

CHAPTER 2

THE CENTRAL IDENTIFICATION LABORATORY

Section I. GENERAL

2-1. Organization

The central identification laboratory (CIL) is the final processing point through which the remains of personnel of all military services are processed. At the laboratory, positive identification is verified or established before the remains are returned to CONUS or other places for final disposition. The CIL is organized for the final disposition of remains. The theater army commander in a theater of operations and the Director, US Army Casualty and Memorial Affairs Directorate, TAGO, arrange for the CIL and carry out its functions. Central identification units and CIL's are organized under applicable tables of distribution, and allowances are as prescribed under Common Table of Allowances 50-926.

2-2. Functions

The functions of the CIL include recording a complete description of the remains; performing dental, fluoroscopic, and anthropological examinations; making chemical or scientific analyses; and fingerprinting. This information is entered on forms for identification processing. Because positive identification must be made if possible, extreme care is exercised in safeguarding the effects of the decedent and in maintaining the association of the effects with the remains. Particular emphasis is placed on the importance of examining and recording all identifying media on the remains and personal effects from the time the remains are received in the laboratory until they are processed. The following tasks are stressed in processing remains in the CIL:

a. All possible clues for identifying the remains must be examined thoroughly and resourcefully.

b. Care must be exercised in the preservation of all identifying media.

c. Identification forms and reports must be prepared completely and accurately.

2-3. Classification of Remains

Remains are classified as follows:

a. *Current*. Current remains are those received in a nondecomposed state within 72 hours after death.

b. *Flesh Covered*. Remains received in a state of decomposition but with no bones exposed.

c. *Semiskeletal*. Remains received with some flesh on the bones.

d. *Skeletal*. Remains received with no flesh.

2-4. Identifying Media

a. *Categories of Identifying Media*. Certain categories of identifying media are acceptable to memorial activities personnel for the initial association of remains with specific casualties. This evidence, however, is not considered conclusive for positive identification unless it is confirmed by additional evidence developed through exhaustive research and through analysis of documents. Categories of single-item and collective evidence are given below:

(1) *Single-item evidence*.

(a) Identification tags from around the neck of the deceased, in the pockets, or elsewhere on the deceased.

(b) An identification bracelet found on the wrist.

(c) A statement of recognition when an individual who knew the deceased and positively identified the remains signs DA Form 1155 (Witness Statement on Individual).

(d) An official identification card found on the deceased, for example, DD Form 2A (Armed Forces Identification Card).

(2) *Collective evidence*. When facts concerning the date, place, and cause of death of the deceased agree with a known casualty record, the facts, combined with one or more of the following means of identification, are used as the basis for the tentative association of a remains with a casualty:

(a) Identification tags found elsewhere than around the neck or in the pockets of the deceased.

(b) Motor vehicle operator's permit.

(c) Personal papers and letters, such as credit cards, a marriage certificate, a will, money orders, and unofficial identification cards.

(d) Engraved jewelry.

(e) Information obtained from local officials and residents or from civilian cemetery registers,

including information shown on temporary markers or crosses erected over temporary graves.

b. Inconclusive Evidence. Evidence other than that listed in a (1) above is insufficient for tentatively identifying remains when unsupported by other evidence. When evidence is inconclusive, the deceased is classified as an unknown. However, all records applicable to the deceased must bear the believed-to-be (BTB) identity, and information recorded on the records must support the BTB identity of the remains.

2-5. Receipt of Remains

Remains received for processing are listed on DD Form 1075 (Convoy List of Remains) if they are shipped in a group. Inprocessing personnel verify the list, sign the receipt, and enter information for

each decedent in a laboratory register. Each decedent is assigned a processing number, tagged accordingly, and placed on an individual processing table. An embossed or hand-painted cardboard identification tag is attached to the pouch including the remains, and all items belonging to the remains are properly tagged. Care is taken to insure that identifying media are not lost.

2-6. Records of Identification Processing

Records of identification processing, DD Forms 890 through 894, are initialed in pencil for each remains when it enters the processing area. The processing number assigned a particular remains is entered on all processing records associated with the remains.

Section II. IDENTIFICATION PROCEDURES

2-7. Examination and Recording of Data

Persons engaged in processing operations must carefully examine and record exactly all identification data associated with a remains; they must also preserve all identifying media. These tasks are of vital importance to positive identification. Any item received with the remains that may furnish information that will lead to or confirm an identification is completely described and recorded on DD Form 890 (app C).

a. Individual Clothing and Equipment. All items of individual clothing and equipment are removed and carefully examined for clues that may be used in identifying the deceased. Particular attention is given to recording the type and size of clothing, distinctive insignia, and laundry markings. Items of individual clothing and equipment are examined and recorded as follows:

(1) All items of clothing are examined under the flouroscope and then usually examined for laundry markings and other clues. When markings are illegible, portions of the clothing are properly tagged and chemically treated to restore the markings.

(2) Official identification attached to the remains, such as identification tags, DD Form 1380 (US Field Medical Card), or death tags, are examined. Any discrepancies in information recorded on the tags are entered on processing records. Identification tags are imprinted in the space provided on DD Form 890. The identification tag is attached to the remains; and the DD Form

1380 or the death tag is attached to the case papers.

(3) Footgear, headgear, the web belt, and the helmet liner are examined for markings as required by AR 700-84. The size of items and any markings which may serve as clues to identification are annotated.

(4) When compared with military records, insignia, decorations, medals, and campaign badges provide means for identifying the deceased. Information recorded must include the type and full description of the item.

(5) Military equipment is examined for identification numbers assigned the equipment. A complete description of the equipment and the numbers assigned to the items are recorded.

(6) Military records are carefully examined and the name, grade, social security number, fingerprint record, or other data pertinent to the deceased recorded.

b. Personal Effects. Personal effects and the inventory of personal effects accompanying the remains are removed and carefully examined for identifying information. Particular attention should be given to the following:

(1) *Wallets.* Contents of the wallet which may indicate the identity of the deceased, and names or initials inscribed in the leather.

(2) *Watches.* Type of metal, make, movement number, case number, number of jewels, as well as dates, initials, or numbers scratched or inscribed on either the outside or inside of the watch.

¹The permanent marking method used in Army fixed laundry plants provides an excellent medium of identification. The marking consists of the first letter of the customer's last name and the last four digits of his social security number. Thus, the clothing of a customer named Jones whose social security number is 296-38-8503 would be marked J8503.

(3) *Identification bracelet.* Type of metal, name, initials, social security number, or inscriptions.

(4) *Rings.* Design of ring: type of ring, metal, and stone; initials; and names and dates engraved on inside of band.

(5) *Pen and pencil sets.* Make and inscriptions, such as owner's name or initials.

(6) *Personal papers.* Name or names of persons indicated on club membership cards; clippings, letters, and notes; credit card numbers; or money order receipt numbers.

(7) *Books.* Names or other identifying information.

(8) *Photographs.* Names or initials written on photographs, the photographer's stamp, and the likeness on the photograph.

(9) *Keys.* Manufacturer's number on house and automobile keys, and identification number attached to keys which may be registered in the name of the owner.

2-8. Processing Remains

The identifying media used when the remains are processed are recorded on DD Forms 890 through 894. Reports that support recorded information, resulting from laboratory and anthropological examinations, accompany case papers as enclosures to DA Form 2773-R (app B). Extreme care must be used in recording observations made for each remains to prevent transposition of identifying data. In charting information on anatomy or dentition, it must be remembered that the right side of the charts, as the observer views them, represents the left side of the remains.

a. Physical Data. The physical description of remains is recorded on DD Form 890.

(1) *Height.* The condition of the remains determines the method used to obtain the height of the remains.

(a) *Table measurement.* The height of the remains of all current and semiskeletal cases is measured on the processing table when sufficient portions of the upper and lower extremities are intact. When a table measurement cannot be made of current or flesh-covered remains because of massive trauma, the height is estimated.

(b) *Long bone measurement.* The estimated height of skeletal remains is determined by measuring the maximum length of long bones and correlating the data obtained with the scale applicable to the race of the remains being observed (app J).

(2) *Age.* An age estimate if furnished for all remains. In skeletal cases, the estimated age may be determined from bone morphology (app K).

(3) *Race.* An identification specialist usually

makes the racial determination for current evacuation cases. If he is unable to make the determination, the laboratory supervisor decides the race or nationality of the remains. The race of skeletal, semiskeletal, and commingled remains is determined by an anthropologist. He prepares a narrative describing the racial characteristics of the remains. When determining factors are indicative of two races, he points out the predominant racial characteristics.

(4) *Scars, tattoos, and other identifying marks.* A thorough examination is made of remains, and an accurate description is furnished of scars, tattoos, birthmarks, healed fractures, deformities, or any other distinctive identifying clues. Photographs taken of distinctive marks are attached to the case papers.

b. Dental Chart. A memorial activities specialist prepares DD Form 891 (app F) for each remains, except when a complete dental chart can be obtained only by mutilating the jaws. In the latter case, a partial dental chart is prepared indicating the dentition that can be recorded without mutilating the jaws. The specialist uses the front of the form to illustrate the defects and restorations as he views them and the back of the form to describe wear, alinement, dentures, and bridges.

c. Anatomical Chart. DD Form 893 (app D) is completed for flesh-covered remains. The condition of the remains is indicated in the space provided on the form. An accurate description is recorded of all identifying media, such as tattoos, scars, deformities, wounds, and injuries, to include the exact location of these features on the remains. When an *unknown* current remains has recognizable features, fullface and profile photographs are taken. Supporting evidence attached to DD Form 890, such as photographs and X-rays, accompany case papers.

d. Skeletal Chart. DD Form 892 (app E) is completed for skeletal remains. The remains are cleaned and laid out in anatomical sequence. The observer clearly indicated on the record the type and location of deformities, fractures, and shattered bones as well as missing portions of the remains. In recording skull fractures, it should be noted that three views of the skull are illustrated on DD Form 892; therefore, skull fractures affecting more than one view of the skull should be indicated to present a clear picture of the extent of injury observed. For example, a fracture extending from the left parietal region across the frontal surface and ending in the right parietal region must be depicted on all three views of the skull.

e. Fingerprints. DD Form 894 (app G) is used

to record impressions of all digits that will give a legible print. All remains are fingerprinted, if possible, regardless of other identifying media present. Every effort must be made to obtain clear legible prints. In all cases where there is an indication that the cause of death is due to other than natural causes or is of a questionable nature and may involve a CID investigation, major case prints should also be obtained from the deceased and released to the local CID office. The major case prints (finger-prints, palmprints, fingertips, and sides of fingers and palms) will be in addition to the fingerprints on DD Form 894 recorded for the US Army Casualty and Memorial Affairs Directorate, TAGO.

f. Footprinting. When the remains being processed is believed to be a member of the Air Force, foot impressions are made, if possible, by inking the toes and the balls of the feet and placing the impressions on bond paper. Any available information about the decedent, including name, social security number, and processing number, is entered on the paper. The paper is mounted on a sponge rubber pad secured to a clipboard. After the foot is cleaned, an inked roller is run over it. Then the operator grasps the foot firmly across the instep and presses the clipboard against the entire foot at one time. Although it is not necessary to get an impression of the surface of the entire foot, as much of it as possible should be obtained. Footprint impressions are submitted as an inclosure to DA Form 2773-R.

2-9. Blood Grouping of Remains

In cases of group casualties involving tank crews, airplane crashes, or other similar accidents (app L), laboratory tests of whole blood, tissue, or bone marrow may be conducted to determine the blood grouping of remains. The results of the tests along with other identifying media may be used to establish legal evidence that may assist in the identification. Blood grouping of the remains of a single casualty may be indicated when the identification of the individual is not fully supported. The blood of the remains should be type classified.

2-10. Photographing Remains

When other identifying media seem insufficient, photographs of the head and of distinguishing marks, such as tattoos and scars, are made for each unknown remains if any features are recognizable. A commissioned officer decides whether photographs are to be taken and screens them to make sure that good taste as well as the dignity of the individual remains has been preserved. Black and white photographs are made

of the torso and the front and side of the head. Photographs are also taken of the fingerprints when suitable inked prints cannot be obtained. Color photographs are made of tattoos and unusual marks.

2-11. Anthropological Examination

An anthropologist examines all skeletal, semiskeletal, and commingled remains (app M). He prepares and enters a statement of his findings in the Remarks section of DD Form 892, or he incloses the statement with DA Form 2773-R. He makes sure that his statements are correct and complete and that they correspond to the case number. The anthropologist describes physical and other pertinent characteristics which, in his opinion, will assist in identifying the remains. He includes any findings on the evidence of wounds and his opinion that what appears to be healed fractures. In his summation, he includes a statement as to predominant racial characteristics. If the anthropologist finds that recorded information is insufficient to make a conclusive identification, he may resolve the case by superimposition, the technique of matching a life-photograph with a similar one of the decedent (app N). In processing group burials or associated cases, the anthropologist processes the entire group simultaneously on adjacent tables. Separate DD Forms 892 are prepared for associated and commingled remains, and specific explanations are given to indicate the reasons for segregating or consolidating parts.

2-12. Extra Portions of Remains

Extra portions of remains can be kept to a minimum at the laboratory if associated remains from air crashes, tank accidents, or group burials are processed simultaneously. Extra portions of remains are segregated from the remains when parts are duplicated: when parts do not articulate (form a joint): and when race, size, or age differences exist in bone structure.

a. Parts or Portions That May Be Designated Extra. The following parts or portions of the human skeleton may be designated extra portions of remains:

- (1) Mandible.
- (2) Clavicle.
- (3) Scapula.
- (4) Humerus.
- (5) Radius.
- (6) Ulna.
- (7) Femur.
- (8) Tibia.
- (9) Fibula.
- (10) Patella.

- (11) Sternum.
- (12) All hand bones.
- (13) All foot bones.

(14) Vertebrae, excluding the coccyx, may be designated as extra portions of remains if not more than eight vertebrae are segregated from the principal remains. When there are more than eight vertebrae, they are assigned an unknown X-number.

(15) Ribs may be designated as extra portions of remains if they do articulate with the vertebral column and are not in excess of eight ribs. When there are more than eight ribs or when they do not articulate with the vertebral column, the ribs are assigned an unknown X-number.

(16) Innominate bone (hipbone), either right or left, may be termed an extra portion of remains. When both innominate bones are segregated from the principal remains, they are assigned an unknown X-number.

(17) Skull bones, not to exceed one-fourth of the total surface of the skull, may be termed extra portions of remains. These portions are of occipital, parietal, temporal, and frontal

portions are assigned an unknown X-number when the complete skull, or major portions thereof, is segregated from the principal remains.

(18) The sacrum may be designated as an extra portion of remains if it does not articulate with the vertebral column.

b. Classification. When conclusive evidence shown that extra portions of remains are a part of a remains already classified as known or unknown, the portions are given the same classification.

c. Recording. DD Form 892 is prepared on all extra portions of remains. The forms accompany case papers of the principal remains from which extra portions were segregated.

d. Storage. All extra portions of remains are tagged and stored. A quarterly inventory of all such cases indicating the part number and - the remains from which the portions were segregated is furnished, through channels, to US Army Casualty and Memorial Affairs Directorate, TAGO, or, when established, to the Chief, Armed Services Graves Registration Office-CONUS. One copy of DD Form 892 for each case added during the quarter is forwarded with the inventory.

Section III. LABORATORY EXAMINATIONS

2-13. X-Ray and Fluoroscopic Laboratory

The X-ray and fluoroscopic laboratory examines remains and clothing to determine the presence of metallic or other dense identifying media. In addition, the laboratory attempts, if necessary, proper segregation of commingled skeletal remains.

a. X-rays. X-rays are made of parts of the remains when considered necessary to determine healed fractures, bone malformation, abnormal dental structure, or other unusual conditions.

b. Fluoroscopic Examination. The fluoroscope reveals the presence of nonporous material, such as identification tags, loose teeth, rings, or wallets, that may contain information which can assist in identifying the remains.

(1) **Clothing.** All clothing removed during processing operations in hand carried to the fluoroscopic laboratory for examination.

(2) **Remains.** As appropriate, remains are given a fluoroscopic examination in an effort to detect objects which may have been overlooked during the physical processing of the remains. When attempts to segregate commingled skeletal remains have failed, the laboratory may be requested to assist in examining the remains by using the ultraviolet ray technique (app M).

c. Reports. Reports of X-ray and fluoroscopic

examinations are submitted as inclosure to DD Form 890 along with the X-rays. Negative reports are made, as appropriate.

(1) When X-rays are made of parts of remains, the anthropologist examines the X-rays and submits a report of his findings.

(2) The X-ray technician furnishes a report giving the results of the fluoroscopic examination he conducted.

2-14. Chemical Laboratory

The chemical laboratory examines and treats material bearing identifying information that is illegible because of deterioration, fading, stains, or other causes.

a. Laboratory Operations.

(1) **Treating marks on clothing.** All laundry marks, stamps, and ink markings on clothing are examined visually. If a marking is covered by a stain, the marking can be brought out by applying an oxidizing agent. The agent affects the overlying strata but has little effect on the ink of the marking.

(a) **Use of calcium hypochlorite.** A 10-percent solution of calcium hypochlorite clarifies organic stains. Residual stains of a mineral origin, however, resist oxidation by the calcium

hypochlorite solution. Small amounts of nascent chlorine remove the stains if a small amount of the hypochlorite solution is applied to the material and a few drops of concentrated nitric acid are added with a pipette or dropper. The action of nascent chlorine should be observed closely, and when the desired effect has been accomplished, the material should be thoroughly washed with water. After the marking has been clarified, covering it with concentrated nitric acid sometimes aids the reading of it. The acid darkens the ink, particularly if it is stamp-pad ink.

(b) *Photographic procedure.* If the methods followed in (a) above are ineffective, the material is transferred to the photographic laboratory where infrared photographs are taken. The photographic prints are attached to the case report.

(2) *Treating metallic objects.* Metallic objects, such as canteens, guns, wrist watches, rings, medals, and keys, are cleaned and examined for markings. The cleaning is accomplished mechanically or by applying a concentrated sodium hydroxide solution. If the cleaning reveals identifying information, a note is made on the chemical laboratory statement. Photographs are made of articles of questionable or foreign origin and are attached to the chemical laboratory statement.

(3) *Treating personal effects.* Personal effects not included in (2) above, such as letters and family photographs, are examined and cleaned. Papers are carefully separated. If the papers and wallet are matted together, they are soaked in water. A wetting agent added to the water helps to separate the papers. Any abrasive action should be avoided, as it removed surface strata along with any writing that may be present.

(4) *Treating writing on paper.* In treating faded markings, ultraviolet or infrared light, if available, should always be used and the results photographed before chemicals are applied. Inks containing iron may often be restored, but as a rule, aniline inks do not respond to chemical treatment.

(a) *Silver nitrate solution.* Silver nitrate is used on paper to disclose faded ink markings. After the paper is treated with a 3- to 4-percent silver nitrate solution, it is dried and exposed to strong sunlight or to ultraviolet light in cloudy weather. Chloride patterns develop, and as many inks contain chloride, the original marking is reproduced. Silver nitrate is generally more effective than other methods and should always be used first.

(b) *Ammonium sulfide and polysulfide vapors.* Steamed or otherwise moistened paper may be exposed to the vapors or ammonium sulfide and polysulfide. The vapors react with

embedded iron deposit in the ink to form a brown or black sulfide. The marking usually shown on the paper unless the paper itself has a great deal of iron deposit.

(c) *Ammonium sulfide and polysulfide liquids.* When the vapors of ammonium sulfide and polysulfide do not bring results, ammonium sulfide and polysulfide liquids may be applied directly to the steamed or otherwise moistened paper. The liquids can be swabbed over the markings, but a general staining of the area treated may result.

(d) *Iodine vapor or solution.* Iodine, either in the form of vapor or a dilute solution of the tincture, sometimes improves the visibility of either pencil or ink markings on dry paper. Restorations should be photographed promptly.

(e) *Tannic acid.* A 2- or 3-percent solution of tannic acid is used on iron inks. Cloths or pieces of white blotting paper moistened with the acid are placed in contact with the markings and pressure applied for a few minutes.

(f) *Ammonia fumes.* Obliterated markings are sometimes restored by using ammonia fumes or by swabbing the markings with ammonium hydroxide.

b. *Laboratory Report.* The laboratory forwards the results of the chemical analysis with the case papers as an inclosure to DD Form 890.

2-15. Photographic Laboratory

The photographic laboratory is responsible for completing all photographic material in support of the CIL mission and for furnishing prints for inclusion in the case file.

a. *Functions.* The photographic laboratory photographs personal effects and remains for recording identifying media. Portions of remains which may be considered objectionable should be masked before photographing. Photographs include but are not limited to the following:

(1) Scars, tattoos, bone malformations, healed fractures, abnormal tooth formations, and wounds.

(2) Fullface and profile views of current unknown remains.

(3) Fingerprints.

(4) Personal effects bearing identifying data.

(5) Infrared photographs of any laundry marks which were not made visible by chemical processes.

b. *Records.* The photographic laboratory files and records each photograph taken. Negatives are labeled with the name, grade, social security number, or X-number, and the CIL case number assigned the remains in the laboratory. The file for each photograph contains a brief description of the photograph and the name of the photographer.

Section IV. REVIEW OF CASE PAPERS AND DISPOSITION OF REMAINS**2-16. Case Papers**

After a remains has been completely processed, it is left on the table while the identification specialist reviews all case papers for conflicting information, omissions, and other inaccuracies. The officer in charge of the laboratory and the identification specialist decide whether to assign a name or unknown X-number to each case received and processed in the laboratory under an evacuation or a search and recovery number. The decision to assign a name or X-number is reached only after careful examination and evaluation of all

available records received and developed in the laboratory. Case papers are prepared in the number of copies that are required in the local zone or area.

2-17. Disposition of Remains

The remains are wrapped appropriately and forwarded with all identifying items of clothing and equipment to the section responsible for preparing the remains for shipment or burial in a temporary or permanent cemetery.