The New Zealand ***Amateur Radio Study Guide*** **BOOK 1**

What **YOU** do…to become a **RADIO AMATEUR!**

Compiled by MBIE-Approved Radio Examiner ARX2106*

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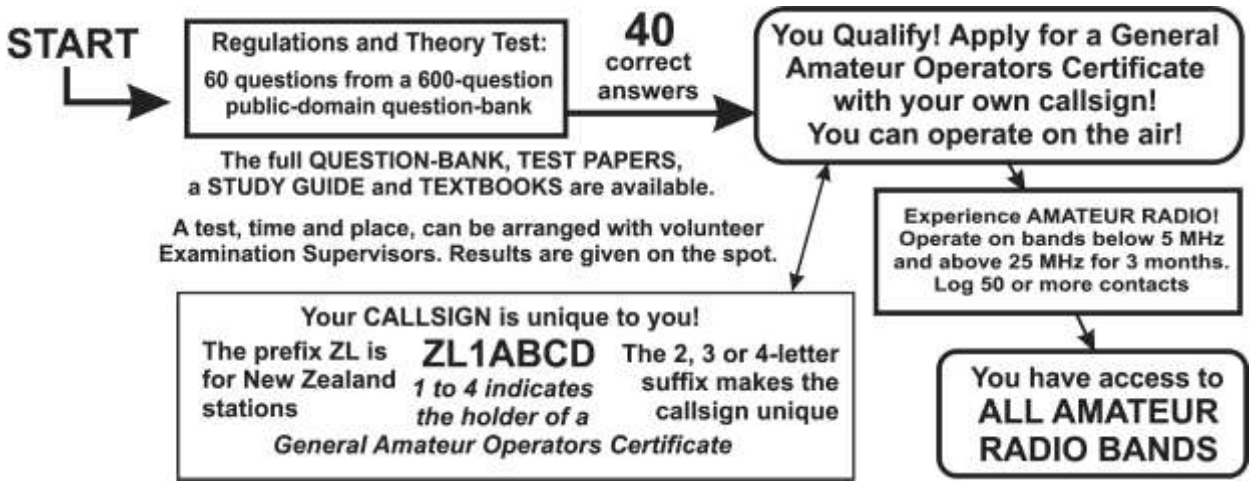
WELCOME TO AMATEUR RADIO!



*An '***Active ARX***' list is at the MBIE RSM website: http://www.rsm.govt.nz/cms

The New Zealand *Amateur Radio Study Guide* BOOK 1

Introduction ... to this STUDY GUIDE

Purpose: To help New Zealand residents to become ***Radio Amateurs.***

YOUR GOAL: To become a New Zealand ***Radio Amateur***.

Method: Self-study! In your own time - at your own pace!

Summary: This **GUIDE** was first launched in January 2000 and has been evolving ever since.

It includes all questions from a Question Bank prepared to meet the qualification requirements arising from the ***Radiocommunications Regulations 2001*** and ***Amendments.***

It is still under development. The latest version is the one currently posted on the website. Be sure that you have the latest version.

Many packages of "Study Notes" are here for your guidance! Start anywhere you wish! Work ***on-screen*** from the downloaded computer files or ***print*** what you require!

Test Questions: Each "Study Notes" package is crafted to help you to prepare for the questions from a New Zealand Amateur Radio Examination Question Bank.

Please note the companion books, the 600 **Questions *WITH* answers**, and the 600 **Questions *WITHOUT* answers**! Test yourself against the actual questions you will get in the examination!

Plan your own course! Jot down your answers to the various questions - then check against the listed answers!

The "Study Notes" provide background to the topics contained in the examination. They are in summary form. ***They are compressed.*** **This Guide does not pretend to be a complete text for radio and electronics**. The intention is to provide enough background for you to answer the questions.

The examination questions are limited in what they cover. Additional material is added in some places in this GUIDE to be sure that you know about things that should be known by radio amateurs but which are not examined.

For convenience, some short topics, such as the ***multiples and submultiples of electrical units,*** are covered in more than one place in these Study Notes.

Start this series of studies where-ever you wish! Start with something you already know.

Don't be put off by things new to you! It will all become clear as your study progresses. Please be regular with your studies. ***IT IS FUN ! !***

These Study Notes are only a GUIDE. You are recommended to refer to and to read Amateur Radio books during your studies. The publications of the ARRL, American Radio Relay League, and the RSGB, Radio Society of Great Britain, are recommended.

When you think that you are ready for the examination, make contact with your local amateur radio club and ask for an examination to be arranged for you.

Good Luck!

Reports: Comments and suggestions for changes and improvements to this Study Guide are appreciated.

Please note: ***Every effort has been taken to make this STUDY GUIDE as accurate and as complete as possible. We're still working on it! The information is provided on a free "as is" basis. The compilers have prepared this information in good faith and accept no responsibility to any person or entity for any outcomes. Your feedback will help us to improve it.*** **zl2amj@nzart.org.nz**

Acknowledgements

This collection of notes for the New Zealand Amateur Radio Examination began in the early 1970s using typed-up stencils and an old Gestetner machine acquired by Upper Hutt Branch NZART. The material has developed as technology advanced through photocopiers, to computers, to the word-processors of today. With so many contributors over so many years, it is impossible to list them. Sincere thanks to them all.. – 73, Fred ZL2AMJ

The SIX books in the *STUDY GUIDE* series:

The six books in the ***New Zealand Amateur Radio Study Guide*** prepare the candidate for the New Zealand Amateur Radio Examination. The books can be bound together *back-to-back* to form ***three volumes***:

VOLUME 1 "*Theory*":

Book 1. "***What YOU do ...to Become a Radio Amateur***" explains the Syllabus and other features of the examination system. (13 pages.)

Book 2. "***All you need to know...to BECOME a RADIO AMATEUR!***" a theory text-book or, if required, the source of classroom "hand-out" notes. (128 pages.)

VOLUME 2 "*NO answers*":

Book 3. "***The Amateur Radio Question-Bank (WITHOUT Answers)***", all the genuine questions for self-testing! (60 pages.)

Book 4. A ***Sample of a typical examination paper (WITHOUT Answers)***, with a candidate's .. answer sheet on its last page. (12 pages.)

VOLUME 3 "*WITH Answers*":

Book 5. "***The Amateur Radio Question-Bank***", same as Book 3 but ***with answers***, (60 pages.) **This is the Question-bank MASTER copy for this examination system**.

Book 6. A short "Statement" version of "***The Amateur Radio Question-Bank***", the questions ***with answers*** but without the distractors! (30 pages.)

The books can be freely downloaded from the published website. Each book can be viewed on-screen or printed on paper. If printed, they should be printed double-sided so only half of the number of sheets of paper are used. The books have been laid out with presentation carefully developed for the convenience of students.

Planning a STUDY COURSE with the printed booklets:

Book 2 is a collection of ***free-standing class hand-out notes*** for the study topics. It is also a course "textbook", with explanatory study material for "Clusters" of questions.

The Study Notes are presented so that each "Note" can be separately printed as a distinct separate document if required (by telling your printer which pages to print) to form **class hand-outs**. Or, the complete document can be printed to provide a complete "**textbook**".

The Study Guide BOOK 2 provides:

your *personal textbook*, for your own self-study course, or,
separate *class hand-outs* for Instructors and Students to use in a conventional classroom, or,
a pre-course directed *Reading Reference Resource* for each participating student prior to and during an "Amateur Radio week-end camp".

When binding: Make "Volumes" by binding Book 1 with Book 2, Book 3 with 4, and Book 5 with 6. Spiral-bind the pairs back-to-back with one book inverted. This gives each volume two "front covers" - the content details are then readily visible! Just flip the volume over to move to the other book! Use transparent plastic front and back cover sheets so the contents detail for each book is immediately visible!

The *QUESTION-BANK* and the *EXAMINATION PAPER*

Background and Structure

There are 600 questions in the examination **Question-Bank**, packaged into 60 "clusters" of 10 questions in each cluster.

For each examination paper, one question is randomly-selected from each cluster = a total of 60 questions in each paper.

The Question-Bank is in the public domain. This *question bank compilation* of amateur radio examination questions is the intellectual property of *MED-Approved Radio Examiner ARX2106.* It may be freely used for personal study and for practice tests. For examinations to qualify to be a radio amateur and to ensure the integrity of the examination process, it must be used within *an* ARX2106 *Approved Radio Examiner's systems and procedures* and with authorisation by Examiner ARX2106.

The Question-Bank is publicly available with all answers to the questions included (Book 5), and again as the same document but with all the answers removed (Book 3). This is so you can self-test yourself. Use the "no answer" version and attempt (say) question 5 from each cluster. Note your selections on a sheet of paper - then check your answers against the full version. A record sheet is provided in Book 2, at page 129. Re-do this test regularly to determine your study progress. Forty or more correct answers out of the 60 are required for a pass!

The Question-Bank itself is revised at intervals when changes in regulatory and technical requirements make revision necessary. The document is regularly scrutinised by a team of experienced tutors. Make sure that the documents you are using are the latest versions. The latest versions are on the website.

Diagrams are not used with any of these questions. Examination papers can be prepared on request for the visually disabled to use with appropriate screen-reading text-speaking software. Book 6 (the "Statement" version of the Question-Bank) is recommended as a learning aid for the visually-disabled.

The "***Working Syllabus***" that follows here shows how the knowledge required is distributed through the 60 numbered Clusters of the Question-Bank.

A description of each study topic follows in the Working Syllabus. The number of questions which will be selected from each study topic for each examination paper is shown in brackets.

The companion BOOK 2 "***All you need to know...to BECOME a RADIO AMATEUR!***" is a compilation of study notes for the various cluster packages.

Study it in your own time, at your own pace, at your own place!

The Official New Zealand Syllabus:

Extract from the NZ Radio Regulations: (Section 4 of Schedule 4 to the Radiocommunications Regulations 2001):

"4 General amateur operator's certificate

To qualify for a general amateur operator's certificate for operation on all scheduled amateur frequencies, a candidate must pass a written examination approved by the chief executive for the purpose that demonstrates a theoretical knowledge of—

a) the legal framework of New Zealand radiocommunications, including—

- (i) the International Radio Regulations of the International Telecommunication Union; and
- (ii) the Act; and
- (iii) these regulations; and
- (iv) the New Zealand amateur radio licence conditions and frequency allocations; and

(b) the methods of radiocommunication, including radiotelephony, radiotelegraphy, and data and image; and

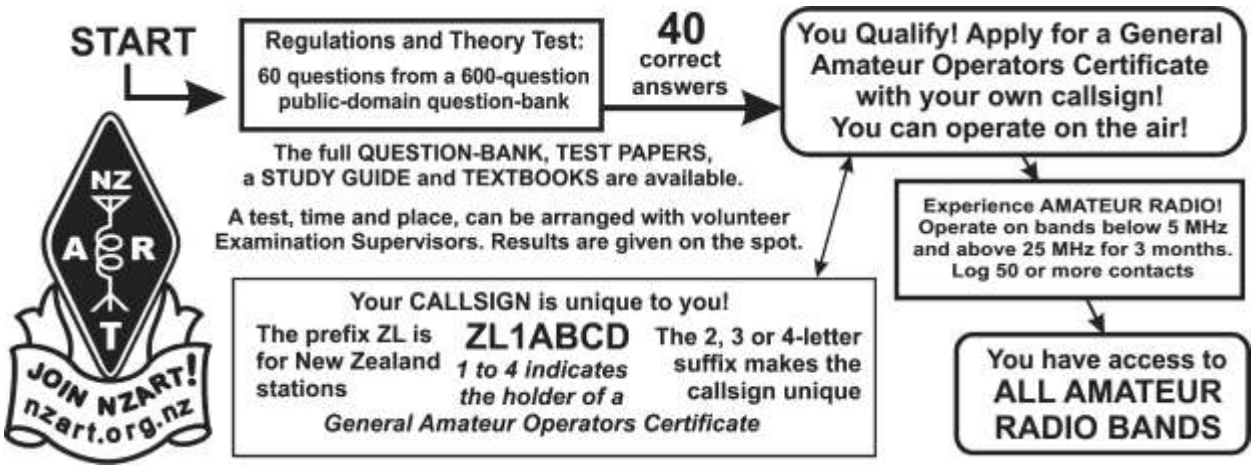
(c) radio system theory, including theory relating to transmitters, receivers, antennas and propagation, and measurements; and

(d) electromagnetic radiation; and

(e) electromagnetic compatibility; and

(f) avoidance and resolution of radio frequency interference.**"**

WELCOME TO AMATEUR RADIO!



The Working Syllabus

Cluster Number	
1 to 7	**Regulations: (7 questions)** The international and the NZ radio regulatory environment. Licences, Certificates of Competency, station identification and callsigns. Responsibilities of operators. Power permitted. Administration of amateur radio. Operating and message requirements. Bandplans and operating procedures.
8 & 9	**Radio Frequency Bands (2 questions)** Frequency band allocations. Sharing of bands, restrictions on certain bands.
10 & 11	**Electronics Fundamentals: (2 questions)** Atoms and sub-atomic particles, electrons, ions. Insulators, conductors and semiconductors. Fields produced by currents and magnets. Types of cells.
12	**Measurement Units: (1 question)** Units of voltage, current, resistance, impedance, power.
13 & 14	**Ohm's Law: (2 questions)** Calculations involving voltage, current, resistance (using a single resistor).
15, 16, 17	**Resistance: (3 questions)** Values of resistors in series and parallel (using two resistors and more). Calculations involving resistor combinations, voltage, current. Internal resistance of cells.
18 & 19	**Power calculations: (2 questions)** Power calculations given two of voltage, current, resistance. Power dissipated in resistors connected in series and parallel.
20	**Alternating current: (1 question)** Frequencies, waveforms and units. Waveform shapes, rms, peak values.
21 & 22	**Capacitors, Inductors, Resonance: (2 questions)** Variation of capacitance with plate size and spacing, dielectrics. Variation of inductance with diameter, length, number of turns, (descriptive only). L and C in series and in parallel. Reactance variation of L, and C, with frequency. Series and parallel resonance. Impedance, Q values. Toroidal inductors. Transformers, turns ratios, voltage transformation.
23	**Safety: (1 question)** Basic procedures for removing persons from live circuits. Action of residual current devices, fuses, isolating transformer. Grounding. Colour codes and names of mains wiring. Purpose of the ground lead and how it should be connected.
24 & 25	**Semiconductors: (2 questions)**

The properties of semiconductor materials. Basic properties and uses of diodes, zener diodes and transistors.

26 **Electronic Devices: (1 question)**
Recognition of names and electrodes of semiconductor devices and thermionic valves.

27 **Meters and Measuring: (1 question)**
The function of voltmeters, ammeters, SWR bridges, power meters.
The impedances they present to circuits, how they should be connected.
Peak and rms values.

28 **Decibels, Amplification and Attenuation: (1 question)**
Power, voltage and current ratios expressed in dB.
Gain and loss in dB of systems connected in cascade.

29 **HF Stations: (1 question)**
Understanding the block diagram of a typical HF station, showing how a transceiver is connected to an amplifier, low pass filter, SWR bridge, antenna switch, antenna tuner, dummy load and antenna.
The basic function of each block.

30 to 36 **Receivers: (7 questions)**
Block diagrams of SSB, CW, FM receivers, the purpose of each block.
Sensitivity, selectivity, receiver noise.
Operation of a superhet, RF amplifier, IF amplifier, mixer, frequency translation, images, product detector, BFO, AGC, audio amplifier, single and double conversion.

37 to 39 **Transmitters: (3 questions)**
Block diagrams of SSB, CW, FM transmitters, the purpose of each block.
Properties of the signals produced.
Linear and non-linear amplification.
Meaning of "SSB", "CW", "FM", properties of their signals.
Causes of distortion.
Power distribution in transmitters.

40 & 41 **Harmonics and Parasitics: (2 questions)**
Harmonic frequencies. Causes of harmonic and parasitic generation in transmitters, methods to reduce them.

42 & 43 **Power supplies: (2 questions):**
Cells.
Mains input DC power supplies.
Purpose of diodes, capacitors, transformers.
Full-wave and half-wave rectification, ripple frequencies.
Basic purpose of transformer, rectifier, filter, regulator sections, fuses, crowbars.
Basic operation of switched mode power supplies, advantages and disadvantages.

44 **General Operating Procedures: (1 question)**
Standard calling, answering, conversing procedures and conventions.
Initiating and terminating contacts. Callsign exchanges**.**

45 & 46 **Practical Operating Knowledge: (2 questions)**
Recognition of common terms.
Repeater procedures, standard New Zealand splits. Repeater Linking.
Operation of standard controls on transmitters and receivers.

47 **Q signals: (1 question)**
Common Q signals used in Amateur Radio communications.

48 & 49 **Transmission lines: (2 questions)**

Construction of coaxial and twin-lead transmission lines.
Balanced and unbalanced lines.
Characteristic impedance. Line losses. Standing waves, SWR.

50 to 53 **Antennas: (4 questions)**

Lengths of dipoles, verticals, for different frequencies.
Impedances, feedpoint position. Matching. Antenna bandwidth.
Elements of a yagi antenna, direction of radiation.
E and H fields around antennas. Polarisation.
Tuning antennas with inductance.
Baluns. Dummy antenna.

54 to 56 **Propagation: (3 questions)**

Basic phenomena in HF, VHF, UHF propagation.
Layers which refract (reflect) signals. D layer absorption.
Skip zones, hops, MUF, LUF, OWF.
Solar cycle. Sky waves, ground waves. Sporadic E.
Great circle paths, radiation angles. Fading.
Doppler caused by satellite motion.

57 to 59 **Interference & filtering: (3 questions)**

Cause of and remedy for key-clicks.
Causes and recognition of cross modulation, unwanted harmonics.
Definitions of low-pass, band-pass, band-reject, notch and high-pass filters.
Using filters for interference reduction.
EMC concepts. Causes and reduction of BCI, TVI.
Gain, impedance, basic properties of operational amplifiers.
Op-amps in active filters.

60 **Digital Systems: (1 question)**

Basic digital communication principles, names of common digital modes. Principles of BBS systems. Modems, TNCs.

The Question-numbering system:

Each cluster is numbered, 01 to 60 and is presented in the Question-Banks with each on a separate page.

The ten questions within each cluster are each identified by a number, 0 to 9. (**Note**: Start at zero.)

For an examination paper, one question is randomly selected from each cluster to make a total of 60 questions in each examination paper.

The **first two numerals** of each question number give the Cluster Number. With just one question selected from each cluster, these two numerals will become the final examination question number, i.e. from 01 to 60.

The **next numeral** is the number of the question taken from within the cluster. (It starts at zero and runs to 9 – for ten questions). This number will be retained on the final printed examination paper for origin-tracing and for marking reasons.

The **final letter (in brackets)** is the correct answer choice for that question. The correct choices are intentionally scrambled and shown in no particular order throughout this question-bank. These brackets and their contents will be removed before the final examination paper is printed for use by a candidate.

[Cluster and Final Question No.] – [Question selected from the cluster]- **(**[Correct answer choice]**)**,

e.g. 23-7-(c) etc.

*(**These Appendices, for Instructors of Amateur Radio Classes and for Examination Supervisors, are included here for interest.)***

Appendix 1

How an Examination is organised:

This is the procedure to be followed for preparing and administering an examination for the ***Amateur Radio Operators Certificate of Competency.*** Variations may be arranged and may be prior-approved by the ARX to better meet local conditions and circumstances.

Preparatory

Before a candidate attempts an examination, it should be ascertained by careful questioning if the time is correct for testing. Has the candidate made adequate study preparations? Is the candidate aware of the nature of the examination and has the candidate attempted any trial examinations? This is to avoid possible disappointment. The candidate must be advised to produce a birth certificate, passport, driver's licence, or other legal document at the examination time to establish identity, full legal name and date and place of birth.

Outline of the procedure

The examination is the qualification for the grant of a Certificate of Competency under statute authority so the rules of conduct are essentially the same as any other public examination and must be followed.

The examination papers may be centrally prepared by an ARX away from the examination site and then provided to the Chief Supervisor or they may be prepared by the Chief Supervisor.

Examination papers are to be ordered from the ARX one week before the examination date, giving the date, time and place of the proposed examination, the names of the proposed two Supervisors, the number of candidates and suggesting arrangements for the preparation of the examination papers.

One unique examination paper is prepared for each candidate.

Two Supervisors are required to supervise an examination. The Supervisors are to be qualified and experienced radio amateurs of known good repute and integrity and accepted for the task by the ARX. The Supervisors must not have any family connections with any candidate and have not been involved with tutoring any candidate.

The Supervisors are to offer no information or advice other than that relevant to the examination room procedure.

The Chief Supervisor must be provided with the following items for each candidate:

1. A sealed envelope containing the ***exam-coded examination paper*** for the candidate. A label on the outside gives the exam-code-number of the examination paper within.
2. A ***second*** sealed envelope of different colour containing a ***special print-out*** of the ***same-coded examination paper*** for the exclusive use of the Supervisors. This envelope is not to be opened until after the completion of the examination and then used by the Supervisors for marking the candidate's completed Answer Sheet.
3. A blank ***Candidate's Answer Sheet***. The other face of this sheet (the ***Candidate's Record Information***) is to be completed ***before*** the examination commences with the Candidate's Record details.
4. A blank ***Radio Exam Result*** form for use when recording a successful outcome of an examination.
5. An ***Application Form for an amateur radio operator Certificate of Competency***. This is for use after the examination if the result is a pass.

The Examination Room

A comfortable room with adequate lighting and a table and chair for each candidate is required. Candidates must be positioned so that visibility of another's paper is minimised.

A toilet must be available near-by.

It must be assured that there will be no interruptions for the period of the examination and with no noises or other distractions.

Persons not involved with the examination must be excluded from the examination room, but the attendance in the room with or without notice, of the ARX and authorised representatives from the MED RSM for inspection and auditing of the examination must be permitted.

Conducting the examination

Candidates are seated and settled and the candidate's blank Answer Sheets are distributed.

The rear of the ***Answer Sheet*** is the ***Candidate's Record Sheet*** for the candidate's personal information. This detail must now be entered – ***before*** the examination starts.

The candidate must produce a birth certificate, passport, driver's licence, or other legal document to establish identity, full legal name and date and place of birth.

Pens should be checked - some spare pens should be held available by the Supervisors.

The examination papers, still in their sealed envelopes, are randomly distributed to candidates.

The packaging of the unopened sealed envelope is to be checked by the Supervisors and again by the candidate to ensure that each envelope is intact and has not been previously opened.

The code number on the sealed envelope is to be the individual candidate's code number and is to be ***entered on the candidate's Answer Sheet***.

The examination starts with the Chief Supervisor announcing the start, two hours is the time available, and candidates can now open their sealed envelopes and read ***the cover sheet of the examination paper*** only.

The ***candidate's code number*** and the ***Instructions to Candidates*** are printed on the cover sheet of the examination paper.

Check that the code number from each examination paper and the positive identification details are correctly entered on the Answer Sheet and Record Sheet for each candidate.

The Chief Supervisor announces that candidates can now start writing and the two-hour time period starts.

Concluding the examination

Candidates may leave the examination room at any time during the examination, taking their examination papers with them. The Answer Sheets are the property of *The Wellington VHF Group Inc.* and are to be handed to the Chief Supervisor.

Except for quick temporary absence for a toilet visit, a return to the examination room is not permitted.

When all candidates have completed their work, or when the two hours is up, the Chief Supervisor declares the time to stop and collects all the Answer Sheets.

Marking the paper

With the candidate out of the room, the Supervisors' sealed envelope is now opened and the entries on the candidate's answer sheet are compared question-by-question with the correct answer as shown on the Supervisors' printed examination paper. Two Supervisors are needed for this task.

A tick by a coloured pen is placed in the white margin alongside each correct question on the answer sheet. A short horizontal line may be placed alongside incorrect answers.

The final number of correct answers is counted.

The process is then rechecked until both supervisors are satisfied with the result obtained from the processing of these two documents.

If forty or more correct answers are attained by a candidate, the result can be declared a ***provisional pass*** and the candidate called back to the room and notified.

A ***Radio Exam Result*** form can then be completed and signed by both Supervisors. The result is also entered on the ***Candidate's Record Sheet*** (on the back of the Answer Sheet).

It is important that the total number of the correct questions answered is properly recorded. This result information may also be used later for possible annual prize purposes.

Processing the outcome

The signed **Radio Exam Result** form for a "provisional pass" candidate must be promptly returned to the ARX with the completed **Candidate's Answer Sheet** (and completed ***Candidate Record*** form) with a completed **application form** for an amateur radio operator *Certificate of Competency* and the *Callsign* actions in SMART in accordance with the candidate's wishes for personal address entries and callsign suggestions.

Any blank Radio Exam Result forms (those not used – by failed candidates) are also to be returned with all the material prepared for any candidates who didn't show up for the examination.

The ARX will check the claimed marking conclusions and if all is in order, declare a **pass** and sign the ***Radio Exam Result*** form accordingly.

The ***Radio Exam Result*** form, being printed on special paper for security reasons, is now embossed with a unique ARX embossing stamp.

The ***Radio Exam Result*** form is then the property of the candidate and sent to the candidate as the record of the examination result.

Result recording and further action

The ARX logs the candidate's result information in a Master Examination Register. This Register is kept for record and archival purposes. It is backed-up at intervals on to CD-ROM and an additional copy stored off-site. It is available for audit.

After discussions with the candidate, the ARX can proceed to process the application form for an amateur radio operator *Certificate of Competency* and the *Callsign* actions in SMART in accordance with the candidate's wishes for personal address entries and callsign suggestions.

Provision for revision

The Examination Question-Bank and the procedural forms are complex documents. These will be revised as experience, regulatory and procedural matters and changes require. Persons with appropriate knowledge and experience outside the direct examining process will be called upon to check revisions.

Provision for complaints

Any complaints about this examination or the examination procedure or a request for a revision or a re-count should be formally directed to the ARX involved with your particular examination. All such feedback will be promptly investigated.

Appendix 2

Practical Training for new Radio Amateurs

The whole examination objective is to ensure that candidates will be competent and responsible operators, to have reached an achievement level to work unsupervised within amateur radio bands with the maximum RF power level permitted and set up a safe working station with a clean signal, and adopt courteous operating procedures.

Examination candidates should be given encouragement by local radio amateurs and the opportunity to receive active and practical instruction in many practical operating aspects important to amateur radio.

The Syllabus (in 44 and 45 & 46) requires some understanding of practical operating. On-air demonstration and “hands-on” experience with local operators is recommended to enhance and to encourage.

There is provision in PIB46 for examination trainees before becoming qualified, to operate an amateur radio club station *under the close supervision of an experienced qualified radio amateur*, on-air, using the suffix XT (i.e. examination trainee) added to a club station callsign, to establish and to experience communications.

Here are suggestions to assist with planning and preparation:

Connecting a transmitter/receiver safely to a power supply, microphone, key, transmission line and aerial. Observing national bandplans, frequencies, emissions and power levels. Correction of simple problems, high SWR, excessive modulation. Listen before transmitting. Dangers from wearing high-volume headphones. Stations with ZK callsigns have absolute priority.

Use of appropriate calling procedures. Operation of modes appropriate for HF and VHF. Experience and manage interference situations. Meaningful signal reporting. Correct use of repeaters. Breaks in transmissions. Making a CQ call. Changing frequency, QSY. Experience recognised abbreviations.

Amateur-to-amateur communication only. Callsigns to be given at least once in 15 minutes. There is an unknown listening public. Use plain language, no offensive language or topics in bad taste. Third-party messages but no business or financial traffic. No messages encoded to obscure content.

Beware of high voltages and high currents. Precautions with mains-operated equipment. State of repair of leads, plugs and sockets. Safety earthing. Proper use of fuses. Physical safety, hazards of trailing cables, frayed and damaged leads, dangers with high RF levels.

Actions in event of station emergency, labelled mains off switch, first aid awareness. Precautions with batteries. Dangers of low aerials, dangers of working on poles and towers. Siting of aerials relative to other wires. Lightning problems. Be aware of local body rules and restrictions.

Actions to take on reports of EMC interference, relations with neighbours.

Your station must not be operated by unqualified persons.

Hands-on experience and understanding of basic electricity/electronics...the Do's and Don'ts of it and safe practice procedures.

How to connect a 13.8VDC supply to a modern-day transceiver, how to turn it on and get to know the basic features of the equipment.

Make a simple basic "dipole" and have some understanding of the capabilities of such antenna depending on height above ground etc.

Learn and make up a BNC, PL259 and N connector. Learn basic soldering procedures.

The dummy load and power measurements. Have explained by demonstration, the different modes associated with Amateur Radio, SSB/CW/Digital etc.

Join NZART! Please complete the following and post to: *FREEPOST 3565*

The General Secretary, NZART Headquarters, P.O. Box 40 525, UPPER HUTT 5140

Your Name: _____ _____ _____
Initials Surname Callsign

Add details _____ _____ _____

of Family _____ _____ _____

Members _____ _____ _____

Address: _____

_____

_____ Postcode_____

Occupation: _____

The above information is for membership records required to be maintained under the Incorporated Societies Act 1908.

Date of Birth: (For statistical purposes only)_____

Preferred NZART Branch: (Name or No.) _____

Subscription: (*Get current $ figures from:* http://www.nzart.org.nz/join/index.html)

(Tick appropriate boxes)

TRANSMITTING ☐ $95

NON-TRANSMITTING ☐ $95

FAMILY ***ADDITIONAL*** ☐ $30
(To include all the Family Members you listed above)

OVERSEAS (Surface postage) ☐ $ 95

OVERSEAS (Airmail postage) ☐ $110

STUDENT ☐ $45
(Copy of Student ID required annually)

Tick this box if you request a Listener Call: ☐

My subscription is: $_____
Donation to the Association: $_____

Enclosed: ☐ **Total sent:** $_____

By Credit Card ☐ *(Please complete details)*

VISA ☐ *MASTERCARD* ☐ *EXPIRES* ☐☐☐☐

NAME ON CARD: _____ *CARD:*

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Signature: _____

I agree to abide by the NZART Constitution.

Signature _____

The New Zealand Association of Radio Transmitters Incorporated

The Radio Amateur's Organisation

Founded 16 August 1926

It serves you at local, national and international levels.

It deserves our full support if we are to continue to have the frequencies and operating privileges we currently enjoy.

Founder Member of the International Amateur Radio Union Region 3.

The International Amateur Radio Union Region 3

Formed in 1968 to promote the special interests of the Member Societies in Region 3 of the International Telecommunication Union, and to present their interests at ITU Radio Conferences.

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