OPERATING AN AMATEUR RADIO STATION

Including the Information on the A. R. R. L. Field Organization

BY THE

COMMUNICATIONS DEPARTMENT

HEADQUARTERS STATION W1MK

The American Radio Relay League, West Hartford, Connecticut
OPERATING AN AMATEUR RADIO STATION

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To our A.R.R.L. members:

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These objects must be kept in mind while we, as individuals, are getting enjoyment from our hobby. By operating our stations with some useful end in view we can improve our service to others and increase the pleasure we get from amateur radio communication, justifying our existence at the same time.

The activities of the Communications Department are arranged and recorded through QST, and by correspondence. Tests are arranged to develop new routes for traffic handling, to prepare ourselves to render emergency service in time of need, and to bring to light additional technical information.

Compliance with government regulations, orderly operating, and co-operation with each other and with outside interests for the advancement of the art, are a part of our policies. The first duty of the Department to member-stations is to supervise operating work so well that the amateur will continue to justify the frequency allocations and rights the government has set aside as due him in the past.

It is obviously impossible to distribute up-to-the-minute information in a monthly periodical. It takes several weeks to get a high grade, technically accurate magazine in print and distributed to its many thousands of readers. Mimeographed bulletins are mailed regularly to the most active and interested station-owners. They are thus kept informed of the latest developments and operating news. Through such bulletins, through QST, and through a large volume of correspondence and radio communication with individual members, the contact is kept good and the activities we have mentioned are effectively carried out by interested member-stations.

In this booklet you will find information concerning the organization of the League, the proper message forms to use, some special convenient abbreviations adopted by the League for your use, and a resume of standard operating practices. Help strengthen amateur radio by studying the practice suggested and using it at your station. Keep this book in your station for reference. Its purpose is to offer practical operating suggestions and to give standards to follow. We can better ourselves by trying to reach certain ideals.

It is suggested that members keep complete records of their individual activities. A complete log of experimental investigations or of traffic-handling is always valuable. Anything worth doing is worth recording.

Constructive criticism and suggestions are invited. Through full exchange of ideas between operators we can improve our service to others, thereby increasing the pleasure we ourselves derive from our chosen hobby.

League organization will benefit you only as you take part in it by your radio activity and contacts with your fellow amateurs, your Director, S.C.M., and Headquarters.

The world is at your fingertips when requested, friendly advice and counsel to the beginner, kindly assistance and cooperation for the broadcast listener; these are marks of the amateur spirit.

The Amateur is Balanced. Radio is his hobby. He never allows it to interfere with any of the duties he owes to his community. His knowledge and his station are always ready for the service of his country and his community.

F. E. HANDY,
Communications Manager.

THE AMATEUR'S CODE

The Amateur is Gentlemanly. He never knowingly uses the air for his own amusement in such a way as to lessen the pleasure of others. He abides by the pledges given by the A.R.R.L. in his behalf to the public and the Government.

The Amateur is Loyal. He owes his amateur radio to the American Radio Relay League, and he offers it his unswerving loyalty.

The Amateur is Progressive. He keeps his station abreast of science. It is built well and efficiently. His operating practice is clean and regular.

The Amateur is Friendly. Slow and patient sending when requested, friendly advice and counsel to the beginner, kind assistance and cooperation for the broadcast listener; these are marks of the amateur spirit.

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THE A.R.R.L. FIELD ORGANIZATION

For the use of your station, the following table of prefixes is given.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Description</th>
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<tr>
<td>A</td>
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<td>M</td>
<td>Midwest</td>
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<tr>
<td>S</td>
<td>Southern</td>
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I—OPERATING PRACTICE

Listen carefully for several minutes before you use the transmitted signal of what stations are working. This will help in working stations in the desired direction. Try to operate intelligently on all occasions.

Hams who do not raise DX stations readily may find that their sending is poor, their calls ill-timed or jargonistic, and that the message is hard to understand. If you see DX stations sending in your desired direction, you may call them by using the signal CQ (short for call the station). This will indicate to others that you are through with the station called and interested in making contact with other stations. AR (end of transmission) shall be used at the end of messages during communication and also at the end of a call, indicating when so used that communication is established.

Stations to once or twice. If a station sends test signals to adjust the transmitter or at the request of another station to permit the latter to adjust its receiving apparatus, the signals must be composed of a series of Vs in which the call signal of the transmitting station shall appear at frequent intervals.

5. When a station receives a call without being certain that the call is intended for it, it shall not reply until the call has been repeated. For example, if a station receives a call but is uncertain of the call signal of the sending station, it shall answer using the signal: - - - - - - - (?) instead of the call signal of the latter station.

QRZ? may also be used since it means, "By whom am I being called?" Note that QRZ is not used to replace CQ.

BREAK-IN

Useless calling and unnecessary transmission during periods of heavy QRM can be prevented through intelligent use of break-in. Long calls, for example, are inexcusable, inconvenient and unnecessary. Every transmitter should be so arranged that by lifting the key (and connecting 'phones to the receiver if these are cut off during transmission) the operator can ascertain if the station called is replying. Brief calls, which are always preferable, are more effective and save time. Each call should be brief and to the point, and a station should listen for replies constituent intelligent operating, devoid of useless effort.

During c.w. transmissions insert a "BK" and pause briefly at intervals. This makes it possible for the other operator to stop sending, insert a brief message, and to call these stations.

POSTAL CALLS

Effective, efficient, enjoyable amateur work really requires but a simple switching arrangement in your station to cut off the power and switch 'phones from monitor to receiver.

GETTING FILLS

Sometimes parts of a message are not received correctly. In that case the transmitter may call the station to get a few lost words. The good operator will ask for what fills he needs, separating the different sections of the message having missed words by using the break signal (--- --- ---) or a couple of dots (.. .. ..) between parts. Note the appropriate abbreviations for getting fills (see International Abbreviations, page 7 this book) and use them in preference to all other methods.

Accuracy is of first importance. Then speed in transmission and handling of radiograms must be considered. Very often, transmission at moderate speeds moves traffic more quickly than fast sending. A great deal depends on the proficiency and good judgment of the two operators concerned. Fast sending is helpful only when two fast operators work together.

Use R only when all is received correctly.

Do not accept or start incomplete messages. Omission of the fundamental parts of a message may keep a message from getting through to its destination. Good operators never guess at anything. When not sure of part of a message they ask for a repeat.

CODE PRACTICE SCHEDULES

Beginning amateurs are invited to drop a postal to Headquarters for the list of stations call schedules of code practice transmissions which will be sent without obligation, and which afford valuable practice after the first step in memorizing the code has been mastered. Where possible the address of the nearest affiliated radio club will also be given, so beginners may attend lectures, join code practice groups, and the like.

1959 kc.-band code practice lists for each season are usually ready early in the year for mid-November, following the fall re-organization of this column of this publication. A.R.L.—amateur service to help in increasing code proficiency.

SENDING SPEED—Adjust to radio conditions and operator-proficiency
To our A.R.R.L. members:

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It is suggested that members keep complete records of their individual activities. A complete log of experimental investigations or of traffic-handling is always valuable. Anything worth doing is worth recording.

Constructive criticism and suggestions are invited. Through full exchange of ideas between operators we can improve our service to others, thereby increasing the pleasure we ourselves derive from our chosen hobby.

League organization will benefit you only as you take part in it by your radio activity and contacts with your fellow amateurs, your Director, S.C.M., and Headquarters. The world is at your fingertips as you grasp key or microphone. But the value of amateur radio to you in new friendships, a widened circle of acquaintances, improved operating ability, technical education and enjoyment is just what you yourself make it. Success in communication increases with proficiency and operating experience. Strive to improve; let us set definite objectives for ourselves, operate with definite purpose and cooperate fully toward every constructive end.

F. E. HANDY,
Communications Manager.

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I—OPERATING PRACTICE

Listen carefully for several minutes before you use the transmit button. Have an idea of what stations are working. This will help in working stations in the desired direction. Try to operate intelligently on all occasions.

Hams who do not raise DX stations readily may find that their sending is poor, their calls ill-timed or judgment missing. It has been recommended that all stations to once or twice.

Clearing the air for the beginner is essential to avoid confusion. This is increased by the fact that the receiver of the calling station is not yet established. K (invitation to transmit) shall be used at the end of each transmission when answering a call, indicating when so used that communication is not yet established. SK (or VA) shall be used by each station when signing off, this followed by your own call signal, indicating the end of a call, or working another station, almost carrying the same significance of "go ahead." SK (or VA) shall be used by each station when raising stations with minimum time and trouble. The reason W/VE CQs do not raise DX is that the number of U. S. A. and Canadian hams is so great that it is always possible for a foreign station to find a large number of W/VE's calling, without wasting time on stations not definitely looking for this station.

CALLING AND SIGNING PRACTICE

1. The calling station shall make the call by transmitting, not more than three times the call signal of the station called and the word DE, followed by its own call signal sent not more than three times thus: VES9AL VE VE VL W1MK W1MK: is the call signal of the station called in the calling formula. The A.R. (the receiver being kept tuned to the frequency of the called station). The use of a break-in system is highly recommended to save time and reduce unnecessary interference to a minimum.

Stations desiring communication, without, however, knowing the names of the operating stations within range, may use the word DE: in place of the call signal of the station called. The directional CQ: To reduce the number of useless answers and lessen needless QRZ, every CQ call shall be made informative when possible. Stations desiring communication shall follow each transmission sent CQ by an indication of direction, direction, state, continent or the like. Stations desiring communication with amateur stations within the same country shall include the official prefix letters designating the country after each CQ. To differentiate domestic from foreign calls in which the directional CQ is used, the city, state, point of the compass, etc., shall be included. The third CQ shall precede the word DE and the thrice-repeated station call. The prefixes (Sec. III) may be used to identify a particular country. Examples follow. A United States station looking for any Canadian amateur station calls: CQ VE VE VE W1MK W1MK W1MK. A western station with traffic for the east coast when looking for an intermediate relay station calls: CQ CQ EAST DE W6CIS W6CIS W6CIS. A station with messages for points in Massachusetts calls: CQ CQ MASS DE W3QP W3QP W3QP.

2. Answering a call: Call three times (or less); send DE: sign off and after contact is established decrease the use of the call signals of both stations to once or twice.

3. Ending signals and sign off: The proper use of AR, R and SK ending signals is required of all Official Relay Stations. AR (end of transmission) shall be used at the end of messages during communication and also at the end of a call, indicating when so used that communication is not yet established. K (invitation to transmit) shall be used at the end of each transmission when answering a call, or working another station, almost carrying the same significance of "go ahead." SK (or VA) shall be used by each station when sending its own call signal once for identification purposes. SK (end of work) indicates to others that you are through with the station with which you are working. AR is not necessarily for distribution to others who wish to call. A very short CQ after sign off will clearly show you are in readiness for more OSCs.

4. If a station sends test signals to adjust the transmitting station, or at the request of another station to permit the latter to adjust its receiving apparatus, the signals must be composed of a series of V's in which the call signal of the transmitting station shall appear at frequent intervals.

5. When a station receives a call without being certain that the call is intended for it, it shall not reply until the call is repeated and is understood. If the call is received but is uncertain of the call signal of the sending station, it shall answer using the signal: QQ (7) instead of the call signal of this latter station.

QRZ? may also be used since it means, "By whom am I being called?" Note that QRZ is not used to replace CQ.

BREAK-IN

Useless calling and unnecessary transmission during periods of heavy QRM can be prevented through intelligent use of break-in. Long calls, for example, are inexcusable, inconsiderate and unnecessary. Every transmitter can be so arranged that by lifting the key (and connecting 'phones to the receiver if these are cut off during transmission) the operator can ascertain if the station called is listening. Brief calls with frequent short pauses to listen will increase the break-in operator's chances of hearing replies constitute intelligent operating, devoid of useless effort. During c.w. transmissions insert a "BK" and pause briefly at intervals. This makes it possible for the receiving operator to stop all or part of his transmissions, and to call those stations.

GETTING FILLS

Sometimes parts of a message are not received correctly. In that case the re-direction (AR) — is used between the last word received correctly and the first word received after the interruption. There is seldom any excuse for repeating the whole message to get a few lost words. The receiver will ask for what he needs to listen on the frequency of the sending station, and h.v. on, of course.) Break-in is usually simple to arrange. With break-in, ideas and messages to be transmitted can be pulled right through the holes in the QRM. Snappy, effective, enjoyable amateur work really requires a simple switching arrangement in your station, to cut off the power and switch 'phones from monitor to receiver.

SENDING SPEED — Adjust to radio conditions and operator-proficiency

1. 1750 kc.-band code practice lists for each season are used.

2. Accuracy is of first importance. Then speed in transmission and handling of radiograms must be considered. Very often, transmission at moderate speeds moves traffic more quickly than fast sending. A great deal depends on the proficiency and good judgment of the two operators concerned. Fast sending is helpful only when two fast operators work together.

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5. Use R only when all is received correctly. Do not accept or start incomplete messages. "Omission of the fundamental parts of a message may keep a message from getting through to its destination. Good operators never guess at anything. When not sure of part of a message they ask for a repeat. Use R only when all is received correctly. Do not accept or start incomplete messages. "Omission of the fundamental parts of a message may keep a message from getting through to its destination. Good operators never guess at anything. When not sure of part of a message they ask for a repeat.

CODE PRACTICE SCHEDULES

Beginning amateurs are invited to drop a postal to Headquarters for the list of stations and schedules of code practice transmissions which will be sent without obligation, and which afford valuable practice after the first step in mastering the code has been mastered. Where possible the addresses of the nearest W/VE's will be given, so beginners may attend lectures, join code practice groups, and the like.

1750 kc.-band code practice lists for each season are usually ready for distribution by mid-November, following the fall re-organization of this volunteer A.R.L.-amateur service to help in increasing code proficiency.
WORD LIST FOR ACCURATE TRANSMISSION

When sending messages containing radio calls or initials likely to be confused and where errors must be avoided, the calls or initials should be shown into short code words:

A—ABLE S—SAIL
B—BEL T—TARE
C—CAST U—UNIT
D—DOG V—VICE
E—EVE W—WAR
F—FOX X—XRAY
G—GEORGE Y—YOKY
H—HAY Z—ZED
I—IT IS
J—JUD
K—KEE
L—LOE
M—MRE
N—NAN
O—OBOE
P—PUP
Q—QUEEN
R—ROT
S—SUGAR
T—THOMAS
U—ULLEN
V—VICTOR
W—WILLIAM
X—XRAY
Y—YOUNG
Z—ZED

'TPHONE PROCEDURE

Amateur radiophone stations should use the International radiotelephone procedure which is part of the supplementary regulations to the International Radiotelephone Convention.

For spelling call signals, service abbreviations and words, such lists as just given should be used. The complete phonetic alphabet and the spelling formula is spoken twice by both the station called and the calling station. After contact is established it is spoken only once.

Examples of 'phone procedure in accordance with the International Radiotelephone Convention:

W5QL calls: "Hello W3JZ Philadelphia, hello W3JZ Philadelphia, W5QL Oklahoma City calling, W5QL Oklahoma City calling, message for you, message for you, come in please."

In handling traffic by voice, messages are repeated twice for accuracy, using the word list to spell names and prevent misunderstandings. The receiving station must repeat the message back in addition. Only when the sender confirms the repetition as correct can the message be regarded as handled.

RELAY PROCEDURE

Messages shall be relayed to the station nearest the location of the addressee and over the greatest distance permitting reliable communication. Messages that are not complete, in every respect shall not be accepted for relay. The city and station of Origin, the number, date, address, text and signature constitute a complete message. No abbreviations shall be substituted for the words in the text of a message. Delivering stations must be careful to insure that no confusing abbreviations are written into delivering stations. No abbreviations shall be substituted for the words in the text of a message. Delivering stations must be careful to insure that no confusing abbreviations are written into delivering stations.

Sending "words twice" is a practise to avoid. Use it only when expressly called for by the receiving operator when receiving conditions are poor. "QSX" is the signal when using this is necessary.

Messages shall be transmitted as many as three times at the request of the receiving operator. Failing to make a copy after two attempts, the receiving operator shall cancel the message (QTA). It is a simple matter to record the date and time of receiving and transmitting a message if a calendar and clock are kept handy in the station. If these data and the calls of the stations concerned are placed right on the message blank itself, there is never any question about the routing that cannot be answered by reference to the message file.

SCHEDULES

Traffic handling work can be advantageously carried on by arranging and keeping schedules. By arranging schedules using an accurate frequency meter and clock it has been shown many times that a maximum amount of business can be moved in a minimum of time and effort. The Communications Department urges every brass-pounder to write letters to reliable and regular stations heard asking if some schedules cannot be kept in communication with these stations. With a reliable schedule in operation it is possible to advertise the fact that messages for certain points can be put through with speed, accuracy and reliability. The traffic wire will have a value especially if you will arrange and keep a schedule in each direction from your station regularly a few times a week. Don't forget that Headquarters is interested in your results.

THE GENERAL TRAFFIC HOUR

The daily period, 6:30-8:00 p.m. (your local time) has been designated the "General Traffic Hour." All Official Relay Station appointees have been requested to keep this period for working general traffic, and all non-official stations are asked to keep schedules on established traffic routes. The General Traffic Hour is also used by the Western Union word -list. Station appointees are likewise requested to work general traffic during this period. In this manner operators who are unable to maintain regular schedules or whose operations are limited by power available on the air from 6:30-8:00 p.m. and clear their traffic through O.R.S. and T.L.S., who keep schedules on established traffic routes. Make use of this period so that delivery of traffic and dependability of service may be improved. Give your traffic to stations signing "ORS" or "T.L.S." QV QTC is the general call for the "traffic hour." Directional CQs will also be found useful during this period.

UNDERWRITERS RULES

The intent of these regulations is to minimize life and fire hazard. Also in certain sections of the country, insurance policies definitely state that no transmitters may be located on insured property without this first having been inspected by the Underwriters' laboratory and a suitable rider attached to the policy.

Antenna Construction: Antenna and counterpoise wires shall be kept well away from trolley feeders, and light and power wires of overhead lines, and from such circuits. Where proximity is unavoidable construction must be extra strong and durable to avoid sag and maintain clearance. The ground wire shall be 1/8 inch, copper clad steel. Where maximum need not exceed No. 8 B & S for soft drawn copper. All lead-ins must be copper or bronze not smaller than No. 10. Splices in ant. or c. p. span shall be soldered unless approved splicing devices are used.

Lightning protection: Adequate protection in the form of an arrestor or ground switch shall be provided. The ground conductor shall be at least as large as the lead-in, and in no case smaller than No. 14 B & S copper, bronze, or copper-clad steel. The ground wire need not have insulating covering a few feet mounted on insulators. It shall run in as straight a line as possible to a good permanent ground suitable for the purpose. The conductor shall be protected where exposed to mechanical injury. Where an OPERATING ground is used it shall be copper strip not less than 3/4" thick (copper, bronze or copper-clad steel) with girth at least 34 inch, such as No. 2, B & S or its equivalent, to a good permanent ground suitable for the purpose. Other permissible grounds, grounded steel frames of buildings, or other grounded metal work in the building, and artificial devices such as driven pipes, rods, plates, cones, etc. Gas piping shall not be used.

Wiring: Under the following conditions wiring may be done in the same conduit alongside cable, electrical metallic tubing, metal raceway, pull box, junction box, or cabinet. (1) Power supply wires are introduced solely for supplying power to equipment to which the other wires are connected. (2) Wires other than power wires that run in conduit, armored cable, electrical metallic tubing, metal raceway, pull box, junction box, or cabinet with power supply wires shall be kept separate and never used, or collectively in groups, by insulation at least equivalent to that on the power supply wires—or the two sets of wires are separated by a lead sheath or other continuous.
Before emergencies
Be ready, with really portable sets, and emergency power supply.
Overhaul and test periodically.
Give local officials and agencies your address; explain the availability of amateur radio facilities through your station in emergencies.

In emergency
Check station operating facilities; offer your services to all who may be able to use them; inform A.R.R.L. an emergency exists, if possible.
QRR is the official A.R.R.L. "land SOS," a distress call for emergency use only... for use only by a station asking assistance.
The KEY STATION in an emergency zone is the first and the supreme authority for priority and traffic routing in the early stages of emergency relief communications.
PRIORITY must be given messages in the general public interest (relief plans, re food, medicine necessities). Press reports and personal assurance messages can then be handled if practicable.
Co-operation is required of all amateurs. Don't clutter the air with useless Qs. The majority of amateurs must listen in; QRX; avoid QRM. Be ready to help; operate as intelligently as possible; co-operate by staying off the air while vital first information and relief measures are handled, if stations able to help as well as your station are on the job. (CQ STORM AREA is nothing but "more QRM").

After emergencies
Report to A.R.R.L. as soon as possible and as fully as possible so amateur radio can receive full credit. Amateur radio communication in 33 major disasters since 1919 has won glowing public tribute. Maintain this record.

II—Q code and other abbreviations

Readability and audibility
Readability is indicated by sending a figure (1 to 5) after the appropriate Q signal, to show progressive signal strength. QSA means, "The strength of your signals is...

The scale:
1—Hardly perceptible; unreadable.
2—Weak; readable now and then.
3—Fairly good; readable, but with difficulty.
4—Good; readable.
5—Very good; perfectly readable.

The R-system of indicating audibility is widely used by amateurs to supplement a report on the more important consideration of readability. The audibility, indicated by the above scales, is measured by local interference (QRM), atmospheres (QRN), receiver background, or a noisy operating room to such and extent that the signal is un抄iable, even though strong. The report on audibility is one concerned entirely with the strength of the signal without regard to other sounds in the "phones or room.

R1—Faint signals, just audible.
R2—Weak signals, barely audible.
R3—Weak signals, copiable (in absence of any difficulty).
R4—Fair signals, readable.
R5—Moderately strong signals.
R6—Strong signals.
R7—Good strong signals (such as copiable through interference).
R8—Very strong signals; can be heard several feet from phones.
R9—Extremely strong signals.

Some ham abbreviations

ABT About
ACN Again
AMP Ampere
ANI Any
AUSIE Australian amateur
BGL Broadcast listener
BD Bad
BI By
BKG Breaking
BN Been, all between
BFL Brass Pounders' League

Do YOU have a really portable set capable of operation on emergency power?
Given below are a number of Q signals whose meanings most often need to be expressed with brevity and clearness in amateur work. (Q abbreviations take the form of questions only when each is sent followed by a question mark.)

QAV Are you calling me? I am calling....
QRA What is the name of your station? The name of my station is....
QBB How far approximately are you from my station? The approximate distance between our stations is....(nautical miles) (or....kilometres).
QRG Will you indicate my exact frequency in kilocycles? Your frequency is....ke.
QRH Does my frequency vary? Your frequency varies.
QRI Is my note good? Your note varies.
QJQ Are you receiving me badly? Are my signals weak? I cannot receive you. Your signals are too weak.
QKR Are you receiving me well? Are my signals good? I receive you well. Your signals are good.
QRL Are you busy? I am busy (or busy with....)
QBM Are you being interfered with? I am interfered with.
QRN Are you troubled by atmospherics? I am being troubled by atmospherics.
QRO Must I increase power? Increase power.
QRP Must I decrease power? Decrease power.
QEQ Must I send faster? Send faster (....w.p.m.)
QRS Must I send more slowly? Send more slowly (....w.p.m.)
QRT Must I stop sending? Stop sending.
QRU Have you anything for me? I have nothing for you.
QRV Are you ready? I am ready.
QRW Must I advise....that you are calling him? Please advise....that I am calling him.
QRX Must I wait? When will you call me again? Wait until I have finished with....I will call you immediately (or at.....).
QRY By whom am I being called? You are being called by.....
QSA What is the strength of my signals (1 to 5)? The strength of your signals is....(1 to 6).
QSB Does the strength of my signals vary? The strength of your signals varies.
QSD Is my keying correct? Are my signals distinct? Your keying is incorrect; your signals are bad.
QSG Shall I send....telegrams (or one) at a time? Send....telegrams at a time.
QSH Must I send one telegram at a time, repeating it twice? Transmit one telegram at a time, repeating it twice.
QSK Shall I continue with the transmission of all my messages? Can you hear through my signals? Continue: I will interrupt you if necessary.
QSL Can you give me acknowledgment of receipt? I give you acknowledgment of receipt.
QSM Shall I repeat the last telegram I sent you? Repeat the last telegram you sent me.
QSN Can you receive me now? Must I continue to listen? I cannot receive you now. Continue to listen;
QSO Can you communicate with....directly (or through.....)? I can communicate with....directly (or through.....).
QSP Will you relay to....? I will relay to....
QSQ Must I send each word or group once only? Send each word or group once only.
QSV Shall I send a series of VVV....? Send a series of VVV.
QSW Will you send on....kcs etc. I will send on....kcs etc.
QTX Will you listen for....(call sign) on....kcs? I am listening for....(call sign) on....kcs.
QUX Must I change to....kilocycles without changing type of wave? Change to....kilocycles without changing type of wave.
QZQ Must I send each word or group twice? Send each word or group twice.
QTA Must I cancel nr....as if it had not been sent? Cancel nr....as if it had not been sent.
QTB Do you agree with my number of words? I do not agree with your number of words; I will repeat the first letter of each word and the first figure of each number.
QTC How many telegrams have you to send? I have....telegrams for you or....
QTH What is your position (location)? My location is...

QTR What is the time? The time is...

CQ is now specified for all “general” calls having no special or emergency significance. It should be noted that QST and QRR are now unassigned in the official international list.

Special abbreviations adopted by the A.R.L.L.:

QST General call message addressed to all amateurs and A.R.L.L. Members. This is in effect “CQ ARRL.”

QRR Official A.R.L.L. “Land SOS.” A distress call for emergency use only.

### STANDARD INTERNATIONAL ABBREVIATIONS

Some of the standard abbreviations prescribed by the Madrid Convention for all services follow:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Yes</td>
</tr>
<tr>
<td>N</td>
<td>No</td>
</tr>
<tr>
<td>W</td>
<td>Word(s)</td>
</tr>
<tr>
<td>AA</td>
<td>All after (used after a question mark)</td>
</tr>
<tr>
<td>AB</td>
<td>All before (similarly)</td>
</tr>
<tr>
<td>AL</td>
<td>All that has just been sent (similarly)</td>
</tr>
<tr>
<td>BN</td>
<td>All between (similarly)</td>
</tr>
<tr>
<td>BQ</td>
<td>Announcement of reply to a request for rectification</td>
</tr>
<tr>
<td>CL</td>
<td>Call signal to be used to ask repetition of a call signal</td>
</tr>
<tr>
<td>CS</td>
<td>Closing my station</td>
</tr>
<tr>
<td>GA</td>
<td>Grading (in Free sending)</td>
</tr>
<tr>
<td>JM</td>
<td>Minute(s) to indicate duration of a wait</td>
</tr>
<tr>
<td>NW</td>
<td>I resume transmission</td>
</tr>
<tr>
<td>OK</td>
<td>We are in agreement</td>
</tr>
<tr>
<td>RQ</td>
<td>Announcement of a request for rectification</td>
</tr>
<tr>
<td>WA</td>
<td>Do you agree</td>
</tr>
<tr>
<td>WA</td>
<td>Word after (to be used after a question mark to request a repetition)</td>
</tr>
<tr>
<td>WB</td>
<td>Word before (similarly)</td>
</tr>
<tr>
<td>ADR</td>
<td>Address (similarly)</td>
</tr>
<tr>
<td>PBL</td>
<td>Freqmble (similarly)</td>
</tr>
<tr>
<td>SIG</td>
<td>Signature (similarly)</td>
</tr>
<tr>
<td>TXT</td>
<td>Text (similarly)</td>
</tr>
<tr>
<td>YS</td>
<td>Atmospheres</td>
</tr>
<tr>
<td>YS</td>
<td>See your service advice</td>
</tr>
<tr>
<td>ABV</td>
<td>Use abbreviations</td>
</tr>
<tr>
<td>CFM</td>
<td>Confirm or I confirm</td>
</tr>
<tr>
<td>TTP</td>
<td>The punctuation counts</td>
</tr>
<tr>
<td>MS&amp;G</td>
<td>Prefix to radio telegram</td>
</tr>
<tr>
<td>REF</td>
<td>Refer to or referring to</td>
</tr>
<tr>
<td>RPT</td>
<td>Repeat or I repeat (to be used after a question mark to request a repetition)</td>
</tr>
<tr>
<td>SVC</td>
<td>Prefix to service message</td>
</tr>
<tr>
<td>TFC</td>
<td>Traffic</td>
</tr>
<tr>
<td>P</td>
<td>Indicator of private telegram in the mobile service (to be used as a prefix)</td>
</tr>
</tbody>
</table>

### NIL

I have nothing for you

### XXX XXX XXX DE

... urgent signal indicating message to follow regarding safety of mobile station or persons in sight therefrom (PAN is similarly used by aircraft); TTT TTT TTT DE, safety signal sent before meteorological warning messages and those concerning safety of navigation; SOS SOS SOS DE (to be used by distress signals only by mobile stations in grave danger when requesting assistance) MAYDAY is the radiophone distress call similarly used.

### III—INTERNATIONAL PREFIXES

A complete list of the prefixes assigned to different countries by the I.R.C. will help in identifying the nationality of all calls heard on the air. Nations are obliged to select some letters from their assignment to use as a prefix to amateur calls. The prefixes used by stations within the jurisdiction of the United States and Canada are as follows:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>United States (continental)</td>
</tr>
<tr>
<td>K</td>
<td>Porto Rico (attached to U. S. 4th district)</td>
</tr>
<tr>
<td>K4</td>
<td>Porto Rico (attached to U. S. 3rd district)</td>
</tr>
<tr>
<td>K5</td>
<td>Hawaii (attached to U. S. 8th district)</td>
</tr>
<tr>
<td>K7</td>
<td>Alaska (attached to U. S. 7th district)</td>
</tr>
<tr>
<td>KA</td>
<td>Philippine Islands (licensed by Philippine Government)</td>
</tr>
<tr>
<td>VE</td>
<td>Canada</td>
</tr>
</tbody>
</table>

- The procedure used by an Alaskan amateur in calling a station in the continental United States may be made most clear by an example. W7TX W7TX W7TX DE K7AER K7AER K7AER AR. Note that the prefix W or K is always part of the call signal itself.

A full list of countries follows with information from the international table of allocation of call signs from the Madrid Convention to help in identifying all calls.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAA</td>
<td>Chile</td>
</tr>
<tr>
<td>CFA</td>
<td>Canada</td>
</tr>
<tr>
<td>CLA</td>
<td>Cuba</td>
</tr>
<tr>
<td>CNA</td>
<td>Cuba</td>
</tr>
<tr>
<td>COA</td>
<td>Cuba</td>
</tr>
<tr>
<td>CPA</td>
<td>Bolivia</td>
</tr>
<tr>
<td>CQA</td>
<td>Portugal</td>
</tr>
<tr>
<td>CCA</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>CVA</td>
<td>Uruguay</td>
</tr>
<tr>
<td>CYA</td>
<td>Canada</td>
</tr>
<tr>
<td>D</td>
<td>Germany</td>
</tr>
<tr>
<td>EAA</td>
<td>Spain</td>
</tr>
<tr>
<td>ELA</td>
<td>Liberia</td>
</tr>
<tr>
<td>EMA</td>
<td>Greece</td>
</tr>
<tr>
<td>EMA</td>
<td>Portugal</td>
</tr>
<tr>
<td>EZA</td>
<td>Ethiopia (Abyssinia)</td>
</tr>
<tr>
<td>EZA</td>
<td>Territory of the Saar</td>
</tr>
<tr>
<td>F</td>
<td>France</td>
</tr>
<tr>
<td>G</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>HAA</td>
<td>Hungary</td>
</tr>
<tr>
<td>HBA</td>
<td>Switzerland</td>
</tr>
<tr>
<td>HCA</td>
<td>Haiti</td>
</tr>
<tr>
<td>HHA</td>
<td>Dominican Republic</td>
</tr>
<tr>
<td>HHA</td>
<td>Republic of Panama</td>
</tr>
<tr>
<td>HHA</td>
<td>Honduras</td>
</tr>
<tr>
<td>HVA</td>
<td>Vatican City</td>
</tr>
<tr>
<td>HZA</td>
<td>Belgium</td>
</tr>
<tr>
<td>J</td>
<td>Japan</td>
</tr>
<tr>
<td>K</td>
<td>United States of America</td>
</tr>
<tr>
<td>LAA</td>
<td>Norway</td>
</tr>
<tr>
<td>LAA</td>
<td>Argentina</td>
</tr>
<tr>
<td>LAA</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>LAA</td>
<td>Lithuania</td>
</tr>
<tr>
<td>LZZ</td>
<td>Bulgaria</td>
</tr>
<tr>
<td>M</td>
<td>Great Britain</td>
</tr>
<tr>
<td>OAA</td>
<td>Peru</td>
</tr>
<tr>
<td>OEA</td>
<td>Germany</td>
</tr>
<tr>
<td>OEA</td>
<td>Finland</td>
</tr>
<tr>
<td>OOA</td>
<td>Belgium</td>
</tr>
<tr>
<td>OAA</td>
<td>Denmark</td>
</tr>
<tr>
<td>PAA</td>
<td>Mozambique</td>
</tr>
<tr>
<td>PAA</td>
<td>Curacao</td>
</tr>
<tr>
<td>PAA</td>
<td>Cote d’Ivoire (Ivory Coast)</td>
</tr>
<tr>
<td>PAA</td>
<td>United States of America</td>
</tr>
<tr>
<td>PAA</td>
<td>United States of America</td>
</tr>
<tr>
<td>PAA</td>
<td>Soviet Socialist Republic</td>
</tr>
<tr>
<td>PAA</td>
<td>Morocco</td>
</tr>
<tr>
<td>PAA</td>
<td>Costa Rica</td>
</tr>
</tbody>
</table>

Official Relay Stations often sign "ORS." It identifies them as "reliables." It moves traffic.
TKA-TXZ France and colonies and protectorates (F)
U Union of Soviet Socialist Republics (AU-EU)
VAA-VGZ Canada
VHA-VMZ Australia
VOA-VOZ British colonies and protectorates
VPA-VSZ British colonies and protectorates:

- Fiji, Ellice Islands, Zanzibar
- Bahamas
- British Honduras, Trinidad
- Jamaica
- Barbados
- Bermuda
- Fanning Island
- Northern Rhodesia
- Tanganyika
- Kenya Colony
- Uganda
- British East Africa
- Malaya (Straits Settlements)

VTA-WVZ British India
VW United States of America

YAA-YCZ Mexico
YHA-YCZ China
YSA-YCZ British India
YFA-YBCZ Afghanistan
YFA-YBCZ South Russia
YIA-YCZ Iraq
YLA-YCZ New Hebrides
YLA-YLZ Laos
YMA-YCZ Nicaragua
YOA-YRTZ Roumania
YOA-YRTZ Salvador
YTA-YUZ Jugo-Slavia
YWA-YZZ Venezuela
YZA-ZA2Z Argentina
ZAA-ZA2Z British colonies and protectorates:

- Transjordan
- Palestine
- Nigeria
- Southern Rhodesia
- New Zealand
- Cook Islands
- New Zealand proper
- British Samoa
- Japan
- British colonies and protectorates:

- Transjordan
- Palestine
- Nigeria
- Southern Rhodesia
- New Zealand
- Cook Islands
- New Zealand proper
- British Samoa
- Japan

A number of Moroccan amateurs use the unofficial prefix CN, although the French government has decreed that CN must be used by licensed stations.

Changes in the Table of Distribution of Call Signs made at the Madrid convention, and incorporated in this list, will cause changes to be made in the prefixes used by a large number of countries. At the time of going to press no official information concerning these changes, which have not in all cases been officially notified, is available. For this reason, the old prefixes used under the Washington convention are shown.

Improperly assigned by Mexico; it should have two letters to distinguish it from China.

A few Chinese amateurs, on the contrary, use the X-prefix; most of them still use AC, an heritage from the old I.A.R.U. intermediates.

IV—MESSAGES

Station owners may originate traffic of any kind going to any part of the United States, Hawaii, Porto Rico, Alaska, or the Philippines. Canadian messages may be handled under certain restrictions. Important traffic in emergencies or messages for expeditions for delivery in Canada must be put on a land wire by the U.S. amateur station handling. International regulations prohibit the handling of messages to the majority of foreign countries. Messages relating to experiments and personal remarks of such unimportance that recourse to the public telegraph service would be out of the question may be handled; but third party messages only under special arrangements between U. S. A. and other governments, and only to the extent agreed upon by the contracting governments. Domestically, within the U.S.A. and possessions, any kind of traffic may be handled as long as no form of compensation is accepted for the operation of an amateur station.

"Handling" a message always includes the transmission and receipt of radio acknowledgement (QSL of same, and delivery of date, time, and station call on the traffic, as handled, for purposes of record. All messages should be handled in standard A.R.R.L. form.

Messages may be accepted from friends or acquaintances or sent in an emergency or for delivery in the cases tabulated below; but third party messages only under certain restrictions. Important traffic in emergencies or messages for expeditions for delivery in Canada may be handled in complete form as possible before transmitting them. Incomplete messages should not be accepted. As messages are often carried through several countries before arriving at their destination, no abbreviations should be used in the text as mistakes are bound to happen when the text is shortened in this manner. To people not acquainted with radio abbreviations, messages written in shortened form are meaningless. Delivering stations must be careful to see that messages are written out fully.

Above all, the operator will never make changes or alterations in the texts or other portions of messages passing through his hands. However slight or however desirable such changes may seem, the changing of a message without proper authority or without the knowledge of the originator of the message may be considered the "unpardonable sin." The proper thing to do is to notify the party filing the message or the originating station of your observations, secure permission from the proper source for making the change by sending a "service message" or by wire. If the case seems urgent, the traffic should not be delayed but should be delivered or forwarded with appropriate notification or service accompanying it.

Several radiograms may be transmitted in series with the sentiment of the station which is to receive them. As a general rule, long radiograms shall be transmitted in sections of approximately fifty words each, ending with the hyphen - ( - ) meaning, "Have you received the message correctly thus far?"

A file of messages handled shall be kept, this file subject to call by the Section Manager at any time at his discretion. Only messages which can be produced shall be counted in the monthly reports, and these under the A.R.R.L. provisions for message-counting.

Messages may be worded in clear language or in secret language. Secret language may be either code or cipher language. A plain language message gives an intelligible meaning in one of the languages authorized for international telegraph work. Each nation is to transmit or receive in plain-language messages only. A plain-language message has its regular dictionary meaning.

**WORD COUNT**

All ordinary messages are plain-language messages. Every 15 characters or fraction thereof counts as one word. Groups of 5 numerals (or less) also count as one word. (A fraction bar (DN) counts as one character.)

**Examples (plain language):**

- Compensated ... 1 word
- Radio ... 2 words
- Telegraphed ... 2 words
- 1 word
- 2 words
- 71% 2 words
- 2 words
- 1 word
- 2 words
- 2 words
- 2 words
- 2 words
- 1 word
- 2 words
- 715952
- 2 words

**MESSAGE FORM**

Every message shall contain the following parts:

- City of origin
- Station of origin
- City of destination
- Station of destination
- Date
- Signature

(a) The "city of origin" refers to the name of the city in which the message was filed. If a message is filed at the League Headquarters station by someone in Hartford the text might read, "Hr was filed at W1MK, 105 East Main Street, Hartford, Conn."

(b) The "station of origin" refers to the call of the station at which the message was filed and this should be included so that it may be sent back to the originating station if something interferes with the prompt handling of delivery of a message. In the above example, changed to read, W1MK is the station of origin.

(c) Every transmitted message shall bear a "number." Beginning on the first day of each calendar month, each message shall be given a number beginning at Nr. 1. Keep a sheet with a consecutive number of pages beginning at Nr. 1. Keep a sheet with a consecutive number of pages beginning at Nr. 1, and number as follows: 1, 2, 3, and so on, until all messages have been numbered. When you see them and scratch off the number from the number sheet. Such a system will keep things straight and be convenient for reference to messages originated.

- Refuse Traffic When Unable to Handle Properly.

- Never accept and then mishandle a message.
COUNTING "MESSAGES"

A message received in person, by telephone, telegraph, or mail which is filed at your station and transmitted by radio in proper form counts as one message originated. A message received by radio and sent forward by radio counts as two messages relayed, one when received and again one when sent forward. All messages counted must be handled within a 48 hour (maximum) period to count with but one exception. Messages for all countries except North America may be held on half the length of time it would take them to reach their destination by mail if necessary to eliminate needless overlapping (passing about of long distance traffic). Such abbreviations as the following might be used from the telephone book and the city directory, a service message: UR, your; VR, your; NR, number; SIG, signed; EML, undelivered; FSE, please; GBA, give better address.

TRUNK LINES

A.R.R.L. Trunk Lines are organized each active radio season to assist in organized traffic movements East-West and North-South by radio telephone and routes. Get in touch with your Route Manager if interested.

V.—A.R.R.L. FIELD ORGANIZATION

A.R.R.L. TERRITORIAL DIVISIONS

For the purpose of organization, the A.R.R.L. divides the United States and Canada into divisions as follows. These Divisions are further sub-divided into "Sections" for operating purposes.

ATLANTIC DIVISION: Delaware, District of Columbia, Maryland, Pennsylvania, that section of New Jersey within the Third Federal Inspection District, and that section of New York within the Eighth Federal Inspection District.

CENTRAL DIVISION: Illinois, Indiana, Kentucky, Michigan, Ohio and Wisconsin.

DAKOTA DIVISION: Minnesota, North Dakota and South Dakota.

DELTA DIVISION: Arkansas, Louisiana, Mississippi and Tennessee.

HUDSON DIVISION: The entire Second Federal Inspection District, including certain counties of New Jersey and New York States.

MIDWEST DIVISION: Iowa, Kansas, Missouri and Nebraska.

NEW ENGLAND DIVISION: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.


PACIFIC DIVISION: Arizona, California, Nevada, Philippine Islands and the Territory of Hawaii.

ROANOKE DIVISION: North Carolina, Virginia and West Virginia.

ROCKY MOUNTAIN DIVISION: Colorado, Utah and Wyoming.

SOUTHEASTERN DIVISION: Alabama, Florida, Georgia, South Carolina and the Island of Porto Rico, the Republic of Cuba and the Isle of Pines.

SOUTHWEST GULF DIVISION: New Mexico, Oklahoma and Texas.


ONTARIO DIVISION: Province of Ontario.

QUEBEC DIVISION: Province of Quebec.

VANALTA DIVISION: Provinces of Alberta and British Columbia and Yukon Territory.

PRAIRIE DIVISION: Provinces of Manitoba and Saskatchewan and New West Territories.

Each Division elects its Director to represent it on the A.R.R.L. Board of Directors. The Board determines the policies of the League which are carried out by paid officers acting according to the instructions of the Board. When the Board is not in session, the five officers of the League, constituting an Executive Committee, can act for the Board, under certain restrictions, of course.

Use Directional CQ’s (to promote efficient, intelligent relaying)
These A.R.R.L. Divisions are subdivided into Sections of operating territory. Section officials are elected by the membership in a way similar to the Directors (by mail balloting). Each R.L. member must sign a petition for nomination of a candidate. The Constitution and By-Laws of the A.R.R.L. (copies available from Headquarters) explains in detail the procedure followed in selecting Directors, Section Managers, and other officers.

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This Section Manager is responsible for the co-operation of active station-owners in A.R.R.L. activities, contests, traffic work, etc., and is authorized to devise and develop special plans in the furtherance of Section interests and esprit de corps. The Section Manager must in his Department supplies provided for making appointments and supervising the work in his section. He may receive an Honorarium for his expenses and for reimbursement. Members are entitled to wear the distinctive A.R.R.L. pin with red background, similar to the regular black-and-gold A.R.L. membership pin.

7. The S.C.M. may requisition necessary Communications Department supplies provided for making appointments and supervising the work in his section. He may receive an Honorarium for his expenses and for reimbursement. Members are entitled to wear the distinctive A.R.R.L. pin with red background, similar to the regular black-and-gold A.R.L. membership pin.

8. The S.C.M. shall render a monthly report or activity summary to Headquarters. It shall be made up from all reports from all active stations, whether members or not, and includes comprehensive information on all reports. The body of the report will cover all the larger towns and cities as well as possible to encourage and improve local traffic figures.

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The S.C.M. makes cancellations. The S.C.M. must in his duties he is responsible to the S.C.M.

1. The Section Manager shall appoint Route Managers, Official Observers, Official Broadcasting Stations, Official Relay Stations, Official Phone Stations, and individuals and/or stations for specific work in accordance with the qualifications and the duties for such appointments when necessary. The S.C.M. must in his duties he is responsible to the S.C.M.

2. The S.C.M. is responsible for the co-operation of active station-owners in A.R.R.L. activities, contests, traffic work, etc., and is authorized to devise and develop special plans in the furtherance of Section interests and esprit de corps.

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The notification service to amateurs is designed as a friendly, mutual basis upon which they convey and receive government restrictions which might be provoked by careless or intentional disregard of regulations by individuals who might thus jeopardize the enjoyment of all amateurs. While it is possible, by checking as just outlined, observers also embrace the opportunity to report flagrant violations of good amateur practices, including improper procedure, poor spacing, "a.c." notes, etc.; all to the end that the effectiveness of stations may be improved, and high standards of amateur operating maintained.

THE OFFICIAL BROADCASTING STATION

Each Official Broadcasting Station appointee receives information on timely subjects from Headquarters each week or at the other intervals to be put on the air at various stations throughout the country following receipt of the information. Section Managers shall give preference to stations having available considerable amounts of power, or stations whose operators are especially qualified to handle information on any timely subject from Headquarters each week or at the other intervals to be put on the air at various stations throughout the country following receipt of the information. Section Managers shall give preference to stations having available considerable amounts of power, or stations whose operators are especially qualified to give good service in view of the geographical location, the frequency bands in use, or the timely choice of schedules or frequency with which schedules can be kept. Consideration shall also be given to the ability of such stations, especially at great distances from Headquarters to copy the information received and to disseminate it to as many as possible by mail as sent by Headquarters station WLMK.

Applicants for this appointment must submit their qualifications to the Section Manager with the proposed dates, times and frequencies for transmission, the required power, and the call signs of the stations desiring the broadcast. In deciding on the times of transmission schedules preference should be given to those times when the largest number of amateurs are listening, that is, the hours between 6 a.m. and 6 p.m., and midnight. Section Managers are instructed to cancel the appointments of stations not adhering to the schedules. The O.B. appointments are renewable each three months, except that the O.B. appointee may not return to the appointment for periods when periodic surveys of the broadcasting system are made.

BASIC A.R.R.L. APPOINTMENTS

Whatever your qualifications, we suggest that you get into the game, cooperate with your Section Manager by sending him a monthly report of the particular work you are doing. In some department of the A.R.R.L.'s field organization, there is always a job for a volunteer who has a station. The Communications Department organization exists to increase individual enjoyment in amateur radio work, and we extend a cordial invitation to every amateur to participate fully in the activities, and to apply to the S.C.M. for O.R.S. or O.P.S. appointment as soon as sufficiently experienced in ham work.

Both Official Relay Stations and Official Phone Station appointees receive an appointment certificate to be displayed in the station, a quarterly bulletin from Headquarters containing a folder of operating cards on which to turn in the monthly reports to the Section Communications Manager.

Appointment certificates (O.R.S. and/or O.P.S.) must be returned to Section Managers annually for proper endorsement. These certificates can be renewed only once. Any applicant who fails to qualify may again apply for appointment after three months have elapsed. In making application, forms indicating knowledge of recommended procedure must be filed with the S.C.M. on blanks available from each S.C.M. office. New applicants must communicate by radio with a Section official and receive approval of this official or his representative. Operators with personal responsibility and high standards of operating are recognized as O.R.S. and O.P.S., and appointed to these important basic positions. A.R.R.L. operators are given the highest standards of operating because they have the qualifications. As a result of operating appointments carefully supervised and given out to the best stations having the experience in operating matters, the present effective field organization, in successful operation for many years is maintained.

It is the duty of Official Relay Station and Official Phone Station appointees (a) to report activities monthly to the S.C.M., whether or not a special reporting form is available for the reporting stations always on the air, i.e., in readiness for operation and in actual service; (c) to follow A.R.R.L. operating practices; (d) to take part in the activities of the League whenever possible; (e) to hold message files three months for any call of the S.C.M. or licensing authority. Reports are due on the 10th of each month for mainland United States stations.

O.R.S. and O.P.S. appointments are not transferable from one station-owner to another. When an appointee moves, the appointment may be transferred from one Section to another by arranging the transfer from a Section Manager to a person who notifies the S.C.M. of cancellation and re-appointment. Ap-pointments may be cancelled by S.C.M. whenever three consecutive reports are missed, and evidence of regular work and reports for a period of one year is not shown. If such a station may be reinstated. "Earned reinstatements" are made within one year without filing new application.

The application for O.R.S. or O.P.S. appointment requires the following:

1. O.S.P. use circuit precautions that avoid frequency modulation and overmodulation, and employ indicators in perfect working order; transmit messages carefully.

2. O.P.S. cooperate with each other, and with all amateurs, regardless of power, or frequency. No "monopolization of a frequency channel by an individual operator" is permissible, except in the case of emergency conditions at a station in an isolated area.

3. Major adjustment of transmitters is completed outside, and outside operating hours. (There should be no needless music playing under the guise of legitimate testing. This increases QRM and constitutes an exhibition of selfishness. Such tests should be performed using dummy antennas, and radio stations are thus connected for bona fide voice communication.

4. O.S.P. endeavor at all times to make the operation of their stations an example to be looked up to by other amateurs; they take care that traffic is handled these stations observe the same high standards of responsible operating; they will therefore all times cooperate with S.C.M. and R.M.s by prompt dispatch or delivery of any traffic that is sent via the phone bands. Stations holding O.S.P. appointment with the course, insist on complete addresses, and give city of origin number and number each message carefully in accordance with A.R.R.L. procedure.

The application for O.S.P. appointment does not require a 15-w.p.m code speed such as prescribed in the test for O.R.S. applicants. Applicants must have had at least one year of amateur operating experience. A description of the station for which appointment is sought must be given the S.C.M. If the arrangement meets modern technique, if the operating experience is adequate, and if the adjustment of the station is approved by inspection, or test over the air, is also approved, then the O.S.P. appointment may be granted by the S.C.M. and Headquarters so notified at the same time the appointee receives his certificate. The station signal, and its operating efficiency must meet satisfactory standards. Appointments may be cancelled for inactivity, or failure to meet prescribed qualifications (like all other A.R.R.L. appointments) to make the O.S.P. appointment really stand for something worth while to all voice-operated amateur stations.

A Phone Route Manager, or Phone Activities Manager, may assist the S.C.M. in necessary station inspection or test of the-air operation of a station.

This appointment is for every live-line operator of a first class phone, working any phone band. Like all other C.D. appointments, one makes application to the Section Communications Manager for O.P.S. appointment, and if the application is approved, he receives the necessary application forms. A certificate of appointment is issued by the S.C.M. if and when an ap-
appointment is granted. Appointments are issued good for one year, but must be kept in effect by activity and an
annual endorsement by the S.C.M.
If you have a year or more of radiotelephone operating experience behind you, and a well adjusted voice station of
modern technique on the air, this is a cordial invitation to you to seek in the Section with your Section Manager. Tell
him you are interested in the Official Phone Station appoint-
ment; ask him for application forms.

THE OFFICIAL RELAY STATION APPOINTMENT

Every radio telegraphing amateur interested in traffic work who holds or desires to hold operations organization activities who can meet the qualifications is eligible for appointment of his station as A.R.R.L. Official Relay Station. Brass
senders handle traffic because they enjoy such work. There is the satisfaction of spending time on something; opportunity to demonstrate operating proficiency at the same time this is maintained and increased. The integrity of the operator who handles traffic in his community and is enhanced by his ability, and the
readiness of his station and schedules to function in the community interest in case of emergency. Operators with good signals and personal responsibility to their communications handle, seek and hold Official Relay Station appointment. Traffic-awareness is often the sign by which mature and experienced amateurs may be distinguisd from newcomers to the ranks of hamdon.

1. O.R.S. must be able to transmit and receive at least 15 words per minute. Operatives must be capable of making
speed pin except that it has a blue instead of a black back
ground.
2. O.R.S. appointees are entitled to wear the distinctive blue A.R.R.L. pin which is similar to the regular member-
ship pin except that it has a blue instead of a black back
ground.
3. Appointees must keep a transmitter and receiver in
operative condition at all times. Consistent activity is re-
quired to keep appointments in effect and must be demon-
strated to the S.C.M.

O.R.S. must display a high degree of interest in relaying traffic activities, nets, schedules, trunk lines, and
such.

O.R.S. are the “minute men” of amateur radio—always
organized, reporting, active, and holding their equipment in
top-tip condition ready for instant service on any com-
munication. A.R.R.L. Official Relay Station appoint-
tees, as the name implies, stations that can be depended on absolutely to see a hard job through. They are ready for every opportunity of service or public or amateur radio that may come their way, whether it be an emergency, test, experiment, or just in the line of ordinary operation. They deliver and relay promptly all traffic that
comes into their station, and are highly esteemed because
since it puts the station owner in a special position as respects the opportunities of service. The appointment cer-
trification plus the line in the badge tells the operators of an amateur station has “arrived” in the dependable class.

O.R.S. appointees are entitled to wear the distinctive blue A.R.R.L. pin which is similar to the regular member-
ship pin except that it has a blue instead of a black back
ground.

To secure an appointment as Official Relay Station is quite
quicker if you have had qualifications and a little experience. After building the station, gaining some code speed, and reporting your activities to the S.C.M. as suggested, ask the S.C.M. to furnish you with an applica-
tion for appointment as Official Relay Station. The S.C.M. will be glad to send you the necessary forms to be filled out and returned to him, and to give you advice on procedure. And it may be that you will be willing to accept a certain amount of “personal responsibility” in regard to regular reporting each month, and in sending regular reports in form. Reporting and delivering a number of messages regularly through the station appointment is one made with advantage to yourself. Fill out an application form as soon as you can qualify!

AN INVITATION

Any A.R.R.L. member who has a station and operator's license and wants to “do things” with his equipment will find it easy and very much worth while to earn an ap-
pointment; ask him for application forms. As has been explained, knowledge and use of cer-
tain fundamentals of operating procedure are prerequisite to appointment to these important basic posts in our field
organization. Study procedure. Put into practice the
things that you read. Originate and relay some traffic regu-
larly. Keep a few schedules with other amateurs. Regularly. Keep a few schedules with other amateurs. Attempt to
to your S.C.M. whose address is given on page 5, any
QST, to prove your qualifications and interest. Regardless of whether you have yet applied for appointment, a postal to the S.C.M. will give him information to use in his report for QST and boost the standing of your station and Section.

“Being active” in amateur work should not mean sac-
ificing all the varied interests we have as individuals. A few hours daily spent in planned amateur radio work, a postal to our S.C.M., once each month about our activities, and including traffic handled, gives us credit for all we at-
tempts contact with and all we do for fellow hams through QST, and adds the touch that makes the difference be-
tween organized ham radio and merely haphazard un-
chronized work. All reports summed up, make the record for Section, and let our “exclusive” mailing list, the O.R.S. appointees first and from our “exclusive” mailing list, pick the men for the job. The key stations in one lo-
cal or in several Sections do as a whole of North Amer-
ica (as the scope of the specific undertaking may require) may be reached quickly by bulletin or letter. A most effec-
tive amateur organization is working on this basis. The

VI—RADIO COMMUNICATION LAWS

The Radio Act of 1927 provides for the licensing of radio operators by the Secretary of Commerce. Operators' li-
censes may be suspended by the Secretary of Commerce for a period of not more than two years upon satisfactory proof that the licensee (a) has violated any provisions of any Act or treaty (or regulations made under such Act or treaty) binding on the United States which the Secre-
tary of Commerce or the Commission is authorized by this Act to administer; or . . . (d) has transmitted superfluous
radio communications or signals or radio communications containing profane or obscene words or language; or (e) has willfully or maliciously interfered with any other radio communications or signals.

No person, firm, company or corporation within the jurisdiction of the United States shall knowingly utter or transmit, or cause to be uttered or transmitted, any false or fraudulent signals of distress, or communication relat-
ing thereto.

All persons who may have knowledge of the text or simply of the existence of radio telegrams, information, or any
information whatever, obtained by means of the radio
service, shall be bound to maintain and insure the secrecy of such matters as part of its regular routine; it is one essential
of contact with and news from fellow hams through QST, and adds the touch that makes the difference be-
tween organized ham radio and merely haphazard un-
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service, shall be bound to maintain and insure the secrecy of such matters as part of its regular routine; it is one essential
of contact with and news from fellow hams through QST, and adds the touch that makes the difference be-
of the various communicating centers over which the radio station is located, or to the master of a ship under whom he is serving, . . . . and no person not being authorized by the sender shall intercept any message or divulge or publish the contents, subject the purpose, effect or meaning of such intercepted message to any person; and no person not being entitled thereto shall have any information as to any modification or the use and same or any information contained therein for his own benefit or for the benefit of another not entitled thereto.

Provided, That this section shall not apply to the receiving, divulging, publishing, or utilizing the contents of any radio communication broadcasted or transmitted by amateurs for the use of the general public or relating to ships in distress.

A penalty of $500 fine for each and every offense is stipulated (in addition to other penalties provided by law) for conviction of a violation of any provision of the Radio Act or regulations made under that Act or of the provisions of treaties ratified and adhered to by the United States.

FEDERAL RADIO COMMISSION

Rules and Regulations Governing Amateur Radio Stations

1. Each application for an instrument of authorization shall be made in writing on the appropriate form prescribed by the Commission for the purpose. Separate application shall be filed for each instrument of authorization. The required forms except as provided in paragraph 23 shall be obtained from the Federal Radio Commission or from the office of any inspector. For a list of such offices and related geographical districts, see paragraph 20.

2. Each application for amateur facilities shall be filed in accordance with the following instructions:

(a) Applications for amateur station and or operators' licenses from applicants residing within 125 miles of Washington, D. C., a radio district office of the Commission, or an examining city (see par. 20): One copy to the Inspector-in-Charge of the Radio District in which the applicant resides.

(b) Applications for amateur station and or operators' licenses from applicants residing more than 125 miles from Washington, D. C., a radio district office of the Commission, or an examining city (see par. 20): One copy to the Inspector-in-Charge of the Radio District in which the applicant resides.

14. Each application for new license, where a construction permit is not prerequisite thereto, shall be filed at least 60 days prior to the contemplated operation of the station.

16. Unless otherwise directed by the Commission, each application for renewal of license shall be filed at least 60 days prior to the expiration date of the license sought to be renewed.

20. The transfer of a radio station license, or the rights granted thereunder, without consent of the Commission shall be sufficient ground for the revocation of such license or denial of any application for its renewal. Amateur station licenses and call signals are not transferable.

22. The Commission may grant special authority to the licensee of an existing station authorizing the operation of such station for a limited time in a manner, to an extent, or for a service other or beyond that authorized in the license.

24. Any licensee receiving official notice of a violation of Federal laws, the Commission's rules and regulations, or the terms and conditions of a license, shall within three days from such receipt send a written reply direct to the Federal Radio Commission at Washington, D. C.

The answer to each notice shall be complete in itself and shall not be abbreviated by reference to other communications or answers to other notices. If the notice relates to some violation that may be due to the physical or electrical characteristics of the transmitting apparatus, the answer shall state fully what steps, if any, are taken to prevent future violations, and if any new apparatus is to be installed, the name and license number of the new apparatus, the name and license number of the operator in charge shall be given.

26. If the notice of violation relates to some lack of attention or improper operation of the transmitter, the name and license number of the operator in charge shall be given.

27. All station licenses will be issued so as to expire at the hour of 3 a.m. the last day of the expiration date of the license except as provided in paragraph 28.

(a) The licenses for amateur stations shall be issued for a license period of three years from the date of expiration of such license or from the date of granting a new license or modification of a license.

(b) The station licenses for stations authorized by these regulations, if available, will be assigned in regular order and requests for particular calls will not be considered.

(c) Where a license is surrendered or cancelled.

(d) Other cause, such as death, loss of citizenship, or adjudged insanity of the station licensee. Such occurrences will be reported to the Commission by the person severing or suspending the license, preferably accompanied by the station license for cancellation, if available.

29. Where an existing instrument of authorization has expired and no application for renewal or extension thereof has been filed.

(b) Where a license has been revoked.

(c) Where a license is surrendered or cancelled.

(e) The licenses for amateur stations will be issued for a normal license period of three years from the date of expiration of such license or from the date of granting a new license or modification of a license.

28. In so far as practicable, call signals of radio stations will be designated in alphabetical order from such list available for assignment depending upon the class of station to be licensed. Because of the large number of amateur stations, calls will be assigned thereto in regular order and requests for particular calls will not be considered.

30. Call signals of stations will be deleted in each of the following cases:

(a) Where an existing instrument of authorization has expired and no application for renewal or extension thereof has been filed.

(b) Where a license has been revoked.

(c) Where a license is surrendered or cancelled.

Provided, That this section shall not apply to the receiving, divulging, publishing, or utilizing the contents of any radio communication broadcasted or transmitted by amateurs for the use of the general public or relating to ships in distress.

A penalty of $500 fine for each and every offense is stipulated (in addition to other penalties provided by law) for conviction of a violation of any provision of the Radio Act or regulations made under that Act or of the provisions of treaties ratified and adhered to by the United States.
mitten in an inoperative condition in the event there is a difference of opinion as to the terms of the license, in which case the radiation of the transmitter shall be suspended immidiately until corrective measures are effectively applied to place the transmitter in proper condition for operation in accordance with the terms of the station license.

(c) The transmitter shall be so located or housed that it is not accessible to other than duly authorized persons.

214. The person manipulating the transmitting key of a mobile or portable-amateur radio station shall not be such an amateur transmission shall be a regularly licensed operator. The licenses of other stations operated under the constant supervision of duly licensed operators may permit any person or persons, whether licensed or not, to operate them by voice or otherwise, in accordance with emission specified by the respective licenses.

220. Licenses of stations other than broadcast stations are authorized to carry on such routine tests as may be required for the proper maintenance of the stations, providing however that these tests shall be so conducted as not to cause interference with the service of other stations.

221. The original of each station license, except amateur, portable and portable-mobile stations shall be posted by the licensee in a conspicuous place in the room in which the transmitter is located. In the case of amateur, portable, and portable-mobile stations the original license, or a photocopy thereof, shall be similarly posted or kept in the personal possession of the original operator, or aircraft radio operator, and operators of portable and portable-mobile stations, or a copy thereof, shall be posted in a conspicuous place in the room occupied by such operator while on duty. In the case of an amateur radio station, or aircraft radio station, or operators of portable or portable-mobile stations, the original operator’s license shall be similarly posted or kept in his personal possession and available for inspection at all times while the operator is on duty.

(b) When an operator’s license cannot be posted because it has been returned to an office of the Federal Radio Commission for endorsement or other change, such operator may continue to operate stations in accordance with the class of license held, for a period not to exceed sixty days, but in no case beyond the date of expiration of the license.

361. The term “amateur service” means a radio service carried on by amateur stations.

362. The term “amateur station” means a station used by an “amateur,” that is, a duly authorized person interested in radio technique solely with a personal aim and without pecuniary interest.

363. The term “amateur radio operator” means a person holding a valid license issued by the Federal Radio Commission who is authorized under the regulations to operate amateur radio stations.

365. The term “amateur radio communication” means radiocommunication between amateur radio stations solely with a personal aim and without pecuniary interest.

366. An amateur station license may be issued only to a licensed amateur radio operator who has made a satisfactory showing of ownership or control of proper transmitting apparatus; provided, however, that in the case of a military or naval reserve radio station located in approved public quarters and established for training purposes, but not operated by the United States Government, a station license may be issued to the person in charge of such station who may not possess an amateur operator’s license.

(a) An amateur operator’s license may be granted to a person who does not desire an amateur station license, provided such a person waives his right to apply for an amateur station license for ninety days subsequent to the date of application for operator’s license.

Amateur radio station licenses shall not be issued to corporations. Any corporation or other organization provided, however, that in the case of a bona fide amateur radio society, a station license may be issued to a licensed amateur radio operator as a trustee for such society.

368. Licenses for amateur mobile stations and portable-mobile stations will not be granted, except for portable-mobile stations aboard aircraft (See paras. 384 and 387) and capable of operation on the band of frequencies 56,000-60,000 kilocycles and 400,000-410,000 kilocycles only.

370. Amateur stations shall be used only for amateur service, except for testing purposes they may be used also for communication with commercial or Government radio stations. In addition, amateur stations may use any mobile radio station which is licensed by the Commission to communicate with amateur stations, and with stations of expeditions which may also be authorized to communicate with amateur stations.

371. Amateur stations shall not be used for broadcasting any form of entertainment.

372. Amateur stations may be used for the transmission of music or other test programs of short duration in connection with the development of experimental radiotelephone equipment.

373. Amateur radio stations shall not be used to transmit announcements for material compensation, direct or indirect, paid or promised.

375. The following bands of frequencies are allocated exclusively for use by amateur stations.

- 1,715 to 2,000 kc.
- 28,000 to 30,000 kc.
- 3,500 to 4,000 kc.
- 56,000 to 60,000 kc.
- 7,000 to 7,300 kc.
- 400,000 to 410,000 kc.
- 14,000 to 14,400 kc.

376. All bands of frequencies so assigned may be used for radiotelegraphy, type A-1 emission. Type A-2 emission may be used in the following bands of frequencies only:

- 28,000 to 30,000 kc.
- 60,000 kc.
- 400,000 kc.

377. The following bands of frequencies are allocated for use by amateur stations using radiotelephony, type A-3 emission:

- 1,400 to 2,000 kc.
- 56,000 to 60,000 kc.
- 28,000 to 30,000 kc.

378. Provided the stations shall be operated by a person who holds an amateur operator’s license endorsed for class A privileges, an amateur radio station may use radiotelephony, type A-3 emission, in the following additional bands of frequencies:

- 3,000 to 4,000 kc.
- 14,150 to 14,250 kc.

379. Transmissions by an amateur station may be on any frequency within an amateur band above assigned.

380. An amateur radio station shall not be located upon premises containing a professional radio or television receiver.

381. The frequency of the waves emitted by amateur radio stations shall be as constant and as free from harmonics as the state of the art will permit. No licensed amateur transmitters shall employ circuits loosely coupled to the radiating system or devices that will produce equivalent effects to minimize keying impacts and harmonics. Conductive coupling of radiating antenna, even though loose, is not permitted, but this restriction does not prohibit the use of transmission-line feeder systems.

382. Licensees of amateur stations using frequencies below 14,400 kilocycles, shall use adequately filtered direct-current power supply for the transmitting equipment, to minimize frequency modulation and to prevent the emission of broad bands.

383. Licensees of amateur stations are authorized to use a maximum power input of one kilowatt to the plate circuit of the final amplifier stage of their transmitters for the purpose of communicating with radio station operators; provided, however, should such communication cause such interference, the frequency of the oscillation generating such interference shall be promptly changed and the transmitting station shall immediately discontinue its operation.

384. An operator of an amateur station shall transmit its assigned call at least once during each fifteen minutes of operation and at the end of each transmission. In addition, an operator of an amateur portable radiotelegraph station shall transmit immediately after the call of the station, the Break Sign (BT) followed by the number of the amateur call area in which the portable amateur station is operating.

385. An operator of an amateur station shall transmit its assigned call at least once during each fifteen minutes of operation and at the end of each transmission. In addition, an operator of an amateur portable radiotelegraph station shall transmit immediately after the call of the station, the Break Sign (BT) followed by the number of the amateur call area in which the portable amateur station is operating.

386. Each licensee of an amateur station shall keep an
accurate log of station operation, in which shall be recorded:
(a) The date and time of each transmission.
(b) The name and address of the person operating or scheduling the transmission, or of a radio telegraph or radio telephone apparatus, to which the transmitted message is addressed, and the date and time of delivery of such message.
(c) The frequency band used.
(d) The input power to the oscillator, or to the final amplifier stage where an oscillator-amplifier transmitter is employed.
(e) The location of each transmission by a portable amateur station, where an oscillator-amplifier stage is used.

402. Station licenses and/or amateur operator licenses, upon proper application, be modified or reissued provided: (1) the applicant has used his station to communicate by radio with another amateur radio station for a period of not less than thirty days prior to the date of submitting the application, or (2) if the case of an application pending only for an operator's license, that he has similar communicated with amateur stations during the same period prior to the date of submitting the application, or (3) in the case of an application for a license to operate only for the Class B amateur operator's privileges, that he has similar communicated with amateur stations during the same period prior to the date of submitting the application, or (4) in the case of an application for a license to operate only for the Class C amateur operator's privileges, that he has similar communicated with amateur stations during the same period prior to the date of submitting the application. Provided, that the signal must be received and operating on frequencies above 30,000 kilocycles.

403. An applicant for the Class C amateur operator's privileges who has held a valid amateur radio station license or higher, or an equivalent commercial grade license, or who has been accorded unlimited amateur radiotelegraph privileges, within five years of the date of application may only be required to submit additional proof as to code ability and/or knowledge of the laws, treaties, and regulations affecting amateur operators.

406. An applicant for the Class C amateur operator's privileges who has held a radiotelegraph third class operator's license or higher, or an equivalent commercial grade license, or who has held an amateur extra first class license within five years of the date of application may be accorded a limited amateur radiotelegraph first class license in lieu of any examination. Provided, that the applicant is a holder of a valid amateur radio station license or higher, or an equivalent commercial grade license, and has held the same for not less than three years prior to the date of application.

407. An applicant for the Class C amateur operator's privileges must have been validly endorsed as a licensed radiotelegraph operator other than an amateur operator possessing only the Class C amateur operator's privileges, or has held a radiotelegraph second class operator's license. Provided, that the applicant is a holder of a valid amateur radio station license or higher, or an equivalent commercial grade license, and has held the same for not less than one year prior to the date of application.

410. An amateur station license shall be issued so as to run concurrently with the amateur operator's license and both licenses shall run for three years from the date of issuance. If either the station license or the operator's license is modified during the license term, both licenses shall run for three years from the date of modification. Provided, however, in the case of applicants for the Class C amateur operator's privileges, the forms and examination papers when completed shall be mailed direct to the Federal Radio Commission, Washington, D.C.

411. Any operator failing to qualify for an operator's license shall be examined within ninety days from the date of the previous examination. The examination will be held at the licensees' request and the person examiner may be a member of the Commission. Provided, however, that the examination may be postponed for a period not exceeding two years at the discretion of the licensing authority.

412. Any attempt to obtain an operator's license by fraudulent means or by attempting to impersonate another, or by copying or divulging questions used in examinations, will constitute a violation of the regulations and such violator may be held in contempt of court and the case may be prosecuted in any court of competent jurisdiction. The concurring with the Commission on the examination and the original, and will be marked "duplicate" on the face of the license.
mitter in an inoperative condition in the event there is a deviation from the terms of the license, in which case the radiation of the transmitter shall be suspended immedi-
ately until corrective measures are effectively applied to
place the transmitter in proper condition for operation in accordance with the terms of the station license.
(c) The transmitter shall be so located or housed that it is not accessible to other than duly authorized persons.

214. The person manipulating the transmitting key of a manually operated portable or mobile amateur transmitting station shall be a regularly licensed operator. The licenses of other stations operated under the same station license by duly licensed operators may permit any person or persons, whether licensed or not, to transmit by voice or otherwise, in accordance with the types of
operation specified by the respective licenses.

220. Licenses of stations other than broadcast stations are authorized to carry on such routine tests as may be required for the proper maintenance of the stations, provided, however, that these tests shall be so conducted as not to cause interference with the service of other stations.

221. The original of each station license, except ama-
teur, portable and portable-mobile stations shall be posted by the licensee in a conspicuous place in the room in which the transmitter is located. In the case of an amateur, portable, and portable-mobile stations the original license, or a photostat copy thereof, shall be similarly posted or kept in the personal possession or control of the operator. (a) The original license of each station operator, except amateur and aircraft radio station operators, and opera-
tors of portable or portable-mobile stations, shall be posted in a conspicuous place in the room occupied by such operator while on duty. In the case of an amateur or aircraft radio operator, operators of portable or portable-mobile stations, the original operator’s license shall be similarly posted or kept in his personal possession and available for inspection at all times while the operator is on duty.

(b) When an operator’s license cannot be posted because it has been mailed to an officer of the Federal Radio Com-
mmission for endorsement, or for other reasons, such operator may continue to operate stations in accordance with the class of license held, for a period not to exceed sixty days, but only so long as no case beyond the date of expiration of the license.

361. The term “amateur service” means a radio service carried on by amateur stations.

362. The term “amateur station” means a station used by an “amateur,” that is, a duly authorized person interested in radio technique solely with a personal aim and without pecuniary interest.

364. The term “amateur radio operator” means a person holding a valid license issued by the Federal Radio Commission, or an equivalent license issued under the regulations to operate amateur radio stations.

365. The term “amateur radiocommunication” means radiocommunication between amateur radio stations solely with a personal aim and without pecuniary interest.

366. An amateur station license may be issued to a licensed amateur radio operator who has made a satisfac-
tory showing of his ability to control proper transmit-
ting apparatus; provided, however, that in the event of a military or naval reserve radio station located in approved public quarters and established for training pur-
poses, but not operated by the United States Government, a station license may be issued to the person in charge of such station who may not possess an amateur operator’s license.

(a) An amateur operator’s license may be granted to a person who does not desire an amateur station license, provided he exercises his right to apply for an amateur station license for ninety days subsequent to the date of application for operator’s license.

370. Amateur radio station licenses shall not be issued to corporations, partnerships, or other organizations, provided, however, that in the case of a bona fide amateur radio society, a station license may be issued to a licensed amateur radio society or to any duly authorized trustee for such society.

368. Licenses for amateur mobile stations and portable
mobile stations will not be granted, except for portable-
mobile stations operated aboard aircraft (see pars. 384 and 387) and capable of operation at a power level below 5,600 to 60,000 kilowatts and 400,000 megahertz, 5,600 to 60,000 kilowatts only.

370. Amateur stations shall be used only for amateur service, except for experimentation, for engineering purposes they may be used also for communication with commercial or Government radio stations. In addition, amateur sta-
tions may communicate with any mobile radio station which is licensed by the Commission, with amateur
amateur stations, and with stations of expeditions which may also be authorized to communicate with amateur sta-
tions.

311. Amateur stations shall not be used for broadcasting any form of entertainment.

312. Amateur stations may be used for the transmission of music for test purposes of short duration in connection with the development of experimental radiotelephone equipment.

313. Amateur radio stations shall not be used to trans-
mit or receive messages for hire, or for communication for material compensation, direct or indirect, paid or promised.

374. The following bands of frequencies are allocated exclusively for use by amateur stations using radiotelephony, Type A-3 emission:

375. All bands of frequencies so assigned may be used for radiotelegraphy, Type A-1 emission. Type A-2 emission may be used in the following bands of frequencies:

376. The following bands of frequencies are allocated for use by amateur stations using radiotelegraphy, Type A-3 emission:

377. Provided the stations shall be operated by a person who holds an amateur operator’s license endorsed for class
A privileges, an amateur radio station may use radiotelegraphy, Type A-3 emission, in the following additional bands of frequencies:

378. The following bands of frequencies are allocated for use by amateur stations for television, facsimile, and picture transmission:

379. Transmissions by an amateur station may be made on any frequency within an amateur band above assigned.

380. An amateur radio station shall not be located upon land or water owned by the United States Government.

381. The frequency of the waves emitted by amateur radio stations shall be as constant and as free from harmonics as the state of the art permits. For this purpose, amateur transmitters shall employ circuits loosely coupled to the radiating system or devices that will produce equi-
valent effects to minimize keying impacts and harmonics. Conductive coupling to the radiating antenna, even though
loose, is not permitted, but this restriction does not pro-
hibit the use of transmission-line feeding systems.

382. Licenses of amateur stations using frequencies below 14,400 kilocycles, shall use adequately filtered direct-current power supply for the transmitting equipment, to minimize frequency modulation and to prevent the emis-
sion of broad signals.

383. Licenses of amateur stations are authorized to use maximum power input of one kilowatt to the plate cir-
cuit of the final circuit of the transmitting equipment.

384. An operator of an amateur station shall transmit its assigned call at least once during each fifteen minutes of operation and at the end of each transmission. In addi-
tion, an operator of an amateur portable radiotelegraph station shall transmit immediately after the call of the station, the Break Sign (BT) followed by the number of the amateur call area in which the portable amateur sta-
tion is operating as: for example

Example 1: Portable amateur station operating in the third amateur call area calls a fixed amateur station: W1ABC W1ABc W1ABC W1ABC K

Example 2: Fixed amateur station answers the portable amateur station: W2DEF W2DEF W2DEF W2DEF BT3 BT3 BT3

Example 3: Portable amateur station calls a portable amateur station: W3GHI W3GHI W3GHI DE W4JKL W4JKL W4JKL BT4 BT4
recorded:

station will be operated is given to the Inspector-in-Charge located aboard an aircraft in accordance with Rule

amplifier stage where an oscillator-amplifier transmitter

mitting key of a radiotelegraph transmitter or

accurate log of station

operation of licensed amateur stations, provided, however,

giving further notice to the Inspector-in-Charge of the

operated during any period exceeding 30 days without

same period. Proof of such communication must be in-

applicant possessing only an operator's license, that he has

be omitted if the applicant can show proof of code ability in accordance with the preceding rule.

license, or who has been accorded unlimited amateur radioactivity privileges, the applicant must have used his station to

Class C. The requirements for Class C amateur operator's privileges shall be the same as for Class B. To be eligible for this

receives messages in plain language in the Continental Morse Code (6 characters to the word) at a speed of not less than ten words per minute.

403. There shall be but one main class of amateur opera-
tor's license to be known as "amateur class" but each

scope.

Class A. Unlimited privileges.

Class B. Unlimited radiotelegraph privileges. Limited in the use of the following bands of frequencies: 1800 to 2000 kilocycles; 28,000 to 28,500 kilocycles; 56,000 to 60,000 kilocycles; 400,000 to 401,000 kilocycles.

Class C. Same as Class B privileges, except that the Commission may require the licensee to appear at an examining point for a supervisory written examination and practical code test during the license term. Failing to appear for examination when directed to do so, or failing to pass the supervisory examination, the license held will be cancelled and no other license will be issued another license of the Class C privileges.

404. The scope of examinations for amateur operators' licenses shall be based on the class of privileges the applicant desires, as follows:

Class A. To be eligible for examination for the Class A amateur operator's privileges, the applicant must have been a licensed amateur operator for at least two years at the discretion of the licensing authority, and must personally appear at one of the Commission's examining offices, and take the supervisory written examination and practical code test. Examinations will be conducted at Washington, D.C., on Thursday of each week, and at each radio district office of the Commission at such time as the Inspector-in-Charge of such offices. In addition, examinations will be held quarterly in the examining cities listed in Rule 30 on the dates to be designated by the Inspector-in-Charge of the radio district in which the examining city is situated. The examination will include the following:

(a) Applicant's ability to send and receive in plain lan-
guage messages in the Continental Morse Code (6 char-
acters to the word) at a speed of not less than 10 words per minute.

(c) Knowledge of the provisions of the Radio Act of 1927 as amended, subsequent acts, treaties, and regulations of the Federal Radio Commission, affecting amateur licenses.

Class B. The requirements for Class B amateur operator's privileges are similar to those for the Class A, except that no experience is required and the questions on radio-telephone apparatus are not so comprehensive in scope.

Class C. The requirements for Class C amateur operator's privileges shall be the same as for Class B. To be eligible for this class of privileges, an applicant must reside more than 125 miles (airline) from Washington D.C., a radio district office of the Commission, or an examining city. (See pars. 2 h (2), 50, and 408.)

405. An applicant for any class of amateur operator's privileges who has held a radiotelephone second class operator's license or higher, or an equivalent commercial grade license, or who has been accorded unlimited amateur radiotelephone privileges, within five years of the date of application must be required to submit additional proof as to code ability and/or knowledge of the laws, treaties, and regulations affecting amateur licenses.

An applicant for the Class B or C amateur operator's privileges who has held a radiotelegraph third class operator's license or higher, or an equivalent commercial grade license, or who has been accorded unlimited amateur radiotelegraph privileges, within five years of the date of application may be accorded a license by passing an examination in plain language messages, in Continental Morse code, at a speed of not less than ten words per minute.

406. An applicant for the Class C amateur operator's privileges must have his application signed in the presence of a notary public residing 250 miles (airline) from any point where the applicant desires to have his station operated, giving further notice to the Inspector-in-Charge of the radio inspection district in which the station will be operated.

407. An applicant for Class C amateur operator's privileges must have his application signed in the presence of a notary public residing 250 miles (airline) from any point where the applicant desires to have his station operated, giving further notice to the Inspector-in-Charge of the radio inspection district in which the station will be operated.

408. Forms for amateur station and/or operator license applications, and examination papers and blanks shall be obtained by calling or writing to the Inspector-in-Charge of the radio inspection district in which the applicant resides. Upon completion of the forms and examination papers the examination answers shall be mailed to the Radio Commission, Washington, D.C.

409. The percentage that must be obtained as a passing mark in each examination is 75 out of a possible 100. No credit will be given in the grading of papers for experience or knowledge of the code. If an applicant answers only the questions relating to laws, treaties, and regulations by reason of his right to omit other subjects because of having held a recognized class of license, a percentage of 75 out of a possible 100 must be obtained on the questions answered.

410. An amateur station license shall be issued as soon as to run concurrently with the amateur operator's license and both licenses shall run for three years from the date of issuance. If either the station license or the operator's license is modified during the license term, both licenses shall be reissued for the full three-year term, provided, however, if an operator's license is modified only with respect to the class of operator's privileges, the license may be endorsed in which case the expiration date will not change.

411. No applicant who fails to qualify for an operator's license will be examined within thirty days from the date of the previous examination.

412. Any attempt to obtain an operator's license by fraudulent means or by the use of any other, or copying or divulging questions used in examinations, will constitute a violation of the regulations for which the licensee may be subjected to an examination for a period not exceeding two years at the discretion of the licensing authority.

Any licensee applying for a duplicate license to replace an original which has been lost, mutilated, or destroyed, shall submit an affidavit to the Commission attesting to the fact that the original was lost. Duplicates will be issued in exact conformity with the original, and will be marked "duplicate" on the face of the license.
mitten in an inoperative condition in the event there is a deviation from the terms of the license, in which case the radiation of the transmitter shall be suspended immediately until corrective measures are effectively adopted to place the transmitter in proper condition for operation in accordance with the terms of the station license.

(c) The transmitter shall be so located and housed that it is not accessible to other than duly authorized persons. 

214. The person manipulating the transmitting key of a radiotelegraph or radiotelephone mobile or amateur transmitting station shall be regularly licensed for mobile or amateur service.

The licenses of other stations operated under the direct supervision of duly licensed operators may permit any person or persons, whether licensed or not, to transmit by voice or otherwise, in accordance with the types of emission specified by the respective licenses.

**220.** Licenses of stations other than broadcast stations are authorized to carry on experiments as may be required for the proper maintenance of the stations, provided, however, that these tests shall be so conducted as not to cause interference with the service of other stations.

221. The original of each station license, except amateur, portable and portable-mobile stations shall be posted by the licensee in a conspicuous place in the room in which the transmitter is located. In the case of amateur portable and portable-mobile stations the original license, or a photocopy thereof, shall be similarly posted or kept in the personal possession of the operator on duty. (a) The original license of each station operator, except amateur, portable and portable-mobile stations, or operators of portable or portable-mobile stations, shall be posted in a conspicuous place in the room occupied by such operator while on duty. In the case of an operator or portable and portable-mobile stations, the original of the station license shall be similarly posted or kept in his personal possession and available for inspection at all times while the operator is on duty. 

(b) When an operator's license cannot be posted because it has been mailed to an office of the Federal Radio Commission for endorsement or other purposes, such operator may continue to operate stations in accordance with the class of license held, for a period not to exceed sixty days, but in no case beyond the date of expiration of the license. 

**231.** The term "amateur service" means a station used solely for the personal or educational interest of its operator or group of operators and available for inspection at all times while the operator is on duty.

232. The term "amateur station" means a station used by an "amateur," that is, a duly authorized or interested in radio technique solely with a personal aim and without pecuniary interest.

234. The term "amateur radio operator" means a person holding a valid license issued by the Federal Radio Commission for a purpose other than commercial or pecuniary interest.

235. The term "amateur radiocommunication" means radiocommunication between amateur stations solely with personal or educational purposes. 

236. An amateur station license may be issued to a licensed amateur radio operator who has made a satisfactory showing of ownership or control of transmitting apparatus; provided, however, in the case of a military or naval reserve radio station, in approved public quarters and established for training purposes, but not operated by the United States Government, a station license may be issued to the person in charge of such station who may not possess an amateur operator's license.

(a) An amateur operator's license may be granted to a person who does not desire an amateur station license, provided he shall waive his right to apply for an amateur station license for thirty days subsequent to the date of application for operator's license.

237. Amateur radio station licenses shall not be issued to commercial stations or to stations of a type not authorized as amateur stations; provided, however, that in the case of a bona fide Amos radio society, a station license may be issued to a licensed amateur radio operator who is an officer or trustee of such society.

238. Licenses for amateur mobile stations and portable-mobile stations will not be granted, except for portable-mobile stations installed aboard aircraft (see para. 384 and 387) and capable of operation in the bands of frequencies 56,000-60,000 kilocycles and 400,000-401,000 kilocycles only.

239. Amateur stations shall be used only for amateur service, except for emergency use in the case of disasters. 

Portable amateur station calls a portable amateur station: W3GHI W3GHI W8GHI DE W4JLK W4JLK BT4 BT4 BT4 K

If telephone calls from the station shall be followed by an announcement of the amateur call area in which the portable station is operating.

240. In the event that the operator of an amateur radio station causes general interference to the reception of broadcast programs with receivers of modern design, that amateur radio station shall not be authorized to operate during the hours from 8 o'clock p.m. to 10:30 p.m. local time, and on Sundays from 10:30 a.m. until 1 p.m., local time, upon such frequencies or frequencies as cause such interference.

241. Each licensee of an amateur station shall keep an
located aboard an aircraft in accordance with Rule 1927 as amended, and all other regulations of the Federal Radio Commission, affecting amateur licenses.

Class B. The requirements for Class B amateur operator's privileges are similar to those for the Class A, except that no experience is required and the questions on radio-telephone apparatus are not so comprehensive in scope.

Class C. The requirements for Class C amateur operator's privileges shall be the same as for Class B, except that to be eligible for this class of privileges, an applicant must reside more than 156 miles (airline) from Washington D.C., a radio district office of the Commission, or an examining city. (See paras. 2 h (2), 39, and 408.)

406. Any applicant for any class of amateur operator's privileges who has held a radiotelegraph third class or higher license, or an equivalent commercial grade license, or who has been accorded unlimited amateur radiotelephone privileges, within five years of the date of application may be given a license only by submitting additional proof as to code ability and/or knowledge of the laws, treaties, and regulations affecting amateur licensees.

407. An applicant for the Class C amateur operator's privileges must have his application signed in the presence of a notary public, or writing to the Inspector-In-Charge of the radio inspection district in which the applicant resides. Upon completion of the forms they shall be mailed to the same district where the final arrangements will be made for the examination: Provided, however, in the case of applicants for the Class C amateur operator's privileges, the forms and examination papers completed shall be mailed directly to the Federal Radio Commission, Washington, D.C.

408. The percentage of credit to be obtained as a passing mark in each examination is made out of a possible 100. No credit will be given in the grading of papers for experience or knowledge of the code. The applicant must answer all the questions relating to laws, treaties, and regulations by reason of his right to omit other subjects because of having held another class of license. A percentage of less than 60 out of a possible 100 must be obtained on the questions answered.

409. An amateur station license shall be issued so as to run concurrently with the amateur operator's license and both licenses shall run for three years from the date of issuance. If either the station license or the operator's license is modified during the license term, both licenses shall be reissued for the full three-year term, provided, however, if an operator's license is modified only with respect to the class of operator's privileges, the license may be endorsed in which case the expiration date will not change.

410. No applicant who fails to qualify for an operator's license will be examined until ninety days from the date of the previous examination.

412. Any attempt to obtain an operator's license by fraudulent means or by willful misrepresentation, fraud, knowing and other, or copying or divulging questions used in examinations, will constitute a violation of the regulations for which the licensee subject to further examination for a period not exceeding two years at the discretion of the licensing authority.

Any license applying for a duplicate license to replace an original which has been lost, mutilated, or destroyed, shall submit an affidavit to the Commission attesting to the fact that the original was lost. Duplicates will be issued in exact conformity with the original, and will be marked "duplicate" on the face of the license.
414. Licenses are not valid until the oath of secrecy has been executed and the signature of the licensee affixed thereto. 

AMATEUR HELPS AVAILABLE FROM A.R.R.L. HEADQUARTERS

The License Manual—Before you can operate an amateur transmitter, you must have a government license and an officially assigned call. These cost nothing—but you must be able to pass the examination. The License Manual tells you how to do that. In addition to a large amount of general information, it contains 198 typical questions and answers which are asked in the government examinations. If you know the answers to the questions in this book, you can pass the examination without trouble. The License Manual costs $0.50, postpaid anywhere.

The Amateur Call Book Magazine containing a United States, Canadian, and foreign amateur call lists (revised quarterly) may be obtained for $1.00 (foreign $1.20) from A.R.R.L., 88 LaSalle Road, West Hartford, Conn. This publication is most up-to-date and lists many frequencies commercial stations are using in addition to the world-wide list of amateur calls.

Hints and Kinks—An amateur must be resourceful and a good technician. He must be able to make a small amount of money do a great deal for him. This book is a compilation of hundreds of good ideas which amateurs have found helpful. Hints and Kinks costs $0.50, postpaid.

The Radio Amateur's Handbook published by the A.R.R.L. $1.00 postpaid (buckram binding $2.00) is perhaps the best single source of all kinds of information needed in constructing and operating a short wave sending and receiving station. It is full of information helpful to the new member and the experienced brass-pounder alike in installing and operating radio equipment at amateur stations.

How to Become a Radio Amateur contains in some thirty pages condensed essential information necessary to code learning, getting licenses, and building the first simple but efficient low-cost station. This publication is available from A.R.R.L. postpaid for 25c.

QST—For years (and thereby the oldest radio magazine) QST has been the bible of Amateur Radio. It faithfully reports each month the rapid development which makes Amateur Radio so intriguing. Edited in the sole interest of the members of the American Radio Relay League, who are its owners, QST treats of equipment and practices and construction and design, and the romance which is part of Amateur Radio, in a direct and analytical style which has made QST famous all over the world. It is essential to the well-being of any radio amateur. QST goes to every member of the American Radio Relay League. Membership costs $2.50 per year in the United States and Possessions, and Canada. All other countries $3.00 per year.

The F.R.C. regulations require that a complete and accurate log be kept. As a convenience to members a carefully designed station logbook may be obtained from A.R.R.L. Headquarters (40c each or three for $1.00). Also official A.R.R.L. message pads (buckram binding—$5.00 for a pad of 100 or three pads for $1.00). A.R.R.L. emblems (pin or button type) are $1.00 postpaid.

APPLICATION FOR APPOINTMENT AS OFFICIAL STATION

To: Section Communications Manager

Name ___________________________

Street and Number ___________________________

City ___________________________ State ________________

Transmitting frequencies specified on my license from ______ kilocycles to ______ kilocycles. Actual frequency in use ______ kilocycles.

My membership in the A.R.R.L. expires ______ month ______ year

In making application for appointment as Official Relay Station, I agree:

1. To obey the radio communication laws of the country under which my station is licensed, particularly with respect to the regulations governing quiet hours and frequencies.
2. To send monthly reports of station activities to the Section Communications Manager under whose jurisdiction this station comes.
3. To handle messages in accordance with good operating procedure, delivering messages within forty-eight (48) hours when possible, mailing to destination whenever impossible to relay to the next station in line within a 48-hour period.

I understand that this appointment requires annual endorsement, and also may be suspended or cancelled at the discretion of the Section Communications Manager for violation of the agreement set forth above. Please send detailed forms to submit to my S.C.M. in connection with this application.

Signed ___________________________

For A.R.R.L. members who hold amateur licenses, who are interested in Communications Department operating work (explained, Sec. V this book), here is an application blank which may be filled out for appointment as either Official Relay Station (for telegraphing members) or Official Phone Station (for voice operated members). The form may be filled out and sent direct to your Section Communications Manager (address on page 5 of QST) or to A.R.R.L. Headquarters, 88 LaSalle Road, West Hartford, Conn. for routing to the proper S.C.M. for attention if you are interested.

The Communications Department field organization includes only the United States and its territories, and Canada, Newfoundland, Labrador, Cuba, the Isle of Pines, and the Philippine Islands. Foreign applications, that is, those from outside these areas cannot be handled.