



CANADIAN BASIC AMATEUR RADIO EXAM PREPARATION

SECTION 1 **H** REGULATIONS & POLICIES





**THIS COURSE IS BEING TAUGHT TO THE JULY 15, 2025 UPDATE
OF THE CANADIAN BASIC AMATEUR RADIO EXAM QUESTIONS.**

THE MATERIAL IN SECTION 1 JUST NEEDS TO BE MEMORIZED TO WRITE THE EXAM. DESPITE THIS SECTION BEING CALLED “SECTION 1,” **WE ADVISE LEAVING IT TO THE VERY END OF YOUR EXAM PREPARATIONS.** AFTER YOU GET A THOROUGH UNDERSTANDING OF THE OTHER SECTIONS, RETURN TO SECTION 1 TO CONCLUDE YOUR PREPARATIONS.



SECTION 1 QUESTION CATEGORIES:

B-001-001: REGULATORY FRAMEWORK AND AUTHORITY

B-001-002: AMATEUR RADIO OPERATOR CERTIFICATE ADMINISTRATION

B-001-003: PROHIBITED TRANSMISSIONS AND PENALTIES

**B-001-004: ELIGIBILITY AND QUALIFICATIONS FOR AMATEUR RADIO OPERATOR
CERTIFICATE**

**B-001-005: INSTALLATION, MODIFICATION, REPAIR AND PROGRAMMING OF
RADIO APPARATUS**

**B-001-006: PERMISSIBLE USE AND LIMITATIONS OF AMATEUR RADIO
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**B-001-008: STATION TYPES, QUALIFICATIONS FOR SPECIFIC OPERATIONS AND
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B-001-015: OPERATING PRIVILEGES AND BAND LIMITS

B-001-016: BANDWIDTH AND EMISSION MODE RESTRICTIONS

B-001-017: TRANSMITTER POWER LIMITS

B-001-018: REPEATER AND SPECIAL STATION RULES

B-001-019: TECHNICAL STANDARDS AND STATION REQUIREMENTS

B-001-020: INTERNATIONAL COMMUNICATIONS

B-001-021: ITU REGIONS AND RECIPROCAL/CEPT OPERATIONS

B-001-022: EXAMINATION FEES AND ACCOMMODATIONS

B-001-023: ANTENNA STRUCTURE INSTALLATION AND PUBLIC CONSULTATION

SECTION 1 QUESTION CATEGORIES:

B-001-024: RF EXPOSURE SAFETY (SAFETY CODE 6)

**B-001-025: ELECTROMAGNETIC COMPATIBILITY AND INTERFERENCE
RESPONSIBILITY**





QUESTION SECTION B-001-001:

REGULATORY FRAMEWORK AND AUTHORITY

B-001-001: REGULATORY FRAMEWORK AND AUTHORITY

LEGAL AUTHORITY AND ADMINISTRATION OF AMATEUR RADIO IN CANADA

- WHICH DOCUMENT ASSIGNS THE AUTHORITY TO MAKE CANADIAN REGULATIONS GOVERNING RADIOCOMMUNICATIONS? **ANSWER: THE RADIOCOMMUNICATION ACT**
- THIS IS THE PRIMARY FEDERAL LAW (AN ACT OF PARLIAMENT) THAT GIVES THE GOVERNMENT THE POWER TO CREATE AND ENFORCE RULES FOR ALL RADIO USE IN CANADA. WITHOUT THIS ACT, THERE WOULD BE NO LEGAL BASIS FOR ANY RADIOCOMMUNICATION REGULATIONS.

B-001-001: REGULATORY FRAMEWORK AND AUTHORITY

LEGAL AUTHORITY AND ADMINISTRATION OF AMATEUR RADIO IN CANADA

- THE SAME **RADIOCOMMUNICATION ACT** EMPOWERS THE MINISTER TO ISSUE DETAILED OPERATING STANDARDS (OFTEN CALLED RIC-24 OR SIMILAR DOCUMENTS) SPECIFICALLY FOR AMATEUR RADIO STATIONS. THESE STANDARDS COVER TECHNICAL AND OPERATIONAL RULES THAT HAMS MUST FOLLOW.
- COMMONLY ABBREVIATED AS ISED (**INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA** - FORMERLY INDUSTRY CANADA), THIS FEDERAL DEPARTMENT OVERSEES THE ACT. ISED HANDLES AMATEUR RADIO LICENSING, EXAMINATIONS, CALL SIGN MANAGEMENT, SPECTRUM ALLOCATION FOR HAMS, AND ENFORCEMENT OF THE RULES.

B-001-001: REGULATORY FRAMEWORK AND AUTHORITY

LEGAL AUTHORITY AND ADMINISTRATION OF AMATEUR RADIO IN CANADA

- WHICH DOCUMENT DEFINES THE CANADIAN "AMATEUR RADIO SERVICE"? **ANSWER: THE RADIOCOMMUNICATION REGULATIONS**
- THESE ARE THE DETAILED REGULATIONS (SOR/96-484) MADE UNDER THE AUTHORITY OF **THE RADIOCOMMUNICATION ACT**. THEY INCLUDE THE OFFICIAL DEFINITION OF THE **AMATEUR RADIO SERVICE**: A NON-COMMERCIAL **SERVICE** FOR SELF-TRAINING, INTERCOMMUNICATION, AND TECHNICAL INVESTIGATION BY INDIVIDUALS WITH A PERSONAL (NON-FINANCIAL) INTEREST IN RADIO.



QUESTION SECTION B-001-002:

AMATEUR RADIO OPERATOR CERTIFICATE

ADMINISTRATION

CERTIFICATE VALIDITY AND LIFESPAN

- **ONCE YOU PASS YOUR EXAM(S) AND RECEIVE THE CERTIFICATE, IT NEVER EXPIRES. IT IS VALID FOR LIFE. THIS APPLIES EVEN IF YOU MOVE ABROAD TEMPORARILY — THE CERTIFICATE REMAINS VALID FOR LIFE.**

B-001-002: AMATEUR RADIO OPERATOR CERTIFICATE ADMINISTRATION

ADDRESS CHANGE REQUIREMENTS (NOTIFY ISED PROMPTLY!)

- ISED (**INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA**) NEEDS YOUR CURRENT MAILING ADDRESS FOR OFFICIAL NOTICES (EX: RULE CHANGES, ENFORCEMENT LETTERS, OR CERTIFICATE REPRINTS). USE THE ONLINE FORM ON THE ISED AMATEUR RADIO SERVICE CENTRE WEBSITE TO UPDATE IT — IT'S QUICK AND FREE. FAILING TO NOTIFY WITHIN **30 DAYS** CAN LEAD TO ISSUES IF ISED NEEDS TO CONTACT YOU. THE **AMATEUR RADIO OPERATOR CERTIFICATE** SHOULD STAY AT YOUR REGISTERED ADDRESS.

B-001-002: AMATEUR RADIO OPERATOR CERTIFICATE ADMINISTRATION

CERTIFICATE RETENTION AND INSPECTION

- KEEP THE ORIGINAL CERTIFICATE **AT YOUR STATION LOCATION**. IF AN ISSED INSPECTOR (RADIO INSPECTOR) REQUESTS TO SEE IT DURING A VISIT OR INVESTIGATION, YOU HAVE **48 HOURS** TO PRODUCE IT — THIS GIVES FLEXIBILITY IF YOU'RE NOT HOME OR NEED TO RETRIEVE A COPY.
- IT'S NOT AN IMMEDIATE "SHOW ME NOW" DEMAND LIKE SOME OTHER LICENCES.



B-001-002: AMATEUR RADIO OPERATOR CERTIFICATE ADMINISTRATION



FEES FOR CERTIFICATE AND CALL SIGN ACTIONS

- B-001-002-006 — WHAT IS THE FEE FOR A FIRST AMATEUR RADIO OPERATOR CERTIFICATE? **ANSWER: FREE**
- B-001-002-009 — WHAT IS THE FEE FOR CHANGING AN EXISTING CALL SIGN (INCLUDING CHANGING TO A TWO-LETTER CALL SIGN)?
ANSWER: \$60



QUESTION SECTION B-001-003:

PROHIBITED TRANSMISSIONS AND

PENALTIES

B-001-003: PROHIBITED TRANSMISSIONS AND PENALTIES

OPERATING OUTSIDE AMATEUR BANDS

- **STICK TO YOUR AUTHORIZED AMATEUR BANDS (EX: 2M, 40M, ETC.). TRANSMITTING ELSEWHERE (EX: ON MARINE, AVIATION, OR BROADCAST FREQUENCIES) IS ILLEGAL — EVEN ACCIDENTALLY — AND THE CONTROL OPERATOR (THE LICENSED PERSON IN CONTROL) CAN FACE FINES OR OTHER PENALTIES FROM ISD.**



B-001-003: PROHIBITED TRANSMISSIONS AND PENALTIES

FALSE OR FRAUDULENT MESSAGES AND DISTRESS SIGNALS



- **NEVER FAKE AN EMERGENCY** — NO JOKES, TESTS, OR PRANKS WITH "MAYDAY," "SOS," OR FALSE DISTRESS CALLS. THIS IS CALLED A FALSE OR FRAUDULENT DISTRESS SIGNAL/MESSAGE UNDER SECTION 9 OF THE RADIOCOMMUNICATION ACT.
- IT'S A CRIMINAL OFFENCE (SUMMARY CONVICTION), PUNISHABLE BY UP TO \$5,000 FINE, 1 YEAR IN PRISON, OR BOTH. REAL EMERGENCIES ONLY — FALSE ONES ENDANGER LIVES AND TIE UP RESCUE RESOURCES.

B-001-003: PROHIBITED TRANSMISSIONS AND PENALTIES



INTERFERENCE AND OBSTRUCTION

- **DELIBERATE JAMMING, WILLFUL INTERFERENCE, OR BLOCKING LEGITIMATE COMMUNICATIONS (EVEN NON-AMATEUR) IS ILLEGAL. SAME PENALTIES AS FALSE DISTRESS: UP TO \$5,000 FINE AND/OR 1 YEAR IMPRISONMENT. ACCIDENTAL INTERFERENCE SHOULD BE CORRECTED IMMEDIATELY.**

LEGAL BASIS FOR OFFENCES AND PENALTIES



- ALL THESE RULES AND PUNISHMENTS COME FROM THE **RADIOCOMMUNICATION ACT** (FEDERAL LEGISLATION). IT'S THE SOURCE LAW ENFORCED BY INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA (ISED). THE ACT OUTLINES PROHIBITIONS (EX: SECTION 9) AND PENALTIES.

B-001-003: PROHIBITED TRANSMISSIONS AND PENALTIES

SUSPENSION OF CERTIFICATE AND INSPECTOR POWERS

- B-001-003-005 — WHICH OF THE FOLLOWING IS NOT CORRECT? THE MINISTER OF INNOVATION, SCIENCE AND INDUSTRY MAY SUSPEND AN AMATEUR RADIO OPERATOR CERTIFICATE: **ANSWER: WITH NO NOTICE, OR OPPORTUNITY TO MAKE REPRESENTATIONS THERETO**

B-001-003: PROHIBITED TRANSMISSIONS AND PENALTIES

SUSPENSION OF CERTIFICATE AND INSPECTOR POWERS

- B-001-003-006 — WHICH OF THE FOLLOWING STATEMENTS IS NOT CORRECT? ANSWER: A RADIO INSPECTOR MAY ENTER A DWELLING WITHOUT THE CONSENT OF THE OCCUPANT AND WITHOUT A WARRANT



QUESTION SECTION B-001-004:
ELIGIBILITY AND QUALIFICATIONS FOR
AMATEUR RADIO OPERATOR CERTIFICATE

AGE AND BASIC ELIGIBILITY REQUIREMENTS



- ANYONE CAN ATTEMPT THE EXAM AND HOLD THE CERTIFICATE — **NO MINIMUM OR MAXIMUM AGE**, NO CITIZENSHIP REQUIREMENT. THE ONLY FIRM CONDITION IS **A VALID CANADIAN MAILING ADDRESS** (FOR USED CORRESPONDENCE AND REGULATORY PURPOSES).
- KIDS AS YOUNG AS ELEMENTARY SCHOOL AGE HAVE PASSED AND GOTTEN LICENSED!

REQUIRED EXAMINATION FOR INITIAL CERTIFICATION

- **THE BASIC QUALIFICATION** (100-QUESTION MULTIPLE-CHOICE EXAM, **70% PASS 80% HONOURS**) IS MANDATORY. PASSING IT GRANTS YOUR AMATEUR RADIO OPERATOR CERTIFICATE AND ENTRY-LEVEL PRIVILEGES (EX: LIMITED POWER, VHF/UHF + SOME HF BANDS). WITHOUT BASIC, NO CERTIFICATE IS ISSUED — IT'S THE FOUNDATION.

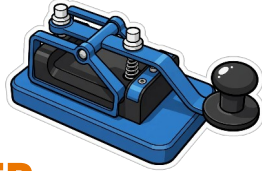
EQUIVALENT CERTIFICATES FOR DIRECT ISSUANCE



- CERTAIN OLDER PROFESSIONAL MARITIME RADIO CERTIFICATES (LIKE THE **CANADIAN RADIOCOMMUNICATION OPERATOR GENERAL CERTIFICATE MARITIME (RGMC)**) ARE RECOGNIZED AS EQUIVALENT. HOLDERS CAN BE ISSUED AN AMATEUR RADIO OPERATOR CERTIFICATE WITH FULL PRIVILEGES (EQUIVALENT TO BASIC + MORSE + ADVANCED IN SOME CASES, PER HISTORICAL EQUIVALENCY RULES IN RIC-3). THIS IS A LEGACY PROVISION — MOST NEW HAMS TAKE THE BASIC EXAM INSTEAD.

B-001-004: ELIGIBILITY AND QUALIFICATIONS FOR AMATEUR RADIO OPERATOR CERTIFICATE

ORDER OF ADDITIONAL QUALIFICATIONS AND MORSE CODE REQUIREMENT



- ONCE YOU HAVE BASIC, YOU CAN ADD ADDITIONAL QUALIFICATIONS IN **ANY ORDER**:
ADVANCED QUALIFICATION (ANOTHER EXAM FOR HIGHER POWER, REPEATERS, REMOTE CONTROL, CLUB STATION SPONSORSHIP, ETC.).
- **MORSE CODE QUALIFICATION** (SEND/RECEIVE PLAIN TEXT AT **5 WPM** FOR 3 MINUTES EACH — NO LONGER REQUIRED FOR HF ACCESS BELOW 30 MHZ, BUT STILL AVAILABLE FOR THOSE WHO WANT IT OR FOR INTERNATIONAL RECIPROCITY IN SOME CASES).
- **NOTE: SCORING 80%+ ON BASIC GIVES "BASIC WITH HONOURS"** (EXTRA HF PRIVILEGES WITHOUT MORSE OR ADVANCED). THIS IS YOUR GOAL!

B-001-004: ELIGIBILITY AND QUALIFICATIONS FOR AMATEUR RADIO OPERATOR CERTIFICATE

SCOPE OF AUTHORIZATION



- B-001-004-006 — YOU HOLD AN AMATEUR RADIO OPERATOR CERTIFICATE WITH ADVANCED QUALIFICATION. BESIDES THE AMATEUR RADIO SERVICE, IN WHAT OTHER SERVICE DOES THIS AUTHORIZATION ALLOW YOU TO OPERATE A STATION? **ANSWER: NO OTHER SERVICE**
- THE AMATEUR RADIO OPERATOR CERTIFICATE (EVEN WITH ADVANCED) IS **ONLY FOR THE AMATEUR RADIO SERVICE**. IT DOES **NOT** AUTHORIZE OPERATION IN MARITIME, AERONAUTICAL, LAND MOBILE, OR OTHER PROFESSIONAL/COMMERCIAL SERVICES — THOSE REQUIRE SEPARATE CERTIFICATES. HAM CERTIFICATION IS HOBBY-SPECIFIC.



QUESTION SECTION B-001-005:
INSTALLATION, MODIFICATION, REPAIR,
AND PROGRAMMING OF RADIO
APPARATUS

GENERAL RULE FOR ADVANCED QUALIFICATION HOLDERS



- **EVEN WITH ADVANCED (WHICH ALLOWS BUILDING/MODIFYING TRANSMITTERS, HIGHER POWER, REPEATERS, ETC.), YOU CAN ONLY DO THESE ACTIONS ON BEHALF OF SOMEONE ELSE IF THEY HOLD A VALID AMATEUR RADIO OPERATOR CERTIFICATE (THE "AUTHORIZATION" FOR AMATEUR APPARATUS).** THIS APPLIES TO AMATEUR-SPECIFIC GEAR. ADVANCED DOESN'T LET YOU SERVICE NON-HAMS OR COMMERCIAL EQUIPMENT OUTSIDE AMATEUR RULES.

B-001-005: INSTALLATION, MODIFICATION, REPAIR, AND PROGRAMMING OF RADIO APPARATUS

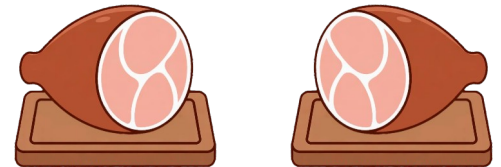
SPECIFIC CASE: REPROGRAMMING A LAND MOBILE TRANSMITTER FOR 2M AMATEUR USE

- B-001-005-002 — UNDER WHAT CIRCUMSTANCES CAN AN AMATEUR RADIO OPERATOR REPROGRAM A LAND MOBILE TRANSMITTER ON BEHALF OF ANOTHER PERSON FOR USE ON 2 METRES? **ANSWER: ONLY IF THE OTHER PERSON HOLDS AN AMATEUR RADIO OPERATOR CERTIFICATE**
- REPROGRAMMING COMMERCIAL/LAND MOBILE GEAR (EX: TO OPERATE ON 2M AMATEUR BAND) COUNTS AS MODIFICATION. **YOU CAN ONLY DO THIS FOR SOMEONE WHO ALREADY HAS THEIR OWN AMATEUR RADIO OPERATOR CERTIFICATE.** THIS PREVENTS TURNING COMMERCIAL RADIOS INTO AMATEUR ONES FOR UNLICENSED USERS.

B-001-005: INSTALLATION, MODIFICATION, REPAIR, AND PROGRAMMING OF RADIO APPARATUS

CORE REQUIREMENT ACROSS INSTALLATION, REPAIR, AND PLACING IN SERVICE

- FOR ANY OF THESE ACTIONS: (INSTALLATION, REPAIR, PLACE IN SERVICE/OPERATION), **BOTH PARTIES NEED AMATEUR RADIO OPERATOR CERTIFICATES**. YOU (THE HELPER) MUST BE LICENSED TO HANDLE AMATEUR GEAR, AND THE OWNER MUST BE LICENSED TO OPERATE IT. NO EXCEPTIONS FOR BASIC-ONLY HOLDERS HELPING UNLICENSED FRIENDS.



B-001-005: INSTALLATION, MODIFICATION, REPAIR, AND PROGRAMMING OF RADIO APPARATUS

BASIC + MORSE QUALIFICATION SCENARIO

- B-001-005-004 — AN AMATEUR RADIO OPERATOR WITH BASIC AND MORSE CODE QUALIFICATIONS MAY INSTALL AN AMATEUR RADIO STATION FOR ANOTHER PERSON:
ANSWER: ONLY IF THE OTHER PERSON IS THE HOLDER OF A VALID AMATEUR RADIO OPERATOR CERTIFICATE
- TEACHING POINT: EVEN WITH BASIC + MORSE (WHICH GIVES FULL HF ACCESS WITHOUT ADVANCED), THE RULE IS THE SAME: **YOU CAN INSTALL A STATION ONLY IF THE OTHER PERSON HOLDS A VALID CERTIFICATE**. MORSE DOESN'T GRANT EXTRA "SERVICE" PRIVILEGES — THE FOCUS REMAINS ON THE OWNER'S AUTHORIZATION.



QUESTION SECTION B-001-006:
PERMISSIBLE USE AND LIMITATIONS OF
AMATEUR RADIO EQUIPMENT/STATIONS

SUPERVISION REQUIREMENT FOR VERY LOW-POWER STATIONS

- **NORMALLY, ANY AMATEUR STATION MUST BE OPERATED BY (OR UNDER THE DIRECT SUPERVISION OF) A LICENSED AMATEUR WITH A VALID CALL SIGN. FOR VERY LOW-POWER SETUPS (≤ 2 W OUTPUT), THE RULE IS EXPLICIT: SUPERVISION BY A CERTIFIED OPERATOR WITH A CALL SIGN IS REQUIRED — NO UNSUPERVISED OR UNLICENSED OPERATION, EVEN AT TINY POWER LEVELS. THIS PREVENTS MISUSE OF LOW-POWER "LICENSE-EXEMPT" STYLE GEAR IN AMATEUR CONTEXTS.**

B-001-006: PERMISSIBLE USE AND LIMITATIONS OF AMATEUR RADIO EQUIPMENT/STATIONS

WHO YOU MAY COMMUNICATE WITH



- **YOU CAN ONLY TALK TO OTHER AMATEUR RADIO STATIONS** (OR STATIONS IN SERVICES WITH RECIPROCAL OR **SIMILAR AMATEUR AUTHORIZATIONS**, EX: FOREIGN HAMS UNDER CEPT/ IARP AGREEMENTS).
- **NO CASUAL CHIT-CHAT WITH CB, FRS, MARINE, AVIATION, POLICE, OR OTHER NON-AMATEUR SERVICES — EVEN IF YOU CAN HEAR THEM.**

USE OF AMPLIFIERS WITH LICENSE-EXEMPT TRANSMITTERS

- **LICENSE-EXEMPT DEVICES (EX: FRS WALKIE-TALKIES, PART 15 TOYS, WI-FI ROUTERS) ARE STRICTLY LIMITED IN POWER AND CANNOT BE AMPLIFIED. AN AMATEUR CANNOT ATTACH A LINEAR AMPLIFIER TO BOOST THEM INTO AMATEUR BANDS — IT'S ILLEGAL AND VOIDS THEIR EXEMPT STATUS. USE ONLY CERTIFIED AMATEUR TRANSMITTERS FOR AMPLIFICATION.**





TRANSMITTING OUTSIDE AMATEUR BANDS WITH AMATEUR EQUIPMENT

- AMATEUR RADIO GEAR (EVEN MODIFIED) IS **NEVER PERMITTED TO TRANSMIT ON NON-AMATEUR FREQUENCIES** (EX: MARINE VHF, AIRBAND, PUBLIC SAFETY, LAND MOBILE). AMATEUR EQUIPMENT IS NOT TYPE-ACCEPTED/CERTIFIED FOR THOSE SERVICES, AND DOING SO VIOLATES THE RADIOCOMMUNICATION ACT AND REGULATIONS.

B-001-006: PERMISSIBLE USE AND LIMITATIONS OF AMATEUR RADIO EQUIPMENT/STATIONS

TRANSMITTING OUTSIDE AMATEUR BANDS WITH AMATEUR EQUIPMENT

- B-001-006-005 — WHICH OF THE FOLLOWING STATEMENTS IS NOT CORRECT?
A PERSON MAY OPERATE RADIO APPARATUS, AUTHORIZED IN THE AMATEUR RADIO SERVICE: **ANSWER: ON AERONAUTICAL, MARINE OR LAND MOBILE FREQUENCIES**
- YOU CANNOT USE AMATEUR-AUTHORIZED APPARATUS ON AERONAUTICAL, MARINE, OR LAND MOBILE BANDS.

B-001-006: PERMISSIBLE USE AND LIMITATIONS OF AMATEUR RADIO EQUIPMENT/STATIONS

PROGRAMMING AMATEUR RADIOS FOR LAND MOBILE FREQUENCIES

- **B-001-006-006 — SOME VHF AND UHF FM RADIOS PURCHASED FOR USE IN THE AMATEUR RADIO SERVICE CAN ALSO BE PROGRAMMED TO COMMUNICATE ON FREQUENCIES USED FOR THE LAND MOBILE SERVICE. UNDER WHAT CONDITIONS IS THIS PERMISSIBLE? ANSWER: THE RADIO IS CERTIFIED AND LICENSED FOR USE IN THE LAND MOBILE SERVICE**
- **LAND MOBILE RADIO (LMR) CAN BE USED FOR COMMERCIAL AND PUBLIC SAFETY PURPOSES (LAW ENFORCEMENT, FIRE & EMS, UTILITIES, ETC.). LMR IS AVAILABLE IN 30-50 MHZ (LOW VHF BAND), 150-172 MHZ (HIGH VHF BAND), AND 450-470 (UHF).**



QUESTION SECTION B-001-007:

PERMITTED AND PROHIBITED COMMUNICATIONS CONTENT

BUSINESS COMMUNICATIONS AND PLANNING



- **NO BUSINESS TALK AT ALL** — NOT EVEN "OCCASIONAL" OR PLANNING CLUB FUNDRAISING/SALES.
- **AMATEUR RADIO CANNOT SUPPORT INDUSTRIAL, BUSINESS, OR PROFESSIONAL ACTIVITIES. NO SELLING GEAR, COORDINATING WORK, OR DISCUSSING PAID SERVICES.**



BROADCASTING AND ONE-WAY TRANSMISSIONS TO THE PUBLIC

- AMATEUR RADIO IS **TWO-WAY COMMUNICATION** BETWEEN LICENSED AMATEURS (OR SIMILAR SERVICES). **NO ONE-WAY "BROADCASTS"** TO ANYONE LISTENING (EX: NO NET CONTROL READING NEWS BULLETINS FOR THE PUBLIC, NO PODCAST-STYLE TRANSMISSIONS).

B-001-007: PERMITTED AND PROHIBITED COMMUNICATIONS CONTENT



SECRET CODES, ENCRYPTION, AND ENCODING

- **EVERYTHING MUST BE OPEN AND DECODABLE BY ANYONE MONITORING. NO SECRET CIPHERS/ENCRYPTION TO HIDE MEANING (STANDARD ABBREVIATIONS LIKE Q CODES, PROSIGNS, OR PUBLISHED DIGITAL MODES ARE FINE — THEY'RE NOT SECRET.)**
- **IF YOU INVENT A NEW ENCODING/DIGITAL MODE, PUBLISH THE DETAILS PUBLICLY (EX: IN OPEN-SOURCE DOCS OR JOURNALS) SO ANYONE CAN DECODE IT.**
- **PURPOSE: AMATEUR RADIO IS ABOUT TRANSPARENCY AND LEARNING — NO "PRIVATE" MESSAGES.**

B-001-007: PERMITTED AND PROHIBITED COMMUNICATIONS CONTENT

SECRET CODES, ENCRYPTION, AND ENCODING

- B-001-007-006 — WHEN MAY AN AMATEUR RADIO STATION TRANSMIT AN ENCODED MESSAGE? **ANSWER: ONLY WHEN THE ENCODING OR CIPHER IS NOT SECRET**
- YOU COULD TRANSMIT AND TEST ENCRYPTED MESSAGES PROVIDING THE CIPHER KEY IS PUBLICLY AVAILABLE SO THAT THE PLAIN TEXT OF THE MESSAGE CAN BE DETERMINED.



B-001-007: PERMITTED AND PROHIBITED COMMUNICATIONS CONTENT

PREVENTING RETRANSMISSION OF PROHIBITED CONTENT (EX: MUSIC)



- NO RETRANSMITTING MUSIC, COMMERCIAL BROADCASTS, PODCASTS, OR NON-AMATEUR SIGNALS (EX: NO LEAVING YOUR RECEIVER ON A FM BROADCAST STATION WHILE TRANSMITTING).
- IF ACCIDENTAL RETRANSMISSION HAPPENS (EX: OPEN MIC PICKING UP BACKGROUND RADIO/TV), **LOWER THE BACKGROUND VOLUME OR MUTE IT.** THIS AVOIDS VIOLATING THE BAN ON RETRANSMITTING BROADCASTING MATERIAL OR COMMERCIAL CONTENT.



QUESTION SECTION B-001-008:
STATION TYPES, QUALIFICATIONS FOR
SPECIFIC OPERATIONS AND LOCATION

GEOGRAPHIC SCOPE OF OPERATION



- **YOUR CANADIAN AMATEUR RADIO CERTIFICATE IS VALID NATIONWIDE** — NO PROVINCIAL RESTRICTIONS. OPERATE FROM HOME, PORTABLE (EX: PARKS, VEHICLES), MOBILE, OR TEMPORARY LOCATIONS ANYWHERE IN CANADA (INCLUDING REMOTE AREAS), AS LONG AS YOU FOLLOW BAND/POWER RULES AND IDENTIFICATION. GREAT FOR TRAVEL **ANYWHERE IN CANADA!**
- **YOU ARE NOT REQUIRED** TO APPEND A REGIONAL SUFFIX (LIKE /VE6, /PORTABLE VE6, OR SIMILAR) WHEN OPERATING IN A DIFFERENT CALL REGION FROM YOUR HOME ONE. YOU CAN DO THIS IF YOU WANT TO, BUT IT'S PURELY VOLUNTARY—NOT A LEGAL OBLIGATION.

B-001-008: STATION TYPES, QUALIFICATIONS FOR SPECIFIC OPERATIONS AND LOCATION



GEOGRAPHIC SCOPE OF OPERATION (OUTSIDE OF CANADA)

- **AS A CANADIAN AMATEUR RADIO OPERATOR YOU CAN OPERATE IN THE UNITED STATES UNDER THE LONG-STANDING BILATERAL RECIPROCAL OPERATING AGREEMENT BETWEEN CANADA AND THE USA (DATING BACK TO THE 1952 TREATY).**
- **NO PAPERWORK, PERMIT, OR APPLICATION IS REQUIRED — IT'S AUTOMATIC FOR QUALIFIED CANADIAN CITIZENS HOLDING A VALID AMATEUR RADIO OPERATOR CERTIFICATE FROM ISCED/RAC.**
- **FOR OTHER COUNTRIES, THERE ARE PROVISIONS IN CEPT/IARU.**

B-001-008: STATION TYPES, QUALIFICATIONS FOR SPECIFIC OPERATIONS AND LOCATION

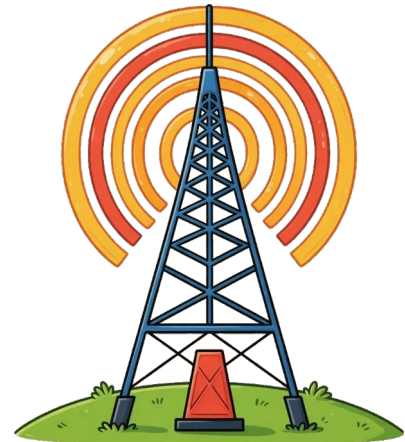
GEOGRAPHIC SCOPE OF OPERATION (OUTSIDE OF CANADA)

- WHEN OPERATING STATESIDE YOU IDENTIFY USING YOUR CANADIAN CALL SIGN FOLLOWED BY A SLASH “/” AND THE APPROPRIATE US CALL AREA INDICATOR.
- EX: VE5REV/W5



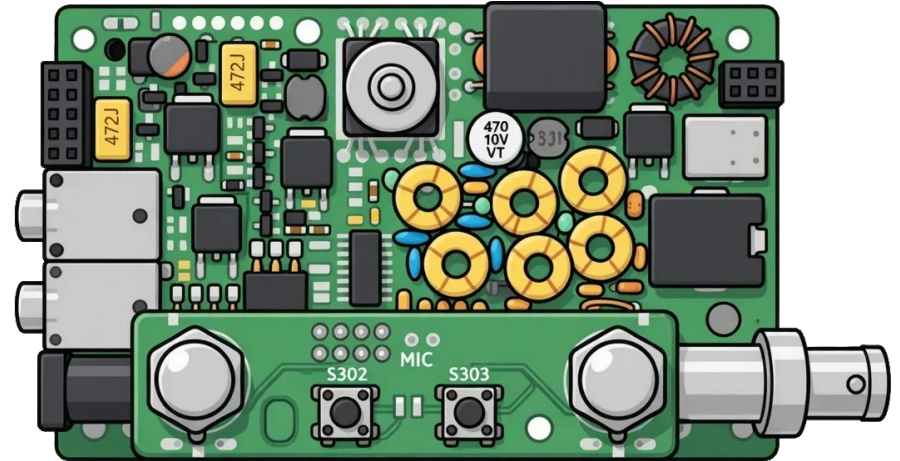
ONE-WAY TRANSMISSIONS ALLOWED

- **AMATEUR CONTACTS ARE ALMOST EXCLUSIVELY TWO-WAY.**
- **BEACON STATIONS** (AUTOMATED, LOW-POWER SIGNALS ON KNOWN FREQUENCIES FOR PROPAGATION TESTING) ARE THE ONLY EXCEPTION ALLOWING ONE-WAY TRANSMISSIONS.



QUALIFICATION REQUIREMENTS FOR BUILDING/ASSEMBLING EQUIPMENT

- WITH **BASIC** QUALIFICATION ONLY, YOU CAN ASSEMBLE ("BUILD") **COMMERCIALLY AVAILABLE TRANSMITTER KITS OF PROFESSIONAL DESIGN** (EX: POPULAR QRP RADIO KITS).
- THIS IS "KIT ASSEMBLY," NOT FULL HOMEBREW DESIGN.



B-001-008: STATION TYPES, QUALIFICATIONS FOR SPECIFIC OPERATIONS AND LOCATION

QUALIFICATION REQUIREMENTS FOR REPEATERS, CLUB STATIONS, AND HOMEBREW/ADVANCED GEAR

- TO INSTALL A REPEATER, AN AMATEUR RADIO CLUB STATION, OR A HOMEBREW TRANSMITTER OR AMP, YOU NEED **BOTH BASIC AND ADVANCED** QUALIFICATIONS.





QUESTION SECTION B-001-009:
CONTROL OPERATOR AND STATION
OWNER RESPONSIBILITIES

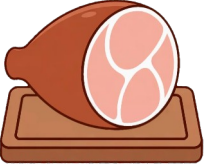
B-001-009: CONTROL OPERATOR AND STATION OWNER RESPONSIBILITIES



WHO BEARS RESPONSIBILITY?

- RESPONSIBILITY IS **SHARED**. THE **CONTROL OPERATOR** (THE PERSON ACTUALLY KEYING THE MIC OR SENDING DATA) IS DIRECTLY ACCOUNTABLE FOR WHAT IS TRANSMITTED (EX: STAYING IN BAND, PROPER ID, NO PROHIBITED CONTENT). **THE STATION OWNER** REMAINS RESPONSIBLE FOR THE OVERALL SETUP (EQUIPMENT COMPLIANCE, ANTENNA SAFETY, ALLOWING ONLY QUALIFIED OPERATORS).
- IF SOMETHING GOES WRONG (EX: OUT-OF-BAND TRANSMISSION), ISED CAN HOLD **BOTH** ACCOUNTABLE.

B-001-009: CONTROL OPERATOR AND STATION OWNER RESPONSIBILITIES



WHO CAN BE A CONTROL OPERATOR?

- B-001-009-004 — WHO MAY BE THE CONTROL OPERATOR OF AN AMATEUR RADIO STATION? **ANSWER: ANY QUALIFIED AMATEUR RADIO OPERATOR CHOSEN BY THE STATION OWNER**
- THE STATION OWNER CHOOSES THE CONTROL OPERATOR, **BUT THEY MUST HOLD A VALID AMATEUR RADIO OPERATOR CERTIFICATE** (AT LEAST BASIC LEVEL, OR HIGHER IF REQUIRED FOR THE MODE/POWER). NO EXCEPTIONS — UNLICENSED PEOPLE CANNOT BE CONTROL OPERATORS, EVEN WITH PERMISSION.

B-001-009: CONTROL OPERATOR AND STATION OWNER RESPONSIBILITIES

WHEN AND WHERE MUST THERE BE A CONTROL OPERATOR?

- **THERE CAN BE NO TRANSMITTING WITHOUT A CONTROL OPERATOR PRESENT AND IN CONTROL. THE CONTROL POINT IS THE LOCATION WHERE THE OPERATOR CAN DIRECTLY MONITOR AND CONTROL THE TRANSMITTER (EX: MIC, KEYBOARD, OR REMOTE CONSOLE IF PROPERLY AUTHORIZED).**

B-001-009: CONTROL OPERATOR AND STATION OWNER RESPONSIBILITIES

UNLICENSED PEOPLE (FAMILY, FRIENDS, VISITORS) AND OPERATION

- B-001-009-009 — UNDER WHAT CIRCUMSTANCES CAN A PERSON WHO DOES NOT HAVE AN AMATEUR RADIO OPERATOR CERTIFICATE OPERATE AN AMATEUR RADIO STATION? ANSWER: WHEN THE PERSON IS UNDER SUPERVISION, AND IN THE PRESENCE OF, A PERSON HOLDING APPROPRIATE QUALIFICATIONS (AMATEUR RADIO OPERATOR CERTIFICATE).



QUESTION SECTION B-001-010:

INTERFERENCE RULES AND HARMFUL INTERFERENCE

B-001-010: INTERFERENCE RULES AND HARMFUL INTERFERENCE

DEFINING AND PROHIBITING HARMFUL INTERFERENCE



- **HARMFUL INTERFERENCE** (DEFINED IN THE RADIOCOMMUNICATION ACT) IS INTERFERENCE THAT SERIOUSLY DEGRADES, OBSTRUCTS, OR REPEATEDLY INTERRUPTS ANOTHER SERVICE'S OPERATION. IT INCLUDES JAMMING, WILLFUL BLOCKING, OR EXCESSIVE SPURIOUS EMISSIONS.
- **DELIBERATE INTERFERENCE** — EVEN TO ANOTHER HAM — IS NEVER ALLOWED. ACCIDENTAL INTERFERENCE SHOULD BE STOPPED IMMEDIATELY; PERSISTENT ISSUES MUST BE RESOLVED COOPERATIVELY OR REPORTED TO ISD.

B-001-010: INTERFERENCE RULES AND HARMFUL INTERFERENCE

PRIMARY VS. SECONDARY USERS AND NO-PROTECTION BANDS

- IN **SECONDARY ALLOCATIONS** (EX: 430-450 MHZ / 70 CM BAND IN CANADA), AMATEURS ARE SECONDARY TO PRIMARY USERS (EX: RADIOLOCATION/MILITARY).
- ON SECONDARY ALLOCATIONS, “BE A POLITE GUEST”
- AMATEURS MUST NOT CAUSE HARMFUL INTERFERENCE TO PRIMARIES AND GET NO PROTECTION FROM THEM — IF A PRIMARY SHOWS UP, YIELD OR QRT.



B-001-010: INTERFERENCE RULES AND HARMFUL INTERFERENCE

PRIMARY VS. SECONDARY USERS AND NO-PROTECTION BANDS



- IN THE **902-928 MHZ** BAND (33 CM), AMATEURS ARE SECONDARY TO ISM (INDUSTRIAL, SCIENTIFIC, MEDICAL) AND LICENCE-EXEMPT DEVICES (EX: CORDLESS PHONES, WIRELESS SENSORS, SOME IOT).
- THIS BAND IS OFTEN CROWDED WITH NON-HAM SIGNALS — AMATEURS HAVE NO PROTECTION AND MUST TOLERATE INTERFERENCE WHILE NOT CAUSING ANY.

B-001-010: INTERFERENCE RULES AND HARMFUL INTERFERENCE

SHARING FREQUENCIES AMONG AMATEURS

- B-001-010-004 — WHAT RULE APPLIES IF TWO AMATEUR RADIO OPERATORS WANT TO USE THE SAME FREQUENCY? **ANSWER: BOTH STATION OPERATORS HAVE AN EQUAL RIGHT TO OPERATE ON THE FREQUENCY**
- **AMATEURS HAVE EQUAL RIGHTS ON ANY AUTHORIZED FREQUENCY** — NO ONE "OWNS" A FREQUENCY. GOOD ETIQUETTE (SHORT TRANSMISSIONS, LISTENING FIRST, YIELDING TO WEAKER STATIONS OR NETS) RESOLVES CONFLICTS.
- NO "SQUATTERS' RIGHTS" — COOPERATE OR MOVE ALONG.

B-001-010: INTERFERENCE RULES AND HARMFUL INTERFERENCE

MINISTER'S POWERS AND TEST TRANSMISSIONS



- IF **ISED** FINDS HARMFUL INTERFERENCE, THE **MINISTER** CAN ORDER THE STATION TO **STOP OPERATING (SHUT DOWN) OR CHANGE FREQUENCY/POWER/MODE UNTIL FIXED** — SERIOUS ENFORCEMENT POWER.
- **TEST TRANSMISSIONS** (EX: CHECKING A NEW ANTENNA, TUNING, OR MODE) ARE ALLOWED ONLY IF **THEY CAUSE NO INTERFERENCE TO ANY SERVICE.**
- SHORT "CQ TEST" OR "TESTING 1-2-3" CALLS ARE FINE IF THE FREQUENCY IS CLEAR; AVOID LONG TESTS ON BUSY BANDS.



QUESTION SECTION B-001-011:

EMERGENCY AND THIRD-PARTY COMMUNICATIONS

B-001-011: EMERGENCY AND THIRD-PARTY COMMUNICATIONS

NORMAL COMMUNICATIONS RESTRICTIONS (EVEN IN EMERGENCIES)



- **EVEN DURING DISASTER RELIEF, NON-DISTRESSED AMATEUR STATIONS MUST STAY WITHIN AMATEUR BANDS AND COMMUNICATE ONLY WITH OTHER AMATEUR STATIONS.**
- **NO TRANSMITTING ON MARINE, AVIATION, PUBLIC SAFETY, OR OTHER BANDS — THAT'S RESERVED FOR THOSE SERVICES.**
- **THIS PROTECTS SAFETY-OF-LIFE FREQUENCIES FROM INTERFERENCE.**

B-001-011: EMERGENCY AND THIRD-PARTY COMMUNICATIONS

RESPONDING TO DISTRESS SIGNALS

- B-001-011-003 — IF YOU HEAR AN UNANSWERED DISTRESS SIGNAL ON AN AMATEUR RADIO BAND WHERE YOU DO NOT HAVE PRIVILEGES TO COMMUNICATE: **ANSWER: YOU MAY RESPOND AND OFFER ASSISTANCE**
- IF YOU HEAR A GENUINE DISTRESS CALL (EX: "**MAYDAY**" OR URGENT PLEA) ON AN AMATEUR FREQUENCY YOU AREN'T QUALIFIED FOR (EX: HF WHEN YOU HAVE ONLY VHF PRIVILEGES), YOU MAY BREAK IN TO HELP — PRIVILEGE RULES BEND FOR LIFE-SAVING. REPORT IT TO AUTHORITIES IF POSSIBLE, BUT PRIORITIZE RENDERING AID.

B-001-011: EMERGENCY AND THIRD-PARTY COMMUNICATIONS



SPECIAL PERMISSIONS FOR SAFETY AND DISTRESS

- **THE ONLY EXCEPTION TO THE GENERAL “NO BROADCASTING” (ONE-WAY TO THE PUBLIC) RULE IS IF RADIO COMMUNICATIONS ARE REQUIRED FOR IMMEDIATE SAFETY OF LIFE OR PROPERTY (EX: ALERTING OTHERS TO A WILDFIRE OR FLOOD VIA AMATEUR NETS).**
- **THIS IS RARE AND MUST BE JUSTIFIED.**

B-001-011: EMERGENCY AND THIRD-PARTY COMMUNICATIONS

SPECIAL PERMISSIONS FOR SAFETY AND DISTRESS

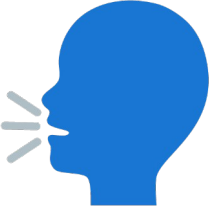
- IF YOUR STATION IS IN **DISTRESS** (GRAVE/IMMINENT DANGER TO LIFE/PROPERTY), ALL RULES RELAX: USE **ANY MEANS OF RADIO COMMUNICATION** (FREQUENCY, MODE, POWER, OR RADIO - EVEN NON-AMATEUR GEAR) TO CALL FOR HELP.
- **NO POWER LIMITS** — USE MAXIMUM TO GET THROUGH. THIS MIRRORS INTERNATIONAL MARITIME/AVIATION DISTRESS RULES.

B-001-011: EMERGENCY AND THIRD-PARTY COMMUNICATIONS

RELIEF OPERATIONS AND SUPPORTING DISASTER RESPONSE

- IN DECLARED DISASTERS (OR EXERCISES), **AMATEURS CAN PASS THIRD-PARTY MESSAGES** (EX: HEALTH/WELFARE, AGENCY TRAFFIC) FOR GOVERNMENTS, RELIEF ORGANIZATIONS (RED CROSS, ETC.), OR THE PUBLIC — **BUT ONLY WHEN NORMAL TELECOM/INTERNET/CELL SYSTEMS ARE DOWN/OVERLOADED**. THIS INCLUDES SIMULATED EMERGENCIES FOR TRAINING. **IN PEACETIME, LIMITED AGENCY SUPPORT IS ALLOWED FOR EXERCISES.**

B-001-011: EMERGENCY AND THIRD-PARTY COMMUNICATIONS



ETIQUETTE FOR NON-INVOLVED OPERATORS AND INTERFERENCE

- DURING **RELIEF NETS** (ORGANIZED EMERGENCY TRAFFIC), STAY OFF THE FREQUENCY UNLESS INVOLVED — NO CHIT-CHAT, TESTING, OR RAGCHEWING. **AVOID NEEDLESS TRANSMISSIONS ON OR NEAR THE NET FREQUENCY.**
- B-001-011-010 — WHEN ARE YOU PERMITTED TO INTERFERE WITH ANOTHER STATION'S TRANSMISSIONS? **ANSWER: WHEN YOUR STATION IS DIRECTLY INVOLVED WITH A DISTRESS SITUATION**



QUESTION SECTION B-001-012:

THIRD-PARTY TRAFFIC AND REMUNERATION/DIVULGING RULES

B-001-012: THIRD-PARTY TRAFFIC AND REMUNERATION/DIVULGING RULES



PAYMENT / REMUNERATION FOR THIRD-PARTY MESSAGES

- **AMATEUR RADIO CANNOT BE USED FOR ANY FORM OF COMMERCIAL ACTIVITY OR PAID SERVICE. YOU CANNOT CHARGE (OR ACCEPT PAYMENT) FOR PASSING MESSAGES — WHETHER HEALTH-AND-WELFARE, EMERGENCY, OR ROUTINE THIRD-PARTY TRAFFIC.**
- **THIS INCLUDES NO "TIPS," BARTER, OR INDIRECT COMPENSATION (EX: "I'LL BUY YOU DINNER IF YOU RELAY THIS").**

B-001-012: THIRD-PARTY TRAFFIC AND REMUNERATION/DIVULGING RULES

DIVULGING (REVEALING) THE CONTENT OF COMMUNICATIONS

- THE RADIOCOMMUNICATION ACT (SECTION 9) MAKES IT AN OFFENCE TO **DIVULGE** OR USE THE CONTENT OF PRIVATE RADIO-COMMUNICATIONS (NON-BROADCAST) WITHOUT AUTHORIZATION — WITH PENALTIES POSSIBLE (FINES, ETC.).
- KEY OFFENCE EXAMPLE: GIVING A NEWS REPORTER DETAILS FROM A POLICE/FIRE/AMBULANCE TRANSMISSION YOU OVERHEARD — THAT'S ILLEGAL.
- SHARING DETAILS FROM A HAM-TO-HAM CHAT IS USUALLY FINE (AS LONG AS IT'S NOT SENSITIVE PERSONAL INFO THAT COULD HARM PRIVACY).





QUESTION SECTION B-001-013:

STATION IDENTIFICATION REQUIREMENTS

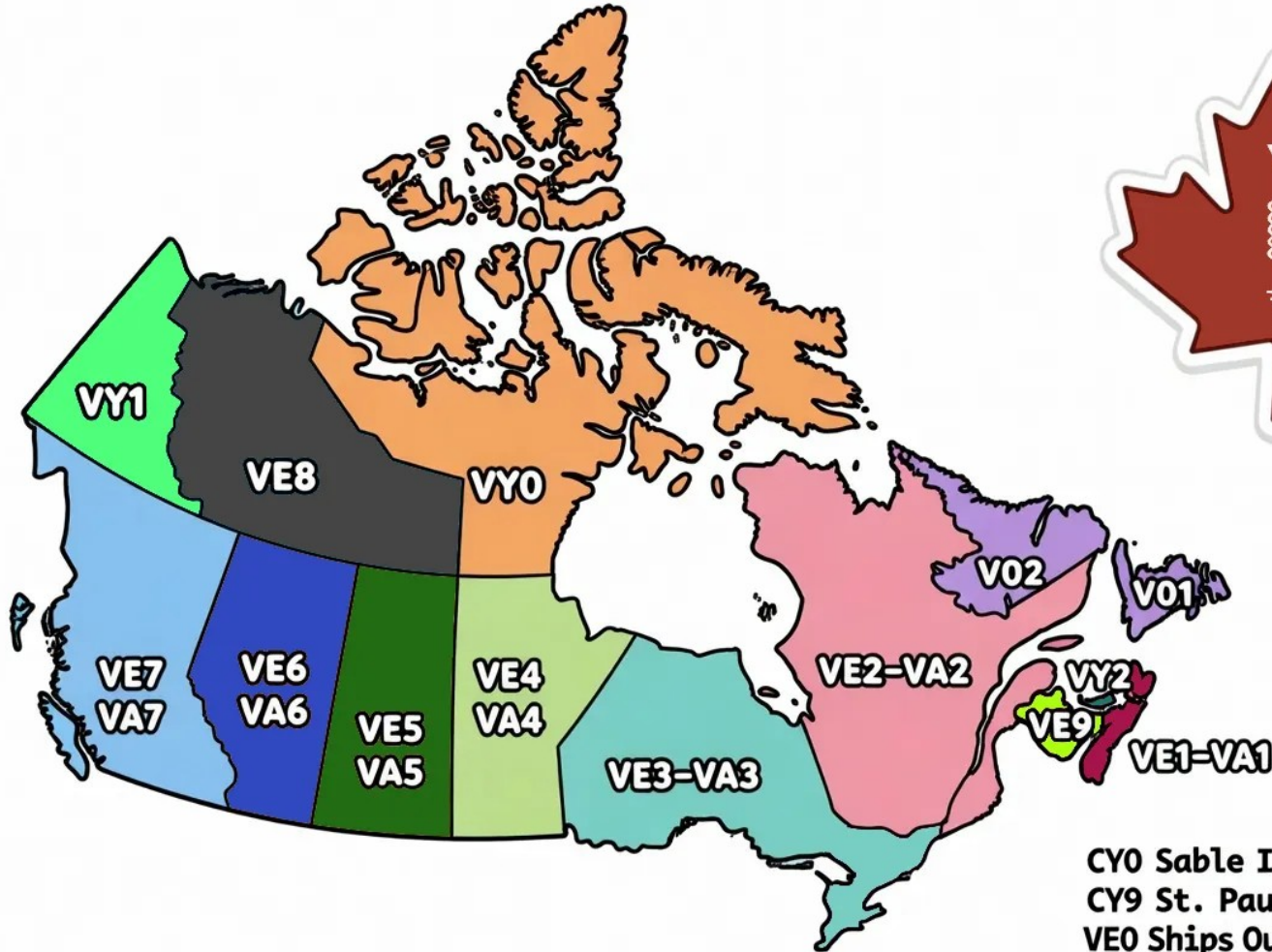
B-001-013: STATION IDENTIFICATION REQUIREMENTS

VALID CANADIAN CALL SIGNS AND PREFIXES

- ALL CANADIAN AMATEUR CALL SIGNS BEGIN WITH ONE OF THESE ITU PREFIXES:
 - **VA** (OFTEN NEWER OR SPECIAL)
 - **VE** (MOST COMMON)
 - **VO** (NEWFOUNDLAND & LABRADOR),
 - **VY** (YUKON). THE NUMBER INDICATES THE PROVINCE/TERRITORY
- VALID CALL SIGN EXAMPLES: VA7BIX, VE6SFX, VA5MUD, VE3TWM, VE9CF
- INVALID FORMATS INCLUDE US-STYLE (EX: K1ABC) OR OTHER COUNTRIES' PREFIXES.



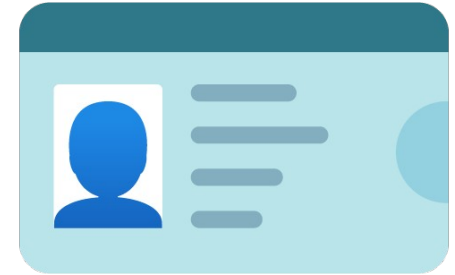
B-001-013: STATION IDENTIFICATION REQUIREMENTS



B-001-013: STATION IDENTIFICATION REQUIREMENTS

WHEN AND HOW OFTEN TO IDENTIFY

- IDENTIFICATION TIMING IS STRICT:
 - AT THE **START** OF A CONTACT (FIRST TRANSMISSION).
 - AT THE **END** OF A CONTACT (LAST TRANSMISSION).
 - **EVERY 30 MINUTES** OR LESS DURING LONGER QSOS/NETS.
- THE MAXIMUM GAP WITHOUT ID IS 30 MINUTES — AFTER THAT, YOU MUST IDENTIFY BEFORE CONTINUING. THIS APPLIES TO VOICE, CW, DIGITAL — EVERY MODE.



B-001-013: STATION IDENTIFICATION REQUIREMENTS

WHAT TO TRANSMIT FOR IDENTIFICATION

- B-001-013-003 — WHAT DO YOU TRANSMIT TO IDENTIFY YOUR AMATEUR RADIO STATION? **ANSWER: YOUR CALL SIGN**
- SIMPLY TRANSMIT YOUR OWN CALL SIGN (EX:"THIS IS VE5REV").
- NO NEED FOR FANCY PHRASES, SUFFIXES, OR CLUB NAMES UNLESS OPERATING A CLUB STATION.

B-001-013: STATION IDENTIFICATION REQUIREMENTS

WHAT TO TRANSMIT FOR IDENTIFICATION

- B-001-013-003 — WHAT DO YOU TRANSMIT TO IDENTIFY YOUR AMATEUR RADIO STATION? **ANSWER: YOUR CALL SIGN**
- SIMPLY TRANSMIT **YOUR OWN CALL SIGN** (EX:"THIS IS VE5REV").
- **BOTH** CONVERSING STATIONS WILL DO THIS.
- **TEST TRANSMISSIONS** ARE EXACTLY THE SAME.
- IN CANADA YOU MUST GIVE YOUR CALLSIGN IN EITHER **ENGLISH** OR **FRENCH**.

B-001-013: STATION IDENTIFICATION REQUIREMENTS



SPECIAL CASES

- B-001-013-007 — WHEN MAY AN AMATEUR RADIO OPERATOR TRANSMIT UNIDENTIFIED COMMUNICATIONS? **ANSWER: ONLY TO CONTROL A MODEL CRAFT**
- UNIDENTIFIED TRANSMISSIONS ARE ALMOST NEVER ALLOWED — EXCEPT FOR MODEL AIRCRAFT/BOAT/CAR CONTROL (TELECOMMAND), WHERE SHORT BURSTS DON'T REQUIRE VOICE/CW ID (BUT STILL MUST BE ON AUTHORIZED AMATEUR BANDS AND FOLLOW POWER RULES).



QUESTION SECTION B-001-014:
INTERNATIONAL AND THIRD-PARTY
COMMUNICATIONS

B-001-014: INTERNATIONAL AND THIRD-PARTY COMMUNICATIONS

THIRD-PARTY COMMUNICATIONS – GENERAL RULES IN CANADA

- IN CANADA, YOU CAN PASS MESSAGES FOR UNLICENSED FRIENDS/FAMILY (THIRD PARTIES) TO **ANY OTHER AMATEUR STATION** WORLDWIDE — AS LONG AS THE CONTENT IS PERSONAL (EX: "I'M SAFE," GREETINGS, FAMILY UPDATES) AND NON-COMMERCIAL (NO BUSINESS, NO PAID SERVICES).
- CANADA DOES NOT RESTRICT INTERNATIONAL THIRD-PARTY TRAFFIC (UNLIKE SOME COUNTRIES THAT BAN IT ENTIRELY). THIS MAKES CANADA ONE OF THE MOST FLEXIBLE COUNTRIES FOR WELFARE/RELIEF MESSAGES.

B-001-014: INTERNATIONAL AND THIRD-PARTY COMMUNICATIONS

INTERNATIONAL THIRD-PARTY TRAFFIC – SPECIAL CASES AND EMERGENCIES

- **CANADA** **ALLOWS OUTBOUND INTERNATIONAL THIRD-PARTY MESSAGES ROUTINELY**. IN EMERGENCIES OR DISASTER RELIEF, THIRD-PARTY TRAFFIC IS PERMITTED UNLESS THE OTHER COUNTRY HAS EXPLICITLY OBJECTED (RARE – MOST ALLOW IT FOR HUMANITARIAN REASONS).
- **IN TRUE CRISES, ERR ON THE SIDE OF HELPING ANY WAY YOU CAN.**



B-001-014: INTERNATIONAL AND THIRD-PARTY COMMUNICATIONS

WHO COUNTS AS A THIRD PARTY?

- B-001-014-008 — YOU AND A FOREIGN AMATEUR RADIO OPERATOR BOTH HAVE A LOCAL FRIEND WITHOUT AMATEUR RADIO CERTIFICATION ENGAGED IN RADIO COMMUNICATION. WHO IS CONSIDERED A THIRD PARTY? **ANSWER: BOTH NON-CERTIFIED PERSONS**
- A THIRD PARTY IS **ANYONE WITHOUT AN AMATEUR RADIO OPERATOR CERTIFICATE** PARTICIPATING IN THE CONVERSATION (VIA YOU RELAYING). IF TWO HAMS ARE EACH TALKING TO THEIR OWN UNLICENSED FRIEND, **BOTH FRIENDS ARE THIRD PARTIES** — EVEN IF THEY'RE IN DIFFERENT COUNTRIES.

B-001-014: INTERNATIONAL AND THIRD-PARTY COMMUNICATIONS

SCENARIO: UNLICENSED FRIEND USING YOUR STATION + FOREIGN BREAK-IN

- **B-001-014-001 — IF A FRIEND WITHOUT AMATEUR RADIO CERTIFICATION IS USING YOUR STATION TO TALK TO SOMEONE IN CANADA, AND A FOREIGN STATION BREAKS IN TO TALK TO YOUR FRIEND, WHAT SHOULD YOU DO?**

ANSWER: CONTINUE MONITORING THE COMMUNICATIONS OF YOUR FRIEND

- **AS THE CONTROL OPERATOR, YOU REMAIN RESPONSIBLE.**

B-001-014: INTERNATIONAL AND THIRD-PARTY COMMUNICATIONS

FOREIGN OPERATORS VISITING/OPERATING IN CANADA

- MOST FOREIGN HAMS (EXCLUDING US HAMS) CAN OPERATE IN CANADA UNDER INTERNATIONAL **AGREEMENTS** & HAVE AN **APPROPRIATE PERMIT**.
- IF THEY QUALIFY FOR A **CEPT** (EUROPEAN CONFERENCE OF POSTAL AND TELECOMMUNICATIONS ADMINISTRATIONS) HAM LICENSE, THEY GET **ADVANCED** PRIVILEGES.



B-001-014: INTERNATIONAL AND THIRD-PARTY COMMUNICATIONS

SPECIAL RULES FOR US OPERATORS IN CANADA

- US HAMS OPERATE IN CANADA UNDER A BILATERAL AGREEMENT (NO CEPT NEEDED).
- THEY MUST ID AS: THEIR US CALL SIGN + "MOBILE" OR "PORTABLE" + CANADIAN PREFIX FOR THE PROVINCE & MENTION CITY/PROVINCE AT LEAST ONCE PER CONTACT.
- EX: "W1ABC/PORTABLE VE3 IN TORONTO, ONTARIO"
- THIS HELPS LISTENERS KNOW THE REAL LOCATION.



B-001-014: INTERNATIONAL AND THIRD-PARTY COMMUNICATIONS

WHEN INTERNATIONAL COMMUNICATION IS PROHIBITED

- CANADA ALLOWS COMMUNICATION WITH ALMOST ALL COUNTRIES. THE ONLY PROHIBITION IS IF **THE FOREIGN ADMINISTRATION HAS FILED A FORMAL OBJECTION WITH THE INTERNATIONAL TELECOMMUNICATION UNION (ITU).**
- VERY RARE — EX: HISTORICAL CASES LIKE CERTAIN EMBARGOED COUNTRIES
- IN PRACTICE, CANADIAN HAMS CAN WORK ALMOST THE ENTIRE WORLD.



QUESTION SECTION B-001-015:

OPERATING PRIVILEGES AND BAND LIMITS

B-001-015: OPERATING PRIVILEGES AND BAND LIMITS

PRIVILEGES WHEN OPERATING UNDER DIFFERENT QUALIFICATIONS

- **THE CONTROL OPERATOR'S QUALIFICATIONS DETERMINE WHAT CAN BE DONE — NOT THE STATION OWNER'S OR THE CALL SIGN USED.**
- **IF A BASIC-ONLY OPERATOR USES AN ADVANCED HAM'S STATION AND CALL SIGN → STILL LIMITED TO BASIC PRIVILEGES.**
- **IF AN ADVANCED OPERATOR USES A BASIC-ONLY HAM'S STATION → STILL LIMITED TO BASIC PRIVILEGES.**
- **THIS PREVENTS "BORROWING" HIGHER PRIVILEGES. ALWAYS OPERATE WITHIN YOUR OWN CERTIFICATE LIMITS (POWER, MODES, BANDS, REMOTE CONTROL, ETC.).**

B-001-015: OPERATING PRIVILEGES AND BAND LIMITS

REQUIREMENTS FOR HF BANDS (BELOW 30 MHZ)

- B-001-015-003 — IN ADDITION TO PASSING THE BASIC WRITTEN EXAMINATION, WHAT MUST YOU DO BEFORE YOU ARE ALLOWED TO USE AMATEUR RADIO FREQUENCIES BELOW 30 MHZ? **ANSWER: YOU MUST ATTAIN A MARK OF 80% ON THE BASIC EXAMINATION, OR PASS AN ADVANCED OR MORSE CODE EXAMINATION**
- TO GET FULL HF ACCESS (ALL BANDS BELOW 30 MHZ):
 - **SCORE 80%+ ON THE BASIC EXAM (BASIC WITH HONOURS), OR**
 - PASS THE ADVANCED EXAM, OR
 - PASS THE MORSE CODE EXAM (5 WPM SEND/RECEIVE — LEGACY BUT STILL VALID FOR HF).
 - MOST NEW HAMS AIM FOR 80%+ ON BASIC



B-001-015: OPERATING PRIVILEGES AND BAND LIMITS

RADIO-CONTROLLED MODELS AND BANDS ABOVE 30 MHZ

- ANY LICENSED AMATEUR (BASIC OR HIGHER) CAN USE **AMATEUR FREQUENCIES ABOVE 30 MHZ** (VHF/UHF/MICROWAVE) FOR RADIO CONTROL OF MODELS (AIRCRAFT, BOATS, CARS).
- NO ID REQUIRED DURING SHORT CONTROL BURSTS (FROM EARLIER IDENTIFICATION RULES).
- BELOW 30 MHZ IS NOT ALLOWED FOR RC DUE TO LONGER RANGE AND INTERFERENCE RISKS. THIS IS A FUN, PRACTICAL USE OF VHF/UHF PRIVILEGES.



B-001-015: OPERATING PRIVILEGES AND BAND LIMITS

MAJOR CANADIAN HF AMATEUR BANDS (BELOW 30 MHZ)

- **THE STANDARD ALLOCATIONS FOR SIX CANADIAN HF BANDS ARE ON THE EXAM**
- **YOU WILL JUST NEED TO MEMORIZE THE FREQUENCIES IN THE FOLLOWING CHART.**
- **IN ACTUAL HAM PRACTICE YOU WILL COME TO USE THIS INFORMATION ALL THE TIME.**

B-001-015: OPERATING PRIVILEGES AND BAND LIMITS

MAJOR CANADIAN HF AMATEUR BANDS (BELOW 30 MHz)

1.8MHz

160M Band

2.0MHz

3.5MHz

80M Band

4.0MHz

7.0MHz

40M Band

7.3MHz

14MHz

20M Band

14.350MHz

21MHz

15M Band

21.450MHz

28MHz

10M Band

29.700MHz





QUESTION SECTION B-001-016:

BANDWIDTH AND EMISSION MODE RESTRICTIONS

B-001-016: BANDWIDTH AND EMISSION MODE RESTRICTIONS

MAXIMUM BANDWIDTH ON VHF BANDS (50 MHz, 144 MHz)

- ON 6 M (50–54 MHz) AND 2 M (144–148 MHz), THE MAXIMUM BANDWIDTH IS **30 kHz**. THIS ACCOMMODATES FM VOICE ($\approx$ 15–20 kHz), REPEATERS, PACKET, AND SOME DIGITAL MODES.

B-001-016: BANDWIDTH AND EMISSION MODE RESTRICTIONS

MAXIMUM BANDWIDTH ON HF BANDS (7–25 MHz AND 28–29.7 MHz)

- MOST HF BANDS FROM 40 M TO 15 M (7–25 MHz) LIMIT BANDWIDTH TO **6 kHz**—SUITABLE FOR SSB VOICE (≈ 2.4 –3 kHz), CW, AND NARROW DIGITAL MODES.
- THE 10M BAND (28–29.7 MHz) ALLOWS UP TO **20 KHZ**, GIVING ROOM FOR WIDER FM OR EXPERIMENTAL MODES.
- EXCEPTION: 30M BAND (NEXT SLIDE)

B-001-016: BANDWIDTH AND EMISSION MODE RESTRICTIONS

SPECIAL NARROW BAND – 30 METRE BAND (10.100–10.150 MHz)

- THE **30M BAND** (10.100–10.150 MHz) IS VERY NARROW (50 KHz TOTAL) AND SHARED INTERNATIONALLY.
- MAXIMUM BANDWIDTH IS **1 kHz** (NOT 6 kHz), AND SSB IS PROHIBITED TO PROTECT NARROW CW AND DIGITAL MODES.
- THIS BAND IS FOR LOW-POWER, NARROWBAND OPERATION ONLY — NO VOICE MODES.

B-001-016: BANDWIDTH AND EMISSION MODE RESTRICTIONS



PROHIBITED EMISSION MODE + FREQUENCY COMBINATIONS

- **ATV (FAST-SCAN TELEVISION)** REQUIRES SEVERAL MHz OF BANDWIDTH — FAR EXCEEDING THE 30 kHz LIMIT ON 2M (145 MHz) OR 6 kHz ON 20M (14.23 MHz)
→ PROHIBITED ON BOTH.
- **SSB** (≈ 2.7 KHz BANDWIDTH) **IS PROHIBITED ON 30 M (10.12 MHz)** — ONLY NARROW MODES ALLOWED.

B-001-016: BANDWIDTH AND EMISSION MODE RESTRICTIONS

BAND-EDGE PRECAUTION

- B-001-016-008 — WHAT PRECAUTION MUST AN AMATEUR RADIO OPERATOR TAKE WHEN TRANSMITTING NEAR BAND EDGES? **ANSWER: ENSURE THAT THE ENTIRE OCCUPIED BANDWIDTH FALLS WITHIN THE AMATEUR RADIO BAND**
- IF YOUR SIGNAL IS NEAR THE UPPER OR LOWER EDGE (EX: SSB ON 7.298 MHZ), **THE WHOLE SIGNAL (INCLUDING SIDEBANDS) MUST STAY INSIDE THE BAND (7.0–7.3 MHZ).**
- NO PART CAN "SPILL" OUTSIDE — THIS CAUSES OUT-OF-BAND OPERATION, WHICH IS ILLEGAL AND CAN INTERFERE WITH ADJACENT SERVICES. USE NARROW FILTERS, MONITOR WITH A RECEIVER, AND STAY WELL INSIDE THE EDGE IF USING WIDER MODES.



QUESTION SECTION B-001-017:

TRANSMITTER POWER LIMITS

GENERAL PRINCIPLE – MINIMUM POWER RULE



- THE OVERRIDING RULE FOR ALL AMATEURS (BASIC OR ADVANCED):
 - **USE THE MINIMUM LEGAL POWER NECESSARY TO COMMUNICATE**
- EVEN IF YOUR QUALIFICATION ALLOWS 1000W, YOU SHOULD DROP TO 5W, 50W, OR WHATEVER WORKS FOR THE CONTACT.
- IT REDUCES INTERFERENCE, SAVES ENERGY, AND SHOWS GOOD OPERATING PRACTICE. MNEMONIC: **MNA** - "MINIMUM NECESSARY — ALWAYS."

B-001-017: TRANSMITTER POWER LIMITS

POWER LIMITS FOR BASIC QUALIFICATION HOLDERS

- **BASIC-ONLY OPERATORS (INCLUDING BASIC WITH HONOURS OR BASIC + MORSE) ARE LIMITED TO:**
 - **250 W DC** INPUT TO THE FINAL RF STAGE
 - **190 W CARRIER POWER** ON NON-SSB MODES (EX: CW, FM, AM FULL CARRIER).
 - **560 W PEP ON SSB** (VOICE) — THIS IS ROUGHLY EQUIVALENT AFTER ACCOUNTING FOR SSB'S HIGHER PEAK-TO-AVERAGE RATIO.
- **BASIC + MORSE OR BASIC WITH HONOURS DOES NOT INCREASE POWER LIMITS — ONLY ADVANCED DOES.**

B-001-017: TRANSMITTER POWER LIMITS

POWER LIMITS FOR ADVANCED QUALIFICATION HOLDERS

- ADVANCED QUALIFICATION SIGNIFICANTLY INCREASES POWER:
 - **1000 W DC** INPUT TO THE FINAL STAGE (COMMON FOR LEGAL-LIMIT AMPS).
 - **2250 W PEP** ON SSB (ALLOWS FOR CLEAN, HIGH-POWER VOICE OPERATION WITHOUT EXCEEDING LIMITS).
- THIS APPLIES ACROSS MOST HF/VHF/UHF BANDS EXCEPT **60M – ONLY 100W PEP IS ALLOWED ON THE 60M BAND.**



B-001-017: TRANSMITTER POWER LIMITS

BAND-SPECIFIC POWER LIMITS AND MEASUREMENTS

- THE **60M BAND** (5.332–5.405 MHz CHANNELIZED IN CANADA), EVEN ADVANCED OPERATORS ARE CAPPED AT **100W PEP**. THIS IS A SHARED/SECONDARY BAND WITH STRICT LIMITS TO PROTECT OTHER USERS.
- ON THE LOW-FREQUENCY BANDS **2200 M** (135.7–137.8 KHZ) AND **630 M** (472–479 KHZ), POWER IS LIMITED BY EIRP (EQUIVALENT ISOTROPICALLY RADIATED POWER), WHICH INCLUDES ANTENNA **GAIN**. HIGH-GAIN ANTENNAS REDUCE ALLOWABLE TRANSMITTER POWER TO STAY UNDER THE EIRP CAP.

B-001-017: TRANSMITTER POWER LIMITS

VERIFYING POWER COMPLIANCE (RF EXPOSURE & LIMITS)

- B-001-017-003 — YOU HAVE DETERMINED THE MAXIMUM TRANSMITTER POWER THAT MEETS RF EXPOSURE AND RADIATED POWER LIMITS. WHERE DO YOU VERIFY THIS POWER IS NOT EXCEEDED? **ANSWER: AT THE OUTPUT OF THE TRANSMITTER OR EXTERNAL AMPLIFIER**
- WHEN CHECKING POWER LIMITS (INCLUDING RF EXPOSURE CALCULATIONS PER SAFETY CODE 6), MEASURE AT THE **TRANSMITTER OUTPUT** OR **EXTERNAL AMPLIFIER OUTPUT** — NOT AT THE ANTENNA FEEDLINE. THIS IS THE EASIEST POINT TO MONITOR WITH A WATTMETER AND ENSURES YOU STAY LEGAL BEFORE LOSSES/GAIN FACTORS.





QUESTION SECTION B-001-018:

REPEATER AND SPECIAL STATION RULES

B-001-018: REPEATER AND SPECIAL STATION RULES

DEFINITION OF A REPEATER STATION

- A **REPEATER STATION** RECEIVES A WEAK SIGNAL ON AN INPUT FREQUENCY, AMPLIFIES IT, AND **RETRANSMITS** IT SIMULTANEOUSLY ON A DIFFERENT OUTPUT FREQUENCY (USUALLY OFFSET BY 600 KHZ ON 2M, 5 MHZ ON 70CM, ETC.).
- THIS EXTENDS COVERAGE FOR MOBILE/PORTABLE STATIONS. REPEATERS ARE TYPICALLY SPONSORED BY CLUBS OR INDIVIDUALS AND FOLLOW COORDINATED BAND PLANS TO AVOID INTERFERENCE.

B-001-018: REPEATER AND SPECIAL STATION RULES

UNMODULATED CARRIER TRANSMISSIONS

- AN UNMODULATED CARRIER IS A PURE, CONTINUOUS RF SIGNAL WITH NO MODULATION (NO VOICE, NO TONE, NO DATA) — LIKE A STEADY TONE ON AN OLD AM RADIO. IT IS PROHIBITED IN MOST CASES BECAUSE IT OCCUPIES SPECTRUM WITHOUT CARRYING INFORMATION AND CAN CAUSE INTERFERENCE.
- **THE ONLY ALLOWED USE IS BRIEF TESTS** (EX: TUNING A LINEAR AMPLIFIER OR CHECKING SWR) BELOW 30 MHZ (HF BANDS). EVEN THEN, KEEP IT SHORT (SECONDS, NOT MINUTES) AND LISTEN FIRST.
- ABOVE 30 MHZ (VHF/UHF), UNMODULATED CARRIERS ARE NEVER PERMITTED — USE MODULATED TEST SIGNALS (EX: "TESTING 1-2-3") INSTEAD.

B-001-018: REPEATER AND SPECIAL STATION RULES

REPEATER ACCESS FOR BASIC QUALIFICATION HOLDERS

- THE **LOWEST OUTPUT FREQUENCY** OF THE REPEATERS THAT HOLDERS OF AN AMATEUR RADIO OPERATOR CERTIFICATE WITH ONLY A BASIC QUALIFICATION ARE ALLOWED TO USE IS **29.500MHZ**. THE TOP 200 kHz OF THE 10M BAND (**29.500 MHZ TO 29.700 MHZ**) IS MARKED FOR FM REPEATERS.
- IN PRACTICE, 10M REPEATERS ARE RARE IN CANADA.





QUESTION SECTION B-001-019:

TECHNICAL STANDARDS AND STATION REQUIREMENTS

B-001-019: TECHNICAL STANDARDS AND STATION REQUIREMENTS



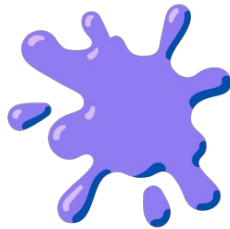
FREQUENCY STABILITY REQUIREMENT

- **BELOW 148 MHZ** (EX: ON ALL HF BANDS AND VHF UP TO JUST ABOVE 2 M), YOUR TRANSMITTER'S FREQUENCY MUST BE AS **STABLE AS IF IT WERE CRYSTAL-CONTROLLED** — MEANING VERY LOW DRIFT (TYPICALLY A FEW HZ OR LESS OVER TIME/TEMPERATURE).
- MODERN SYNTHESIZED RIGS EASILY MEET THIS, BUT OLDER VFO-ONLY DESIGNS MIGHT NOT. ABOVE 148 MHZ (HIGHER UHF/MICROWAVE), MORE DRIFT IS TOLERATED DUE TO SHORTER WAVELENGTHS AND NARROWER PRACTICAL USES.
- THIS RULE PREVENTS SIGNALS FROM DRIFTING OUT OF BAND OR ONTO OTHER USERS — CRITICAL FOR NARROWBAND MODES LIKE CW/DIGITAL.

B-001-019: TECHNICAL STANDARDS AND STATION REQUIREMENTS

OVERMODULATION PREVENTION/INDICATION (VOICE MODES)

- **OVERMODULATION** (EXCEEDING 100% MODULATION) CAUSES DISTORTION, SPLATTER (BROADBAND INTERFERENCE), AND POOR AUDIO QUALITY — **ESPECIALLY NOTICEABLE ON SSB** (SINGLE SIDEBAND), WHERE THERE'S NO CARRIER TO "CLIP" AGAINST.
- REGULATIONS REQUIRE SSB TRANSMITTERS TO HAVE BUILT-IN MEANS TO PREVENT (EX: ALC – AUTOMATIC LEVEL CONTROL) OR INDICATE (EX: MODULATION METER, LED/ALC INDICATOR) OVERMODULATION. WHILE THE RULE HIGHLIGHTS SSB, GOOD PRACTICE APPLIES TO ALL VOICE MODES (AM, FM) — BUT SSB IS MOST SENSITIVE BECAUSE OVERDRIVE CREATES SIDEBAND SPLATTER FAR OUTSIDE YOUR CHANNEL.



B-001-019: TECHNICAL STANDARDS AND STATION REQUIREMENTS

REQUIRED MEASUREMENT CAPABILITY

- EVERY AMATEUR STATION MUST HAVE A RELIABLE WAY TO MEASURE **FREQUENCY** ACCURATELY — WHETHER BUILT-IN DIGITAL DISPLAY, EXTERNAL FREQUENCY COUNTER, OR CALIBRATED RECEIVER. THIS ENSURES YOU STAY WITHIN BAND EDGES AND ALLOCATED SUB-BANDS (EX: NO DRIFTING INTO NON-AMATEUR SEGMENTS).
- NO SIMILAR REQUIREMENT EXISTS FOR POWER, MODULATION PERCENTAGE, OR SWR — THOUGH GOOD OPERATORS MONITOR THOSE TOO. **FREQUENCY** IS THE LEGAL MUST-HAVE BECAUSE OUT-OF-BAND OPERATION IS A SERIOUS VIOLATION.



QUESTION SECTION B-001-020:

INTERNATIONAL COMMUNICATIONS

B-001-020: INTERNATIONAL COMMUNICATIONS

CONTENT RESTRICTIONS FOR INTERNATIONAL MESSAGES

- WHEN TALKING TO FOREIGN STATIONS, CONTENT IS STRICTLY LIMITED TO: **AMATEUR RADIO PURPOSES** (TECHNICAL DISCUSSIONS, EQUIPMENT, PROPAGATION, OPERATING PRACTICES, EMERGENCY/RELIEF TRAFFIC WHEN AUTHORIZED).
- **PERSONAL REMARKS** (FRIENDLY CHAT, FAMILY GREETINGS, HOBBIES, TRAVEL EXPERIENCES — NON-COMMERCIAL).
- NO BUSINESS DEALINGS, POLITICS (UNLESS INCIDENTAL), BROADCASTING, OR THIRD-PARTY MESSAGES UNLESS THE FOREIGN COUNTRY PERMITS THEM.

B-001-020: INTERNATIONAL COMMUNICATIONS

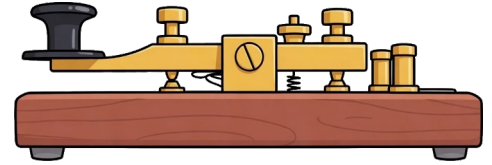


ITU PROVISIONS ON INTERNATIONAL AMATEUR COMMUNICATIONS

- THE ITU RADIO REGULATIONS (GLOBAL TREATY-LEVEL RULES) ALLOW AMATEUR-TO-AMATEUR INTERNATIONAL COMMUNICATION BY DEFAULT — **UNLESS A COUNTRY'S ADMINISTRATION FORMALLY OBJECTS VIA THE ITU** (VERY RARE IN MODERN TIMES).
- CANADA HAS NO SUCH OBJECTIONS, SO CANADIAN HAMS CAN LEGALLY CONTACT AMATEURS IN VIRTUALLY EVERY COUNTRY (EXCEPT IN EXTREME CASES LIKE ACTIVE CONFLICTS OR SANCTIONS). THIS PERMISSIVE RULE SUPPORTS GLOBAL DXING AND EMERGENCY COORDINATION.

B-001-020: INTERNATIONAL COMMUNICATIONS

ITU RULES ON MORSE CODE PROFICIENCY



- **SINCE THE 2003 ITU WORLD RADIOCOMMUNICATION CONFERENCE (WRC-03), MORSE CODE PROFICIENCY IS NO LONGER REQUIRED INTERNATIONALLY FOR ANY AMATEUR BAND OR LICENCE CLASS.**
- **EACH COUNTRY (ADMINISTRATION) DECIDES ITS OWN RULES.** IN CANADA, MORSE (5 WPM) IS OPTIONAL — IT PROVIDES EXTRA HF ACCESS FOR BASIC HOLDERS BUT IS NOT MANDATORY.
- **THIS EXPLAINS WHY MANY COUNTRIES DROPPED MORSE REQUIREMENTS POST-2003, MAKING THE HOBBY MORE ACCESSIBLE WORLDWIDE.**

B-001-020: INTERNATIONAL COMMUNICATIONS

HIERARCHY OF REGULATIONS CANADIAN AMATEURS MUST FOLLOW



- **CANADIAN AMATEURS FOLLOW A LAYERED SET OF RULES:**
 - **DOMESTIC: RADIOCOMMUNICATION ACT (FEDERAL LAW)**
 - **RADIOCOMMUNICATION REGULATIONS (DETAILED RULES FROM ISED).**
 - **INTERNATIONAL TELECOMMUNICATION UNION REGULATIONS (GLOBAL TREATY CANADA HAS RATIFIED).**



QUESTION SECTION B-001-021:

ITU REGIONS AND RECIPROCAL/CEPT

OPERATIONS

B-001-021: ITU REGIONS AND RECIPROCAL/CEPT OPERATIONS

HIERARCHY OF REGULATIONS CANADIAN AMATEURS MUST FOLLOW

- THE ITU DIVIDES THE WORLD INTO THREE REGIONS FOR FREQUENCY ALLOCATION AND BAND PLANNING:
 - **REGION 1:** EUROPE, AFRICA, MIDDLE EAST, FORMER SOVIET STATES (MOST RESTRICTIVE HF ALLOCATIONS).
 - **REGION 2:** THE AMERICAS (NORTH, CENTRAL, SOUTH AMERICA + CARIBBEAN) — CANADA IS HERE, ALONG WITH THE US, MEXICO, BRAZIL, ETC.
 - **REGION 3:** ASIA-PACIFIC (AUSTRALIA, JAPAN, SOUTHEAST ASIA, PACIFIC ISLANDS).
- MEMORIZE THE UNDERLINED LOCATIONS

B-001-021: ITU REGIONS AND RECIPROCAL/CEPT OPERATIONS

OPERATING IN THE UNITED STATES – FREQUENCY LIMITS AND ID

- CANADA AND THE US HAVE A BILATERAL RECIPROCAL AGREEMENT – **BASIC** QUALIFICATION IS SUFFICIENT TO OPERATE IN THE US (NO ADVANCED NEEDED).
- KEY RULES: FOLLOW **US BAND PLANS AND POWER LIMITS** (EX: US 40 M ENDS AT 7.3 MHZ SAME AS CANADA, BUT 60 M IS CHANNELIZED DIFFERENTLY).
- EVEN 7 KM OFFSHORE IN US TERRITORIAL WATERS, YOU'RE UNDER US RULES.
- ID FORMAT (VOICE): **YOUR CANADIAN CALL + /MOBILE OR /PORTABLE + US PREFIX FOR THE STATE/AREA** (EX: "VE5REV PORTABLE W4 IN FLORIDA").

B-001-021: ITU REGIONS AND RECIPROCAL/CEPT OPERATIONS

CEPT LICENCE FOR EUROPE AND OTHER PARTICIPATING COUNTRIES

- TO OPERATE CEPT COUNTRIES, YOU NEED AN **ADVANCED** QUALIFICATION
- THE ID FORMAT: TRANSMIT THE VISITED COUNTRY'S PREFIX, FOLLOWED BY "STROKE," (/) FOLLOWED BY YOUR CANADIAN CALL SIGN
- EX: SP/VE5TRF, DL/VE5ARV





QUESTION SECTION B-001-022:

EXAMINATION FEES AND ACCOMMODATIONS

B-001-022: EXAMINATION FEES AND ACCOMMODATIONS



FEES FOR EXAMINATIONS AT ISED OFFICES

- B-001-022-004 — WHAT IS THE FEE FOR TAKING AMATEUR RADIO OPERATOR CERTIFICATE EXAMINATIONS AT AN INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA OFFICE? **ANSWER: NO CHARGE FOR QUALIFICATION EXAMINATIONS**
- NO MATTER HOW THE QUESTIONS WORD THIS, EXAMS AT ISED ARE **FREE**.

B-001-022: EXAMINATION FEES AND ACCOMMODATIONS



FEES FOR EXAMINATIONS BY ACCREDITED EXAMINERS

- B-001-022-003 — WHAT IS THE FEE FOR TAKING AN EXAMINATION FOR AN AMATEUR RADIO OPERATOR CERTIFICATE, ADMINISTERED BY AN ACCREDITED EXAMINER? **ANSWER: THE EXAMINER MAY CHARGE A FEE TO RECOVER COSTS**
- ACCREDITED EXAMINERS (VOLUNTEERS OR CLUBS APPROVED BY ISED) CAN CHARGE A REASONABLE FEE TO COVER THEIR EXPENSES (VENUE RENTAL, PRINTING, TRAVEL, REFRESHMENTS, ETC.)

B-001-022: EXAMINATION FEES AND ACCOMMODATIONS

ACCOMMODATIONS AND EXCEPTIONS FOR CANDIDATES

- **ISED PROVIDES REASONABLE ACCOMMODATIONS FOR CANDIDATES WITH DISABILITIES (EX: EXTRA TIME, LARGE-PRINT EXAMS, ORAL ADMINISTRATION, SEPARATE ROOM, SCRIBE), BUT NO EXEMPTIONS FROM ANY PORTION OF THE EXAM — ALL QUESTIONS MUST BE ATTEMPTED AND PASSED (70% MINIMUM).**
- **LANGUAGE INTERPRETERS ARE NOT PERMITTED — CANDIDATES MUST DEMONSTRATE SUFFICIENT KNOWLEDGE OF ENGLISH OR FRENCH (THE OFFICIAL LANGUAGES OF THE EXAM).**



QUESTION SECTION B-001-023:
ANTENNA STRUCTURE INSTALLATION
AND PUBLIC CONSULTATION

B-001-023: ANTENNA STRUCTURE INSTALLATION AND PUBLIC CONSULTATION

AUTHORITY AND GENERAL REQUIREMENTS

- THE **MINISTER** (THROUGH ISED) HAS ULTIMATE FEDERAL AUTHORITY OVER ALL RADIOCOMMUNICATION ANTENNA SYSTEMS, INCLUDING AMATEUR TOWERS/MASTS.
- HOWEVER, YOU CANNOT INSTALL ANY SIZE/STRUCTURE **WITHOUT CHECKING** LOCAL RULES OR NEIGHBOURS. LOCAL LAND-USE AUTHORITIES (MUNICIPALITIES, ZONING BYLAWS) OFTEN HAVE INPUT.



B-001-023: ANTENNA STRUCTURE INSTALLATION AND PUBLIC CONSULTATION

WHEN PUBLIC CONSULTATION IS (OR IS NOT) REQUIRED

- PUBLIC CONSULTATION IS NOT REQUIRED IF AN **EXCLUSION CRITERION DEFINED BY INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA** APPLIES.
- THE TALLEST NO-CONSULTATION STRUCTURE IS **WHATEVER HEIGHT** IS EXEMPTED BY EITHER THE LOCAL LAND-USE AUTHORITY (IF THEY HAVE A PROCESS) OR **ISED'S DEFAULT EXCLUSIONS**. ALWAYS CHECK BOTH – LOCAL BYLAWS CAN BE STRICTER.

B-001-023: ANTENNA STRUCTURE INSTALLATION AND PUBLIC CONSULTATION

ROLE OF LOCAL LAND-USE AUTHORITIES VS. ISED



- IF A **MUNICIPALITY** HAS ITS OWN ANTENNA APPROVAL/CONSULTATION PROCESS, THEY DECIDE THE DETAILS (EX: PUBLIC MEETINGS, SIGNAGE, TIMELINES).
- YOU FOLLOW THEIR PROCESS UNLESS YOUR ANTENNA IS EXCLUDED BY THEIR RULES OR BY ISED'S CLIENT PROCEDURES CIRCULAR CPC-2-0-03 CRITERIA. IF THE MUNICIPALITY HAS NO PROCESS, YOU FALL BACK TO ISED'S DEFAULT PROCESS.

B-001-023: ANTENNA STRUCTURE INSTALLATION AND PUBLIC CONSULTATION

ISED'S DEFAULT PUBLIC CONSULTATION PROCESS



- **ISED'S DEFAULT PROCESS (WHEN NO LOCAL PROCESS EXISTS) INCLUDES:**
 - **POSTING PUBLIC NOTICE (EX: SIGNAGE ON SITE, NEWSPAPER/RADIO NOTICE).**
 - **30-DAY COMMENT PERIOD** FOR WRITTEN SUBMISSIONS.
 - **ADDRESSING REASONABLE, RELEVANT CONCERNS IN WRITING** (EX: SAFETY, ENVIRONMENTAL IMPACT — NOT AESTHETICS ALONE UNLESS TIED TO LAND USE).
- **NO MANDATORY PUBLIC MEETINGS (THAT'S A "NOT" ELEMENT — LOCAL AUTHORITIES MIGHT REQUIRE THEM, BUT ISED DEFAULT DOES NOT) SEE B-001-023-005.**

B-001-023: ANTENNA STRUCTURE INSTALLATION AND PUBLIC CONSULTATION

RESOLVING DISPUTES

- B-001-023-008 — THE PROPONENT OF AN ANTENNA SYSTEM AND A STAKEHOLDER, OTHER THAN THE GENERAL PUBLIC, HAVE FAILED TO REACH AN AGREEMENT. HOW IS A FINAL DECISION REACHED? **ANSWER: THE DECISION IS MADE BY INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA**
- **ISED** SERVES AS THE FINAL DECISION MAKER IN ANY DISPUTES.



QUESTION SECTION B-001-024:

RF EXPOSURE SAFETY (SAFETY CODE 6)

B-001-024: RF EXPOSURE SAFETY (SAFETY CODE 6)

AUTHORITY AND PURPOSE OF SAFETY CODE 6

- **HEALTH CANADA** (NOT ISED) **PUBLISHES SAFETY CODE 6** (LIMITS OF HUMAN EXPOSURE TO RADIOFREQUENCY ELECTROMAGNETIC ENERGY IN THE FREQUENCY RANGE FROM 3 KHZ TO 300 GHZ).
- ITS PRIMARY PURPOSE IS TO ESTABLISH SAFE **RF EXPOSURE LIMITS TO THE HUMAN BODY** TO PREVENT ADVERSE HEALTH EFFECTS FROM RF ENERGY.

B-001-024: RF EXPOSURE SAFETY (SAFETY CODE 6)

FREQUENCY RANGE OF GREATEST RISK

- THE HUMAN BODY ABSORBS RF ENERGY MOST EFFICIENTLY IN THE **VHF RANGE (ROUGHLY 48–300 MHz, INCLUDING OUR POPULAR 6M, 2M, AND 1.25M BANDS)**. THIS IS WHY EXPOSURE LIMITS (IN TERMS OF POWER DENSITY OR SAR – SPECIFIC ABSORPTION RATE) ARE STRICTEST HERE.
- ABOVE ~300 MHz OR BELOW ~10 MHz, ABSORPTION DROPS SIGNIFICANTLY, SO LIMITS ARE HIGHER.



HAND-HELD TRANSMITTERS AND EXPOSURE LIMITS

- SAFETY CODE 6 **DOES NOT SPECIFY** A SIMPLE "MAXIMUM POWER" FOR HAND-HELD RADIOS (EX: NO "5 W IS ALWAYS SAFE" RULE). INSTEAD, COMPLIANCE IS BASED ON EXPOSURE (SAR OR FIELD STRENGTH NEAR THE BODY).

B-001-024: RF EXPOSURE SAFETY (SAFETY CODE 6)

NO EXEMPTIONS – ALL TRANSMITTERS COVERED

- **NO AMATEUR RADIO TRANSMITTER IS EXEMPT FROM SAFETY CODE 6 – WHETHER HANDHELD, MOBILE, BASE STATION, QRP, OR HIGH-POWER.**
- **ALL MUST COMPLY WITH EXPOSURE LIMITS. OPERATORS ARE RESPONSIBLE FOR ENSURING THEIR STATION (POWER, DUTY CYCLE, ANTENNA PLACEMENT, DISTANCE TO PEOPLE) STAYS WITHIN SAFE LEVELS.**

B-001-024: RF EXPOSURE SAFETY (SAFETY CODE 6)

TWO BASIC EXPOSURE SITUATIONS AND ADDITIONAL EFFECTS

- SAFETY CODE 6 DEFINES TWO CATEGORIES:
 - **CONTROLLED ENVIRONMENTS** — OCCUPATIONAL (EX: YOU AT YOUR OWN STATION) — HIGHER LIMITS ALLOWED.
 - **UNCONTROLLED ENVIRONMENTS** — GENERAL PUBLIC (NEIGHBOURS, FAMILY, PASSERS-BY) — STRICTER LIMITS (TYPICALLY 1/5 OF CONTROLLED).
- BELOW ~10 MHZ (EX: 160 M, 80 M), BESIDES HEATING, **NERVE STIMULATION** (INDUCED CURRENTS CAUSING TINGLING OR MUSCLE TWITCH) IS THE OTHER MAIN CONCERN, SO LIMITS ARE SET ACCORDINGLY.

B-001-024: RF EXPOSURE SAFETY (SAFETY CODE 6)

COMMON MISCONCEPTIONS ABOUT SAFETY CODE 6

- B-001-024-010 — WHICH OF THESE STATEMENTS ABOUT SAFETY CODE 6 IS NOT CORRECT? ANSWER: SAFETY CODE 6 SETS LIMITS IN TERMS OF POWER LEVELS FED INTO ANTENNAS
- SAFETY CODE 6 DOES NOT SET LIMITS BASED ON TRANSMITTER POWER OR POWER INTO THE ANTENNA — IT USES EXPOSURE METRICS.



QUESTION SECTION B-001-025:
ELECTROMAGNETIC COMPATIBILITY AND
INTERFERENCE RESPONSIBILITY

B-001-025: ELECTROMAGNETIC COMPATIBILITY AND INTERFERENCE RESPONSIBILITY

WHEN THE CONSUMER DEVICE IS AT FAULT (LACK OF IMMUNITY)

- IF THE MEASURED RF FIELD STRENGTH FROM YOUR STATION AT THE NEIGHBOUR'S LOCATION IS BELOW IS BELOW INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA'S SPECIFIED IMMUNITY CRITERIA IN **EMCAB-2 (ELECTROMAGNETIC COMPATIBILITY ADVISORY BULLETIN)**, THE STEREO (OR OTHER DEVICE) IS CONSIDERED TO HAVE INADEQUATE IMMUNITY.
- THE FAULT LIES WITH THE CONSUMER EQUIPMENT, NOT YOUR LEGAL AMATEUR TRANSMISSION. YOU ARE NOT REQUIRED TO REDUCE POWER OR STOP OPERATING — THE NEIGHBOUR (OR MANUFACTURER) SHOULD ADDRESS THE DEVICE'S POOR DESIGN/SHIELDING.

B-001-025: ELECTROMAGNETIC COMPATIBILITY AND INTERFERENCE RESPONSIBILITY

WHEN THE AMATEUR TRANSMISSION IS AT FAULT

- IF THE RF FIELD AT THE NEIGHBOUR'S PREMISES **EXCEEDS THE EMCAB-2 IMMUNITY LIMIT**, **YOUR TRANSMISSION IS DEEMED THE CAUSE OF THE INTERFERENCE**.
- IN THIS CASE, YOU MUST TAKE REASONABLE STEPS TO MITIGATE (EX: LOWER POWER, CHANGE ANTENNA, ADD FILTERS, ADJUST OPERATING TIMES) UNTIL THE FIELD DROPS BELOW THE THRESHOLD OR THE PROBLEM IS RESOLVED. THIS PROTECTS THE PUBLIC FROM EXCESSIVE RF EXPOSURE/INTERFERENCE.

B-001-025: ELECTROMAGNETIC COMPATIBILITY AND INTERFERENCE RESPONSIBILITY

TYPES OF AFFECTED EQUIPMENT IN EMCAB-2

- EMCAB-2 CLASSIFIES AFFECTED DEVICES INTO CATEGORIES WITH DIFFERENT IMMUNITY THRESHOLDS:
- **ASSOCIATED EQUIPMENT** — NON-RADIO HOME ENTERTAINMENT GEAR (EX: TVS, STEREOS, DVD PLAYERS, GAME CONSOLES) CONNECTED TO BROADCAST RECEIVERS OR SIMILAR. THESE HAVE SPECIFIC (OFTEN LOWER) IMMUNITY REQUIREMENTS.
- **RADIO-SENSITIVE EQUIPMENT** — DEVICES THAT USE RADIO FREQUENCIES INTERNALLY BUT ARE NOT LICENSED RADIO APPARATUS (EX: GARAGE DOOR OPENERS, WIRELESS DOORBELLS, BABY MONITORS, CORDLESS PHONES). THESE ALSO HAVE DEFINED IMMUNITY LEVELS.
- KNOWING THE CATEGORY HELPS DETERMINE WHICH FIELD-STRENGTH LIMIT APPLIES WHEN MEASURING DURING A COMPLAINT.



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