

# FIRST DRAFT

## Measuring distance before GPS took on many forms

One day late in the 19th century — the exact date is unknown — Dan Casement and a friend named “Pate” Smith decided to measure the distance from Whitewater to Casement’s ranch in Unaweep Canyon.



BOB SILBERNAGEL

Casement encountered Smith at Whitewater. Smith had a team of horses hitched to the running gear of a wagon — meaning there were wheels, axles and a frame, but no seats, floor or sides on the wagon.

The distance from Whitewater to the ranch had never been accurately measured, and “it occurred to me that this was a good time to do it,” Casement wrote in his autobiography some 50 years later. The two college grads measured the circumference of one of the rear wheels and tied a rag around the wheel.

Then they “set forth with Pate driving from an insecure seat on the bolster (the wooden beam over the front axle on which the wagon bed would normally rest) while I, perched on the reach, (at the rear of the wagon frame) counted the revolutions.”

The system worked well until they encountered problems that forced them to abandon the project. More on that below.

Casement and Smith weren’t the first to use creative ways of measuring or estimating mileage in the days before modern technology.

Others have used the wheel-circumference technique. In fact, one of the first known wagon trips through this part of western Colorado — the Gunnison-Beckwith expedition of 1853 — measured mileage using the circumference of wagon wheels.

An 1895 book prepared for

the United States Infantry and Cavalry School at Fort Leavenworth, Kansas, included the diagram of a mechanical wagon-wheel odometer. The accompanying text said, “This form is the most trustworthy that has yet been devised but it is not altogether satisfactory, many topographers preferring to count the revolutions of the wheel directly, using an arrangement which rings a bell at each revolution.”

For much of the history of this region, however, there weren’t any roads to accommodate wagons. So people developed different ways of estimating distance, often measured in days of travel.

James Parker served as a young Army lieutenant in western Colorado in 1880 and 1881 and helped to forcibly remove the Utes from the Uncompahgre Valley. He later devised a test for cavalry officers that included estimating mileage on horseback. He didn’t elaborate on the techniques.

The 1895 Fort Leavenworth Army manual offered more detail on how to compute mileage while on horseback.

It noted that the official U.S. Army Drill Regulations for cavalry list the pace of horses walking at four miles an hour, while the trot rate was double that. A gallop was listed at 12 miles per hour and a full gallop at 16 miles per hour.

Those are clearly meant as paces that could be sustained over a considerable distance, since horses at a full-out sprint have been recorded at speeds up to 50 mph.

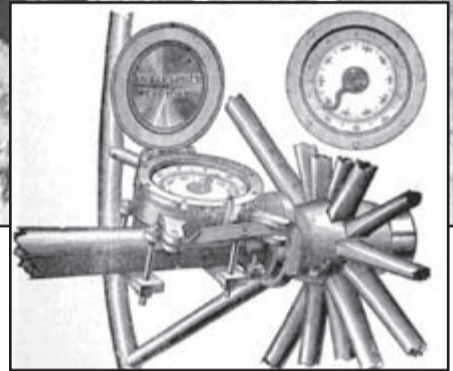
Even so, the 1895 manual suggested the drill regulation speeds were too fast. A better pace for a cavalry troop of horses at a walk is 3.75 mph, it said,



Photos SPECIAL TO THE SENTINEL

Dan Casement on horseback at his Unaweep Canyon ranch in 1911, with his daughter, Frances, left, and son, Jack, center, in this photo from the 1975 book, “Casement of Juniata,” by Donald R. Ornduff.

INSET: A sketch of an odometer attached to a wagon wheel, from an 1895 Army manual.



while the more realistic trot pace is 7.5 mph. It didn’t give revised figures for the gallop.

The manual also said that walking “can be used for measuring distances to within 2 or 3 per cent of the truth.” But it warned that walking or riding up and down hills would significantly shorten the stride and thus the pace.

Another handbook for Army officers, produced in 1881, offered detailed geometric formulas for doing things like “measuring the breadth of a river without instruments and without crossing it.”

For soldiers who didn’t want

to deal with all that math, the 1881 manual also suggested a simpler method. One could shoot a rifle into a target across the stream, with sights set for a predetermined distance. Then the estimator could note “whether the bullet falls short or passes beyond the mark.”

Dan Casement and “Pate” Smith used straightforward math to determine distances based on the revolutions of their wagon wheel. Casement’s ranch was near the top of the divide in Unaweep Canyon, a little more than 25 miles from Whitewater. Measuring that distance wouldn’t have been

difficult — if not for the beer they took with them.

After completing their first mile, Casement said, “We gravely dismounted, conscientiously consumed a bottle of beer each and erected a pile of rocks to support an upright barrel stave marked W 1 M.”

“With each succeeding mile this rite was repeated while the piles became smaller and the staves less erect,” he added. “As we started on our 21st mile Pate rolled off the bolster and our public spirited undertaking was ignominiously abandoned.”

Information for this article

came from “The Abbreviated Autobiography of a Joyous Pagan” by Dan Dillon Casement, courtesy of the Morse Department of Special Collections at Kansas State University. Other information came from “Military Topography and Sketching,” by 1st Lt. Edwin Root; “Mountain Scouting,” by Edward S. Farrow, and “The Old Army,” by James Parker. Special thanks to Marie Tipping at the Museum of Western Colorado and Zeb Miracle with Gateway Canyons Resort.

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## Bureau of Land Management sets Roan plan meetings

By DENNIS WEBB  
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The Bureau of Land Management has scheduled three public meetings in January in connection with its recently released draft management plan amendment for the Roan Plateau west of Rifle.

The draft plan and supplemental environmental impact statement include a preferred alternative incorporating a legal settlement under which the BLM canceled 17 oil and gas leases there. The settlement involved a lawsuit brought by

conservation groups in connection with leases the BLM issued on the Roan in 2008. A federal judge sided with the groups on some of its complaints in 2012. Under the deal, the BLM canceled all but two leases on the plateau top, while leases also issued in 2008 along the plateau base remained in place.

The draft documents also consider issues including great-er sage-grouse, lands with wilderness characteristics, and management of the Hubbard Mesa area near Rifle, where concerns have arisen in an area popular for recreational shoot-

ing but also other uses such as mountain biking.

The planning area covered in the documents includes more than 73,000 acres of federal land.

The upcoming open houses will allow the BLM to accept written comments and share information about the draft documents.

All meetings are from 4 to 7 p.m., with brief presentations by the BLM planned for 4:30 and 6 p.m.

The meetings will be:

- Jan. 12 at the BLM Colorado

River Valley Field Office, 2300 River Frontage Road, Silt;

- Jan. 13 at the Grand Valley Recreation Center, 398 Arroyo Drive, Battlement Mesa;

- Jan. 14 at the Rifle Branch Library, 207 East Ave., Rifle.

The draft documents are available at [www.blm.gov/co/crvfo](http://www.blm.gov/co/crvfo). Public comments are due by Feb. 18. They may be emailed to [roanplateau@blm.gov](mailto:roanplateau@blm.gov), faxed to 970-876-9090, or mailed to the Bureau of Land Management, Colorado River Valley Field Office, Roan Plateau Comments, 2300 River Frontage Road, Silt, CO 81652.

## Utah courts approve new job designed to fill legal gap

By THE ASSOCIATED PRESS

SALT LAKE CITY — People filing for divorce, settling debts or dealing with an eviction could soon have a new option to get help navigating Utah’s legal system.

The Utah Supreme Court has approved the creation of a new kind of legal professional, one that will be cheaper than a full-fledged lawyer but still have enough training to guide people through the civil system, The Salt Lake Tribune reported last week.

Called limited paralegal practitioners, they would be able to help clients with filling out forms, mediating negotia-

tions or preparing settlements but couldn’t represent them in courtrooms.

“A large number of people do not have a lawyer to help them,” Supreme Court Justice Deno Himonas said. “The people facing these situations need correct information and advice. They need assistance.”

The professionals will have more training than a typical paralegal, but less than an attorney. They couldn’t question witnesses, present evidence or make arguments before a judge. They would be working with cases in the civil court system where most people in Utah don’t hire lawyers, either because they can’t afford one or think

they don’t need one.

Himonas said that lawyers in Utah have tried to help more people get legal assistance by taking on cases pro bono, but there’s still a gap to fill. He served as chairman of a task force that spent seven months researching whether the idea could work for Utah. The group presented its report Monday.

It’s not clear how many lawyers will support the new position. A Utah State Bar survey found that 60 percent of lawyers disagreed with the idea of granting limited legal licenses.

A spokesman for the state bar said the organization is looking forward to considering the recommendations. Sean Toomey

said the bar also has encouraged lawyers to consider changes to the way they “package, price and deliver their services.”

It’s not clear when people could start working in the new profession. There are still important questions to decide, including the educational requirements for the position and what its exact limitations will be.

Still, court official Rick Scherwermer said the idea of a new profession is a big deal.

“Yes, we are at the beginning of it,” he said. “But we’ve done the most difficult part, which is getting everyone to agree that we need to do something and coming up with at least the framework for doing it.”

## BLOTTER COMPILED BY SENTINEL STAFF

### Info sought in burglary

Mesa County Crime Stoppers is asking for help solving a burglary at a Grand Junction pet store. Sometime between 5:30 p.m. Sept. 19 and 6:30 p.m. Sept. 20, an unknown suspect broke the upstairs window to gain entry at All Pets Center, 424 S. Fifth St. Prescription medications were stolen inside, resulting in a loss of more than \$200. Anyone with information is asked to call Crime Stoppers, 241-7867, or go online, [www.241STOP.com](http://www.241STOP.com). Up to \$1,000 is offered for

information leading to arrests in the cases.

### According to the Grand Junction Police Department:

- Several mailboxes were broken into and burglarized in the 2800 block of Orchard Avenue.

- Robert Moore, 53, was cited Dec. 13 on suspicion of driving under suspension, failure to present insurance and displaying expired plates at 23rd Street and North Ave.

- Angel Coxey, 45, was cited Thursday on suspicion of driving under suspension,

driving with expired registration and failure to present insurance, after being contacted in the 2800 block of North Avenue.

### According to the Mesa County Sheriff’s Office:

- A juvenile was arrested Thursday on suspicion of drugs violations and outstanding warrants in the 500 block of Warrior Way.

- A 15-year-old boy reported his BMX bicycle was stolen Wednesday in front of City Market, 569 32 Road.

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12/27, <i>Real Estate Weekly</i>	12/21, Monday, Noon
1/1, Friday	12/28, Monday, Noon
1/2, Saturday	12/28, Monday, Noon
1/3, Sunday	12/28, Monday, 5 PM
1/4, Monday	12/29, Tuesday, 5 PM
1/1, <i>Out &amp; About</i>	12/28, Monday, 5 PM
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1/1, Friday	12/31, Thursday, Noon
1/2, Saturday	12/31, Thursday, 1 PM
1/3, Sunday	12/31, Thursday, 1 PM
1/4, Monday	12/31, Thursday, 1 PM
Legals	
12/25, Friday	12/21, Monday, 4 PM
12/26, Saturday	12/21, Monday, 4 PM
12/27, Sunday	12/21, Monday, 4 PM
12/28, Monday	12/21, Monday, 4 PM
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