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 counter-battery 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...
240mm howitzer of Battery B, 697th Field Artillery, firing in Mignano area, Italy. January 30, 1944.

Graphic of World War II letter battery combat artillery surveyor from the history of the XVIIIth Field Artillery Observation Battalion.
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.

The town of Cassino devastated by 5th Army Artillery while the still-standing monastery crowns the heights of Monte Cassino. February 6, 1944.

David Whipp, most decorated Coast and Geodetic Survey officer of the Second World War. Served 924 days in line as Survey Officer of the 1st Field Artillery Observation Battalion.
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 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.

Dead mule on Monte Cassino. One of tens of thousands of mules and horses used by Allied and Axis forces during World War II. They suffered high casualty rates.
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.

February 20, 1944
“The other day I was visiting a French outfit, and just as I reached for my third piece of beef steak the French Colonel asked how I liked the beef steak. I says “Tray bone”. Everybody laughed and I thought they were laughing because of the way I pronounced it, but after we were through the interpreter said they were laughing because the beef steak was the remains of a pack mule that had been killed the day before during a shelling. Most delicious steak, whatever it was.

June 22, 1944
“Were you ever scared? I should not write like this, but fear is a terrible thing, and no man knows when or why it will strike him. You lay in camp, and watch a town to your rear being literally blown off the map. You look over the hill and see the results of a cold scientific job of road interdiction where they can see the road and shoot at every vehicle that goes over the road. Then it is your turn. You have got to go down that road and do a job of work. You talk to yourself ‘It takes a direct hit to stop you and they have not scored one yet today’. Yeah! Some of them were mighty close, suppose a fragment gets the driver, and you would look mighty pretty at the bottom of that cliff. Away you go. You get past the observed stretch, on up front but under cover. It sure feels good to know that they can’t see you, and fortunately he has not
got the ammunition to spray the countryside. An occasional shell hasn’t got but about one chance in ten thousand to get you, then you finish the work. The debate starts again, shall I go back along the road and run the gauntlet again, or try to work along a trail that you have heard of through the mountains and maybe get lost. Maybe get into a pocket of snipers that they haven’t cleaned out yet, or should you wait until dark when the observation won’t be so good. Common sense wins because you don’t want to miss supper and back you go along the road. Some how you feel safer on the way back, because you are going away from the guns.”

Insight into the role of the observation battalions is gained by reference to the 1st FAOB history for this period:

“During April 1944, the Corps Expeditionnaire Français (CEF) was relieved of its sector north of Cassino and assigned a sector south of Cassino along the Garigliano River. Sound and flash bases were installed on Mona Camino and Mona Maggiore. Due to the high, inaccessible flash bases, mules were used to carry supplies to the outposts on those rugged mountains. Survey was furnished for all artillery of the Corps in preparation for the attack of 11 May. Before the attack was begun, every effort was made to locate all the enemy artillery capable of firing on the sector of the CEF and the British XIII Corps on the right. Counter-battery fire was withheld until just before the attack, both for surprise, and so that the location of all batteries would be known. After the devastating barrage of the night of 10-11 May, the CEF was able to seize Mt. Majo and advance without artillery interference. The advance was continued up the Liri Valley by San Giorgio, Esperia, Pico, and Valmontone. This drive through the Gustaf Valley by San Giorgio, Esperia, Pico, and Valmontone. This drive through the Gustaf and Hitler Lines resulted in the capture of Rome on 4 June 1944.”

Whipp’s unit was awarded the Croix de Guerre for work with the CEF for “relentless pursuing of the enemy through the winter campaign on heights covered with snow and rain at Monna Casale and Monna Acquafondata: their sound and flash posts furnished throughout the day and night, the essential information for counterbattery work. Since the 11 May 1944, they have furnished to the Artillery of the Corps Expeditionnaire Français an exact topography, locations by sound and flash of numerous enemy materiel and movements, with an admirable spirit and much hard work, in spite of losses of personnel and equipment.”

The observation battalions did not always have to sit on their information before counterbattery work by the big guns was instituted. In fact, their ability to rapidly and accurately detect the location of enemy guns by either sound ranging or visual location of the muzzle flash accompanying artillery fire, was in large measure responsible for the devastating speed and accuracy of American artillery in the artillery duels which the Germans usually lost. On one documented occasion, a civilian observed a German inspection team and most of the battery cannoneres killed within a few minutes of a demonstration barrage being unleashed. The position of the German battery was determined by the 1st FAOB and passed to the heavy artillery for appropriate action.

In January 1945, Whipp was awarded the Legion of Merit. An excerpt from the citation follows: “As Survey Officer during five major campaigns, Captain Whipp performed in an outstanding manner, the vital missions of furnishing survey to all the artillery of the Corps to which his unit was assigned. Despite the difficulties arising from operating on extremely wide fronts in rapidly moving tactical situations, Captain Whipp never failed to provide, on time, the precise survey data essential to efficient massing of artillery fires. This data was readily furnished in spite of difficulties of performing the precise work and calculations required often under shell fire, adverse weather and many trying situations.”

It is fitting that his final commendation resulted from work accomplished in the last week of April 1945, less than two weeks prior to the final capitulation of German forces. Major Whipp established control for electronic navigation stations for use by bomber crews in reducing resistance on the German-held island of Oleron, France. The official commendation finished thusly: “Due to the weather conditions visual bombing could not be used; therefore without the excellent trigonometrical data furnished by you, the occupation of Oleron would have had to be accomplished without bombardment cooperation which undoubtedly would have increased allied casualties and could well have delayed the final victory for many days.”

David Whipp completed his tour as an artillery surveyor with 924 days in line, perhaps a record for U.S. soldiers during WWII. He fought with the French, landed with a British unit in Italy, dined with royalty, visited Hitler’s Eagle’s Nest following the war, and even had an audience with the Pope. What David Whipp was most proud of during his 3 years of frontline duty was the fact that not one man from his unit had been captured by the Germans during the course of the war. This was in spite of the fact that his unit was always working in either the frontlines or on many occasions in advance of the infantry.

Albert “Skip” Theberge served as a NOAA Corps officer for 27 years prior to retirement in 1995. During that period he was primarily engaged in nautical charting and seafloor mapping but also served a stint in geodesy working on the Transcontinental Traverse project during the 1970s. For the past 18 years he has worked as a research librarian at the NOAA Central Library and has produced a number of historical works related to the Coast and Geodetic Survey (C&GS) and seafloor mapping. He also produced the NOAA History website [www.history.noaa.gov] and the NOAA Photo Library [www.photolib.noaa.gov] which includes thousands of historic photos related to the work of the C&GS.