAT tubing instead of thinwall aluminum. The aluminum flange shown makes a neat interface between the tubing and the baffling and a second flange can be used at the bottom end as well though some forego the bottom flange. Others have used the flexible aluminum tubing.

As shown, use SCAT tubing between and put the sensor end big clamp around the SCAT on the new flange, and the little clamp around the engine mount, aim the outlet at the sensor and secure the big clamp to the small. Neat and stays put.



You will wonder about making a tube of aluminum.....I have been searching for years for thin wall aluminum tube and have yet to find it. The blast tubes were made with thin wall material, on the order of 0.020? but the least wall thickness you can get today is a hardened 0.035 and that is a beast to bend!! SCAT readily forms the shape necessary. Size is your choice but make it at least an inch in diameter. "In the beginning", the aluminum tube was about 5/8 inch or so, and grew with the latest being two inch diameter.

* "All of the planes are supposed to have the blast tube". But, the Cessna parts manuals skip some details.



Oil temp sensor cooling tube and opening in the baffling for attachment. 1946 engine on the left, with both features. 1947/48 figure in the middle with the holes for attachment missing, and the same lack in the 140A figure on the right.

If you have suggestions for improvement, by all means send the information to me for inclusion in the next version.

Neal

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