

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Materials Laboratory Division
Washington, D.C. 20594



10/23/2017

MATERIALS LABORATORY FACTUAL REPORT

Report No. 17-068

A. ACCIDENT INFORMATION

Place : Fargo, ND
Date : 12/01/2016
Vehicle : Cessna 340, N123KK
NTSB No. : CEN17FA045
Investigator : Arnold Scott

B. COMPONENTS EXAMINED

Stewart Warner combustion heater model #8472

C. DETAILS OF THE EXAMINATION

The combustion heater exhibited mechanical and thermal damage along its entirety (figures 1 - 4). The blower assembly (figure 5) for the combustion air had separated from the main body of the combustion heater assembly. The main body of the combustion heater exhibited multiple dents, folds and general distortion from its original cylindrical shape. Overall the body of the combustion heater exhibited thermal discoloration and soot staining consistent with exposure to a fire environment. No evidence of a fuel leak was observed on the exterior of the combustion heater's body. Examination of the fuel fittings on the combustion heater's body also did not reveal any evidence of a fuel leak. One of the fuel fittings on the combustion heater body was found to be loose. This fitting coincided with an area of mechanical deformation to the combustion heater's body (figure 6). The combustion air blower assembly exhibited some dents and punctures. There was a solenoid valve attached to the combustion air blower. This valve had fuel lines attached to it that exhibited secure connections and no evidence of fuel leakage.

Joseph Panagiotou
Fire Protection Engineer



Figure 1: Combustion heater body



Figure 2: Combustion heater body



Figure 3: Combustion heater body, ventilation air inlet (cold) side.



Figure 4: Combustion heater body, ventilation air outlet (hot) side.



Figure 5: Combustion air blower.



Figure 6: Loose fuel fitting near ventilation air inlet side of combustion heater body.