ABSTRACT. This poster describes a research project at the National Air and Space Museum (NASM) characterize and preserve fragile paint remains on B-26 Marauder – a World War Two-era bomber. The study focuses on analyzing the paint material with X-ray fluorescence, X-ray diffraction, Raman spectrometry, and FT-IR spectroscopy to identify the paint composition. The results of this analysis will help in understanding the historical significance of the aircraft and contribute to the preservation of its painted surfaces.

DISCUSSION. Manganese compounds dominate the analysis, particularly calcium carbonate, barium, and sulfur. Calcium carbonate is expected to be the main ingredient for distemper, a temporary water-soluble marking paint hinted in literature. Other compounds identified include calcium sulfate, barium sulfate, and calcium hydroxide. These compounds may be used in the analysis to determine the historical significance of the aircraft.

EXPERIMENTAL IMPACT. The results of the analysis will be used to develop a treatment plan for the aircraft. The treatment plan will include cleaning, consolidation, and protective coating to preserve the painted surfaces.

METHODOLOGY. The methods used in this study include X-ray fluorescence (XRF), X-ray diffraction (XRD), Raman spectrometry, and FT-IR spectroscopy. These methods are used to identify the paint composition and provide insights into the historical significance of the aircraft.

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Table 1. Initial results of the analysis of the Invasion Stripes on the B-26 Marauder.

- Calcium carbonate
- Barium sulfate
- Calcium hydroxide
- Sulfur
- Amorphous carbon
- Iron oxide
- Gypsum (selenite)
- Sulfates
- Silica