



The UCLS Newsletter



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“By three methods we may learn wisdom: First, by reflection, which is noblest; Second, by imitation, which is easiest; and Third, by experience, which is the bitterest.” - Confucius



Who is it?

Do you recognize the wax rendering of this famous land surveyor? Be the first to correctly identify who it is and you become eligible for a free luncheon at your next chapter meeting.

Answers may be emailed to Susan at srmerrill@ucls.org. The earliest received date and its time of response will determine the winner.

In This Issue:

Sam Surveyor provides “professional” words of advice as we review last month’s “where is it” contest. We get better acquainted with two more outstanding UCLS members; present a tongue - in - cheek editorial

about using drones for aerial photography; introduce the organization - Young Surveyors of North America; and contemplate the values outlined in the Creeds and Cannon of NSPS.

We invite you to share charismatic photos of yourself and/or a coworker, panoramic images of Utah’s scenic wonders, or pictures of survey related tools and equipment. Additionally, we need interesting and unique descriptions or survey related stories to share with our membership. Remember, if you do not participate you have no right to complain. Please let us know your thoughts, recommendations, suggestions, or complaints.

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Another Trick or Two

by: Sam Surveyor

Now this is a more philosophical comment that you can either take or leave it. I have often wondered about the word **Professional**. The law profession claims to be professional and it requires a lot of schooling and a major exam in order to be able to practice law. Likewise, our profession requires the same. Does that make us professional?

At the conference we listened to an attorney tell of a case where the opposing team called a surveyor to testify as a professional witness. His testimony would have hurt our attorney speaker's case however, our speaker explained that in a discussion with the judge the testimony was that of a professional witness and this witness, was not previously mentioned, as a professional witness prior to the case and his testimony should be tossed out. The testimony was not allowed and the opposing team lost the case. Was justice served? I'm sure that our speaker was trying to help his client but was it really the right thing to do? Is that what professional means?

When we do a survey are we worried about client or establishing the true boundaries? Do we charge a fair price? Do we justify our actions by saying "we lost money on that survey so let's make it up on this one"?

I believe this attitude is not limited to just surveying. What kind of person are you really? Are we trying to get ahead at the expense of others? Are we trying to gain the advantage over someone or something?

There was a man who spent his whole life getting rich. When he died, his two friends were talking. "How much did he leave" one man asked? "Well, all of it" the second man replied.

I don't believe anyone will care how much you left or all the toys you acquire but rather how you lived. Are you a true professional? Please give it some thought!

I hope to see you in the trades, I mean fields. Remember I'm pulling for ya.

April "What is it" Old Ephraim

UCLS member Corbin Van Nest was the first to correctly identify Old Ephraim's Gravesite in last month's "where is it" contest. Arthur LeBaron and Brent Slater were not far behind in their respective guesses.

Old Ephraim (known as "Old Three Toes" by shepherders due to a deformity on one foot) was a very large grizzly bear that roamed the Cache National Forest from circa 1911 until his death on August 22, 1923. The bear lived alternately from as far north as Soda Springs, Idaho, to as far south as Weber County, Utah, before settling in Logan Canyon, about 20 miles east of Logan, Utah.

Old Ephraim's grave is a Logan classic as an infamous grizzly bear with a hearty appetite for sheep, cattle, and big game. The ten-foot tall 1,100-pound beast was the largest and last known grizzly bear to roam Utah. Old Ephraim's skull, once displayed at the Smithsonian Institute in Washington, D.C., now resides at Utah State University's special collections library, and a 9-foot, 4.5-ton stone monument marks the hollow where the behemoth grizzly met his fate.



"Old Ephraim, Old Ephraim, your deeds were so wrong;
Yet we build you this marker and sing you this song;
To the king of the forest so mighty and tall;
We salute you, Old Ephraim, the king of them all."

Getting to Know Our Members

Name: **Dallas Buttars**

Residing at: **2768 N 1775 E Layton, UT**

My spouse is **Jodie (28 years)** and I am a parent of 2 children.

My hobbies and/or interests include **camping, boating, traveling, and spending time with my family.**

When I retire, I want to travel, spend time with my family and continue to promote the surveying profession with the younger generation.

I have been a member of the Utah Council of Land Surveyors since **1988** and wish they would **continue with the direction it has been going, promoting the surveying profession to the younger generation.**

My current employer is **Landmark Surveying (a small company)**

My position or title is **PLS/Owner** and I am responsible for **all office and field surveying projects.**

I have been employed by this company since **1994** but have been involved in the surveying profession since **1978.**

I became a surveyor because **my father was a surveyor and encouraged me to become a surveyor. I continue it because of the outdoor work.**

During the past **15 years, GPS has had the greatest impact on the surveying profession.** However, during the next **10 years**, I believe **Aerial Laser Scanning** will have the most influence on its future.

In my opinion, the future of surveying is **critical to keep under the surveying profession and college education requirements.**



Name: **Lee Cammack**

Residing at: **Kaysville, Utah**

My spouse is **Anne** and I am a parent of 5 children.

My hobbies and/or interests include: **cars, motorcycles and virtually anything with a motor. I also enjoy sports and the outdoors especially with family.**

When I retire, I want to **do some service and some traveling.**

I have been a member of the Utah Council of Land Surveyors since **2006** and wish they would **continue with the fine work they are already doing.**

My current employer is **J-U-B Engineers, Inc.**

My position or title is **President/CEO** and I am responsible for **overall business management for the company.**

I have been employed by this company since **1995** but have been involved in the surveying profession since **1976.**

I became a surveyor because **I started as a teenager working for a neighbor. I found that I really enjoyed the practical application of mathematics and the ability to be in the outdoors. The combination of math, reasoning and understanding of the issues related to ownership and transfer of property was always fascinating to me.**

During the past **38 years, technology has had the greatest impact on the surveying profession.** However, during the next **10 years**, I believe **data and information management** will have the most influence on its future.

In my opinion, the future of surveying is **very bright although it will incorporate elements of technology that will change how we do things. The core elements of property law and how those are applied will remain.**



Larry Milton Buttars

Larry Milton Buttars passed away Tuesday, April 8th, 2014 surrounded by his loving family.

Larry was born August 18th, 1933 in Preston, ID to Milton LaRue Buttars and Gladys Nina Buttars. Larry attended Utah State University. He worked for Nielsen, Reeves & Maxwell Engineering. Larry and another partner started Great Basin Engineering and Surveying in 1958. In 1976, he started his own business, RIS Land Surveyors. He was a successful businessman and land developer in Davis and Weber Counties. During his life he was on many boards and organizations, including the South Ogden City Planning Commission and the Ogden Engineers Club.

Larry married LaRene Udy in 1955. They were later divorced.

He married Connie R. Smith in 1969. They were later divorced.

He married Vonita (TJ) Buttars on July 4th, 1986.

Larry is survived by his children: Valerie Hammer - Ogden, UT, Dallas (Jodie) Buttars - Layton, UT, Marina Atwater - Cottage Grove, OR, Kristin (Alan) Myers- Ogden, UT, Keri Squires (Larry Humphries) - Woods Cross, UT, Trina (Shane) Dykster - Nephi, UT, and Amy Pierce and Jennifer Price. He has 24 grandchildren and 12 great-grandchildren.

Larry is also survived by his sister, Gaylene B. (Dick) Loeffler - Huntsville, UT, and brother Alan L. Buttars- Huntville, UT, and his very special puppy Pepper. He was preceded in death by his parents, sister, DeAnne Flick, and wife, Vonita (TJ) Buttars.

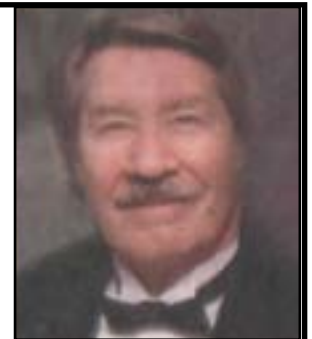
He most recently resided in Fish Haven, ID, Mesquite, NV, Pleasant View, UT and Ogden, UT.

He was an avid boater, an exceptional "Captain", loved Lake Powell and enjoyed several years as a member of The Pineview Yacht Club. He was a member of the Church of Jesus Christ of Latter-Day Saints.

Special thanks to Anne Burbank for taking great care of our father while he was in Idaho.

Funeral services will be held on Saturday, April 12, 2014 at 2:00 p.m. with a viewing one hour prior at Leavitt's Mortuary, 836-36th Street, Ogden, UT.

Please send condolences and a memory to the family at www.leavittsmortuary.com



HDS LIDAR LASER SCANNING

PRESENTED BY: BRETT WELLS, MATT PARK, STEVE COLLIER, KEVIN DAWSON

Prepared and Presented by the students of Salt Lake Community College



LEICA C-10 LASER SCANNER

INTRODUCTION

WE ARE INTRIGUED BY THE SCIENTIFIC AND CUTTING EDGE TECHNOLOGY KNOWN AS HIGH DEFINITION SCANNING (HDS). LASER SCANNERS ARE ONE OF THE MANY SCIENTIFIC INSTRUMENTS USED IN THE LAND SURVEYING AND GEOMATICS PROFESSION. WE EXPERIMENTED WITH A LEICA C-10 MODEL LASER SCANNER. THIS SCANNER IS CAPABLE OF COLLECTING 50,000 MEASUREMENTS PER SECOND AT A DISTANCE OF UP TO 700 FEET. FOR THE PROJECT WE WENT TO THE UTAH STATE CAPITOL BUILDING AND SURVEYED THE EXTERIOR BUILDING WITH THE C-10 LASER SCANNER .

DISCUSSION

FIELD SUMMARY

IN 5 HOURS WE COLLECTED OVER 55 MILLION POINTS FROM 17 SCAN LOCATIONS AND TOOK OVER 4,000 PICTURES. EACH POINT HAS THE FOLLOWING ATTRIBUTES: LOCATION (NORTHING, EASTING, ELEVATION IN STATE PLANE COORDINATES), INTENSITY VALUE (ASSIGNED FROM THE SCANNER MEASURING THE RELATIVE REFLECTIVITY OF THE SURFACE OF THE OBJECT), AND THE RGB COLOR VALUE (TAKEN FROM THE CAMERA AND APPLIED TO EACH SCAN). WE COLLECTED A TOTAL OF 12GB OF DATA IN THE FORM OF SCAN DATA AND IMAGERY.

OFFICE SUMMARY

THE DATA WAS THEN PROCESSED AND REGISTERED WHICH ALIGNS EACH SCAN BASED ON COMMON TARGETS AND THEN COMPUTES THE LEAST AMOUNT OF ERROR FOR EACH TARGET TO DETERMINE THE OPTIMUM POSITIONAL SOLUTION. FOR EACH TARGET CONSTRAINT WE HAD AN AVERAGE VERTICAL ERROR OF -0.0006 FEET WITH A STANDARD DEVIATION OF 0.0122 FEET, AND AN AVERAGE HORIZONTAL ERROR OF 0.004 FEET AND A STANDARD DEVIATION OF 0.0042 FEET.



FRONT VIEW OF CAPITOL BUILDING. THE COLORS ON THE RIGHT ARE DERIVED FROM THE PHOTOGRAPHY AND THE COLORS ON THE LEFT ARE FROM THE INTENSITY VALUES THE SCANNER MEASURED.

METHODOLOGY

FIELD SUMMARY:

OUR FIRST TWO ATTEMPTS TO VISIT THE CAPITOL BUILDING DURING JANUARY WERE CANCELED DUE TO BAD WEATHER. IF IT IS SNOWING OR RAINING THE SCANNER COLLECTS MILLIONS OF POINTS DEPICTING FALLING SNOW, WHICH IS NOT BENEFICIAL TO THE PROJECT. WE SET THE SCANNER UP ON 17 DIFFERENT LOCATIONS AND COLLECTED BOTH LASER SCAN DATA AND PHOTO IMAGERY. AT EACH LOCATION WE ACQUIRED MULTIPLE TARGETS THAT ACT AS CONTROL POINTS TO ORIENT THE SCANNER LOCATION AND THE COLLECTED INFORMATION (POINTS AND TARGETS). WE COLLECTED THE SCANNERS FULL RANGE OF VIEW, WHICH IS 360 DEGREES HORIZONTALLY AND 270 DEGREES VERTICALLY. THE ONLY AREA NOT COLLECTED IS DIRECTLY BENEATH THE SCANNER. WE ALSO OCCUPIED A FEW CONTROL POINTS WITH SURVEY GRADE GPS SYSTEM TO APPLY THE UTAH CENTRAL STATE PLANE COORDINATE SYSTEM TO OUR PROJECT.

OFFICE SUMMARY:

WE ALIGNED EACH INDIVIDUAL SCAN TO THE THE TARGETS THAT WE ACQUIRED FROM EACH SCAN LOCATION AND TO THE GPS POINTS. WE THEN PROCESSED THE IMAGES WE COLLECTED FROM THE SCAN DATA AND FUSED THE RGB COLOR VALUE FROM THE IMAGES TO EACH POINT COLLECTED FROM THE SCANNER.

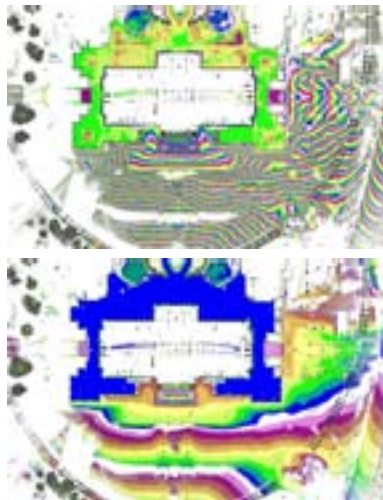
CONCLUSION

ALTHOUGH THERE WERE WEATHER DELAYS, THE SPEED AND ACCURACY OF THE SCANNER WERE PHENOMENAL. THIS IS ESPECIALLY TRUE WHEN COMPARED TO CONVENTIONAL RATES OF COLLECTING ONE OR TWO THOUSAND POINTS IN A DAY TO COLLECTING OVER 55 MILLION POINTS IN A SHORT 5 HOUR WINDOW. TAKING THE IMAGES ADDED A LOT OF TIME TO THE PROJECT. APPROXIMATELY EACH SETUP TOOK 7 MINUTES TO COLLECT THE SCAN DATA AND 6-7 MINUTES TO COLLECT THE PHOTOGRAPHS. WE WERE ABLE TO IMMEDIATELY GENERATE 0.10 FT CONTOUR INTERVALS. WE WERE IMPRESSED WITH THE ACCURACY OF THE RESULTS, SEEING AVERAGE ERROR IN THE RANGE OF 0.005 FT. AND A SMALL STANDARD DEVIATION WITHIN THE SPECIFICATIONS REPORTED BY THE MANUFACTURER.

FUTURE PLANS INCLUDE TAKING THESE DATA AND DRAFTING BOTH TOPOGRAPHICAL MAPS AND ARCHITECTURAL ELEVATION VIEWS, INCLUDING DETAIL OF THE WINDOWS, DOORS, AND COLUMNS. WE ALSO PLAN TO CREATE AN ANIMATION THAT WILL FLY THROUGH THE POINT CLOUD.

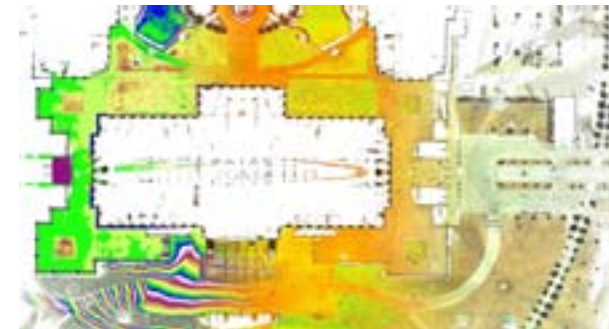


REGISTERED POINT CLOUD VIEW FROM ABOVE. THE COLORS ON THE LEFT ARE DERIVED FROM THE PHOTOGRAPHY AND THE COLORS ON THE RIGHT ARE FROM THE INTENSITY VALUES THE SCANNER MEASURED.



IMAGES AT LEFT ARE COLORED BASED ON THE RELATIVE ELEVATION OF EACH POINT CREATING A COLORED CONTOUR MAP. THE TOP IMAGE HAS A COLOR INTERVAL OF 0.10 FEET AND THE BOTTOM IMAGE INTERVAL IS 1.00 FEET.

THERE ARE 10 COLORS THAT REPEAT. FROM BLUE COLOR INTERVAL TO THE NEXT BLUE COLOR INTERVAL ON THE TOP IMAGE IS 1 FOOT, AND ON THE BOTTOM IMAGE IS 10 FEET.



ORTHOMETRIC TOP VIEW OF THE CLOUD. THE COLORS TRANSITION FROM LEFT TO RIGHT AS FOLLOWS: 0.10 FT COLORED ELEVATION INTERVAL, INTENSITY AS MEASURED FROM THE SCANNER, AND RGB COLOR DERIVED FROM THE PHOTOGRAPHY

Editor's Note: This article was sent to me by Carl C.de Baca PLS, Alidade, Inc., NSPS Area 9 Director (retiring). He has sent me several articles which will be in future issues. Carl is a dedicated survey brethren who has a unique knack for seeing the humor in surveying and most things in life. Life is full of special moments, make sure you notice them!

Dear Engineering Journal of Greater Ireland,

I am writing regarding the recent article in your publication submitted by Gerald Fitzpatrick, Surveying Engineer and Patrick Fitzgerald, Engineering Engineer. The article addresses the use of UAVs (drone aircraft) for aerial mapping to gather all the various types of data that an engineer would need for design, including topographic, vegetative, and surprisingly, cadastral. While the version I read was found in your pages, an online search yielded a nearly identical version published elsewhere with only minor differences:

http://uav.ie/PDF/Accuracy_UAV_compare_RTK_GPS.pdf



The gist of your article is that UAV-based aerial photogrammetry is now a mature technology poised to eliminate troublesome and insufficiently detailed surveys done by more conventional methods. How exhilarating!

The authors assert that they routinely achieve accuracies with digital data sets extracted from this photography equal to GPS RTK methods but with infinitely more "richness of data". I found it quite interesting that they lay out the flight lines for each mission perpendicular to the direction of the wind to keep the plane direction and speed constant. Since the article's lead indicated that the drone could also be used for boundary purposes, I read with a close eye, searching for passages that would discuss using the drone to produce cadastral information. I think it's fantastic that the authors' CV indicates that they produce the "World's Most Accurate Aerial Photogrammetry", and I applaud the assertion that this marvelous piece of technology can finally assign the lowly surveyor to the dust bin of history alongside lamplighters, gas station attendants and the guy who used to ride in the caboose, not to mention the caboose itself.

I do have some questions and thoughts that perhaps the authors could touch upon in a future article:

- ◇ Does the wind in Ireland always blow in the same direction? That would certainly be most helpful to mission planning.
- ◇ I understood that the British Isles, though relatively tectonically stable, were in fact still rebounding from the last ice age. Is Ireland's cadastre rebounding as well?
- ◇ I'm curious to know more about achieving sub-pixel accuracy in the post-data collection and pre-processing stage. Are the pixels smaller than a centimeter? Would that not then imply achieving sub-centimeter accuracy with centimeter-accurate surveying methods?
- ◇ What profession in Ireland would now be responsible for setting the highly accurate ground control if the need for surveyors has been truly eliminated, as alluded to in the article?
- ◇ It must be a wonderful feeling to have a digital cadastre of the entire country such that boundary surveying is reduced to a data set of coordinate values. However, this remarkable tool would need some minor enhancements to be used for similar applications over here across the pond, where many varieties of unwritten rights need to be considered, not to mention that portions of our continent are moving in different directions at different speeds. I confess no small curiosity as to who might be employed to write the particular piece of software that could retrace the footsteps of the typical GLO surveyor of the 1800's, or better yet, the footsteps of one of the Benson Syndicate's collaborators. That would truly be a marvel to behold!

Now that my profession has been mooted, I look forward to seeking gainful employment in the field of lawn maintenance or the janitorial arts. I will look longingly to the skies as my replacements flit back and forth "revolutionizing the world of engineering surveying."

Best Regards,

Carl C.de Baca *soon to be ex-Surveyor (U.S)*

Golden Spike

by: David Balling

The last meeting was held on April 24. Henry Peterson of the U.S. Forest Service addressed us. He presented some history of the U.S. Forest Surveyor and what is expected for growth in the future. Most work is farmed out to private surveyors these days and will continue into the near future. He also discussed some of the projects that were completed last year and reviewed some up and coming projects. Those interested in being on the U.S. Forest Surveyors list of contractors should visit their website to apply and review current jobs.

The Golden Spike Chapter will meet at 12:00 noon on Thursday, May 22 at the El Matador. This is located at 606 South Main Street in Bountiful. Our speaker will be Sean Fernandez who runs the AGRC. This is the department of the State which also runs the VRS network. He will also tell us the latest and greatest for our GPS network.

We will continue to have meetings each month and keep you informed. Even if you're not a member, please come and enjoy with us.

Education Committee

by: Danial Perry

Attendees:

Danial Perry, Walt Cunningham, Charles Heaton, Chris Moore

Scholarship Silent Auction

I need to thank the two new members of our committee for joining us in our online meeting via google and hangout. After a few technical difficulties, we began the meeting with a report of the recent annual convention scholarship silent auction which received just short of \$3000. We discussed the pros and cons of this event and we still find it to be quite effective and efficient given the time to process value. We plan to continue in the future.

Scholarship Promotion

How can we improve the promotion of the scholarship and encourage students to apply because for the past few years there have been too few applicants. No conclusions were drawn other than to continue with our current promotion which includes sending emails to the students, making announcements in classes, and even providing the application to each student, or perhaps making the application a part of a course requirement or extra credit.

Promotion of Geomatics/Surveying

During high school visits by various members of the profession the UVU Geomatics video is available by doing a search on YouTube "uvgeomatics". This video is a public video and any surveyor can use this video to promote our profession.

2014 Fall Forum

UVU is sponsoring the fall forum this year to be held September 19th. The forum is focused on GIS and will include an all day hands-on workshop learning the basics of Esri's ArcGIS software. Each participant should be able to walk away with a GIS map. There may also be a session on Basic Principles of Geodesy.

Our next Education Committee Meeting will be held in June to review and recommend the 2014 scholarship recipients. If anyone is interested in serving with us in this committee please contact Dan Perry.

FIG - Young Surveyors of North America

The 1st FIG Young Surveyors North American Meeting was held in sunny San Diego, California on April 14-15 2014. The 25 enthusiastic surveyors from 15 states had a lively discussion on how to establish a Young Surveyors presence and program within North America. The first day started with an introduction to NSPS, FIG, FIG Foundations and the FIG Young Surveyors Network to get inspired and by staking out the pathway for the 2 days meeting. Curt Sumner, executive director of NSPS, lead a round table discussion on the current needs and views of NSPS towards the Young Surveyors and Young Professionals. The discussion pointed out that there is the need for interaction, collaboration, and communication between the young and the more seasoned professionals. Mr. Bryn Fosburgh followed Mr. Sumner presenting his view on the current and future trends of surveying. He encouraged Young Surveyors and Professionals to embrace new technology and new applications. Mr. Shannon Hixon continued the dialogue regarding the changing role of the surveyors. Mr. William Stone got everyone excited about the new horizontal and vertical datum planned to be introduced in 2022. Mr. Don Buhler updated our group on the current status of BLM and the future developments. Also important and inspiring was that the leadership within BLM was handed over to 35 year old Mr. Neil Kornze. We rounded up the day with an interactive feedback session.

Day 2 launched with participants recapping the outcome from day 1 and started to collect ideas on how to establish and form the Network. These ideas included Mission and Vision statements, how to organize, how to communicate and identification of future events. The discussion focused on mutual benefits for NSPS, State societies and Young Surveyors and Young Professionals. In preparation of the presentation to the NSPS Governors, responsibilities were assigned to participants of the meeting to build relationships with various states. Capitalizing on the opportunity to present to the NSPS Board of Governors, the representatives of FIG Young Surveyors Network and North American Network presented their goals, mission and vision and how to collaborate with NSPS and the State societies. At the presentation to the Governors it was seen that there is an enthusiastic response to establish such a Network. Based on this response, we saw the need to develop and define our role more clearly. We will communicate the development of the Network and future activities to NSPS and the State societies. The meeting followed by a presentation given by Mr. Joe Paiva on UAVs for surveying application by showing opportunities for surveyors. The second part of his presentation was introducing us to Geolearn, which is an online education program that could benefit surveyors of all ages. The group walked away extremely educated, enthusiastic, motivated and determined to work on establishing the Young Surveyors and Young Professionals Network within NSPS Associations.

We appreciate the support that we have received from NSPS and look forward to work with all of you and your State societies... we definitely see a bright future... and look forward to growing the Network and establishing new friendships.

We would also like to take this opportunity to thank our Platinum Sponsor Trimble and the FIG Foundation. Also, we would like to thank the facilitators without their hard work this meeting wouldn't have been possible: NSPS (Curt & Trish), CLSA/NALS. Another big thank we have to say to our Keynotes who inspired us by their speeches and showed us a way to go by showing us future developments. Thanks to: John Hohol, Steve Frank, Curt Sumner, Bryn Fosburgh, Shannon Hixon, Bill Stone, Don Buhler and Joe Paiva.

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Title No. 44



General Quitclaim

DEED

to

ONE ACRE OF LAND

on the

MOON (NORTHEAST QUADRANT)

INTERPLANETARY DEVELOPMENT CORPORATION

THIS INDENTURE, made the 18th day of April, nineteen hundred and fifty-six BETWEEN INTERPLANETARY DEVELOPMENT CORPORATION, a domestic corporation, having its principal place of business at The Little Museum, The Plaza, Glen Cove, Nassau County, New York, party of the first part, and Caroline H. & Hugh S. Greysa Jr. ten. party of the second part, of Cansan Ct., Cansan, N.H. 05741

WITNESSETH, that the party of the first part, in consideration of One Dollar paid by the party of the second part, does hereby remise, release and quitclaim unto the party of the second part, the heirs or successors and assigns of the party of the second part, forever,

ALL that certain plot, piece or parcel of land, situate, lying and being in the crater Copernicus, situated in the northeast quadrant of the surface of the Moon facing the planet Earth, more particularly known and described as follows; Lot No. (refer to cover of deed), comprising by admeasurement one (1) acre, more or less, as more particularly described on a certain subdivision plan, prepared and acknowledged by the grantor on 1st day of September 1955, and deposited at the office of the grantor at Glen Cove, New York, United States of America, Planet Earth, said parcel sometimes situate over Grafton County, N.H.

TOGETHER with all mineral and oil rights, if any, of the party of the first part.

TOGETHER with all right, title and interest, if any, of the party of the first part, in and to any streets and roads abutting the above-described premises to the center lines thereof; TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises; TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part, forever.

TOGETHER with beach rights to, and right of access to, the Sea of Tranquility for the enjoyment thereof,

TOGETHER with the right to fish, dredge and clam in, upon and under the Sea of Nectar with the right to enter upon said Sea at the places designated by the Grantor for said uses and purposes.

TOGETHER with the right to engage in Winter sports in the Lunar Alps with all the privileges appurtenant thereto without the grantor being in any manner liable for the consequences.

TOGETHER with the privilege of prospecting for all manner of minerals and other elements in the Lunar Apennines, reserving unto the grantor, however, fifty (50) per centum of all minerals and elements of whatsoever nature for the use and benefit of the grantor, anything to the contrary in this Indenture notwithstanding. The grantor covenants, however, that it will dedicate twenty-five (25) per centum of this to the payment of taxes and assessments, if any.

Consideration less than \$100.

And the party of the first part hereby covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration for the purpose of paying the cost of improvements, if any, and will apply the same first to the payment of the cost of the improvements before said cost shall be paid.

The word "party" shall be construed as if it read "parties" whenever the sense of the Indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.

INTERPLANETARY DEVELOPMENT CORPORATION



Robert C. Cole
Per
Hugh S. Greysa Jr.
V. Pres.
Caroline H. Greysa
Secy.

Received and recorded Jan. 10, 1969 8:30 A. M.

Charles A. Wood, Registrar, N.H.



Surveyor's Creed and Canons

As a member of the National Society of Professional Land Surveyors and as a Professional Surveyor, I dedicate my professional knowledge and skills to the advancement and betterment of human welfare.

I Pledge:

To give the utmost of performance;

To participate in none but honest enterprise;

To live and work according to the laws of humankind and the highest standards of professional conduct;

To place service before profit, honor and standing of the profession before personal advantage, and public welfare above all other considerations;

In humility and with need for Divine Guidance, I make this pledge.

Canon 1.

A Professional Surveyor should refrain from conduct that is detrimental to the public.

Canon 2.

A Professional Surveyor should abide by the rules and regulations pertaining to the practice of surveying within the licensing jurisdiction.

Canon 3.

A Professional Surveyor should accept assignments only in one's area of professional competence and expertise.

Canon 4.

A Professional Surveyor should develop and communicate a professional analysis and opinion without bias or personal interest.

Canon 5.

A Professional Surveyor should maintain the confidential nature of the surveyor-client relationship.

Canon 6.

A Professional Surveyor should use care to avoid advertising or solicitation that is misleading or otherwise contrary to the public interest.

Canon 7.

A Professional Surveyor should maintain professional integrity when dealing with members of other professions.