

MEETING JAN 18 2010

Happy
Birthday

Sara-KB2BDC	Bill-NY2U
John-KC2AGM	Dave-W2DAV
Erika-KC2DMI	John-W2JSN
Jim-KC2OGK	Bruce-W2ZNO
Bernie-KC2RHV	Barry-WK2S
ED-N2XPW	

I just got a report from Tom, N2NZD, that the insulation on the repeater shack is working great. He said the temp in the shack was 45 degrees and that is after a very long cold spell. He also reported that the batteries are only OK, holding steady. Thanks Tom!

2010 dues are \$25.00 per individual \$30.00 for family \$5.00 for students and active Military are free.

**PLEASE pay your
2010 dues!**

Mail to:
Stan Engel, WA2UET
PO Box 153
Ghent, NY 12075

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Please join us on the Tuesday night Roundtable on 147.210 at 7:00 PM. ALL are welcome! Use the Echo-Link (K2RVW-R) if need be.



**Meeting
Jan 18
7:00 PM
Noecker
"Club House"
Talk-in 147.21**





N2LBX wins Christmas Raffle N2NZZ gets 2nd Place win

Goodie Fest Draws Big Crowd!

The annual "Goodie Fest" RVWARS Holiday Party was well attended by members, their families and friends. As always, there was plenty of "Goodies" to satisfy the hungry hoards plus a huge stack of pizza boxes with just about every choice of topping. (What? No Anchovies???)

The big feature of the evening was the drawing for the Christmas Raffle. Lenny, 5 year old son of Len, N2LEN, drew the 2nd Prize Ticket for \$100 won by Tom, N2NZZ, The 1st Prize Ticket was drawn by Christina, 4 year old daughter of Len, N2LEN, for the FT-857 won by Stan Murawski, N2LBX.

Stan, WA2UET, RVWARS Treasurer, ran the raffle as a fundraiser for the Club. Stan said "Thanks to all who made the raffle a success. I expect that we will do it again, maybe soon."

The success of the raffle was due in part to the wide spread interest in not only the the members of RVWARS but hams all over the area and Capital District.

As Stan said, "...we will do it again, maybe soon." Anyone with ideas for a raffle are urged to contact Stan.



Christina Draws the winning ticket at the Christmas Raffle.



Lenny draws the 2nd Place ticket at the Christmas Raffle.

New Officers Elected At December Meeting

The December meeting was also the official annual meeting of the Rip Van Winkle Amateur Radio Society, Inc. and as such was Election Night for the Club.

The Election results are:

President—Tom, N2NZZ

Vice President—Mike, N2JVE

Secretary—Tom, WE2G

Treasurer - Stan, WA2UET

Historian - Stan, WA2UET

Safety Officer - Stan, WA2UET

The Officers have been elected for a two year term.



January Meeting on 18th

The January RVWARS meeting will be held at 7:00 p.m. at the Noecker "Clubhouse" at the corner of Graham Ave. and Rt. 66 in Hudson. A hot dish will be served as well as Coffee and goodies.

Bring a friend and introduce him or her to the fun of Amateur Radio. Talk-in on 147.21



Ham Class Starts Feb. 23

Pass the Word! The RVWARS Technician License Class will start up on Tuesday, Feb. 23, 7:00 p.m. at the Noecker Clubhouse Classroom. As usual, the course will run for 10 weeks with the VE Exam Session held at the final class. The class is open to all, young and old!



Goodie Fest

PICTURES





Amateur Radio Quiz: The Transistor, Our Three-Legged Friend



By H. Ward Silver, N0AX
ARRL Contributing Editor
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What piece of active equipment in the ham shack doesn't have a transistor in it somewhere? Could you troubleshoot that equipment? While transistors are nearly ubiquitous, we often don't understand their inner workings as well as we might like. Here are some sharp questions to put an edge on your solid-state know-how.

1) What parameter is used to specify the current gain of a bipolar transistor in a common emitter configuration?

- a. Alpha (A)
- b. Beta (B)
- c. Mu (M)
- d. Rho (P)

2) Adding impurities to a pure semiconductor, creating p-type or n-type material is called:

- a. Peaking
- b. Passivating
- c. Stagger tuning
- d. Doping

3) In the acronym "MOSFET," "MOS" stands for

- a. Metal Oxide Semiconductor
- b. Metal On Sapphire
- c. Metal Over Silicon
- d. Metallic Organic Source

4) In a transistor fails from excessive voltage, which is the most likely cause of failure?

- a. Thermal runaway
- b. Miller effect
- c. Avalanche breakdown
- d. Parasitic oscillation

5) What is the term that describes FET gate bias reaching the point at which current flow from drain to source stops?

- a. Pinch-off
- b. Punch-through
- c. Charge starvation
- d. Saturation

6) True or False: To cause current to flow in an NPN transistor, electrons must flow into the base terminal.

7) True or False: In an FET, increasing device temperature causes drain current to decrease.

8) True or False: Bipolar transistors for RF power amplifiers require impedance matching to drive a 50 Ω load because their collector impedance is very low.

9) Match the bipolar and field-effect terminals that have similar functions:

- a) Emitter d) Drain
- b) Base e) Source
- c) Collector f) Gate

10) Which parameter specifies the maximum voltage that a bipolar transistor can withstand from the collector to emitter with the base terminal open?

- a. BVCEO
- b. BVEBO
- c. PDISS
- d. IDSS

11) Which instrument is used to determine the linear region for a transistor?

- a. Network analyzer
- b. Octopus
- c. Curve tracer
- d. Beta tester

12) In a bipolar transistor, the charge carriers are

- a. electrons and positrons.
- b. electrons and holes.
- c. monopoles.
- d. torts and writs.

Bonus: Which type of transistor was invented first -- bipolar or field-effect?

— Answers —

1. b
2. d -- The "dopants" are elements whose atoms have one more or one less electron than those of the semiconductor in their outer shell.
3. a -- The gate of the MOSFET is a deposit of metal on a layer of insulating silicon oxide over the underlying source-drain channel.
4. c -- The avalanche is of electrons that are driven across the transistor's internal potential barriers, causing current to flow unchecked through the transistor.
5. a -- Viewed in cross-section through the source-drain channel, gate bias gradually reduces the area through which current flows, eventually reducing it to zero, as in pinching off water flow through a hose.
6. False -- Conventional current (the flow of positive charge) flows into the NPN base, but electronic current (the flow of electrons) must flow out of the base.
7. True -- Because channel resistance increases with temperature, reducing current, this helps prevent the thermal runaway effect present in bipolar transistors.
8. True -- Sometimes the output impedance of a large transistor can be a fraction of an ohm!
9. a-e, b-f, c-d
10. a -- "BV" stands for breakdown voltage, "CE" stands for collector-to-emitter and "O" stands for remaining terminal open, which is the base.
11. c -- Curve tracers present a graph of many combinations of current and voltage through a device.
12. b -- See also the answer to questions 2 and 6.

Bonus: Field-effect devices based on copper-oxide were first described in the 1920s and 1930s, while the bipolar device was invented in 1948. The bipolar device proved practical to fabricate, though, and became widely used.