



Central Valley Chapter - California Land Surveyors Association  
[www.californiacentralvalleysurveyors.org](http://www.californiacentralvalleysurveyors.org)

# THE Central Valley Chapter PRISM

Volume 5, Issue 2

March 2015

## 2015 Chapter Officers

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Vice President: Landon Blake  
Secretary: Rich Brown  
Treasurer: Tom Price  
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Chapter Director: Bill Koch  
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Boy Scout Merit Badge:  
Zachary Wong (Coordinator)  
TrigStar:  
Bill Koch (Coordinator)  
Workshops:  
Rich Brown (Coordinator)

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Up  
Coming  
Meetings!

**Date:** March 25, 2015

**Time:** 6:00 p.m.

**Location:** Perko's @ 901 North Carpenter Road, Modesto

**Speaker:** Gwen Gee, PLS, CFedS

**Topic:** Santa Clara County Surveyor

**Date:** April 22, 2015

**Time:** 6:00 p.m.

**Location:** Perko's @ 901 North Carpenter Road, Modesto

**Speaker:** Michael Durkee - Land Use Navigators

**Topic:** TBD

## Announcements

### NATIONAL SURVEYORS WEEK

National Surveyors week is March 15-21, 2015. NOAA's National Geodetic Survey encourages anyone with survey-grade Global Positioning System (GPS) receivers to join the 2015 GPS on Bench Marks Campaign. [Click here](#) for more information.

### CLSA/NALS ANNUAL CONFERENCE

Is set for March 21-25, 2015, at the Silver Legacy Resort and Casino in Reno, Nevada [Click here for more information](#)

### CHAPTER SCHOLARSHIPS AWARDED

The 2015 Chapter scholarships were presented at the 54th Annual Fresno State Geomatics Conference on March 20, 2015. They were awarded as follows:

Thomas H. DeLaMare Memorial Scholarship was awarded to Marco Castenada

Chuck Kincaid Memorial Scholarship was awarded to Marco Castenada

Jesse Stanley Memorial Scholarship was awarded to Stephen Castillo

Terry Hayden Memorial Scholarship was awarded to Cory Walker

### 2015 MEMBERSHIP IS NOW DUE

You should be receiving your 2015 membership bill from State CLSA shortly. When you send in your dues, please don't forget to send in your Central Valley Chapter dues. We will be updating our membership database, so **please update your information**. You can also pay [online through the chapter website](#).

The Central Valley Chapter will waive chapter dues for any members (or new members) who have become victims of the current economic downturn and are unemployed. Please fill out the Membership Application, enter "Unemployed" on Line 7 for the Name of Firm or Agency, submit your application, and your 2015 chapter dues will be waived.

## Classes, Training, and Continuing Education

# Mark Your Calendars

Subdivision Map Act Seminar - Michael Durkee  
April 22, 2015, Modesto  
More information at the March Chapter Meeting

CAD Masters - AutoCAD Level I (3-Day Course)  
March 30-1, 2015, Sacramento  
April 13-15, Walnut Creek  
April 27-29, Sacramento  
May 11-13, 2015 Walnut Creek  
May 26-28, 2015, Sacramento [Register here](#)

CAD Masters - AutoCAD Level II (2-Day Course)  
April 6-7, 2015, Walnut Creek  
April 30-1, 2015, Sacramento  
May 18-19, 2015, Walnut Creek [Register here](#)

CAD Masters - AutoCAD Level III  
April 2, 2015, Sacramento [Register here](#)

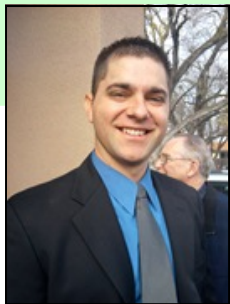
CAD Masters - AutoCAD Civil 3D Intro (3-Day Course)  
April 6-8, 2015, Walnut Creek  
April 20-22, 2015, Sacramento  
May 4-6, 2015, Walnut Creek  
May 18-20, 2015, Sacramento [Register here](#)

ESRI - Introduction to GIS (2-Day Course)  
Multiple Dates, Online [Register here](#)

Half Moon Seminars - GNSS: State Plane Coordinate  
Systems, Webinar [Register here](#)

If you have information about a training or class, please submit to: [editor@californiacentralvalleysurveyors.org](mailto:editor@californiacentralvalleysurveyors.org)

## President's Message



As we roll into 2015 (is it March already?) I am excited to see that the Chapter has chosen to delve into the arena of public service. By the time most of you read this we will have completed our second round of cleanup on our adopted stretch of Claribel Road just east of Riverbank. It is great to be involved with an organization that has decided to find a problem and volunteer a solution. It is much easier to sit and complain that people have no respect for our public spaces than it is to put on gloves and a vest and get to work.

I think it is very appropriate that the CVCLSA has chosen adopting a road as a way to assist our community. Surveyors are by nature problem solvers and don't mind a little hard work, however unglamorous it may be. I am deeply appreciative to those who were willing to search out an opportunity and bring it before the chapter. I am equally as appreciative of those who are willing to give of their time and labor to fulfill that obligation. Civic pride is a noble idea, but sooner or later someone has to put on gloves and a vest and get to work.

If you would like to comment on this topic or suggest another, please submit it to:  
[editor@californiacentralvalleysurveyors.org](mailto:editor@californiacentralvalleysurveyors.org)



CLSA EDUCATION FOUNDATION

*Land Surveying Photo Gallery*



California Land Surveyors Association Education Foundation would like to thank Bryant Sturgess for generously donating his collection of historic images.

The proceeds from the photos sold on this website will be used to fund scholarships for land surveying students.

# Current Events

54th Annual Fresno State Geomatics Conference, February 20, 2015



Gary Ochsner from Engineering Supply Company, one of our great sponsors



Rich Brown, Jay Seymour, and Keith Spencer work the CLSA Booth as former Chapter scholarship winner Analisa Gonzales gets information



Rob McMillan and the Caltrans Crew



Stephen Castillo receives  
The Jesse Stanley Memorial Scholarship  
From CLSA President Jay Seymour



The BPELSG Booth



Marco Castaneda receives  
The Thomas H. DeLaMare Memorial Scholarship and  
The Chuck Kincaid Memorial Scholarship



Cory Walker receives  
The Terry Hayden Memorial Scholarship  
sponsored by Aerial Photomapping



## State News

### Geospatial Engineering Program at Cal Poly Pomona

By Dr. Francelina A. Neto, PLS

#### Abstract

California Polytechnic University, Pomona offers a geospatial engineering program embedded in the civil engineering program. This program is accredited by the Accreditation Board for Engineering and Technology (ABET) for both civil and surveying engineering, giving its graduates the opportunity to become dual licensed. This article summarizes the geospatial option part of the program, and its surveying specific components. The integration of the curriculum to engineering practice briefly described and the components of the programs are concisely presented. A view of possibilities for the use of geospatial technology and land surveying is offered at the end of the article.

#### Engineering at California Polytechnic University, Pomona

The California State University (CSU) system accommodates a wide range of undergraduate and masters degree programs. Within the system, two campuses have been dedicated to learn-by-doing education since their inception: Cal Poly San Luis Obispo and Cal Poly Pomona. The Cal Poly Pomona College of Engineering offers 11 undergraduate and 5 masters degree programs housed in 7 departments. Serving over 5,000 students, the college is the 17th largest in the nation. The Civil Engineering department currently has two programs: Civil Engineering (CE) and Construction Engineering Technology (CET) with approximately 1,300 undergraduate students, and 140 graduate students. Its growing graduate programs make the department one of the largest undergraduate programs in the nation, with a wide range of capabilities. The Civil Engineering program has three options, one being Geospatial Engineering (GE).

The CE department at Cal Poly Pomona is supported by 21 full time faculty, and additional adjunct faculty. The department is currently searching for two additional tenure-track faculty to start in Fall 2015; one in the geospatial area, and the second one in construction engineering.

All faculty are required to have industry experience. In addition to a doctorate degree, a professional license in the area of expertise is required before tenure is granted. The goal of this requirement is to ensure that graduates receive an education that prepares them for research opportunities with practical applications for social infrastructure, as well as the expectations of the industry. Additionally, all adjunct faculty must have field experience and licensure in the technical area of the courses they teach, as well as post-graduate education.

#### Geospatial Engineering Program

The Geospatial Engineering program is embedded in the Bachelor of Science in Civil Engineering (BSCE). The BSCE at Cal Poly Pomona currently requires completion of 98 quarter units (132 semester units) for graduation. Of these, 68 quarter units are general education (GE) courses mandated by the state's educational code and set by the campus. The GE program enhances the students' education in communication and critical thinking, mathematics, physics, natural sciences, humanities, arts, literature, social sciences and awareness toward the importance of lifelong self-development. As is the case with all engineering programs, CE includes a number of mathematics, physics and chemistry courses, leaving 73 quarter units of core, specific department courses to

*Continued on page 5*



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## Geospacial Engineering, *cont. from page 4*

prepare the students for a successful career in the technical area of their choice. This approach requires strong curricular strategies to keep up with the demands of an evolving world, and results in a high quality program that prepares engineers who are ready to tackle increasingly more difficult societal infrastructure problems. Two very important goals of the engineering curriculum are to (1) make the graduates aware of their role in society, and (2) help them appreciate the impact their work will have on the sustainability of the world's infrastructure.

The BSCE at Cal Poly Pomona has three options: general, environmental and geospatial. All three options are ABET accredited under the civil engineering criteria. The geospatial option is additionally accredited under the surveying engineering criteria. Since the late 1980s, graduates from the GE program have received credit to sit for both the Professional Land Surveyor (PLS) and the Professional Engineer (PE) license examinations. The BSCE options have about 75% of their course work in common. All undergraduate students in the program follow similar GE curriculum as prescribed by the campus, and have a set of common core classes. The common engineering core includes mathematics, physics, chemistry, statics, and dynamics. All students in the BSCE program take common courses in drafting, surveying, transportation, materials, structures, geo-technical engineering, and environmental and water resources.

Students in geospatial engineering complete the program with advanced courses in specific curriculum: Advanced Surveying, Surveying Computations, Highway Design, Photogrammetry, Remote Sensing, Geographic Information Systems (GIS), Global Position Systems (GPS), Geodesy, Public Land Surveys, Boundary and Land Survey Descriptions, Legal Descriptions, Subdivision Design, Digital Mapping and Laser Scanning. All students have a nine (9) month capstone Project Design. The Project Design is a comprehensive project involving all aspects of a real world engineering assignment, involving several technical areas including the geospacial aspect.

### From Elementary Surveying to Laser Scanning

All students in the geospatial option in CE have to take drafting and surveying courses as freshmen. The drafting courses include theoretical and laboratory courses on the fundamentals of drafting plus gaining experience in AutoCAD and Bentley support software. In the course sequence, all CE, CET and GE students advance to surveying curricula that includes theory and a large amount of "learn by doing" field experience.

Cal Poly Pomona has three laboratory spaces dedicated to support the geospatial engineering program and surveying courses. Two of these labs support the field training courses, and the third lab supports the high tech computer based courses.

[Click for Complete Article](#)

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# National News

## The Artillery Surveyors in WWII—Africa and Europe: Part 1 of 3: In Advance Of The Infantry

By Albert "Skip" Theberge

Prior to leaving the United States, the 16th Field Artillery Observation Battalion (FAOB) was being reviewed following maneuvers at Fort Leonard Wood, Missouri. The reviewer was General Ben Lear. When reviewing the 16th, the following exchange took place:

"What's this outfit?" asked the general.

"The 16th Field Artillery Observation Battalion," he was told.

"What?" asked the general.

The identification was repeated.

"Do they belong to me?"

"Yes, sir!"

"Never heard of them!"

General Lear was not alone in his ignorance of these units. With few exceptions, that remains the fate of most of the FAOB's that served during the Second World War. These units filled the highly technical role of sound and flash ranging to determine the strength and position of enemy artillery for the purpose of directing effective counter-battery fire. For effective counterbattery fire, accurate survey control of Corps and Division artillery and the accurate location of sound and flash units are required. As such the observation battalions, and in particular the battalion survey officer, served as the primary survey expertise for all surveying problems intrinsic to artillery operations. The majority of battalion survey officers and, in some cases the commanding officer or executive officer of these units, were officers of the Coast and Geodetic Survey (C&GS) on detail to the United States Army for the duration of the Second World War.

Prior to the Second World War, the Coast and Geodetic Survey was an organization of military engineers and civilians who were experts in land surveying, seafloor and airways charting, coastline mapping, geophysics, and oceanography. This expertise was combined with the hardships of a lifestyle that was accustomed to literally years in survey field assignments or attached to survey vessels. With the advent of war, over half of the commissioned officers of the Coast and Geodetic Survey were transferred to the Army, Navy, or Marine Corps. Of that group, twenty-six officers were assigned to the Field Artillery, the majority of which served as FAOB survey officers. In addition to those who served on the front lines, a Coast and Geodetic Survey officer developed the survey training school at Fort Sill which trained hundreds of field artillery surveyors during the war and another was in charge of the meteorological and electronics school at Fort Sill.

Artillery surveying was organized on a somewhat loose hierarchy during the Second World War. FAOBs were generally a Corps resource reporting directly to the Corps artillery commander. Coordination of survey between Corps boundaries seems to have been on a relatively informal basis. At the top of the Corps pyramid was the FAOB survey officer. He directed the activities of the FAOBs Headquarters and letter batteries survey groups. FAOB Headquarters Battery was responsible for establishing primary (highest accuracy) survey control points (SCP) including azimuthal control for use by Corps artillery, FAOB letter batteries, and in some cases Division level artillery. The FAOB letter battery survey units were responsible for carrying control forward to the location of each flash observation post and all microphones along a sound base. Although not under their direct control, Corps artillery survey parties, Division artillery survey parties, and individual gun battalion survey parties (all organizationally separate from the FAOB) could and on many occasions did receive guidance and technical assistance from the FAOB survey officers. The ultimate goal of this massive surveying effort was to tie all artillery weapons and observation systems to a common grid for the express purpose of "putting iron on target." Indeed, the remarkable system of massing artillery fire on a common point known as Time on Target (TOT) would not have been possible without this survey work. This ability to mass artillery fire from numerous guns on a single target was a major contributing factor to the supremacy of American artillery in all theaters of war. To accomplish massing of firepower on a target from widely dispersed artillery units requires three basic requirements: 1) a knowledge of the location of one's own gun emplacements; 2) a knowledge of the location of the target; and 3) an ability to determine the azimuth to the target. Determination of these three factors was the realm of the artillery surveyor.

### North Africa and Italy

The most decorated of all Coast and Geodetic Survey officers was David Whipp, honored with the Silver Star, Legion of Merit, and French Croix de Guerre with gold star. In March, 1943, at El Guettar, Tunisia, "with complete disregard for his own safety, Lt. Whipp proceeded in advance of the Infantry to establish survey control for all of the artillery to be engaged in this

*Continued on page 11*



## Classifieds

### TKM Seeking experienced LSIT

Small South Bay land surveying business is seeking an experienced LSIT with a minimum of 10+ years' experience, who is skilled at detail throughout the survey process including research, field work, and drafting. Priority will be given to candidates that blend excellent technical skills, solid decision making skills, efficient field operation, and excellent people skills. After a year of employment demonstrating these skills, this individual would qualify for performance bonuses based on TKM achieving their revenue goals.

Salary: Competitive salary, negotiable based on skill set and experience.

Hours: 50-60 hours a week; occasional week-end work required.

Location: Santa Clara, CA

Overview: This individual is key contributor to the success of TKM Land Surveyors. Critical skills include the quality of the research for each job, the accuracy of field work, and the quality and accuracy of the drafting.

TKM Land Surveyors

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Tom Milo



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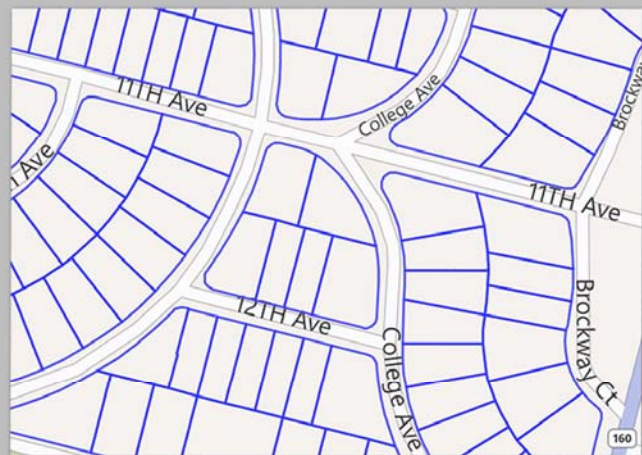


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## Pictures of the Issue



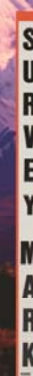
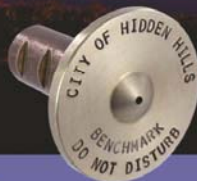
Located northeast of I-5 and E. Louise Avenue. Immediately south of these monuments is an old gas station. I suspect the  $\frac{3}{4}$ " rebar was set at the time the gas station was developed and no map filed. In 1985 Caltrans set the 1" pipe. Then in 2008 the spike and washer was set and R.S. 37-17 was filed. R.S. 37-17 makes no mention of the other two monuments. The spike and washer is 0.3 south of the 1" pipe and the  $\frac{3}{4}$ " rebar is 0.6 west.

If you have a historic or interesting photo you would like to see in a future edition of The Prism, please submit to: [editor@californiacentralvalleysurveyors.org](mailto:editor@californiacentralvalleysurveyors.org)

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## Monument Obituaries

By Mike Quartaroli, L.S.



### Monument Obituary

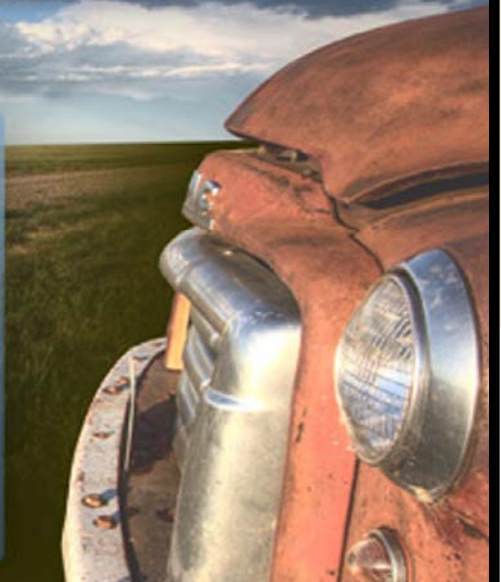
This is a U.S. Coast and Geodetic Benchmark set in 1947. It was named "C792" and later given a PID of HS 0019. It had a productive life for 67 years along Highway 33 northwest of Vernalis. "792" met its untimely death sometime between August 2014 and January 2015.

# THE SUBDIVISION MAP ACT

## *A One-Day Seminar*

**This seminar provides guidelines for effective use of the Subdivision Map Act.**

- New Legislative and Judicial developments
- When the Map Act applies (and when not)
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- Exemptions and Exceptions under the Map Act
- Life of Tentative Map
- Conditions of Approval/Exactions/Dedications/Fees
- Creative mapping approaches
- And more...



# Just For Laughs

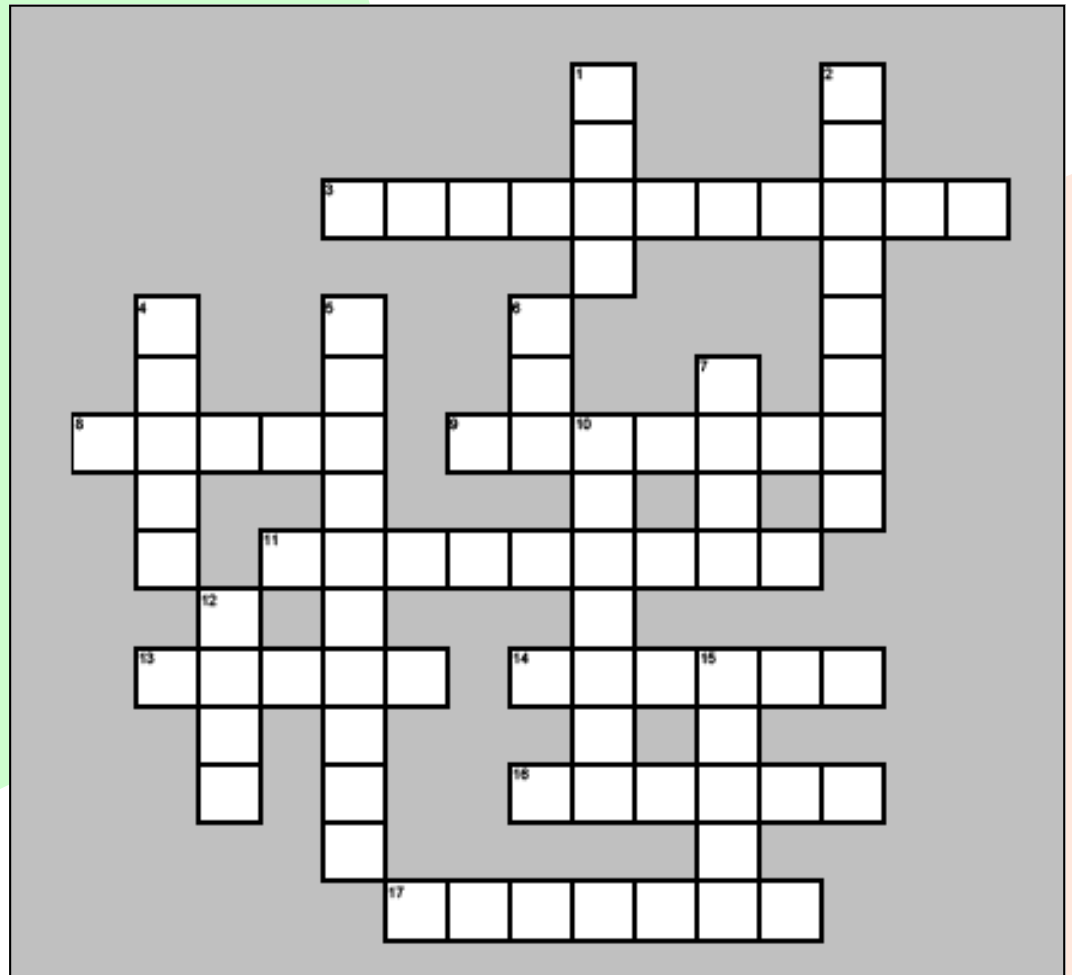
## Terms of the Profession

### Down

1. California Land Surveyors Association
2. A physical structure, such as an iron post, marked stone or tree in place, which marks the location of a corner point established by a Cadastral Survey
4. a mark made upon a tree trunk
5. a precision surveying instrument for measuring horizontal and vertical angles. The graduated circles are usually read by means of optical microscopes and are more precisely graduated than are the circles on a transit
6. a survey connection to an existing station of corner from a point whose position is desired to be referenced
7. a claim or charge on property for payment of a debt or obligation
10. the inside of a curve
12. 43,560 s.f.
15. equivalent to 66 feet in length

### Across

3. appointed the first Surveyor General in 1796 (2 words)
8. a measurement used in the PLSS, consisting of a strip of land six (6) miles wide, running in a north-south direction
9. a tract of land approximately one (1) mile square and containing 640 acres
11. touching or contiguous
13. the relationship between a distance on a map and the corresponding distance on the earth
14. Orestimba, Pescadero, or Del Rio Estanislao
16. a line that cuts a geometric curve or surface at two or more points
17. The horizontal angle which a line makes with the meridian of reference adjacent to the quadrant in which the line lies



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## The Artillery Surveyors in WWII... cont. from [page 6](#)

attack. By his actions Lt. Whipp accomplished this survey control two (2) days prior to the time that our [United States] Artillery occupied these positions, despite heavy enemy shell fire." One month later while still in Tunisia, "Lt. Whipp was assigned the mission of establishing the survey control of a Forward Flash Ranging Observation Post. After setting up his survey instruments at the O.P., which was under fire from enemy artillery, Lt. Whipp observed an enemy battery. Though not a trained Artilleryman, he contacted the Corps Artillery fire direction center by radio and called for fire on the enemy battery. He succeeded in neutralizing this and other enemy batteries comprising a battalion of Artillery. By his coolness, courage, and devotion to duty Lt. Whipp was an inspiration to his men and is deserving of the highest praise, exemplifying the highest traditions of the United States Armed Forces." For these actions, Whipp received the Silver Star Medal.

### Whipp wrote home on May 20, 1943:

"One night not so long ago I was working late as usual in Survey Center. About midnight I stepped outside for a minute, and was horrified to see a convoy of trucks going by with the lights on. Frankly I was scared, and I waited expectantly for the bombing and shelling that was bound to follow. It was a beautiful night for bombing such a target, blacker than the inside of your hat, with stars scattered through the sky. "The trucks kept on rolling, and nothing happened; gradually, I realized what had happened. The Germans had surrendered. I sat down in the middle of the field all alone and watched. It was the most beautiful sight I had ever seen. The tears came to my eyes; the FIRST lights."

It has been said that David Whipp's unit, the First Field Artillery Observation Battalion, saw more combat than any other American unit of the Second World War with over 900 days in the lines. Following North African service, Whipp fought through Sicily, Italy, and Southern France. David Whipp was a frontline soldier both in deed and heart. His memoirs contain insights into both his character and indeed the universal G.I. of WWII. After landing on the beach in Sicily, Whipp wrote home:

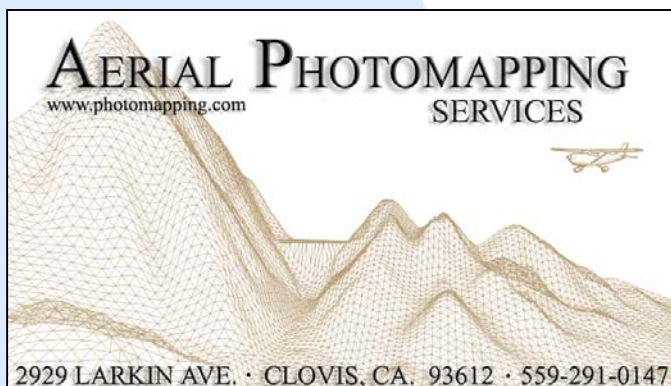
"I was among the first wave to hit Sicily ..... In the scramble on the beach I lost my cigarettes (an irreplaceable loss) and my knife and fork, so the first dead German I came across, I rifled his mess kit for a fork and spoon. Water being a nonexistent luxury, I proceeded to use same without washing them. This disgusted some of my more timid comrades who were a little squeamish about touching the dead body in the first place, but I figured I needed them. They looked like he had just washed them, and the blood had not gotten on them, and he certainly did not need them anymore."

While fighting in Italy and France, Whipp made many classic observations. The following are but samples of the soldiering that he experienced.

### January 7, 1944

"The second week of January and colder than it has any right to be. It is not the enemy that worries us, or makes war hell, but the weather. Oh, how I hate cold weather. This will make my second winter under canvas and with nothing but body heat. Yesterday it was so cold I decided to change to woolen underwear. I went to a delousing station where they have one of those portable shower baths, really one of the most wonderful things that the government has provided for the comfort of the soldier, and got stripped down to the skin in a heated tent, soaped and showered for about twenty minutes, in a heated trailer, with hot running water; then they gave me clean underwear that had been treated with an evil smelling disinfectant and I left to come home feeling kinda funny in my first pair of long handled underwear. I was really not as much warmer as I expected, in fact I felt colder. Everybody makes insinuating remarks about it being no wonder I felt cooler because I had doubtless removed a thicker layer of dirt than I had added in wool.

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