

ST. LUCIA

**AMATEUR RADIO HANDBOOK
2000**

Prepared by

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Ministry of Communications, Works, Transport and Public Utilities**

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INTRODUCTION

This document is intended to assist persons interested in becoming amateur radio operators by providing basic information on amateur radio operation. Most of the material in this document was extracted from ARRL¹ & RSGB² Publications, as well as some other sources.

The booklet has been divided into three sections. The first section provides the reader with rules and guidelines governing amateur radio operation in St. Lucia. This section also provides information on the classes of licences available and the topics that must be mastered in order to be successful in the licence examinations.

The second section provided an introduction to the theoretic knowledge required for successful and competent amateur radio operation. It is also strongly recommended that additional reading from other sources, such as magazines devoted to Amateur Radio and other amateur radio books, be done to supplement this booklet.

The final section is the appendices, which includes among other things, a glossary of terms, the phonetics alphabet and some additional resources. The appendices have been designed to provide reference information for amateur radio. Once again the material included in this section is not exhaustive. The reader is again encouraged to conduct additional research to augment and improve their knowledge base.

Upon receipt of an amateur radio license, the reading should not stop. It should be intensified as well as drawing on the resources of the local amateur radio fraternity. There is a process called “*Elmering*” in which an older or more seasoned amateur operator helps a novice or someone who shows interest in the hobby with practical, helpful advice and assistance when it is needed. The “*elmer*” is to be a very good role model, as the novice may sometime down the road become another one’s *elmer*.

The Amateur Radio Service is defined as a personal radio service, featuring self-training, intercommunication, and technical investigation. Amateur Radio operators over the years have help pioneer new and exciting telecommunications technologies. One of the best known areas that the amateur radio service has really stood the test of time is in providing communications in the aftermath of a natural disaster such as hurricanes, floods and earthquakes.

Some reasons that the amateur radio service exists:

1. Proven ability to handle emergency communications.
2. Advancement of the radio art.

¹ ARRL – American Radio Relay League

² RSGB -

3. Improvement of communication and technical skills.
4. Increase in numbers of trained operators and electronics experts
5. Enhancement of international goodwill.

It must always be remembered that **amateur radio is a privilege and not a right**. This means that the Amateur Radio Service is supported by governments and can be suspended at any time for whatever reason.

The Amateur Radio Service occupies a large portion of valuable radio spectrum, which is viewed as one of the country's natural resources. The governments who support Amateur Radio activities expect the Amateur Radio Service to live up to its mandate outlined above and to the Amateur's Code outlined in the next chapter.

SECTION ONE

**RULES AND GUIDELINES
FOR AMATEUR RADIO OPERATION
IN ST. LUCIA**

THE AMATEUR'S CODE

One ***The Amateur is considerate***

...He never knowingly uses the air in such a way as to lessen the pleasure of others.

Two ***The Amateur is Loyal***

...He offers his loyalty, encouragement and support to his fellow radio amateurs and his local radio clubs.

Three ***The Amateur is Progressive***

...He keeps his station abreast of science. It is well built and efficient. His operating practice is above reproach.

Four ***The Amateur is friendly***

...Slow and patient sending when requested, provides friendly advice and counsel to the beginner, offers kindly assistance, cooperative and considerate for the interests of others. These are the marks of the amateur spirit.

Five ***The Amateur is Balanced***

...Radio is his hobby! He never allows it to interfere with any of the duties he owes to his home, his job, his school, or his community.

Six ***The Amateur is patriotic***

...His knowledge and his station are always ready for the service of his country and community.

OPERATING RESPONSIBILITIES

Persons without an amateur radio license are not allowed to transmit from an amateur radio station unless a control operator gives his/her permission to do so and is present at the station's control point. The control point of an amateur radio station is the place where the station operating functions are performed. The control operator must be present at the station's control point whenever transmissions are being made from his/her station.

Each operator must have his/her license in his/her possession whenever and wherever he/she operates an amateur radio station. A photocopy of the license would suffice and it should be posted prominently at the control point.

Station identification is required every *** minutes or less during contact and at the end of contact. This is done by transmitting the station call sign listed on the operator's licence. Operators do not have to identify with every transmission, only at required intervals.

The maximum output power that the novice operator may use on the High Frequency (HF) band is 100 watts PEP. Peak envelope power (PEP) is the average power supplied to the radio frequency transmission line from the transmitter (or amplifier) during one complete cycle of RF at the crest of the modulation envelope. Output power is measured most accurately at the antenna connector of the transmitter/amplifier. One should always use the minimum amount of power that is needed to communicate satisfactorily between stations.

It is also recommended that an accurate log be kept of the operator's station activities at all times. The prospective novice is also encouraged to do a lot of monitoring of the ham frequencies via short-wave radio, scanners or with the assistance of a local ham at his *ham shack*. Some amateur radio operators may also have been exposed to CB (Citizen Band) Radio operations and are strongly discouraged from using CB language when operating on the amateur radio band.

Amateur Radio operators should also familiarize themselves with their equipment and current operating practices. Being an amateur radio operator is not about picking up a microphone and talking. A lot of work needs to be done before the microphone is picked up! Amateur Radio operators need to also be keen on public relations.

3.1 REPEATER OPERATING PRACTICES

The following suggestions will assist you in operating a repeater, like you have been doing it for years.

- 1) Monitor the repeater frequency to become familiar with any peculiarities in its operation.
- 2) To initiate a contact simply indicate that you are on frequency, such as: “This is J69PM monitoring.” Please do not “*ker-chunk*” the repeater (key your radio without identifying yourself) just to see if it’s working.
- 3) Wait until you hear the courtesy tone (if repeater is equipped with such) before transmitting. This allows time for other stations to break in if necessary. If you do not hear a courtesy tone (and that feature is available on the system), the system is “off line”.
- 4) Identify legally. You must identify yourself at the end of a transmission or series of transmissions and at least once each 10 minutes during the communication.
- 5) Pause between transmissions. This allows other radio amateurs to use the repeater (someone may have an emergency). On most repeaters, a pause is necessary to reset the timer.
- 6) Keep your transmissions short and thoughtful. Your “monologue” may prevent someone with an emergency from using the repeater. If you talk long enough, you may actually time out the repeater. Your transmissions are being heard by many listeners, including non-amateur radio operators with monitors and scanners. Don’t give a bad impression of the service.
- 7) Use simplex whenever possible. If you can complete your QSO on a direct frequency, there is no need to tie up the repeater and prevent others from using it.
- 8) Do not break into a contact unless you have something meaningful to add. Interrupting is no more polite on the air than it is in person.
- 9) If you hear a jammer, ignore him. Resist the temptation to “set the jammer straight”. Don’t acknowledge his presence in any way. Anything you might say probably doesn’t belong on the band and may contribute to the problem. If the jammer has no audience, he won’t have any fun and will soon be gone.

PROHIBITIONS

1. **Amateurs are not allowed to transmit false signals, unidentified signals, broadcasts, music, or indecent/obscene/profane words or unknown codes/ciphers.**

A transmission that disturbs other communications is harmful interference, which is never allowed. Interfering with police, fire or ambulance communications could endanger people and/or property. The lack of proper station identification constitutes an unidentified transmission, which is prohibited.

2. **Amateurs are not allowed to transmit broadcasts.**

A broadcast is the transmission of programs that are of interest to the general public, either direct or by relay.

3. **Amateurs should not operate outside the range of frequencies that they are licensed to operate.**

4. **Amateurs are not allowed to accept payment in any form (money, goods or services) for handling third-party traffic.**

Third-party traffic involves two amateurs handling a message for at least one person, other than themselves. It usually involves two people, in addition to the two amateurs radio operators. Amateurs are allowed to exchange third-party traffic only with amateurs in other countries with which St. Lucia has third-party traffic agreements.

One such country is the United States of America. At present, St. Lucia has no third-party agreements with the other countries in the Caribbean!

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AMATEUR RADIO LICENCE EXAMINATIONS

In Saint Lucia, there are three classes of licences for amateur radio operation: Novice Class, General Class and Advanced Class. The classes can be distinguished by the knowledge requirements to attain the licence and the privileges that are associated with each class. As one moves from the Novice Class to the Advanced Class, there is need for greater knowledge in terms of theory and practical skills required, and correspondingly, the privileges increase.

Section Two of this handbook introduces some of the theory and concepts required for successful and competent amateur radio operations. Candidates are expected to supplement the information provided.

5.1 NOVICE CLASS LICENCE

Candidates taking the Novice Class Examinations are expected to have a thorough knowledge of the listed subjects:

1. Basic Operating Principles
 - (a) Operating procedures and practices
 - (b) Propagation
 - (c) Safety
 - (d) Ohm's Law
 - (e) Phonetics
 - (f) Requirements to set up a station

5.2 GENERAL LICENCE

For the General Licence, candidates are expected to have a thorough knowledge of the listed subjects, in addition to the topics covered under the Novice Licence.

1. Amateur Station Operating Procedures
 - (a) Repeater operation, Courteous operation
 - (b) Simplex operation, Q signals, RST signal reporting, Repeater frequency co-ordination
 - (c) Distress calling and emergency drills and communication operation and equipment.
2. Radio Wave Propagation

- (a) Ionosphere, ionosphere region, solar radiation.
 - (b) Ionospheric absorption, causes and variation, maximum usable frequency.
 - (c) Propagation, including ionospheric, tropospheric, line of sight scatter propagation and maximum usable frequency.
3. Amateur Radio Practices
- (a) Electrical wiring, including switch location, dangerous voltages and currents.
 - (b) Meters, including Volt, Amp, multi, peak reading, RF, Watt and placement and rating of fuses and switches.
 - (c) Marker generation, crystal calibration, signal generator and impedance-match indicator
 - (d) Dummy antennas, S-meter, exposure of human body to RF
4. Electrical Principles
- (a) Definition of resistance, inductance, capacitance and units of measurement; calculations of values in series and parallel.
 - (b) Ohm's Law
5. Circuit Components
- (a) Resistors, construction types, variable and fixed, colour codes, power rating schematic symbols
 - (b) Schematic symbols – inductors and capacitor construction of variable and fixed, factors affecting inductance and capacitance, capacitor construction.

5.3 ADVANCED CLASS LICENCE

In addition to the topics covered by the Novice and General Licences, candidates are expected to have a thorough understanding of the following topics.

- 1. Amateur Radio Practices
- 2. Practical Circuits
- 3. Signals and Emissions
 - (a) Definitions of modulation and emission types
 - (b) RF carrier, modulation bandwidth and deviation
- 4. Antennas and Feed Lines
 - (a) Parasitic beam and non-directional antennas
 - (b) Polarization, impedance matching and SWR feed lines, balanced vs. unbalanced

(c) Line losses by line type, length and frequency, RF safety.

The candidates eligible to apply for the Advanced Class Licence examinations if

- they are in possession of a General Class Licence;
- they have had the General Class Licence for at least three (3) years;
- they have been active community and/or national activities

The granting of the Advanced Class Licence is subject to the approval of the Telecommunications Officer upon the advice from the designated advisory committee(s).

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PRIVILEGES

On successful completion of the amateur radio examinations, the operator will have certain operating privileges, which will be dependent on the class of licence that has been granted.

The Novice Class License Operators are limited to

- three (3) High Frequency (HF) bands, the 80, 40 and the 10 meter band, and
- one (1) Very High Frequency (VHF) band, at 2 meters.

Operations on any other bands can only be made with the direct assistance of a General Class License Operator as the control operator of an Amateur Radio Station.

APPROVED FREQUENCIES/MHz	MODES OF OPERATION	POWER LIMIT/W
6.1 Novice Class		
3.5 - 4.0; 7.0 – 7.3; 28.0 – 29.7; 144.0 – 148.0	SSB, FM	100
6.2 General Class		
1.8 – 2.0	CW, SSB	200
3.5 - 4.0, 7.0 – 7.3; 10.1 - 10.15; 14.0 - 14.35; 18.068 – 18.168	CW, SSB	1000
21.0 – 21.45; 24.89 - 24.99; 28.0 – 29.7; 50.0 – 54.0; 144.0 – 148.0	CW, SSB, FM	1000
220.0 – 225.0; 430.0 – 450.0	CW, SSB, FM	1000