

USGIF Intelligence Brief: Remote Sensing the Past

Declassified CORONA and HEXAGON Imagery as a Tool for Locating
MIA Airmen Lost Over Laos During the Vietnam War

Author: Sara Schofield, Department of Economics and Geosciences, United
States Air Force Academy

***Assessment: Change detection in declassified imagery identifies a
candidate area of interest for Air Force Major Lewis P. Smith, Missing in
Action.***

BLUF

- A previously unidentified landscape disturbance was in the vicinity of the suspected crash site location of Maj. Smith.
- The landscape disturbance is consistent with reconnaissance pilot eyewitness reports of a ridge impact and sequential downward slide.
- Change detection of archival imagery narrows the potential search area for DPAA site surveys.
- This finding does not confirm wreckage or location of Maj. Smith.

Top-Level Analysis

Major Lewis P. Smith and his aircraft disappeared on May 30, 1968, during a reconnaissance mission over southern Laos. More than five decades later, the loss of Maj. Smith is still under investigation by the Defense POW/MIA Accounting Agency (DPAA)¹. This assessment evaluates whether change detection techniques can be used to analyze declassified satellite imagery to identify a more precise area for DPAA field investigations. Using 1967 KH-4A CORONA imagery as a baseline and 1973 KH-9 HEXAGON imagery as a post-crash comparison, one significant unexplained landscape disturbance, distinct from bomb scarring, was identified². The disturbance pattern is consistent with vegetation removal, likely resulting from either an aircraft crash or a landslide.

¹ Defense POW/MIA Accounting Agency, *DPAA Report CS22-0155* (2023).

² U.S. Geological Survey, *CORONA Imagery, Mission 1039-2, Frame 118* (1967); U.S. Geological Survey, *KH-9 HEXAGON Imagery, Mission 1205-1, Frame 19* (1973).

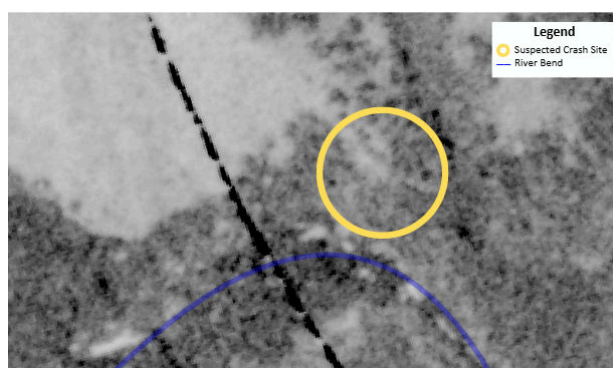


Figure 1. Pre-Incident Baseline (CORONA, 1967). No visible surface disturbance or scarring.

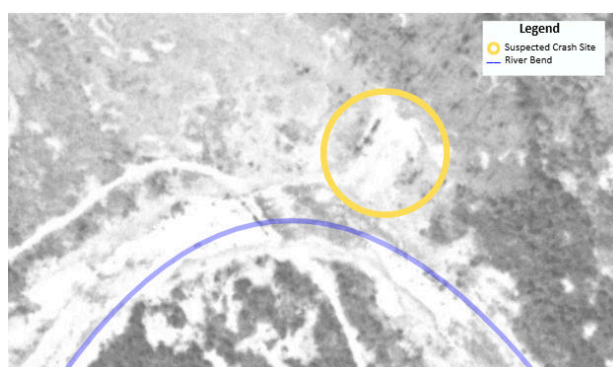


Figure 2. Post-Incident Change Detection (KH-9 HEXAGON, 1973). Visible surface scarring. The 1970 Ban Mangha Noy topographic map shows the highlighted location as a steep ridge³.

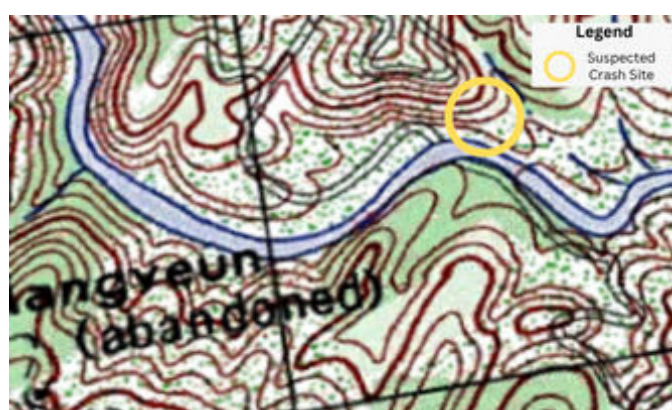


Figure 3. Ban Mangha Noy Sheet 6439 I Series L7015 (1970). Topography of the suspected crash site location.

The dense vegetation of the area makes large surface disturbances more detectable in archival imagery than physical debris, which would likely be buried or overgrown from the six-year difference in imagery. The temporal and spatial alignment of this

³ U.S. Army Map Service, *Ban Mangha Noy, Sheet 6439 I, Series L7015* (1970).

disturbance within the known loss location increases the likelihood that this surface feature is associated with the crash site.

Secondary Analysis

The analysis of Maj. Smith's loss began with DPAA document exploitation to understand the mission context, geography, and personal accounts of the incident. Imagery from before and after the disappearance was gathered, prioritizing images with a clear view of the river bend. The vegetation texture and coverage were used as the control for the comparison. The result is a narrowed area of interest rather than a confirmed crash site, as the differences in the spatial resolution of the two satellite systems limit direct comparison of the landscape. Additional validation should compare the vegetation disturbance with known crash sites, such as Col. Walter Renelt, who was recently accounted for and was lost under similar circumstances.

Impact

This finding supports DPAA investigations by converting a broad, historically uncertain loss area into a narrowed search area through change detection analysis of declassified imagery. This finding can inform survey planners by providing them with a new search area without incurring significant costs from frequent site visits based on uncertain data. More broadly, this method demonstrates how declassified imagery can support recovery for Vietnam War personnel who remain unaccounted for where all other methods have been exhausted to bring them home. This same workflow can be applied to other unresolved cases by analyzing declassified imagery for unexplained landscape disturbances.

Confidence

Moderate confidence due to multi-temporal imagery and the location's consistency with DPAA investigative reports. Confidence is reduced due to the lack of visible wreckage and the historical imagery resolution limitations. A field validation or additional imagery would be required before treating the feature as the probable crash site.

Bias

This analysis is susceptible to confirmation bias due to the expectation to locate a crash-related disturbance in this area after considerable review of DPAA documents. Terrain association bias is also possible due to the steep slope in the highlighted disturbance area, which could've been caused by landslide activity or non-crash-site-related fires. To mitigate this, the imagery should be independently reviewed by an analyst without prior exposure to the DPAA investigative reports before being incorporated into operational planning.