



**JOINT POW/MIA ACCOUNTING COMMAND
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Memo CIL01
24 JUL 06

MEMORANDUM

From: Scientific Director, JPAC Central Identification Laboratory
To: Commander, Joint POW/MIA Accounting Command

Subj: IDENTIFICATION OF CIL 1994-097-X-01, CIL 1994-097-I-02, AND CIL 1994-097-I-03

Encl: SEE BELOW

1. Background and Acquisition

a. On 10 January 1970 Captain Herbert C. CROSBY and Warrant Officer One George A. Howes were returning from Tien Phuoc to their base at Chu Lai, South Vietnam, when their UH-1C Iroquois (Huey) helicopter was lost in bad weather over Quang Nam Province. Also manifested on board the aircraft were Specialist Fifth Class Wayne C. ALLEN and Specialist Fourth Class Francis G. GRAZIOSI. When the other two helicopters involved in the flight safely reached Chu Lai, a search was initiated for CPT CROSBY and his crew. No sign of the helicopter or the crew was spotted. The incident was designated REFNO 1547, and all four men were placed into the status of Missing In Action. While in an MIA status, George A. Howes, Wayne C. ALLEN, and Francis G. GRAZIOSI were promoted to the ranks of Chief Warrant Officer Three, Sergeant First Class, and Sergeant First Class, respectively. Subsequently, military review boards amended the status of each man to presumed Killed In Action.

b. On 24 January 1989 the Socialist Republic of Vietnam (S.R.V.) turned over to the United States 25 boxes purportedly containing the remains of U.S. servicemen. The remains in Box 18 were accessioned at the CIL as CILHI 0020-89. Laboratory analysis revealed that CILHI 0020-89 actually represented at least three individuals. Accordingly, the remains were segregated into three sub-accessions: CILHI 0020-89A, CILHI 0020-89B, and CILHI 0020-89C.

c. On 27 September 1989 the Joint Casualty Resolution Center turned over to the CIL a single tooth and an identification tag for *CROSBY HERBERT C* that had been obtained from a Vietnamese refugee who had fled the S.R.V. The tooth and identification tag were accessioned at the CIL as CILHI 0231-89.

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d. On 27 March 1991 CILHI 0020-89C was identified as SFC Wayne C. ALLEN. CILHI 0020-89B was identified as an Unknown Southeast Asian.

e. On 1 September 1993 a joint U.S./S.R.V. team traveled to Quang Nam—Da Nang Province (formerly Quang Nam Province) to investigate REFNO 1547 but uncovered no significant information or evidence associated to the case.

f. On 21 March 1994 a joint U.S./S.R.V. team traveled to Ho Chi Minh City to interview a Vietnamese national believed to have knowledge relating to REFNO 1547. The Vietnamese informant turned over to the team an identification tag for *HOWES GEORGE A* and told the team that he knew where the remains of as many as nine American servicemen were buried in Quang Nam—Da Nang Province. The informant agreed to lead a joint U.S./S.R.V. team to the purported burial site.

g. On 25 April 1994 another joint U.S./S.R.V. team traveled to Quang Nam—Da Nang Province and excavated the purported burial site identified by the Vietnamese informant. The team recovered a metal box and several bags containing fragmented human remains. The remains subsequently were accessioned at the CIL on 7 June 1994 as CILHI 0097-94. (Note: The CIL subsequently amended its accession numbering system and CILHI 0020-89, CILHI 0231-89, and CILHI 0097-94 were redesignated CIL 1989-020, CIL 1989-231, and CIL 1994-097, respectively. This nomenclature is used throughout the remainder of this memorandum.)

h. On 18 July 1998 a joint U.S./S.R.V. team traveled to Ho Chi Minh City to investigate REFNO 1547. The team uncovered no new significant evidence or information. On 20 March 1999 another joint U.S./S.R.V. team continued the investigation of REFNO 1547 in Ho Chi Minh City. As with the 1998 investigation, the team uncovered no significant information.

i. In September and October 1999 a joint U.S./S.R.V. team traveled to Quang Nam Province to investigate REFNO 1547. No significant evidence or information were obtained.

j. On 6 January 2000 a bone fragment from CIL 1989-020 was submitted (Sample A) to the Armed Forces DNA Identification Laboratory (AFDIL) for mitochondrial DNA (mtDNA) analysis. On 5 April 2000 a second bone fragment from CIL 1989-020 (Sample B) was submitted for mtDNA testing.

k. On 1 January 2001 a tooth from CIL 1989-231 was submitted (Sample A) to the AFDIL for mtDNA analysis.

l. On 13 and 14 June 2001 ten teeth from CIL 1994-097 (samples A-J) were submitted to the AFDIL.

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m. On 16 June 2003 another joint U.S./S.R.V. team traveled to Quang Nam Province to investigate REFNO 1547. No significant evidence or information were obtained.

n. On 23 March 2005 an eleventh tooth from CIL 1994-097 (Sample 11A) was submitted to the AFDIL.

o. On 15 September 2005 two dental samples from CIL 1989-020 (samples C and D) were submitted to the AFDIL.

p. On 9 January 2006 two more dental samples from CIL 1989-020 (samples E and F) were submitted to the AFDIL.

2. Summary of Analysis

a. Identification tags turned over with the remains in 1989 and 1994 correlate to the two pilots of the REFNO 1547 helicopter—CPT Herbert C. CROSBY and CW3 George A. Howes—by names and social security numbers.

b. The AFDIL reports that all 11 dental samples from CIL 1994-097 (samples A-J and 11A) yielded verifiable mtDNA sequence data. Similarly, CIL 1989-020 samples A, C, D, E, and F and CIL 1989-231 Sample A yielded mtDNA. (CIL 1989-020 Sample B was determined to be an unsuitable sample.)

(1) CIL 1989-020 Sample C, yielded mtDNA sequence data that match that of two known maternal-line relatives (sisters) of Herbert C. CROSBY. The sequence data are not unique to the mtDNA database used by the AFDIL but are sufficiently rare ($\approx 0.91\%$ of the total database and $\approx 2.48\%$ of the Caucasian sub-database) that they can be inferred to be rare within the general population. Conversely, the sequence data do not match mtDNA reference samples obtained from maternal relatives of Francis G. GRAZIOSI and George A. Howes, nor do they match sequence data obtained from a tooth attributed to Wayne C. ALLEN (see below).

(2) CIL 1989-020 Sample D; CIL 1994-097 samples A, B, D, E, G, and H; and CIL 1989-231 Sample A yielded mtDNA sequence data that match that of two known maternal-line relatives (aunt and uncle) of Francis G. GRAZIOSI. The sequence data are not unique to the mtDNA database used by the AFDIL but are sufficiently rare ($\approx 0.02\%$ of the total database and $\approx 0.06\%$ of the Caucasian sub-database) that they can be inferred to be rare within the general population. Conversely, the sequence data do not match mtDNA reference samples obtained from maternal relatives of Herbert C. CROSBY and George A. Howes, nor do they match sequence data obtained from a tooth attributed to Wayne C. ALLEN (see below). Based on the results of mtDNA testing, CIL 1989-231 was consolidated into CIL 1994-097.

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(3) CIL 1994-097 samples C, F, I, J, and 11A yielded mtDNA sequence data consistent with deriving from a single individual. Sample 11A was obtained from a tooth attributed to SFC Wayne C. ALLEN (see below). The sequence data are unique to the mtDNA database used by the AFDIL and can be inferred to be rare within the general population. The sequence data do not match mtDNA reference samples obtained from maternal relatives of Herbert C. CROSBY, George A. Howes, and Francis G. GRAZIOSI.

(4) CIL 1989-020 samples A, E, and F yielded mtDNA sequence data that do not match that of known maternal-line relatives of Herbert C. CROSBY, George A. Howes, and Francis G. GRAZIOSI, nor do they match the ALLEN reference obtained from the tooth (see below). Based on the results of mtDNA testing, CIL 1989-020 is disassociated from CIL 1994-097 (with the exception of tooth #5 from which mtDNA Sample C and tooth #31 from which mtDNA Sample D were obtained).

c. The dental remains consist of 16 teeth or fragments of teeth (including the two teeth retained from CIL 1989-020). Fourteen of the teeth or tooth fragments can be attributed to specific individuals based on comparison to antemortem dental records and mtDNA testing.

(1) A maxillary right second molar (#2), restored with two occlusal pit amalgams, can be attributed to SFC Wayne C. ALLEN on the basis of a radiographic comparison with ALLEN's antemortem dental records. Tooth #2 yielded mtDNA sequence data (Sample 11A) that match that obtained from four unrestored teeth: a maxillary left lateral incisor (#10), a mandibular left canine (#22), a maxillary right canine (#27), and a maxillary right second premolar (#29). Similarly, SFC ALLEN's dental records also indicate that teeth #10, #22, #27, and #29 were unrestored. Furthermore, the dental remains previously identified as SFC Wayne C. ALLEN did not include teeth #2, #10, #22, #27, and #29.

(2) A single unrestored maxillary right first premolar (#5) is associated with CPT CROSBY on the basis of mtDNA testing. The available dental records for Herbert C. CROSBY indicates that tooth #5 was unrestored.

(3) Maxillary central incisors (#8 and #9), a maxillary left second premolar (#13), a mandibular left third molar (#17), a mandibular left canine (#22), a mandibular left lateral incisor (#23), and a mandibular right lateral incisor (#26) are associated with SFC Francis G. GRAZIOSI on the basis of mtDNA testing. Likewise, CIL 1989-020 tooth #31 yielded mtDNA matching the GRAZIOSI reference sample. All eight teeth are unrestored. Tooth #17 exhibits no signs of attrition, suggesting that it may have been unerupted or only recently erupted at the time of death. The available dental records for Francis G. GRAZIOSI indicate that teeth #8, #9, #13, #22, #23, #26, and #31 were unrestored. Both of SFC GRAZIOSI's mandibular third molars (#17 and #32) are charted as missing. The records do not indicate that radiographs were made during the examination, however, and given that Francis G. GRAZIOSI was 19 years old at the time of his death it is possible that his mandibular third molars were unerupted and might have been charted as missing.

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(4) Two unrestored molar fragments cannot be exclusively associated to one of the four men involved in the incident given the available antemortem dental records. Neither fragment is a good candidate for mtDNA testing.

d. There are no skeletal remains attributable to any of the men involved in REFNO 1547.

e. Based on laboratory analysis, the remains that can be individually associated to SFC ALLEN were redesignated CIL 1994-097-X-01 to denote that they represent additional remains of a previously identified individual. For administrative purposes, the remains attributable to CPT CROSBY and SFC GRAZIOSI were sub-designated as individual remains CIL 1994-097-I-02 and CIL 1994-097-I-03, respectively. The remaining tooth fragments and the bone fragments were sub-designated as group remains CIL 1994-097-G-01.

3. Summary and Conclusions

Available evidence establishes that CPT Herbert C. CROSBY, CW3 George A. Howes, SFC Wayne C. ALLEN, and SFC Francis G. GRAZIOSI died in Quang Nam Province, South Vietnam, on 10 January 1970 when their UH-1C Iroquois helicopter crashed in bad weather. In 1989 the S.R.V. repatriated commingled human remains that they alleged were those of U.S. servicemen. Also received in 1989 was a human tooth turned over by a refugee who alleged that it represented an unaccounted-for U.S. serviceman. In 1991 some of the remains turned over by the S.R.V. were identified as those of SFC ALLEN. In 1994 additional human remains were recovered from a secondary burial site in Quang Nam—Da Nang Province by U.S. personnel investigating REFNO 1547. Laboratory analysis allows for some of the 1989 and 1994 remains to be exclusively associated to CPT CROSBY, SFC ALLEN, and SFC GRAZIOSI to the exclusion of other reasonable possibilities. Given the unilateral nature of the recoveries, however, the Group Remains cannot be circumstantially associated to a specific incident with any degree of certainty at this time.

4. Findings

a. I re-designated CIL 1994-097-I-01 as CIL 1994-097-X-01, the additional remains of:

SFC Wayne Clouse ALLEN, RA11626448, U.S. Army

b. In my opinion, the results of laboratory analysis and the totality of the circumstantial evidence made available to me establish the remains designated CIL 1994-097-I-02 as those of:

CPT Herbert Charles CROSBY, 257-72-2905, U.S. Army Reserve

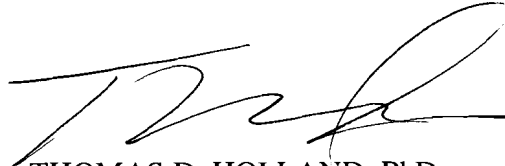
c. In my opinion, the results of laboratory analysis and the totality of the circumstantial evidence made available to me establish the remains designated CIL 1994-097-I-03 as those of:

SFC Francis George GRAZIOSI, RA11643731, U.S. Army

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d. The remains designated CIL 1994-097-G-01 cannot be identified at this time given current forensic technology and available historical records and will be held at the CIL pending further developments.



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27 Encls

1. J-2 Analysis Report: Case 1547, Quang Nam Province, Socialist Republic of Vietnam; dtd 6 April 2006
2. Forensic Odontology Report: CIL 1994-097-G-01; dtd 3 May 2006
3. Forensic Odontology Report: CIL 1994-097-X-01; dtd 3 May 2006 (ALLEN copy only)
4. Memorandum For Record; Ref: CIL 1994-097: Wayne Clouse ALLEN; dtd 05 June 2006 (ALLEN copy only)
5. Forensic Odontology Report: CIL 1994-097-I-02; dtd 3 May 2006 (CROSBY copy only)
6. Department of Defense; Office of the Armed Forces Medical Examiner (40-31a); Consultation Report on Contributor Material; CROSBY, Herbert C. (BTB); CIL Case No. 1989-020; dtd JUN 05 2006 (CROSBY copy only)
7. Forensic Odontology Report: CIL 1994-097-I-03; dtd 3 May 2006 (GRAZIOSI copy only)
8. Department of Defense; Office of the Armed Forces Medical Examiner (40-31a); Consultation Report on Contributor Material; GRAZIOSI, Francis G. (BTB); CIL Case No. 1989-020; dtd JUN 05 2006 (GRAZIOSI copy only)
9. Department of Defense; Office of the Armed Forces Medical Examiner (40-31a); Consultation Report on Contributor Material; GRAZIOSI, Francis G. (BTB); CIL Case No. 1989-231; dtd JAN 11 2006 (GRAZIOSI copy only)
10. Department of Defense; Office of the Armed Forces Medical Examiner (40-31a); Consultation Report on Contributor Material; GRAZIOSI, Francis G. (BTB); CIL Case No. 1994-097; dtd JAN 11 2006 (GRAZIOSI copy only)
11. Material Evidence Report: CIL 1994-097-A-01 Through 03; dtd 10 August 2005
12. MSG CJTFFA DET ONE BANGKOK TH, 271202Z SEP 93, SUBJ: Detailed Report of Investigation of Case 1547
13. MSG CDR JTF-FA, 302233Z MAR 94, SUBJ: Field Investigation Report: Case 1547
14. MSG CDR JTF-FA, 030723Z JUN 94, SUBJ: Detailed Report of Investigation of Case 1547
15. MSG CDR JTF-FA, 211857 AUG 98, SUBJ: Detailed Report of Investigation of Case 1547
16. MSG CDR JTF-FA, 280155Z APR 99, SUBJ: Detailed Report of Investigation of Case 1547
17. MSG CDR JTF-FA, 022230Z DEC 99, SUBJ: Detailed Report of Investigation of Case 1547
18. MSG CDR JTF-FA, 011412Z AUG 03, SUBJ: Detailed Report of Investigation of Case 1547 Conducted During the 74th Joint Field Activity in the Socialist Republic of Vietnam

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19. MSG CDR JTF-FA,011102Z AUG 03, SUBJ: Additional Information Report 74-001 Obtained During the 74th Joint Field Activity in the Socialist Republic of Vietnam (SRV)
20. Relevant Personnel Records [CROSBY] (CROSBY copy only)
21. Relevant Personnel Records [HOWES] (HOWES copy only)
22. Relevant Personnel Records [ALLEN] (ALLEN copy only)
23. Relevant Personnel Records [GRAZIOSI] (GRAZIOSI copy only)
24. DD Form 1300, Report of Casualty [CROSBY]; dtd 6 Nov 74 (CROSBY copy only)
25. DD Form 1300, Report of Casualty [ALLEN]; dtd 18 AUG 1978 (ALLEN copy only)
26. DD Form 1300, Report of Casualty [GRAZIOSI]; dtd 1 Feb 79 (GRAZIOSI copy only)
27. Consultant Comments [Kenney]; dtd 06/25/06

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