

1. Where must the writing indicating the station call sign and the licensee's name and address be affixed in order to operate under the special rules for radio control of remote model craft and vehicles?
 - A. It must be in the operator's possession
 - B. It must be affixed to the transmitter
 - C. It must be affixed to the craft or vehicle
 - D. It must be filed with the nearest FCC Field Office
2. What is the term used to define the average power supplied to the antenna transmission line during one RF cycle at the crest of the modulation envelope?
 - A. Peak transmitter power
 - B. Peak output power
 - C. Average radio-frequency power
 - D. Peak envelope power
3. How often do amateur service licenses generally need to be renewed?
 - A. Every 10 years
 - B. Every 5 years
 - C. Every 2 years
 - D. They are lifetime licenses
4. Which language(s) must be used when making the station identification by telephony?
 - A. The language being used for the contact may be used if it is not English, providing the US has a third-party traffic agreement with that country
 - B. English must be used for identification
 - C. Any language may be used, if the country which uses that language is a member of the International Telecommunication Union
 - D. The language being used for the contact must be used for identification purposes
5. What kinds of one-way communications by amateur stations are not considered broadcasting?
 - A. All types of one-way communications by amateurs are considered by the FCC as broadcasting
 - B. Beacon operation, remote control of a device, emergency communications, information bulletins consisting solely of subject matter of direct interest to the amateur service, and telegraphy practice
 - C. Only code-practice transmissions conducted simultaneously on all available amateur bands below 30 MHz and conducted for more than 40 hours per week are not considered broadcasting
 - D. Only actual emergency communications during a declared communications emergency are exempt
6. What is the term used to describe messages sent into or out of a disaster area that pertain to a person's well being?
 - A. Emergency traffic
 - B. Tactical traffic
 - C. Formal message traffic
 - D. Health and welfare traffic
7. What is the usual input/output frequency separation for stations in repeater operation in the 70-centimeter band?
 - A. 1.6 MHz
 - B. 5 MHz
 - C. 600 kHz
 - D. 5 kHz
8. Why should users of a station in repeater operation keep their transmissions short and thoughtful?
 - A. A long transmission may prevent someone with an emergency from using the repeater
 - B. To see if the receiving station operator is still awake
 - C. To give any non-hams that are listening a chance to respond
 - D. To keep long-distance charges down
9. At what time of day does maximum ionization of the ionosphere occur?
 - A. Dusk
 - B. Midnight
 - C. Midday
 - D. Dawn
10. Ducting occurs in which region of the atmosphere?
 - A. F2
 - B. Ionosphere
 - C. Troposphere
 - D. Stratosphere
11. What causes ionospheric absorption of radio waves?
 - A. A lack of D layer ionization
 - B. D layer ionization
 - C. The presence of ionized clouds in the E layer
 - D. Splitting of the F layer
12. Large amounts of RF energy may cause damage to body tissue, depending on the wavelength of the signal, the energy density of the RF field, and other factors. How does RF energy effect body tissue?
 - A. It causes radiation poisoning
 - B. It heats the tissue
 - C. It cools the tissue
 - D. It produces genetic changes in the tissue

13. If a directional RF wattmeter indicates 96 watts forward power and 4 watts reflected power, what is the actual transmitter output power?
- 80 watts
 - 88 watts
 - 92 watts
 - 100 watts
14. What station accessory is used in place of an antenna during transmitter tests so that no signal is radiated?
- A Transmatch
 - A dummy antenna
 - A low-pass filter
 - A decoupling resistor
15. How is an ammeter typically connected to a circuit under test?
- In series with the circuit
 - In parallel with the circuit
 - In quadrature with the circuit
 - In phase with the circuit
16. When 120 volts is measured across a 47000-ohm resistor, approximately how much current is flowing through it?
- 392 A
 - 39.2 A
 - 26 mA
 - 2.6 mA
17. What is a picofarad?
- A basic unit of capacitance equal to 10^{-12} /farads
 - A basic unit of capacitance equal to 10^{-6} /farads
 - A basic unit of capacitance equal to 10^{-2} /farads
 - A basic unit of capacitance equal to 10^6 /farads

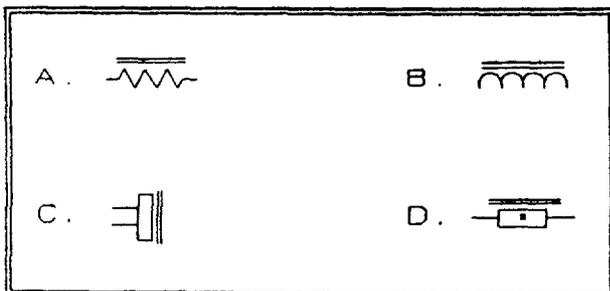


Diagram 3AF-2-4.2

18. What is the symbol used to represent an iron-core inductor on schematic diagrams? (Please refer to Diagram 3AF-2-4.2)
- Symbol A
 - Symbol B
 - Symbol C
 - Symbol D

19. For radio frequency power applications, which type of inductor has the least amount of loss?
- Magnetic wire
 - Iron core
 - Air core
 - Slug tuned
20. What circuit is likely to be found in all types of receivers?
- An audio filter
 - A beat frequency oscillator
 - A detector
 - An RF amplifier
21. How would you transmit packet using an FM 2-meter transceiver?
- Use your telegraph key to interrupt the carrier wave
 - Modulate your FM transmitter with audio tones from a terminal node controller
 - Use your mike for telephony
 - Use your touch-tone (DTMF) key pad to signal in Morse code
22. What is the FCC emission designator for a Morse code telegraphy signal produced by switching the transmitter output on and off?
- Test
 - AM phone
 - CW
 - RTTY
23. What type of feed line is best suited to operating at a high standing wave ratio?
- Coaxial cable
 - Flat ribbon "twin lead"
 - Parallel open-wire line
 - Twisted pair
24. What is a cubical quad antenna?
- Four parallel metal tubes, each approximately $1/2$ electrical wavelength long
 - Two or more parallel four-sided wire loops, each approximately one electrical wavelength long
 - A vertical conductor $1/4$ electrical wavelength high, fed at the bottom
 - A center-fed wire $1/2$ electrical wavelength long

25. What is an unbalanced line?
- Feed line with neither conductor connected to ground
 - Feed line with both conductors connected to ground to suppress harmonics
 - Feed line with one conductor connected to ground
 - Feed line with the outer conductor connected to ground at uneven intervals

W5YI Volunteer Examiner Coordinator

Element 3A - Technician Examination - Answers to Series H901

1. B (3AA-10.4)
2. D (3AA-6-1.2)
3. A (3AA-3.1)
4. B (3AA-8-2.1)
5. B (3AA-13.1)
6. D (3AB-6-2.1)
7. B (3AB-2-3.2)
8. A (3AB-2-1.3)
9. C (3AC-3.2)
10. C (3AC-7.1)
11. B (3AC-2.4)
12. B (3AD-11-1.1)
13. C (3AD-5-2.2)
14. B (3AD-9.4)
15. A (3AD-3-1.1)
16. D (3AE-2.7)
17. A (3AE-4-2.3)
18. B (3AF-2-4.2)
19. C (3AF-2-1.4)
20. C (3AG-4-1.1)
21. B (3AH-2-6.2)
22. C (3AH-2-2.1)
23. C (3AI-3-3.2)
24. B (3AI-1-2.1)
25. C (3AI-4-1.2)

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Element 3A - Technician Examination - Answers to Series G901

1. C (3AA-12.2)
2. B (3AA-2.3)
3. B (3AA-6-4.1)
4. D (3AA-13.2)
5. C (3AA-8-3.1)
6. C (3AB-3.3)
7. C (3AB-2-2.1)
8. D (3AB-4.2)
9. A (3AC-7.4)
10. C (3AC-1-4.3)
11. B (3AC-3.4)
12. B (3AD-9.2)
13. A (3AD-6.1)
14. A (3AD-11-1.2)
15. D (3AD-3-2.1)
16. D (3AE-1-2.2)
17. B (3AE-3-4.2)
18. D (3AF-2-1.3)
19. D (3AF-3-3.3)
20. C (3AG-4-2.2)
21. A (3AH-2-6.1)
22. D (3AH-2-4.2)
23. C (3AI-5-1.1)
24. C (3AI-2-1.2)
25. C (3AI-5-2.1)

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Element 3A - Technician Examination - Series J901

1. Under what circumstances does the FCC declare a temporary state of communication emergency?
 - A. When a declaration of war is received from Congress
 - B. When the maximum usable frequency goes above 28 MHz
 - C. When communications facilities in Washington, DC, are disrupted
 - D. When a disaster disrupts normal communications systems in a particular area
2. In an exchange of international third-party communications, when is the station identification procedure required?
 - A. Only at the beginning of the communications
 - B. At the end of each exchange of communications
 - C. The station identification procedure is not required during international third party communications
 - D. Only at the end of multiple exchanges of communications
3. Which operator licenses authorize privileges on 52.525 MHz?
 - A. Extra, Advanced only
 - B. Extra, Advanced, General only
 - C. Extra, Advanced, General, Technician only
 - D. Extra, Advanced, General, Technician, Novice
4. What are the station identification requirements for an amateur station transmitting signals to control a model craft?
 - A. Once every ten minutes, and at the beginning and end of each transmission
 - B. Once every ten minutes
 - C. At the beginning and end of each transmission
 - D. Station identification is not required provided that a label indicating the station call sign and the station licensee's name and address is affixed to the station transmitter
5. Notwithstanding the numerical limitations in the FCC Rules, how much transmitting power shall be used by an amateur station?
 - A. There is no regulation other than the numerical limits
 - B. The minimum power level required to achieve S9 signal reports
 - C. The minimum power necessary to carry out the desired communication
 - D. The maximum power available, as long as it is under the allowable limit 3AA-6-3.1 D What is the maximum transmitting power permitted an amateur station on 146.52 MHz?
6. What is the meaning of: "Your report is five seven..."?
 - A. Your signal is perfectly readable and moderately strong
 - B. Your signal is perfectly readable, but weak
 - C. Your signal is readable with considerable difficulty
 - D. Your signal is perfectly readable with near pure tone
7. What is the term used to describe first-response communications in an emergency situation?
 - A. Tactical communications
 - B. Emergency communications
 - C. Formal message traffic
 - D. National Traffic System messages
8. What is the usual input/output frequency separation for stations in repeater operation in the 2-meter band?
 - A. 1 MHz
 - B. 1.6 MHz
 - C. 170 Hz
 - D. 0.6 MHz
9. What effect does tropospheric bending have on 2-meter radio waves?
 - A. It increases the distance over which they can be transmitted
 - B. It decreases the distance over which they can be transmitted
 - C. It tends to garble 2-meter phone transmissions
 - D. It reverses the sideband of 2-meter phone transmissions
10. What are the two distinct sub-layers of the F layer of the ionosphere during the daytime?
 - A. Troposphere and stratosphere
 - B. F1 and F2
 - C. Electrostatic and electromagnetic
 - D. D and E
11. How are VHF signals within the range of the visible horizon propagated?
 - A. By sky wave
 - B. By direct wave
 - C. By plane wave
 - D. By geometric wave
12. What is the purpose of the ANSI RF protection guide?
 - A. It protects you from unscrupulous radio dealers
 - B. It sets RF exposure limits under certain circumstances
 - C. It sets transmitter power limits
 - D. It sets antenna height requirements

13. What is a multimeter?
- An instrument capable of reading SWR and power
 - An instrument capable of reading resistance, capacitance and inductance
 - An instrument capable of reading resistance and reactance
 - An instrument capable of reading voltage, current and resistance
14. When adjusting a transmitter filter circuit, what device is connected to the transmitter output?
- A multimeter
 - A set of Litz wires
 - A receiver
 - A dummy antenna
15. What is a directional wattmeter?
- An instrument that measures forward or reflected power
 - An instrument that measures the directional pattern of an antenna
 - An instrument that measures the energy consumed by the transmitter
 - An instrument that measures thermal heating in a load resistor
16. What is a microfarad?
- A basic unit of capacitance equal to 10^{-12} /farads
 - A basic unit of capacitance equal to 10^{-6} /farads
 - A basic unit of capacitance equal to 10^{-2} /farads
 - A basic unit of capacitance equal to 10^6 /farads
17. What is Ohm's Law?
- A mathematical relationship between resistance, voltage and power in a circuit
 - A mathematical relationship between current, resistance and power in a circuit
 - A mathematical relationship between current, voltage and power in a circuit
 - A mathematical relationship between resistance, current and applied voltage in a circuit
18. What are the electrical properties of an inductor?
- An inductor stores a charge electrostatically and opposes a change in voltage
 - An inductor stores a charge electrochemically and opposes a change in current
 - An inductor stores a charge electromagnetically and opposes a change in current
 - An inductor stores a charge electromechanically and opposes a change in voltage
19. What is a capacitor dielectric?
- The insulating material used for the plates
 - The conducting material used between the plates
 - The ferrite material that the plates are mounted on
 - The insulating material between the plates
20. What circuit attenuates electrical energy above a certain frequency and below a lower frequency?
- A band-pass filter
 - A high-pass filter
 - An input filter
 - A low-pass filter
21. If the modulator circuit of your FM transmitter fails, what emission type would likely result?
- An unmodulated carrier wave
 - A phase-modulated carrier wave
 - An amplitude-modulated carrier wave
 - A frequency-modulated carrier wave
22. What other emission does phase modulation most resemble?
- Amplitude modulation
 - Pulse modulation
 - Frequency modulation
 - Single-sideband modulation
23. What type of parasitic beam antenna uses two or more straight metal-tubing elements arranged physically parallel to each other?
- A delta loop antenna
 - A quad antenna
 - A Yagi antenna
 - A Zepp antenna
24. What is a balanced antenna?
- A symmetrical antenna with one side of the feed point connected to ground
 - An antenna (or a driven element in an array) that is symmetrical about the feed point
 - A symmetrical antenna with both sides of the feed point connected to ground, to balance out harmonics
 - An antenna designed to be mounted in the center
25. How can you minimize exposure to radio frequency energy from your transmitting antennas?
- Use vertical polarization
 - Use horizontal polarization
 - Mount the antennas where no one can come near them
 - Mount the antenna close to the ground

W5YI Volunteer Examiner Coordinator
Element 2 - Novice Examination - Series H901

1. If you are operating your amateur station on 21150 kHz, in what meter band are you operating?
 - A. 80 meters
 - B. 40 meters
 - C. 15 meters
 - D. 10 meters
2. The amateur service rules were designed to provide a radio communications service that meets five fundamental purposes. What are those principles?
 - A. Recognition of business communications, advancement of the radio art, improvement of communication and business skills, increase in the number of trained radio operators and electronics experts, and the enhancement of international goodwill
 - B. Recognition of emergency communications, advancement of the radio art, improvement of communication and technical skills, increase in the number of trained radio operators and electronics experts, and the enhancement of international goodwill
 - C. Recognition of emergency communications, preservation of the earliest radio techniques, improvement of communication and technical skills, maintain a pool of people familiar with early tube-type equipment, and the enhancement of international goodwill
 - D. Recognition of emergency communications, advancement of the radio art, improvement of communication and technical skills, increase in the number of trained radio operators and electronics experts, and the enhancement of a sense of patriotism and nationalism
3. If you were to receive a voice distress signal from a station on a frequency outside your operator privileges, what restrictions would apply to assisting the station in distress?
 - A. You would not be allowed to assist the station because the frequency of its signals were outside your operator privileges
 - B. You would be allowed to assist the station only if your signals were restricted to the nearest frequency band of your privileges
 - C. You would be allowed to assist the station on a frequency outside of your operator privileges only if you used international Morse code
 - D. You would be allowed to assist the station on a frequency outside of your operator privileges using any means of radio communications at your disposal
4. What emission types are Novice control operators permitted to use from 3700 to 3750 kHz?
 - A. Phone only
 - B. CW and phone
 - C. All amateur emission privileges authorized for use on those frequencies
 - D. CW only
5. What emission types are Novice control operators permitted to use on the amateur 220-MHz band in ITU Region 2?
 - A. CW and phone only
 - B. CW and data only
 - C. Data and phone only
 - D. All amateur emission privileges authorized for use on 220 MHz
6. Another amateur gives you permission to use her amateur station. What are your responsibilities, as the control operator?
 - A. Both you and she are equally responsible for the proper operation of her station
 - B. Only the station licensee is responsible for the proper operation of the station, not you the control operator
 - C. You must be certain the station licensee has given proper FCC notice that you will be the control operator
 - D. You must inspect all antennas and related equipment to ensure they are working properly
7. When is an amateur operator permitted to transmit a message to a foreign country for a third party?
 - A. Anytime
 - B. Never
 - C. Anytime, unless there is a third-party traffic agreement between the US and the foreign government
 - D. When there is a third-party traffic agreement between the US and the foreign government, or when the third party is eligible to be the control operator of the station
8. What is the license class immediately above Novice class?
 - A. The Digital class license
 - B. The Technician class license
 - C. The General class license
 - D. The Experimenter's class license
9. Which one of the following call signs is a valid US amateur call?
 - A. CE2FTF
 - B. G3GVA
 - C. UA1ZAM
 - D. AA2Z

10. When are communications pertaining to business or commercial affairs of any party permitted in the amateur service?
- Only when the immediate safety of human life or immediate protection of property is threatened
 - There are no rules against conducting business communications in the amateur service
 - No business communications of any kind are ever permitted in the amateur service
 - Business communications are permitted between the hours of 9 AM to 5 PM, only on weekdays
11. What is one meaning of the Q signal "QTH"?
- Time here is
 - My name is
 - Stop sending
 - My location is ...
12. What is the meaning of the Morse code character AR?
- Only the called station transmit
 - All received correctly
 - "Over" or End of transmission
 - Best regards
13. What type of propagation uses radio signals refracted back to earth by the ionosphere?
- Sky wave
 - Earth-moon-earth
 - Ground wave
 - Tropospheric
14. Why should all antenna and rotator cables be grounded when an amateur station is not in use?
- To lock the antenna system in one position
 - To avoid radio frequency interference
 - To save electricity
 - To protect the station and building from damage due to a nearby lightning strike
15. If you are notified that your amateur station is causing television interference, what should you do first?
- Make sure that your amateur equipment is operating properly, and that it does not cause interference to your own television
 - Immediately turn off your transmitter and contact the nearest FCC office for assistance
 - Install a high-pass filter at the transmitter output and a low-pass filter at the antenna-input terminals of the TV
 - Continue operating normally, since you have no legal obligation to reduce or eliminate the interference
16. What precautions should you take before removing the shielding on a UHF power amplifier?
- Make sure all RF screens are in place at the antenna
 - Make sure the feed line is properly grounded
 - Make sure the amplifier cannot be accidentally energized
 - Make sure that the RF leakage filters are connected
17. What instrument is used to indicate the relative impedance match between a transmitter and antenna?
- An ammeter
 - An ohmmeter
 - A voltmeter
 - An SWR meter
18. List at least four good electrical insulators.
- Glass, air, plastic, porcelain
 - Glass, wood, copper, porcelain
 - Paper, glass, air, aluminum
 - Plastic, rubber, wood, carbon
19. Signals above what frequency are usually called radio-frequency signals?
- 20 Hz
 - 2000 Hz
 - 20,000 Hz
 - 1,000,000 Hz
20. Your receiver dial is calibrated in megahertz and shows a signal at 3.525 MHz. At what frequency would a dial calibrated in kilohertz show the signal?
- 0.003525 kHz
 - 3525 kHz
 - 35.25 kHz
 - 3,525,000 kHz
21. What is the term used to describe a current that flows first in one direction, then in the opposite direction, over and over?
- Alternating current
 - Direct current
 - Negative current
 - Positive current

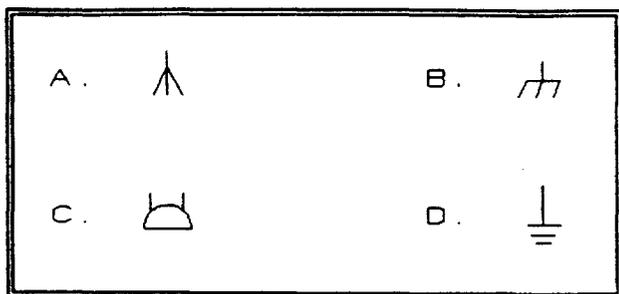


Diagram 2F-5.1

22. What is the symbol normally used to represent an earth-ground connection on schematic diagrams? (Please refer to Diagram 2F-5.1)

- A. Symbol A
- B. Symbol B
- C. Symbol C
- D. Symbol D

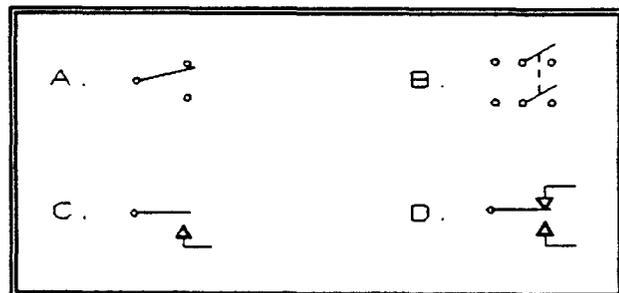


Diagram 2F-2.3

23. What is the symbol used on schematic diagrams to represent a double-pole, double-throw switch? (Please refer to Diagram 2F-2.3)

- A. Symbol A
- B. Symbol B
- C. Symbol C
- D. Symbol D

24. In an amateur station designed for Morse radiotelegraph operation, what station accessory will you need to go with your transmitter?

- A. A terminal-node controller
- B. A telegraph key
- C. An SWR meter
- D. An antenna switch

25. You discover that your tube-type transmitter power amplifier is radiating spurious emissions. What is the most likely cause of this problem?

- A. Excessively fast keying speed
- B. Undermodulation
- C. Improper neutralization
- D. Tank-circuit current dip at resonance

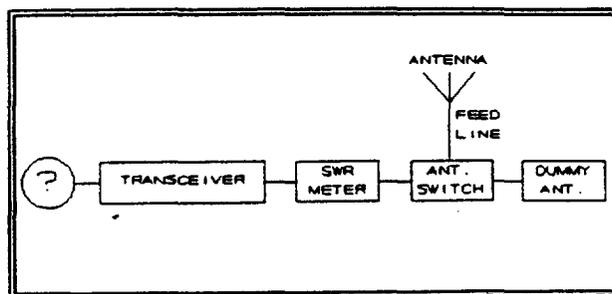


Diagram 2G-3.2

26. What is the unlabeled block (?) in this diagram of a radiotelephone station? (Please refer to Diagram 2G-3.2)

- A. A splatter filter
- B. A terminal-voice controller
- C. A receiver audio filter
- D. A microphone

27. What can be done to the power supply of a CW transmitter to avoid chirp?

- A. Resonate the power supply filters
- B. Regulate the power supply output voltages
- C. Use a buffer amplifier between the transmitter output and the feed line
- D. Hold the power supply current to a fixed value

28. On the Yagi antenna shown in Figure 2I-4, what is the name of section C?

- A. Director
- B. Reflector
- C. Boom
- D. Driven element

29. How is the approximate length (in feet) of a half-wavelength dipole antenna calculated?

- A. By substituting the desired operating frequency for f in the formula: $150 / f$ (in MHz)
- B. By substituting the desired operating frequency for f in the formula: $234 / f$ (in MHz)
- C. By substituting the desired operating frequency for f in the formula: $300 / f$ (in MHz)
- D. By substituting the desired operating frequency for f in the formula: $468 / f$ (in MHz)

30. A certain antenna system has an impedance of 1000 ohms on one band. What must you use to connect this antenna system to the 50-ohm output on your transmitter?

- A. A balun
- B. An SWR bridge
- C. An impedance matching device
- D. A low-pass filter

NAME Walter Amary DATE 8/21/16 AGE 17 SEX M BIRTH 1999
 SCHOOL 2 CITY 2 INSTRUCTOR _____ GRADE OR CLASS _____ PART _____

NOVICE (H 901)

1 A B C D E 31 A B C D E 61 A B C D E 91 A B C D E
 2 A B C D E 32 A B C D E 62 A B C D E 92 A B C D E
 3 A B C D E 33 A B C D E 63 A B C D E 93 A B C D E
 4 A B C D E 34 A B C D E 64 A B C D E 94 A B C D E
 5 A B C D E 35 A B C D E 65 A B C D E 95 A B C D E
 6 A B C D E 36 A B C D E 66 A B C D E 96 A B C D E
 7 A B C D E 37 A B C D E 67 A B C D E 97 A B C D E
 8 A B C D E 38 A B C D E 68 A B C D E 98 A B C D E
 9 A B C D E 39 A B C D E 69 A B C D E 99 A B C D E
 10 A B C D E 40 A B C D E 70 A B C D E 100 TECH (H 901) A B C D E
 11 A B C D E 41 A B C D E 71 A B C D E 101 A B C D E
 12 A B C D E 42 A B C D E 72 A B C D E 102 A B C D E
 13 A B C D E 43 A B C D E 73 A B C D E 103 A B C D E
 14 A B C D E 44 A B C D E 74 A B C D E 104 A B C D E
 15 A B C D E 45 A B C D E 75 A B C D E 105 A B C D E
 16 A B C D E 46 A B C D E 76 A B C D E 106 A B C D E
 17 A B C D E 47 A B C D E 77 A B C D E 107 A B C D E
 18 A B C D E 48 A B C D E 78 A B C D E 108 A B C D E
 19 A B C D E 49 A B C D E 79 A B C D E 109 A B C D E
 20 A B C D E 50 TECH (H 901) A B C D E 80 A B C D E 110 A B C D E
 21 A B C D E 51 A B C D E 81 A B C D E 111 A B C D E
 22 A B C D E 52 A B C D E 82 A B C D E 112 A B C D E
 23 A B C D E 53 A B C D E 83 A B C D E 113 A B C D E
 24 A B C D E 54 A B C D E 84 A B C D E 114 A B C D E
 25 A B C D E 55 A B C D E 85 A B C D E 115 A B C D E
 26 A B C D E 56 A B C D E 86 A B C D E 116 A B C D E
 27 A B C D E 57 A B C D E 87 A B C D E 117 A B C D E
 28 A B C D E 58 A B C D E 88 A B C D E 118 A B C D E
 29 A B C D E 59 A B C D E 89 A B C D E 119 A B C D E
 30 A B C D E 60 A B C D E 90 A B C D E 120 A B C D E

Attachment 17

BE SURE YOUR MARKS ARE HEAVY AND BLACK.
 ERASE COMPLETELY ANY ANSWER YOU WISH TO CHANGE.

50 TECH (H 901)

100 TECH (H 901)

100% Paid A. 9804
AD

Attachment &
Christine F. McElwain
8/4/91 IA

The name is Tom and Samin
Tennessee.

ksicmontnadu

5019283746

Print)
NAME:

CHRISTINE McELWAIN

Attachment 9

ement:

1A

Date:

9/14/91

Signature:

Christine F. McElwain

NOVICE

5019283746 IS OT TNA KR G

W F YLCP

OR X THE NAMES TO M [AND I AM

IN TENNESSEE, THE TRAIN IS N
OT AT THE STATION.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Revocation of License of)
)
SANDRA V. CRANE) PR Docket No. 92-119
Amateur Radio Station)
N6TFO)
)
and)
)
Suspension of License of)
)
SANDRA V. CRANE)
Amateur Extra Class)
Radio Operator License)
)
and)
)
Revocation of License of)
)
CHARLES P. PASCAL)
Amateur Radio Station)
WB6CIY)
)
and)
)
Suspension of License of)
)
CHARLES P. PASCAL)
Amateur Extra Class)
Radio Operator License)

AFFIDAVIT OF JOHN B. JOHNSTON

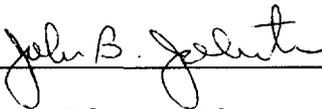
I, John B. Johnston, being first duly sworn, depose and state as follows:

1. I am Chief of the Commission's Personal Radio Branch. The Personal Radio Branch is responsible for the regulatory oversight of the amateur service, including oversight of the Volunteer-examiner coordinator (VEC) system. I hold the license for amateur station W3BE. I have been an amateur operator since 1954 and have held an Amateur Extra Class operator license since 1965. I hold

a Bachelor of Science degree in Electrical Engineering.

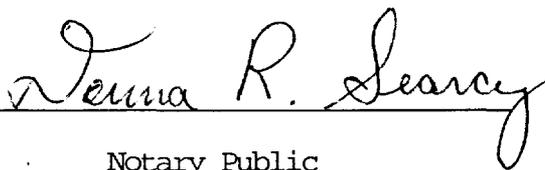
2. As Chief of the Personal Radio Branch, I supervised the establishment of the VEC system. This system includes 18 VEC's, one of which is the W5YI-VEC. The VECs operate pursuant to both written agreements made with the Commission and Sections 97.501-97.527 of the Commission's Rules, 47 C.F.R. §§ 97.501-527. The VECs' functions include: accrediting volunteer examiners (VEs) who administer amateur operator license examinations; coordinating the examinations conducted by the VEs that they accredit; processing the paperwork from the examination sessions they coordinate; forwarding the applications of successful examinees to the Commission; and maintaining records of the examination sessions that they coordinate.

3. The VEs' functions include: preparing the written examination elements from the question pools maintained by the VECs; preparing Morse code examinations; administering examinations; correcting examination papers; and forwarding the applications and examination papers of successful examinees to the VEC.



John B. Johnston

Subscribed and sworn to before me this 28th day of August, 1992.



Notary Public

Donna R. Searcy
Notary Public District of Columbia
My commission expires August 31, 1993

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 205543

In the Matter of)
)
Revocation of License of) PR Docket No. 92-119
)
SANDRA V. CRANE)
Amateur Radio Station)
N6TFO)
)
and)
)
Suspension of License of)
)
SANDRA V. CRANE)
Amateur Extra Class)
Radio Operator License)
)
and)
)
Revocation of License of)
)
CHARLES P. PASCAL)
Amateur Radio Station)
WB6CIY)
)
and)
)
Suspension of License of)
)
CHARLES P. PASCAL)
Amateur Extra Class)
Radio Operator License)

AFFIDAVIT OF JAMES GEORGAS

I, James Georgias, being first duly sworn, depose and state as follows:

1. I am the manager of the Great Lakes Amateur Radio Club Volunteer Examiner Coordinator (VEC), which was formerly called the DeVry VEC. I have held that position since 1984. My duties as manager of the Great Lakes VEC include accrediting volunteer examiners (VEs), overseeing VE teams, coordinating examination sessions and maintaining records of examination sessions.

2. I hold the license for amateur station W9JUG and an Amateur Extra Class operator license. I have been an amateur since 1955 and have held an Amateur Extra Class operator license for approximately 10 years. ~~I hold a Bachelor of Science degree in Industrial Arts.~~

3. I had a number of telephone conversations with Charles P. Pascal during October 1991. During these conversations, Mr. Pascal requested that the DeVry VEC provide volunteer examiners to retest applicants originally tested at the August 4, August 24, and September 14, 1991, examination sessions, the results of which had been invalidated by the W5YI-VEC. Additionally, during these conversations, Mr. Pascal requested access to the examination questions to be used at the future examination sessions so he could "better prepare" his students.

James Georgias
James Georgias

Subscribed and sworn to before me this 21st day of August 1992.

Robert L. Rosin
Notary Public

OFFICIAL SEAL
ROBERT L. ROSIN
Notary Public, State of Illinois
My Commission Expires 1-29-95

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Revocation of License of)
)
SANDRA V. CRANE) PR Docket No. 92-119
Amateur Radio Station)
N6TFO)
)
and)
)
Suspension of License of)
)
SANDRA V. CRANE)
Amateur Extra Class)
Radio Operator License)
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and)
)
Revocation of License of)
)
CHARLES P. PASCAL)
Amateur Radio Station)
WB6CIY)
)
and)
)
Suspension of License of)
)
CHARLES P. PASCAL)
Amateur Extra Class)
Radio Operator License)

AFFIDAVIT OF CHRISTINE F. McELWAIN

I, Christine F. McElwain, being first ^{duly em} duty sworn, depose and state as follows:

1. I hold the license for amateur station KC6BLL and a General Class operator license. I have been an amateur for about 3 1/2 years and have held a General Class operator license since November 1989. I am a member of the San Fernando Valley Amateur Radio Club.

2. Professionally, I am an Administrator - Technical Support for the Pacific Bell Telephone Company. My duties include investigating the feasibility of new technologies, testing proposed telephone services, and trouble shooting problems at operator services offices throughout California.

3. The amateur auxiliary (AA) program is a program in which amateur radio operators assist the Federal Communications Commission in the enforcement of the Commission's Rules and the Communications Act. One of the ways participants in the AA program assist the Commission is by investigating complaints about irregularities. The AA program is carried out by the American Radio Relay League ^{ARRL em} (~~ARRL~~), a nationwide organization of amateur operators. During the time period discussed in this affidavit, David Morse coordinated AA program in the Los Angeles, California, area as the "official observer coordinator" for the ARRL.

4. In early July 1991, Mr. Morse, who is also a member of the San Fernando Valley Amateur Radio Club, asked me whether I would be interested in participating in an undercover investigation of the California Amateur Radio School (CARS) to determine whether there were any irregularities concerning the school and the amateur license examinations given to its students. Mr. Morse told me he'd received complaints about the school. I agreed to participate in the investigation.

5. In pursuance of the undercover investigation of CARS, I made arrangements to attend a class at CARS on August 4, ^{1991 em} 1992, and to be examined for an amateur license following the class. I paid \$150.00 to attend the class; the ARRL provided me with those funds.

6. I attended a CARS class on August 4, 1991, at the home of Sandra V. Crane in Marina Del Rey, California. Charles P. Pascal taught the class with assistance from Sandra V. Crane, who was present during approximately 80-85% of the class. During the class, Ms. Crane interjected comments and observations at intervals averaging approximately 7-8 minutes. The class began at about 9:30 a.m. and ended at about 2:30 p.m., with a lunch break of approximately one hour. During the lunch break, Mr. Pascal taught Morse code for about 45 minutes. During the Morse code instruction, Mr. Pascal covered 11 letters of the alphabet, 10 digits and the period. He told the students that this was sufficient for the Morse code test. Mr. Pascal sent two sentences in Morse code during the instruction: "The train is not at the station," and "The name is Tom and I am in Tennessee." Mr. Pascal told the students that the Morse code test administered to them would be one of those sentences. I took extensive notes during the class on August 4, ^{1991 em} 1992. Attachment 1 is a true and correct copy of those notes.

7. Following the class on August 4, ^{1991 em} 1992, a team of volunteer examiners administered written examination elements 2 and 3A to the students who had attended the class. The volunteer examiner team consisted of Lance B. Ferranti, Terrence M. Pierce and John J. Quinn. Attachment 2 is a true and correct copy of the application form I filled out, and my examination papers.

After the written examination, some students took the 5-words-per-minute Morse code examination (element 1A). Although he was not a volunteer examiner, Mr. Pascal sent the Morse code message used for the examination. The message consisted of the "The name is Tom and I am in Tennessee," as well as "random" letters and numbers.

8. As indicated by Attachment 2, I "passed" both written elements (2 and 3A) and the Morse code test (1A). At the time of the examination I was unable to copy Morse code at the speed of five words per minute. Mr. Morse had given me a 5-words-per-minute examination that I had failed by a wide margin. I, therefore, could not have passed a fairly administered 5-words-per-minute Morse code examination.

9. The instruction on August 4, 1991, included the information necessary to answer all the questions in both written examination elements (2 and 3A) that I took on that date. I recognize Attachment 3 as a true and correct copy of the questions I answered from examination element 3A on August 4, 1991. A comparison of Attachment 3 with my notes (Attachment 1) confirms my initial determination that the instruction included the information needed to answer all the questions on the element 3A examination. At a time subsequent to the class and examination on August 4, 1991, I examined the question pools for elements 2 and 3A and compared them with my notes (Attachment 1). The comparison indicated that the instruction on August 4, 1991, included the information needed to answer approximately 39.7%^{6/11/91} of the questions contained in the question pool for element 2 and 37.8% of the questions contained in the question pool for element 3A. Attachment 4 is a true and correct copy of the

question pools for those elements, with my markings indicating which questions could be answered on the basis of the instruction on August 4, 1991.

10. Following the class and examination on August 4, 1991, I prepared a report of my investigation. Attachment 5 is a true and correct copy of this report and I adopt its contents as my testimony. I submitted my report to the AA, which, in turn, submitted it to the Federal Communications Commission and the W5YI-VEC.

11. Following the submission of my report, the W5YI-VEC invalidated the results of the examinations administered on August 4, 1991. I was then offered an opportunity by CARS to take a "refresher" course without charge at CARS and to retest on August 24, 1991.

12. On August 24, 1991, I attended the "refresher" class and an examination session at Sandra V. Crane's residence. I arrived at approximately 12:30 p.m. The class, which had already started, continued until approximately 3:15 p.m. The class was again taught by Mr. Pascal, with assistance from Ms. Crane, who was present about 90% of the time. During the class Ms. Crane had, in front of her, three sets of examination questions (for both elements). Mr. Pascal told Ms. Crane to "keep all three tests there and make notes on anything I miss." Ms. Crane said, "We just got the tests last night. They just got reviewed." During the class, Mr. Pascal frequently asked Ms. Crane about such subjects as whether he had gotten something right and the wording of the examination questions; this had not occurred during the class on August 4, 1991. In response, Ms. Crane provided information about the exact wording of

examination questions and pointed out key words for the class to remember. At times, Ms. Crane also provided such information on her own initiative or made other comments. I took detailed notes during the class. Attachment 6 is a true and correct copy of those notes. Although I had arrived after the class started, I did not miss any of the instructional content because the material was repeated.

13. Following the class on August 24, 1991, a team of volunteer examiners administered written examination elements 2 and 3A to the students. No Morse code test was given. The volunteer examiners were Thomas E. Fakehany, Robert G. Osborn, Jr., and Michael Bryant. The volunteer examiners arrived at the session without any examination materials. After the examiners arrived, Ms. Crane handed them a sealed package, which contained the examination questions. During the test, Ms. Crane provided a diagram to be used during the test, which had been missing from the package. *Tests handed out. Ms. Crane knew where to find it in the package.* Attachment 7 is a true and correct copy of *package* this diagram. *cm.* Attachment 8 is a true and correct copy of the application form I filled out and my examination papers. As indicated by Attachment 8, I "passed" both examination elements (2 and 3A).

14. The instruction on August 24, 1991, included the information necessary to answer all the questions in both examination elements (2 and 3A) that I took on the date. I recognize Attachments 9 and 10 as true and correct copies of the questions I answered for examination elements 2 and 3A on August 24, 1991. A comparison of attachments 9 and 10 with my notes (Attachment 6) confirms my initial determination that the instruction on August 24, 1991, included the information needed to answer all the questions on the examination. At a time

subsequent to the class and examination on August 24, 1991, I examined the question pools for elements 2 and 3A and compared them with my notes (Attachment 6). The comparison indicated that the information needed to answer approximately 41.5%^{61m} of the questions contained in the question pool for element 2 and 33.8% of the questions contained in the question pool for element 3A. Attachment 11 is a true and correct copy of the question pools for those elements, with my markings indicating which question⁵s could be answered on the basis of the instruction on August 24, 1991.

15. Following the class and examination on August 24, 1991, I prepared a report of my investigation. Attachment 12 is a true and correct copy of this report and I adopt its contents as my testimony. I submitted my report to the AA, which, in turn, submitted it to the Federal Communications Commission and the W5YI-VEC.

16. Following the submission of my report, the W5YI-VEC invalidated the results of the examinations administered on August 24, 1991. Prior to the announcement of the invalidation, I was offered an opportunity to retake the Morse code test.

17. On September 14, 1991, I attended an examination session in Marina Del Rey, California, at which students of CARS were being examined. I did not attend a class on that date. The volunteer examiners were Michael Bryant, James McKinley and Raymond Navarro. I was the only person at the session who took the five-words-per-minute Morse code examination. Ms. Crane had possession of the tape recording used for my Morse code examination and

provided it to the volunteer examiners. Because it is common for students of Morse code to use tape recorders for code practice, I was able to make a tape recording during the examination session. Attachment 13 is a partial transcript of that recording and accurately reflects its contents. As indicated by the transcription, Mr. Pascal and Ms. Crane were familiar with the content of the tape recording used to administer my Morse code examination, but the volunteer examiners were not. The examination included the two sentences Mr. Pascal taught to the class I attended on August 4, 1991 (except that the name "Tom was changed to "Don"). Attachment 14 is a true and correct copy of the application form I filled out and my examination paper. As indicated by Attachment 14, I "passed" examination element 1A (five-words-per-minute Morse code). As of September 14, 1991, I was still unable to copy Morse code at five words per minute and could not have passed a fairly administered examination.

18. Following the class and examination on September 14, 1991, I prepared a report of my investigation. Attachment 15 is a true and correct copy of this report, and I adopt its contents as my testimony. I submitted my report to the AA, which, in turn, submitted it to the Federal Communications Commission and the W5YI-VEC.

Christine F. McElwain

Christine F. McElwain

Subscribed and sworn to before me this 27th day of August, 1992.



Mark Lees

Notary Public

Attachments

Chris McElwain

654-4739 Attachment 1

Self training

permit^{or} authority ^{to operate} - amateur radio operator

responsibility = control operator

rules - 97 - all regulations - doesn't regulate station construction

ham license - all but rep of foreign govern

call sign - at ~~end~~ every 10" and at end of QSO (conversation)

listen for clear frequency - think simple work on tower - wear safety belt (carefully inspected)

work under tower - hard hat

lightning storm - ground everything

cold water pipe - good ground

dummy load - eliminates on the air tune-up interference

TX (transmitter) - low pass filter - will block higher freq's - allows low one's to pass - put high pass on neighbour's TV to allow high freqs to pass