



The READOUT

Vol. 9 No. 2

Feb 1986

VOICE OF AMERICA

A very special SARA Field Trip has been set up for this spring. Thanks to some very nice folks at the Voice of America relay station in Delano, we are going to be able to tour their facilities on April 5th, 1986. If you read the story in last months READOUT about the station, then you know that you're in for a treat. The station sits on 800 acres 2 1/2 miles west of Delano and is operated by the United States Information Agency. The station runs several high powered shortwave transmitters using elaborate rhombic and curtain antennas to beam their signals into Southeast Asia and Latin America. The station went on the air in November of 1944 and has been in continuous operation since then.

(CONTINUED ON PAGE 5)



FIELD TRIP

APRIL 5TH

Stanislaus Amateur Radio Association, Inc.
P.O. Box 4601 Modesto, Ca 95352

READOUT is the official publication of the STANISLAUS AMATEUR RADIO ASSOCIATION INC. "SARA" P. O. Box 4601 Modesto, CA. 95352. Entered as bulk mail at the U.S. Post office Modesto CA. Contributions to READOUT are always welcome and may be submitted to the editor, Bob Pinheiro, W6GZLO at 1221 Mist Flower Ct. Modesto, CA. 95355. SARA owns and operates two F.M. repeaters. 145.39 MHz (-) located on Mt. Oso 22 miles SW of Modesto at an elevation of 3,370 feet. Our 220 MHz repeater operates of 223.68 MHz (-) and is also located on Mt. Oso at an elevation of 3,500 feet. Both repeaters are equipped with an autopatch for the use of SARA members. SARA conducts in informational net on both repeaters each Thursday evening at 800 pm with the exception of holidays.

SARA meets the third Tuesday of each month at the Stanislaus County Administration building at the 12th and H streets in downtown Modesto. Meetings begin at 730 pm. SARA is incorporated with the State of California and carries liability insurance covering all members. SARA is an affiliated club of the American Radio Relay League (ARRL) and Stanislaus County RACES. Dues are \$15.00 per annum, \$7.50 for students up to sophomore in college. Dues are pro-rated for newly joining members from the date they join. ARRL membership and QST renewals may be made through SARA with a 2.00 commission retained by SARA.

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VICE PRESIDENT

John Cowman.....KB6OU.....527-7258

SECRETARY

Laverne Landeros.....KB6ECF.....578-5554

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Lynn Windus.....KB6DXX.....523-0141

funnies by KF6QA



**IT'S JUST A LITTLE ICE -
BUILD UP ON THE ANTENNA,
IT'LL GO AWAY WHEN THE
FOG LIFTS!**

**BUDGET COPY
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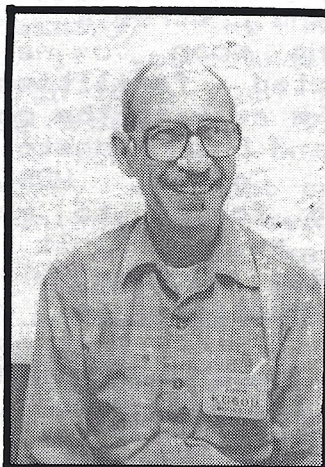
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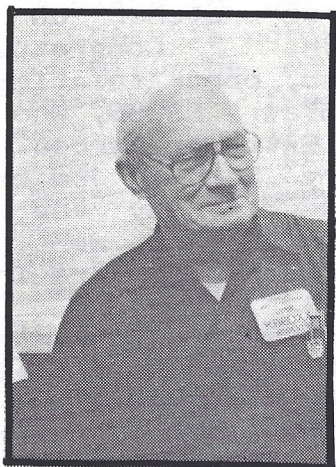
1986 OFFICERS



PRESIDENT
Gene Rong
N6JRC



VICE PRESIDENT
John Cowman
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TREASURER
Lynn Windus
KB6DXX



SECRETARY
La Verne
Landeros
KB6ECF

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THIS & THAT

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-- 10-4 Communications, at 9th and L streets, will be moving soon to newly constructed facilities four blocks away at the corner of 5th and L in Modesto. Owner Marc Colton, WB6OZF, is being forced to make the move as a result of the Modesto Community Center construction in downtown Modesto. His present building is to be raised by the City for a parking lot for the Center.

-- KB6JHV, Bill Ebeling of Manteca is recuperating from recent hip surgery.

-- W6XK Chet, and Jim N6KMR are the proud owners of new Yaseu 757 low band rigs.

-- Burt, W6FGC, has his digipeater and packet mailbox operational. The digipeater is W6FGC-1 and is located on Confidence Ridge at the home of WB6LOQ. The equipment consists of a Kantronics Packet Communicator and an Icom 27-A running 25 watts. The mailbox is also a Kantronics unit and is designated W6FGC-2 which is located at Burt's home in Twain Harte. The mailbox has a box for SARA announcements.

-- Amateur callsigns issued by the FCC as of December 1985 in the six call district included, Extra >>> WN6D; Advanced >>> KB6ZR; Gen-Tech >>> N6MUM and No-vice >>> KB6KRW.

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COMMENDATIONS

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Congratulations are in order for SARA members Paul Caruso, WD6EXY and Doug Cron, KB6CCX for special community achievements. Paul was named the "Man of the Year" by the Ceres Chamber of Commerce. Doug was commended in writing by the Modesto Police Department for helping the police catch a purse snatcher on December 29th. Congratulations!! Also, congratulations to Joe Fontes, N6LSB, who upgraded to Extra in Merced on January 25th. Joe celebrated his birthday the day before. Joe went from unlicensed to Extra in a years time.

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THURSDAY NIGHT NET 8 PM

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The SARA Thursday night net has returned to 8 p.m. The recent move to 730 p.m. proved unpopular which brought about the return to 8 p.m.

DELANO TRIP (From front page)

We have made arrangements with Storer Coaches to rent a coach for the day for transportation. The cost per person will be \$12.50 which covers the cost of renting the bus. There is no charge for the tour which lasts approximately two hours. The tour will start at 10 a.m. in Delano. The bus will leave Modesto at 730 a.m. for the 2 1/2 ride to Delano. We will board the bus at in the parking lot behind our meeting place, Stanislaus County Administration Building at 12th & H streets in downtown Modesto. Following the tour the bus will stop for lunch at a place to be determined. Lunch is not provided. You will be on your own. Please feel free to bring a sack lunch if you prefer. We expect to be back in Modesto between 5 and 7 pm. Here are the rules: The trip is limited to 38 maximum. SARA members will be given first choice. Each member will be allowed one guest (wife-girlfriend-friend etc.) to go along on the trip. Your money must be in to WA6ZLO, who is organizing the trip, no later than March 18, 1986. We will establish a standby list for those who decide

they would like to go at the last minute and for non-SARA members. We will go to the standby list to fill the bus if necessary. The refund policy: If you cancel before March 18th, your money will be refunded. If you cancel after March 18th, your money will not be refunded unless your seat is filled from the reserve list. Make your reservation by contacting WA6ZLO at 523-5880 after 7 pm evenings. **FIRST COME FIRST SERVED!** The number of people that can take the trip and tour is limited to 38, primarily because this is the maximum amount that the VOA people can handle at one time. Secondly, that's all the bus holds. As a matter of fact, the VOA people had to make special arrangements with off duty and retired personnel to come in to handle the tour, which we greatly appreciate. The bus is air conditioned and has a restroom on board. This is a trip you won't want to miss, but please remember, space is limited. If you want to go, call now! Don't be disappointed!

ARRL
affiliated club

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BULK MAIL OFF & RUNNING

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Our first bulk mailing took place in January, and from all indications it was a success. From the reports we have received, it took as long as 8 days to as short as 1 day to deliver the READ-OUT. Although third class mail, members in the Modesto 95355 Zip Code got their's in one day. Most of the other Zip's in Modesto got their's in 3 to 4 days. Randy, KA6WWT, serving in the Air Force in Illinois, got his in 3 days. The slowest service was to parts of Manteca which took a full eight days and Hughson, (where's Hughson?) which took 5 days. We were told that total delivery anywhere in the U.S. was probable in 8 days, and that came true. However, we were cautioned to expect longer delays around Christmas time. We plan to get the December issue of READOUT in the mail earlier in December.

MISTAKES!

What with the change to bulk mail and the crush of renewals coming in, we sometimes make mistakes. Also, WA6ZLO, has just purchased a disk drive and added new programs requiring the

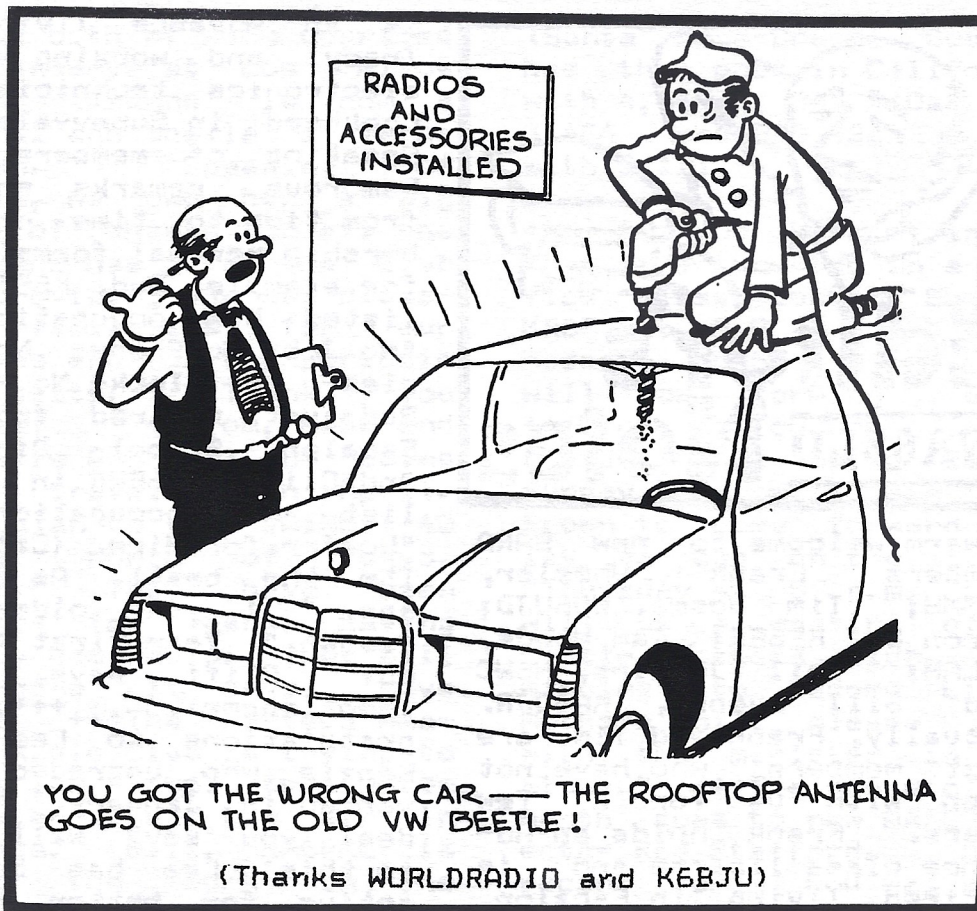
transferring of membership lists and mail lists. All this added work (and confusion) has caused some errors. So, PLEASE, if you notice anything that is not right please let WA6ZLO know. If you don't receive your newsletter by the monthly meeting date, please contact WA6ZLO (phone and address in the RO Facts on page 2). Slip-ups will happen, please help by notifying us. We hope you enjoy the newsletter, if you do, mention it to the editor when you get a chance. Praise is his salary!! Suggestions and contributions are always welcome.

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220 OSCILLATOR STRIP

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The SARA 220 mHz repeater remains out of service. Our engineers have elected to replace the entire oscillator circuit with a new one in hopes of curing, once and for all, the problem of the machine jumping off frequency. The new board was ordered from Spectrum Communications in Pennsylvania with delivery expected in four to five weeks.



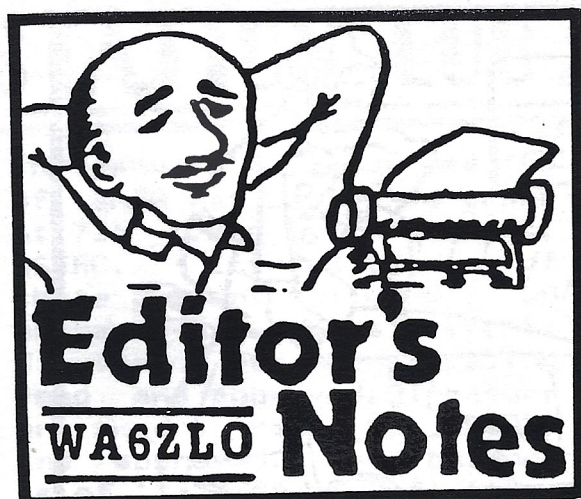
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MORE SATELLITE SCRAMBLING COMING SOON

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Scrambling is still big news in the backyard earth station business! Super station, WOR Chicago, is set to scramble full time effective March 1st- although test scrambling could have begun by the time you read this. They will use the M/A-Com VideCipher II system (also adopted by HBO) which seems to be emerging as the standard. HBO was scheduled to scramble their signals on January 15th. Showtime, TBS (Turner Broadcasting Sytem) which includes CNN (Cable News Network) and many others are also set to encode their programming. The Justice Department is in-

(See SCRAMBLING page 15)



A warm welcome to new SARA members Frank Wheeler, W6MMH; Tim Bosma, WB6UJD; Byron Oh, KF6ER; Pam Woods, N6LAH; Phil Jenkins, N6WC and Bill Luebke, KA6DJR. Actually, Frank and Tim are past members who have not been with us for a few years. Frank holds an Advance class license and is retired living in Escalon. Tim is also an Advance and is a purchasing manager for a San Jose firm. Pam Woods is a Technician, a book-keeper, and the wife of Allen, WA6OYF. Phil Jenkins is Deputy Director of Communications for Stanislaus County and is an Extra. Bill Luebke is a college instructor and administrator at Modesto Junior College. His articles on astronomy are published regularly in the Modesto Bee. Bill holds a Novice license. Byron Oh

is an Advance living in Tracy and working as an electronics technician at Lockheed in Sunnyvale. +++ Speaking of members, some humorous remarks show up from time to time on membership renewal forms. Take for example, Bud, K6SFX who listed his occupation as.. "No Job- No Phone- No Worries- No Clock- No Money." Bud just retired from the Escalon School District. And Cliff, WA6EWR in Sonora list his occupation as.. "Loafer for Hire. (Call me, I'm the best). As for his age, " 1 year older than Reagan." Year first licensed? Cliff says, "50's (bootlegger)". +++ Congratulations to Lee MacKenzie who upgraded to Advanced in January. No big deal you say? Well listen to this! Lee has been inactive for better that 7 years and only picked up a license manual about 30 days before taking the test in Cupertino. And to put the frosting on the cake, he took and PASSED the 20 words a minute Extra code test. He is now studying for the Extra written. Lee is an announcer/studio engineer at KHYY/KBEE-FM. Way to go Lee!!! Congratulations are also in order for SARA members Jeanne Stevenson, KB6JQF and Sheila Grothe,

KB6JQE both of whom upgraded in January at Los Altos Hills. Jeanne is now a General and Sheila a Technician. Speaking of Sheila, we owe her a big vote of thanks for all the help she has given the Club in providing the new classroom facilities for our classes and for the periodic VE tests. Thank you Sheila! +++Tom, WJ60 and his wife Ann will be doing some traveling in April. They plan to visit JA1NUT 40 miles north of Tokyo, Japan. They have been friends for years, having met by ham radio. They will be gone 14 days. Have Fun!! +++The Manteca Amateur Radio Club is trying to get a low level two meter repeater on the air in Manteca. Bill, KA6PKL is doing the work on the repeater at his home. Plans are to put the machine on 147.075 MHz (+). +++ The popular North Hills ARC Swap Meet will be held on May 4th if it doesn't rain, May 11th if it does. The meet will be held this year at the American River College stadium parking lot on College Oak drive near Winding Way in Sacramento. +++ According to the Call Book, there are 889 licensed hams in the 953 (Stockton/ Modesto) Zip code area of California. 926

(Santa Anna-Orange County) has the most in California with 4,569; 945 (Oakland) 3,484 and 920 (San Diego) with 3,121.

+++ If you know of anyone that is interested in a Novice Class, contact Sherry, KR6F at P.O. Box 4659, Modesto 95352. A new class will be forming soon. +++From the church bulletin board- "This being Easter Sunday we will ask Mrs. Brown to come forward and lay an egg on the altar." "Thursday at 5 p.m. there will be a meeting of the Little Mothers Club. All wishing to become Little Mothers will please meet with the minister in his study." +++The quote of the month goes to new ARRL Director Rod Stafford. At a recent forum Rod was asked about how he feels about his new job as Director. He replied...."I feel like a mosquito at a nudist colony. I know what to do, but I don't know where to start." +++ Jordan has entered the era of 450 MHz Amateur repeaters. The repeater went on the air in September atop the tallest building in Amman. The repeater is a Spectrum built in Pennsylvania. +++Heathkit has a new two meter talkie out

(Continued on Page 12)

Mount Sutro:

Evolution of a tower

On February 21st, 1986 the Mount Sutro television tower will be 15 years old. The planning for the tower, however, began in 1956 when ABC first applied to the FCC for approval to build a tall tower on Mount Sutro overlooking the city by the bay. The final authorization for construction of the tower came in February 1966 when the San Francisco Planning Commission approved a conditional use permit for the site.

Before the erection of Sutro Tower, TV broadcasting in San Francisco originated in three locations. During the formative days in the late 1940's, as licenses were issued, stations opted for different transmitting sites. KPIX Channel 5 broadcasted from the top of the Mark Hopkins Hotel on Nob Hill. KGO-TV Channel 7 chose Mount Sutro and KRON-TV Channel 4 selected Mount San Bruno, 3 1/2 miles south of the city. KSAN-TV, a UHF pioneer, joined KGO-TV on Mount Sutro. KQVR Channel

13 (Stockton) erected their transmitting site on Mt. Diablo east of San Francisco that covered the Sacramento Valley and the bay area.

It was apparent from the beginning that a common tower would offer advantages to all area broadcasters. The problems encountered were location and ownership. Two sites were under consideration, Mount Sutro and Mount Bruno. The latter was finally ruled out because of its proximity to the San Francisco International Airport. The ownership problem was solved with the formation of a corporation consisting of ABC, Westinghouse, Cox Broadcasting and Chronicle Broadcasting. Experts from the four companies joined consultants, engineers and designers from many disciplines in all phases of the project.

Construction began in late February 1971 with footings cut into the undisturbed

rock of the mountain. Grade beams were channeled to connect the three legs to prevent seismic shifting. After the footings were dug, 56 feet square and 10 feet thick, the concrete pouring presented a logistical problem. Ten yard trucks, pouring every few minutes for 24 hours, contributed 1100 cubic yards of concrete for each footing. The foundations, each a 14-foot cube, were then poured for each of the footings with the grade beams poured last.

The raising of the steel presented major problems. The erection of the first 300' of the 977 foot structure went without incident with the steel members raised by a ground-based crane. Above 300 feet a special basket-boom was fabricated which swung from leg to leg within the center of the three legs of the tower. Support of the basket was by a series of cables attached to the legs. After the boom was in place (a major accomplishment because of its 300-foot length) construction resumed at an accelerated pace. When ground crews lost visual contact with those aloft because of the famous San Francisco fog, radio contact kept work flowing. Wind was the greatest hazard as the

height increased. There are times at Sutro when you can enjoy calm at ground level and experience 40 mph winds a few hundred feet in the air. Also, there are times when the ground level is fogbound and it is clear and sunny above.

Steel was supplied by

Sutro Tower statistics

- Overall height is 977 feet.
- Height above sea level is 1811 (AMSL).
- It is the highest structure in San Francisco.
- It is only a few feet shorter than the Eiffel Tower.
- There is three times as much weight, in concrete, below ground, as the weight of steel above ground. The center of gravity is 13 feet below ground.
- Steel, all domestic, weighs 3,400,000 pounds. The antennas add another 200,000 pounds.
- There are more than 25,000 feet of transmission line, all copper coax.
- Total cost including tower, building and antennas was in excess of \$12 million. Today's cost would exceed \$50 million.

U.S. Steel and Bethlehem Steel with the finished members shipped by rail flatcar to San Francisco and trucked to the site. The whole thing went together like a

(Continued on next page)

MOUNT SUTRO TOWER

(Continued from page 11)

giant erector set. The trusses were assembled on the ground and raised as a single unit. There was little welding on site, because everything was bolted together. Almost everything exposed to the weather was hot-dipped galvanized, and all other members were coated with rust-inhibiting paint. With the exception of touch-up work, there has been only one major paint job in the 15 years the tower has been in operation. The topping off of the construction began in December of 1972 and the antennas were installed. Antennas for channels 2-4-5-7-9-32-44 along with four FM stations were set in place. Channel 4 and 5 share a common antenna with filters keeping interaction to a minimum. The four FM stations, KGO-FM, KFOG, KOIT and KQAK are located at and below the sixth level while the TV stations occupy the stacks above the sixth level. All communication and microwave systems are located at the fourth level, two down from the narrowest part of the tower. While the tower was being built the transmission building adjacent to the base of tower was being

constructed. The building incorporates the south leg of the tower within the building itself so that transmission lines can directly enter the tower/building.

On July 4, 1973, by mutual agreement, all of the stations began transmitting from the highest structure in San Francisco, the new \$12 million Sutro Tower. (Thanks Don Lincoln, Director of Engineering, Sutro Tower)

(Ed-Notes from Page 9)

with it's own mobile type holder with 25 watts for mobile operation. The talkie alone is \$279.95. The 25 mobile amp is \$59.95. The mobile holder is \$129.95. Accessories include a mobile charger and dry battery tray for \$19.95 and a speaker/microphone with touchtone pad for \$39.95. The total price, \$529.75...and you have to put it together. Thats it for this month. Have a good one and hope to see you on the Voice of America trip in April. Get your reservations in early. We only have room for 38! 73, Bob, WA6ZLO.

THE AMERICAN RADIO RELAY LEAGUE, INC.

SECTION MANAGER

SAN JOAQUIN VALLEY

Charles P. McConnell W6DPD

The ARRL advises that you should get a copy of H.R. 3378 and S. 1667 before you contact your Senators and Congressman about this proposed legislation. You should read the editorial in the Feb. 1986 QST. This editorial explains the facts and the rumors about this legislation. You can get a copy of the legislation by sending a large SASE with 73 cents postage to ARRL Information Services, 225 Main Street, Newington, CT 06111.

There is now a third party traffic agreement in effect between the United States and 4U1VIC in Vienna.

The ARRL Club Challenge for the 80's will continue through 1986. There will be a transceiver given away in each of the club categories according to size. This program allows an affiliated club to a \$5 check from ARRL for each new ARRL member a club recruits for the League. Any ARRL application form can be used as long as the affiliated clubs 4 digit code number is written on the application form. If you are not an ARRL member contact your affiliated club for information on joining and benefits of membership.

The following ARRL Section Leadership appointments are available to interested ARRL members: Bulletin Manager (recruits and coordinates Official Bulletin Stations); Official Observer Coordinator (recruits Official Observers and helps in monitoring); Public Information Officer (recruits and coordinates Public Information Assistants and works to improve the image of Amateur Radio in the eyes of the public); and Assistant Technical Coordinator (helps answer technical questions and works in solving RFI problems). If you are interested in more information on one of these appointments, please contact me. My address is on page 8 of QST.

Amateurs should avoid using the segment 145.8 to 146.0 MHz for FM simplex because this segment is allocated for satellite inputs. The use of FM on the satellites puts an excessive drain on the batteries and it uses a lot of space on the satellite. CW and SSB use much less bandwidth than does FM.

STATION LOG

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The January 21, 1986 meeting of SARA was called to order at 731 p.m. by President, N6JRC. Introductions of those present followed. 50 members and guests present. Minutes of December meeting read and approved. Treasurers report read by KB6DXX and approved. Bank balance as of 12-30-85 was \$1,440.-66. Expenses, \$76.51. On hand for deposit \$305.40. Deposits made through 1-21-86 \$274.50. Total in bank, \$1,944.05 of which \$309.65 is in the educational fund. WA6ZLO reported on the first bulk mailing taking from one to eight days. Under new business ZLO reported on the preliminary plans for a field trip to the Voice of American transmitting facilities at Delano. Moved, seconded and approved for April 5, 1986. Maximum allowed 38 at a cost of approximately \$12 each. W6AFS moved that club purchase a heater for the crystal in the 220 machine. Seconded by NV6S and approved. Cost about \$100. A letter from the City of Modesto regarding a test of their emergency center on 1-26-86 was read. Probably four hams would be needed. A

thank you card was read by ZLO received from K6SJV for the flowers sent by the club on the death of his wife. KB6DXX moved and W6AFS seconded that a cash donation of \$25.00 be made to the Special Olympics of San Joaquin County in the name of SARA silent key Joe, N6DXB. Unanimously approved! KB6DXX moved and W6AFS seconded that the thursday night net be moved back to 8 pm. Motion carried to take affect in two weeks. N6JRC suggested a CW check-in at 730 pm on Thursday night before the VHF net. WJ60 will be net control WG6P will be the alternate net control. Frequency will be 3739 kHz starting on 1-30-86. Our program for the evening was canceled because of technical difficulties encountered at the last minute by Mrs. Rader. Program rescheduled for July 15, 1986. The \$14 in the raffle pot was won by Mrs. Virginia Sayre (XYL of W6GYM). Meeting adjourned at 930 pm. Respectfully submitted by SARA Secretary LaVerne, KB6ECF.

SCRAMBLING

(Continued from page 7)

investigating whether cable operators violated anti-trust laws by convincing programmers to scramble. Meanwhile, representatives of the home satellite hardware industry, worried about how scrambling might affect them, are pushing bills in Congress to impose a two year moratorium on scrambling or guarantee home dish users scrambled programming at fair prices. Senator Barry Goldwater, K7UGA, is actively involved in making certain that costs are reasonable and the \$400 descrambler boxes are available to the public before total scrambling takes place. Goldwater is also on record as saying that he feels scrambling legislation is premature at this time since adequate competition does not yet exist in programming. It appears that SPACE (the home dish industry lobby group) has not been successful in getting Congress to go along with their wishes to delay satellite scrambling. Cable operators are developing systems which will enable them to charge

(Continued on next page)



This is it! If you haven't paid your 1986 dues, this will be the last issue of READOUT that you will get and your name will be dropped from the roster. If you have forgotten to send in your dues, please do it right now while your thinking about. We don't want to lose you as a member of SARA. This is our 10th year and we are hoping to break the membership record of 178 we set last year. We can do it if we all pay our dues. If you stop to think about it, \$15.00 a year (\$7.50 for students) is only \$1.25 a month. Examine the mailing label on the back page to determine the year that your dues are paid through. Com' on, pay your dues! Send your check to the Post Office box now. Thanks!

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N6DXB, JOE PARKER, SR. SILENT KEY

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It is with regret we record the passing of SARA member, Joe Parker, Sr., N6DXB of Stockton. Joe passed away on January 14, 1986 at St. Joseph's Hospital in Stockton. Joe was 61 and retired from the upholstery business. He was a retired Navy veteran having served aboard the Naval cruiser New Orleans. Joe had several heart attacks the last few years and had been ill for some time. Services for Joe were held in Stockton on January 17th with longtime friend Bill, W6AFS, reading the eulogy. Joe leaves his wife Doris, a son Joe, Jr. WD6GRW and a daughter Dorothy. He also leaves a sister in Bozeman, Montana where he was born, and six grandchildren.

W6YIN.....	Charles Barnes.....	November	5,	1978	
N6VZ.....	Henry Deeter.....	July	7,	1979	
K6JFS.....	Charlie Mendoza.....	November	13,	1979	69
WB6VUS.....	Richard Jensen.....	January	21,	1981	
W6GCL.....	Will Mc Alpine.....	February		1982	73
KA6GVR.....	Norman Goodwin.....	October	2,	1982	61
W6FIQ.....	Bill Dalton.....	December	20,	1982	76
N6BGA.....	Quentin Goodrich.....	March	18,	1983	64
K6AYL.....	Leo Nepote.....	July	12,	1983	60
W6ERE.....	Cliff Price.....	October	5,	1983	69
W6QH.....	Tony White.....	November	28,	1983	78
KB6DVQ.....	Stephen Pereira.....	April	2,	1984	66
WB6TUV.....	Bill Ponkow.....	July	19,	1984	69
N6HFU.....	Edgar Martin.....	May	14,	1985	69
WB6LSC.....	Glen Andrews.....	May	29,	1985	43
N6DXB.....	Joe Parker, Sr.....	January	14,	1986	61

SATELLITE SCRAMBLING

(Continued from page 15)

private dish owners for programming. Programmers will scramble their signals before beaming them to the satellite. Cable operators will unscramble them at their receiving station. Decoder box owners will have their dishes turned on by electronic authorization downlinked from the bird with the signal. In 1980, 4,000 home dishes were sold. In 1985, 12,000 were sold a "'WEEK'" at an average cost of \$2,000 each.

ELECTRONIC TRIVIA

The term "condenser" was born in 1745 when a scientist was experimenting with a Leyden jar. He reasoned that the electric charges were "condensed" in the jar. A Leyden jar was the original capacitor consisting of metal foil sheets on the inside and outside of a glass jar. The foil served as the plates and the glass as the dielectric. A hundred years later, Michael "Faraday" further studied the characteristics of capacitors. Alessandro "Volta" judged a battery by the flash he saw when he touched its wires to his eyelides! Andre Marie "Ampere" showed that when current flowed through a suspended rectangular wire loop, the loop became magnetized and acted like a compass needle and pointed north. George Simon "Ohm" discovered curious mathematical relationships between various electrical components in 1827. Ohm's source of electricity was a set of Leyden jars connected by brass rods. In 1831, Joseph "Henry" discovered that electricity is induced in a conductor as a result of a magnetic field. It led to the discovery of the transformer. (W5YI Report)

NEW TUOLUMNE COUNTY CLUB

The first meeting of the newly formed Sonora Pass Amateur Radio Klub (SPARK) is set for February 15, 1986 in Sonora. According to organizer Burt, W6FGC, they expect to be a VHF-UHF type club with dues set at \$10.00 per year. Associate membership is \$5.00. The first meeting on the 15th will be over breakfast at Rube's Restaurant above Sonora Junction Shopping Center at 10 a.m. Contact W6FGC for more information.

PROGRAM THIS MONTH

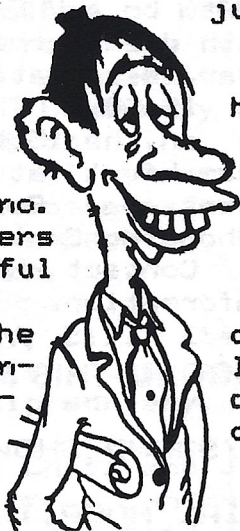
SLIDE/SOUND SHOW ON THE MEMORIAL HOSPITAL EMERGENCY MEDI/FLIGHT HELICOPTER. PROGRAM WILL BE PRESENTED BY JASPER, WD6DZN. 730 PM ON FEBRUARY 18, 1986.

SARA MEETING

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DEAR FRANK

I have two brothers. One is an Amateur radio operator and the other was sent to the electric chair. My mother just recently passed away in a federal hospital for the insane and my father is a wino. One of my sisters is a lady of the night, while the other is a common-law wife of a lo-cutive com-party. I recently met a girl shortly after her release from prison for poisoning her husband to death. We are very much in love and wish to get married. My problem is, should I tell her about my brother the ham radio operator?



WATERMELON DESSERT

A group of ministers and a salesman's organization were holding conventions in the same hotel at the same time. The catering department had to work at top speed serving dinners to both groups. The salesmen were having spiked watermelon for dessert, but the chef discovered this was being served to the ministers by mistake. "Quick", he commanded a waiter, "if they haven't eaten the watermelon yet, bring it back and we'll give it to the salesmen!" The waiter returned in a minute and reported that it was too late- the ministers were eating the liquor spiked dessert. "Well", demanded the excited chef, what did they say? "Did they like it?" "Don't know" said the waiter. "But they're putting the seeds in their pockets."

A KISS....

Groom: "Have you kissed the new bride?" Old Boyfriend: "Not Lately!"

CONFUCIUS SAYS

Putting Mrs. in front of a woman's name is like giving the cat his own fish pond.

Your Invitation

Several complimentary issues of READOUT were mailed this month. If you are not a member of SARA and received a copy of READOUT, we hope you enjoy it and will accept this invitation to join SARA. You will enjoy meeting new friends and the many activities of the club each year. Your membership brings with it the club's monthly newsletter, READOUT and use of the autopatch facilities.

Please use the handy membership application below to apply for membership. If you would like more information on SARA please write to the Club at post office box 4601 Modesto, CA. 95352.

Join In: **DUES** Pay

January	\$15.00
February	\$13.75
March	\$12.50
April	\$11.25
May	\$10.00
June	\$ 8.75
July	\$ 7.50
August	\$ 6.25
September	\$ 5.00
October	\$ 3.75
November	\$ 2.50
December	\$ 1.25

Membership

MEMBERSHIP APPLICATION

Date	_____
Name	_____
Call	_____
MEMBER OF AARL?	_____
Address	_____
City	_____
Zip	_____
Home Phone	_____
Bus. Address	_____
Bus. Phone	_____
Occupation	_____
Date of Birth	_____
Class of License	_____
Year First Licensed	_____
Membership year (19)	_____
Entered Roster ()	_____
Entered Mail List ()	_____
FOR OFFICIAL USE ONLY:	
Treasurer ()	_____
Welcome/Autopatch letter sent: ()	_____

■ ■ CALENDAR ■ ■

Februry 18, 1986.....SARA Monthly meeting..... 730 p.m.
 Program: Slide/sound presentation
 on the Medi-Flight emergency
 helicopter.

March 18, 1986.....SARA Monthly meeting730 p.m.
 Program: Tour of the television
 transmitter building facilities of
 Sainte Broadcasting Co. Modesto

April 18-20, 1986.....DX Convention Holiday Inn
 in Visalia.

April 22, 1986.....SARA Monthly meeting.....730 p.m.
 Program: Slide/sound program on
 raising pheasants. Presented by
 Delta College.

May 20, 1986.....SARA Monthly meeting.....730 p.m.
 Program: Rancho Seco Nuclear
 Power plant, Sacramento

June 17, 1986.....SARA Monthly meeting.....730 p.m.
 Program: Bud , KB6JHU, on Laser
 Photography.

July 15, 1986.....SARA Monthly meeting.....730 p.m.
 Multi-Projector Slide/Sound on
 Alaska with Mrs. Bunnie Rader
 (Rescheduled from January)

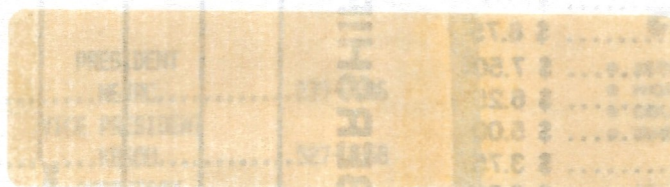
August 19, 1986.....SARA Monthly meeting.....730 p.m.

Sept. 16, 1986.....SARA Monthly meeting.....730 p.m.

October 21, 1986.....SARA Monthly meeting.....730 p.m.



Address Correction Requested



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P.O. Box 4601 Modesto, Ca 95352