

WIRELESS INSTITUTE OF AUSTRALIA
Exam Service

Practical Assessment Check Sheet

Amateur Radio Operators Certificate of Proficiency
Foundation, Standard and Advanced
Practical Assessment

.....
Name of Candidate (Print)

Version 2.3 – 11 October 2005

1. The practical assessment is to be confined primarily to Section 8 of the Foundation Syllabus. Questions/assessment task can be drawn from sections 2 and 9 – licence conditions and safety.
Note: The Standard and Advanced syllabi have corresponding and identical practical section.
2. It is desirable the assessment time keep to approximately 30-40 minutes.
3. Many elements of competency can be combined. For example elements of competency the require “on-air” operation could be completed in one session with the candidate or if necessary broken in a number of sessions.

<u>Element of Competency</u>	<u>Method</u>	<u>Performance Criteria</u>	<u>Outcome</u>
1. Identification of common transmission lines types	Using physical examples or photographs or diagrams of common coaxial and parallel transmission lines provided to candidate.	Identify correctly three types of transmission lines as coaxial or parallel line. Codes [e.g. RG58] are not required	{C/NYC}
2. Identify balanced and unbalanced transmission line	Using physical examples or photographs or diagrams of common coaxial and parallel transmission lines provided to candidate. At least one type of transmission line must be “balanced” and the other “unbalanced”	Identifies the types of transmission line as “balanced” or “unbalanced”.	
3. Identification of common coaxial connectors	Using physical examples or photographs or diagrams of 3 types of coaxial connector	Identify at least two of the three types present. Example PL-259, BNC, N-Type	
4. Demonstrate how to conduct a continuity check on a coaxial cable which is terminated with RF connectors on both ends	Physical skill test using a provided Ohmmeter and terminated coaxial cable. Or Oral questions and response on how the test procedure would be conducted and results interpreted	Using an Ohmmeter: Low loop resistance test with one end short circuited and high resistance open circuit test. Or Oral description of the test and interpretation of results of test.	
5. Identify Antennas	Physical examples or supplied (standard) assessors diagram of five antenna types	At least four of the five antennas identified correctly.	
6. Construct an RF choke	Oral question - Physically demonstrate or fully describe how an RF choke is constructed (of a type used for RF interference suppression) Simulated construction using a provided Ferrite toroid or Rod and cable or wire.	Candidate – physically simulated construction of a simple RF choke for interference suppression.	
7. Symbol identification	Hand the candidate the standard assessors symbol chart and ask them to identify at least 5 unlabelled symbols two of which must be antenna and earth.	Five symbols correctly identified two of which must be antenna and earth.	
8. Demonstrate safely the connection of a transmitter/receiver (transceiver), ready for powering up	Physically connect a transceiver to a power source, an antenna (or dummy load). Connect an external SWR meter and antenna tuner. All interconnecting cables and equipment supplied and in an appropriate uncluttered environment. No other equipment other than that to be connected should be available.	Station connected in a safe manner with devices in the correct order.	

<p>9. Identify amateur radio bands for the Foundation Licence (or Standard or Advanced if the candidate is attempting that assessment)</p>	<p>Candidate is supplied a copy of the appropriate Licence Condition Determination. Candidate to correctly identify (using the LCD) the band limits of any four bands chosen by the assessor.</p>	<p>Four bands and their frequency limits correctly identified.</p>	
<p>10. Demonstrate the protocol(s) required prior to commencing transmitting</p>	<p>Candidate is provided a tuned, ready to use Amateur Radio station on HF and VHF or UHF. No tuning or adjustments necessary. Candidate to demonstrate the requirement to listen on frequency prior to transmission and may include increasing the receiver gain or opening mute for weak signal detection. This task should be repeated up to three times and may be incorporated in other elements of competency.</p>	<p>Demonstrated the requirement to listen on frequency prior to transmission and adjustment of receiver sensitivity as appropriate.</p>	
<p>11. Demonstrate making on-air calling procedures for HF and VHF or UHF</p>	<p>Candidate is provided with a ready to use Amateur Radio station. Candidate is to demonstrate preferably “on-air” the procedure for make a call on HF and VHF or UHF. The call should be to a specific station. This activity may be simulated using a dummy load between candidates or between a candidate and assessor or another radio amateur. This task should be completed on HF and VHF or UHF at least three times. This task can include other elements of competency – e.g. “Demonstrate protocols prior to transmitting”</p>	<p>Demonstrated the correct procedure for calling a specific station. Candidate completes three on-air contacts (may be with the same participating station) or simulated on-air contacts using the correct protocols.</p>	
<p>12. Demonstrate how the signal strength meter is used in conjunction with a signal report.</p>	<p>Using an amateur radio station on HF and VHF or UHF the candidate demonstrates the use of a Signal Strength meter. This is preferably done on-air but could be done by reception of a station and the report provided to the assessor. A detailed description of the RS or RST code is not required. Report can be accompanied by English description e.g. “RS + and your audio sounds very good”. This task should be repeated up to three times and may be incorporated in other elements of competency.</p>	<p>Candidate demonstrates a basic knowledge of the RS or RST and plain language method of providing signal reports.</p>	

<p>13. With the material provided demonstrate the correct use of voice repeaters with and without</p> <ul style="list-style-type: none"> * CTCSS * DTMF 	<p>By the use of an Amateur Radio station preferably on-air, the candidate demonstrates the use of voice repeaters with and without CTCSS or DTMF tones. For example repeater access with and without IRLP. The candidate must demonstrate the need to identify the station before transmitting DTMF tones and may incorporate other elements of competency such as “Protocols prior to transmission” etc. This task should be repeated at least three times.</p>	<p>Candidate demonstrates a rudimentary knowledge of the use of CTCSS and DTMF tones, voice repeater access and placing a call on air.</p>	
<p>14. Purpose of breaks in transmissions</p>	<p>By oral questioning discuss the purpose of and importance of breaks in transmissions on HF and VHF or UHF. May be done as part of other elements of competency involving on-air operation. Candidate demonstrates the usage “breaks in transmission”</p>	<p>Candidate demonstrates (preferably on-air) the need for breaks in radio transmissions.</p>	
<p>15. Change to another frequency (QSY)</p>	<p>By use of an Amateur Radio station after making a contact with another station, demonstrate the correct protocol for changing to another frequency. May be completed as part of another element of competency requiring on-air operation.</p>	<p>Candidate on-air, successfully establishes a contact and changes to another frequency and re-establishes contact on that frequency with the contact station</p>	

<p>16. Q-Code and the Phonetic Alphabet. Use of plain language.</p>	<p>By oral questioning only the candidate should be asked the purpose of the Q-code and the phonetic alphabet. Including the importance of standardised codes and signals over radio. Use of language – slang etc. <i>Note- while not preventing such use- it is not a requirement for the candidate to use the Q-code or the phonetic alphabet in any part of this assessment.</i></p>	<p>Candidate provides a knowledge of the existence (only), of the Q-code and Phonetic Alphabet and knowledge of purpose for their use. Candidate demonstrates by answers the importance of the use of plain language in radio communications.</p>	
<p>17. Transmitter power measurement and adjustment.</p>	<p>Demonstrate the measurement of output power of a transmitter. Adjust the transmitter power to within legal limits. This may be done using an Amateur Radio station connected to a dummy load. No modulating sources other than voice are required. No modulation depth monitoring is required. Estimation of power only is required. No complex PEP measurements. Estimate made using a commercial power measuring device. The power meter should preferably be an external instrument. This measurement should be done on SSB and FM.</p>	<p>Candidate demonstrates the ability to make simple power measurements and adjustment using a commercial wattmeter.</p>	
<p>18. Measurement of SWR</p>	<p>Preferably with the use of an Amateur Radio station connected to an antenna, the candidate should demonstrate the ability to make a simple SWR measurement. This task may be completed off air with simulated mismatched loads. Candidate should be able disclose to the assessor if the reading obtained is satisfactory (equal to or less than 1.5:1) The task should be repeated 2-3 times.</p>	<p>Candidate demonstrate the correct technique (including identification of transmission if conducted on-air) for making a simple SWR measurement. Candidate is able to interpret if the reading is within acceptable limits (equal to or less than 1.5:1)</p>	
<p>19. Correcting high SWR</p>	<p>Using oral questioning the candidate is asked on methods available to correct an antenna system that may have a high SWR. Examples, use an antenna tuner or correct an antenna fault or adjust the antenna . Specific adjustments or tuning are not required in this assessment task.</p>	<p>Candidate orally describes what remedial action may be taken to rectify a high SWR problem.</p>	

20. High voltage and currents	Oral questions and responses from the candidate to ascertain that the candidate is aware of the dangers of high voltage (electric shock) and current (heat, burning and possibly fire)	Candidate demonstrates an awareness of the dangers of high voltages and currents.	
-------------------------------	--	---	--

.....
Signature of Assessor

.....
Name of Assessor (Print)

.....
Date