



Founded July 24, 1968 and
designated a 501(c)(3) in July 1971

Truckee Donner Historical Society
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ECHOES FROM THE PAST

PRESIDENT'S CORNER

JUNE 2018 ISSUE 2 VOLUME L

**Celebrating 50 years
1968 - 2018 !!!**

Dear Members

Spring has arrived and so has our season for preparing the Old Jail Museum to open. We are still looking for docents, of course! If a weekend doesn't work for you or you prefer to not be downtown on a Truckee Thursday, we would love to be able to be open a few hours during the week. Please contact us if you are interested!

The repairs continue at the Old Jail Museum. We had a pipe split on the outside that has since been repaired, so we are back in business with water. Our ever-faithful volunteer crew is currently repairing our watering system and the garden will once again bloom with color. We haven't wanted to plant anything delicate without being able to water continuously but we are now on a roll.

The biggest and best news is that the Nevada County Historical Landmarks Commission (NCHLC, the "Commission") has recognized the Masonic Arch as an historical landmark (see article on page 15). Once the plaque is completed and installed, there will be a dedication ceremony with the Commission, the

Town of Truckee, and, of course, the Masonic Lodge!

We received some wonderful artifacts over the winter and are busy logging those into

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CALENDAR

Events will be posted online at our website

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Truckee Donner Historical Society ("TDHS") Board meetings are held on the fourth Thursday of each month at 2:30 p.m. at the Joseph Research Library at 10115 Donner Trail Road, Truckee. Board meetings are open to the public.

TDHS does not accept responsibility for the accuracy of the information in these articles.

TDHS retains the right to republish submitted material. Please contact TDHS for permission to use any content in this publication.

Notice to Members

In 2015, the TDHS Board of Directors approved a change in membership renewal to reflect the Society's bi-annual renewal schedule - January or July. For specific details, please visit our website.

We hope you have been continuing to enjoy this quarterly newsletter. We realize that sometimes printed copies are much easier to grab, but we will continue to distribute our Newsletter electronically. As always, the newsletter will be readily available online and accessible on a quarterly basis. If you are a TDHS member, an email will be sent to you advising you of posting.

Editor's Note: This Newsletter is interactive - it is designed to be read *online* and contains links to relevant source material and in many cases, links to larger images for easier viewing.

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our inventory. This is another opportunity if you have an interest in working with documentation of artifacts.

My ever grateful thanks to all of you for your continued support. Without your help, we would be struggling to continue with our ever-growing library and the maintenance of the Old Jail Museum.

The Truckee-Donner Historical Society is still a strong partner in the development of a combined History Museum with the Truckee Donner Railroad Society.

We meet every 4th Wednesday of the Month at the Joseph Research Library at 10:00am. Please drop in and see what this is all about.

Have a wonderful summer!

Please get involved with your Truckee Donner Historical Society (TDHS). The only way we can offer programs and events is if YOU, as a volunteer, step up and get involved. TDHS is an all-volunteer, 501(c)(3) organization so any and all donations are gratefully appreciated and tax deductible. Our mailing address is Truckee Donner Historical Society, P.O. Box 893, Truckee, CA 96160.

'Alien' Concrete Arrows, Beacons and Air Mail

By Heidi Sproat

As the Donner Centennial is rapidly approaching on June 9, 2018 ¹, general interest in airmail service was renewed when we learned that part of the *original* 1918 dedication ceremony originally intended to have a "flyover" by Lieutenant Chapman, son of the chairman of the Native Sons of the Golden West committee for the dedication. Hoping to mark the progress of transportation since the days of the Pioneer crossings, Lt. Chapman agreed to do the flyover if it was so ordered and he studied air currents and emergency landings in preparation.² Keep in mind that this flyover was supposed to occur in the middle of the first World War effort, declared April 6, 1917, (Armistice Day was not until November 11, 1918). Consequently, Lt. Chapman's response – that he joined the military to "fight the Huns" but orders were orders and that if he were ordered to fly over the memorial, he would do so. A May 4, 1918 **Sacramento Union** newspaper article discusses that the necessary permissions were in the process of being obtained. Unfortunately, for whatever reason, the flyover did not happen.³

As many of you also prepare to attend the annual [Truckee Tahoe Air Show held in July](#) at the Truckee airport, have you ever wondered about **how** those early flights managed to fly over the rugged Sierra Nevada mountains?

For the past several years, I have been drawn

to various articles about the early pilots who somehow maneuvered their wood framed, cloth covered, open cockpit biplanes over the Reno - Sacramento corridor in sometimes less than ideal weather conditions.

TDHS has a very good article on our website called [Sierra Air Mail Pilots, Heroes of the Sky](#) written by former TDHS President Gordon Richards, and another article [Claire Vance Pioneer Sierra Pilot Extraordinaire](#), also by Richards. Noted local author Mark McLaughlin also wrote two 'Sierra Stories' articles in *The Weekly* and *The Tahoe Weekly*, in 2010 and 2016 respectively, about the whole concept of planes delivering the U.S. Mail.⁴ Best of all, the articles are titled, *From Ponies to Planes*, and later, *Ponies, Trains & Planes*. How poignant.

I next stumbled on a crazy site called [Messy Nessy](#)⁵ where there was an article about the early airmail routes and an early 1920-ish map, (see below) which intrigued and befuddled me. In addition, **National Geographic Magazine** did an April 2015⁶ update about the arrows. I just had to start more digging.

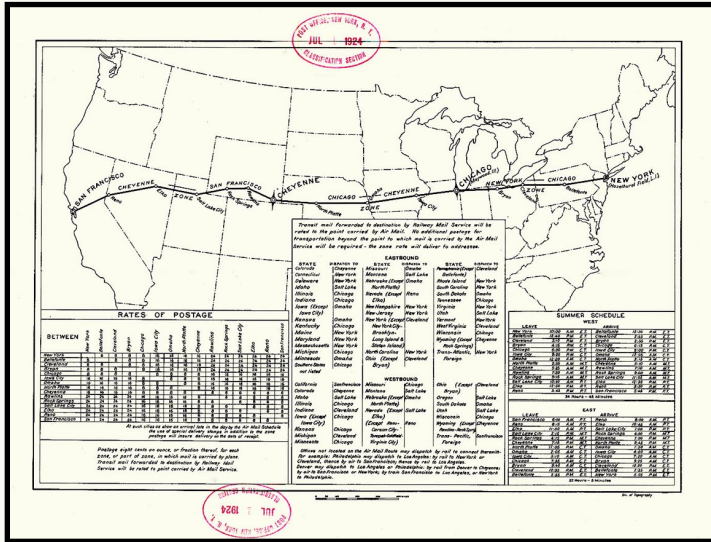
Today we take airplane travel for granted, but just imagine the early intrepid, barnstorming days of the mid-1920s.

The Air Mail program started in May 1918. Then President Woodrow Wilson went to Potomac Field in Washington to watch the first plane depart – and ignominiously, plans were overlooked to supply gasoline for the plane that was due to showcase that original flight. The showcased flight eventually worked out and air mail service grew. Congress wanted to promote air commerce by establishing 'sky

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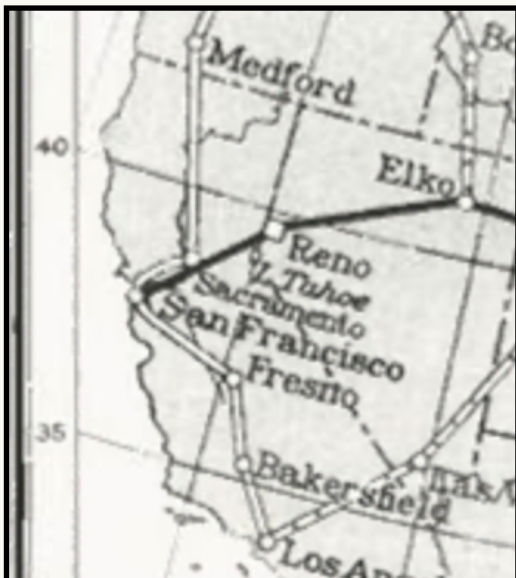
routes.' Over the next several years, postal officials' efforts concentrated on serving a *transcontinental* route between New York and San Francisco and abandoning shorter mail lines.⁷ Night flying commenced in 1924.



To see a larger picture of this map, click on the image

Later copy of map Courtesy of National Air and Space Museum Library; stamped 1924 map; larger image available at this [link](#); also in the [National Geographic Magazine](#) January 1926 article, p. 5

A comparable time frame map showed both the feeder and *prospective* routes:



(Right) Source: [NGM 1926](#), p. 5

The key on the entire map shows that the solid black line indicates the transcontinental route, and the white squares indicate stations where pilots changed planes. Pilots changed at Elko, Reno, Sacramento, and San Francisco on the Transcontinental Route. So how exactly did these early "beezos"⁸ fly across uncharted territory?

One of the earliest articles we came across was a superb January 1926 *National Geographic Magazine* article (available by subscription; [link with subscription](#)). The Editor of Donner Summit Historical Society's newsletter, *Heirloom*, has written several excellent and intriguing articles about the airway beacons and concrete arrows in their area. Huh? Concrete arrows? Ever seen one of these?



(Above) Beacon 14 A between Crystal Lake and Cisco Grove south of I-80; beacon location google map link - <https://bit.ly/2k8CLV0>



(Left) St. George, Utah, photo by John Teas, *St. George News, National Geographic*, April 2015, unpaginated.

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As a young girl growing up in the San Francisco Bay Area, I remember a story from my great uncle about airmail pilots and how they originally navigated by arrow and beacon. I always thought it was a “cute” story, but at the time, I paid no heed. I also learned then that a western area Concord Airport was eventually built to serve as the western terminus of the airmail service because San Francisco Crissy Field could sometimes be unreachable due to the notorious San Francisco Bay Area fog.

Fast forward to the present day. Seeing the arrows and beacons and associations with airmail, I just had to write this article. Many of the concrete arrows have been long abandoned and are located mostly in rural, remote locations - many now on private property. Most of the arrows also had an accompanying beacon built on or adjacent to them as well. But during World War II, much of the metal was reclaimed for the war effort and the concrete arrows were destroyed because of military fears of enemy targeting. Beacons were constructed according to standard installation airway beacon guidelines, with route designations based on terminal cities. Accompanying sheds were constructed with black letters on a chrome yellow background. The beacon number was based on mileage.⁹

A Little Background

The U.S. Department of Commerce began funding installation of the original arrows to provide air guidance across America. The arrows could be up to 70' long and were usually

painted a bright yellow or another vibrant color. Over time, each arrow was accompanied by a steel tower up to 50' in height, and each tower was topped with a powerful gas-powered beacon light which allowed pilots to fly at night. Apparently, more than *1,000 concrete arrows* were placed about 10-15 miles apart. (The National Postal Museum says they were placed every 3 miles and were visible within 10 miles, but this is the only source I found that says they were installed every 3 miles¹⁰). Since the air mail pilots typically flew under 3,000', inevitably 'hanging over the side' so they could visually spot one arrow to the next, these intrepid 'seat-of-the-pants-flyboy' pilots flew open cockpit biplanes on the route. The markers were labeled with directional signs, like **SF-SL** indicating that San Francisco was WEST and Salt Lake was EAST. The signage was in numerical order indicating to the pilot to look for the next *increasing* numeral flying east, and the next *decreasing* number flying west. In the September 9, 1920 edition of the *Reno Evening Gazette*, the headline read: “Plane arrives from Cheyenne with first air post letters”.

One of our TDHS research members, Ron Rettig, located an incredible [silent movie from circa 1925](#)¹¹ about the transcontinental airmail service in a DeHavilland DH-4. The photographer flew *alongside* the air mail plane to record its flight across the United States. In that silent movie, there is text that states that in 1922, the National Aeronautic Association awarded the Air Mail Service, Post Office Department, [The Collier Trophy](#), for having flown two million miles without a fatal

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accident on a mail trip. The Air Mail Service was again awarded the same honor in 1923 for successfully demonstrating the *practicability* of night flying. According to this film, the Post Office Department used surplus planes received from the Army which were remodeled and rebuilt at the Air Mail Service repair depot in Chicago. To accommodate night flying, apparently five hundred million candle power beacons and flood lights were located at terminal fields between Chicago, Illinois and Cheyenne, Wyoming, a distance of some 885 miles. There were also 34 emergency landing fields approximately 25 miles apart which served the lighted airway. The pilots also carried snow shoes and rations in the event of forced landings. There are even pictures of the Air Mail terminal at Reno, Nevada, the last stop before continuing over the Sierra Nevada mountains to San Francisco. [49:20 in the movie]. There are movie frames of the plane flying over Lake Tahoe [53:07] and **overtaking** the Overland Limited train [55:56], which left New York 3 days earlier than the Air Mail. At that time, by rail, San Francisco was *ninety* hours from New York; by air, *thirty* hours. Air Mail sent in New York was delivered in San Francisco in 29 hours, 30 minutes. There is also a view of the wharfs in San Francisco, but no Golden Gate Bridge - which was yet to be built (1933). There is also another movie, the [1932 John Ford Hollywood-ized version of the Air Mail service](#), *Air Mail*, about the legendary pilot Duke Talbot. It's worth watching on a rainy afternoon, especially to see "special effects" and mountain scenes of the 1930s. And lastly,

a short 3 minute [Periscope Film LLC Flying the Mail](#) clip about how the "mail must go on."



(Above) Screenshots from the silent movie - the air mail pilot hanging over the side to find his way, and the first Reno, NV air hanger used for airmail service

Historical Markers

Unlike today's Pony Express Trail historical markers across America, (see the Historical Marker Database ¹²), the air mail arrows and beacons, the "lighthouses of the land," have been generally unmarked, and largely ignored until recently. The advances of technology, google mapping, GPS, drones, and just a general inquisitiveness about stumbling on these humongous dilapidated concrete arrows in mostly remote places, have brought a new found surge of interest in these 'dinosaur'

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markers. Maybe like the alien X-file references, as Reed Karaim, the author of the April 2015 National Geographic article concluded, the arrows “remain to befuddle hikers and others who stumble upon them, mysterious remnants of a more romantic era of flight.” ¹³

Another arrow is in Silver Zone, Nevada, on the Salt Lake to San Francisco path. Courtesy of the website DreamSmithPhotos.com, there are fabulous [photos](#) of all sorts of arrows, including this one in Elko County, Nevada. [Google Map location](#) – just south of Interstate 80 about half way between West Wendover and Wells. On the Salt Lake City to San Francisco (SF-SL or SL-SF) section of the Dream Smith Photo website, there are images of the Auburn, Cisco Grove, Troy, **Donner** ¹⁴ and Truckee beacons and/or arrows. Take a look. There is also a specific [section map with GPS coordinates](#) of these sites. A quick [google](#) or [pinterest](#) search will also reveal literally *hundreds* of images of these arrows and beacons. Pretty interesting.

To accommodate for emergencies, intermediate landing fields were established every 25 miles along the route. In fact, the Truckee Intermediate Field was one such emergency landing field, but it is not know what year it was constructed. It was illuminated and had two runways in an “L” shape, and was designated as Site 16B along the SF-SL corridor. Although there is no definitive date available for this image in the adjacent column, we believe it is from the late 1920s to early 1930s. ¹⁵ [A recent newspaper article from John Corbett's Historic Photo Collection covers Howard Hughes' landing at the Old Truckee Airport in 1938. See p. 12.]



TDHS Image # AIR0009 Biplane at Truckee Flying Field

The fields were constructed with rotating incandescent electric lights mounted on 50-foot towers, set to sweep six times per minute at an angle of a degree or two above the horizon. They were supposedly visible up to 75 miles away – in clear weather (NGM 1926, p. 15). The earliest airmail passed through cities that only a few decades earlier were connected via The Pony Express.

One of the most amusing articles I read was in the *Nevada State Journal* (9/11/1922):

Old-timers who had crossed the plains in ox teams and recalled the first pony express, and there are many still living in Nevada, gazed in awe as this modern express rider hurtled through the air, and gasped ‘What next?’

Pilots and planes were changed six times en route between New York and San Francisco: at Cleveland, Chicago, Omaha, Cheyenne, Salt Lake City, and Reno. The average flight for each pilot was 381 miles. The longest leg was between Omaha and Cheyenne, 476 miles; the shortest was between Reno and San

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Francisco, 184 miles, where the pilots reached an altitude from 10,000 to 15,000 feet above sea level while crossing the Sierra Nevada (known in Air Mail parlance as "The Hump"). (NGM 1926, p. 27). We even found a grainy photograph of a forced landing during a winter storm on the snow-covered slopes of Mount Rose.



Photo courtesy of the United States Post Office Department (NGM 1926, p. 44)

There was another crash near Reno, NV. Caught with a missing motor in dense clouds in Truckee Canyon, the pilot scraped over a mountain range, breaking the propeller on the tips of the pine trees, but somehow managed to glide to within 12 miles of Reno.



NGM 1926, p. 49.

In the Messy Nussy article, there is another link to a country-wide survey database of all the remaining markers and beacons. ¹⁶

And if you hone in on the RED dot marking Norden, you will see that there is evidence of both a beacon and arrow nestled among the mountain peaks of Mt. Judah, Mt. Lincoln, and Boreal Ridge. Donner Summit Historical Society, in their [December 2016 Heirloom](#), offered a great article about the Donner Summit 15 SF-SL ¹⁷ beacon and concrete arrow beneath the beacon. Who knew? And there's another arrow near 18 SF-SL [Mogul](#), just south of I-80 and west of Reno. [Google map](#).

Two nearby historical dedication markers might be of interest to our readers as well: the [Reno marker by the Peppermill](#), ; [google map location, and a close up photo of the marker wording](#), <https://bit.ly/2rWTk9Y>. Using Google to view these markers has been intriguing and eye-opening.

Due to technological advances of navigation and radio technology in the 1930s, improvements had increased dramatically to allow flight without land-based visual guidance. The Low Frequency Radio Range (LFRR) system began to replace the older visual-based systems. Before we had Instrument Flight Rules (IFR) and radio guidance, pilots were limited to visual guidance using the arrow and beacon landmarks to chart their course.

The airmail beacon program continued to operate until 1933, when technology advancements - and the higher cost of operation during the Great Depression - finally

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rendered the program obsolete. The Department of Commerce eventually decommissioned and disassembled most of the beacon towers to recoup the steel which was used in the World War II efforts.

If you do another search on [google images](https://www.google.com/images) you can also find examples of many of the stamps in the 1920s which commemorated airmail beacons and the arrows.



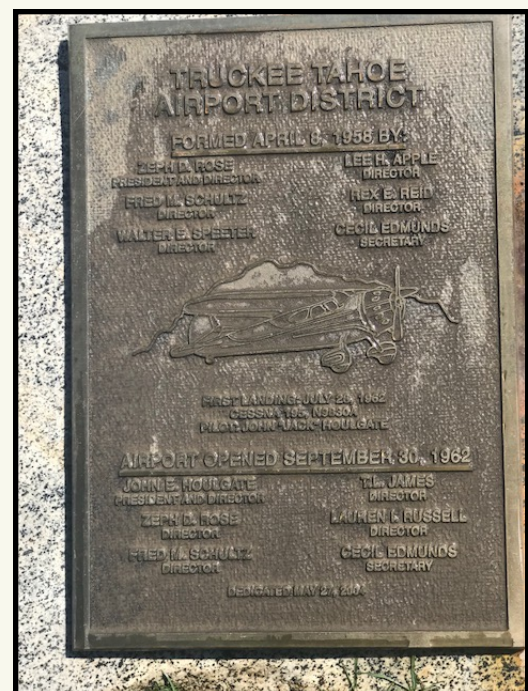
Source: <https://bit.ly/2LeCWuf>

Like many other business endeavors of the early 1900s, air travel for mail delivery was one of the most creative – and crazy – efforts involving ingenious planning. The fact that the program lasted as long as it did is testament to its efficacy. Just be glad that today we have much saner means of air mail delivery systems – UPS, FedEx, Amazon, and others.

So the next time you receive a package in the mail, just think about those early air pioneers who, bedecked with warm woolies and goggles, somehow managed to negotiate over the Sierra

Nevada mountains by following giant concrete arrows and beacons - and stay alive. Sounds crazy – but it's true.

And if you've never stopped by the Placer County Play Ground, field elevation 5901 at the Truckee Tahoe Airport District, 10356 Truckee Airport Road, you should. There is a plaque installed at the playground dedicated to the opening of the Truckee Tahoe Airport District. While the first flight into the *current* airport didn't occur until July 1962, none of this would have been possible were it not for those early intrepid pilots who paved the way for the airports of today. The [Tahoe Truckee Airport District History & Stats page](#) even mentions that "in 1933 an airstrip was cleared and used by Boeing as an emergency landing runway for the Trans-Sierra airmail route between San Francisco and Salt Lake City." And take a look at the details outlined in an online article entitled [Abandoned and Little Known Airfields](#) showing Truckee Site 16B.



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(Above 2 photos) Courtesy of Barbara Czerwinski, May 2018.

(Below) Excerpt from Air Corps Map of 1935, Reno to San Francisco, showing airway markers



Pasco, Washington Connection

In a quirky twist of fate, this editor's husband was employed just outside Pasco, Washington – in the middle of nowhere. When I saw on a feeder air mail map that Pasco was one of the destination cities on the 1926 map, I did a double take. And then I saw the postage stamp from Pasco. Again, who would have believed this coincidence?



(Above) Make sure to look at the stamp date of April 6, 1926

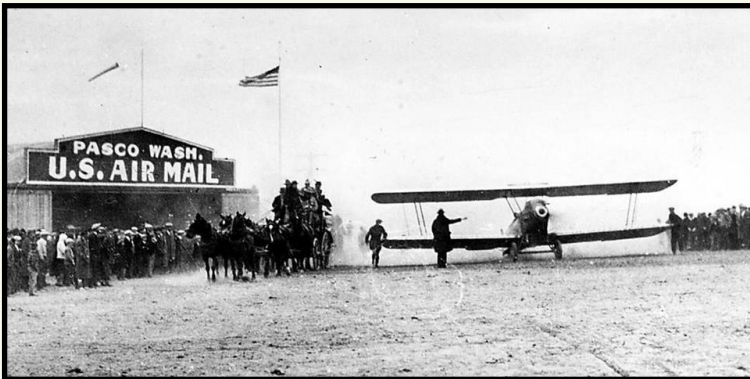
Photo courtesy of Malin Bergstrom, Volunteer Board President, Pasco Aviation Museum, working to save and restore the original and historic NAS Pasco Control Tower; www.savethetower.com; 509-547-6271 office.

A few other incredible photos that Ms. Bergstrom kindly shared with us at the Truckee-Donner Historical Society. See next page, next 3 images.

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(Below 2 images) Pasco Airport in the 1920s



(Above) Take note of the number of people around this biplane.



(Above) Varney pilot, 1926

Pennsylvania Connection

In yet another twist of fate, I was doing volunteer work for an historical society in Pennsylvania and learned that one of these beacons was used until **1993** for an airport outside Philadelphia, Pennsylvania - my former residence. The plaque states: "This beacon tower served as a national beacon for airmail pilots in the 1920's and 1930's. On this spot, it was used as a rotating beacon ... from 1961 to 1993." What a small world!



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And, saving the **BEST** for last, are images of the original beacon at Truckee Tahoe Airport District. Photos courtesy of Ed Czerwinski, May 2018.



There is an amazing image on a display board in the Truckee-Tahoe Airport that shows the Truckee Emergency Landing Field in the 1930s. The first Truckee airport was constructed sometime between 1924 - 1926. Photo courtesy of the author; original photo courtesy of Nelson Stone.



Many of these images can be seen enlarged if you visit this folder to see higher resolution images. See footnotes next page 14.

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Arrows article continued from page 12

We have also located several fascinating images of some of the old planes, including an artist's rendering of the DeHavilland DH-4B; the Truckee Airport in 1929; a biplane at the Truckee Flying Field, AIR0005; the old airport, now I-80, AIR0007; a biplane at Old Truckee Airport, AIR0008; and if you look closely, on the right side, there is a handwritten sign lying on its side that reads "KEEP OUT - THIS IS GOVERNMENT PROPERTY". Many of these images were donated to TDHS by Nelson Stone, caretaker for the FAA at the Old Airport. Lastly, the newspaper article (*Sierra Sun*) posted in the Truckee Airport titled "Truckee has had an airport for about last 50 years" is available at this link to better read the text.



On a recent trip to Reno, I found the plaque dedicated to Reno Airfield. Photo by the author.



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Footnotes:

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- ¹ [link](#); [facebook link](#)
- ² [Google Book link](#), *The Grizzly Bear*, Vol. 22, Grand Parlors Supplement, p. 7, June 1918
- ³ <https://bit.ly/2lwRurx>
- ⁴ <https://bit.ly/2lvJCXi>
- ⁵ [Messy Nesy article about Arrows, Beacons, and early Pioneer Pilots](#), November 2013
- ⁶ National Geographic ("NG"), subscription-based access only, April 2015, <http://archive.nationalgeographic.com/?iid=117743#folio=21>
- ⁷ The National Geographic Magazine ("NGM"), again, subscription-based access only, January 1926, <http://archive.nationalgeographic.com/?iid=52385&allIssueSearchKey=air%20mail#folio=Ad25> , pp. 50, 55.
- ⁸ "Beezos" are pilots, NGS 1926, p. 13
- ⁹ <https://sometimes-interesting.com/wp-content/uploads/2013/11/airmail-beacon-design.jpg>
- ¹⁰ <https://postalmuseum.si.edu/collections/object-spotlight/airmail-beacon.html>
- ¹¹ <https://www.youtube.com/watch?v=piYqdYQFRh0&t=23s&app=desktop> ;The United States Post Office Department presents its Air Mail Service, photography by L.W. Beeson
- ¹² <https://www.hmdb.org/map.asp>
- ¹³ *Ibid.*, NG, unpaginated
- ¹⁴ Donner Summit Historical Society's ("DSHS") Heirloom monthly newsletter authored by Bill Oudegeest has several fascinating articles specifically about the Donner Summit beacon and arrow. [DSHS Heirloom, May 2011](#), p. 3; <http://www.donnersummithistoricalociety.org/pages/exhibits/transcairroute.html> , (Transcontinental Air Route); [Plane Crashes on Donner Summit](#), March 2009; [DSHS Heirloom, July 2011](#) , pp. 1, 7-11; [DSHS Heirloom, December 2016](#) , pp. 5-8 ; [DSHS Heirloom, October 2017](#), p. 13 photo of old weather station atop Donner Summit AND red airway beacon in background on right of house showing beacon at Donner Ski Ranch; and [DSHS Heirloom, May 2018](#) , pp. 6-10 .
- ¹⁵ http://www.airfields-freeman.com/CA/Airfields_CA_NE.htm
- ¹⁶ <https://thesurveystation.com/map-of-ngs-airway-beacons/>
- ¹⁷ *Ibid.*, DSHS.

A complete list of references for this article are available on our website at this link.

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Masonic Arch at the Old Jail Museum Designated a Nevada County Historical Landmark

At the May 22, 2018 meeting of the Nevada County Historical Landmarks Commission ("NCHLC"), Truckee's Memorial Masonic Arch, 10142 Jibboom Street (APN 19-102-04-000), was approved as Nevada County Historical Landmark NEV18-01 (Dist. V). For the story on the history of the Arch, please see our March 2018 *Echoes* newsletter. Congratulations to all those who contributed to submitting the application to the NCHLC for consideration, including District V Commissioner Barbara Czerwinski and Judy DePuy.



(Above, left to right) Judy DePuy, Dave DePuy, Katie Holley, Greg Zirbel, and Chaun Mortier. Not pictured in full Karl Pape (only his arm!). Thank you to one and all!

Open House / Fundraising Event a Success! Thank you!

On Saturday, May 19, TDHS members held an Open House / Fundraiser / Living History Day in which we offered and sold a variety of historical books, artifacts, and other items. The effort was a rousing success and TDHS made just over \$500 to contribute towards our ever-expanding preservation of local historical assets. Here is a photo of some of the members who so graciously organized and hosted this event.



Image Collection Additions

To date, almost 500 images have been scanned and entered into our online Image Collection Database. If you haven't checked it out yet, please get ready to view some 'oldies but goodies.' All Front Street images are now included.

One of our favorites is below: FTS0045, downtown Truckee, in 1914; Red Crown Gas sign in back; telephone poles; 17 men on horseback; SP Hotel; shooting movie. Flashback time!



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Moving Pullman # 9115 from the Truckee Railyard

In mid-May 2018, Pullman # 9115, Shasta Division, the old Pullman car, was readied for moving into storage for a future museum. There are some incredible pictures posted on Facebook at this link of the mammoth machinery required to move the Pullman car. Take a look. Greg Zirbel also took a movie of the actual lift and move, available at this link.



(Above) Photo courtesy of Greg Zirbel, May 12, 2018

Railyard Crane and Rotary Also Moved

Also in May 2018, the Bucyrus Erie crane and rotary snowplow were moved from the Truckee Railyard and are now in their Pocket Park home. This Pocket Park is located on land leased by the Town of Truckee. The location will be turned into a small park once the road is completed. The Jim Dobbis Company donated the men and equipment to move these last two pieces of the Truckee Railroad Society's equipment out of the Railyard area. For more information, see the Truckee History - Railroad Museum facebook page at this link.



(Above) Photos courtesy of Ed Czerwinski, May 21, 2018

Truckee-Donner Historical Society is 50 years young July 24, 2018!! Happy Birthday!

On July 24, 2018, Truckee-Donner Historical Society will celebrate 50 years young! We started as a fledgling organization and were granted IRS non-profit 501(c)(3) status in July 1971. Browsing through old *Echoes From the Past* newsletters, we thought you might enjoy looking at the 1st Edition in May 1968, and the 20th edition in Summer 1998. We've come a long way in 50 years!

You decide - coincidence or not! **This** June 2018 publication is the **50th** issue of our *Echoes From the Past* Newsletter, Volume L (if you're a Roman Numeral purist).

Old Jail Museum

If you haven't visited the Old Jail Museum recently, please do stop by. Many of our jail displays have been recently updated with new materials and donations. To see a few images of these new displays, visit this link.



Thank you!

A special thank you to members of Scout Troop Local # 267 who cleared out the Old Jail Museum Patio garden area. Before and after photos, courtesy of Greg Zirbel.

(Below) The Old Jail Museum Memorial Garden BEFORE restorative work done by the Eagle Scouts



(Right) Jack Walterscheid, mother Chelsea, and father John, pose for Jack's finished Eagle Scout project at the Memorial Garden. What an improvement! Thank you!



Flumes of Truckee: Using the Power of the Sierras

By Judy DePuy

Driving down Interstate 80 from Truckee to Reno I've often wondered about the wooden boxes that hug the road and the Truckee River. Some look abandoned, while others look as if they are still being used. I learned that these are "flumes" and have been here for over 100 years. But what are they for?

Flumes have been used around Truckee for many purposes. Early on, 'V-flumes' were a replacement for oxen, horse and mule power, and "donkey steam" engines, which transported logs to the various mills found on the Truckee River, Alder Creek and Trout Creek. Flumes also transported lumber, ice and wood cords. But one of the most important purposes of flumes had to do with providing power to where it was most needed.

The flumes you see along Interstate 80 are box flumes used to transport water and are part of a vast hydroelectric system.

Need for Power

Even a hundred years ago, the need for affordable electric power was apparent. The finding of the great Comstock Lode in Virginia City helped fuel the decision to cross over 40 miles of rugged desert to bring electricity to the mining operations. With mining being Nevada's primary industry in the late 1800s, the installation of hydroelectric power was critical to the Silver State's economy.

The Virginia City mines needed this electric

power desperately so that hydroelectric plants could replace expensive, soot-producing coal and wood power. By the late 1800s, Virginia City mines were so deep that they required constant pumping to remove groundwater. Heat was another problem; the deeper into the earth the mines went, the hotter they became. In some cases the air temperature would be 150°F with the water reaching 170°F. Steam-driven Cornish pumps were effective for a while but the cost of the electricity and the drop in value of silver forced mine owners to find cheaper power alternatives.

Hydroelectricity

The first hydroelectric plant between Truckee and Reno was built at Farad in 1899. It had 2 turbines and generators and could supply 2800 KW (KiloWatts) to the mining companies and the town of Virginia City. At Floriston, a 'diversion' dam was built and the Truckee River water was diverted into a canal and flume system which created the 'headpond'. The headpond fed into the penstock pipes (pressurized round wooden pipes with metal bands) and into the generating station. The height of the pipe above the turbines and the flow of water in the pipe provided the force necessary to turn the turbines. The greater the fall and flow of water, the more electricity could be produced. The steep sides of the Truckee River canyon made it necessary to build a flume (of 2-inch thick native pine for nearly 2 miles), set on supports that clung to the walls of the canyon. (See sidebar on 'Seeing the Flume'). Power was first delivered

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to Virginia City from the Farad hydroelectric plant on September 12, 1900.

Unless otherwise indicated, photos courtesy of the author, or Dave DePuy.

(Below) Wood and Metal Penstocks at Farad



Flume Construction and Maintenance

Flumes were built on the edges of cliffs or high in the air on trestles. Farad's highest flume was 36 feet off the ground. Box flumes were very different from the 'V' flumes for the logging industry. Box flumes were enclosed. The flumes had 'racks' which would help keep debris and ice from going into the Powerhouse.

On the top of the box flume were boards creating a 12" walkway. Constant repairs required a two-man crew to work on the flume. One would be on the walkway to hand over needed equipment. The other crew member doing the repairs was on a 12 inch wide 'sill' on the side of the flume. Before any repairs could be made, there was a painstaking analysis and physical

walk-through of the flume to see where maintenance was needed. Wood flumes were replaced approximately every 20 to 40 years. Replacing a section was an interesting task.

Historically, they would dispatch a flume crew to manually take down the section of flume that needed replacement. In the most dangerous areas and in long sections, environmental requirements dictated explosives use for several reasons: 1) they removed the section requiring quick replacement; and 2) the material would fall in place and not into the river. Environmentalists were adamant that no "unnatural treated wood or contaminants" fall into the river.

Regular maintenance also entailed dealing with ice build-up on the flumes. In the winter, a flume crew who would come in every two weeks to knock the ice off both the inside and outside of the flume.



Working the Flumes

Tom Macaulay and Walt Walker were two of the experts working on the hydroelectric plants. Tom was Supervisor of the four Sierra Pacific Power Company hydroelectric plants,

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managing operations. Walt was the Superintendent of Sierra Pacific Power Company General Construction.

Walt Walker managed the flume crew at each of the hydroelectric plants built by Sierra Pacific Power Company. He started as a laborer, in 1942, earning \$0.93/hour. On his first day on the job, he was told to climb a ladder and caulk the leaks on the bottom of the flume. His supervisor was testing him to see how he coped with heights. Walt also remembers the hard winter of 1947, when he worked from November 15 through March 15 with no days off, 10 hours per day, fighting the ice in and on the flumes.

Early on, many of the hydroelectric full time workers lived at the hydroelectric plants with 4 people assigned to each powerhouse. There were several rooming houses at the site. Walt's dad, Wesley Walker, Sr., was an operator and foreman on the crew at Farad. Walt's family lived in the Farad company housing and Walt's brother was born there. Later, when technology took hold and the plants were automated, Walt moved from operations to, once again, supervising the flume team.



*(Above) Left, Walt Walker, and right, Tom Macaulay,
May 2018*

Drama Along the Flumes

Over the last 100 years there have been many stories about the flumes.

Around 1958-1959 there were 43 boxes (512' of flume with each box being 12' long) that fell all at once at the Farad flume near the head. There was talk of sabotage but nothing was found. Farad also had issues with boulders falling and damaging the flume. Over a 3 week period they blasted the hill above the flume to reduce the rock fall.

And there was the one person in the 1980s who wanted to ride the top of the flumes on his bike (with his dog), only to fall 35 feet. He lived but not without injuries. His civil suit was dropped when it was pointed out that he was riding beyond the "No Trespassing" signs. Needless to say, fencing and more signs were added.

Hydroelectric Plants Today

The Farad Hydroelectric plant continued operations until a major high flood in 1989 irreparably damaged the diversion dam. Farad has now been closed for over 20 years because of the costs of rebuilding and the low cost of wholesale electricity. However, it can still be seen from Interstate 80.

Today, the Truckee Meadow Water Authority (TMWA) operates 3 hydroelectric plants along the Truckee River: Fleish (1905), Verdi (1911) and Washoe (1904). The operational plant you see first off Interstate 80 coming from Truckee is Fleish. The Fleish hydroelectric plant is the most dramatic.

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Upriver from the operational Fleish Plant (south side of Interstate 80), you can see the flumes leading into a solid granite tunnel. The tunnel was built in 2005 because of the numerous times the flume had been washed out or damaged at the sharp bend of the river. The old flume location is still visible. Just past the tunnel the flume continues. Then, as you enter Nevada, you can see the spillway off the flume before the power plant, which handles the overflow and any unneeded water.



(Above) Spillway off the flume. Photo Courtesy of Kristen Sproat Colley, June 4, 2018.

Verdi and Washoe hydroelectric plants use both flumes and open canals to carry water. All three plants are still providing cheap, reliable electricity to TMWA customers.

Conclusion

The great advantage of hydroelectricity is that it uses a renewable resource and all the water goes back to the river. Flumes were an important part of building the West. In our

next article we will explore the flumes in the lumber industry, and the joy of 'flume riding'.

Learn about the history of Truckee and how important this town has been to the opening of the West. <https://www.truckeehistory.org/>

Mystic Hot Springs

From Interstate 80, take the Farad exit towards Reno and turn right. You can still see the Farad hydroelectric generating station and wood stave pipes (penstocks) which was the 'head' to produce the power to the turbines. The drop is 85 feet, small compared to today's large plants with drops of hundreds of feet. The Farad site was originally Mystic Hot Springs, a spa, where, during cold weather, steam from the hot springs could be seen from the road above the plant.

How to see the flumes

Start at the Floriston exit, 15 miles below Truckee on Interstate 80: First there is a Central Pacific Railroad section house, then the site of the Rocky Run Ice Company. The Truckee River General Electric Company's Farad diversion dam was built in 1899. The dam is visible on the north side of the highway, as is the upper portion of the Farad flume.

Farad Hydroelectricity Plant: 17 miles below Truckee, on the south (right) side of the highway: This is the location of the Farad

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generating station. The flume between the Floriston bridge and Farad is close to the highway. The roof of the forebay house is visible just above the interchange. When you park off the Farad exit you can walk and see the original wood and metal penstocks (pipe to create power to turbines).

Fleish Diversion: About 20 miles below Truckee, built in 1905 by Truckee River General Electric Company: A wide spot alongside Interstate 80 provides a view of the Fleish flume. The dam is out of site from the freeway. The flume continues for two miles along the canyon wall, with one short section of ditch, and is one of the most prominent features of the canyon.

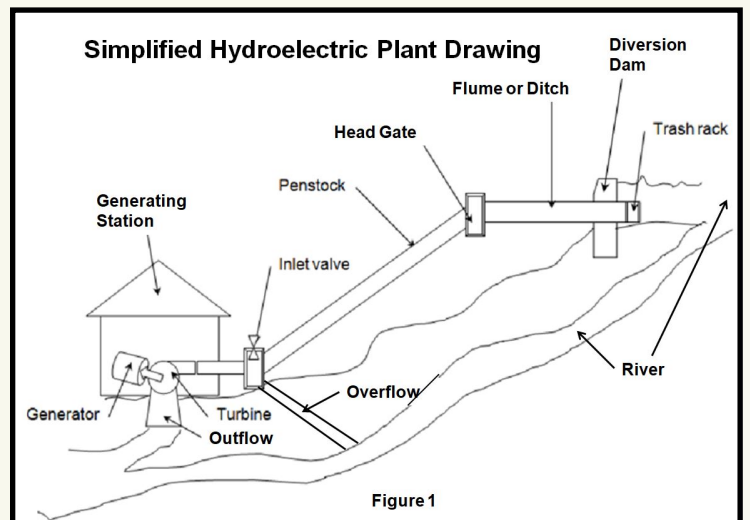
Fleish Power House: Twenty-two miles below Truckee, the Fleish forebay, penstock and power house are visible across the canyon. Two spill-ways can be seen. One is for Fleish, the other for the Steamboat Ditch which takes water from the river a short distance upstream. Fleish was named for the Fleishacker brothers who financed the Truckee River General Electric Company.

Verdi Diversion Dam: 23.5 miles below Truckee, the Verdi diversion dam was built in 1911 by the Truckee River General Electric Company and is easily visible from Interstate 80. Water was supplied to Coldren/Datz/Merrill ditches, Essex Ice Company, Verdi Lumber Co., and the California Sugar and White Pine agency. The generating plant is not visible from Interstate 80 but can be seen with a detour through the town of Verdi.

Summary of Structures

	Farad	Fleish	Verdi	Washoe
Date built	1899	1905	1911	1904
Original KW Capacity	2800	2000	2400	1500
Head (Drop)	85'	120'	96'	88'
Open Ditch	600'	2736'	10,362'	7510'
Flume	8700'	8763'	600'	3300'

(Below) The drawing below may help to orient our readers to the concept of a hydroelectric plant.
Drawing courtesy of Dave DePuy.



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