FD 2019, June 22, 1:58 pm

The Aero Aerial

The Newsletter of the Aero Amateur Radio Club
Middle River, MD
Volume 15, Issue 7
July 2019

Editor Georgeann Vleck KB3PGN

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		Contests	Bob Venanzi ND3D

Website: http://w3pga.org
Facebook: https://www.facebook.com/pages/Aero-Amateur-Radio-Club/719248141439348

About the Aero Amateur Radio Club

Meetings

The Aero Amateur Radio Club meets at 7:30 pm on the first and third Wednesdays of the month at Essex SkyPark, 1401 Diffendall Road, Essex. Meetings begin at 7:30 p.m. local time. Meetings are canceled if Baltimore County Public Schools are closed or dismiss early.

Repeaters

W3PGA **2 M :** INPUT : 147.84 MHz, OUTPUT : 147.24 MHz, PL 123.0
W3PGA **70 Cm:** INPUT : 444.575 MHz, OUTPUT : 449.575 MHz, PL123.0
W3JEH **1.25 M:** INPUT : 222.24 MHz, OUTPUT : 223.84 MHz

Club Nets

Second Wednesday Net – 70 Centimeters (449.575 MHz Repeater) @ 8 p.m. Local Time
Fourth Wednesday Net – 2 Meters (147.24 MHz Repeater) @ 8 p.m. Local Time
Fifth Wednesday Net – 10 Meters (28.445 MHz) @ 8 p.m. Local Time

Radio License Exams

The Aero Amateur Radio Club sponsors Amateur Radio License Exams with the ARRL VEC. Examination sessions are throughout the year. Walk-ins are welcome; arrive no later than 30 minutes after start time. $15 charge.

2019 Examination Schedule

Time:	1:15 pm		
Dates:	Sunday, Sept. 22		
Where:	White Marsh Library		

White Marsh Library, 8133 Sandpiper Circle, White Marsh, MD
Contact: Patricia Stone AC3F, email: ac3f@juno.com, landline: 410-687-7209

LOCAL AREA NETS

Day	Time	Freq. (MHz)	Net Name
Daily	9 – 10 am	145.330	Oriole Net
Daily	6 pm	3.820	Maryland Emergency Phone Net
Daily	6:30 – 7 pm	145.330 no PL	Balto. Traffic Net (b/u 146.670 PL 107.2)
Daily	7 pm & 10 pm	3.643	MD/DC/DE Traffic Net
2nd Tue	7:30 pm	146.670	Baltimore County RACES Net
2nd Wed	8 pm	28.445	Aero ARC Net
4th Wed	8 pm	147.240	Aero ARC Net
5th Wed	8 pm	449.575	Aero ARC Net
Fridays	7:30 pm	145.330	Back in the Day Net
When activated by NOAA		147.030	SkyWarn (primary)

From the President's Desk

Field Day 2019 Report

Field Day 2019 results have been submitted to ARRL, we operated as a 5A class station from the Community Hanger at the Essex Skypark (W48).

Our **score of 3,024** with QSO of 1,534 and Bonus Points of 1,490 with **522 contacts** was much more than that. We had 24 AERO members participate. 3 guests and 8 visitors joined us at the Essex Skypark, as well as five people who took tests at the VEC session. On Saturday we were visited by Ken Reid KG4USN, ARRL MDC ASM.

During the 24 contest hours we made 522 contacts; 145 CW, 100 digital and 277 phone.
We were able to contact 49 States, Canada, Puerto Rico and DX with Australia. Yes, we got Delaware but could not find Nevada!

A big highlight of the FD event, as always, was the **pasta dinner and dessert** provide by **Sue Landis**, Bob's wife. The dinner included pasta, bread, a build-it-yourself salad, and pineapple upside down cake. By counts there were 27 people that enjoyed the food. There was enough for seconds and a small amount left over, for late night snacking. The three bags of cookies filled in the void before dinner. **Again, thanks Sue for a job well cooked.**

The solar cycle, or lack of one, seemed to be a problem this FD. There were no sunspots, whereas last year we had 41 during FD, per Spaceweather. Since we are near the bottom of Solar Cycle 24, things can only look up.

Aero members helping and teaching with this event:

Ray N3RES, Rob KC3ROB, George KB3TBH, Marty KC3AID, Dave AC3EO, Brittany KB3YKN, Steve KD3TP, Jerry N3VBJ, Coz WA3RQD, William AC3DX, Dave KB3KRV, Warren W3JDF, Russell W3WFI, Thomas WA3QLY, Keon KE3HAY, Larry KB3QWC, Richard KB3VAE, Franklin KC3FBM, Lou AB3QK, Bob WA3SWA, James KC3FBL, Joe WB3FMT, Harry AC3EK, Patricia AC3F, Bob ND3D, Dave KA3SNY, John K3LPV and Joe N3JDP.
And Sue Landis for Dinner and Cookies!

Time spent on FD, including set-up, making contacts, and break-down, took from 8:00 am on Friday, 6/21 to 4:00 pm on Sunday, 6/23.

Aero ARC Public Service in June 2019

Aero member, Bob WA3SWA, continued to assist BRATS for various **Multiple Sclerosis Bike Tours** and Walks and also participated in other area clubs' activities

The American Diabetes Association's **Tour de Cure 19** was held on Sunday, June 2, 2019. We had at 10 members from the club assisting in these 16.4-, 28.5-, and 61.7-mile bike rides which took place in Baltimore County, starting and ending at Goucher College and proceeding through the Loch Raven and NE Baltimore County. There were approximately 250 riders all told. Dave, Ray, and Marty were kept busy as SAG vehicles supporting bike repairs, returning tuckered out riders, and finding a lost sheep, er, rider.

Aero members supporting the Tour de Cure 19 event were: Ray N3RES, Rob KC3ROB, Marty KC3AID, David AC3EO, William AC3DX, Ed KB3SGN, Larry KB3QWC, Richard KB3VAE, Joe WB3FMT, Chris AB3WB, and Darryl Robinson rode with Dave.
The event lasted from 6:30 am to 2:00 pm.

On Saturday June 8th the Aero ARC participated in the **Chesapeake Scouts Aviation** event, held for the first time at the Essex Skypark. It was formerly held at the Martin State Airport. The move to Essex was to provide more space for the Scouts. The Aero Club was asked to set up an active HF radio station and to be a merit badge councilor for the "Signs, Signals and Codes" merit badge. We had initially planned for 16 scouts and 15 showed up.

The following Aero members did the following training: Patricia AC3F – Morse Code, Lou KC3NMT -Braille, John K3FIL – American Sign Language (another club), and Joe WB3FMT – Semaphore and Nautical Flags. Rob KC3ROB, Dave AC3EO, Steve KD3T, and Harry AC3EK ran the HF rig. The operators did a script for the Scouts to use while talking to other stations from Florida to Canada and out west to Kansas. Our formal training ran from 10:15 am to 12:00 pm but was expanded to include the "Radio" merit badge and the continued to after 3:00 pm. There were over 400 scouts registered for this event. Patricia AC3F was able to sign off on not 15 but 30 merit badges. Plans are in the works for next year.

Aero members helping and teaching with this event:
Ray N3RES, Rob KC3ROB, Dave AC3EO, Steve KD3TP, Harry AC3EK, Richard KB3VAE, Joe WB3FMT, Patricia AC3F, Lou KC3NMT and John K3FIL.

The event lasted from 8:00 am to 4:00 pm.

IMPORTANT – Meeting Schedule Change – JULY ONLY

Because July 4 is on Thursday this year, the membership decided on these changes to the July schedule.

NO MEETING on July 3. Instead, 440 net on 449.575r, PL123.0.
NO MEETING on July 17. Instead, 2 m net on 147.24r, PL 123.0.

The first meeting of the month will be on July 10th. Fortunately, July has 5 Wednesdays, giving us the 10m net, and removing the necessity of back-to-back meetings.

SCHEDULE FOR JULY

July 3	**440 net** at 20:00
Jul 10	**1st meeting** of the month at 19:30
Jul 17	**2 meter net** at 20:00
Jul 24	**2nd meeting** of the month at 19:30
Jul 31	**10 meter net** on 28.445 MHz USB at 20:00

REGULAR SCHEDULE RESUMES IN AUGUST

Aug 7	1st meeting of the month 19:30

Reminder: New club net schedule

Please be advised the 10 meter net is moving from the 2nd Wednesday to the 5th Wednesday of the month. In its 2nd Wednesday's place will be the 440 net (449.575 PL 123.0). The 2 meter net will remain at the 4th Wednesday (147.24 PL 123.0)

OLD Net	New Net
2nd Wed 10 meters	2nd Wed 440 Net
4th Wed 2 meter net	4th Wed 2 meter net
5th Wed 440 net	5th wed 10 meter net

Any questions pls give me a call. 443-956-0197
Joe Miko 443-956-0197

Upcoming Aero Club Events

Saturday, September 14: Essex Skypark Wings and Wheels Fly-In
This event has airplanes and vintage cars on display. There are aircraft rides for a fee, and food for sale. The Aero Club will also set up a communications display, running a radio, and information on Skywarn. We also need Aero member support for this event to staff and setup and breakdown. Cost is $5.00 a carload.

Hamfests

10/06/2019, 6 am – 2 pm, CARAFest 2019
Location: Howard County Fairgrounds, 2210 Fairgrounds Road, West Friendship, MD 21794
Website: http://www.carafest.org
Sponsor: Columbia Amateur Radio Association
Type: ARRL Hamfest
Talk-In: 147.390/R+ (PL 156.7)
Public Contact: David Parkison , KB3VDY
P.O. Box 911 Columbia , MD 21044
Phone: 410-977-1249
Email: vendorsales@carafest.org

10/27/2019, Mason Dixon Hamfest/Convention
Location: Sportsman's Hall Roller Skating Center, 15500 Hanover Pike, Upperco, MD 21155
Website: https://k3pzn.net/hamfest/
Sponsor: Carroll County Amateur Radio Club
Type: ARRL Hamfest
Talk-In: 145.410 (PL 114.8)
Public Contact: Rich Mitchell , N3III
1722 Brooks Road Freeland, MD 21053
Phone: 443-280-1871
Email: n3iiipa@gmail.com

For further information go to:
http://www.arrl.org/hamfests-and-conventions-calendar
http://www.arrl.org/find-an-amateur-radio-license-exam-session
http://www.arrl.org/find-an-amateur-radio-license-class

NET REPORTS

6-12-19: 449.575r, 20:00 to 20:30 local.

W3PGA NCS Joe Essex, KC3FBM Franklin Parkville, AC3F, Patricia Middle River, AC3EO Dave Baltimore City, KB3JVP Ken Middle River, W3JEH Ron Perry Hall

6 members on the net.

6-26-19: 147.24r, 20:00 to 20:40 local.

W3PGA NCS Joe Essex, KB3JVP Ken Middle River, AC3EO Dave Balto City, KC3FBN Franklin Parkville, AC3F Patricia Middle River, W3JEH Ron Perry Hall, N3CVA Ian Balto City, K3TEL Arnold Towson, KB3TBH George White Marsh,
KE3HAY Keon Middle River

10 amateurs on the net.

VE CORNER

by Pat Stone, AC3F

The AERO VE Team held its third session of 2019 on May 5. We served 7 applicants. Congratulations to new Extra: Jim Cosby WA3RQD, new Generals Arnold Lamar KC3CMR, Lou Smith KC3NMT, and Terry Wallace KC3NMU, and new Techs: Dan Shearer KC3NMS and Mike McGovern KC3NMR.

Many thanks to VE's: WB3FMT, KC3FBM, W3WFI, KC3FBL, AB3QK, KD3TP, KB3VAE, and AC3DX for assisting me with our third session of 2019. All of you did a terrific job. We couldn't do this without you. It's always a joy working with you.

Our next test session is Sunday, September 22, at White Marsh Library.

Feature Article

Amateur Radio Q-Codes

exerpted from Wikipedia article "Q code".

Amateur radio[edit]

Amateur radio actually has adapted two different sets of Q codes for use in amateur communications. The first set come from the ITU civil series QRA through QUZ. Most of the meanings are identical to the ITU definitions, however, they must be looked at in the context of amateur communications. For example, QSJ? asks what the charges are for sending the telegraph. Since amateur communications are without charge, this Q code would not make sense.

The second set is the set of QN Signals, used only in ARRL NTS nets. These operating signals generally have no equivalent in the ACP 131 publication or ITU publications, and are specifically defined only for use in ARRL NTS nets. They are not used in casual amateur radio communications.[12][13]

Selected Q codes were soon adopted by amateur radio operators. In December 1915, the American Radio Relay League began publication of a magazine titled *QST*, named after the Q code for "General call to all stations". In amateur radio, the Q codes were originally used in Morse code transmissions to shorten lengthy phrases and were followed by a Morse code question mark (··—— ——··) if the phrase was a question.

Q codes are commonly used in voice communications as shorthand nouns, verbs, and adjectives making up phrases. For example, an amateur radio operator will complain about QRM (man-made interference), or tell another operator that there is "QSB on the signal" (fading); "to QSY" is to change your operating frequency, or to break in on a conversation QSK is often used even on VHF and UHF frequencies. (See also Informal usage, below.)

Q codes as adapted for use in amateur radio[edit]

Code	Question	Answer or Statement
QLE	What is your expected signal?	The expected signal is low...
QNI	May I join the net?	You may check in...
QRA	What is the name (or call sign) of your station?	The name (or call sign) of my station is ...
QRG	Will you tell me my exact frequency (or that of ...)?	Your exact frequency (or that of ...) is ... kHz (or MHz).
QRH	Does my frequency vary?	Your frequency varies.
QRI	How is the tone of my transmission?	The tone of your transmission is (1. Good; 2.

		Variable; 3. Bad)
QRJ	How many voice contacts do you want to make?	I want to make ... voice contacts.
QRK	What is the readability of my signals (or those of ...)?	The readability of your signals (or those of ...) is ... (1 to 5).
QRL	Are you busy?	I am busy. (or I am busy with ...) Please do not interfere.
QRM	Do you have interference? [from other stations]	I have interference.
QRN	Are you troubled by static?	I am troubled by static.
QRO	Shall I increase power?	Increase power.
QRP	Shall I decrease power?	Decrease power.
QRQ	Shall I send faster?	Send faster (... wpm)
QRS	Shall I send more slowly?	Send more slowly (... wpm)
QRT	Shall I cease or suspend operation?/ shutoff the radio	I am suspending operation. /shutting off the radio
QRU	Have you anything for me?	I have nothing for you.
QRV	Are you ready?	I am ready.
QRW	Shall I inform ... that you are calling him on ... kHz (or MHz)?	Please inform ... that I am calling him on ... kHz (or MHz).
QRX	Shall I standby / When will you call me again?	Please standby / I will call you again at ... (hours) on ... kHz (or MHz)
QRZ	Who is calling me?	You are being called by ... on ... kHz (or MHz)
QSA	What is the strength of my signals (or those of ...)?	The strength of your signals (or those of ...) is ... (1 to 5).
QSB	Are my signals fading?	Your signals are fading.
QSD	Is my keying defective?	Your keying is defective.
QSG	Shall I send ... telegrams (messages) at a time?	Send ... telegrams (messages) at a time.
QSK	Can you hear me between your signals?	I can hear you between my signals.
QSL	Can you acknowledge receipt?	I am acknowledging receipt.
QSM	Shall I repeat the last telegram (message) which I sent you, or some previous telegram (message)?	Repeat the last telegram (message) which you sent me (or telegram(s) (message(s)) numbers(s) ...).
QSN	Did you hear me (or ... (call sign)) on .. kHz (or MHz)?	I did hear you (or ... (call sign)) on ... kHz (or MHz).
QSO	Can you communicate with ... direct or by relay?	I can communicate with ... direct (or by relay through ...).

QSP	Will you relay a message to ...?	I will relay a message to ... .
QSR	Do you want me to repeat my call?	Please repeat your call; I did not hear you.
QSS	What working frequency will you use?	I will use the working frequency ... kHz (or MHz).
QST	–	Here is a broadcast message to all amateurs.
QSU	Shall I send or reply on this frequency (or on ... kHz (or MHz))?	Send or reply on this frequency (or on ... kHz (or MHz)).
QSW	Will you send on this frequency (or on ... kHz (or MHz))?	I am going to send on this frequency (or on ... kHz (or MHz)).
QSX	Will you listen to ... (call sign(s) on ... kHz (or MHz))?	I am listening to ... (call sign(s) on ... kHz (or MHz))
QSY	Shall I change to transmission on another frequency?	Change to transmission on another frequency (or on ... kHz (or MHz)).
QSZ	Shall I send each word or group more than once?	Send each word or group twice (or ... times).
QTA	Shall I cancel telegram (message) No. ... as if it had not been sent?	Cancel telegram (message) No. ... as if it had not been sent.
QTC	How many telegrams (messages) have you to send?	I have ... telegrams (messages) for you (or for ...).
QTH	What is your position in latitude and longitude (or according to any other indication)?	My position is ... latitude...longitude
QTR	What is the correct time?	The correct time is ... hours
QTU	At what times are you operating?	I am operating from ... to ... hours.
QTX	Will you keep your station open for further communication with me until further notice (or until ... hours)?	I will keep my station open for further communication with you until further notice (or until ... hours).
QUA	Have you news of ... (call sign)?	Here is news of ... (call sign).
QUC	What is the number (or other indication) of the last message you received from me (or from ... (call sign))?	The number (or other indication) of the last message I received from you (or from ... (call sign)) is ...
QUD	Have you received the urgency signal sent by ... (call sign of mobile station)?	I have received the urgency signal sent by ... (call sign of mobile station) at ... hours.
QUE	Can you speak in ... (language), – with interpreter if necessary; if so, on what frequencies?	I can speak in ... (language) on ... kHz (or MHz).
QUF	Have you received the distress signal sent by ... (call sign of mobile station)?	I have received the distress signal sent by ... (call sign of mobile station) at ... hours.

Notes for response to radiotelegraph Q-codes: Responses to a radiotelegraph Q-code query or a Q-code assertion may vary depending upon the code. For Q-code assertions or queries which only need to be acknowledged as received, the usual practice is to respond with the letter "R" for "Roger" which means "Received correctly". Sending an "R" merely means the code has been correctly received and does not necessarily mean that the receiving operator has taken any other action. For Q-code queries that need to be answered in the affirmative, the usual practice is to respond with the letter "C" (Sounds like the Spanish word "Si"). For Q-code queries that need to be answered in the negative, the usual practice it to respond with the letter "N" for "no". For those Q-code assertions that merely need to be acknowledged as understood, the usual practice is to respond with the prosign SN or VE which means "understood". On telegraph cable networks "KK" was often used at the end of a reply to a Q Code to mean "OK" or "Acknowledged". This practice predates amateur radio as telegraph operators in the late 19th Century are known to have used it.

Informal usage[edit]

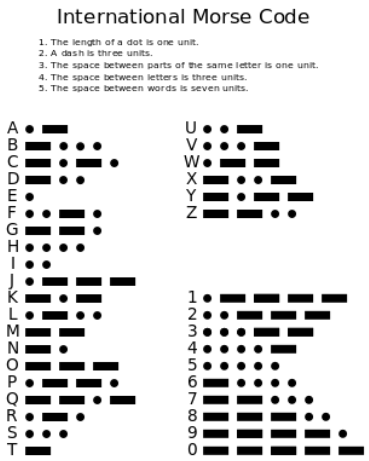

Chart of the Morse code letters and numerals.[14]

QLF – "Are you sending with your left foot? Try sending with your left foot!" A humorously derogatory comment about the quality of a person's sending. [15][16]

QSK – "I can hear you during my transmission" – refers to a particular mode of Morse code operating often called QSK operation (full break-in) in which the receiver is quickly enabled during the spaces between the dits and dahs, which allows another operator to interrupt transmissions. Many modern transceivers incorporate this function, sometimes referred to as *full break-in* as against *semi-break-in* in which there is a short delay before the transceiver goes to receive.[17]

QSY – "Change to transmission on another frequency"; colloquially, "move [=change address]". E.g., "When did GKB QSY from Northolt to Portishead....?"[18]

QTH – "My location is..."; colloquially in voice or writing, "location". E.g., "The OCF *[antenna]* is an interesting build but at my QTH a disappointing performer."[19]

QTHR – "At the registered location..."; Chiefly British in voice or writing, "Historically - the location in the printed Callbook. Modernly - as given in online government records for my callsign". E.g., "You can contact me QTHR"[20]

German use during World War II[edit]

During World War II, according to Bletchley Park's *General Report on Tunny*, [21] German radio teleprinter networks used Q-codes to establish and maintain circuit connections.

In particular: **QKP** was to indicate the Lorenz cipher machine setting for each message and, **QZZ** to indicate that the daily key change was about to take place at the sender's station.

12.^ "Operating Signals".
13.^ "FSD-218 - Field Service Form: Instructions for NTS Radiogram Messages" (PDF).
14.^ "International Morse code Recommendation ITU-R M.1677-1". itu.int. International Telecommunication Union. October 2009. Retrieved 23 December 2011.
15.^ The, Free Dictionary. "Definition of QLF". The Free Dictionary. Retrieved 1 July 2016.
16.^ ARRL. "Capitalizing on your Capital Project". ARRL.ORG. American Radio Relay League. Retrieved 1 July 2016.
17.^ "Communications Instructions Operating Signals" (PDF). Combined Communications Electronics Board. April 2006. Archived from the original (PDF) on September 6, 2012. Retrieved 2014-05-16.
18.^ Post in the uk.radio.amateur newsgroup Dated 2010-08-21. Accessed 2013-08-04.
19.^ Has anyone used a tuner with an Off Centre Fed Dipole? How well did it work? Article on Amateur Radio Wiki. Accessed 2013-08-04.
20.^ [1] List of repeaters in the UK sorted by QTHR Accessed 2016-06-01.
21.^ "TR01-016". www.alanturing.net.

Source: https://en.wikipedia.org/wiki/Q_code

From the Skies over Mt. Essex

SKY Events for July 2019

Jul 2nd – New Moon

Jul 4th – Happy Birthday U.S.A. 243 years old; M1 Crab Nebula first seen in 1054 A.D. and Earth at aphelion 94,513,220 miles from the Sun.

Jul 9th – First Quarter Moon

Jul 11th - USA's STS-135 last shuttle mission using shuttle Atlantis in 2011.

Jul 14th – New Horizon Pluto flyby in 2015.

Jul 16th - Full "Summer" Moon, for Traditional and the "Moon of Middle Summer" for the Dakota Sioux American Indian, Comet Shoemaker-Levy 9 smashed into Jupiter in 1994.

Jul 21st – Neptune is 4° N of Moon at 04:00 EDT

Jul 24th – Last Quarter Moon, First missile launch of a modified V-2 from Cape Canaveral, FL.

Jul 28th – First photograph of a total eclipse of the Sun in 1851.

Jul 29th – NASA was founded in 1958.

Planet Lookout at mid-Month

Sunrise 05:54 EDT and Sunset 20:22 EDT

Mercury Evening Rise 07:22 EDT, Sets 22:07 EDT**;** Mag 0.0 and 6.8 arc seconds.

Venus Morning Rise 04:43 EDT, Sets 19:04 EDT, Mag -3.9, Arc Sec 10.3

Mars Evening Rises 07:34 EDT Sets 22:11 EDT, Mag 1.8 and 3.7 arc seconds wide.

Jupiter Evening, rises 19:47 EDT, Sets 05:31 EDT; Mag-2.5 size 4.8 arc seconds.

Saturn Evening. Rises 21:54 EDT Sets 07:43 EDT; Mag 0.2 size 18.3 seconds.

Uranus Morning **Rises** 02:59 EDT Sets 16:22 EDT; Mag 5.9 size 3.3 arc seconds.

Neptune Morning Rises 01:03 EDT Sets 12:34 EDT; Mag +7.9 size 2.4 arc seconds

To Boldly Go Where ……

Not only are these few words at the start of every Star Trek TV or Movie, they in not so many words was issued by President Eisenhower's. The president issued this command to a newly established space agency called the National Aeronautics and Space Administration (NASA) at its inception in July 19, 1958. The original concept was to follow the single seat Mercury Project with a follow up of a three seat Lunar Mission. That mission was made a National Goal of, "landing a man on the Moon and returning him safely to the Earth" by the end of the 1960s and was made by President Kennedy on May 25, 1961 in an address to Congress.

The Mercury Project ran from 1958 to 1963, dual set Gemini ran from 1962 to 1966, The Apollo Missions ran from 1961 to 1972. As NASA was ramping up its next program in its race to the "Moon", it used the best knowledge from the previous mission to incorporate then into the next mission. If it works, don't fix it gave the agency the ability to build on the best of the last. They also had to deal with the impossible. Just because no one has built "one" doesn't mean we shouldn't or can't. That allowed 12 men from Earth to visit and walk on the Moon.

This concept of let's make it, has earned NASA numerous technology awards and created 1,000 of Spin Off ideas from water pumps used in firefighting to Blue Smoke which can be used as an insulator.

This became part of the problem, due to cost overruns. The original cost estimate was $7 billion dollars, James Webb NASA's boss changed the estimate to $20 billion before submitting it to President Johnson. In a report to Congress in 1973 it was estimated the Apollo project cost $25.4 billion. That's would be $120 billion in 2016 dollars.

Why spend the money for MARS, it's for scientific studies, national pride, and to further our understanding about our Solar System. There are just some ideas and concepts that Artificial Intelligent machines can't fathom or understand. If something goes amiss man can think outside the box! AIs can't.

Why not go straight to MARS, why the first? First, it a long trip to Mars, no way points, or WAWA's, or Home Depots. Mars is 6 to 9 months flight from Earth, the Moon on the other hand is 3 to 4 days from Earth.

It's been 47 years since we walked on the Moon, we need to ramp up to reacquire that Lunar engineering and flight knowledge to bring the Mars team up to date. The estimated budget for a Mars mission project lasting 25 years is about $1 Trillion dollars. The Mars One, which aims to establish a permanent settlement on planet Mars, puts the cost of sending four people there at $6 billion.