Holliston: *“Dave, great post, article, explanation! My first thoughts are that I'd remove the vernatherm and build a door for the nose (either entrance or exit) with an electric actuator and control the oil temp with that instead of the vernatherm. Of course, that doesn't solve the problem of moving that thick oil through the 20' of lines out of the way unless you have a heated hanger to warm them up. I have the same problem with the electric pump in the nose moving the oil to my cabin heat oil cooler. On cold days I just park it and let it idle till the oil starts flowing. The one time I didn't do that and climbed to 17,500' it never did start circulating so I had a cold ride but being a quick learner that never happened again. At -15 F I doubt my pump would ever move the oil unless I had a heated hanger like you. I'll have to admit that it's hard not to gloat when you know you're going to climb to 17,500' (where it's not unusual to have below freezing temps even in summer) wearing shorts and a tank top.*

*Also, it's hard not to gloat when you take off knowing you're going directly to 17,500' wearing shorts and a tank top.”*

**In answer to Orr Questions:** *“Right, David. The standpipe in my sump is a little above the two quart level. The oil is pumped with an electric pump that is in the nose with the oil cooler and plenum.”*

**Orr:** *“We had long debates at Santa Monica on that - how to close off the rear oil cooler in the winter, how to avoid taking engine pressurized oil all the way forward and back, how to tap the sump above the last 2 quarts so the engine won't run out if you leak it all over your feet and pump it forward a with a pump.”*

**Holliston** *“Seems I remember that Velocity (does or did) mount the oil cooler in the nose and it doubles as a cabin heater. I have a second oil cooler in the nose of my LE just for cabin heat and it works unbelievably well.”*

**On the Velocity side, Scott Keith suggested this:** *“If your oil runs cool already, why don’t you install an electric heater?*

*The simplest install might be above your feet if there is room (Ron Jones did that), but you can also do something that recirculates air pulled from above the canard, through a booster fan, through a 45amp DC Thermal electric heater and then through ducts that come put between your feet.  That is what I did.  Great solution.  No need to increase drag to stay warm.*

*By far, the most important thing I did was sealing the nose gear with David Weak’s nose boot.  If you don’t have one, plan on doing that first.  It seals the gear 100%. I also used fire retardant foam purchased at the Aviation Dept :) of Rangeley Lakes Builder Supply to seal the front openings of the two side tunnels (often used for running wires and those oil lines) and took care to seal the dog house area.*

*Anyway, that is another way of approaching the problem.  If you are only running 190 degrees oil I am not sure you want to mess with making it cooler.  Check out some electric solutions.”*

**Don Johnson**: *“I was at Malcolm [Collier] who had the plane in his shop when [Cano] was building that plane. But the engine hadn't been installed (Malcolm did mostly airframe, not engine or electrical).*

*My oil (IO550) ran at the bottom of the normal range. I installed a controllable damper at the engine mounted oil cooler. That allowed me to close off that oil cooler which let me raise the oil temps and also allowed more air through the cylinders getting me lower CHT's.*

*As for heat in the cabin, number one is to make sure you block outside air getting into the cabin. All the heat in the world is useless if you've got -10F air blasting in.*

*Trying to heat -10F outside air by passing it through an oil cooler at 200MPH isn't going to raise its temperature enough. To that end I made two modifications to my nose mounted oil cooler.*

*1) I have a controllable damper that blocks off outside air from entering the oil cooler. The damper also opens up a duct from the cabin.*

*2) I installed a blower that takes the cabin air and runs it through the oil cooler. The output from the heated air enters the cabin between the rudder pedals on the left and right. I didn't have any provisions for ducting it to the back seats.*

*As for where you run the oil lines, they are the first thing most people run in the ducts. That way you're not trying to push them through tangles of wires. Normally, I would say that you probably won't be able to get the lines in the ducts with the antenna wires, engine control cables or other stuff that's typically put in the ducts after the oil lines are put in. But you've got a Hangar 18 plane which means your ducts are larger than everyone else's. So, I would try and run an oil line down there and see how it goes. You may be able to get the lines in the ducts. Otherwise, you'll have to run it down the keel.”*

I had an article by Ian Huss, now attached as -2 to this document. I’ve appended some of his photos to the bottom of this page…sorry to confuse. See also the library article from Kit Planes done by John McAvoy Library Item 23CS69.

These are the photos of Ian Huss’ oil cooler installation in the engine compartment…to go with -2 of the articles.

A picture containing indoor

Description automatically generated

A picture containing indoor, cooking, pan, engine

Description automatically generated

A car engine with its hood open

Description automatically generated with low confidence

A picture containing plane

Description automatically generated

A close-up of a faucet

Description automatically generated with medium confidence