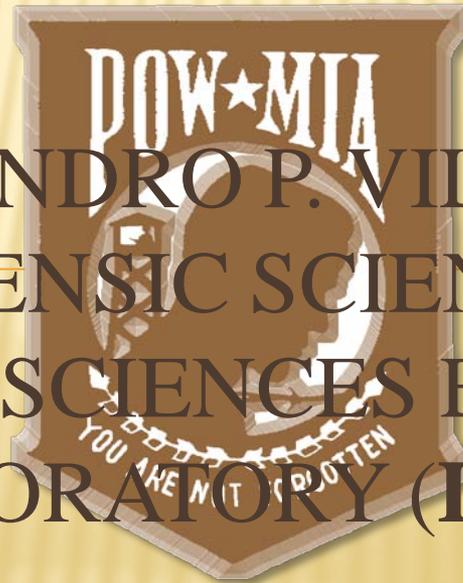
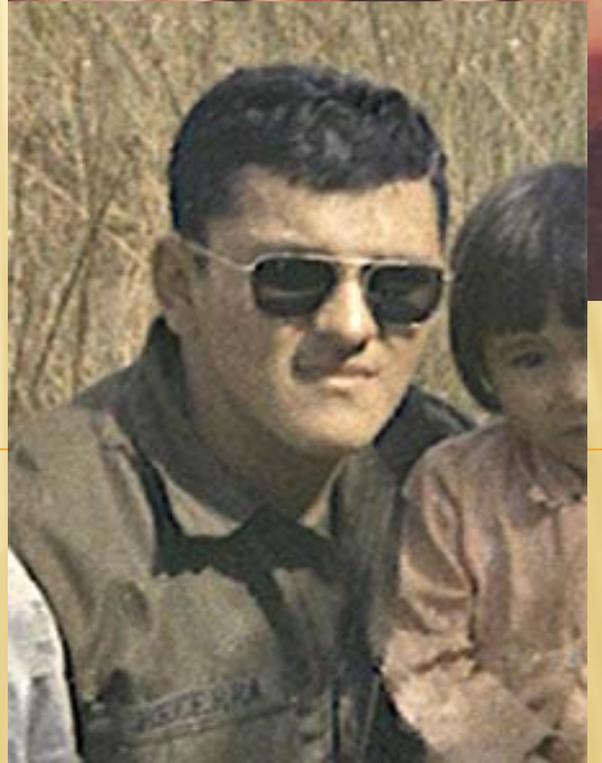
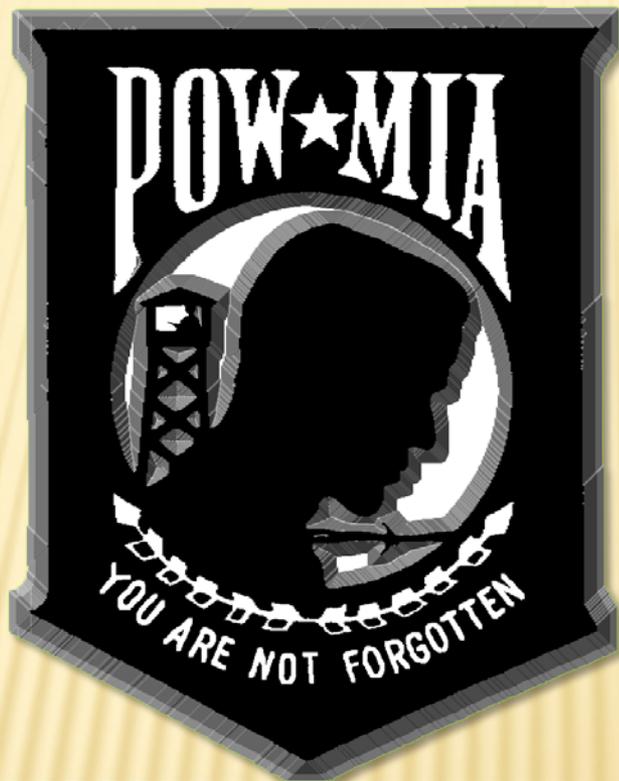


**‘THE ROLE OF CIRCUMSTANTIAL
EVIDENCE IN THE OVERALL
ACCOUNTING AND
IDENTIFICATION PROCESS OF U.S.
SERVICE MEMBERS ‘MISSING IN
ACTION/UNACCOUNTED FOR’ IN
SOUTH EAST ASIA/VIETNAM WAR’**

**ALEJANDRO P. VILLALVA
FORENSIC SCIENTIST
USAF LIFE SCIENCES EQUIPMENT
LABORATORY (LSEL)**





Life Sciences Equipment Laboratory (LSEL)

-Our Mission-



- To directly support the Department Of Defense mission to account for U.S. personnel who are ‘Missing In Action (M.I.A.)’ or ‘Unaccounted For’
- To support current-day U.S. Air Force aviation mishap investigations
- To provide technical and scientific support to various DoD personnel agencies, and military equipment programs

Forensic Analysis by LSEL



➤ **LSEL** assists in the identification and accounting process of U.S. M.I.A. service members, through the scientific and forensic analysis of recovered **Life Sciences Equipment** artifacts.

➤ Accounting for M.I.A. personnel is possible by identifying *Circumstantial Evidence* (**Life Sciences Equipment** artifacts), and associating it with, the involved M.I.A. personnel.

What Is ‘Circumstantial Evidence’?

- Evidence that establishes an inference, which is then linked to a conclusion of fact
- Often referred to as ‘Indirect Evidence’
- In the field of Personnel Recovery and Accounting, *Circumstantial Evidence* may take the form of:
 - Personal Equipment artifacts (**Life Sciences Equipment**)
 - Personal Effects artifacts (ring, watch, medallion)
 - Aircraft/Vehicle Wreckage artifacts

Aspects of an M.I.A. Loss Site Recovery



➤ Items of key significance that are sought in the recovery/excavation of an MIA loss site:

➤ Human Remains

➤ *Life Sciences Equipment artifacts*

➤ Aircraft/Vehicle artifacts



Life Sciences Equipment



➤ Categories of Life Sciences Equipment:

➤ Military Uniform Items

(Clothing/Apparel)

➤ Personal Equipment Items

(Equipment/Gear worn or carried on a person)

➤ Flight Gear

➤ Ground Gear

➤ Escape and Survival Equipment

➤ Aircraft Seats

➤ Survival Kits & Gear

Analysis of Life Sciences Equip. Artifacts

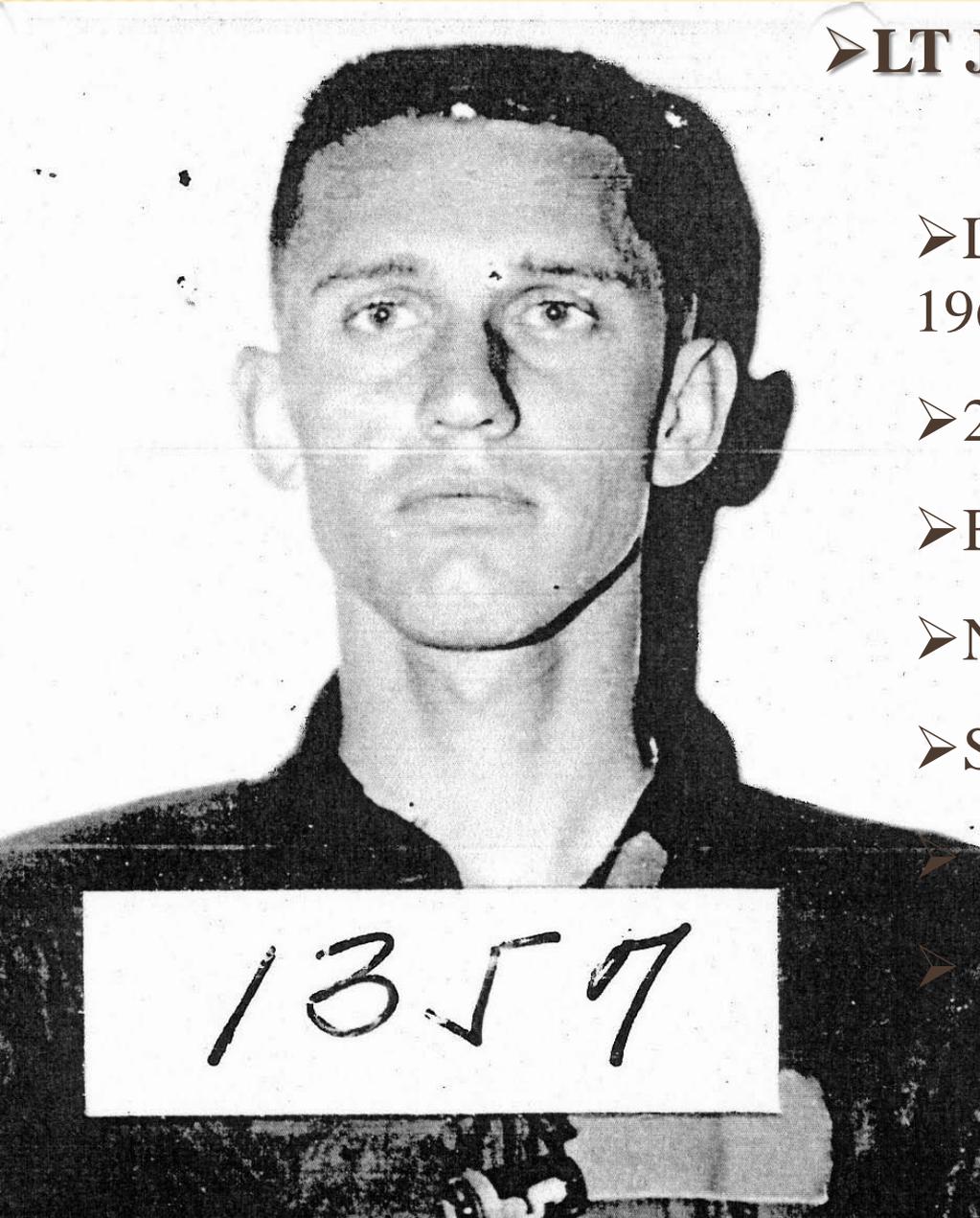
- Life Sciences Equipment artifacts often display and provide highly unique and very specific evidence details, which are not found or displayed elsewhere
- The forensic and scientific analysis of Life Sciences Equipment artifacts can often support and confirm the presence (and thus accounting) of M.I.A. personnel, *with or without* the presence and identification of human remains



Pursued Goals Of The Analysis Of Life Sciences Equipment Artifacts

- What is the number of involved persons that are represented by the Life Sciences artifacts?
- What indicators of survivability are displayed by the artifacts?
- What Service Branch is represented by the artifacts?
- What vehicle type, and escape system (if involved), is represented by the artifacts?
- What is the time frame of loss that is represented by the artifacts? (i.e. early 1966, mid-1969, etc.)
- Are the artifacts consistent with the involved loss details, and also one another?

LT Jeffrey M. Krommenhoek, USN



➤ LT Jeffrey Morris Krommenhoek, United States Navy

- Lost over NVN on 25 October 1967, of unknown causes
- 26 YOA at time of loss
- Born 27 October 1940
- Native of Iowa
- Single; unmarried; no children
- Family: both parents, one brother
- U.S. Naval Academy graduate, Class of 1959

LT Jeffrey M. Krommenhoek, USN



➤ LT Jeffrey Morris Krommenhoek, United States Navy

- Attack Pilot of VA-163, “Saints”
 - Flew A-4E ‘Skyhawk’ bomber
- Flew first SEA combat tour with VS-37, aboard USS HORNET
 - Flew S-2E ‘Tracker’
 - Anti-sub/Ocean surveillance missions
- August 1965-March 1966

REFNO 0875: LT J. Krommenhoek

➤ **LT Krommenhoek was lost on 25 October 1967, over NVN**

- Attack pilot assigned to VA-163
 - Aboard USS ORISKANY
 - Assigned to VA-163 only 47 days (reported on 08 Sept 1967)
 - Went missing on a major air wing strike against Phuc Yen airfield, North Vietnam (north of Hanoi)

➤ Last seen evading missiles just prior to attack

➤ No communications received



Attack Squadron 163 "Saints"

➤ LT Krommenhoek was the sixth of eight total VA-163 pilots lost during 1967-68 cruise

➤ Worst loss rate of any USN squadron during the VN War

➤ 5 KIA/MIA; 3 POW: 8 total pilots lost

➤ All original unit aircraft did not survive tour



VA-163

ATTACK SQUADRON ONE-SIXTY-THREE
"SAINTS"

➤ Uncommon Valor:

➤ 3 Navy Crosses

➤ 7 Silver Stars



➤ 34 Distinguished Flying Crosses

➤ 4 Purple Hearts

A-4E SKYHAWK

AH-310, BuNo 149998

CVW-16

USS ORISKANY (CVA-34)

PILOT LT. JOHN DOE

1966

GULF OF TONKIN



Attack Squadron 163 “Saints”



- LT Krommenhoek was lost on 25 October 1967, over NVN
- LCDR John S. McCain was lost on 26 October 1967, over NVN
 - Was shot down on a major air wing strike against a thermal power plant in Hanoi
 - Assigned to VA-163 only 26 days (reported on 30 Sept 1967)
 - Ejected from aircraft; survived
 - Taken as POW, and held for 5½ years in NVN

Recovery of 'REFNO 0875' site

➤ In January 1995, a U.S. team of *'Joint Task Force-Full Accounting'* locates the possible crash site of LT Krommenhoek in Minh Phu village, NVN; Recommends excavation of site.



Recovery of 'REFNO 0875' site



Recovery of 'REFNO 0875' site

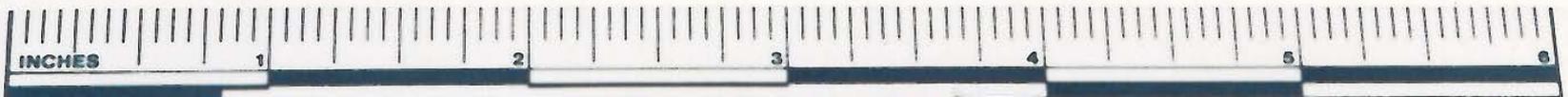
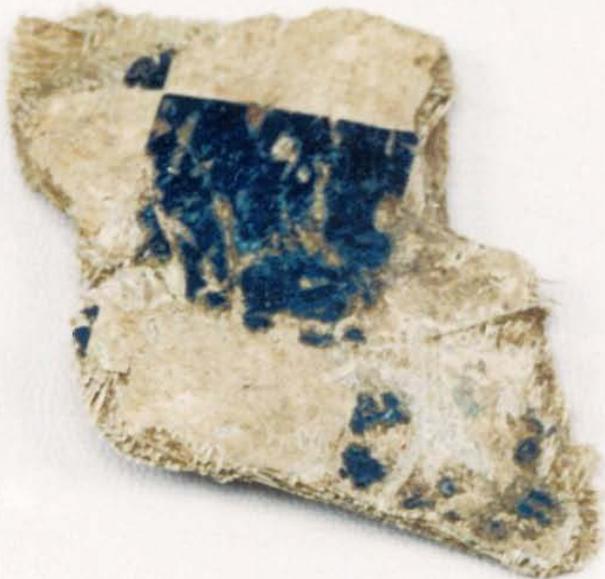


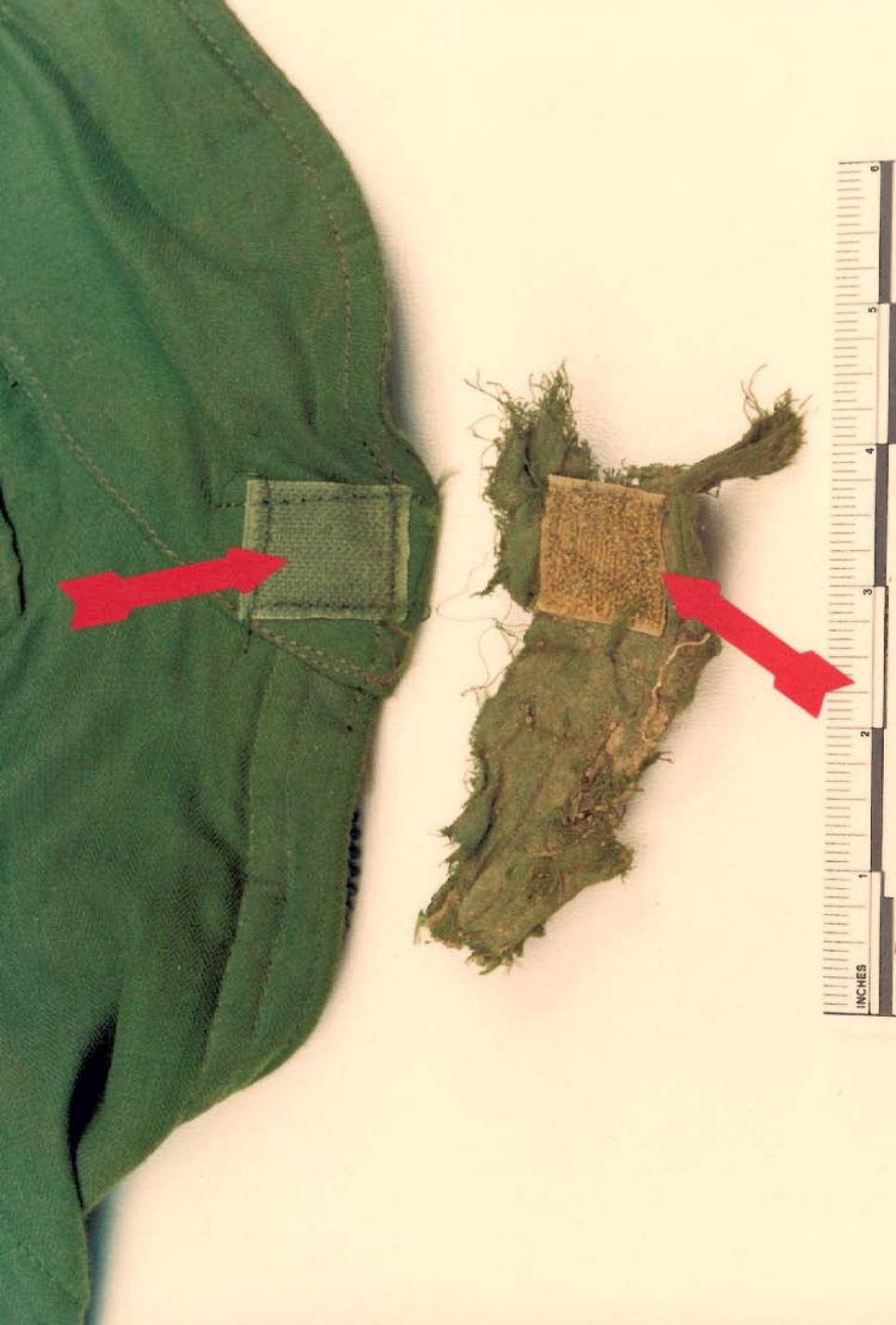
Recovery of 'REFNO 0875' site



Analysis of 'REFNO 0875' artifacts

- Recovery team excavates the crash site in October-November 1995
- It finds six possible human remains fragments, and moderate amounts of Life Sciences Equipment artifacts





➤ Life Sciences Equipment artifacts frequently survive in some form, and are thus able to be recovered and analyzed as evidence

➤ Life Sciences Equipment items are typically made from synthetic materials (nylon, rayon, fiberglass), and thus do not degrade or erode easily over time

➤ Fragment of a USN NOMEX flight suit

➤ Has not degraded physically

JTF-FA CASE: 0875



➤ Life Sciences Equipment artifacts usually display unique and distinctive construction details and features

➤ These unique features/details are much like individual fingerprints, as they are often unique to a specific area of origin, on a specific piece of Life Sciences Equipment

➤ USAF LPU-2/P Life Preserver

➤ Favored by USN A-4 pilots in 1967 timeframe

JTTF-EA CASE: 0875



➤ When a Life Sciences Equipment artifact is properly analyzed and identified, it can be aligned to a specific area of origin, on a specific equipment item

➤ USN Flying Safety Boot outsole

➤ Left boot, ball area

➤ ‘Vibram’ brand design

➤ Widely used by USN pilots during the 1967 timeframe





➤ Each Life Sciences Equipment artifact provides a small, but critical, segment of information regarding the loss incident, and the overall fate of the involved individual

➤ Lap Belt Fitting, from a Parachute Container

➤ Used only in A-4 a/c

➤ It's recovery indicates that no ejection occurred, with seat/pilot still in aircraft at crash impact

➤ Corrosion supports lengthy residence at site



- The identified Life Sciences Equipment artifacts all consistently support the conclusion that the involved pilot did not eject prior to crash impact
- The displayed damage signs, and environmental exposure forms, all support a non-survivable (fatal) crash, with no attempt to eject being made
- All recovered artifacts are reflective of use in a US Navy A-4 aircraft and escape system, and are consistent with use by a Navy A-4 pilot, during the 1967 time frame
- All the artifacts aligned to the involved case details and facts

JTF-FA CASE: 0875



Jeff Krommenhoek
MIA 25 Oct 67



JTF-FA CASE: 0875



REFNO 0875:

Life Sciences Equipment Types, as represented by the identified and aligned artifacts

- Flying Helmet, Type APH-6
- Oxygen Mask, Type MS-22001
- Torso Harness, Type MA-2
- Survival Vest, Type SV-2
- Life Preserver, USAF Type LPU-2/P (Unofficial USN Modification)
- Anti-G Suit, Type Z-3
- Flying Safety Boot, (Official USN Modification)
- Parachute Components

They shall grow not old, as we that are left grow old;
Age shall not weary them, nor the years condemn.
At the going down of the sun and in the morning,
We will remember them.

‘For The Fallen’, by Laurence Binyon
September 1914