

S P A N I S H
BASIC COURSE
SUPPLEMENT

Module 10
Radio Procedures
Volume I
Lessons 1 - 6

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DEFENSE LANGUAGE INSTITUTE
FOREIGN LANGUAGE CENTER



PREFACE

COURSE OBJECTIVES

This is an introductory course, the objectives of which are to acquaint you with basic radio communications procedures and terminology and refine your skills in gisting, transcribing, and translating. The material is presented as a series of hypothetical military situations in which various radio stations communicate with each other. The skills which you have learned in previous Listening Comprehension Exercises will be applied here.

COURSE DESIGN AND ORGANIZATION

This supplementary course fits into the "specialized needs" portion of the 28-week Spanish Basic Course. It has been developed specifically for those students who belong to NCTS related services. The course was designed to be used either in conjunction with the Level 3 materials or after, in the Enrichment/Specialized Needs portion of the course.

There are 6 lessons in this volume. The components of each lesson are:

1. Text
2. Standard Abbreviations
3. Vocabulary
4. Samples
5. Exercises

1. Text.

The texts of each lesson are introductions to a particular phase in radio communications. They follow the real-life sequence of events which occur in military radio communications. When you finish this course, you will be familiar with all the major procedures used by military radio operators.

2. Standard Abbreviations.

These are abbreviations of English words which should be overlearned to the point that they become automatic. While you may develop abbreviations for other words you hear, these standardized items will help you develop skill in rapid gisting.

3. Vocabulary.

The vocabulary listings found in each lesson are words which are peculiar to radio communications. They may have different meanings in usages other than radio. Here, however, the definitions given are solely in radio communications context.

4. Samples.

For each lesson there is a taped sample of vocabulary usage which conforms to the subject of the text. The format is that of a simulated radio broadcast. In your book you will find three samples which correspond to the sample on the tape. First you will find the Sample Gist. This shows you how to use the Standard Abbreviations for each lesson.

Second you will find a Sample Transcription. This is an exact transcription of what you heard on the tape. This shows

you how the vocabulary of each lesson is used in context.

Third you will find the Sample Translation. This clarifies the meaning of the taped sample and will acquaint you with radio communications procedure and terminology.

5. Exercises.

There are two types of taped exercises in each lesson, enabling exercises and self-evaluation exercises.

The enabling exercises will give you practice in gisting, transcribing, and translating vocabulary in isolation and in context. They are designed to prepare you to meet the objectives for each lesson.

The self-evaluation exercises are divided into three parts and are in the form of simulated radio broadcasts very similar to the taped sample.

The first task is to gist what you hear using the communication logs found in the back portion of the text. For this you should use the standard abbreviations as much as possible. You may also abbreviate other words as desired but make sure that your abbreviations are clear and can be understood easily. For the gisting portion of the exercise, your final objective should be an accurate gist after playing the tape only once with no stops. If you have trouble keeping up with the tape, continue to practice with the exercise and also go back and work with the sample until you can gist with both speed and accuracy. This is a very important skill for your military job.

The second task in this exercise is the transcription of taped broadcasts. For this you may play the tape as many times as you need. It is suggested that you have a dictionary available for this part of the exercise to ensure a correct transcription with accuracy in spelling and use of accent marks. One hundred percent accuracy is the objective for this part of the exercise.

The third and final task in the exercise is translation of what you have transcribed. This is why a perfect transcription is necessary. For if you make an error in your transcription, you will also err in your translation.

This is a self-study course and you will find the answers to each exercise in the key at the end of the text. Follow the instructions for each exercise carefully and use the key only as it is intended. Glancing at the answers while doing the exercise will not help you acquire the skills you will need for your job.

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BASIC COURSE

SUPPLEMENT

RADIO PROCEDURES

LESSON 1

CALL-UPS

MODULE 10

INTRODUCTION TO CALL-UPS

In a call-up, one radio station calls up one or more other radio stations to check communications or pass messages.

Callsigns. Each station is assigned a callsign. For convenience, callsigns are usually placenames (Bogota), numbers (tres--3), placenames and numbers (Bogota 3), or digital (03, 421, 6042, 84503, etc.). Callsigns don't necessarily correspond to geographical locations. The callsign 'Bogota' could be assigned to a radio station anywhere in Latin America.

Call-up Format. Several different call-up formats are used. Usually, the station being called is named first. This procedure lets other stations know the call isn't for them. For example, "Bogota, this is Havana calling." Havana (the station making the call) names Bogotã first. However, the station making the call-up may occasionally reverse this procedure by giving his own callsign first. For example, "This is Havana calling Bogota."

Repeated Callsigns. In any call-up, the callsigns may be repeated several times. For example, "Bogota, Bogota, Bogota, this is Havana calling, this is Havana calling you."

Dropped Callsigns. After the first call or two, the station making the call-up may drop his own callsign. For example,

Havana says "Bogota, please answer," instead of "Bogota, this is Havana. Please answer." After a number of exchanges between the same people, operators sometimes drop both call-signs.

Multiple Station Call-ups. In the examples you've seen so far, one station was calling one other station. A station can also call up several stations at the same time. The format is the same as for a single callup. For example, "Bogota, Havana, Colon; this is Trinidad." Trinidad is calling up three stations at one time.

All Station Call-ups. If a station wants to talk to only one other station, he makes a single station call-up; if he wants to talk to several other stations, he makes a multiple station call-up, and if he wants to talk to every station, he makes an all station call-up. Example: "All stations, this is Florida calling."

Communications Log. Communication exchanges between radio stations are entered on a communications log. This log form has three columns labeled TO, FM (FROM), and TEXT. The TO and FM columns are used for callsigns, and the TEXT column is used for whatever is said. TO callsigns (the station being called) are entered in the TO column. FM callsigns (the station doing the calling) are entered in the FM column.

Abbreviated Call Signs. It takes too much time to write out callsigns in the TO and FM columns each time they are mentioned, so they are abbreviated by using the first letter of the first few syllables. For example, "Bogota" is abbreviated as BG, "Hayana" as HV, etc. Sometimes more than two letters are necessary to prevent confusion. For example, "Bogota" as BG and "Bigote" as BGT. Callsigns involving number series are also handled the same way. "Bogota tres" would be entered as BG3.

It is extremely important to remember that once you have abbreviated a callsign, you must always abbreviate it the same way.

Callsign Legend. While abbreviations are used as a time-saving device in the TO and FM columns, it is essential to write out each callsign in full in the callsign legend (marked C/S) at the top of the Communications Log. The legend shows whether BG stands for "Bogota," "Bigote," etc. For example, the transmission "Darlen, this is Carmen cinco, answer please" would be entered on the Communication Log as follows:

COMMUNICATIONS LOG

C/S

DarlenDRCarmen cincoCM5TOFMTEXT

DR

CM5

Cl, Pls ans.

Reduced Callsigns. Full callsigns are used during initial call-ups. Later, operators may use only part of the callsign. For example, "Caribe cuatro" may be shortened to simply "cuatro."

Implied Call-ups and Answers. In some call-ups, both TO and FM callsigns are given, but there is no mention of the word "calling." For example, "Bogota, I'm Yucatan." There is a TO callsign (Bogota) and a FM callsign (Yucatan), but Yucatan doesn't actually say that he is calling Bogota; the call is implied. It is not necessary to distinguish between an actual or implied callup. However, it is necessary to indicate on your gist that some type of callup was made. For this, notate an implied callup as if it were actually made. The same applies to answers. Very seldom will a station say "I am answering you."

Abbreviations. You'll find that as the exercises get longer, faster, and more difficult, you'll have to use as many abbreviations as possible. You should learn and use the standard abbreviations given with the vocabulary as soon as possible, even though you may be able to cope with the early exercises without using them. If you can't remember certain abbreviations automatically, don't waste time trying to recall them. You may abbreviate other words, so long as the original words are readily apparent from your abbreviations.

SUMMARY

1. Callsigns are usually placenames, numbers, placenames and numbers, or digital.
2. The station being called is usually named first.
3. A call-up may involve a single station, several stations, or all stations.
4. Callsigns are written in full in the C/S legend of the Communications Log. They are abbreviated in the TO and FM columns.
5. Use standard abbreviations where they exist. Your abbreviations for other words should clearly represent the original words.

STANDARD ABBREVIATIONS

The following abbreviations will be useful in gisting. These are standard abbreviations and are the ones to be used during exercises and tests.

1. agn	1. again
2. all	2. all (stations)
3. allsta	3. all stations
4. ans	4. answer
5. cl	5. call
6. in seq	6. in sequence
7. pls	7. please
8. rd	8. read
9. u, ur	9. you, your
10. #	10. number

NOTE: It is also useful to abbreviate prefixes and suffixes. Examples: calling - clng; called - cld; calls - cls.

VOCABULARY

- | | |
|-----------------|--|
| 1. cambio | 1. over |
| 2. contestar | 2. to answer |
| 3. en secuencia | 3. in sequence |
| 4. la llamada | 4. call-up |
| 5. llamar | 5. to call |
| 6. número | 6. number (#) in a series, as
in #1, #2, #3, etc. |
| 7. oír | 7. to read (a signal) |
| 8. la red | 8. all stations (network) |

SAMPLE

GIST

COMMUNICATIONS LOG

C/S	Bogotá - BG	Número Uno - #1
	Trinidad - TN	Número Dos - #2
	Azul - AZ	Número Tres - #3
	All stations - ALL	Número Cuarenta - #40

	TO	FM	TEXT
1.	#1	#2	cl.
2.	BG	TN	cl.
3.	--	--	Pls cl me agn.
4.	--	--	I cld quite a few times.
5.	ALL	AZ	cl.
6.	#1	#2	cl, pls ans me.
7.	--	--	Can u rd me?
8.	--	--	I didn't rd #40s cl-up.
9.	--	--	Do u rd? Ans.
10.	#1	BG	Cl. Allsta ans in seq.
	#2		
	#3		
11.	BG	#1	ans.
12.	BG	#2	ans.
13.	BG	#3	ans.
14.	BG	#40	cl.

SAMPLE
TRANSCRIPTION

1. Número 1, número 2.
2. Bogotá, llama Trinidad.
3. Llámeme otra vez, por favor.
4. Lo llamé varias veces.
5. Red, llama Azul.
6. Número 1, llama número 2, contésteme, por favor.
7. ¿Puede usted oírme?
8. No oí la llamada del número 40.
9. Contésteme si me oye.
10. Número 1, número 2, número 3, llama Bogotá. Todos contesten en secuencia.
11. Bogotá, llama número 1.
12. Bogotá, aquí número 2.
13. Bogotá, aquí número 3.
14. Bogotá, número 40.

NOTE: Although the word "cambio" follows most utterances, it is not placed in the transcription. "Cambio" is only used by a radio operator to let others know that he has finished talking.

SAMPLE
TRANSLATION

1. Number 1, number 2.
2. Bogota, Trinidad calling.
3. Call me again, please.
4. I called you several times.
5. All stations, Azul calling.
6. Number 1, number 2 calling, answer me, please.
7. Can you read me?
8. I didn't read number 40s call-up.
9. Answer me if you read me.
10. Number 1, number 2, number 3, Bogota calling. All (stations) reply in sequence.
11. Bogota, number 1 calling.
12. Bogota, this is number 2.
13. Bogota, this is number 3.
14. Bogota, number 40.

EXERCISE 1

Abbreviate the following callsigns by using the first letter of the first two syllables. The first one has been done for you.

- | | | | |
|-------------------|-------|--------------------|-------|
| 1. <u>B</u> ogotá | BG | 11. México Cinco | _____ |
| 2. Colón | _____ | 12. Caribe Dos | _____ |
| 3. Rojo | _____ | 13. Mayo Ocho | _____ |
| 4. Pirata | _____ | 14. Cuarenta y dos | _____ |
| 5. Centro | _____ | 15. Jota Trece | _____ |
| 6. Trinidad | _____ | 16. Bravo Uno | _____ |
| 7. Balsa | _____ | 17. Víctor | _____ |
| 8. Azul | _____ | 18. Culebra Siete | _____ |
| 9. Carmen | _____ | 19. Tomás | _____ |
| 10. Golfo | _____ | 20. Diablo | _____ |

EXERCISE 2

Instructions: You will hear a series of words and phrases in Spanish. In the spaces provided, gist, transcribe, and translate whatever you hear on the tape. The first one has been done for you.

	Gist	Transcription	Translation
1.	u	Usted	you
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

EXERCISE 3

Instructions: You will hear a recorded passage of simulated radio procedures.

Part A - Gist

Using one of the Communications Logs provided by your instructor, gist what you hear on the tape. You are to record callsigns and write in abbreviated English the context of what you hear. For the gisting part of this exercise, play the tape only once.

Part B - Transcription

When you have finished gisting, rewind the tape and transcribe verbatim the Spanish passages, using your gist as a guideline. For this, you may play the tape as many times as you wish.

Part C - Translation

After transcribing the tape your next step is translating. Translate your transcription into English.

BASIC COURSE

SUPPLEMENT

RADIO PROCEDURES

LESSON 2

SIGNAL READABILITY

MODULE 10

17 / 18

INTRODUCTION TO SIGNAL READABILITY

After the call-up, the stations determine the readability of each other's radio signals. Readability involves strength and clarity. A loud signal that isn't clear enough is unreadable. Loud and clear signals facilitate radio communications.

Checking Readability. Readability checks begin with the question "How do you read?" Read means to receive and understand a radio message. This basic question is often expanded, and may be given as "How do you read me?" or "How do you read my signal?" Responses to this question indicate the degree of readability.

Degree of Readability. When precision is desired, signal strength and clarity are measured on a scale of 1 to 5. A signal readability of 5 means perfectly clear, 1 means completely unintelligible. However, stations seldom get this technical. Signal readability is more often described in terms of 'good' or 'bad,' 'clear' or 'unclear,' 'strong' or 'weak,' etc.

STANDARD ABBREVIATIONS

The following abbreviations will be useful in gisting. These are standard abbreviations and are the ones to be used during exercises and tests.

- | | |
|-----------|--------------------|
| 1. bd | 1. bad |
| 2. clr | 2. clear |
| 3. cont | 3. contact |
| 4. estab | 4. establish |
| 5. gd | 5. good |
| 6. interm | 6. intermittent |
| 7. l/c | 7. loud and clear |
| 8. OK | 8. okay, very well |
| 9. sig | 9. signal |
| 10. tdy | 10. today |
| 11. tmw | 11. tomorrow |
| 12. vol | 12. volume |
| 13. vy | 13. very |
| 14. wk | 14. weak |
| 15. ydy | 15. yesterday |

NOTE: It is useful to abbreviate prefixes and suffixes.
Examples: clearly - clrly; unclear - unclr.

VOCABULARY

1. claridad	1. clarity (readability)
2. claro	2. clear
3. contacto	3. contact
4. débil	4. weak
5. establecer	5. to establish (contact)
6. fuerte	6. strong
7. intermitente	7. intermittent
8. señal	8. signal
9. el volumen	9. volume
10. ¿Cómo me oye?	10. How do you read me?
11. Hacer contacto con	11. To make contact with
12. Alto y claro	12. Loud and clear
13. Ponerse en contacto con	13. To be put in contact with

SAMPLE
GIST
COMMUNICATIONS LOG

C/S

	TO	FM	TEXT
1.	--	--	Pls cont me.
2.	--	--	Ur sig is clr.
3.	--	--	I rd u l/c.
4.	--	--	I don't rd u well, ur sign is bd.
5.	--	--	How do you read my signal?
6.	--	--	I receive ur sig with clrty.
7.	--	--	How do u rd me?
8.	--	--	I rd u bd. Ur sig is wk.
9.	--	--	Urs is wk too.
10.	--	--	How do u rd me now?
11.	--	--	Ur sig is unclr.
12.	--	--	Now ur sig is interm.
13.	--	--	Ur sig is 5.
14.	--	--	Now I rd u as 5.
15.	--	--	I rd u as 2, because u have too much vol.
16.	--	--	The clrty of ur sig is ok.
17.	--	--	Tmw, make cont with me.
18.	--	--	I have to estab cont with u.
19.	--	--	Ydy ur sig was better.
20.	--	--	Cont BG.

SAMPLE
TRANSCRIPTION

1. Por favor, póngase usted en contacto con esta estación.
2. Su señal es clara.
3. Lo oigo alto y claro.
4. No lo oigo bien, su señal es muy mala.
5. ¿Cómo oye mi señal?
6. Recibo su señal con claridad.
7. ¿Cómo me oye?
8. Lo oigo mal. Su señal es débil.
9. La suya es débil también.
10. ¿Cómo me oye ahora?
11. Su señal no es clara.
12. Ahora su señal es intermitente.
13. Su señal es 5.
14. Ahora lo oigo como 3.
15. Lo oigo como 2, porque tiene demasiado volumen.
16. La claridad de su señal está bien.
17. Mañana, haga contacto con esta estación.
18. Tengo que establecer contacto con usted.
19. Ayer su señal era mejor.
20. Póngase usted en contacto con Bogotá.

SAMPLE
TRANSLATION

1. Please, put yourself in contact with this station.
2. Your signal is clear.
3. I read you loud and clear.
4. I don't read you well, your signal is very bad.
5. How do you read my signal?
6. I receive your signal with clarity.
7. How do you read me?
8. I read you bad. Your signal is weak.
9. Yours is weak, too.
10. How do you read me now?
11. Your signal is not clear (unclear).
12. Now your signal is intermittent.
13. Your signal is 5.
14. Now I read you as 5.
15. I read you as 2, because you have too much volume.
16. The clarity (readability) of your signal is good (okay).
17. Tomorrow, make contact with this station.
18. I have to establish contact with you.
19. Yesterday your signal was better.
20. Put yourself in contact with Bogota.

EXERCISE 1

Instructions: You will hear a series of words or phrases in Spanish. In the spaces provided, gist, transcribe, and translate whatever you hear on the tape. The first one has been done for you.

	GIST	TRANSCRIPTION	TRANSLATION
1.	tmw	mañana	tomorrow
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

EXERCISE 2

Instructions: You will hear a recorded passage of simulated radio procedures.

Part A - Gist

Using one of the Communications Logs provided by your instructor, gist what you hear on the tape. You are to record callsigns and write in abbreviated English the context of what you hear. For the gisting part of this exercise, play the tape only once.

Part B - Transcription

When you have finished gisting, rewind the tape and transcribe verbatim the Spanish passages, using your gist as a guideline. For this you may play the tape as many times as you wish.

Part C - Translation

After transcribing the tape, your next step is translating. Translate your transcription into English.

BASIC COURSE

SUPPLEMENT

RADIO PROCEDURES

LESSON 3

TUNING

MODULE 10

INTRODUCTION TO TUNING

Transmitters are set to transmit on predetermined frequencies. Radio receivers must be properly tuned to these frequencies to give the best reception.

TUNING COUNTS. If a receiving station can't read the sending station's signal properly during readability checks, the receiving station will request a tuning count so he can adjust his receiver for optimum reception.

SHORT COUNT. If the receiving station requests a tuning count, the sending station will count from one to five and back again, e.g., "1-2-3-4-5, 5-4-3-2-1." While the sending station is counting, the receiving station tunes his receiver until he reads the numbers "loud and clear." A SHORT COUNT is used only if the receiving station's readability problem is small, and calls for only minor adjustment of his receiver.

LONG COUNT. If the signal is very bad, the receiving station may request a LONG COUNT so he will have more time to tune, or adjust, his radio receiver. For a long count, the sending station counts from one to zero and back again, e.g., "1-2-3-4-5-6-7-8-9-0, 0-9-8-7-6-5-4-3-2-1."

VARIATIONS. Sometimes stations count up by odd numbers and back by even or vice versa, to break up the monotony. If a receiving station is having severe tuning problems, the

LESSON 3

sending station may extend his LONG COUNT to twenty, twenty-five or even fifty numbers instead of repeating several one to zero counts.

STANDARD ABBREVIATIONS

The following abbreviations will be useful in gisting. These are standard abbreviations and are the ones to be used during exercises and tests.

- | | |
|---------|----------------------|
| 1. adj | 1. adjust |
| 2. int | 2. interference |
| 3. lcl | 3. long call |
| 4. lnc | 4. long number count |
| 5. nc | 5. number count |
| 6. rad | 6. radio |
| 7. rec | 7. receive |
| 8. rd | 8. copy |
| 9. stat | 9. static |

VOCABULARY

- | | |
|--------------------|----------------------------|
| 1. ajustar | 1. to adjust |
| 2. conteo (contar) | 2. number count (to count) |
| 3. copiar | 3. to copy or read |
| 4. fijo | 4. stable |
| 5. interferencia | 5. interference |
| 6. llamada larga | 6. long call |
| 7. el radio | 7. radio |
| 8. ruido | 8. static |
| 9. sintonizar | 9. to tune |

SAMPLE
GIST
COMMUNICATION LOG

C/S

	TO	FM	TEXT
1.	--	--	Give me a nc pls.
2.	--	--	Give me a lnc agn.
3.	--	--	Ur sig is wk. Give me a lcl.
4.	--	--	Give me a lcl. I am going to adj my rad.
5.	--	--	I don't rd ur sig gd. Tune ur rad.
6.	--	--	Give me a lnc. I will tune my rad.
7.	--	--	There is stat. I don't rd ur sig clrly.
8.	--	--	The int is heavy. I rd u as 2.
9.	--	--	There is too much stat, I don't rd u well. Make a nc.
10.	--	--	I'll give u a nc. (gives count) How do u rd me now?
11.	--	--	Ur sig is clr but adj ur rad a little.
12.	--	--	Ur sig is stable and clr.

SAMPLE
TRANSCRIPTION

1. Déme un conteo, por favor.
2. Déme un conteo largo otra vez.
3. Su señal es débil. Déme una llamada larga.
4. Déme una llamada larga. Voy a ajustar el radio.
5. No copio bien su señal. Sintónice su radio.
6. Déme un conteo largo, sintonizaré el radio.
7. Hay ruido. No lo oigo claro.
8. La interferencia es muy fuerte. Lo copio como 2.
9. Hay demasiado ruido, no lo copio bien. Haga un conteo.
10. Le doy un conteo, 1, 2, 3, 4, 5, 5, 4, 3, 2, 1.
¿Cómo me oye ahora?
11. Su señal es clara, pero ajuste su radio un poco.
12. Se señal está fija y clara.

SAMPLE
TRANSLATION

1. Give me a number count, please.
2. Give me a long number count again.
3. Your signal is weak. Give me a long call.
4. Give me a long call. I am going to adjust my radio.
5. I don't copy your signal well. Tune your radio.
6. Give me a long number count. I will tune my radio.
7. There is static. I don't read you clearly.
8. The interference is very heavy. I copy you as 2.
9. There is too much static, I don't read you well. Make a number count.
10. I'll give you a number count. 1, 2, 3, 4, 5, 5, 4, 3, 2, 1. How do you read me now?
11. Your signal is clear but adjust your radio a little.
12. Your signal is stable and clear.

EXERCISE 1

Instructions: You will hear a series of sentences in Spanish. In the spaces provided, gist, transcribe, and translate whatever you hear on the tape.

	GIST	TRANSCRIPTION	TRANSLATION
1.	<hr/>	<hr/>	<hr/>
2.	<hr/>	<hr/>	<hr/>
3.	<hr/>	<hr/>	<hr/>
4.	<hr/>	<hr/>	<hr/>
5.	<hr/>	<hr/>	<hr/>
6.	<hr/>	<hr/>	<hr/>
7.	<hr/>	<hr/>	<hr/>
8.	<hr/>	<hr/>	<hr/>

EXERCISE 2

Instructions: You will hear a recorded passage of simulated radio procedures.

Part A - Gist

Using one of the Communications Logs provided by your instructor, gist what you hear on the tape. You are to record callsigns and write in abbreviated English the context of what you hear. For the gisting part of this exercise, play the tape only once.

Part B - Transcription

When you have finished gisting, rewind the tape and transcribe verbatim the Spanish passages, using your gist as a guideline. For this, you may play the tape as many times as you wish.

Part C - Translation

After transcribing the tape your next step is translating. Translate your transcription into English.

BASIC COURSE
SUPPLEMENT

RADIO PROCEDURES
LESSON 4
CHANGING FREQUENCY

MODULE 10

INTRODUCTION TO CHANGING FREQUENCY

Radio stations are assigned a primary frequency and one or more alternate frequencies. If communications are poor on the primary frequency and tuning doesn't help, stations will by mutual agreement change to the alternate frequency.

Radio Frequency. A frequency is the number of complete oscillations per second of an electromagnetic wave. Frequencies were formerly expressed in 'cycles'. A kilocycle was one thousand cycles per second, and a megacycle was one million cycles per second. The word 'cycle' has now been replaced by 'Hertz' (in deference to the German physicist). A kilocycle is now called a kilohertz (kHz), and a megacycle is called a megahertz (mHz). A gigahertz (GHz) is one thousand megahertz (mHz).

Radio Frequency Spectrum. Communications equipment is designed to operate in different parts of the radio frequency spectrum. Most is either high frequency (HF) or very high frequency (VHF). The entire spectrum is given below.

very low frequency	VLF	3 kHz - 30 kHz
low frequency	LF	30 kHz - 300 kHz
medium frequency	MF	300 kHz - 3 mHz
high frequency	HF	3 mHz - 30 mHz
very high frequency	VHF	30 mHz - 300 mHz
ultrahigh frequency	UHF	300 mHz - 3 GHz
superhigh frequency	SHF	3 GHz - 30 GHz
extremely high frequency	EHF	30 GHz - 300 GHz

