

ENCLOSURE
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ANALYSIS OF DIGITAL IMAGES
FOR
LUCKY 8 TV

Start Date: 17 December 2015

This report was prepared at the request of Nell Koring of Lucky 8 TV. Its purpose is to compare images from various sources taken on Iwo Jima on 23 February 1945 to determine the identity of individuals involved in the raising of the flag on Mount Suribachi.



At left in Figure 1 is a cropped version of the original photograph taken by Joseph Rosenthal on 23 February 1945 with the identities of the Marines involved.

In question is the identity of John Bradley.

Figure 1

Materials Received

Fifty six (56) digital still images in .jpg and .tif formats. These images vary in resolution from low (100 ppi) to high (1270 ppi). It should be kept in mind that low resolution images in compressed format (.jpg) are susceptible to degradation and fine detail is lost. I have no information with respect to the provenance of the images and will confine this analysis as much as possible, to details unlikely to have been distorted by compression.

One (1) video sequence in .MP4 format entitled "Lucky_8_TV_20150820_DPX_H264_2". This is a high resolution (3032X2304 pixels) transfer of 16 mm film shot by Marine Sgt. William Genaust on 23 February 1945. Although the resolution is high I have no information as to how the transfer was accomplished. The best evidence would be frame by frame scanning of the original film which I do not believe to be the case here. Vignetting is evident throughout, regardless of lens changes suggesting a telecine chain was used to accomplish the transfer or worse, that it was simply recorded directly from a screen. The dynamic range (number of steps between black and white) is short, increasing contrast and is typical of a multi-generational copy.

Based on my knowledge and experience I believe this to be a direct transfer of a multi-generation copy of the original and therefore there is significant loss of fine detail.

Technical

Images in .jpg format were converted to uncompressed files in .tif format to preserve details. A levels correction was applied to all images to improve overall brightness and contrast and an unsharp mask was applied as needed to improve detail.

The video was exported as a sequence of uncompressed still images in .tif format.

Time-line

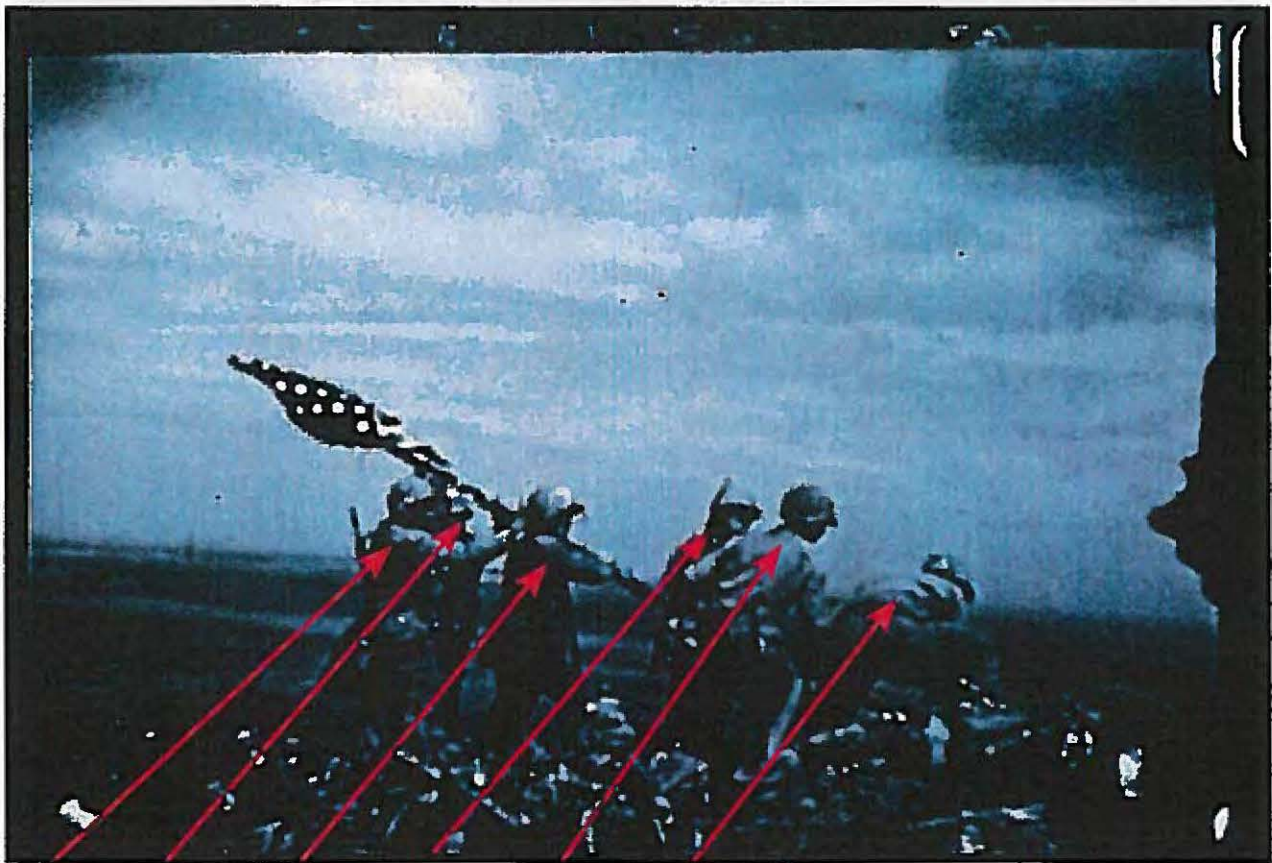
Subjects are identified as per the official record.



Michael Strank Ira Hayes John Bradley Franklin Sousley



Hayes Strank Sousley Gagnon Bradley Block

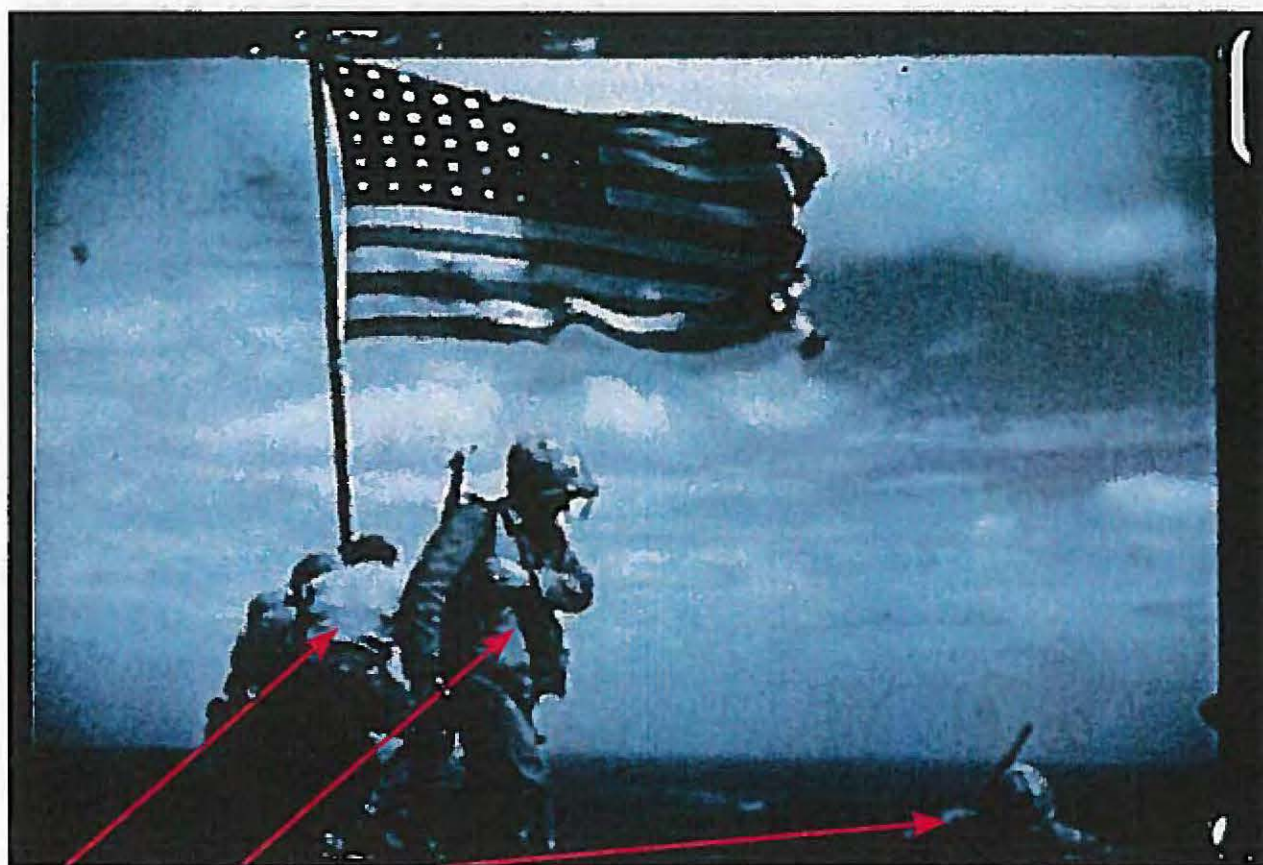


Hayes Strank Sousley Gagnon Bradley Block



Sousley Hayes Strank Bradley Block Gagnon obscured by Block

Once the flag is raised the men bunch up and change positions.



Unknown Sousley Gagnon

As Bradley, Strank and Block struggle with the mast, Gagnon and Sousley gather rocks to place at the base along with an unknown soldier who is seen here placing a rock.



Hayes Bradley Unknown Block Sousley Gagnon



Sousley Bradley Unknown Block Gagnon



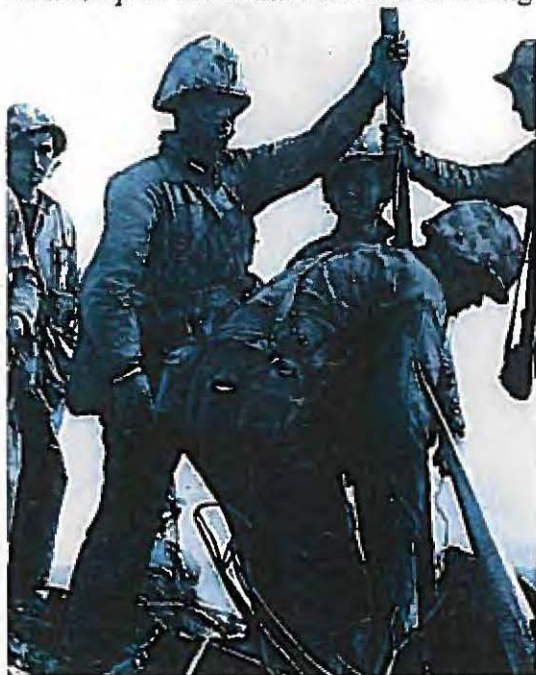
Hayes Sousley Strank Bradley Block and Gagnon not seen

The "Gung Ho" photograph taken immediately after.

Descriptions

Subject 1 – Identified as John Bradley

In these two photographs taken during and after the first flag raising Bradley is seen full length. The chin strap of his helmet is secured during the raising but has been undone at some point afterwards. The strap from the helmet liner is secured across the front of the helmet.

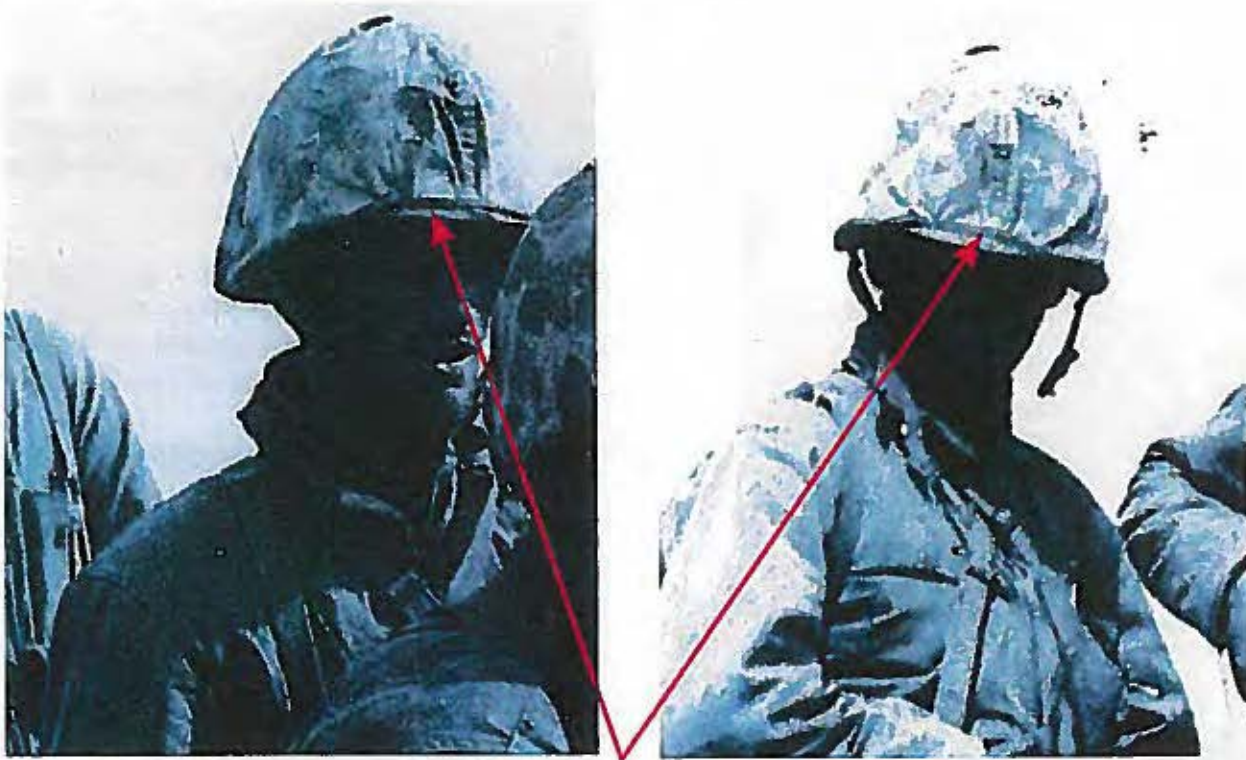


His Unit 3 pouches are slung on both sides, the straps of his suspenders are fastened across his chest; his jacket is done up beneath the straps. He has a bracelet on his right wrist and wears a ring on the third finger of his left hand.

His pant legs are rolled up revealing his leggings.



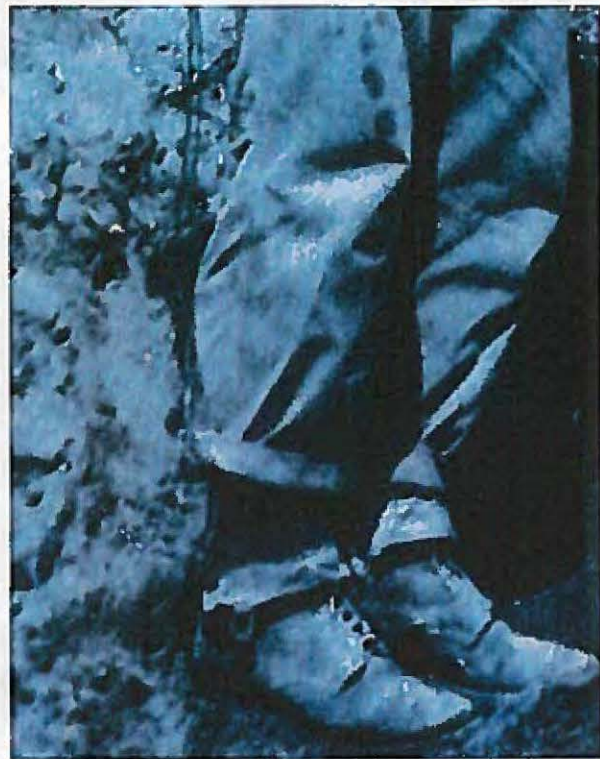
Bradley – Helmet



Liner strap is intact and fastened



Bracelet Straps fastened securely over jacket



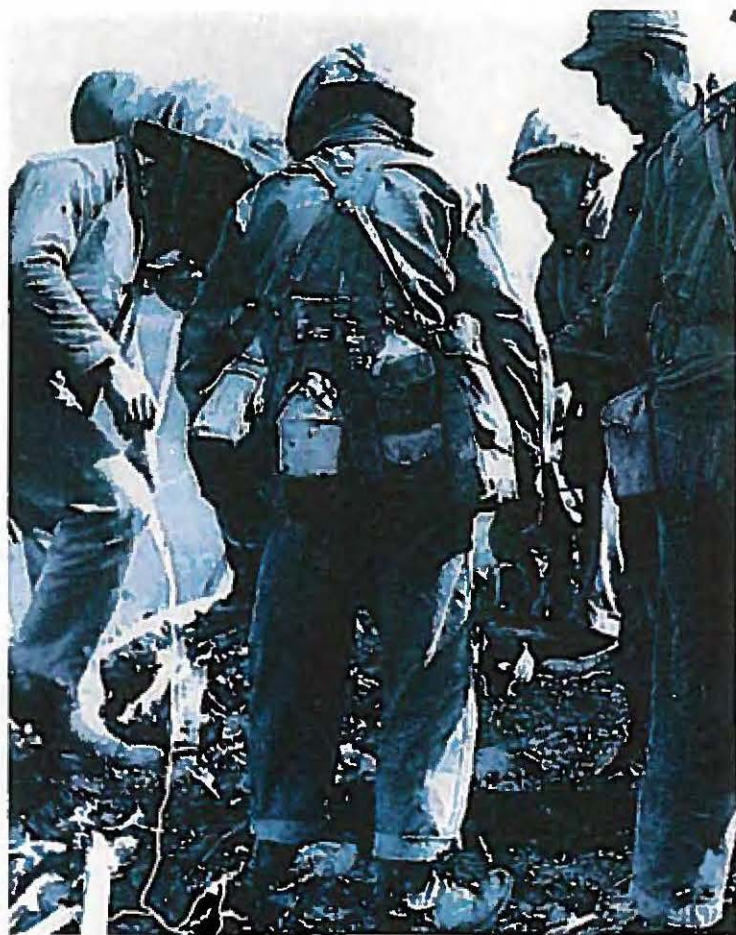
Pants cuffed with leggings visible



Bracelet

Ring

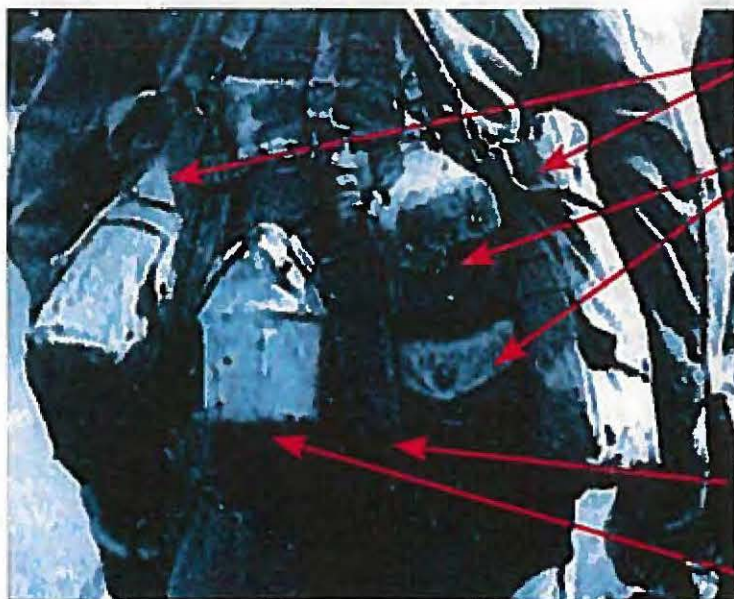
Unit 3



• This rear view of Bradley taken at the first flag raising clearly shows the equipment he was wearing that day.

His unit 3 pouches hang to each side, canteen at left, knife/scabbard centred, M1942 and M2 first aid kits on the right.

Again the cuffed pants and leggings are seen.



Unit 3

First Aid kits

Knife

Canteen

Franklin Sousley

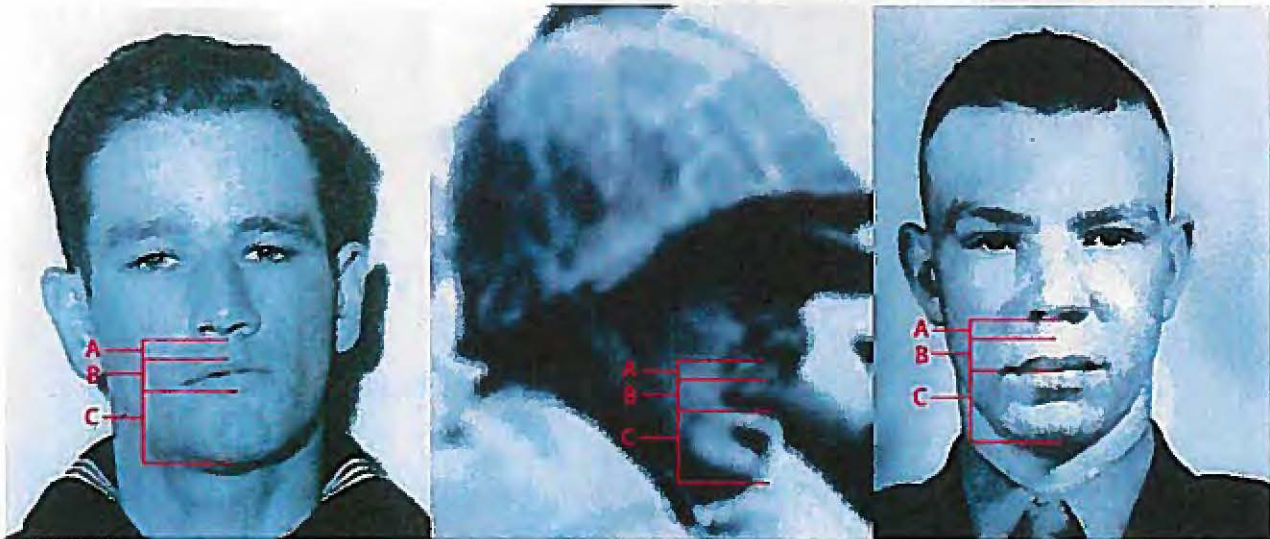


Although the image of Subject 1 at left is identified in many sources as being Franklin Sousley, a facial comparison is shown below.

The faces were overlaid and re-sized to match. Distances were then established at points A, B and C on the image of John Bradley. The points were then transferred to the image of Subject 1 and Sousley.

The distance between nose and upper lip on Bradley is markedly shorter on Bradley than on Sousley. The same measurement is similar when Sousley and Subject 1 are compared.

Taking this into account, as well as the overall similarities, I have formed the opinion that the Marine identified as Subject 1 is more likely Franklin Sousley than John Bradley.



John Bradley

Marine

Sousley

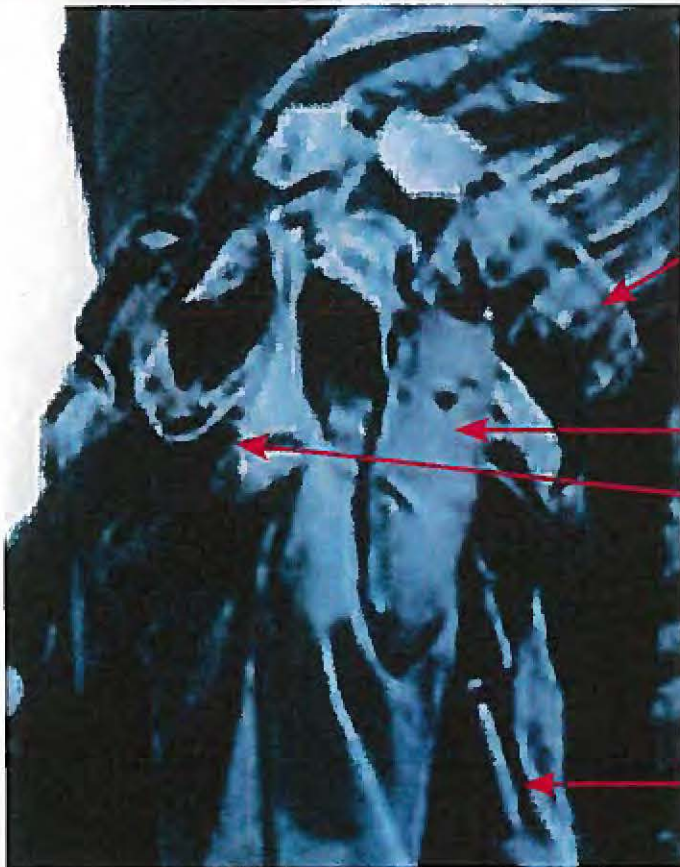
Franklin Sousley



In this photograph, identified as being of Franklin Sousley, he is depicted full length and most of his equipment is visible.

His chin strap is fastened although it is not possible to see if the liner strap is secured. In any case it (liner strap) does not appear to be hanging loose.

Also of note are the pants which are not cuffed.



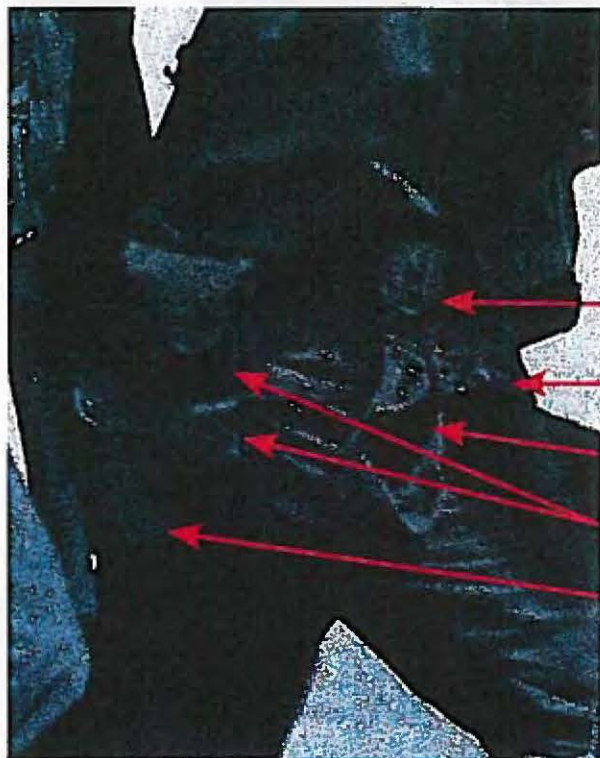
Cartridge Belt

Wire-cutters

Canteen holder (empty)

M7 Grenade Launcher

Comparison of Bradley to Subject 1 of the Rosenthal Photograph



Comparison work always proceeds from the unknown/questioned person or object to the known and so we begin with the person in the photograph purported to be John Bradley and identified as Subject 1 for the purposes of this examination.

Cartridge Belt

Wire-cutters

Canteen Cover (empty)

First Aid Kits

Canteen



Liner strap is not evident

Utility Cap

Chin strap fastened



Pants hang straight, not cuffed

Helmet



It is a well-understood concept in the comparison of clothing that it is unlikely for two items of patterned clothing to be the same.

The reason for this is the manner in which articles of clothing are manufactured.

Large bolts of cloth are rolled out in layers. A series of dies are then placed by hand on the cloth and pressed through the layers of cloth to cut the pieces required.

It is unlikely with patterned cloth that the die will be placed in precisely the same locations, or that the cloth bolts will be rolled out in exactly the same way.

Therefore it would be considered statistically unlikely that the camouflage cover on any two helmets to be the same.

The cover on Subject 1's helmet appears to fit the helmet tightly and there is no evidence of the liner strap.

The front of a utility cap can be seen extending out from beneath his helmet

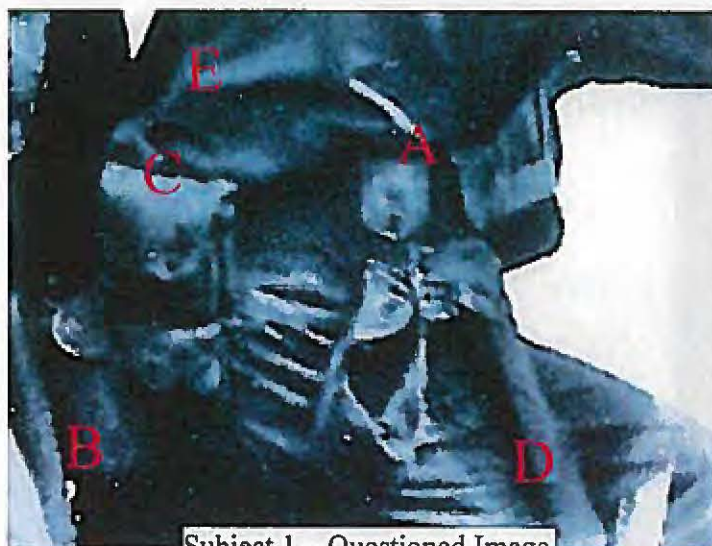


In images of the helmet known to be Bradley's, the cover appears to be fastened loosely and the liner strap is clearly evident.

Bradley does not appear to wear a utility cap under his helmet

There is no adequate profile view that could be used for a detailed comparison of the camouflage patterns.

In comparison, the two helmets are not consistent with each other. The cover on the known helmet belonging to Bradley has very distinctive folds at the front that are not seen on the unknown helmet. The known helmet has a clearly visible liner strap while there is no strap evident on the unknown helmet.



Subject 1 - Questioned Image

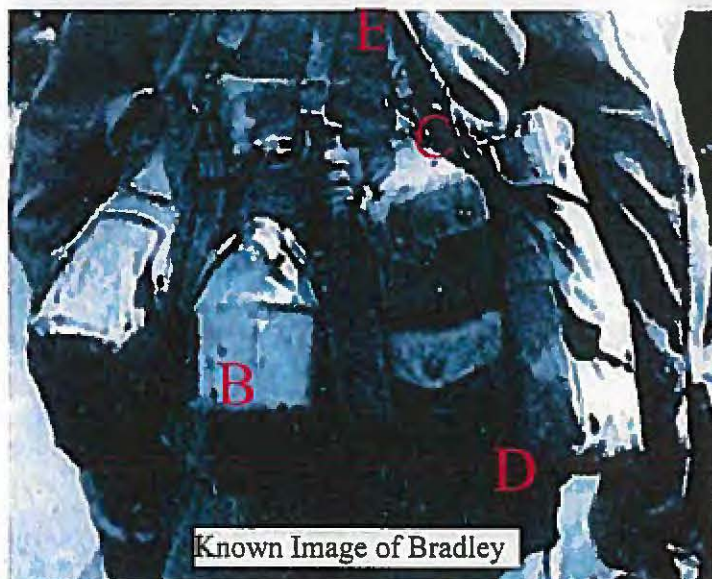
The equipment carried by Bradley appears to be quite different from that seen on Subject 1.

There is no evidence of the Unit 3 carried by Bradley. Assuming that for whatever reason, he removed it, there is no evidence from the known images of Bradley that he wore a cartridge belt (A) like the one seen in the questioned image.

The location of the canteen (B) seen in the known images corresponds to the location of the canteen in the questioned image however, there is no evidence of the knife, and while the first aid kits (C) are positioned right of centre as is the case with Bradley they would not conceal the knife.

The wire-cutters (D) seen in the questioned image are not present in the known image of Bradley. They are clearly long enough to have extended below his Unit 3 on his right hip.

The belt worn by Bradley is secured by suspenders and the centre strap (E) at the back can be seen directly above his knife. The person in the questioned image has no suspenders.



Known Image of Bradley

Subject 1 has an empty canteen cover fastened to the right side of his belt suggesting that at some point he had two canteens. If Bradley was also carrying an empty canteen cover it would be hidden by the right side of his Unit 3. No comparison can be made.



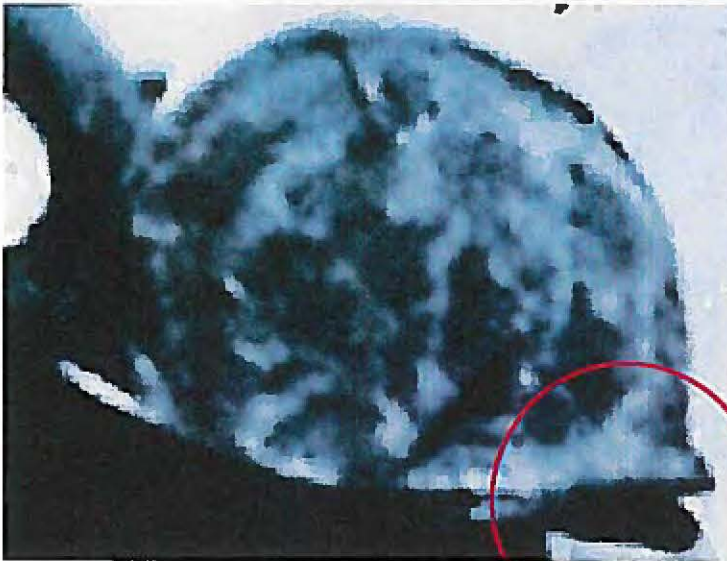
Known Image of Bradley



Finally, the pants seen in the questioned image are not cuffed as is the case in the known images of Bradley.



Comparison of Sousley to Subject 1 of the Rosenthal Photograph



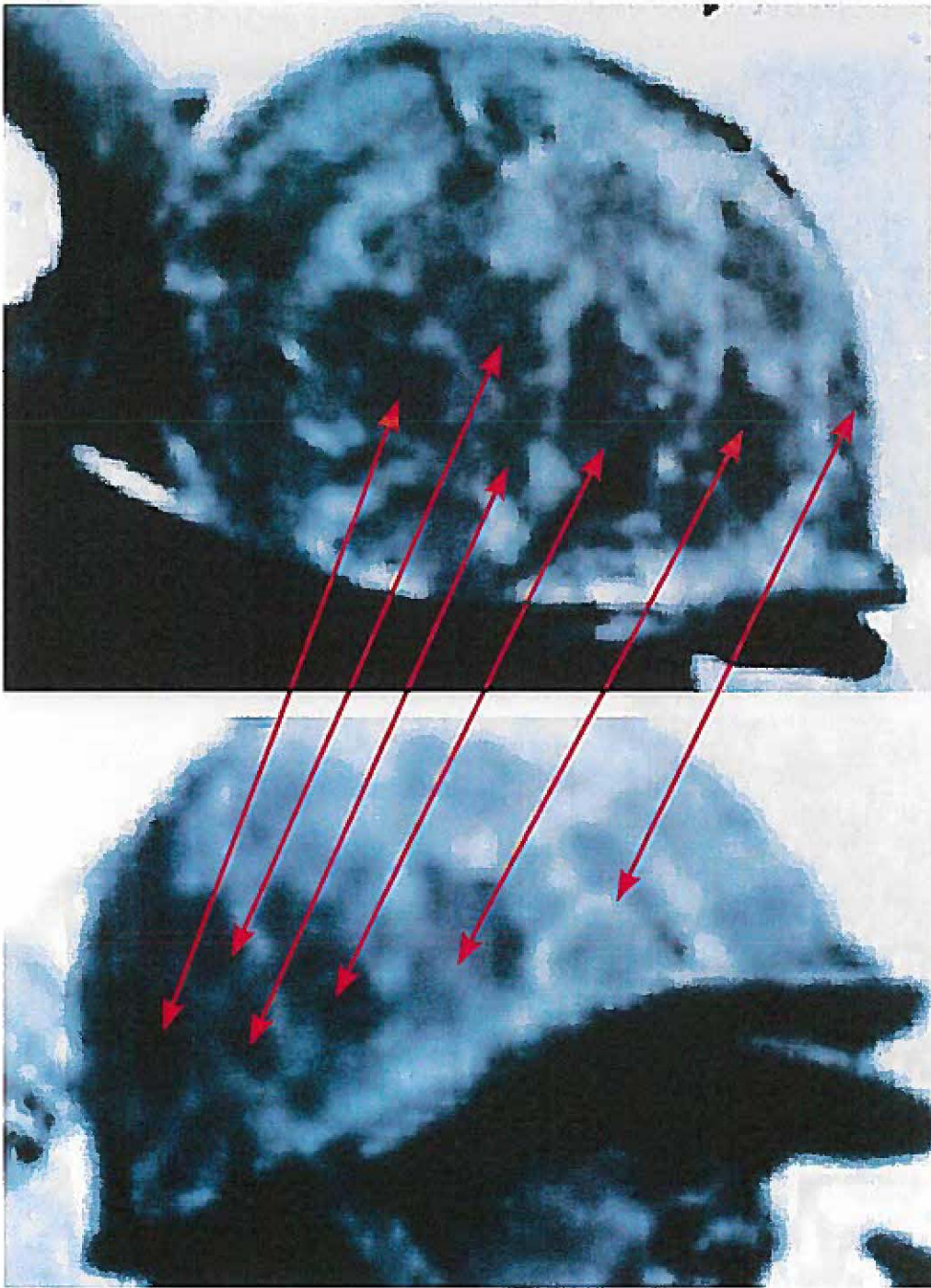
Subject 1

In the images depicting Subject 1 and Franklin Sousley, both men wear a utility cap under their helmets.

The liner strap is not seen in either image.



Franklin Sousley



Allowing for the angle of rotation, the patterns on the helmet cover of Subject 1 are consistent with those on the helmet cover of Franklin Sousley.



Subject 1



Franklin Sousley

Neither Subject 1 nor Franklin Sousley have their pants cuffed.



Subject 1 is turned to his left presenting a view more from behind than in profile.

Franklin Sousley (Below, Left) is presented in profile and reveals more of the front.

Taking this into account comparisons can be made as to the location and type of equipment both men are carrying.

A. Sousley's first aid kits are seen "side on".

B. Empty canteen cover.

C. Cartridge belt, only the last pouch is seen on Subject 1 due to the angle at which he is turned

D. Wire-cutters.



Known image of Franklin Sousley

At this point it is clear to me that Subject 1 and John Bradley are not the same person. Franklin Sousley

and Subject 1 are consistent with respect to their clothing and the equipment they are carrying. It remains to rule out Franklin Sousley as being the person to the left of Subject 1, who has previously been identified as Sousley. For the purposes of this examination this person is referred to as Subject 2.

Subject 2



Subject 2



Franklin Sousley – Known Image

Very little equipment is visible in the photograph; only a knife and rifle are visible. But the very fact that Subject 2 is carrying a rifle is an inconsistency that automatically rules him out as being Sousley, since the known image of Sousley taken seconds after the flag has been raised does not show him carrying one. Similarly, the lack of other articles seen in the known image is an inconsistency that would rule Subject 2 out as being Franklin Sousley.

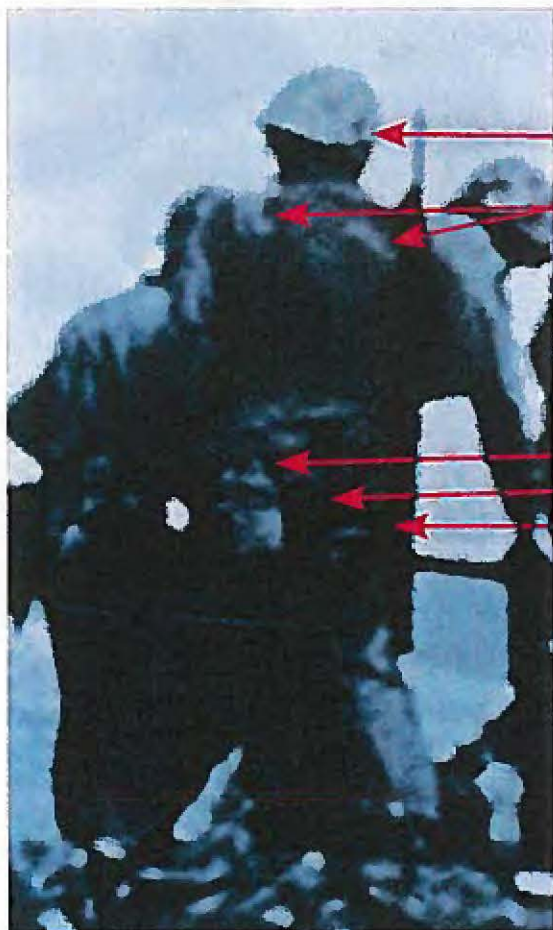
For the same reasons Subject 2 can also be ruled out as being John Bradley.

It remains then, to determine who Subject 2 is.

Subject 2 – Characteristics

Since the image of Subject 2 in the Rosenthal photograph gives so little information it is necessary to turn to the 16 mm footage taken by Marine Sgt. William Genaust.

Subject 2 is first observed from behind approaching the flag after the other men are in place.



Dark marking at the back of the helmet

Light markings left and right shoulders. Possibly scuff marks

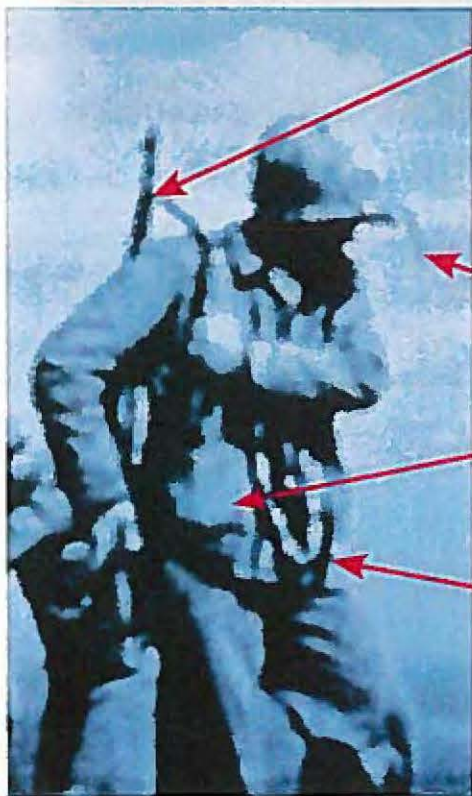
Canteen

Unidentified – possibly first aid kit(s)

K-Bar



Subject 2, far left next to Hayes. There are no identifiable facial features.



Rifle sling is fastened to the stacking swivel which is incorrect. It should be fastened to the upper swivel further back along the stock.

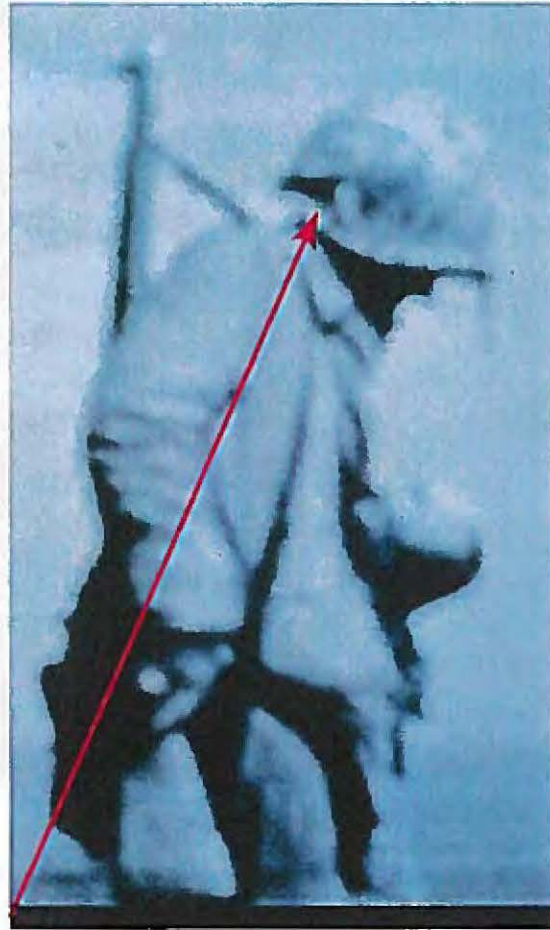
Loose/broken helmet liner strap

Right pocket bulging. Appears to be filled.

Consistent with a bandolier



Object consistent with a bandolier



Rip in helmet cover

I examined all available images from both flag raising events in order to rule out men who did not demonstrate the same characteristics in their clothing and equipment. Of particular interest is the improper slinging of the rifle and the loose helmet liner strap.

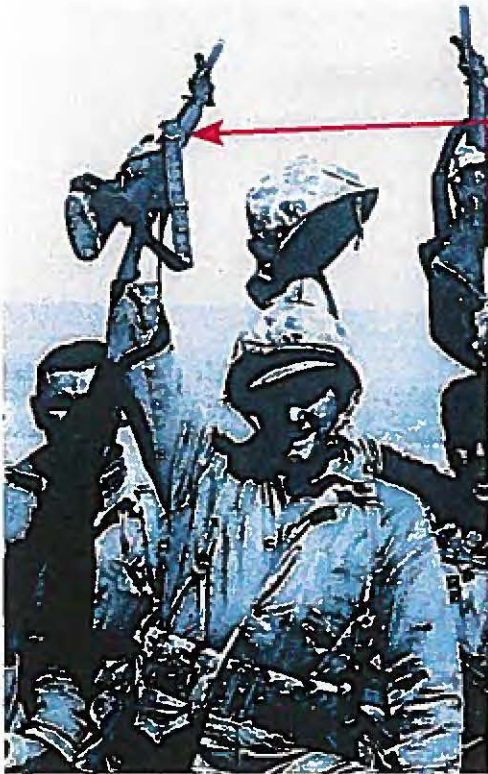
The Marines on the following pages can all be ruled out with the exception of Harold Schultz (Page 30)



Charles Lindberg

Was known to employ a flame-thrower and carried a sidearm not a rifle.

No loose liner strap



Clarence Garrett

Rifle is properly slung. Also has a bayonet affixed.

No loose liner strap



Frank Walzak

No rifle seen
No loose liner strap



Graydon Dyce

Helmet liner strap is intact and fastened

Dyce



Harold Keller

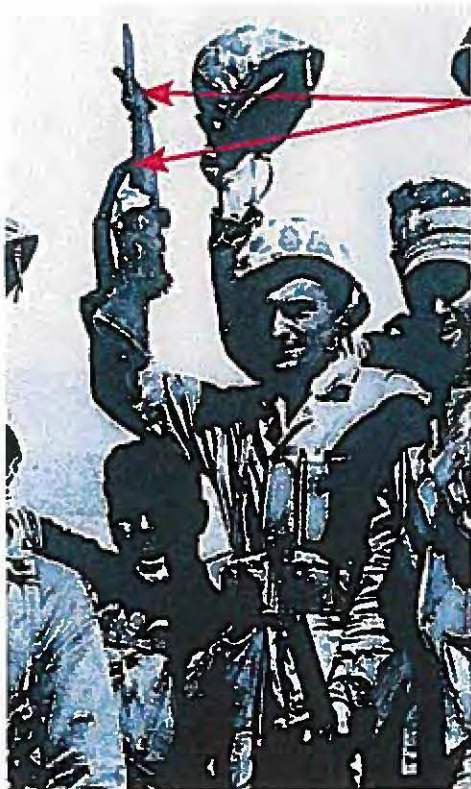
Rifle properly slung. Liner strap is intact and fastened



Harold Schultz

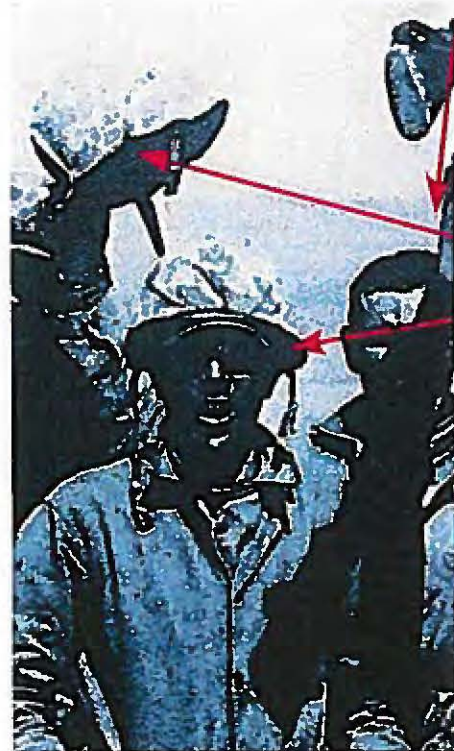
Sling is not visible

An object consistent with a liner strap is visible on the left side of the helmet.



Howard Snyder

Rifle has a bayonet affixed and is properly slung.
No loose liner strap is visible



John Bradley

No rifle visible. No loose liner strap

Michael Strank – already accounted for in the photograph.
No loose liner strap.



John Schmitt

Rifle sling is correctly fastened

Liner strap is intact and fastened



John Thurman

No rifle visible

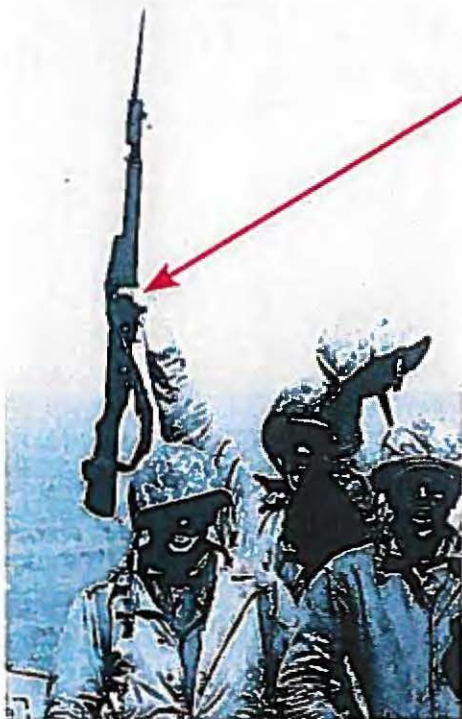
No loose liner strap



Raymond Larsen

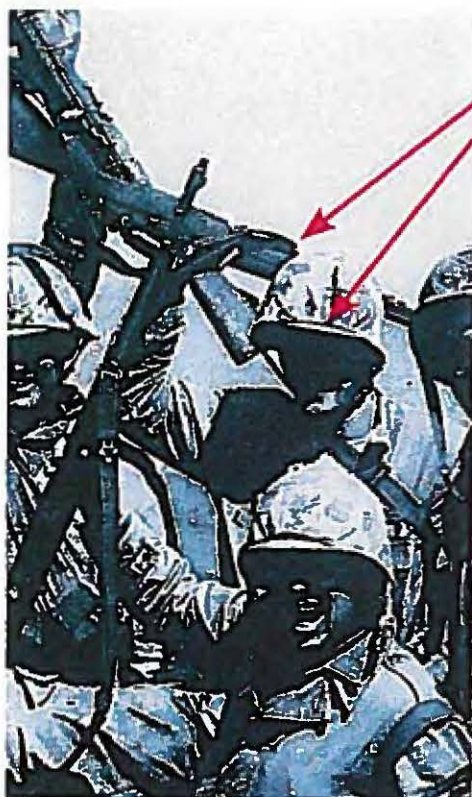
No loose liner strap

Carries a sidearm



Franklin Sousley

Rifle is properly slung and bayonet attached.



Thomas Hekmanek

Rifle sling is properly attached
Liner strap is intact and fastened



James Michaels

No loose liner strap
Different type rifle

Harold Schultz



Harold Schultz – Characteristics



Known Image of Schultz – identified by photographer (Lowery)

Known image of Harold Schultz

A. Right pocket appears to be filled.

B. Object consistent with bandolier looped in front.



Known Image of Harold Schultz - First Flag Raising



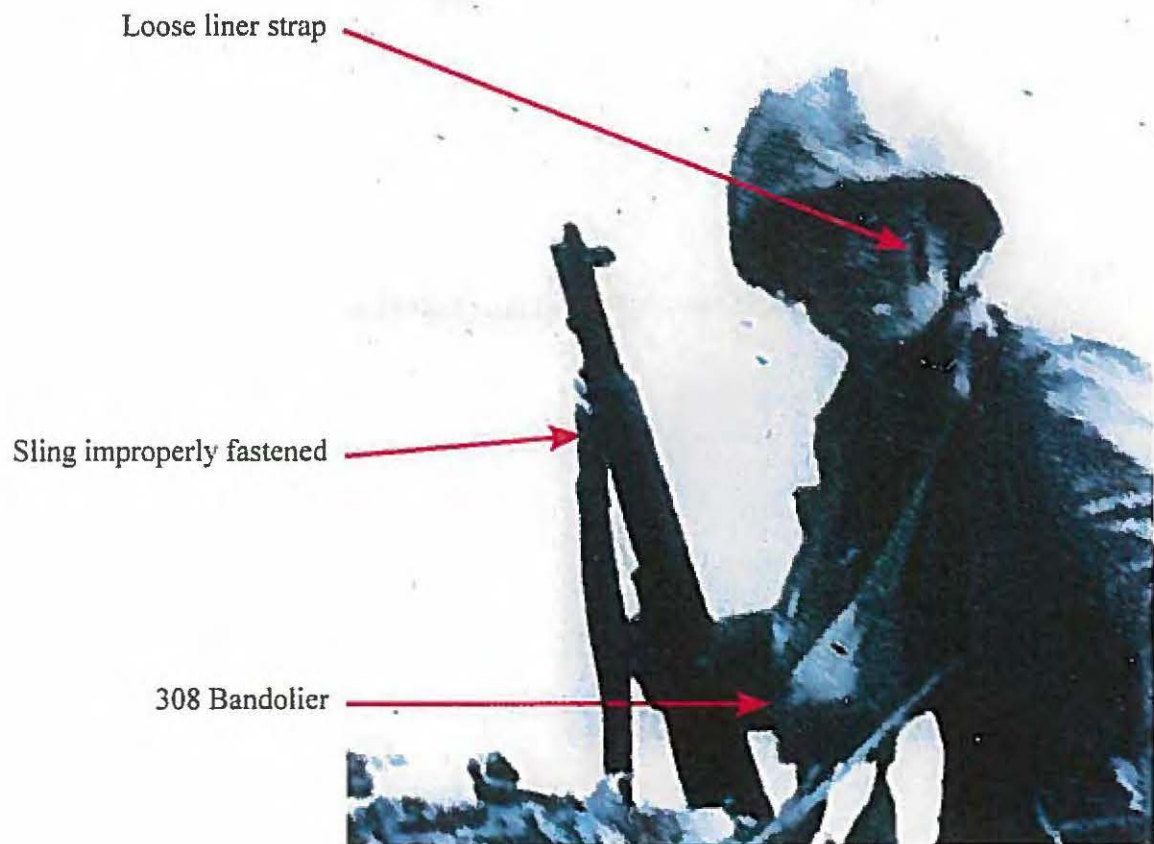
Schultz (Identified by photographer Lowery)



Loose liner strap

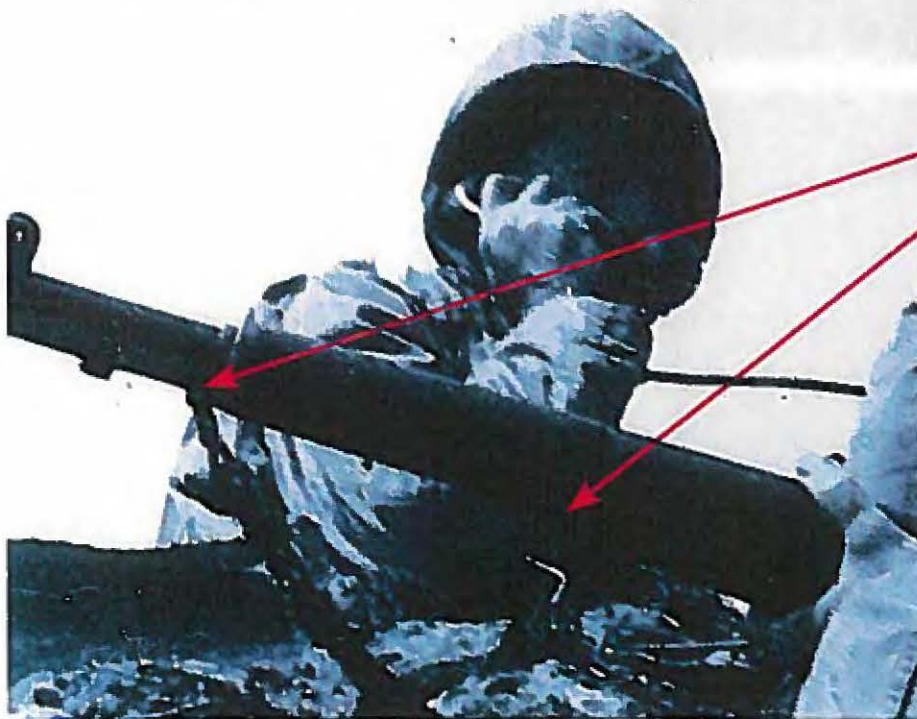


Schultz (identified by photographer Lowery)



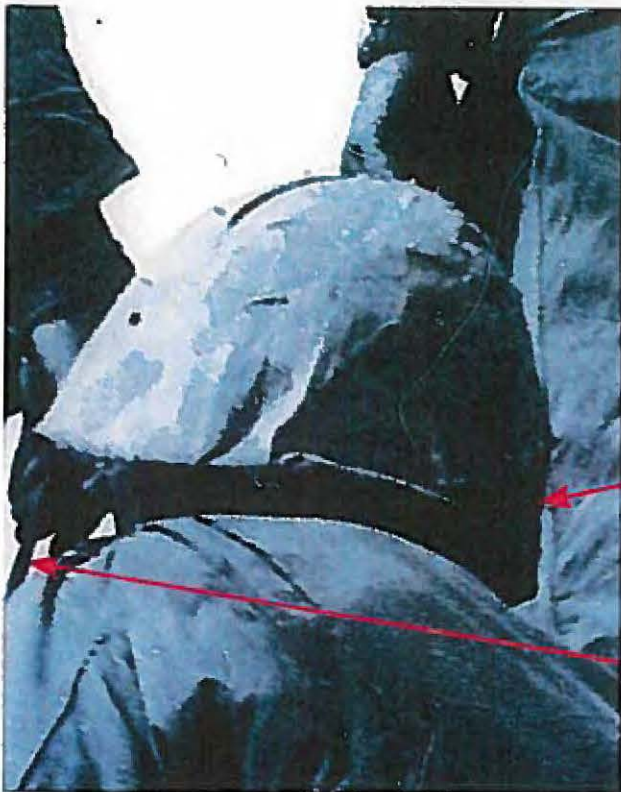


Schultz (Identified by photographer Lowery)



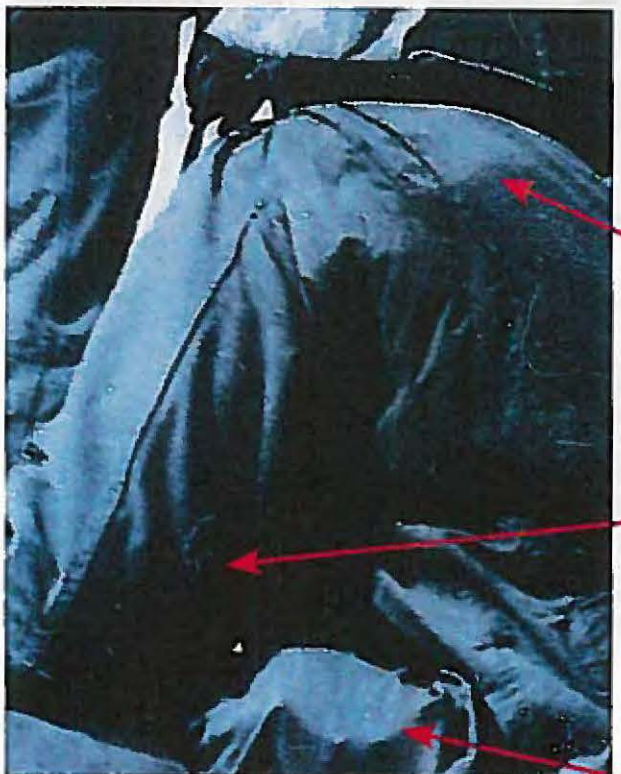
At left is an enlargement of Schultz's rifle. The sling is attached to the stacking swivel. The upper sling swivel appears to be missing.

6



The helmet cover is torn and a triangular piece is missing

Liner strap hanging loose on the left side.

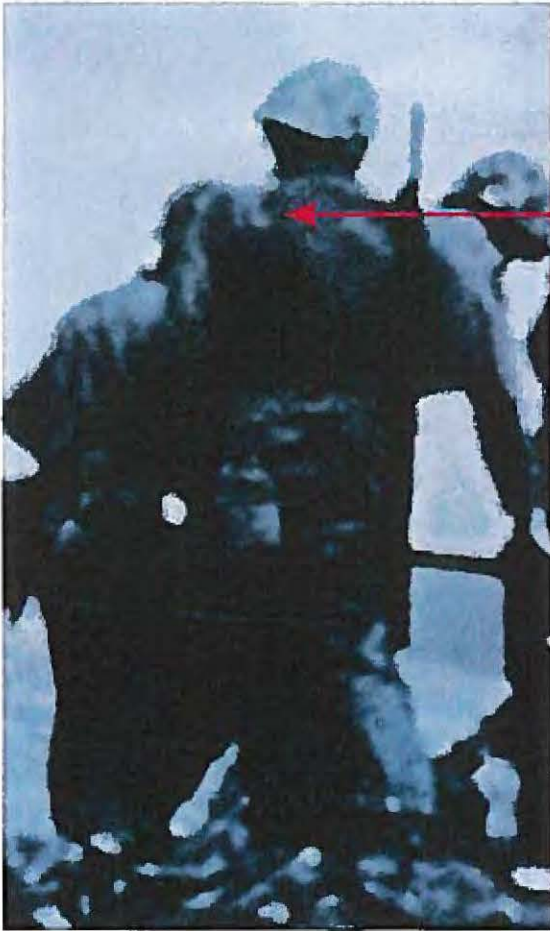


Light coloured marking on left shoulder

Tear on left sleeve

Bag

Comparisons Subject 2 and Harold Schultz



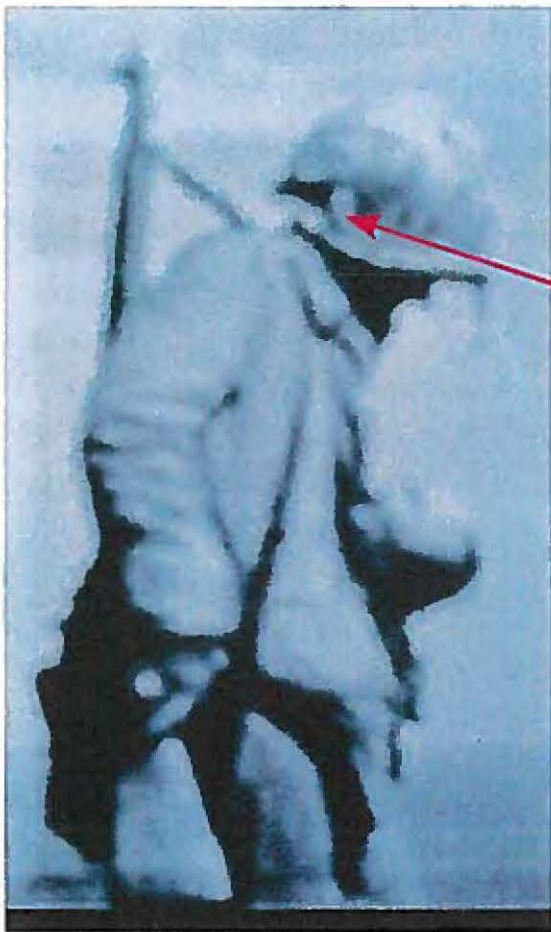
Subject 2



Schultz

The light-coloured marking on the left shoulder of Subject 2 is consistent in size, shape and location with the marking seen on Schultz's jacket.

There is not enough detail available to determine if Subject 2 has a tear at the back of his left sleeve coincident with the tear seen on Schultz's jacket.



Subject 2



Schultz

The triangular marking on the helmet worn by Subject 2 is consistent in relative size, shape and location as the tear seen on Schultz's helmet cover.

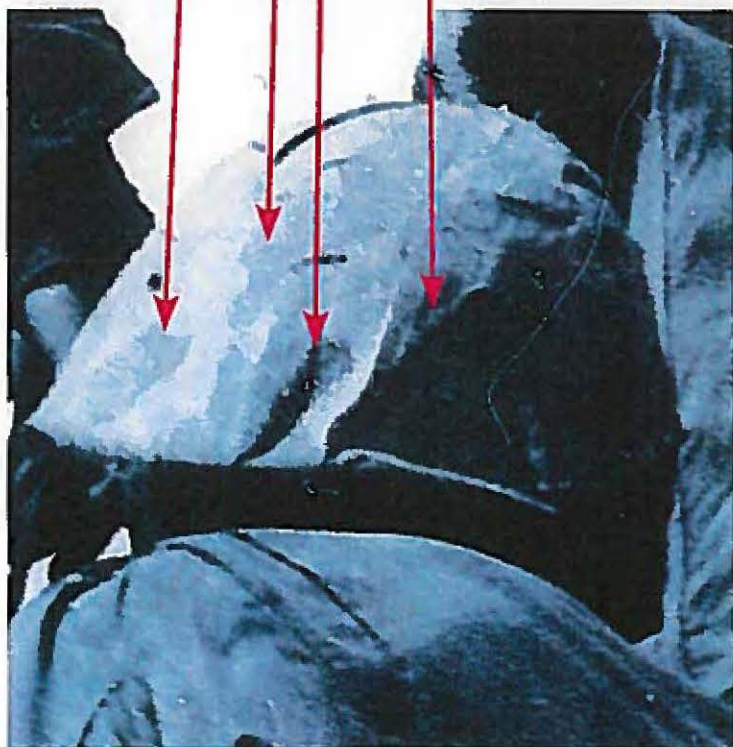


Subject 2 helmet cover markings are consistent with those of Schultz's.





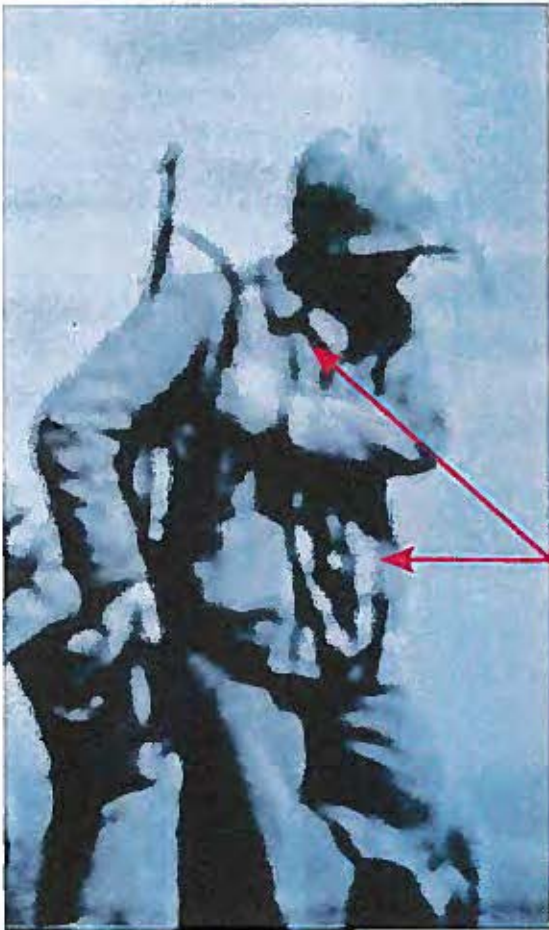
Subject 2 helmet cover markings are consistent with those of Schultz's.





Subject 2 – An extreme levels correction was applied to this image in order to show the two markings at the front of the helmet cover, consistent in location and relative size with the pattern on the front of Schultz's helmet cover (below).

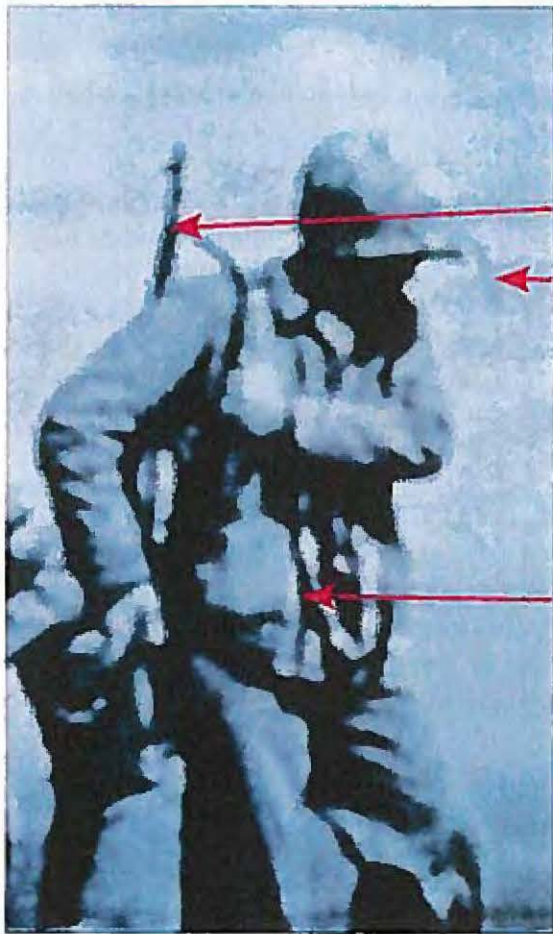




Object consistent with a bandolier worn around the neck



308 bandolier worn around the neck



Sling fastened to stacking swivel

Loose liner strap

Right pocket appears filled



Loose liner strap

Sling fastened to stacking swivel

Right pocket appears filled

Summary

Having examined the supplied materials and compared the equipment and clothing of the persons in question I have formed the following opinions:

1. The person identified as John Bradley in the Rosenthal photograph is in fact Franklin Sousley;
2. The person identified as Franklin Sousley in the Rosenthal Photograph is in fact Harold Schultz.

John Bradley

In my opinion even a cursory examination of the evidence rules out John Bradley as being the person identified as him in the photograph. There are no consistencies between the known images of Bradley and the person in the photograph that would lead me to the conclusion that they are one and the same.

Franklin Sousley

There are no consistencies between the known images of Sousley and the person identified as him in the photograph that would lead me to the conclusion that they are one and the same. The preponderance of corresponding points of identification between the known images of Sousley and the person identified as John Bradley are sufficient to lead me to a conclusion that they are one and the same.

Harold Schultz

Every other person present at the time of the first and second flag raising can be ruled out as being the person identified in the photograph as Franklin Sousley with the exception of Harold Schultz. The loose liner strap, the large tear out of the back of the helmet liner and the positioning of the rifle sling are unique characteristics seen only on Schultz and the questioned person.

Therefore I have formed the opinion that the person identified as Franklin Sousley in the photograph and Harold Schultz are one and the same.



Ira Hayes, Harold Schultz, Michael Strank, Franklin Sousley, Rene Gagnon, Harlon Block

This document has been produced to the best of my ability with the materials supplied. Processes and methods employed conform with the Best Practices guidelines as outlined by SWGIT (Scientific Working Group on Imaging Technology)

Completion Date: 01 January 2016

<<Original signed by>>

Michael Plaxton
Board Certified (LEVA) Forensic Video Analyst