MARS ASSOCIATES
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MARS STAR

MARS STAR has gone digital!!

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MARS Associates: A Social Club for Retirees of Lockheed Martin & United Launch Alliance

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REMINDER:
If you move, please give the membership VP a change of address. Also, if you are a snowbird, let us know when you are leaving and when you plan to return so your MARS STAR can be sent to you. It costs us 70 cents for each STAR package returned.

(Published quarterly by MARS Associates, Retirees of Lockheed Martin Corporation and United Launch Alliance, Denver, CO)

IMPORTANT PHONE NUMBERS

Pension related questions should be directed to: Lockheed Martin Employee Service Center (LMESC),
866-562-2363 toll-free within the U.S.
201-242-4397 from outside the U.S.
800-833-8334 for hearing impaired.
OR
HR benefits mailbox, benefits.hr@lmco.com

MARS Important Phone Numbers
(Be sure to have your MARS ID available)

MARS Delta Dental of Colorado
Individual Administrative Team: contact for Billing and Enrollment (change bank account info, update address, etc.) 877-516-6512
Individual@ddpco.com
Customer Experience Team: contact for Claims and Benefit questions 800-610-0201
customer_service@ddpco.com

Assured Partners of Colorado – For additional information dental (Delta Dental and Beta Dental, which is a Colorado only plan) or vision (VSP, which includes Exclusive Member Extras of hearing aids with Tru Hearing and EyeMed, which is part of Delta Dental at no additional cost)
Joyce Sullivan 303-226-0177
Jon Elmore 303-228-2206

Aetna/Medicare Plus 1-888-562-8111

Kaiser Advantage Plus 303-338-3800

MARS Associates
P. O. Box 1128
Littleton, CO 80160-1128

MARS Website: https://www.marsretirees.org
MARS Facebook:
https://www.facebook.com/groups/MARSAssociates

Cover:
Left – Artist rendition of Skunkworks' X-59 that was Rolled-out on January 12, 2024. Photo Credit: NASA

Right -- Cheers from the Holiday Celebration. Attendees include Charlie & Rusty Adinolfe, Debbie Fowler, Lisa Cox, Beth Worthington, Shar Petty, Gerry & Sharon Boisvert, Glenda Florea. Photo Credit: Larry Stearns

From the Editor's Desk

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For comments or corrections, contact Tom (issue editor) or Dan Ellerhorst, V.P. of Communications.

MARS welcomes your submissions. Submissions must be relevant **to the MARS organization**, informative, and **appropriate for this newsletter**. No **personal dialogues or opinion pieces** will be accepted.

Please submit your article for approval **in advance** to the V. P. of Communications. Articles will be included as time / space allows.

President's Corner

By Ken Marts
(martshouse2@aol.com)

This quarter's President's Corner will be brief. We've entered a new year and yet another "fun" time called an election cycle. Hopefully everyone enjoyed their holiday season and are now ready to enter this year with overflowing enthusiasm and excitement. MARS Associates has a lot of activities planned for 2024 and if you're unable to participate, you can share in the pictures posted after each event.

We'll kick off the new year with a TBD Special Guest at our Annual Meeting in March. Last year, Mr. Tory Bruno (CEO of ULA) gave us a presentation and this year we're planning just as big of an event and speaker. No, no, no, we weren't able to catch the Easter Bunny (Easter) or a magical leprechaun (St Patrick's Day) to talk but we hope our soon-to-be-announced speaker will blow your socks off. After that we'll have a few Special Activity tours in the Denver area, a Happy Hour, and many more activities throughout 2024.

We're currently hard at work writing the 2023 Annual Report to capture our activities last year. This report will be available in March to refresh your memories on what was accomplished.

Be sure to check the MARS Associates website (www.marsretirees.org) and/or Facebook page for the latest news, activity and club updates, Barb Sande's historical perspective write-ups, and other information. Also, use the website to drop us comments on what you like or would like to see changed with your organization.

2024 promises to be a BIG year and we want you to be a part of it. Be sure to enjoy the beauty of Colorado or wherever you live and take time to enjoy some of the simple things in life; nature walks, sitting on the back porch enjoying your favorite beverage with a book or just daydream.

We're also looking for some volunteers to be Directors on our Board to help guide/steer your organization in 2024. If interested, contact any of the board members listed on our website and find out how you can be a part of the organization.

We're also looking for a dynamic person who likes meeting people, arranging fun activities, and getting to know more of the MARS Associates members. This and more, is what the Vice President of Activities gets to do. If interested, contact Linda Duby, the Board of Directors, or me to learn more about this opportunity. Our contact information is on the website (www.marsretirees.org).

In closing, please email me if you have suggestions to improve our communication, recommend events, or ideas to enhance our organization. We welcome your comments!

Thank you and I hope to see you at our upcoming events!

Director's Notepad

By Roger Rieger
Chairperson, BoD
(rrieger10731@gmail.com)

Happy New Year! 2023 was just full of MARS activities, the traditional top 4 (Annual Membership meeting, Senior Recognition Luncheon, the MARS picnic, and the Holiday celebration) along with many new activities, train trips, Rockies Game, Central City Opera…. I hope you have had the chance to participate in some or all-of the activities, and most importantly stay connected with our former work colleagues. None of these things just happen by themselves, someone, usually a group of people, volunteered their time and talents and made it happen. Please take a moment and say "thank you" to those folks -- without them, MARS would be a totally different club.

With the beginning of the new year, MARS Officers and especially members of the BoD are focused on succession planning to ensure continuity and continuation of our Club and the many benefits we provide to our members. Without people volunteering their time and talents, your MARS Associates Club would cease to exist.

The club is actively seeking to fill the following positions:

1. President Elect - 1 year term, transitioning to President (2 year term)
2. VP Activities – 2-year term. Lead and organize major club events
3. Director, member BoD (2 positions, 2-year term) - provide support to Officers, provide approvals as required by Club bylaws, transition to a potential future officer position.

Officers and BoD Meetings are held the first Wednesday of every month at the Red Rocks FCU headquarters building in Southpark. Meetings start at 9:30 and wrap up around 11am. "New blood" is essential for the continued vitality and growth of your Club, and I ask each of you to consider sharing your talents while having fun

and staying connected with fellow MARS members. Interested? Please reach out to any of the Officers or BoD members, or contact me directly, we would love to hear from you

Activities Updates

By Linda Duby
(lindaduby@comcast.net)

Happy New Year! MARS is already busy planning events for the year and looking forward to having members and their guests attend the events.

The **Holiday Celebration** on December 6, 2023, was held at the Wellshire Event Center. We had less reservations this year – 123 members and guests versus 150 in 2022. There were lots of compliments and a few issues but overall, the Wellshire did an excellent job.

Two guests from Lockheed Martin attended and they were Shamina Fletcher and Jessie Lenard. Sgt. Travis Williams and Cpl. Josiah Huizar represented Toys for Tots this year. As usual, the MARS members were very generous with their donations of toys and money to Toys for Tots.

Three Colorado Christian University students sang Christmas carols to entertain us during the luncheon. They were Diego Munguia, Jessica Scott and Anka Thomas. David McNeil, Director of Choral Studies, attended with the students.

Happy Hour. The first event of the year will be on February21 from 4:30 p.m. to 6:30 p.m. at the Blue Spruce Brewery – Ken Caryl, located at 10577 West Centennial Road, Littleton 80127. MARS will provide appetizers -- drinks will be via "cash bar." If you know someone who is thinking about retiring soon or has just retired, please let them know about this event. It is open to members and non-members. Reservations can be made through a link on the MARS website, and it is recommended that everyone R.S.V.P. so we have a headcount for the Blue Spruce. The deadline for reservations is February 17.

Spring Event & Annual Meeting. This year's event is on Wednesday, March 20, 4:30 p.m. to 6:30 p.m. and will be held in the Mount Evans Conference Room at the Lockheed Martin Deer Creek Facility. Hors d'oeurves along with beverages will be served. MARS has invited Mr. Robert Lightfoot, Executive Vice President of Lockheed Martin Space to be the guest speaker, if his schedule permits. Due to security requirements to access the building, the check-in process will begin at 3:30 p.m. The flyer for the event is included in this edition of the STAR and the link for the electronic version is on the MARS website (https://www.marsretirees.org). The deadline for reservations for this event is February 18.

Summer Luncheon Honoring Senior Members. This will be held on June 26 this year. In the past, we held this event in July, but we moved it to June this year to see if we get a better response to the event. This luncheon is open to all members and their guests. We have reserved the Manor House at Ken Caryl for the luncheon. More information will be in the next issue of the STAR.

There are more events planned for the year and notices about the events will be posted on the website and on the MARS Facebook page as well as in the STAR. Blast emails will also be used to notify members of upcoming events.

If you have any questions, suggestions, or comments about the events, please contact me at lindaduby@comcast.net.

MARS at the Rockies - SAVE THE DATE

The annual MARS Game and Picnic will be on Wednesday, June 5 @ 11:30 AM. The game will feature the Rockies against the Cincinnati REDS. Additional details and the flyer will be in the April MARS STAR!

Business

By Gina Curet
(orion43@comcast.net)

I trust that you had a wonderful holiday season and are ready for everything that 2024 has in store for us!

Hot off the presses are some new website additions:

- **2024 Tax Adjustments** – this document includes IRS and SSA 2024 adjustments. This includes everything from income tax brackets, standard deductions, estate tax exclusion amounts, retirement contribution limits, IRAs, HSA contribution limits, SS to earning limitations for retirees. Check it out!

- **Understanding Medicare** – this document is an A to Z, step-by-step process for understanding Medicare and options that everyone should consider, especially when working past 65 years old. This is a 2nd document added to the Medicare section.

Speaking of Medicare, we have 2 informational sessions planned in 2024, so mark your calendars! The events are posted on the website calendar and will also be posted on the MARS Facebook page. They will be held at Red Rocks Credit Union (8195 Southpark Lane, Littleton). Send me an email at orion43@comcast.net if you plan to attend!

- **Thursday, March 14th**; 1:00-2:00 PM
- **Thursday, September 12th**; 10:00-11:00 AM

We all know that everything has increased in cost over the past year. Great news--there were no cost increases in 2024 for your VSP eyecare! On the dental front, 91% of the more than 3,700 Colorado providers participate in the Delta Dental of Colorado network. This gives our members a large selection of the highest-quality dentists, specialists, and independent hygienists to choose from. This is a great network!

My 1Q2024 Discount Vendor of the Quarter is **Osher Lifelong Learning Institute (OLLI) at Denver University (DU).** OLLI is learning for the love of it! Browse the flipbook of offerings (4-6 and 8-week courses—online and in person) taught by facilitators who have a passion for their subjects. Check out the new integrated flipbook of courses at https://olli.du.edu/duolli/category/category.aspx. OLLI at DU also provides social connections and access to 50 live webinars annually. If travel is your thing, join other OLLI members for any of six domestic and international trips.

Communications
By Dan Ellerhorst
(dan.ellerhorst@gmail.com)

Last year at this time, MARS Associates was in the process of transitioning our website to a new software baseline using commercial products (DreamHost and WordPress). We "threw the switch" on the new software baseline on April 1st, and I am happy to say we have experienced no major hiccups since then. This is thanks largely to Steve Sande, who has taken over as Webmaster for MARS from Jim Kummer. Steve is also the Facebook administrator for our MARS Associates Facebook group. Rick Gonzales has been a big help to both Steve and the various officers, directors, and other leads who have been coming up to speed on how to share information on the website.

In this column, I would like to recap each of the software products that we are using for our upgraded digital and communications capabilities. The foundation is DreamHost, which is a web-hosting company that provides services such as domain registration, website hosting, and cloud services. DreamHost is the software platform that hosts our website, marsretirees.org. DreamHost is widely used and offers specialized WordPress hosting that is optimized for running WordPress websites.

WordPress is a hugely popular Content Management System (CMS) which we use to construct and maintain every page on our website without the need for extensive coding knowledge. It has a user-friendly interface and supports a wide variety of themes and plugins for customization.

Both DreamHost and WordPress have been around for over 20 years and both are supportive of "open software" development. Effectively, this means that the source code baselines are available to the public and hence it is easy to develop compatible plug-ins, as well as to offer corrections and improvements to the product. In fact, WordPress has been estimated to be in use on over 40% of all websites in the world.

DreamHost also provides our MARS e-mail service. It allows us to establish and maintain distribution lists for mass mailing important news, membership reminders, and event notifications. Part of its security implementation requires a two-step process for members to subscribe to receive e-mail via these distribution lists. If you are not receiving any e-mail from MARS Associates and would like to sign up, please go to our website homepage and punch the blue "Subscribe" button.

Last year, when we were investigating an online payment capability, we eventually settled on Stripe. Stripe is like PayPal, and is well integrated with WPForms, a popular WordPress plugin that allows us to easily design a form to collect reservation and payment information. We currently use this for event RSVPs and membership applications and renewals. We also use another WordPress plug-in called Events Calendar Pro for managing our website events calendar.

Finally, WordPress provides a file storage and sharing capability (built on DreamHost's underlying services) that we use to archive MARS documents and photos. However, we also still use a cost-free version of Dropbox

(another cloud storage service) for exchanging articles and photos during the quarterly production of the MARS STAR. We will investigate a more unified approach to this part of our online capabilities in the coming year.

The transition to this modern commercial software architecture does not come without costs. In addition to the learning curve that we are all experiencing, there are real dollar costs. Our annual fees are now in the vicinity of $400, which we have included in our budget. However, we believe that the payoffs outweigh the costs in security, maintainability, and growing new capabilities.

As always, feel free to send me your questions and comments.

Membership Report

By Carl Kaminski
(carlkcol66@gmail.com)

MEMBERSHIP STATISTICS

As of December 31, 2023, there are 1,281 MARS Associates members, including 583 senior members. We have a total of 93 new members who have joined MARS for the 2023 CY.

Please welcome the following new members who have joined this quarter:

Colorado

Arvada	Karen & Scott Anderson
Castle Rock	John & Rebecca Hissem
Centennial	Charles & Elizabeth Kay Douglas, Bill Johns & Vanessa Wittekind
Conifer	Steven & Gail Bonner
Denver	Robert Stevenson
Elizabeth	Michael & Diane Serafin
Highlands Ranch	David Mitchell, Eric Morningstar, Stanley & Michelle Schwartz, Johannes Soehn
Littleton	Lynn & John Keefe, Maureen Leach, Mary Nuhn, Bridgid O'Brien, George & Liz Romanyshyn, Joe & Liz Wuest
Lone Tree	Scott Stagliano & Joan Underwood
Morrison	Laurence & Ellen Price
Parker	Victor & Connie Martiny
Roxborough	Donna Urstadt & Dorian Maurer

Other States

California

Lompoc	Alfredo & Kelly Pagatpatan

Georgia

Dallas	Frank & Betty Malik

Louisiana

La Place	Randall & Susan Tassin

Mass Email Distribution: Our records indicate that about 98% (1261) of our members have an email address. Of those members with an email address, about 63% (802) have authorized these addresses to be posted on the MARS Associates website. Of those members with an email address 73% (935) have indicated they wished to receive mass emails from MARS. Our transition to a new website provider has forced transition to a subscription-based model for email distribution lists. This means that we cannot create our email lists, our members must initiate an action to indicate their desire to receive MARS emails. To date 75% (699 of 935) have successfully subscribed to the mass email list. If you have not yet subscribed, go to the MARS home page click on the blue button labeled "MARS EMAIL LISTS" https://marsretirees.org/subscribe-unsubscribe-from-mars-email-lists/ and follow the directions. Electronic distribution of the MARS STAR has become our default method for publication. Members who have requested a printed copy of the MARS STAR will continue to receive them. If you currently receive an electronic copy and wish to receive a printed copy, contact Carl Kaminski at 303-726-1546.

Membership Renewal

Once again, it's time for membership renewal. Since so many of our communications are presently via email, it would be helpful to include your current email address even if you haven't changed it recently. This will help ensure we have the correct address on file.

There is a printed copy of the renewal form contained in this issue of the STAR. In addition, the online renewal form can be accessed here: https://marsretirees.org/mars-associates-membership-renewal/ This will allow you to pay via credit card and save the hassle of mailing your renewal form and payment via USPS.

Alternatively, a pdf version of the renewal form can be accessed here: https://marsretirees.org/wp-content/uploads/2023/12/Mem_renewal_2024_online_version_rev_12_16_23_2.pdf
You can type directly into this form from your web browser and print it out or printout the blank form and fill it in. Either approach should work. If you have any questions contact Carl Kaminski directly at 303-726-1546.

NEW MEMBERS
Do you know someone who recently retired from LM or ULA? First year membership in MARS is free for 2024. Direct them to the website for more information or have them contact one of the Officers or Directors.

Change of email address or phone number?
Given the rapidly changing environment we are all dealing with, it's more important than ever that we have current email and phone information for our members. Please remember to include the MARS membership team in your list of people to notify when you have a new phone number or email. We want to make sure all communications are timely.

In Memoriam

By Norma Emerson
(emer801@msn.com)

Please contact me at the above address or at 303-646-1137 with information about the passing of a member, the spouse of a member or other MM/LM retirees so they can be acknowledged in the Memoriam section.

MARS Associates expresses our deepest sympathy in the loss of your loved one and a donation will be made to a charity chosen by the Officers and *Board of Directors in their memory.*

Members
Berns, Francis "Fritz" (D: December 2023)
Littleton, CO
https://tinyurl.com/mr2dm6nd

Dougherty, Ralph (D: December 2023)
(Survived by Elizabeth Ann "Tootsie" Dougherty)
Littleton, CO
No obituary published

Pearson, Donnette "Donne" (D: Sept 2023)
(Survived by Marlyn Pearson)
Highlands Ranch, CO
https://tinyurl.com/yhwetwsr

Radaz, Marilyn (D: November 2023)
(Survived by F. C. "Charlie" Radaz)
Lompoc, CA
https://tinyurl.com/25rp528w

Silver, Dr. Aaron (D: December 2023)
(Survived by Annette Silver)
Cleveland Heights, OH
https://tinyurl.com/444tm9s6

Uhrlaub, Richard (D: November 2023)
(Survived by Rebecca "Becky" Uhrlaub)
Wheat Ridge, CO
https://tinyurl.com/26zhzsy9

Vinland, Steven (D: October 2023)
(Survived by Virginia "Ginger" Vinland)
Lakewood, CO
No obituary published

Non-Members
Camarotte, Charles "Charlie" (D: Dec 2022)
(Survived by Virginia "Ginny" Camarotte)
Falcon, CO
https://tinyurl.com/4evb5dbz

Damaso, Raymond (D: October 2023)
(Survived by Karen Damaso)
Highlands Ranch, CO
https://tinyurl.com/msk9bvhh

Eichler, Edward "Ed" (D: October 2023)
(Survived by Cindy Eichler)
Littleton, CO
https://tinyurl.com/46bw4nn3

Hinkley, Ardie (D: November 2023)
Castle Rock, CO
https://tinyurl.com/3yr4uy35

Hinshaw, Richard "Dick" (D: December 2023)
(Survived by Mary Beth Hinshaw)
Tifton, GA
https://tinyurl.com/289f3ssc

Jones, Kenneth "Kenny" A. (D: Oct 2023)
(Survived by Linda Jones)
Sedalia, CO
https://tinyurl.com/4ntwrekz

McNeill, Kevin (D: October 2023)
(Survived by Linda McNeill)
Ridgeway, CO
https://tinyurl.com/8vtsjf2p

Merrill, Thomas "Tom" (D: October 2023)
(Survived by Anne Merrill)
Aurora, CO
https://tinyurl.com/y8yb7rpa

Ortiz, John (D: December 2023)
(Survived by Lillian Ortiz)
Littleton, CO
https://tinyurl.com/adxmaxzz

Snodgress, Robert "Bob" (D: December 2023)
Sedalia, CO
https://tinyurl.com/2tj95euc

Tennis, Richard (D: November 2023)
White Springs, FL
https://tinyurl.com/4h2wkmys

Marketing Committee

By Richard Sosnay
(richardsosnay@gmail.com)

Our MARS Special Activities continued to be heavily supported in 2023. Since the last MARS STAR, we completed our 2023 Special Activities with a wonderful wine tasting. The following is a brief summary of our activities in 2023.

Event [Date]	Comments [Attendees]
Special Activities Accomplished in 2023	
ULA Plant Tour [Mar 6]	Great Tour of ULA [41]
Cherokee Ranch and Castle [May 16]	Wonderful Tour. Lunch held at Los Dos Potrillos [53]
Manitou (Pikes Peak) Railway [June 8]	Exciting train trip. Lunch Held at Crystal Park Cantina [51]
The Wildlife Animal Sanctuary [July 19]	Great Day with Lions, Tigers, Bears [31]
Central City Opera [July 26]	Kiss Me Kate [23]
LM Waterton Campus Tour Aug 10]	Great Tour of Waterton Campus [56]
WWII Museum of Aviation [Aug 17]	Lunch Held at Airplane Restaurant in Colorado Springs [37]
Wine Tasting [Nov 8]	Water2Wine [29]
Total Attendees	**321**

Following is a brief description of each activity for 2023:

ULA Plant Tour
The ULA plant Tour, led by Terry Lilly, toured ULA's Denver facilities on March 6. A great time was shared with MARS members and friends. The tour was written-up in the April 2023 MARS STAR, and a slide show can be found on the MARS Web Site.

Cherokee Ranch and Castle tour
The MARS Members had the pleasure of experiencing a tour at Cherokee Ranch & Castle in Sedalia, CO on 16 May, led by Pete Munoz. That tour was written-up in the July 2023 MARS STAR, and a slide show can be found on our MARS Web Site.

Manitou (Pikes Peak) Cog Railway
This trip was coordinated by Robin Zen. We had 51 members and guests of MARS Associates participate in the Manitou Cog Pikes Peak train trip, for a 3-hour tour on June 8. That tour was written-up in the July 2023 MARS STAR, and a slide show can be found on our MARS Web Site.

The Wild Animal Sanctuary
This trip was coordinated by Carolyn Mallaby. We had 31 MARS members and friends make the drive to Keenesburg to see the lions, tigers, bears and more at The Wild Animal Sanctuary on July 19, 2023. That tour was written up in the October 2023 MARS STAR and a slideshow can be seen on our MARS Website.

Central City Opera
The Central City Opera visit was led by Sue Janssen. A total of 23 MARS members and guests got to see a matinee performance of Kiss Me, Kate at the wonderful Central City Opera house on July 26, 2023. That tour was written up in the October 2023 MARS STAR and a slideshow can be seen on our MARS Web site.

LM Waterton Campus Tour
The LM Waterton Campus tour was led by Judy Nielsen. A total of 56 MARS Members and guests got to partake in two Waterton Campus tours, on August 10. That tour was written up in the October 2023 MARS STAR and a slideshow is being prepared for our MARS Web site.

World War II Museum of Aviation in Colorado Springs
The World War II Museum of Aviation was led by Judy Nielsen. On August 17, a group of 37 MARS retirees from the Denver area and Colorado Springs met at the Aviation Museum for a two-hour guided tour. That tour was

written up in the October 2023 MARS STAR and a slideshow is being prepared for our MARS Website.

Wine Tasting

This activity was coordinated by Terry Lilly and Robin Zen. We had 29 members and guests of MARS Associates participate in the wine tasting on November 8. The experience included tasting of Peach Apricot Chardonnay, California Viognier, New Zealand Sauvignon Blanc, Diablo Rojo, Sangiovese, Rattlesnake 2.0. Following the tastings, each attendee received a full glass of any wine on the menu.

Water2Wine, located in the Oakbrook Shopping Center (on County Line Road, near Broadway), offers over 40 different wines for tasting. This is a fully operating winery where their wines are blended, oaked and fermented onsite. They start with grapes sourced from vineyards around the world. Melissa, the owner, explained each of the six wines before we tasted them. She also did a great job serving all of us by herself!

Terry and Robin provided a nice assortment of fruit, cheese, crackers, and chocolates that worked well with wine.

Thank you to everyone who joined this adventure! A slideshow is being prepared for our MARS Website

Planning for 2024

We have started our planning for the Special Activities for 2024 -- we have identified almost 25 activities as possible. A summary was presented at our MARS Picnic, and we asked people to indicate which they were interested in, and which they wanted to lead. This was followed by an online survey and another summary presentation at our Holiday Luncheon. As usual, the toughest part is not finding new activities to do but finding volunteers to lead those activities. Based on the results of the various surveys, and the volunteers we have already had to lead activities, the following is a brief summary of the special activities we are looking at.

Planned 2024 Special Activities		
Activity	**Lead**	**# positive**
LM Plant Tour	Judy Nielsen	38
ULA Plant Tour	Terry Lilly	29
Glenwood Springs Train Trip	Robin Zen	55
Colorado State Capitol Tour	Kathy Hetzel	47
The Wild Animal Sanctuary	Carolyn Malaby	38
Denver Mint Tour	Robin Zen	30
Colorado Railroad Museum	Robin Zen	30
Highlands Ranch Mansion	Carolyn Mallaby	32
Kansas Cosmosphere	Bill Edwards	15
Wine Tasting	Terry Lilly/Robin Zen	21
Central City Opera	Sue Janssen	
Potential Special Activities		
Activity	**Lead**	**# Positive**
Denver Botanic Gardens	None	39
Arvada Center for Performing Arts	None	30
Balloon Glow, Colorado Springs	None	39
Cripple Creek Train	None	37
Distillery Tour	None	26
Georgetown Loop Railroad	None	22
QUEBEC01 Missile Alert Facility	None	40
Molly Brown House	None	23
Buffalo Bill Museum & Grave	None	16
Coors Brewery Tour	None	34
Forney Museum of Transportation	None	27
MARS Movie Night at AMC Theatres	None	22
Air Force Academy Self-Guided Tour	None	29
Denver Walking Tour	None	16
Newly Identified Special Activities		
Cheyenne Mountain Zoo	CO Springs	
Cave of the Winds	CO Springs	
The Broadmoor Seven Falls	CO Springs	
Helen Hunt Falls	CO Springs	
Air Force Academy Planetarium	CO Springs	
Broadmoor tour and Lunch	CO Springs	
Colorado Springs Zoo	CO Springs	
Olympic Training Center	CO Springs	
Sculpture in the Park	Loveland	

Several newly identified activities have also been added to this list. Sue Janssen volunteered to get tickets again to the popular Central City Opera. As a result of our surveys, several folks volunteered new ideas that have also been added to the list. Look for more information on our website, in MARS mass mailers, in future editions of the MARS STAR, and on our MARS Facebook page. If you are interested in attending any of these activities, please let the activity leaders know. If you are interested in leading any of these activities that do not have leaders, or if you have any other great ideas for new activities in 2024, please let me know.

Volunteer Activities

By Judy Nielsen
(jniel129@gmail.com)

For this edition of MARS STAR, we once again do not have a volunteer team report.

This gives me an opportunity to remind our retirees, that if you serve your community, we'd like to hear from you. As Uncle Sam used to say – WE WANT YOU!

Each quarter, we would like to highlight a volunteer and their organization in the MARS STAR. If you are interested in sharing your volunteering experience(s), please send your write-up to Judy Nielsen, MARS Volunteer Activity Coordinator, at jniel129@gmail.com. Not only will this provide recognition for the good work being done, but it will also encourage others and will provide information for those looking for volunteer opportunities. Additionally, we will donate $50 to that volunteer's charity/organization.

As for volunteer opportunities within Lockheed Martin and United Launch Alliance, I am happy to report that things have opened up. We recently received a request from LM Space for volunteers to support the upcoming Waterton Auto Show (and show their classic cars), as well as a request for Bike-to-Work Day volunteers. We also had six volunteers for the Operation Santa Claus Fun Run. So, if you have not already submitted your name and email address for volunteer consideration, please send an email to jniel129@gmail.com.

There are other volunteer activities you can become involved in within MARS, so please contact Judy Nielsen, or any officer/director to find out more.

Happy Volunteering!

Historian Corner

By Barb Sande
(barbsande@comcast.net)

Program Profile

This issue continues a multi-part series on the Skylab orbiting laboratory and the crewed missions for their 50th anniversaries.

Planned Articles:

Skylab Part I: History of a Space Station Concept; Skylab is Born – COMPLETE, in 2023 Q2 MARS STAR

Skylab Part II: Mission Objectives and Plan, Technical Features of the Skylab Design; Integration and Test, Launch of Skylab 1; Skylab Anomalies – COMPLETE, in 2023 Q3 MARS STAR

Skylab Part III: Skylab 2 – Skylab Anomaly Resolution; Crew Selection and Training, First Crew; Skylab 2 Launch, Workshop Repairs and First Mission – COMPLETE, in 2023 Q4 MARS STAR

Skylab Part IV: Skylab Memories – Memories from Martin Marietta Retirees – **This issue, 2024 Q1 MARS STAR**

Skylab Part V: Skylab 3 – Station keeping between Crews, Second Crew, Experiments - 2024 Q2 MARS STAR

Skylab Part VI: Skylab 4 – Final Crew, Potential Plans for Skylab, Demise of Skylab in 1979 – 2024 Q3 MARS STAR

Introduction to Part IV

At the beginning of 2023, I put out a request for stories from retirees that worked on the Skylab Program. I received several articles and am grateful for the interesting background from these folks who worked on that program. These are in no particular order so sit back and enjoy the personal anecdotes! I did very little editing of the stories to preserve the personal nature of the submissions. I have also asked permission from these gentlemen to include their email addresses in case anyone wishes to contact them directly.

Paul Taylor
Training Department Assigned to Skylab

I was in MMC's Training Dept. on Titan I and was laid off in 1964. After several years as an instructor in the computer industry, I was re-hired by MMC in 1971 by the Training department. My first assignment was on the Skylab Program. MMC had the Earth Resources Experiment Program, several packages measuring radiation emissions, etc., along with a group of 6 cameras taking pictures of the same locations as the Lab orbited the Earth. The cameras had a number of filters (some infrared). Our task was train others in the use of these systems.

Mil Tanner, an instructor in the Training department that I knew from our Titan I days was my partner in this program. We taught classes to the Astronauts at the Space Center at Houston, MMC people at McDonnell-Douglas in St. Louis, and MMC people at the Cape. Teaching the astronauts was different -- there was no roster and they came and went as they pleased during class. You didn't ask them questions, they asked you questions. Some slept, some were very attentive. I

remembered some of them and met them again years later, on MMC's AF Shuttle Integration Contract.

I hired on with MMC in June, 1959 from the Air Force at Lowry AFB. I was in a support group here in Denver that supported a Titan I training group at Vandenberg. In 1965, I was laid off with about 6000 other employees and got a job working for the Burroughs Corp.. From there I went to Scientific Computer Systems in LA in 1967. In 1971, MMC offered me a position in their Training department and I was assigned to Skylab (see story above). From that program I went on to the Viking Program and taught classes on the operational uses of Viking for a year. I was laid off in 1965 and in 1968, I was rehired to teach a computer systems course on PACE, the new computerized Launch Control and Checkout System for Titan. From there I worked various programs and a lot of proposals and retired while in Defense Systems in 1991. Paul Taylor can be contacted at amricsfolks@earthlink.net

Phil Carney
Skylab Support Flight Mechanics

I started with Martin Marietta on a Monday morning in early 1969 having graduated with a BS in Aerospace Engineering the previous Wednesday. I was twenty-one, with fifty dollars in my pocket and the promise of a $9,750 annual salary in my future. To put this in context, it was more money than my father was making after working twenty years as a motorman on the Philadelphia subway.

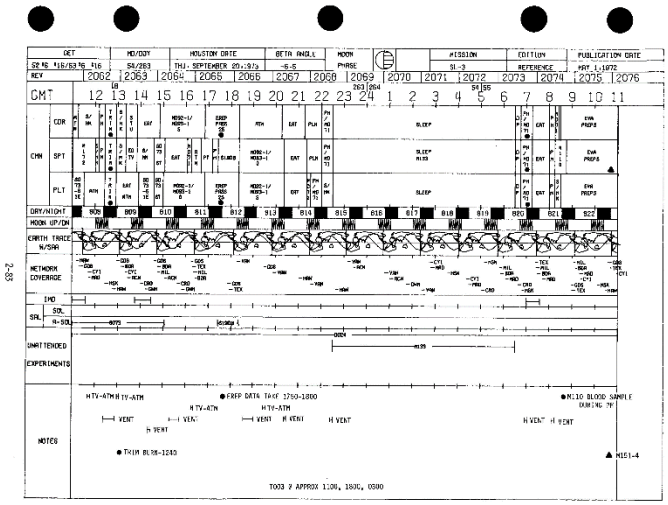
I was assigned to the Flight Mechanics Section and placed under the mentorship of an experienced gentleman by the name of Dick M. There were two Martin Marietta Systems Engineering groups supporting Skylab at the time. One supported NASA Houston (Johnson Space Center, aka JSC) and the other supporting NASA Huntsville (Marshall Space Flight Center aka MSFC). The Flight Mechanics group, and Dick M. in particular, was acting in a supporting role to the company's JSC System Engineering group.

To plan astronauts' activities one of the critical parameters was to know where the space station was at any given time. Hence the involvement of the Flight Mechanics organization. Dick M. was using printouts from JSC to propagate Skylab's orbit using a slide rule and an electro-mechanical calculator as his primary tools. *(Sidebar – that electro-mechanical calculator took up almost half of a desktop and made enough noise to rattle the dentures out of employees nearing retirement).* The HP-25 pocket calculator with its ability to store 49 programming steps was still over a half decade in the future.

Dick M. introduced me to Kepler's equations and we spent hour after hour solving solid trigonometry equations to determine when Skylab would be over various sites around the world. The most challenging Earth targets were those used for the Earth Resources Experiment Package (EREP) because these were of very small, irregular shapes. After a while, I asked Dick why we didn't just write a computer program to do this work. At the time Dick was in his mid-forties and was not of the computer literate generation that was just beginning to impact engineering. (I might say Dick was "old school" but then I should classify myself as a dinosaur today.) Dick asked if I knew computer programming and I replied in the affirmative. (*Another Sidebar – I learned FORTRAN over a weekend in college so I could apply for a job the following week with a physics professor who needed an "experienced" programmer. I needed money for school and I was willing to stretch the definition of "experienced" to earn it).*

So, Dick got us a charge number on an IBM 1130 and we started moving our (really his) equations into our (really my) lines of code. Dick spent several hours doing hand calculations to ensure that the computer results were accurate. To say that Dick was thrilled at seeing how fast results could be achieved using the computer would be a major understatement. And of course, he wanted to see this fantastic machine in person so we walked over and I gave him a quick tour of the 1130. Dick had lots of questions but the one question that would impact us and many others the most was when he asked, "What is that" as he pointed to a small Calcomp plotter. He asked if I could plot the orbit and Earth features underneath. I asked if he could write the equations. We then adjourned back to the office to think our potential answers over.

Plotting the orbital path turned out to be the least difficult part of our new mini-project. A bigger challenge was plotting the irregularly shaped continents and in particular those EREP targets. And of course, one must appreciate that we are talking about a rotating coordinate system - the Earth rotating on its axis while the spacecraft revolving around it at the same time. To make a long story short I spent many hours in the library recording the latitude and longitude of the Earth's prominent features while Dick spent his time making sure all the coordinate systems were properly managed in the equations. It all worked out and the little IBM 1130 computer and its 12" two-axis flatbed Calcomp plotter cranked out plots of Skylab's first (proposed) thirty days of operation in a bit less than twenty-four hours. Fantastic - except for the part where someone had to change plotter paper every five minutes and make sure its ballpoint pen didn't run out of ink.



Example of Daily Orbital Flight Plan for Skylab

"I want to show you something," Dick told me several days later. We walked over to the Administration Building and into a large bay where rows of draftsmen sat at large tables. They were drawing illustrations of Skylab flight plans showing what each astronaut was supposed to be doing. Dick asked if I could plot these illustrations with Skylab's ground trace underneath. Several people were standing around waiting for my answer and except for Dick I knew none of them. I remembered my answer to be pretty sheepish at the time and along the lines of "I think so."

Reconvening back in the office Dick, Casey (the Flight Planning lead) and myself proceeded to strategize on what needed to be done. Casey would get a Univac 1108-produced magnetic tape from JSC listing every ascending node coordinate and we would propagate each orbit from there using Kepler's simple equations. This would save "expensive" computer time on the in-house CDC 6500 which I would use to calculate time over target. Dick expanded the "targets" list to include the continents, EREP sites, ground communication stations, and the South Atlantic Anomaly.

It was also decided to add a variety of other data that users might consider useful. This included date, orbit number, day-night cycles, and moon phase, and Beta angle. The astronaut activities and a large notes field were to remain vacant during a first pass computer run and then be filled in by Systems Engineering for a second past computer run. There was one final issue which was where/how to plot the data. The slow 1130's Calcomp was not realistic and the film plot capability of the CDC 6500 was considered undesirable. Finally, I located an IBM360/30 with a three-axis Calcomp drum plotter in the GPL Building and Wendell, the manager for the computer, was excited to join our completely unofficial Skylab Computerized Flight Planning Team.

It took many false starts but we came up with a really-nice flight planning tool for Skylab. Except for the draftsmen who were hand-drawing the previous versions, everyone at Martin Marietta was very happy with the result and I was asked to make a presentation about the process and software to the NASA people at JSC. The only thing I really remember about this meeting was how terribly awkward I was. In retrospect I am surprised I didn't wet my pants (maybe I did and it is now just a suppressed memory).

Returning to Denver I was given a "Zero Defects" ashtray which to this day I still own and consider ridiculous. I understand the ashtray part because it was a time with different standards but give me a break, who accomplishes anything that has "zero defects"?

After the software was complete, I lost interest in simply maintaining the code so another engineer was assigned to take over my responsibilities. Besides, I heard about another project on the horizon called Viking and that had my interest. Fifty some years later I'm still doing mechanical engineering in support of small businesses and individuals wishing to establish a startup. I consider Skylab and my present activities the highlights of my still ongoing engineering career.

Editor's note (suggested by Greg Bollendonk): This early trajectory software approach led to development of Program to Optimize Simulated Trajectories (POST). POST development began in the early 1970's in partnership with the Martin Marietta Co. as a space shuttle simulation program. POST has become a mainstay mission design tool over the past 50 years.

Program to Optimize Simulated Trajectories II
https://www.nasa.gov/post2/history

Phil Carney worked for Martin Marietta and Lockheed Martin from August 1969 through 2005. He held various engineering roles on a wide variety of Earth and planetary programs. Phil can be contacted at: Phil.carney@comcast.net

Bruno Jambor
T027 Experiment Design Skylab

I owe my career at Martin Marietta to the Skylab Program; more specifically to what was called Technical Objective 27 (TO27). That experiment was designed to study the Zodiacal Light, and the light scattered by contamination particles floating around Skylab—something that worried space experimenters in those days.

The Zodiacal Light is a faint cone of light visible in the sky in a band of the celestial sphere extending about 8° to

either side of the ecliptic that represents the path of the principal planets, the moon, and the sun. In mid latitudes, it is seen before sunrise in the East in the Fall, and after sunset, in the West in the Spring. It is caused by the scattering of sunlight by small particles. The TO27 instrument was a photometer that could be deployed from Skylab on a scissor-like extendable-boom mechanism to allow scanning the sky away from the Lab or back towards it. The analysis of the data required a calculation based on light scattering from small particles, known as the Mie scattering theory.

On January Sixth 1972, I was a graduate student at the University of Illinois in Champaign, finishing my Ph.D. thesis in astronomy, analyzing data from comet tails, using the Mie scattering theory. I received a call from somebody who said they needed an expert in scattering theory. Would I be interested in coming to Littleton and work for Martin Marietta on the Skylab Program? I expected to finish my thesis by March and getting jobs at universities was very difficult that year. The man said he was a principal investigator of one experiment and wanted me to come out to Colorado for an interview. That was an offer I could not refuse. So, in mid-March, my thesis finished, my wife, our newborn son, and I headed for the Rocky Mountains.

As soon as Skylab was launched, troubles began. One side of the solar panels would not deploy, seriously reducing the on-board power, raising temperature inside too high for the coming crew. Brainstorming to save the mission came up with a partial solution: sacrifice the TO27 experiment, and use the deployable extension of the photometer to mount a large parasol to provide shade to cool Skylab, thus allowing the crew to work on the top priority solar experiments. Thus ended my career as a scattering expert, and a series of adaptations to other jobs at Martin Marietta began. After adventures in fiber optics and solar energy, I settled for Vehicle Health Management expert, researching ways to better control launch vehicle engines for the Air Force. This took me to my retirement years after thirty-five years at Martin Marietta and Lockheed Martin.

One mystery remains: how did the principal investigator find my name and call me? The answer resembles a fiction novel, but it is a true story. The Martin investigator was working with his counterpart, the Zodiacal Light investigator who was at the State University of New York in Albany (SUNYA). They were looking for a scattering analyst to hire. The Zodiacal Light expert knew somebody who was an international authority in that field. He was a professor at Rensselaer Polytechnic Institute (RPI) in Troy, NY. So, he contacted him. It so happened that I had been one of his graduate students at RPI, where I learned the skill under his supervision. Before I could start a thesis there, that professor took a job at the University of Leiden, in the Netherlands, for a few years. Left without an advisor to do a quick thesis, I transferred to Illinois. Close to the finish line, I wrote my former professor, now in Leiden, to inform him about my whereabouts, as a simple courtesy. That is when he received the inquiry about the potential job candidate. The Martin Marietta investigator tracked me down to the basement of the University of Illinois Observatory.

Never burn your bridges! A courtesy letter can have unsuspected consequences. It helps to have unique skills, but adaptability is a must in order to ensure an enjoyable career.

Bruno Jambor joined Martin Marietta in April 1972. He worked in the Optical Instrumentation section then in the Software Department. One of his memorable assignments was the X-33 program. He also worked on engine health management under contract to USAFB in Dayton. He retired in 2007. Bruno can be contacted at: veraldy42@gmail.com

Jack Detmers
Skylab Camera Housing Box Design

I worked on a small part of Skylab in the 70s. I designed the camera housing box. There was about one cubic foot of space in the box at sea level. That equated to somewhere around 100,000 cubic feet of space at Skylab's projected flight elevation. This fact has remained with me for all these years. It's hard to imagine the things we learned doing our work during these times.

Jack Detmers started with the Martin Company in Denver April 11, 1957. He initially worked with Facilities Engineering designing the main plant and test facilities. Over the years, he worked with design teams for the Titan program, C5A transport, Viking Mars probe, Skylab, engineering of Launch Pad 41 at Cape Canaveral, and early development of the MMU. He retired in 1993. Jack can be contacted at: jandmdetmers@gmail.com.

Stan Hightower
Thermal Control Systems Design & Support

Having worked closely with NASA MSFC personnel for several years in the design of the Skylab Thermal Control Systems (TCS), I led a five-person team from Martin who moved to Huntsville to provide flight support for the Huntsville Operation and Support Center (HOSC). The HOSC was like the Mission Control Center in Houston, which had consoles to monitor the performance of the systems in the CSM and the astronauts, while the HOSC had consoles to monitor the

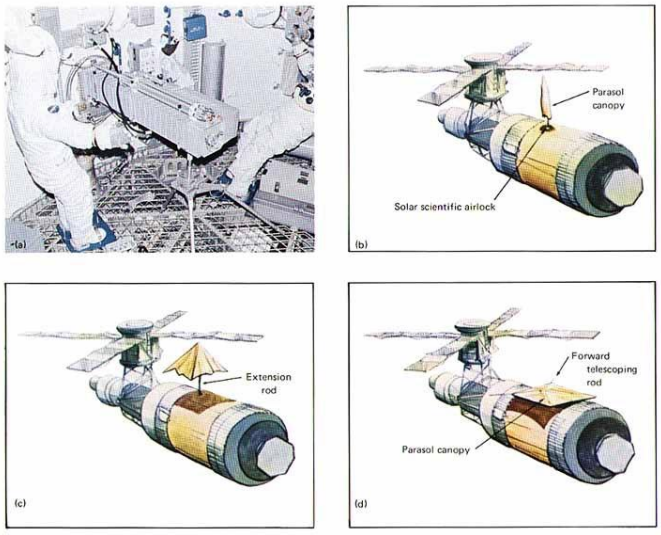
performance of all the systems of the Skylab, including those in the Workshop, the Airlock Module, MDA, and the ATM. The two centers operated together during the Skylab flight. Our team, (Coyne Prenger, Jim Neuman, Gary Wilson, Dick Sosnay, and I), supported NASA engineers responsible for the OWS thermal control and environmental control systems, (TCS/ECS). We took turns 24 hours a day manning a flight console and a back room in the HOSC with NASA TCS/ECS engineers.

When the Skylab was launched on May 14, 1973, we noticed the temperature of the workshop was running much hotter than expected and kept getting hotter and hotter each orbit until it went above the upper limits of our sensors. Other engineers also noticed from their data that the huge cylindrical micrometeoroid shield and one of the photovoltaic arrays had fallen off the workshop. The other workshop array also was stuck against the side of the workshop. The launch of the astronauts was immediately postponed for 10 days. In that ten-day period, emergency teams of engineers were formed by NASA and its contractors, all over the U.S. to assess the problems, design, build, test, and deliver the equipment and tools needed to save the Skylab.

I served on the TCS/ECS emergency team led by Dr. Wayne Littles and George Hopson from NASA MSFC. We worked together in a separate building for 3 days and 3 nights after the launch of the Skylab with very little sleep. The Skylab was initially rolled away from the sun to reduce the temperature, since there was a concern that poisonous gases might outgas from the foam insulation in the workshop, but when doing this it reduced the amount of power being produced from the ATM photovoltaic arrays. By using trial and error, it was found that the best compromise was to fly the Skylab with its centerline held at a 45-degree angle to the sun. This lowered the temperature inside the workshop to about 130°F and the lower power level was acceptable, while the various teams were trying to come up with ways to save the Skylab.

When the Skylab was designed, my group had developed a detailed thermal computer model, which calculated the temperatures of all the inside and outside surfaces of the workshop as it went in orbit around the earth. The computer model was large, because the workshop was about the size of a 3-bedroom house. Our group in Huntsville worked day and night, with the help of engineers in Denver, to change the computer model so that it would match the workshop without the meteoroid shield and was updated each time a new concept was being considered as a thermal shield to shade the sun-side of the workshop. As a result of our studies, using this computer model, it was concluded that if a large rectangular solar shield could be deployed in front of the workshop to shade it from the sun, the inside temperatures could be reduced to a comfortable level to live in. Because of the limited space inside the Command Module, only three concepts were considered in detail to be flown with the first crew.

The first concept, which was selected for initial use, involved a 22 ft square thermal shield, which operated like a huge parasol. This shield could be fitted into a canister, originally developed to house an experiment, which was to be deployed through a scientific airlock, which was already located on the inside of the workshop, facing the sun. Once outside, the shield popped open like the familiar parasol, with four struts extending outward from a segmented center post. To deploy it, the crew pushed the center post outward one segment at a time, which extended the struts and opened the parasol. The installation process is shown in the photo and diagrams below.



The second concept, which was later deployed by the second crew, required the astronauts to go outside the Airlock Module and attach two 55 ft. long poles onto the ATM structure. Like using two sail boat masts with lanyards and pulleys on the end of the poles, the astronauts pulled the cloth solar shield out over the workshop, on top of the parasol shield. The photo below shows the installation on Skylab.

The third concept was to have the crew rig a shield in front of the workshop, while standing in the open hatch of the Command Module using ropes to attach it to the workshop and the ATM structure. This concept required careful maneuvering to keep the command module close to the Skylab, while the crew worked to avoid a collision of the two and the uncertainty of the crew's ability to tie the shield led to the decision to take this shield along, but only as a backup alternative.

Many fabric materials were considered for the solar shields. The material that was selected was made of parachute cloth with a reflective aluminized mylar backing that faced the workshop. Seamstresses were flown down to Huntsville from Samsonite in Denver to sew the material together on the hanger floor. The three solar shields were packed in the Command Module before liftoff along with other tools and repair hardware. As the astronauts were launched on May 25, we heard Pete Conrad say, "This is Skylab 2, we can fix anything." When the parasol shield was deployed, the temperature came down as fast as we had predicted. After a while, however, it leveled off at a comfortable temperature, but somewhat warmer than what we had predicted. We found out later that there was a large hot spot on the inside wall of the upper crew quarters, because some of the cloth had stuck together in one corner of the parasol. When the second crew deployed the second solar shield with the two poles attached to the ATM structure, the hot spot was fully covered and an even more comfortable temperature was maintained inside during the last two flights.

The hot spot was used to our advantage in solving a later emergency. When the crew had come back inside after freeing the workshop photovoltaic array, it appeared that small solid particles had become stuck inside two control valves that were used in the system which cooled their long underwear inside their space suits and the system was getting colder and colder. This was a serious problem, because this system was also used to cool all the electronics in the Skylab and if it should freeze and stop, the required cooling could not be provided for the electronics. We were told that if a large amount of heat could be put into this system all at once, it may force the control valves to open and flush away the particles. We had the crew reactivate and duct-tape their long underwear to the hot spot in the workshop and when they cycled the system on and off, this floated away the particles and there were no more problems with this system the rest of the Skylab mission.

The Earth Resources Experiments and other experiments required rolling the Skylab to aim at the earth and other pointing maneuvers for short periods of time. Our group had to use our thermal computer model and hand calculations to predict how much the temperature would increase each time, so were kept busy providing predictions and advice during all three flights of the Skylab.

After splashdown of the first crew, I was asked to fly with Dr. Littles in the NASA plane to Houston to participate in the debriefing of the first crew of astronauts, Conrad, Kerwin, and Weitz. This was an interesting experience and I really enjoyed it. When the Skylab mission was over on February 8, 1974, and we returned to Denver, I was assigned to assist Dr. Littles in writing the Thermal Control and ECS portions of the hard-bound book, "Skylab, Our First Space Station" (NASA SP-400) which was published by NASA, MSFC. (Editor's note: This book is available from the NASA on-line archives and is also available from amazon.com and was used as a reference for this series of articles).

The mission of the Skylab was so successful that the first crew stayed the planned 28 days, and the last two crews stayed longer than what had been planned, staying 59 and 84 days as compared to the 56 days that were originally planned. Since we lived together night and day to help solve what appeared to be insurmountable problems on the Skylab, we became the best of friends. As a result, there is a group of us from Martin who have gotten together at least once a year in December for the past 50 years to share our experiences in the design and flight support of the Skylab thermal control and environmental control systems for not only the OWS, but also the ATM, and the MDA. It was a great experience that we all will long remember!

Stan Hightower started with Martin Company in Denver in 1963 after serving 3 years as an officer in the Air Force at Vandenberg AFB, California. He was assigned to Advanced Systems, working on studies and proposals for new business. Working in the Propulsion Division, he worked on studies of new propellants, pressurization,

and propulsion systems. He then worked on the design of a thermal control system for a large experiment pallet that flew on one of the Apollo CSM flights to the moon. He received one of the "Engineer of the Year" awards from NASA. He worked on the design of thermal control systems for the Skylab when it was first started under the Apollo Applications Program in 1966 and ended in 1974 after providing flight support in Huntsville, AL. He volunteered for an early retirement in 1976, to work with the U.S. Bureau of Reclamation where he was the manager of a group that built and tested two of the first large utility sized wind turbines in Wyoming. He retired from the Bureau in 2000. Stan can be contacted at shightwr@aol.com.

Bill Bollendonk
Systems Manager Earth Resources Experiments Package
(*An excerpt about Skylab EREP CDR from Bill Bollendonk's memoir, "Building Memories" written in 2005, provided by his son Greg*):

The Critical Design Review (CDR) for our Skylab EREP hardware was an interesting milestone for the program in that it was really out of position compared to the state of some of the hardware. The Martin end-items, including the C&D (Control and Display) Panel, the Ampex tape recorder and the optics for the S 191 experiment were well beyond what would be expected at a CDR, but the other experiment packages being supplied by the Universities and their contractors were well behind the curve and causing considerable worry as to delivery for systems tests in the MDA.

The science community doesn't march to the same drum as its counterpart contractors and the disconnect was meaningful since the experiments were still changing requirements that impacted the EREP interfaces. Colin Jones and a small team were kept very busy matching the changes from the experiment investigators to the control hardware, that in some cases was through the qualification program. The interfacing control and data recording hardware was purposely designed to allow as much flexibility as possible for late changes, but that did not always work and the engineering change traffic after the CDR was one of the key reasons that the program grew in cost. Cost was becoming a major concern and at every program meeting at JSC with Kenny Kleinknecht (JSC Skylab Program Director), and the topic of controlling costs was always a key agenda item. Throughout the program cost increases plagued EREP.

The CDR was held in the large conference theatre in the Space Support Building (SSB), at the Waterton plant and was attended by a horde from JSC. Each of the organizational groups made lengthy presentations concerning the status of the hardware, documentation and other deliverables followed by smaller groups that reviewed the current costs and projections. The technical presentations took several days and since I was the systems manager, I was presenting for a good deal of the time. The presentation was by backlit screens illuminated by viewgraphs and I think the package of viewgraphs that I used was over 5 inches thick and the handouts for the attendees filled many boxes. Paper seemed to be one of our most important products.

Each end item was presented by the responsible PIE (Product Integrity Engineer), with many questions and discussion by the listeners. Any questions that could be answered, or more importantly had contract implications were submitted to the CDR review board consisting of NASA project office people and Gene Wood and his managers. Probably the single most memorable event during the CDR was the presentation of the design and status of the S 191 pointing and tracking system made by Bob Smith [retired USAF Lieutenant Colonel Robert W. Smith]. Bob had demonstrated the engineering unit that he used to convince Pete Conrad of the control viability to the NASA CDR team the day before, so most of the questions had been answered.

The Martin Skylab Program Director, Bob Malloy, had, as staff support, Dr. Carl Kober who advised on technical matters concerning all aspects of the Martin parts of the program. Dr. Kober had worked with the Peenemunde group on the V2 rocket program and also with the optics development for submarines. He held two PhD's and often corrected people about his title being Dr, Dr. Kober. Karl was a brilliant man and made many contributions to the success of the program, but he had a way of rubbing people wrong and that happened during Bob Smith's presentation.

During the development of the optics associated with the S 191 there had been a great deal of concern about the use of commercial, off the shelf lenses, especially a French 10X telephoto lens. After much testing, the NASA optics project people had agreed to the performance and signed off on the design, but that still left many people unconvinced. One of them was Dr. Kober, who kept badgering Bob during his presentation, questioning almost everything. Hard to believe that one of our own would try so hard to have us presented in a bad light, but he did until, at one point Dr. Kober stated that the system would not work as presented and that he knew it wouldn't as he held two doctorates in optics and had been a principle in designing submarine optics. I will never forget Bob's answer, "Perhaps, Dr. Kober, that is why Germany lost the war." The room became deathly quiet: Kober, who always was red faced, looked more so, Bob Malloy was steaming, Gordon Stucker could hardly contain himself, and the rest of the audience was

split between holding their breath and snickering. Bob Smith could go toe to toe with anyone and Kober got the message. There may have been some back room "ass chewing," but that never surfaced and Bob and Karl oiled the water and continued to be friendly, if only coolly.

The EREP design approach to use commercial optics flew on Skylab with performance that exceeded specifications. Skylab EREP sensor systems recorded more than 35,000 photographic film frames and 238,000 feet of magnetic tape over 110 orbital passes.

Skylab EREP Data Summary

Mission	Passes	Photographs frames	Magnetic tape, m	Magnetic tape, ft
Skylab 2	13	5,275	13,716	45,000
Skylab 3	48	13,429	28,529	93,600
Skylab 4	49	17,000	30,480	100,000
	110	35,704	72,725	238,600

Editor notes (from Greg Bollendonk, Bill's son): The onboard Earth Resources Experiment Package (EREP) was the Earth pointed camera system. Although EREP was electro-optical, the images were recorded by onboard by tape recorders and film cameras and returned to Earth via Apollo capsule for processing. This was a precursor to NASA Landsat program.

The Skylab EREP Critical Design Review (CDR) was held 8-11 December 1970. See the Skylab EREP CDR package on NASA NTRS archive server: https://ntrs.nasa.gov/citations/19740014848 and https://ntrs.nasa.gov/api/citations/19740014848/downloads/19740014848.pdf

Skylab EREP Investigations Summary, NASA SP-399, Washington DC: USGPO, 1978, 386 pages. Also available online at https://history.nasa.gov/SP-399/sp399.htm

Greg also submitted this additional short story and photo about the Earth-based lunar calibration process: NASA contracted Martin Marietta to build and operate spare Earth Resources Experiment Package (EREP) instruments to simultaneously image the moon from Earth while imaging the Moon from Skylab orbit. The Martin engineers and technicians constructed a mobile vehicle containing spare EREP flight instruments as flown during the Skylab missions in 1973 and 1974. The purpose of the vehicle was to drive the spare instruments to a remote location, where the instruments would image the Moon simultaneously with the flight instruments during the final Skylab mission. The intent of the project was to determine the influence of Earth's atmosphere on the spectral data collected by the flight Skylab EREP experiments.

The mobile vehicle was driven from Martin Marietta's Waterton Canyon facility to Mount Capulin National Monument in northern New Mexico, where the lunar imaging would take place. The image below shows several personalities doing this calibration process (Tom Booth, Gordon Stucker, Gene Wood,...):

Manned Skylab missions:

Skylab 2: 25-May-1973 to 22-Jun-1973
Skylab 3: 28-Jul-1973 to 25-Sep-1973
Skylab 4: 16-Nov-1973 to 08-Feb-1974

Full Moons during Skylab 4:

December 8, 1973
January 6, 1974
February 5, 1974

Bill is a New York City native glad to relocate to Colorado and study Electrical Engineering at CU Boulder. Bill joined the Glenn L. Martin Company in 1956 to work on the Titan I program. In addition to Titan I, Bill had a long aerospace career working Titan II, Viking, Skylab EREP, Shuttle Caution & Warning and PIC, Peacekeeper, Manned Maneuvering Unit, and Tethered Satellite. Bill retired as a program director in 1990. Bill has enjoyed a second career actively restoring and enjoying pre-war MG's. Bill can be contacted through his son Greg at Gregory.R.Bollendonk@lmco.com.

Eugene Pickett
Design of Daily Work Assignments for Crew

My assignment to be a part of the Martin Marietta Skylab work force began in 1970. I was selected because of my experience in helping develop the design of the

computer Automated Wiring System (AWS) drawing system for the Titan programs. My Skylab assignment was to be a part of the Martin engineering group to develop the computer-generated documents for scheduling the daily work assignment for each crew member.

The work in Denver lasted until the spring of 1972 when we were finally informed to prepare for transfer to the Johnson Space Center in Huston to get ready for the launch phase of the program. We sold our home in Littleton and purchased a home in Pearland, Texas which was near the NASA facility.

Our engineers worked in a computer area just off of the Mission Control room. We consisted of three teams each assigned to an 8-hour shift for the three daily shifts required. We had a team on duty 24/7. Our proximity to the control center allowed us to immediately respond to any crew schedule changes from the control center, update those changes and send them to the crew in the Skylab space station. Every two weeks we would rotate to the next shift for a two-week period. Bill Carmine was our Engineering Manager.

The launch of the Skylab vehicle into orbit soon came and two serious problems occurred during that launch which almost canceled the program before it got started. One of the solar panels partially opened and was ripped from the vehicle taking with it a large area of the outer surface of the vehicle which controlled the interior temperatures for the crew living area. The other solar panel opened part way and jammed. These problems made it impossible to make the interior livable for the crew or provide enough electrical power to perform all the power tasks needed. Program management took several days studying the problems and how to fix them to allow the program to continue.

It was decided to send up the first crew with two possible repair packages with all the tools and materials needed. This extra weight meant that several experiments had to be canceled because of weight restrictions. A "Betsy Ross" staff sewed together a reflective cover to be installed over the damaged exterior of the vehicle and the second was a "solar sail" which was not used. The crew performed an EVA and installed the cover and it provided the needed control for regulating the temperature inside. The jammed solar panel was a very stubborn issue and the crew spent a lot of effort before they finally could fully open the panel and get it to work.

Our teams were kept busy with daily changes to the crew members' activities such as crew members getting sick, experiments not working, more time needed for an activity, and so on. We had to account for every minute of each 24-hour day for activities such as eating, sleeping, toilet duties, personal care, experiment management, Skylab maintenance, and scheduled periods of communication with mission control.

Our family slowly adjusted to living in Texas. Our three older children hated leaving their classmates in Littleton which they had known since elementary school. Our twins began their first year of school during the last school year of our stay in Texas. We definitely did not like the hot, humid weather, the torrential rains, tornado alerts (one small one touched down in our subdivision a week before Dana and I was there looking for a home), boarding up our home during hurricane alerts, and living among hordes of insects such as roaches, spiders, fire ants, and aggressive red wasps. We had to continually hire a pest control company to protect the house. The walls of the unattached garage crawled with all kinds of insects when the light was turned on at night.

Although my time was limited during busy times at work my wife and I spent as much time as we could with the children visiting local places such as the Johnson Space Center Museum, Astroworld, the beaches at Galveston, fishing in the Gulf of Mexico, and spending time with relatives visiting from out of state and family relatives in the Houston area. We enjoyed the good seafood restaurants in the area and Dana and I attended social gatherings with Martin personnel such as dinners, and dances. Dana had a sister in Mercedes, Texas and when I could get leave for more than three days between crew changeouts, we would go visit them. They had a cabin at Port Mansfield on the gulf and we would visit there and go out in their 21 ft inboard boat fishing, beach combing, and sight-seeing in the Laguna Madre and the Gulf of Mexico.

Every six weeks I would have to work the midnight shift for a two-week period. This meant I had to try and get some sleep during the day. This required Dana to get used to driving in Houston and its suburbs like she did in Denver. She had to do shopping, medical appointments and school activities without me.

A few weeks before the launch of the third crew, Dana and I received an invitation from Martin Marietta to attend a week of activities at Cape Canaveral and be a guest for the launch. Art Campos from one of our teams and his wife Mary were also invited. George Mumma from Denver and his wife Sue also were invited to attend. They were good friends of ours and attended our church in Littleton. We spent the week before the launch touring Skylab facilities, visiting the Space Center museum at Cape Canaveral, and attending the large dinner party with the Cape Canaveral personnel, the astronauts, and with personnel from other companies working the Skylab program. The day of the launch, we were taken by bus

before dawn to the visitor viewing site where we witnessed the successful launch of the third crew.

When the third crew's tour of duty was over, I was out of work. We wanted to return to Colorado as Colorado was our real home. Martin Marietta said they would move us back. We started the process of selling our home. My old engineering group in Denver called me. A very good friend of mine working the Viking program had passed away. They needed me to come work for them in his place. Dana stayed in Pearland to work with the real estate company selling the home and to see the kids finish their schooling for the year. I flew to Littleton and stayed with my brother for a while as I went back to work at the main plant. The house sold a few weeks later and I flew back to Texas to close the home sale and to drive the family back to Littleton.

Eugene Pickett has 36 years in Aerospace Engineering-34 years with Martin Marietta. Programs include Titan I, II, III and IV, Skylab, Viking, MX (Peacekeeper) and Small ICBM. He worked electrical and ground systems requirements and designs and also facility requirements and management. Eugene can be contacted at: ecpickett2@gmail.com

Additional resources and links:

SP-400 Skylab, Our First Space Station
https://history.nasa.gov/SP-400/contents.htm

SP-4208 Living and Working in Space: A History of Skylab
https://history.nasa.gov/SP-4208/ch12.htm

SP-4011 Skylab: A Chronology
https://history.nasa.gov/SP-4011/part3a.htm

SP-701: Skylab, A Guidebook
https://history.nasa.gov/EP-107/contents.htm

Wikipedia Article about Skylab
https://en.wikipedia.org/wiki/Skylab

Skylab Program Description
https://ntrs.nasa.gov/api/citations/20160013588/downloads/20160013588.pdf

Next Edition

Skylab Part V – Station keeping of Skylab between crews, Skylab 3 launch and workshop activities, overview of experiments, crew biographies. Also, I will include a short story about the Skylab Medical Experiment Altitude Test that was conducted in 1972.

Barb Sande, MARS STAR and MARS Facebook Page Historian. Contact me at barbsande@comcast.net.

Bridge Club

By Dave & Kathy Martz
(martz20@comcast.net)

In the 3rd quarter we met in November to enjoy bridge and celebrate the holidays. This year we all met at the Martz' home, with 5 tables of bridge, while savoring a lot of everyone's favorite dishes they brought to share.

The 1st quarter 2024, we are scheduled to play on 19 January, 16 February, 15 March, and 19 April. We play on the **3rd Friday of each month at the Buck Community Recreation Center in Littleton from 10 AM to 2 PM.** There is no fee to join the Bridge Club. All MARS members and their guests are welcome. It is social, not tournament bridge, with light conversation while we play, and everyone seems to like it that way.

You'll need to pack a lunch, as we stop midday to eat and then resume playing after lunch, until about 2 PM. The club provides the cards and all required items for the games. A fee for the Buck Center for the room use is the same as 2023 for 2024. An even smaller fee to the club is requested (which helps with supplies and the year-end Holiday party).

Contact us to get on the email list. Each month, an email is sent to Bridge Club members to play that month. We ask that you respond to the email to reserve a place at the tables. There is always room for more players, as the room will accommodate 8 tables. You can also check out the MARS website under Clubs/Bridge Club, for more details.

We have couples, as well as singles, playing. If you're a single, invite a friend to be your partner. Your partner does not need to be a member of MARS to play. If you don't have a regular partner, contact us and we will help you search for one.

If you want to join us for bridge, or have any questions, please contact any of the following Bridge Club Officers:

Presidents:
Dave & Kathy Martz, 303-683-9524
Vice-President:
Bill Kacena, 303-973-2685

The 4th Quarter 2023 top winners are as follows:
20 October (3 ½ tables)
1st – Bill & Mavis Kacena
2nd – Curt & Phyllis Brudos

3rd – Ernie & Cecile Berliner
4th – Ed & Laurie Bock

17 November (5 tables)
N/S 1st – Curt & Phyllis Brudos
N/S 2nd – Bill & Mavis Kacena
E/W 1st – Betty Hirst & Wayne Jackson
E/W 2nd – George & MJ Eger

15 December (4 tables)
1st Tied - Ernie & Cecile Berliner and
Bill & Mavis Kacena
3rd - Dave & Kathy Martz
4th – Bart & Diane Wright

Car Club

By Roger Rieger
(rrieger10731@gmail.com)
303-912-6217

Dave Ernst
Dave.Ernst.157@gmail.com

With the onset of cold temperatures, rain/snow, slippery wet and dirty conditions, the driving season is officially over. Every once in a while, the sun will peak out and I'll get the car cleaned up and take "her" out for a ride, but for the most part she sits in the garage waiting for next year's driving season. Hope you had the chance to take your "babies" out for a drive and enjoy all the beauty Colorado has to offer, and are thinking about next year's road trips! Please share your thoughts! I'm sure you can find someone to join you!

At the MARS Holiday event, Eric and Cindy Georges represented the MARS Car Club and presented a very nice donation (from the proceeds of our annual car show) to the Marine Corp "Toys for tots" Christmas program. For those who didn't bring out their cars - there is always next year!

Stay in touch with the Car Club through our MARS Car Club Facebook page, MARS Associates website link, or by contacting either Dave or myself to get added to our email distribution. There is nothing special you need to do to join the MARS Clar Club, all it takes is to be a MARS member in good standing, and a desire to have fun! If you are interested in joining the club, please drop either Dave or myself an email, we'd love to have you!

Golf League

Sandy Mossman
(smoss5592@gmail.com)

Happy New Year to all! May the New Year bring you many happy moments on the golf course.

It is hard to believe the 2024 MARS Golf League season is just around the corner. Each year, we attempt to increase our golf league membership by encouraging MARS Associate members - both men and women - to join. In 2023 we added several new men and women members and want to continue the trend in 2024. Last year's membership was 62 players of which 12 were women.

Our golf league invites you to participate in our spring/summer/fall 18-hole golf league which plays on Thursday mornings, April through October. Our league play is exclusively at Englewood's Broken Tee Golf Course with first tee time between 7:30 and 9:00, depending on the time of the year. Our primary purpose as a club is to realize a pleasurable golfing experience by promoting social interaction and friendly competition using the certified USGA handicap system. Tentatively, this year's kick-off meeting is March 7th, 10:30 AM at Wyatt's at Broken Tee (2101 W. Oxford Ave). Check the MARS calendar in the next few weeks to verify the date. We encourage you to attend this meeting as we will review our league's order of business, the rules of golf imposed by the USGA and basically how the league 'works.' However, if you cannot attend the kickoff-meeting please contact Tom Ripper or myself for more information and/or to sign-up.

Tom Ripper - tomripper303@gmail.com
Sandy Mossman - **smoss5592@gmail.com**

See the attached flier in the MARS Star for more information.

Broken Tee Golf Course is an 18-hole championship course with some tight fairways and some small lakes to challenge the average golfer. It offers affordable golf rates (for 18 holes: golfers age 62+ $28 green fee, under 62 $35 green fee), which is hard to beat in the region. If you choose to ride, golf carts are $21 per player. The great thing about our league, is that there aren't any up-front green fees; you only pay when you play. Come join us this season for fun and exercise!

If you have any questions regarding our golf league, please feel free to view our MARS website:

Hiking Club

By Sue Janssen (susan.g.janssen@gmail.com)

Beth King was our hike leader this past quarter. On October 11 the MARS hiking club enjoyed a beautiful fall hike at Mt Falcon Park in Jefferson County.

The large contingent of hiking club members at Mt. Falcon (Photo by Pete Munoz)

We started at the west trailhead and visited Walkers ruins, an abandoned homesite from the 1800s. We then continued on Walkers Dream trail to the proposed White House site for US Presidents to summer, where there were spectacular views of the back of Red Rocks and downtown Denver.

The Walker Ruins (Photo by Sue Janssen)

On the return trip some of the group chose the 3.1-mile trail, with others going to the summit of Mt Falcon on Tower Trail, 3.9 miles. The hike was followed by a great lunch at Lariat Lodge in Littleton. Gorgeous day with good friends!

Lunch Bunch enjoying a beverage at Lariat Lodge (Photo by Pete Munoz)

Happy New Year! Perhaps a hike or two is part of your exercise plan for 2024. We need volunteers to organize hikes in 2024. If you wish to join the MARS Hiking Club, contact Sue Janssen at susan.g.janssen@gmail.com who will add you to the club distribution list. Please provide your email address, home phone and cell phone for the roster. The schedule of hikes is posted on the MARS website (http://www.marsretirees.org/). Even if you have never gone snowshoeing or hiking you are welcome to join in the fun.

Happy trails!

Photography Club

By John Chapter
johnchapter@msn.com
303-986-8277

The Mars Photo Club meets January, February, March, April, May, September, October, and November. We do not meet in June, July and August as many club members take this time for summer travel. In December we have a holiday luncheon at a local restaurant.

We meet on the second Thursday of each month. The meetings are at 1 pm, either via ZOOM, or in-person at the Columbine Library. Members have the opportunity to discuss cameras and photographic techniques. At the meeting we have a presentation, often given by one of the members. Following the presentation, we have a competition of photos submitted by the members.

The schedule and location of each meeting are posted on the club's web-page, on the MARS website, www.marsretirees.org. Also posted there are

the photo results of each month's competition. Interested MARS members are encouraged to visit the club's webpage and consider attending the meetings. For more information, you may contact the club secretary, Jim Kummer, via email at jkummer@comcast.net.

Colorado Springs Lockheed Martin Retiree Group News

By Doug Tomerlin
(dougincs@aol.com)

The Colorado Springs Lockheed Martin Retiree Group held a luncheon on October 18, 2023 in a private room at the Golden Corral in Colorado Springs. We had good attendance at 42, with several first-time luncheon attendees and a few retirees who had not attended our luncheon for several years.

We were honored to have Dan Ellerhorst, Vice President of Communications for MARS Associates and Gina Curet, MARS Vice President of Business in attendance. Dan and Gina both addressed the group. They discussed the combined MARS and Colorado Springs Retiree Group visit to National Museum of World War II Aviation and the Airplane Restaurant as well as advantages of retirees joining MARS Associates. Several retirees knew Gina, since she worked for Lockheed in Colorado Springs a few years ago. Many retirees stayed and visited with each other for a good while.

We were sad to hear that three Colorado Springs Lockheed Martin retirees passed away since the last newsletter. Our deepest condolences go to their family and friends.

- Larry Stites passed away October 2023
- Joseph Chiacchieri passed away October 2023
- Juan Hernandez passed away December 2023

If you would like more information about the Colorado Springs Lockheed Martin Retiree Group or luncheons, please contact Doug Tomerlin at dougincs@aol.com.

Cape Canaveral News

By Dick Olson
(olsons5145@aol.com)

Luncheons

November 2023 – Dale and Alison Kallsen joined us so we had some new blood and conversation. Regulars present were Wendell McDaniels, Roger Wright, Lynn Johnson, Ken Webb, Don Bollinger, Lavern Jones, Sylvia Sansing and Larry Johnson. We discussed co-workers, many whose names we couldn't remember. One guy in particular who worked in HR and had an office across from the conference room in the MRL. We all drew a blank. Alison recalled the name after the luncheon and dropped me an email – it was Terry Thompson.

Don said he had visited Ray Caldwell and that Ray was doing good. He is in his nineties and would have joined us except he had a commode he needed to install. Don't sell those old guys short.

Heard from Kelly DeFazio and sounds like she will be retiring next month. We wish her a happy retirement and maybe she and Dan will stop by for lunch sometime.

Abe Smith is down in the islands soaking up some sunshine and tropical drinks.

Someone asked about Jimmy Weddle as he hasn't been to a luncheon for a while. Anyone have a status on him? Heard from Larry Gleason's son Lon that Larry has moved to assisted living and is doing ok.

I hope you all survived the trick-or-treaters and are now ready for turkey day.

December 2023 -- A real light turnout this month. Present were regulars: Wendell McDaniels, Lavern Jones, Abe Smith, Bob Matschner and joining us from New Mexico was Ben Deusenbery. Also, a couple of faces we haven't seen in a long time were Lynn Smith and Hank Abbott.

Benny's function at Dolphins had a good turnout especially from the Activation and Payload groups. Many people I haven't seen in ages and as I didn't take notes, I will make no attempt to list them. They did take a group photo(s) so maybe they will share them with us. Kelly DeFazio was there and is excited about her upcoming retirement.

Piece of bad new circulated during the function. Dick Hinshaw passed away yesterday. I have no information on service arrangements. I first met Dick back in the late 50's or early 60's when we both worked up on the test stands in Denver. He had a long career in Safety.

I would like to wish everyone a Merry Christmas and a happy Holiday Season,

January 2024 – Another small, maybe normal, turnout. Present were Abe Smith, Roger Wright, Lynn Johnson, Ken Webb, Lavern Jones, Sylvia Sansing and Don Bollinger. Seems everyone had a good holiday season and Roger was back from Tennessee after a

successful kick off-of his B&B up there. He did say that it was too cold and he wasn't going back until spring.

Bob Rodamer spent a few days in the hospital with COVID. He is back home but still fighting a persistent cough though it is getting better.

Heard from several people that they enjoyed the trip down memory lane while going over the "Cape Titan Team Deceased List". Some names you haven't thought of in years.

Enjoy the cooler weather and stay healthy,

Recent Obituaries

Rich Tennis, 94, passed away 29 November. He had a 31-year career in building and fueling rocket engines.

Richard "Dick" Hinshaw, 86, passed away 8 December. Dick moved from technician to safety engineer. He retired after more than 30 years with Lockheed Martin as manager of safety for all LMC programs at Cape Canaveral.

Lockheed Martin (LM) News

Skunk Works® Unveils The X-59, First Look at The Future Of Commercial Supersonic Flight

The NASA X-59, designed and built by Lockheed Martin at its famed Skunk Works facility, is specifically shaped to quiet the perceived sound of a sonic boom that reaches the ground to that of a gentle thump, similar to a car door shutting in the distance. In collaboration with NASA's Quesst Mission, the Lockheed Martin Skunk Works® team is solving one of the most persistent challenges of supersonic flight – the sonic boom.

The X-59 is the centerpiece of NASA's Quesst mission with the goal of collecting community response data from flights over representative communities across the United States. This data will be used by NASA to recommend an acceptable commercial supersonic noise standard to regulators to possibly repeal the current ban on supersonic flight over land and thereby change the future of commercial aviation, reducing flight times by half of what they are currently. This breakthrough would open the door to an entirely new global market for aircraft manufacturers, enabling passengers to travel anywhere in the world in half the time it takes today.

For additional information, visit our X-59 webpage and NASA Quesst webpage

Lockheed Martin and NASA executives, X-59 subject matter experts, California and Federal Government officials unveiled the X-59 at Lockheed Martin's legendary Skunk Works® in Palmdale, Calif. At 1 p.m. Pacific Time, Friday, Jan. 12, 2024

The "Rollout" is an aeronautical tradition where new aircraft are unveiled to the world. The X-59 rollout ceremony featured remarks from Lockheed Martin and NASA leadership, before the aircraft was unveiled to the public. Photos and video of the ceremony will be made available to the media for download shortly after the ceremony.

Questions? Contact Candis Roussel, Skunk Works® Integrated Communications, at candis.s.roussel@lmco.com.

United Launch Alliance (ULA) News

ULA Successfully Launches First Next Generation Vulcan Rocket on January 8, 2024.

The inaugural launch marks the beginning of an exciting new era for ULA.

A United Launch Alliance Vulcan rocket lifted off from SLC-41

Cape Canaveral Space Force Station, Fla., (January 8, 2024) – United Launch Alliance (ULA) marked the beginning of a new era of space capabilities with the successful launch of its next generation Vulcan rocket on Jan. 8 at 2:18 a.m. EST from Space Launch Complex-41 at Cape Canaveral Space Force Station. The Vulcan provides industry-leading capabilities to deliver any payload, at any time, to any orbit.

"Vulcan's inaugural launch ushers in a new, innovative capability to meet the ever-growing requirements of space launch," said Tory Bruno, ULA's president and CEO. "Vulcan will provide high performance and affordability while continuing to deliver our superior reliability and orbital precision for all our customers across the national security, civil and commercial markets. Vulcan continues the legacy of Atlas as the world's only high-energy architecture rocket."

Vulcan will leverage the world's highest-performing upper stage to deliver on ULA's industry-leading legacy of reliability and precision. Centaur V's matchless flexibility and extreme endurance enables the most complex orbital insertions within the most challenging and clandestine orbits. Vulcan's purpose-built design leverages the best of what we've learned from more than 120 combined years of launch experience with Atlas and Delta, ultimately advancing our nation's space capability and providing unprecedented mission flexibility.

The first certification flight (Cert-1) mission included two payloads: Astrobotic's first Peregrine Lunar Lander, Peregrine Mission One (PM1), as part of NASA's Commercial Lunar Payload Services (CLPS) initiative to deliver science and technology to the lunar surface, and the Celestis Memorial Spaceflights deep space Voyager mission, the Enterprise Flight.

EN: Although the Vulcan mission was successful, the Peregrine Mission is at risk due to a propulsion failure – mission alternatives are being evaluated.

The Cert-1 mission served as the first of two certification flights required for the U.S. Space Force's certification process. The second certification mission (Cert-2) is planned to launch in the coming months, followed by a summer launch of the first Vulcan mission to support national security space.

ULA has sold more than 70 Vulcan launches to date, including 38 missions for Amazon's Project Kuiper and multiple national security space launch missions as the part of the country's Phase 2 launch procurement.

* *

IN THE NEWS

Compiled by Pete Harrigan

The following news headlines are drawn from open-source publications, as noted parenthetically. Click on the hyperlink to access the full article. Please note that some links may not work for all readers. Some sites may require a paid subscription or a login for free access. Other paywall sites may limit the number of free articles you are able to access each month.

CORPORATE NEWS

Lockheed Martin CEO says Pentagon must adopt new acquisition system for digital (Air & Space Forces Magazine)
Lockheed Martin CEO says America needs to invest in digital defense systems to prepare for the future (CNBC)
Rapidly evolving threats demand 21st Century security solutions, Lockheed Martin CTO says (Breaking Defense)
Lockheed Martin wants a rocket motor maker of its own, for GMLRS and more (Defense One)
Businesses reposition amid growing demand for solid rocket motors (Defense News)
Lockheed Martin beats estimates on sustained weapons demand amid geopolitical tensions (Reuters)
Lockheed Martin's Aeronautics revenue falls on F-35 delivery delays (Dallas Morning News)
Lockheed Martin Space third quarter sales grow 8% year over year (Via Satellite)
Lockheed Martin raises dividend, approves $6 billion additional share buyback (MarketWatch)
Analyzing Lockheed Martin's potential dividend growth (Forbes)
Lockheed Martin, Northrop Grumman stocks notch best days in years amid Israel-Hamas conflict (Forbes)
The West badly needs more missiles, but the wait to buy them is years long (The Wall Street Journal)
The U.S. can afford a bigger military; we just can't build it (The Wall Street Journal)
Opinion / What the war between Israel and Hamas could mean for defense (Aviation Week Network)
Strategic surprise scrambles defense outlook in fraught decade (Aviation Week Network)
Wars raise profit outlook for U.S. defense industry in 2024 (Reuters)
Lockheed Martin Australia CEO talks AUKUS, All Domain and the subsidiary's future (Breaking Defense)
AI-enabled assembly and rocket motors mark Lockheed Martin's recent venture moves (Washington Technology)
HawkEye 360 adds Lockheed Martin's venture arm as an investor (Washington Technology)
Bethesda's Lockheed Martin returns as lead sponsor of 2024 National Memorial Day Concert (Maryland Daily Record)
Lockheed Martin names new officer for treasurer role, new CFO for Missiles and Fire Control (Camden News)
Lockheed Martin veteran Erik Miller promoted to VP of security and emergency services (ExecutiveBiz)
Lockheed Martin's Greg Ulmer issues statement on passing of VP Erin Moseley (Cobb County Courier)

HYPERSONICS NEWS

U.S. Army unlikely to field hypersonic glide weapon as planned (Defense News)
Army has a revised hypersonic test plan to address launcher "problem", official says (Breaking Defense)
Air Force says ARRW test provides "new insights," but offers few specifics (Air & Space Forces Magazine)
Time to test a ship-based hypersonic missile launcher (C4ISRNet)

U.S., Australia eye joint hypersonics experiments in 2024 (Defense News)

5G.MIL NEWS

Lockheed Martin to demonstrate space-based 5G network (Space News)
Lockheed Martin, Verizon showcase 5G-powered 3D streaming tech (The Defense Post)

SPACE SYSTEMS NEWS

Building blocks of life? NASA reveals 4.5-billion-year-old asteroid Bennu sample (SciTechDaily)
Scientists excited by first look at OSIRIS-REx asteroid samples (Space News)
Lockheed Martin spacecraft dubbed "the coolest thing made in Colorado" (The Denver Gazette)
OSIRIS-REx parachute deployment affected by wiring error (Space News)
Lockheed Martin to produce U.S. Air Force Sentinel ICBM re-entry vehicle for $1 billion (The Defense Post)
Lockheed Martin opens missile defense lab in north Alabama (The Defense Post)
NASA delays astronaut moon landing to 2026 amid spacecraft "challenges" (Reuters)
NASA delays Artemis lunar rover award by four months (Space News)
Why Lockheed Martin thinks its Mars base camp is worth the wait (Forbes)
Terran Orbital to build 36 satellite buses for Lockheed Martin (Space News)
Tesat optical terminals selected for Lockheed Martin satellites pass ground tests (Space News)
Firefly Alpha upper stage malfunction puts Lockheed Martin payload into wrong orbit (Space News)
Experts raise concern about U.S. commitment to GPS modernization (Space News)
Space Force planning $8 billion satellite architecture for nuclear command and control (Space News)
Northrop Grumman exit from UK satellite bid recasts big-ticket Skynet 6 race (Defense News)
More eyes in the sky: NRO building new satellites to deliver "10 times more signals and images" (Space News)
As military weather satellites near end of life, DoD turns to partners for data (Space News)
Hubble Space Telescope is in safe mode, but scientists aren't too worried (Space.com)
Hubble glitch renews talk about private servicing mission (Space News)
NASA considering budget cuts for Hubble and Chandra telescopes (Space News)
NASA working with industry to advance inflatable heat shield technology (Space News)
Blue Origin, Cerberus looking to buy rocket firm United Launch Alliance, Wall Street Journal reports (Reuters)
Boeing, LM joint venture ULA's next-generation Vulcan rocket launches on its debut flight (Colorado Springs Gazette)
Would-be historic lunar mission won't reach moon's surface, company says (The Washington Post)
Space Force orders 21 new national security space launches: 11 to ULA, 10 to SpaceX (Breaking Defense)
ULA Atlas 5 launches first Project Kuiper satellites (Space News)
The accidental monopoly; how SpaceX became (just about) the only game in town (Space News)

AERONAUTICS NEWS

F-35 head warns future upgrades at risk, production shutdown possible (Defense News)
F-35 delivery freeze complicated by software doubts, hardware shortages (Aviation Week Network)
Lockheed Martin's F-35 quality flaws persist as production ramps up (Bloomberg News)
Lockheed Martin, Howmet price fight over F-35 titanium goes public (Aviation Week Network)
F-35 contractor hits back, says Lockheed Martin lawsuit is about profits, not national security (Fort Worth Star-Telegram)
Judge finds no national security threat in Lockheed Martin dispute with F-35 contractor (Fort Worth Star-Telegram)
With DoD "pausing" negotiations, new F-35 logistics deal in doubt for 2024 (Breaking Defense)
Upgraded F-35s fly with partial software as DoD hunts for fix (Defense News)
Lockheed Martin's F-35 upgrade overrun risks topping $1 billion, top lawmakers says (Bloomberg News)
Stalled F-35 upgrades will delay next improvements, Wittman warns (Defense News)
F-35 engine upgrade set to enter next development phase (Aviation Week Network)
An insider's view of options to fix the F-35's cooling crisis (Aviation Week Network)
"Campaign of learning": 6 questions about the F-35 with a lead DoD sustainment official (Breaking Defense)
F-35I scores first cruise missile shootdown (Aviation Week Network)
U.S. quickly updated Israeli F-35s after Hamas attack, officials say (Defense News)
F-35s make first rolling vertical landings on HMS Prince of Wales (Aviation Week Network)
F-35 has "changed completely the mindset," says Italy's Air Chief (Air & Space Forces Magazine)
Deliveries of Canada's F-35 fighter jets could be delayed; extra costs possible (Ottawa Citizen)
South Korea to buy more F-35As, but picks Embraer C-390s for transport (Korea Economic Daily)
Lockheed Martin rolls out first of F-35 jets ordered by NATO member Belgium (Fort Worth Star-Telegram)
The A-10 and F-35 competed in close air support years ago; the report just surfaced (Defense One)
Air Force looks to create single "Frankenplane" from 2 damaged F-35s (Military Times)
Podcast / Inside the tradeoffs that created the F-35 (Aviation Week Network)
Why Lockheed Martin's F-16 remains a prize fighter 50 years after flight debut (FlightGlobal)

U.S. Air Force weighs retiring older F-16s, turning T-7 into F-7 armed light attack jet (Breaking Defense)
Lockheed Martin to partner with multiple European companies on F-16 training center in Romania (Aerotech News)
Turkey F-16 sale not a done deal, even with Sweden's NATO bid on track (Defense News)
Taiwan to receive 66 F-16V fighters in next 2 years (Taiwan News)
Lockheed Martin secures $177 million contract to upgrade Chilean F-16 fighter jets (Air Force Technology)
New in 2024: Who will win the Air Force's next-gen fighter contract? (Military Times)
Five companies in early running for Air Force's CCA drone wingmen (Breaking Defense)
Lockheed Martin exits U.S. Air Force tanker competition, lifting Boeing's KC-46 (Reuters)
Airmen turn C-5 into "huge floating gas station" with refueling experiment (Air & Space Forces Magazine)
NASA delays X-59 flight tests until 2024 (Aviation Week Network)
This is what 8 U-2 "Dragon Lady" spy planes look like on an "elephant walk" (Task & Purpose)
The F-117 is the stealthy fighter you can now see for yourself (C4ISRNet)
Here are all the airplanes and easter eggs in the amazing Skunk Works video (Task & Purpose)

MISSILES AND FIRE CONTROL NEWS

U.S. State Department clears UK's $1 billion purchase of Joint Air-to-Ground Missile (Defense News)
Lockheed Martin secures $176 million contract for anti-ship missiles (Air Force Technology)
U.S. Army tests Precision Strike Missile in "most stressful environment" (The Defense Post)
Lockheed Martin begins delivering long-range PrSM Increment 1 to Army (Breaking Defense)
Two new missiles in the pipeline for longer-range Army fires (Army Times)
Lockheed Martin tests JAGM-MR target discrimination tri-mode seeker (The Defense Post)
Lockheed Martin to install Rafael's Spike missiles on Apaches (Globes)
Switzerland becomes newest customer of most advanced Patriot missile (Defense News)
Lockheed Martin says Patriot missile could "replace anything and everything" (Australian Defence Magazine)
Lockheed Martin integrates advanced Patriot missile with LTAMDS radar for first time (The Defense Post)
Lockheed Martin to deliver high-powered laser weapons to U.S. Army (The Defense Post)
Lockheed Martin's Next-Generation Interceptor passes digital preliminary design review (Aviation Week Network)
Lockheed Martin device enables HIMARS munitions to strike moving targets (The Defense Post)
Shft5 selected by Army to cyber-harden HIMARS fleet (C4ISRNet)
Lockheed Martin preps souped-up HIMARS demo for Germany (Defense News)
U.S. Army pursues faster, more survivable Stinger missile replacement (Defense News)
Ukraine fires long-range ATACMS to strike Russian depot and aircraft (The Washington Post)
Senior U.S. Republicans urge long-range missiles for Ukraine (Reuters)
Ukraine's latest weapons request includes THAAD air defenses and F-18s (Reuters)
As Ukraine demands THAAD, Lockheed Martin delivers 800th interceptor to MDA (The Eurasian Times)

ROTARY AND MISSION SYSTEMS NEWS

U.S. Navy certifying virtualized Aegis Combat System on its first destroyer (Defense News)
Lockheed Martin Australia's battle management Agile Shield passes counter-drone operational test (Breaking Defense)
Lockheed Martin, Northrop Grumman win U.S. Army contract for spy gear on launched drones (C4ISRNet)
Lockheed Martin's helicopter-borne jammer "defeats threats" in U.S. Navy test (C4ISRNet)
U.S. Army's test of Lockheed Martin jammer highlights payload adaptability (C4ISRNet)
Lockheed Martin jammer for Strykers, AMPVs on "good path," Army official says (C4ISRNet)
Lockheed Martin to deliver advanced TPY-4 radar to Air Force for evaluation (C4ISRNet)
Lockheed Martin to ship advanced Sentinel A4 radar to U.S. Army for tests (C4ISRNet)
Lockheed Martin seeks expanded roles for Q-53 radar, including drone detection (C4ISRNet)
Army to replace "laser tag" system for soldier training (National Defense Magazine)
New military simulations for shooting, trench war, drones unveiled (Defense News)
Lockheed Martin unveils LED-based flight simulator promising significant reduction in training cost (FlightGlobal)
Lockheed Martin upgrades EW systems for U.S. Navy submarines (Naval Technology)
Navy test-fires missile from mobile launcher aboard LCS Savannah (Defense News)
U.S. Army to trim Black Hawk helicopter fleet (Defense News)
Lockheed Martin secures contract to produce Spanish MH-60Rs (FlightGlobal)
Lockheed Martin to produce six Seahawk helicopters for Norway (The Defense Post)
Delivery of another 37 Black Hawk helicopters to be sped up by the United States (Australian Broadcasting Company)
Greece approved for Black Hawk buy (Aviation Week Network)

MARS ASSOCIATES

2024 MEMBERSHIP RENEWAL (DUES) NOTICE

It is time for **all** regular and senior members to renew your membership for the year March 1, 2024 — February 28, 2025, regardless of which month you joined MARS Associates.
Please complete the Membership Renewal Form below and mail with a check or money order made out to "**MARS ASSOCIATES**" in the amount shown below, to be received not later than March 31, 2024.
Members whose dues are not paid as of March 31, 2024, will be notified, and will be dropped from membership if dues remain unpaid. Membership expiration is determined by Membership Database records. Members who have been dropped will not be eligible for MARS clubs or member discounts for activities or benefits after March 31.
Retain your current membership card–cards are not reissued annually. More information about MARS is on the back of this page. If you have questions, contact the Membership Vice President, Carl Kaminski, at **CARLKCOL66@GMAIL.COM** or 303-726-1546.

Please complete all the blanks – The treasurer separates checks from the form upon receipt!

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Membership Renewal Form

Mail to: **MARS ASSOCIATES, PO Box 1128, Littleton, CO 80160-1128**
(New members must complete and submit the New Members MARS Membership Application form found on the website https://marsretirees.org/mars-associates-new-member-application/ or contact Carl at **CARLKCOL66@GMAIL.COM**)

Membership dues for FY2024 are as follows: **(Please check appropriate box.)**

Current Regular Member residing in Colorado **all or part** of the year.	$25.00 ·
Current Regular Member residing full-time outside Colorado.	$15.00 ·
Current Senior Member (or surviving spouse) whether residing in Colorado or out of state, whose retiree-member birthdate is earlier than March 1, 1949.	$15.00 ·

Check # _____ Check Date _____

Name(s) _____
First MI Last Nickname

Spouse (or significant other) _____
First MI Last Nickname

Address _____ Apt/Unit _____

City/State _____ Zip _____ Zip ext._____

Phone _____ Email Address _____

Spouse Email Address (Optional) _____

Do you want your email address listed on the MARS website? YES · NO ·

Do you want to receive special notices from MARS by email? YES · NO ·

Are you interested in volunteering in support of MARS? YES · NO ·

If you volunteer for another organization, let us know where: _____

*** We have transitioned to a new website which requires a self-subscription to our mailing lists for special notices. Please follow this link to subscribe:**

https://marsretirees.org/subscribe-unsubscribe-from-mars-email-lists/

Snowbirds:

Please notify the Membership Vice President by telephone, email or "snail mail" when you know your travel dates to your alternate address AND what that address is.

MARS STARs are mailed by Standard (Bulk) Mail to keep the cost of mailing low—every rejected or forwarded MARS STAR incurs an additional postage cost to MARS Associates.

Membership

- **Low annual membership dues** - $25.00 in-Colorado, $15.00 out-of-Colorado, and seniors (≥ 75 years of age); includes you and your spouse or significant other
- **Dental, Vision** at very reasonable rates
- **Vendor Discounts** – visit our website (http://www.marsretirees.org)
- **Social Events** – annual picnic, happy hours, luncheons, Rockies games, etc.
- **MARS STAR Quarterly Newsletter** – information on past and current events relating to the organization as well as Corporate, LMSSC and ULA happenings
- **Informational & Educational Presentations** – periodic seminars on topics of interest (e.g. Medicare 101)
- **Connectivity with other retirement associations throughout the corporation**

Volunteer Opportunities

- **Community Service & Event Support** – help your community and/or the companies with the MARS team, for example, the Fun Run, Health Fair, Community Support Programs
- **MARS Support** – Web Committee, In Memoriam, Event Photographer
- **MARS Leadership** – Board of Directors and Officer positions of leadership, maximum of two 2-year terms (see the Bylaws and Policy Manual posted on the MARS website)

Current Club Activities

- **Bridge Club** – lively party bridge, singles welcome
- **Car Club** - Invites all car enthusiasts to become members, meet other like-minded people, and enjoy and share our love for the automobile.
- **Golf League** – a handicap league open, to men and women that plays weekly games throughout the summer with a tournament in September and a banquet in the Fall
- **Hiking Club** – planned hikes for various levels of ability
- **Photography Club** – monthly meetings at Littleton Bemis Library (*except June, July, August*), photo-related presentations and programs – including travelogues, photo contests, help with equipment and photography; open to everyone.
- **Special Interests** – You are encouraged to suggest an event or a club for your special interest. Suggestions are vetted by the BoD/officers and if there is enough interest – passed to the Marketing Committee. There is something for everyone to enjoy and all activities are open to all members. Come check us out on our website at http://www.marsretirees.org for more information.

***MARS* ASSOCIATES IS A REGISTERED 501(c) (7) SOCIAL AND RECREATION CLUB**

MARS ASSOCIATES GOLF

Men & Women Members

League play every Thursday,
April thru October

- ✓Weekly Prize Money
  - •Closest To The Pin
  - •Low Net Winners per Flight(s)
- ✓ Certified USGA Handicap System
  - •CGA Membership
  - • Annual Golf Registration, Club and User Fees - $80.00
- ✓ End of Season Most Improved Player
- ✓ Pay As You Play (Regular Weekly Green Fees +$5 Prize Money)
- ✓ Annual Championship Tournament
  - •Pays Low Net Winners
  - •Medalist Trophy to Low Gross Player

ENGLEWOOD'S BROKEN TEE GOLF COURSE
2101 West Oxford Ave.
Englewood, Colorado

Contact: Sandy Mossman
Golf League President
smoss5592@gmail.com

To learn more go to www.marsretirees.org and click on "Golf" in the clubs listing section

MARS SPRING EVENT & ANNUAL MEETING

The Officers and Board of Directors of MARS Associates are pleased to invite you and your spouse/companion to the **MARS Spring Event & Annual Meeting** on **Wednesday, March 20, 2024 from 4:30 to 6:30 p.m.** at the Lockheed Martin Deer Creek Facility located at 12999 West Deer Creek Canyon Road, Littleton, Colorado. For a map to the facility, please click on this link: https://maps.app.goo.gl/udYBf4TiNJy8GEg79?g_st=ic

Hors d'oeurves and beverages will be served and the cost is $25.00 per person. The event will be held in the Mount Evans Conference Room. Mr. Robert Lightfoot, Executive Vice President of Space Company, is planned to be the speaker, his schedule permitting. There will also be a review of MARS Associates, its clubs, and review of 2024 special events.

Due to security requirements (required information below), **check-in for the event will begin at 3:30 p.m.**

To access the building, drive to the guard and identify attendance for the MARS event. Proceed to the tiered parking lot in front of the building where you will see some reserved parking spaces. Enter the building through the main door and check-in at the desk in the lobby with lobby desk security to receive your visitor badge. Signage will be displayed to direct you to the conference room.

Please complete the form below and mail it with your check (made payable to **MARS Associates**) to the address on the form by **February 18, 2024**. Or, you can make your reservation by using the STRIPE link below:

STRIPE (ctrl+click): https://marsretirees.org/2024/01/11/2024-mars-associates-spring-event-and-annual-meeting/

If you make a reservation and later find you cannot attend, please notify, Linda Duby at 303-249-1665 or lindaduby@comcast.net, or Charlie Haupt at 303-725-7595 or qcrfccoach@gmail.com or Carl Kaminski at 303-726-1546 or carlkcol66@gmail.com **no later than February 18, 2024** to receive a refund. Admission is by reservation only.

----------Detach Here----------

2024 MARS Spring Event and Annual Meeting Reservation Form Please Print Clearly.
Mail to: MARS Associates, PO Box 1128, Littleton, CO 80160-1128

Member/Spouse/Companion _____@ $25.00 per person = $ _____

TOTAL ENCLOSED $ _____ Check # _____

Please complete the following for access to the Deer Creek facility and return with your check.

	Member	**Spouse/Companion**
First Name		
Last Name		
Email		
Citizenship Type*		
Citizenship Country**		
Birth Country***		
Date of Birth		

*A- U.S. Citizen, B-U.S. Permanent Resident, or C-Foreign National (non-U.S. Citizen)
**Only required for Permanent Resident, non-U.S. citizens, or Foreign Nationals
***Only required for Foreign Nationals

Holiday Celebration

December 6, 2023

Photos by Larry Stearns

Wellshire Inn Holiday Fireplace

CCC Choir

Carole Lovelace, Karen Paulson, & Judy Nielsen

Shannon Maginn, Laurie Makloski, & Mollie Christensen

Eric & Cindy Georges presenting Car Club donation

Cheryl & Ken Marts, Sgt Travis Williams, Cpl Josiah Huizar

Bev Baugher & Barb Espinoza

Cheryl & John Grace

Bill & Marj Wise

Carolyn Malaby & Paula Pinkley

Bob & Jo Wessels

Charyl Rose & Tami Kinney

Barb & Steve Sande

Cherie Conca & Sandy Crane

Clare & Linda Haag

George Dameron & Charyl Rose

Dan & Lucy Ellerhorst

Janet & Mike Carroll

Darold & Mary Groat

Kathy & Dave Martz

Eileene & Charles Pippenger

Julie Tarpley

Margo Breen


Nels & Tess Freeman


Laurie & Mike Lohaus

Paul & Lonnie Jones

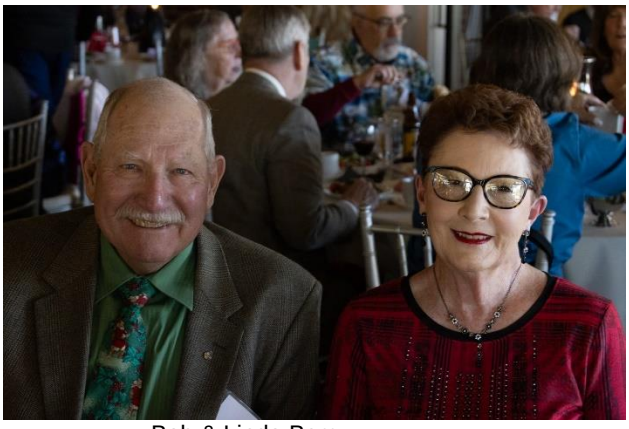
Mike & Shirley Pfister

Ralph Pacheco & Judy Sullivan

Moon Luckow & Sandy Thimmig

Sharon & Calvin Harr

Mauareen- & Ron Gedeon



Bob & Linda Berry

Wine Tasting with 29 members and guests on November 8

Tasting Leads Terry Lilly and Robin Zen

Group Shares wine and snacks

Schedule Addendum (See last page)

NOTES:

1. BOD meets as required
2. Officers/Directors meet 1st Wednesday every month at 09:30 am. Zoom mtgs may be used at discretion of Officers
3. Bridge Club meets 3rd Friday of every month at 10:00 am at Buck Rcreation Center.
4. Car Club meets 1st Sat of every month, and as noted on their website.
5. Golf club meets every Thursday from April through Oct of each year.
6. Hiking Club: Outings on 3rd Wednesday of the month. Check website for Point of Contact for each hike.
7. Photo Club meets 2nd Thursday every month (except Jun, Jul & Aug) at 1:00 pm on Zoom
8. Marketing Committee meets on a monthly basis as determined by members with guests invited (Typically last Wednesday)

***9. 2024 Happy Hour Dates and Locations are tentative; MARS website will have details when available**

10. 2024 Spring Event and Annual Meeting LM Deer Creek facility, Mt Evams Conf rooms, Robert Lightfoot invited Speaker
11. 2024 Summer Event June 26 at Ken Caryl Manor House (TBD) 11AM
12. 2024 Picnic Sep 11, 2024 at Clement Park 11AM
13. 2024 Holiday Celebration Dec 4 at Wellshire Event Center 11 AM (TBD)

14. See MARS website (https://marsretirees.org) for additional information on our Special Activities

15. Medicare 101 Mar 14 is at1PM and Sep 12 at 10AM at Red Rocks 8195 Southpark Lane Littleton, CO

16. 2024 Special Activities are subject to change

Please review dates and times and notify Ken Marts (martshouse2@aol.com) if you have any changes or additions.

MARS ASSOCIATES
P.O.Box 1128
LITTLETON, CO 80160-1128

PRESORTED STANDARD
US POSTAGE
PAID
LITTLETON, CO
PERMIT NO. 245

' ADDRESS SERVICE REQUESTED

DATE: Jan 2024 Rev 2

EVENT/MONTH	2024 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Officers/Directors	3	7*	6	3	1*	5	3	7*	4	2	6	3
Bridge Club	19	16	15	19	17	21	19	16	20	18	15	20
Car Club	6	3	2	6	4	1	6	3	7	5	2	7
Golf Club	-	-	-	Thur	Thur	Thur	Thur	Thur	Thur	Thur	-	-
Hiking Club	Open	Open	Open	Open	Open	Open	Open	Open	Open	Open	Open	Open
Photo Club	11	8	14	11	9				12	10	14	12
Website Team	as-needed	as-needed	as-needed	as-needed	as-needed	as-needed	as-needed	as-needed	as-needed	as-needed	as-needed	as-needed
Marketing Committee	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
MARS Events												
Happy Hour		**21**				TBD				TBD		
Spring Event and Annual Meeting			**20**									
Summer Luncheon Honoring Senior Members						26						
Annual Rockies Game						**5**						
2024 Annual Picnic									11			
Holiday Celebration												4
MARS Special Activities NOTES 12, 13												
Medicare 101			14						12			
MARS STAR Schedule												
Items due for MARS STAR												
STAR Input to Editor	11			4			11			10		
STAR Repro. Deadline	22			15			22			21		
STAR Mailing	31			24			31			30		