U.S. Department of Transportation,
Docket Operations M-30, West Building Ground Floor, Room W12-140
1200 New Jersey Avenue SE
Washington, DC 20590

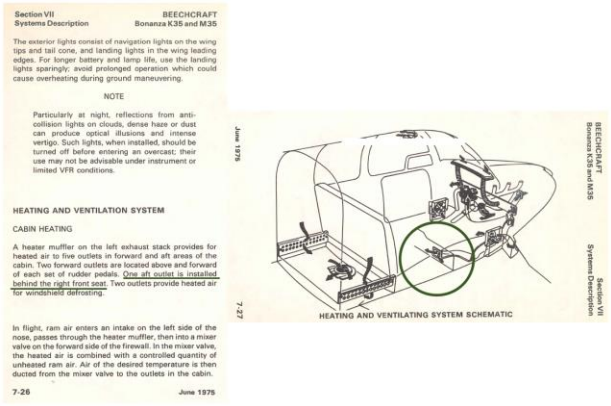
RE: Docket Number FAA-2019-0853
Product Identifier 2019-CE036-AD

November 7, 2019

Good day:

AD 2019-21-08 is a textbook example of airworthiness and regulation done right—the type club and its maintenance experts collectively find a problem, we bring our concerns to the FAA and the manufacturer, the type club creates and promotes a recommended inspection so that the issue is addressed by aircraft owners even before time permits rulemaking to occur, we share results with FAA and together limit the focus based on the actual data that emerge from that voluntary inspection program, and FAA acts on our recommendations to ensure safety across the entire fleet. Thank you to the FAA and especially the engineers and management of the Wichita Aircraft Certification Office for working cooperatively with ABS Air Safety Foundation to achieve a speedy yet measured response to this serious airworthiness condition.

ABS Air Safety Foundation is concerned, however, that some models of Bonanza, specifically the K35, M35, N35 and P35, were added to the Final Rule when they do not share the design characteristic that data have shown to be causal to the airworthiness concern. Specifically, all data supports that the primary contributor to right aileron turnbuckle corrosion is condensation from the aft cabin heat duct where it travels through the rear carry-through and over the aileron turnbuckle. The extended aft cabin heat duct was not installed in K35, M35, N35 or P35 models, and was a design change effective with the S35 Bonanza. See figures 1, 2 and 3.


Section VII
Systems Description
BEECHCRAFT
Bonanza K35 and M35

The exterior lights consist of navigation lights on the wing tips and tail cone, and landing lights in the wing leading edges. For longer battery and lamp life, use the landing lights sparingly; avoid prolonged operation which could cause overheating during ground maneuvering.

NOTE

Particularly at night, reflections from anti-collision lights on clouds, dense haze or dust can produce optical illusions and intense vertigo. Such lights, when installed, should be turned off before entering an overcast; their use may not be advisable under instrument or limited VFR conditions.

HEATING AND VENTILATION SYSTEM

CABIN HEATING

A heater muffler on the left exhaust stack provides for heated air to five outlets in forward and aft areas of the cabin. Two forward outlets are located above and forward of each set of rudder pedals. One aft outlet is installed behind the right front seat. Two outlets provide heated air for windshield defrosting.

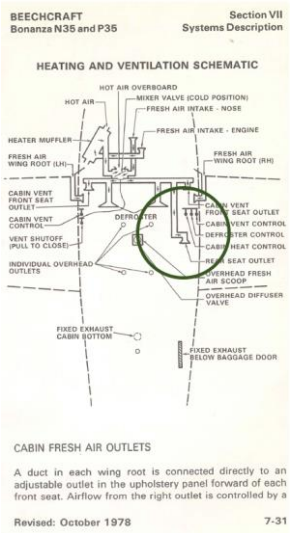
In flight, ram air enters an intake on the left side of the nose, passes through the heater muffler, then into a mixer valve on the forward side of the firewall. In the mixer valve, the heated air is combined with a controlled quantity of unheated ram air. Air of the desired temperature is then ducted from the mixer valve to the outlets in the cabin.

7-26 June 1975

June 1976 BEECHCRAFT Bonanza K35 and M35 Section VII Systems Description 7-27

HEATING AND VENTILATING SYSTEM SCHEMATIC

(left) Figure 1
Excerpt from the Beech Pilot's Operating Handbook for K35 and M35 Bonanzas. The heater system is described as having only one aft outlet behind the right front seat. The POH illustration confirms this single aft outlet on the back side of the forward spar carry-through. The K35 and M35 do not have the extended heater duct that travels over the right aileron cable and turnbuckle, so the K35 and M35 are not affected by the issue addressed in AD 2019-21-08.


BEECHCRAFT
Bonanza N35 and P35
Section VII
Systems Description

HEATING AND VENTILATION SCHEMATIC

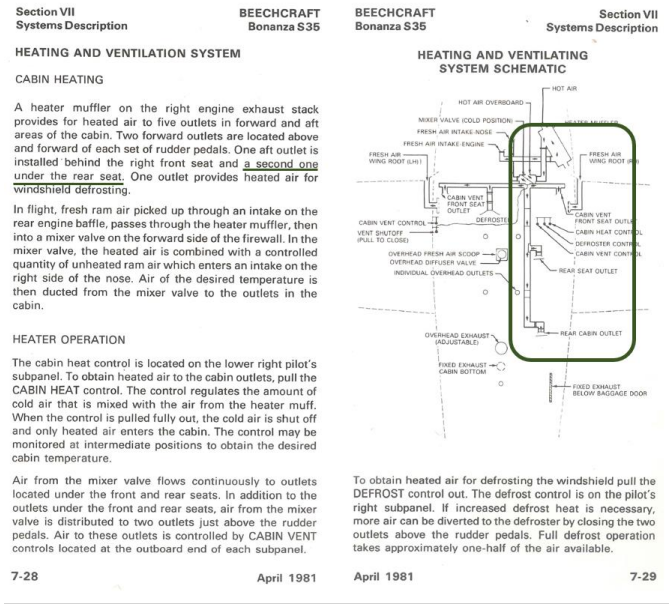
HOT AIR OVERBOARD
MIXER VALVE (COLD POSITION)
HOT AIR
FRESH AIR INTAKE - NOSE
FRESH AIR INTAKE - ENGINE
HEATER MUFFLER
FRESH AIR WING ROOT (LH)
FRESH AIR WING ROOT (RH)
CABIN VENT FRONT SEAT OUTLET
CABIN VENT CONTROL
VENT SHUTOFF (PULL TO CLOSE)
DEFROSTER
INDIVIDUAL OVERHEAD OUTLETS
CABIN VENT FRONT SEAT OUTLET
CABIN VENT CONTROL
DEFROSTER CONTROL
CABIN HEAT CONTROL
REAR SEAT OUTLET
OVERHEAD FRESH AIR SCOOP
OVERHEAD DIFFUSER VALVE
FIXED EXHAUST CABIN BOTTOM
FIXED EXHAUST BELOW BAGGAGE DOOR

CABIN FRESH AIR OUTLETS

A duct in each wing root is connected directly to an adjustable outlet in the upholstery panel forward of each front seat. Airflow from the right outlet is controlled by a

Revised: October 1978 7-31

(right) Figure 2
Excerpt from the Beech Pilot's Operating Handbook for N35 and P35 Bonanzas. Although it is presented differently from the earlier models, the POH illustration confirms the N35 and P35 also have only a single aft outlet on the back side of the forward spar carry-through. The N35 and P35 do not have the extended heater duct that travels over the right aileron cable and turnbuckle, so these models are also not affected by the issue addressed in AD 2019-21-08.



Section VII
Systems Description

BEECHCRAFT
Bonanza S35

HEATING AND VENTILATION SYSTEM

CABIN HEATING

A heater muffler on the right engine exhaust stack provides for heated air to five outlets in forward and aft areas of the cabin. Two forward outlets are located above and forward of each set of rudder pedals. One aft outlet is installed behind the right front seat and a second one under the rear seat. One outlet provides heated air for windshield defrosting.

In flight, fresh ram air picked up through an intake on the rear engine baffle, passes through the heater muffler, then into a mixer valve on the forward side of the firewall. In the mixer valve, the heated air is combined with a controlled quantity of unheated ram air which enters an intake on the right side of the nose. Air of the desired temperature is then ducted from the mixer valve to the outlets in the cabin.

HEATER OPERATION

The cabin heat control is located on the lower right pilot's subpanel. To obtain heated air to the cabin outlets, pull the CABIN HEAT control. The control regulates the amount of cold air that is mixed with the air from the heater muff. When the control is pulled fully out, the cold air is shut off and only heated air enters the cabin. The control may be monitored at intermediate positions to obtain the desired cabin temperature.

Air from the mixer valve flows continuously to outlets located under the front and rear seats. In addition to the outlets under the front and rear seats, air from the mixer valve is distributed to two outlets just above the rudder pedals. Air to these outlets is controlled by CABIN VENT controls located at the outboard end of each subpanel.

7-28 April 1981

BEECHCRAFT
Bonanza S35

Section VII
Systems Description

HEATING AND VENTILATING
SYSTEM SCHEMATIC

To obtain heated air for defrosting the windshield pull the DEFROST control out. The defrost control is on the pilot's right subpanel. If increased defrost heat is necessary, more air can be diverted to the defroster by closing the two outlets above the rudder pedals. Full defrost operation takes approximately one-half of the air available.

April 1981 7-29

(left) Figure 3
By contrast, S35 and later Bonanzas have the extended aft cabin heat duct that travels directly over the aileron control cable turnbuckle before going through the rear carry-through section. This excerpt from the Beech Pilot's Operating Handbook for S35 Bonanzas reflects this design change by specifically noting a second cabin heater outlet under the rear seat, and a revised diagram clearly identifying the extended cabin heat duct and second rear cabin outlet that were not present in K35, M35, N35 or P35 models.

To prevent owners of K35, M35, N35 and P35 Bonanzas from being required to complete this inspection that addresses an issue that does not apply to these types, the ABS Air Safety Foundation requests that FAA revise and reissue the NPRM and Final Rule AD to remove these models from the list of affected aircraft before the November 22, 2019 effective date.

Respectfully

Thomas P. Turner
Executive Director
ABS Air Safety Foundation

cc: Ann Johnson, Program Manager, COS, Wichita ACO
Alan Levanduski, Aerospace Engineer, Wichita ACO