MINUTES for the BISHOP AMATEUR RADIO CLUB meeting on August 11, 2015.

Meeting called to order by John (AD6NR) at 7 pm.

Attendance: 20 present, including rare attendees Randy (N6BXP) from Los Angeles area, and Greg (KJ6KO) from west of Sacramento.

Treasurer's Report: Terry (K6UN) had detailed printouts for the last three months. Income showed four dues payments and donations totaling $175, then $96 from the 50/50 raffle. Mid May to mid July power bill was $177.84. Mid July to mid August bill was $7.60, with a letter from SCE that they were having problems with the power measurements. Total bank balance was $2,318.51.

Minutes: Jon (NW6C) had printed copies available. Minutes were approved as posted.

Activities:

1. Para-glider meet needs our support. This will be a week long contest held at the end of September. Actual routes will not be known until shortly before each group launches – depends on wind and other weather.
2. Tioga pass run will be on September 13. At least one more volunteer needed there. Joy (AG6WM) may be able to help. A t-shirt will be provided if you get the size to John quick enough. Unclaimed shirts from competition entries generally won't fit our radio operators. Just an observation there!
3. BARC club breakfast is 8 am Saturday August 15 at Denny's, followed by the Transmitter hunt starting on Red Hill at 10 am.
4. 80 meter nets on 3950 kHz, Sunday, 8 am, and Thursday, 3947 kHz, 7:30 pm.
5. Slow speed local CW net by Adrian (N6ZA) on Mondays at 7:30 pm. Clear frequency is announced on local repeaters prior to start, probably 3.558 MHz. Send at whatever frequency you want to practice at.
6. Wedding of the Waters. Keith (W6KRF) will have the ShackTow there. John is to order up a second BARC banner so that one can be displayed on each side of the Shack.

Program: Rich (KF6YLW) took the floor to give the Club an update on packet radio and how it was being used as a backup for emergency communications in Nevada. "Packet Radio for Emergency Support" was the Power Point title. Basically, almost all of the hospitals in Nevada are now connected by Amateur radio linked packet systems that are to provide text communications if the telephone and internet systems fail. Agreements have been made with Nevada emergency services to extend this system into Inyo and Mono Counties. This system also adds internet capability to the AX.25 packet radio protocol. Packet can be used on all radio bands, from long HF to microwave, but most of the systems use 2m frequency modulation, including the Nevada system. Band plan frequencies are 145.01, .03, .05 MHz and up.

Rich had a basic packet radio terminal displays on a table. It used a 2 m handy-talkie connected through a packet controller to a notebook computer. "Outpost" software on the computer makes the packet controller interface look like an email screen. This software is the standard used for the Nevada emergency system, supports many operating modes, and allows connection via the internet as well as radio. A Kantronis Packet Communicator 3+ (Kam3) is the preferred controller, although there are many other ones available. Rich noted that the technical challenge is the special cables needed to connect the units together. Those cables could be individually made or purchased separately.

As for basics, a packet Terminal is a setup to access the packet radio system, used primarily to receive and send text messages. Packet terminals can have Digipeat enabled, which allows that station to

automatically re-transmit a message as received. A packet Node has the program in the packet controller enhanced to operate at a remote site, with a command structure for routing and monitoring functions. This can include external inputs, such as site battery voltage. A further configuration is to have the controlling computer configured as a Bulletin Board Service (BBS), where messages and other information can be indexed, received, viewed, and stored. These BBSes are usually located at an accessible control point. For operation, packet controllers are given operating instructions using the Command mode. Messages are passed when the controller is set to Conversation mode. A Transparent mode is used when sending data that contain command instructions (such as an executable computer program) over the packet system, without those embedded commands actually controlling that packet system. The Nevada emergency system BBS can now be accessed from Keith's station in Lone Pine. Incident Command System (ICS) forms are on that BBS. Packet radio links are now functional between Silver Peak, Gardnerville, Tonapah, and Las Vegas. Rich and Keith advised that to keep the data volume down, packet station beacon timing should be set much longer that the usual default. About every 10 or 15 minutes should suffice. A “beacon” is when a device transmits a signal that essentially says “I am here, and this is who I am”. A “ping” is when a special signal is sent to a specific location or address, then immediately sent back. Pings are useful for analyzing the operation of a communication system.
How would we be deployed when emergency text communications were needed? How would Dr. X at a local hospital get a message to Dr. Y at a hospital in Nevada? More planning needs to be done on this, with Inyo, Mono, and Alpine Health Officer Doctor Johnson consulted. John has been waiting for the radio hardware to be checked out before proceeding with a deployment program. Past BARC member/Bishop resident Dale (KJ6IX) has helped a lot in getting the packet system running. Dale moved to Nevada when he retired.

8:25 pm, **Intermission** and **50/50** tickets. Jim (K6JNX) brought an unused satellite phone to see, John brought in a phone and some tools to find new homes before they were thrown away, Terry circulated a copy of his latest BARC roster with a request to check and make corrections, and Randy circulated a box of See's candy.
Darren's sister Carolyn thanked BARC, and especially John, Paul, and Jon for installing an HF antenna at Darren's station. Darren then donated $100 to the Club.
K6END was the 50/50 winner, taking home $40 of the $80 proceeds.

Other Business:
Dennis (W6IY) reported that the last VE test resulted in one new Tech, Jamie. Ed initiated a new idea at the exam, providing contact information to encourage new licensees to get on the air. He reported that she had responded by email. He answered her questions about equipment and sent her information.

Rich gave a report about the Mazourka Peak work party. John and Jon made an afternoon dash to the Peak when the repeater went off the air. Opening the door let water out of the structure. The solar system was not charging the batteries, and the battery voltage (nominally 12 volts) read about 8 volts. Both solar arrays had output to the charge controllers, but neither controller was charging the batteries. Kurt (W6PH) radioed information about checking the charge controllers, which were followed, but still no charging. As the batteries were charged back to over 12 volts by jumpering to John's car, one controller was removed for bench checking. All loads were disconnected from the batteries to keep them from sulphating, then back down the hill. So, no success in returning the repeater to operation. Kurt ordered up a new charge controller. With the new controller, a fresh battery, and wiring supplies, Rich joined Kurt for serious service trip to Mazourka peak. The batteries had self discharged to 8 volts or so. Several suspicious batteries were removed from the set, the new was controller was installed, and work was done to straiten up the wiring. Both solar strings came back on line, and repeater

operation was restored. Apparently, there was a shorted cell in one of the batteries that was bringing down the pack voltage to the point the charge controllers cut off. Moisture may have also been a factor. Priority improvements are to better organize the wiring, seal the roof, and install a better antenna for the packet node. The lower edge of one of the active strings of solar panels is quite close to the ground. Dennis suggested mounting the panels higher above the ground so that power would not be lost due to snow fall. We don't know much about snow accumulation on Mazourka Peak.

Kari Castle is still hoping to have radio support for the para-glider competition. Keith thought he could help if they flew south.

“Islands on the Air”? Terry had a copy of the rules. Keith is planning a kayak trip to an island on Silver Lake (one of the Lakes in the June Lake loop). This will be on the last Saturday in August. 20 contacts, including two DX entities are needed to qualify as an activation of the island. Contact Keith if you want to be part of this expedition.

Keith is entering the ShackTow in the Lone Pine Film Festival parade.

Radio rig power for the ShackTow was discussed. It is now provide by a worn out 12 volt battery hooked to a battery charger. A radio transmission from this source starts out clean, then shortly decays into severe power line frequency hum. Mark (W6WWA) volunteered a solar panel and charge controller for use on the Shack. A low voltage disconnect should also be installed to keep from ruining the battery from too deep of a discharge. Greg though that most new solar charge controllers include that feature. BARC members approved the purchase of a new battery for use in the system. Greg fretted that if he had known earlier, he could have brought with him a really proper battery for that application. Donations were made from club members to aide in a new battery purchase.

Meeting Adjourned at 9:00 pm.

Jon Patzer, NW6C
Secretary
Bishop Amateur Radio Club, Inc.

Packet Postscript: Information about X.25 and AX.25 is on Wikipedia. The “A” added to the military X.25 communications protocol means it is modified for use with Amateur radio.
As a bit of Owens Valley packet history, Club member Bob Wirth was the first one locally to find out and promote packet radio. This was at the same time he was leading the construction of our current building on Silver Peak. Bob Nagel supplied a “Nordlink” firmware chip to Dennis to convert a packet controller to a node, that was then installed on Silver Peak. Later, Dennis got word of surplus plugin ready modules for adding voltage, current, and temperature to packet nodes. One of these may still be in use on Mazourka Peak. All this was before public access to the internet and most computers still needed terminals for access. Mammoth Mountain repeater was originally deliver with 145.01 MHz channel elements. This evolved into BBS, a link from Silver to Mazourka to Ridgecrest to Palos Verdes, packet node wars, and packet DX cluster. With the proliferation of personal computers and the internet, local packet radio devolved to simple site telemetry.