Orders from late 1944 indicated the stripes were supposed to be painted on aircraft in December 1941. The Aviation Gelatin Company of New York, using a combination of barite, anatase, or gypsum. Calcium carbonate is expected to be the main ingredient for distemper, a temporary water-based coating designed to provide camouflage. Nothing detected on the exterior of the aircraft with an extensive service record challenge techniques of paint analysis, and how can we account for this ambiguity in our decisions?  

Invasion stripes were painted on Allied planes to prevent friendly fire during the D-Day invasion, and Focke-Wulf 200 may have the only surviving example – but the stripes are unstable. Treatment should be informed by characterization of the paint, however even with a suite of techniques the composition remains elusive, particularly the binder. How do the complex and heavily weathered surfaces of an aircraft with an extensive service record challenge techniques of paint analysis, and how can we account for this ambiguity in our decisions?

**EXCLUSION:** Inorganic components dominated the analysis, particularly calcium carbonate, barium sulfate, and calcium carbonate or gypsum. Calcium carbonate is expected to be the main ingredient for distemper, a temporary water-based coating designed to provide camouflage. The failure of X-ray fluorescence (XRF) analysis to locate the key elements suggests the paint was applied at manufacture without a primer, and, after severe weathering, both the camouflage and the invasion stripes are unstable and are exfoliating rapidly.  

A clear coating of Resin B-2 (alkyl) is tolerated but has already been successfully applied to some samples. However, before we apply the coating over the invasion stripes, we need to characterize the paint. This is important for three reasons: (1) the composition is unclear; and (2) XRF analysis alone is not sufficient to identify the binder. We are currently experimenting with the application of a primer to stabilize the surface. Initially, the project to characterize the black and white colors and their binder seemed straightforward using common methods for paint analyses. However, we soon discovered complications in studying the painted surfaces of an aircraft with an extensive service record.