



River City ARCS

River City Amateur Communications Society



September 2006

Volume 30, Number 6

CLUB INFORMATION

DUES: \$20.00 Per year
ADDRESS: PO Box 215073, Sacramento CA 95821
MEETINGS: Membership meetings are generally held on the first Tuesday of each month, 7:30 P.M., at the Sacramento County Corporation Yard, corner of Don Julio and Elkhorn Blvds. Board of Directors meetings are held the fourth Tuesday at 7:00 pm. All members are welcome. Contact a board member for location.

2006 OFFICERS AND COMMITTEES

Board of Directors

President	Gary Hayes, KG6SMX	(916) 348-7859
E-mail:	kg6smx@sbcglobal.net	
Vice President	Don Kunkel, KE6GMJ	(916) 967-1343
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E-mail:	ad6ct@arrl.net	
2 year Term	Ken Hall, WO6J	

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Picnic Chair	Need volunteer	

Club Phone (Messages): (916) 492-6115

Web Site: www.n6na.org

E-mail: n6na@arrl.net

N6NA Repeaters

145.250 MHz (-162.2)

442.600 MHz (+100)

Club Net - Members and Guests

Check In on 145.250 MHz

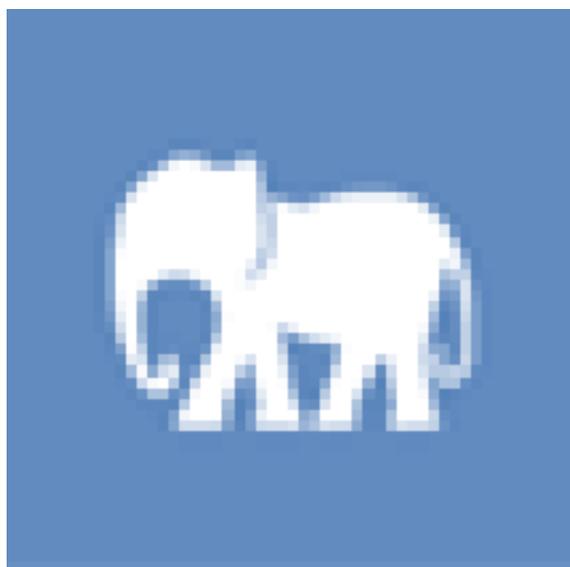
at 8:00 P.M. Wednesdays

2006 SCHEDULE OF EVENTS

Membership Meetings: Oct 3; Nov 8 (Wed); Dec 5 For 2007 all membership meetings will be held on the 1st Tuesday of each month.

Board Meetings: Oct 24; Nov 28; Dec 26

Christmas Party: To be announced



BRING YOUR WHITE ELEPHANTS TO THE MEMBERSHIP MEETING ON TUESDAY, OCTOBER 3

The November meeting will include elections of officers for 2007 and also a presentation from the developer of the tennis ball antenna launcher. Mark your calendars.

Come and join your fellow members at the County Building corner of Don Julio and Elkhorn Blvd.

The officers look forward to your attendance and participation.

HAVE YOU CHECKED IN YET?

One benefit of club membership is participation in the club activities. One of those activities is the weekly net being held on the club repeater. You need to set your radio to 145.250 with a minus offset and PL 162.2. Having done this then tune in at 8:00 PM on Wednesday and check in.

VE SESSIONS

Every third Saturday, except October at Carmichael Elks Lodge, Cypress and Hackberry in Carmichael, CA. River City ARCS holds a VE Session

At the last session held on Sept 16th they had 7 candidates - 3 passed their Technician, 1 became general, and 1 upgraded to Extra.

Next Sessions will be held November 18, 2006 (No session in October due to Pacificon) Sessions start at 8:30 AM - Closed at 9:30 AM (Walk-Ins Only) VE liaison Ken Hall, WO6J

VOLUNTEERS NEEDED

The club is looking for volunteers to handle the assist with the annual Christmas Party. Contact President, Gary, KG6SMX, if you are willing to help.

AMSAT NEWS

AMSAT is excited to announce that ISS Expedition 12 Commander William (Bill) S. McArthur, KC5ACR, will be the keynote speaker at the 2006 AMSAT Space Symposium to be held at the Crowne Plaza Hotel in Foster City, California, October 6-8, 2006. Commander McArthur is well known to ham radio operators - during his six months aboard the ISS he became the most active radio amateur ever to serve in space.

Commander McArthur logged more than 1800 QSOs, and earned the ARRL Worked All States Award. His impressive track record also included a record 37 school contacts, Worked All Continents (including Antarctica) and 130 DXCC entities.

Astronaut McArthur is a veteran of four space flights that include:

- * STS-58 - October 1993 (Spacelab Life Sciences Mission 2)
- * STS-74 - November 1995 (Shuttle-Mir Docking Mission 2)
- * STS-92 - October 2000 (ISS Assembly Mission 3A)
- * Expedition 12 - October 2005

In addition Bill has made four spacewalks (two each aboard STS-92 and Expedition 12) and was on backup crews of Expeditions 8, 9 and 10. He will be featured during the Annual Banquet on Saturday evening, October 7, 2006.

NASA Principle Investigator, Dr. Scott Sanford has generously accepted our invitation to provide a key presentation during the Symposium tour of the Ames Exploration Center. Dr. Sanford, who is co-director of the NASA Ames Astrochemistry Laboratory, will speak about sample return from comets and asteroids in general, and specifically about the Stardust Sample and Return Mission to Comet Wild 2.

Dr. Sanford was one of the original team members to propose capturing dust from a comet and bringing it back to Earth. Stardust was launched in February 1999, and in January 2004 approached Wild 2 within 150 miles of the nucleus, collecting samples and capturing detailed imagery of the comet's surface. On January 15th 2006 Stardust re-entered the Earth's atmosphere and successfully completed its mission after landing in the salt flats of northwestern Utah. So be sure to join us Sunday afternoon for what promises to be an exciting event.

The 2006 Space Symposium will be a joint meeting with the ARISS International Delegates and will also include the IARU Satellite Advisory Panel annual meeting, and a meeting of AMSAT International Delegates. For additional information please visit the AMSAT website at <http://www.amsat.org>. Click on the 2006 Space Symposium link in the left side menu.

This year you can register for the Space Symposium online. Online Registration can be found at <http://www.amsat-na.com/symposium>

The American Radio Relay League Pacific Division & the Mt. Diablo Amateur Radio Club Presents
PACIFICON 2006
Amateur Radio Convention
October 13-15, 2006, San Ramon Marriott Hotel
San Ramon, California

For Convention Tickets & Event Schedules go to:
www.PACIFICON.org <<http://www.PACIFICON.org>>

For Hotel Reservations Call 1-800-228-9290 Before October 1, 2006. Ask for the Special Pacificon 2006 Rate of \$84 per night.

*PACIFICON 2006* Events Include:

Friday All-Day Antenna SeminarFriday Evening DXpedition Presentation**Saturday Keynote Breakfast & Evening Banquet**Outstanding Technical Forums** Ham Equipment Exhibitors**Great Swap Meet**Daily Radio Prize Drawings**ARRL Forum**Transmitter Hunt**QRP Activities**Ham License Exams**Saturday All-Day Technician License Class** HFpack Activities**Legal Seminar

ANNUAL ELECTION OF OFFICERS

President Gary has appointed Chuck Freas, Andy Stephens and Paul Grose to the nominating committee for selection of candidates for the elected officers for 2007. If any member is interested in serving the club in one of these capacities contact one of the members of this committee. The Nominations and elections will be made at the club Number General Membership meeting.

TEST YOUR KNOWLEDGE

The following questions have been taken from the Exam Pools for the Technician, General and Extra Exams. Reference and answers are at the end of the questions

1-Which range of frequencies is well suited for meteor-scatter communications?

- A. 1.8 - 1.9 MHz
- B. 10 - 14 MHz
- C. 28 - 148 MHz
- D. 220 - 450 MHz

2-Why are VHF/UHF signals not normally heard over long distances?

- A. They are too weak to go very far
- B. FCC regulations prohibit them from going more than 50 miles
- C. VHF and UHF signals are usually not reflected by the ionosphere
- D. They collide with trees and shrubbery and fade out

3-What digital code consists of elements having unequal length?

- A. ASCII
- B. AX.25
- C. Baudot
- D. Morse code

4-What factors determine the location of the boundary between the near and far fields of an antenna?

- A. Wavelength of the signal and physical size of the antenna
- B. Antenna height and element material
- C. Boom length and element material
- D. Transmitter power and antenna gain

5-In which International Telecommunication Union Region is Australia?

- A. Region 1
- B. Region 2
- C. Region 3
- D. Region 4

6-From an RF radiation exposure point of view, what is the disadvantage in using a high-gain, narrow-beamwidth antenna for your VHF station?

- A. High-gain antennas must be fed with coaxial cable feed-line, which radiates stray RF energy
- B. The RF radiation can be better focused in a direction away from populated areas
- C. Individuals in the main beam of the radiation pattern will receive a greater exposure than when a low-gain antenna is used
- D. All of these choices are correct

7-Which of the following HF digital modes can be used to transfer binary files?

- A. Hellschreiber
- B. PACTOR
- C. RTTY
- D. AMTOR

8-Which of the following is NOT a cause of radio frequency interference?

- A. Fundamental overload
- B. Doppler shift
- C. Spurious emissions
- D. Harmonics

9-What is the most common data rate used for HF packet communications?

- A. 48 bauds
- B. 110 bauds
- C. 300 bauds
- D. 1200 bauds

10-What would be a good thing to have when operating from a location that includes lots of crowd noise?

- A. A portable bullhorn
- B. An encrypted radio
- C. A combination headset and microphone
- D. A pulse noise blanker

11-What is the meaning of the term simplex operation?

- A. Transmitting and receiving on the same frequency
- B. Transmitting and receiving over a wide area
- C. Transmitting on one frequency and receiving on another
- D. Transmitting one-way communications

12-Considering RF safety, what precaution should you take if you install an indoor transmitting antenna?

- A. Locate the antenna close to your operating position to minimize feed line losses
- B. Position the antenna along the edge of a wall where it meets the floor or ceiling to reduce parasitic radiation
- C. Locate the antenna as far away as possible from living spaces that will be occupied while you are operating
- D. Position the antenna parallel to electrical power wires to take advantage of parasitic effects

13-Why is a Yagi antenna often used for radio communications on the 20-meter band?

- A. It provides excellent omnidirectional coverage in the horizontal Plane
- B. It is smaller, less expensive and easier to erect than a dipole or vertical antenna
- C. It helps reduce interference from other stations off to the side or behind
- D. It provides the highest possible angle of radiation for the HF bands

14-What is the beamwidth of a symmetrical pattern antenna with a gain of 30 dB as compared to an isotropic radiator?

- A. 3.2 degrees
- B. 6.4 degrees
- C. 37 degrees
- D. 60 degrees

15-What letters must be used for the first letter in US amateur call signs?

- A. K, N, U and W
- B. A, K, N and W
- C. A, B, C and D
- D. A, N, V and W

16-What is a band plan?

- A. A voluntary guideline beyond the divisions established by the FCC for using different operating modes within an amateur band
- B. A guideline from the FCC for making amateur frequency band allocations
- C. A plan of operating schedules within an amateur band published by the FCC
- D. A plan devised by a club to best use a frequency band during a contest

17-Where can an official list be found of prohibited obscene and indecent words that should not be used in amateur radio?

- A. On the FCC web site
- B. There is no official list of prohibited obscene and indecent words
- C. On the Department of Commerce web site
- D. The official list is in public domain and found in all amateur study guides

18-When selecting a single-sideband phone transmitting frequency, what minimum frequency separation from a contact in progress should you allow (between suppressed carriers) to minimize interference?

- A. 150 to 500 Hz
- B. Approximately 3 kHz
- C. Approximately 6 kHz
- D. Approximately 10 kHz

19-What is the maximum distance along the Earth's surface that is normally covered in one hop using the E region?

- A. 180 miles
- B. 1200 miles
- C. 2500 miles
- D. None of these choices is correct

20-What is meant by the noise floor of a receiver?

- A. The weakest signal that can be detected under noisy atmospheric conditions
- B. The amount of phase noise generated by the receiver local oscillator
- C. The minimum level of noise that will overload the receiver RF amplifier stage
- D. The weakest signal that can be detected above the receiver internal noise

21-What spread-spectrum communications technique alters the center frequency of a conventional carrier many times per second in accordance with a pseudo-random list of channels?

- A. Frequency hopping
- B. Direct sequence
- C. Time-domain frequency modulation
- D. Frequency companded spread-spectrum

22-What is the maximum transmitting power a station with a General Class control operator may use on 28.150 MHz?

- A. The minimum power necessary to carry out the desired communications, with a maximum of 200 watts PEP output
- B. The minimum power necessary to carry out the desired communications, with a maximum of 1000 watts PEP output
- C. The minimum power necessary to carry out the desired communications, with a maximum of 1500 watts PEP output
- D. The minimum power necessary to carry out the desired communications, with a maximum of 2000 watts PEP output

23-What is the turns ratio of a transformer to match an audio amplifier having a 600-ohm output impedance to a speaker having a 4-ohm impedance?

- A. 12.2 to 1
- B. 24.4 to 1
- C. 150 to 1
- D. 300 to 1

24-When can radio waves cause injury to the human body?

- A. Only when the frequency is below 30 MHz
- B. Only if the combination of signal strength and frequency cause excessive power to be absorbed
- C. Only when the frequency is greater than 30 MHz
- D. Only when transmitter power exceeds 50 watts

25-In what values are RF feed line losses usually expressed?

- A. Bels/1000 ft
- B. dB/1000 ft
- C. Bels/100 ft
- D. dB/100 ft

26-During a disaster in the US, when may an amateur station make transmissions necessary to meet essential communication needs and assist relief operations?

- A. When normal communication systems are overloaded, damaged or disrupted
- B. Only when the local RACES net is activated
- C. Never; only official emergency stations may transmit in a disaster
- D. When normal communication systems are working but are not convenient

27-What can be used to connect a radio with a computer for data transmission?

- A. Balun
- B. Sound Card
- C. Impedance matcher
- D. Autopatch

28-What condition must exist for a circuit to oscillate?

- A. It must have a gain of less than 1
- B. It must be neutralized
- C. It must have positive feedback sufficient to overcome losses
- D. It must have negative feedback sufficient to cancel the input

29-What type of voltage regulator limits the voltage drop across its junction when a specified current passes through it in the reverse-breakdown direction?

- A. A Zener diode
- B. A three-terminal regulator
- C. A bipolar regulator
- D. A pass-transistor regulator

30-What is an undesirable effect of using too wide a filter bandwidth in the IF section of a receiver?

- A. Output-offset overshoot
- B. Filter ringing
- C. Thermal-noise distortion
- D. Undesired signals will reach the audio stage

31-What means may an amateur station in distress use to attract attention, make known its condition and location, and obtain assistance?

- A. Only Morse code signals sent on internationally recognized emergency channels
- B. Any means of radiocommunication, but only on internationally recognized emergency channels
- C. Any means of radiocommunication
- D. Only those means of radiocommunication for which the station is licensed

32-Which of the following is a form of amplitude modulation?

- A. Frequency modulation
- B. Phase modulation
- C. Single sideband
- D. Phase shift keying

33-What might you do to improve the situation if the station you are listening to is hard to copy because of ignition noise interference?

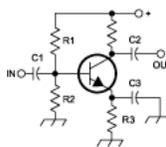
- A. Increase your transmitter power
- B. Decrease the squelch setting
- C. Turn on the noise blanker
- D. Use the RIT control

34-If the free-space far-field power density of an antenna measures 9 milliwatts per square meter at a distance of 5 wavelengths, what will the field strength measure at a distance of 15 wavelengths?

- A. 3 milliwatts per square meter
- B. 1 milliwatt per square meter
- C. 0.9 milliwatt per square meter
- D. 0.09 milliwatt per square meter

35-In Figure E7-1, what is the purpose of R1 and R2?

Figure E7-1



- A. Load resistors
- B. Fixed bias
- C. Self bias
- D. Feedback

36-When installing a power plug on a line cord, which of the following should you do?

- A. Twist the wire strands neatly and fasten them so they don't cause a short circuit
- B. Observe the correct wire color conventions for plug terminals
- C. Use proper grounding techniques
- D. All of these choices

37-What is the most common method of transmitting data emissions below 30 MHz?

- A. DTMF tones modulating an FM signal
- B. FSK (frequency-shift keying) of an RF carrier
- C. AFSK (audio frequency-shift keying) of an FM signal
- D. Key-operated on/off switching of an RF carrier

38-What emission mode may be used by a Technician class operator in the 219 - 220 MHz frequency range?

- A. Slow-scan television
- B. Point-to-point digital message forwarding
- C. FM voice
- D. Fast-scan television

39-What formula is used to calculate resistance in a circuit?

- A. Resistance (R) equals voltage (E) multiplied by current (I)
- B. Resistance (R) equals voltage (E) divided by current (I)
- C. Resistance (R) equals voltage (E) added to current (I)
- D. Resistance (R) equals voltage (E) minus current (I)

40-What function does a capacitor serve if it is used in a power-supply circuit to filter transient voltage spikes across the transformer's secondary winding?

- A. Clipper capacitor
- B. Trimmer capacitor
- C. Feedback capacitor
- D. Suppressor capacitor

References

1-E3A10 ; 2-T9B01; 3-E8C01; 4-G0C06; 5-G2E07; 6-G0E10; 7-E2E08; 8-T5D02; 9-E2E06; 10-T7A04; 11-T5C08; 12-G0D01; 13-G9A07; 14-E9D19; 15-T1B09; 16-G2B07; 17-T3C08 [97.113(a)(4)]; 18-G2B05; 19-G3B10; 20-E4C07; 21-E8C12; 22-G1C09 [97.313]; 23-G5B07; 24-T0C02; 25-G9D08; 26-G2C02; 27-T5A10; 28-E7D02; 29-E7D15; 30-E4C23; 31-G2C01; 32-T6A02; 33-T5B06; 34-G0C05; 35-E7B09; 36-G4E02; 37-E2E01; 38-T6C05; 39-T4D03; 40-G6A03

Answers

1-(C); 2-(C); 3-(D); 4-(A); 5-(C); 6-(C); 7-(B); 8-(B); 9-(C); 10-(C); 11-(A); 12-(C); 13-(C); 14-(B); 15-(B); 16-(A); 17-(B); 18-(B); 19-(B); 20-(D); 21-(A); 22-(C); 23-(C); 24-(A); 25-(B); 26-(D); 27-(A); 28-(B); 29-(C); 30-(A); 31-(D); 32-(C); 33-(C); 34-(B); 35-(B); 36-(D); 37-(B); 38-(B); 39-(B); 40-(D)