Mid-Year Cool

Second-generation Corvettes have a reputation for inferior air-conditioning systems. But properly restored and treated to a few key upgrades, they can be made to work well. We show you how it's done.

BY HAROLD PACE PHOTOS BY CARR CAMPBELL

There have been a lot of improvements to Corvette air-conditioning since the days of the second-generation cars. In its original form, the a/c in these machines was perfectly fine for its day, but over the years few have been properly maintained and many have been improperly repaired. This has resulted in the C2 getting the bad rap that it doesn't keep its cool very well.

This article show you how to properly restore and upgrade the factory air. In this case, the work was done on a well-worn '64 convertible by Carr's Corvettes & Customs in Plano, Texas, which also performed the rest of the Vette's restoration. Follow along as we guide you through the step-by-step process, the result of which is an air-conditioning system with greatly enhanced efficiency that retains its stock appearance.

1: The original a/c system was basically intact, but had been open to the atmosphere and rodents for many years.

2: The first step in the process is to remove the inner heater box. The factory assembly manual is a good guide for this. You can see in the photo that the entire inside of the box had been made into a rats' nest. This is a common occurrence.

3: Disassembly of the heater box begins with removal of the rear cover plate.

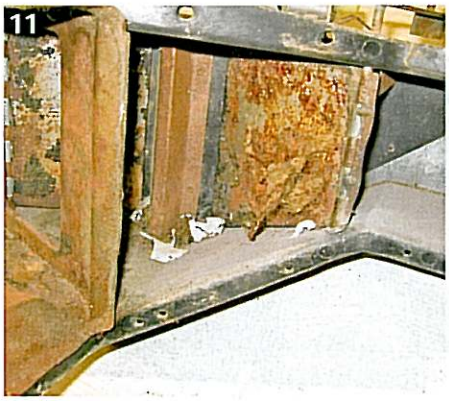
4: Then the front primary cover plate can be removed. There is usually a lot of debris here.

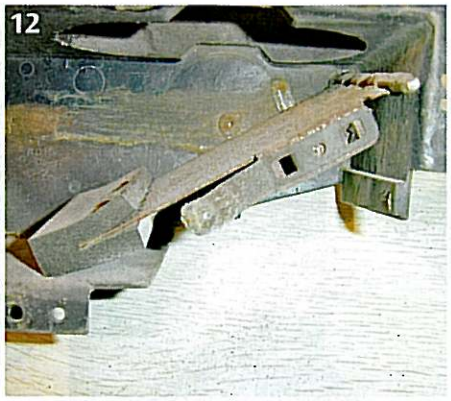
5: After the cover plates are removed you can pull out the heater core.

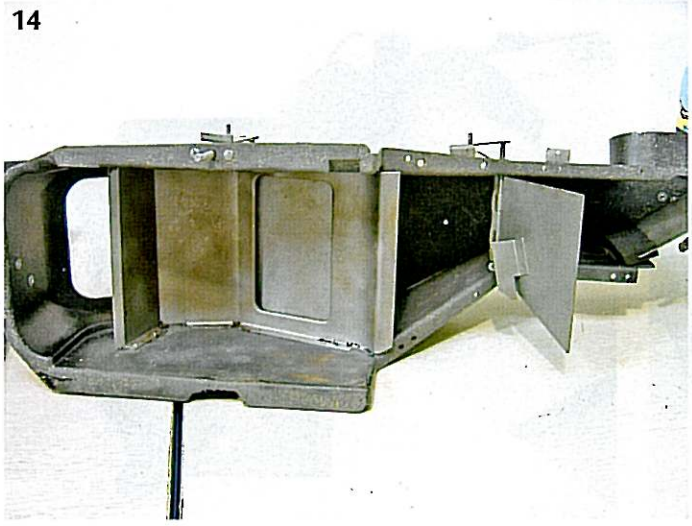
6: There is typically a lot of debris behind the heater core; it's amazing what you find.

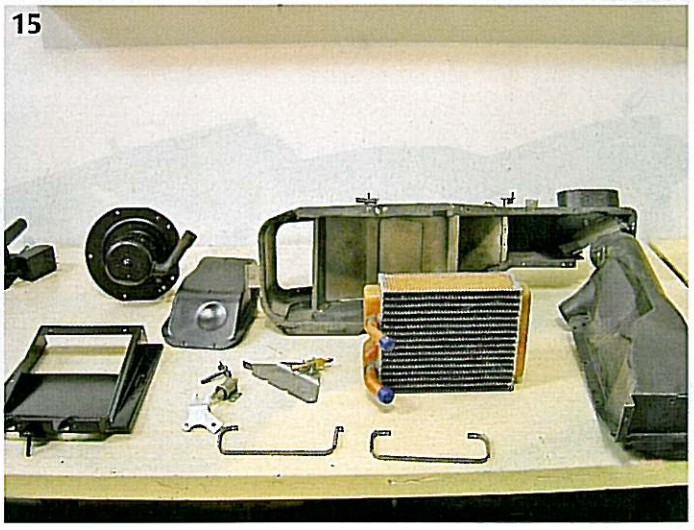
7: You can now begin to split the case. Look for the push nut on top of the blend door; remove and save it, if possible.

8: You can see the shaft of the blend door through the case.









9: A lot of the cases we see have some type of damage on the firewall mounting flanges from being over-tightened at the factory, or previous repair work. These will be reattached with a fiberglass bonding compound, sanded and repaired so the damage will not be detectable.

10: Here you can see the case has been split.

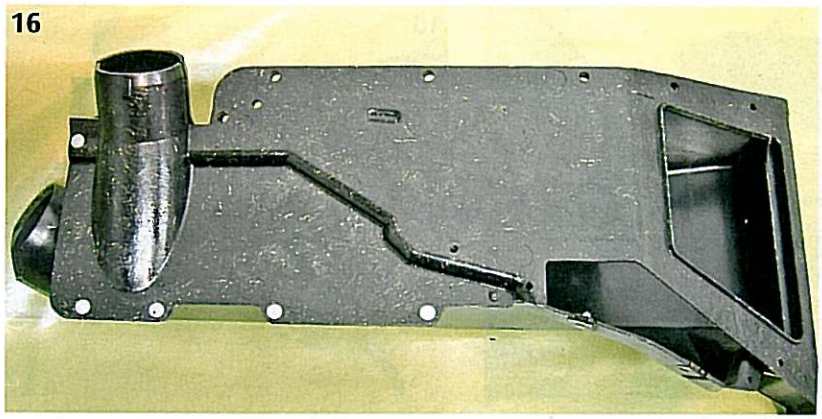
11: There is typically a lot of corrosion of the metal components inside the heater box.

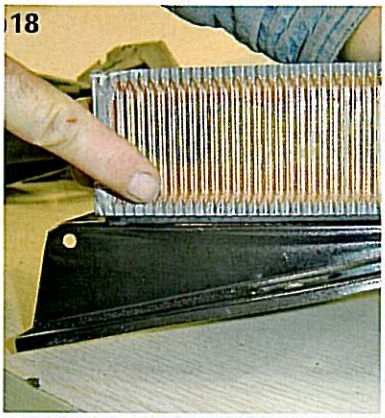
12: The blend door and shaft can now be separated and removed from the case.

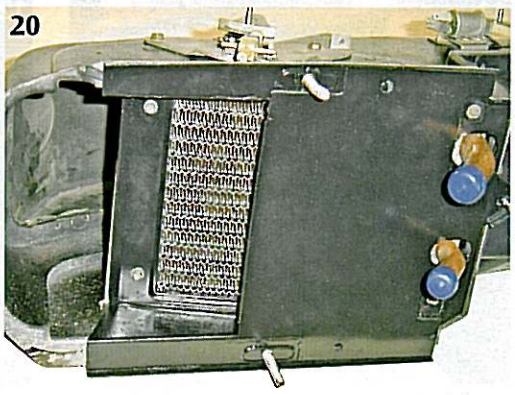
13. Clean the disassembled components to remove corrosion, dirt and grime.

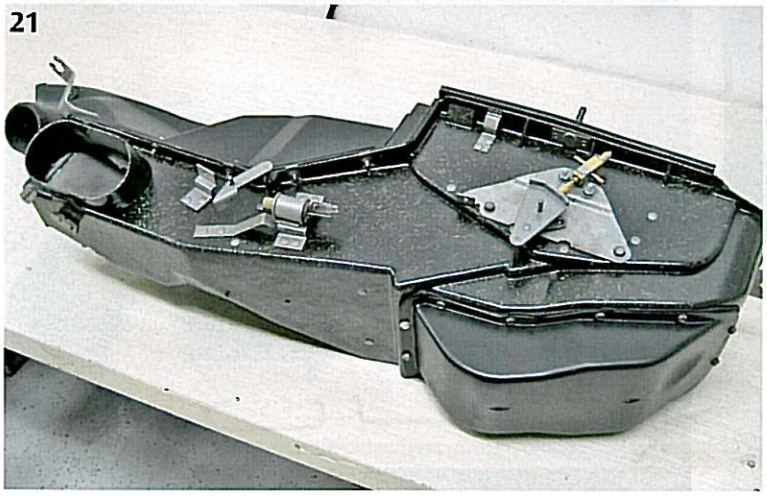
14. Take the case down to bare metal.

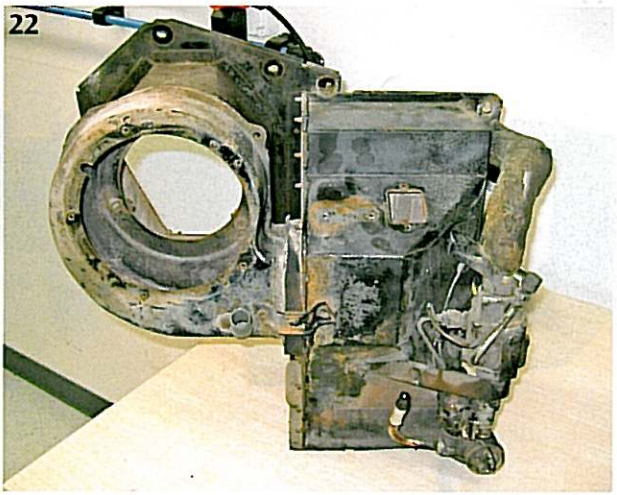
15: Here are all the cleaned components with a new heater core and blower motor.











16: All parts are primed and painted.

17: Begin reassembly by very thoroughly applying strip caulk to every mating surface.

18: Seal the heater core to the case to improve efficiency and keep out any future corrosion and debris. Carr's Corvettes & Customs also lines the inside of the heater case with a proprietary heat barrier to improve efficiency and lower temperatures under the dash.

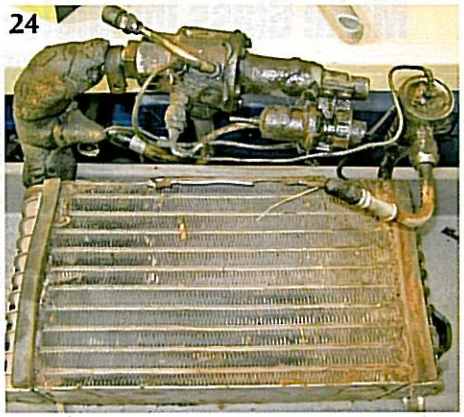
19: Prep the heater box mating surfaces, and install a new seal kit.

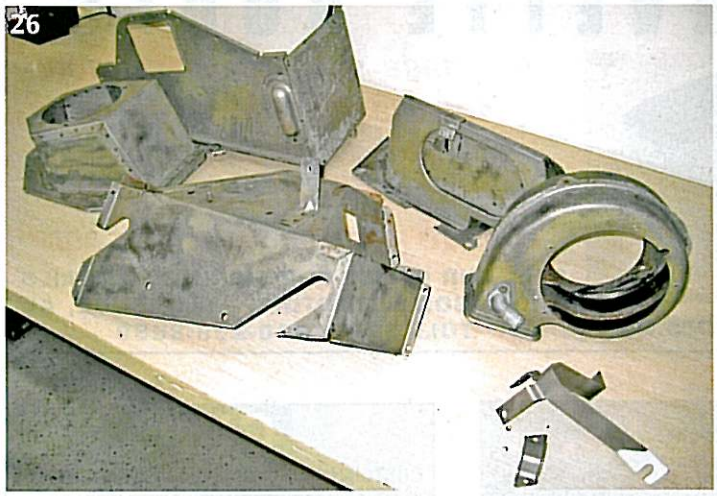
20: Install the heater core in the heater case using the repaired flanges.

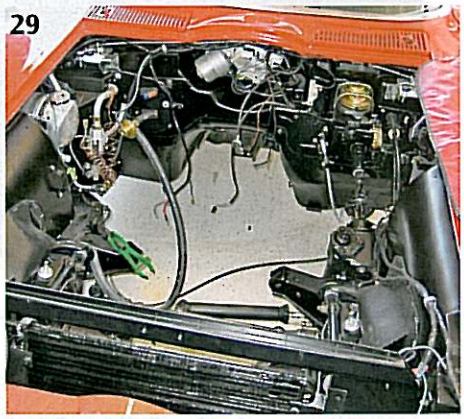
21: Reassemble the heater case with the original hardware and brackets that have been bead-blasted and clear-coated.

22: The evaporator is next on the repair list.

23: Leaves, trash and debris are usually hiding in the evaporator case. This greatly reduces efficiency and is one of the key reasons mid-years do not cool well after a simple evacuate and recharge of the system. The evaporator box needs to be removed and cleaned out.







24: This is the evaporator core assembly with the Suction Throttle Valve (STV). The STV will be disassembled, bead-blasted ad clear-coated, then an STV update kit will be installed to convert the system to a cycling clutch and to use current R-134a refrigerant.

25: Remove all of the original insulating material, which isn't much, from the inside of the evaporator case.

26: Once the evaporator case components have been cleaned, they are primed and painted. The interior of the evaporator box will be lined with heat-barrier insulation.

27: Apply seam sealer to all the flanges inside the assembly to improve efficiency.

28: The reassembled evaporator core assembly installed on the firewall with the original hardware and tubes. You can also see the new expansion valve.

29: The entire engine compartment was restored as part of the project, which explains the missing motor.

30: With the engine back in, the refurbished a/c unit looks as good as it works. It blows an extra-cool 48 degrees at the vent.