

Amateur Radio

Licensing Exam Tutorial

VU2MUE



April 18, 2020 World Amateur Radio Day

Fill-Up Application Forms for both the Grades

- 1. Already sent in our WhatsApp Group:
VPAmateurRadioNetwork
- **General Grade** - 2 hour MCQ Exam + 10 minute Morse Code Proficiency Test (5 minute sending, 5 minute receiving)
- **Restricted Grade** - 1 hour MCQ Exam

Why the Exam/Different Grades?

- Ministry of Communications is a “Regulatory & Licencing Body”.
- As Amateur Radio Licences are issued to people who wants to obtain the licence purely with a personal aim without any monetary interest or for any professional work, they want to ensure that the person whom they issues the licence have the requisite technical knowledge to install/setup his/her personal station without causing any harm to others and to himself/herself.

Knowledge of Radio Frequencies allotted

For example :

If the person does not know the AMATEUR RADIO FREQUENCIES, he/she may be causing interference by operating on a frequency band which is not allotted to him/her.

WPC (Wireless Planning and Coordination Wing) retains the authority to issue either one of the above categories of licences which they deem fit.

For short distance Line of Sight (LoS)
communication (using Handheld Transceivers-HTs)

VHF-**Very High Frequency**

✓ 144-146 MHz (2m Band)

UHF-**Ultra High Frequency**

✓ 434-438 MHz (70 cm Band)

MCQ questions related to Frequency allocation-1

MCQ1

Which of the following frequency band is allotted for LoS communication in VHF?

- ☐ 140-150 MHz
- ☐ 118-138 MHz
- ☐ 88-108 MHz
- ☒ 144-146 MHz ✓

MCQ questions related to Frequency allocation-2

MCQ2

Which of the following frequency band is allotted for LoS communication in UHF?

- ☐ 300 -334 MHz
- ☐ 441-440 MHz
- ☒ 434-438 MHz ✓
- ☐ 800 -1800 MHz

Wavelength (or Metre Band of an allotted Frequency Spectrum)

Theory

Formula:

Wavelength (in metre) = $300 / \text{Frequency in MHz}$

For example wavelength of 300 MHz is:

$$300 / 300 = 1 \text{ m}$$

2m VHF Band in Amateur Radio: 144-146 MHz *

MCQ3

It is the approximate wavelength (rounded off value) $300/150 = 2 \text{ m}$

MCQ:

What is the wavelength of VHF band in Amateur Radio?

- ☐ 10m
- ☒ 2m ✓
- ☐ 4m
- ☐ 1.5m

* In USA frequency allocation is upto 148 MHz (144-148 MHz)

70 cm (0.7m) Band (UHF): 434-438 MHz

Theory

The 70 centimeter or 440 MHz band is a portion of the UHF radio spectrum internationally allocated to amateur radio and amateur satellite use. The ITU amateur radio allocation is from 430 to 440 MHz; however, some countries, such as the United States, allocate hams 420 to 450 MHz. In India allocation is restricted to 434-438

Satellite Operation is not permitted to
Restricted Grade Licence Holder

Satellite Operation on 10 GHz (In India not yet allotted but a few radio amateurs active)

Reference

Qatar Oscar-100 QO-100



World's first Amateur Radio Geostationary Satellite

**This
Is via a
Qatar
Geo
Stationary
Satellite from
Dumka, Jharkhand**

It is mostly not WPC but the hams who complain

Reference

 **gh** He doesn't know the protocol
On the one hand he 8s calling CQ and after calling CQ in the same breath he is giving his other details and suddenly he is calling Sandeep Baruah
Sandeep ji please train him
Haha · Reply · 1w   2

 **Sandeep Baruah** **gh** Ji, Suman made a couple of distant short contacts with with a hackRF SDR with 4 watt. As I wanted to make a video it was my fault I told him to give a call again so that I record properly as I could not record his QSO contacts properly on my smartphone with low audio. So it was not his fault. It was my fault 73
Like · Reply · 1w · Edited

 **gh** Sandeep Baruah Oh... Sorry I was little harsh on him. Apologizes. Saute your guts to admit that its your fault
Love · Reply · 1w   2

 **Sandeep Baruah I** **gh** Ji I **gh** Ji As Suman was giving very brief calls I missed recording his some of the QSOs. I thought to record a better video on my laptop. As in between someone just gives a call on the other phone and recording gets interr... [See More](#)

70 cm (0.7m) : 434-438 MHz

Theory

$$300/0.7 = 428.5 \text{ MHz}$$

As in USA 420-450 MHz is allotted, an **approximate mid frequency** is taken as reference to define it as 0.7m or 70 cm band

Metre Band Related MCQ

MCQ4

What is the wavelength of the 434-438 MHz UHF amateur band?

☐ 45 cm

☒ 70 cm ✓

☐ 72 cm

☐ 77.5 cm

Frequencies to be remembered so that we operate only on frequencies allotted to us

Theory

For example, in the **30m short wave band** (long distance propagation takes place through ionosphere) a portion of the band spectrum is allotted to Pilot and Air Traffic Control for transoceanic communication.

30m band = 300/10 MHz

10 MHz band is a **HF (High Frequency Band)** for **long distance communication**

Here frequencies allotted to radio amateurs/hams is from 10.100 to 10.150 MHz. If we tune in below 10.100 MHz we can listen to some of the ATCs

Practical Example of Frequency Sharing (10.000 to 10.100 MHz for ATC)

Reference



“Secrecy of Correspondence”

Theory

What is Secrecy of Correspondence?

If any message which the licensee is not entitled to receive is, nevertheless received, the licensee shall not make known or allow to be made known its contents, its origin or destination, its existence or the fact of its receipt to any person (Other than duly authorized officer of the Central Government or a competent of legal tribunal) and shall not reproduce in writing, copy or make any use of such message or allow the same to be reproduced in writing, copied or made use of.

Frequencies allotted to radio amateurs

AUTHORISED FREQUENCY BANDS, POWER & EMISSIONS FOR RADIO AMATEURS IN INDIA

Band	Frequencies	Emissions	Max DC Input Power	Emissions	Max DC Input Power	Remarks
	 					
		Restricted Grade		General Grade		
160 M	1820-1860* kHz	A3E, H3E, J3E, R3E	50 watts	A1A, A2A, A3E, H3E, J3E, R3E, F1B, F2B, F3E, F3C, A3C, A3F	400 watts	Old Grade II Licensees are also authorised to use A1A emission in these bands
80 M	3500-3700* kHz					
75 M	3890-3900* kHz					
40 M	7000-7200 kHz					
30 M	10100-10150 kHz \$					
20 M	14000-14350 kHz					
17 M	18068-18168 kHz \$					
15 M	21000-21450 kHz \$					
12 M	24890-24990 kHz					
10 M	28000 -29700 kHz					
2 M	144-146 MHz	F1B, F2B, F3E, F3C	10 watts	F1B, F2B, F3E, F3C	25 watts	Old Grade II Licensees are also authorised to use A1A and A2A emissions in these bands
70 CM	434-438 MHz #					
	 					
	5725-5840 MHz #					

Allocation Subject to Relevant Provision of Radio Regulation

Theory

- * On primary shared basis as per the relevant provision of Radio Regulations. *
- # On secondary basis as per the relevant provisions of Radio Regulations. #
- \$ Authorization is on non-interference and non protection basis. \$

(i) All the allocation subject to the relevant provisions of the Radio Regulations.

Amateur satellite service is permitted for General Grade in the appropriate sub bands in accordance with Radio Regulations and in those cases the maximum output RF power (airp) is 30 dBw.

(ii) The above authorization is subject to site clearance as per the procedure prescribed by the Standing Advisory Committee on Radio Frequency Allocation (SACFA) as applicable.

(iii) For A3F emission, the transmission shall be restricted to call-sign of the station, location and other particular of the station. They shall be limited to point to point test transmission employing a standard interface and scanning with a bandwidth not more than 4 KHz.

(iv) DC input power is the total direct current power input to the final stage of the transmitter.

Secondary Service

Theory

3) Stations of a secondary service:

- a)* shall not cause harmful interference to stations of primary services to which frequencies are already assigned or to which frequencies may be assigned at a later date;
- b)* cannot claim protection from harmful interference from stations of a primary service to which frequencies are already assigned or may be assigned at a later date;
- c)* can claim protection, however, from harmful interference from stations of the same or other secondary service(s) to which frequencies may be assigned at a later date.

MCQ related Primary & Secondary Service

MCQ5

Which of the following frequency is allotted on “Primary Shared” basis in India?

- ☒ 3500 - 3700 kHz (3.5 - 3.7 MHz)
- ☐ 14000 - 14350 kHz (14 - 14.350 MHz)
- ☐ 434 - 438 MHz
- ☐ 10100 - 10150 kHz

International ITU Regulations

Theory

RR5-104

CHAPTER II – Frequencies

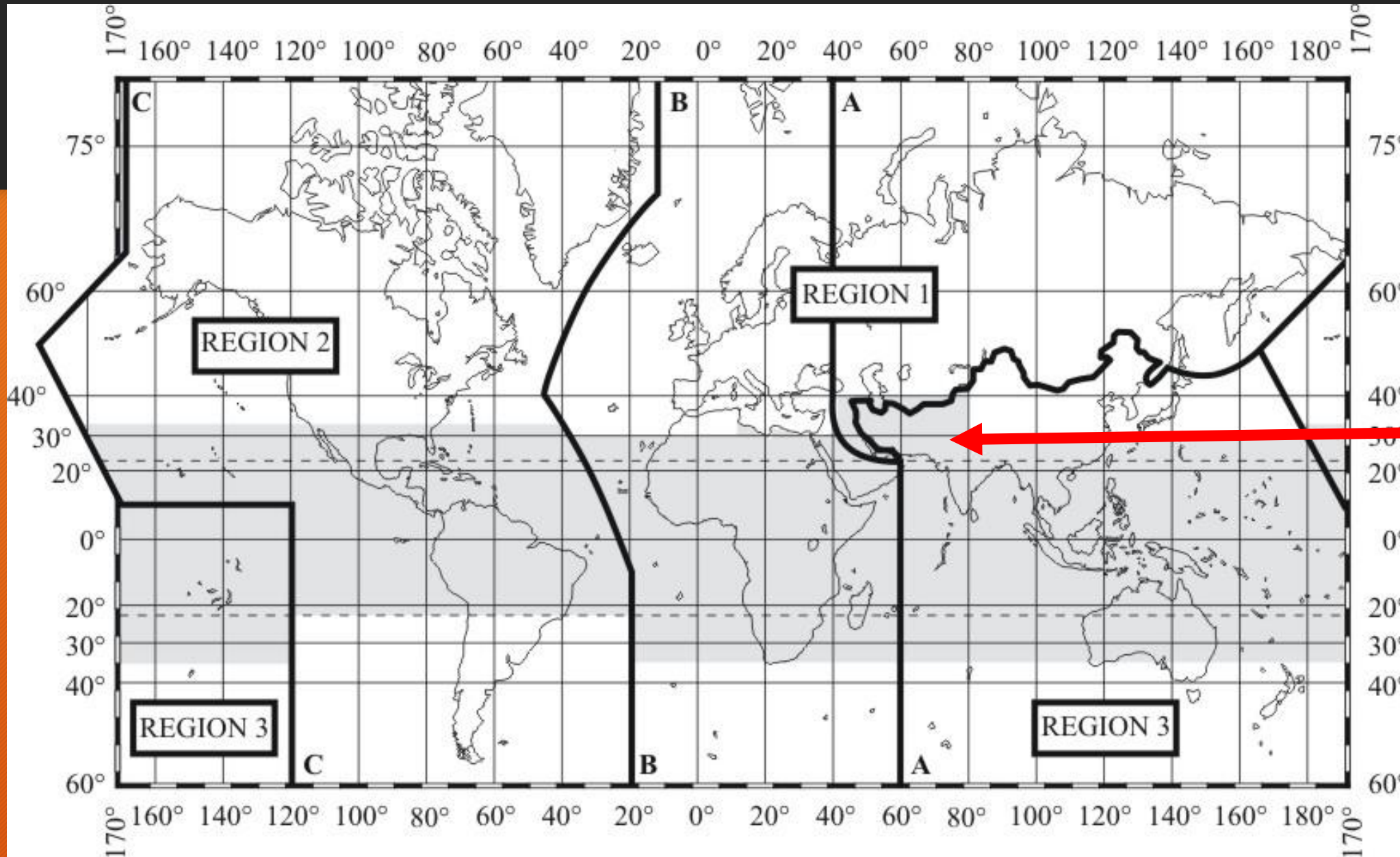
10-10.7 GHz

Allocation to services		
Region 1	Region 2	Region 3
10-10.4 EARTH EXPLORATION- SATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479	10-10.4 EARTH EXPLORATION- SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Amateur 5.474D 5.479 5.480	10-10.4 EARTH EXPLORATION- SATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479
10.4-10.45 FIXED MOBILE RADIOLOCATION Amateur	10.4-10.45 RADIOLOCATION Amateur 5.480	10.4-10.45 FIXED MOBILE RADIOLOCATION Amateur
10.45-10.5	RADIOLOCATION Amateur	

Services the names of which are printed in “**capitals**” (example: FIXED); are called “**primary**” services;

Services the names of which are printed in “normal characters” (example: Mobile); called “**secondary**” services

ITU Radio Region Map



Theory

India is in ITU
“Radio Region
3

Radio Wave Propagation

1.8 - 30 MHz

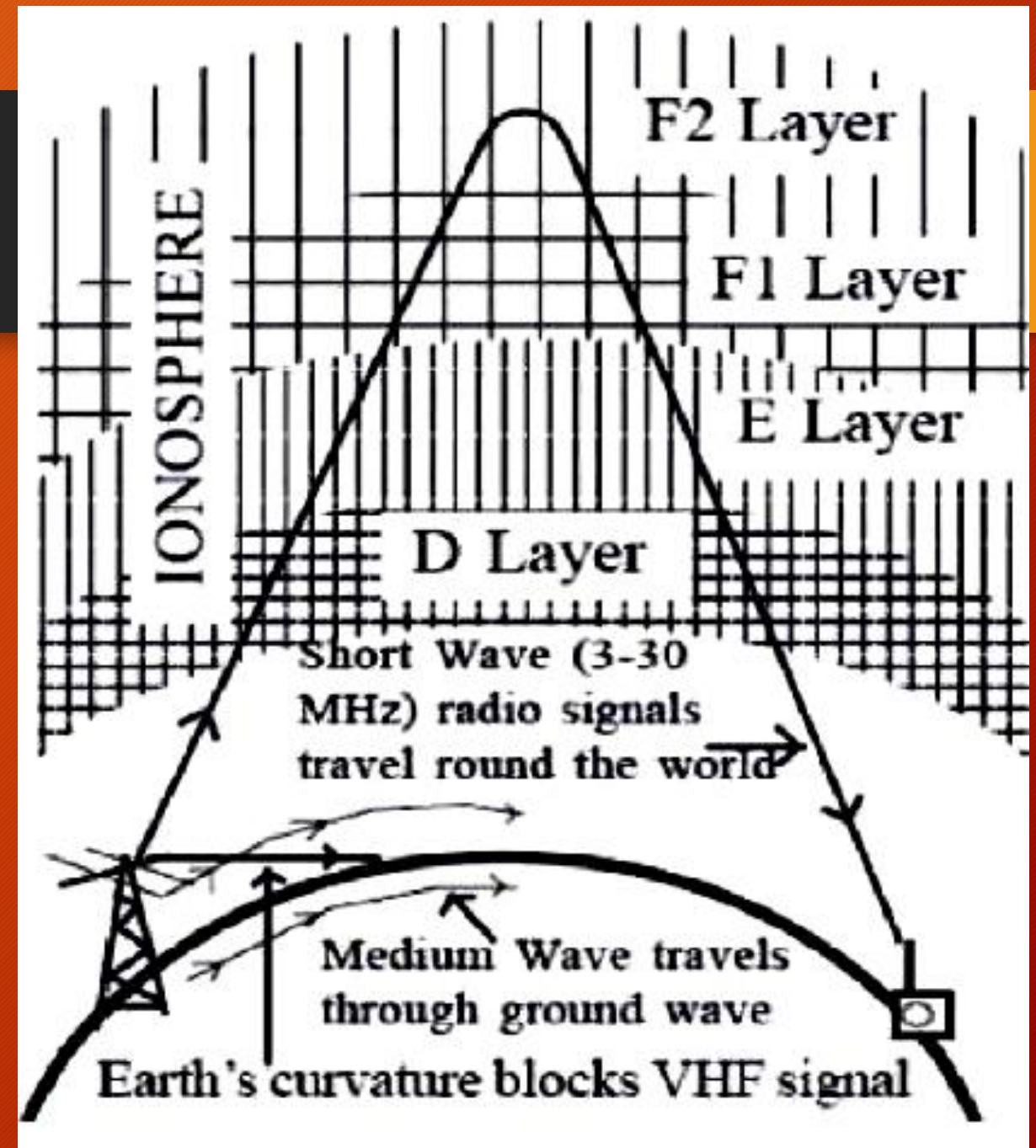
High Frequency

30 - 300 MHz

Very High Frequency

300 - 3000 MHz

Ultra High Frequency



MCQ Test [for sections covered in Day1

MCQ6

1. Which of the following frequency is used for long distance communication?

☒ 14.150 MHz

☐ 145.200 MHz

☐ 434.500 MHz

☐ 70.90 MHz

Day2

MCQ Test [for sections covered in Day1

MCQ7

2. Which layer of the Ionosphere is used by radio amateurs for long distance worldwide communication?

☐ F4

☐ D

☐ E

☒ F2

Day2

MCQ Test [for sections covered in Day1

MCQ8

3. India falls in which ITU (International Telecommunication Radio Region?

☐ Region 2

☒ Region 3

☐ Region 1

☐ Non of the above

Day2

MCQ Test [for sections covered in Day1

MCQ9

4. Which is not an amateur radio frequency in India?

☐ 7150 kHz

☒ 7250 kHz

☐ 7070 kHz

☐ 7100 kHz

Day2

MCQ Test [for sections covered in Day1

MCQ10

5. Which of the following band is used for long distance communication?

☐ VHF

☒ HF

☐ UHF

☐ EHF

Day2

MCQ Test [for sections covered in Day1

MCQ11

6. Which is the lowest layer of ionosphere

☐ F1

☒ D

☐ F2

☐ E

Day2

MCQ Test [for sections covered in Day1

MCQ12

7. Frequencies allotted to radio amateurs in India in **VHF** is

- ☐ 14.400 - 14.600 MHz
- ☐ 1.4400 - 1.4600 MHz
- ☒ 144.00 - 146.00 MHz
- ☐ 14.34 - 14.380 MHz

Day2

MCQ Test [for sections covered in Day1

MCQ13

8. UHF frequencies allotted to radio amateurs in India are

☐ 4.34 -4.38 MHz

☐ 44.4 - 4.90 MHz

☒ 434 - 438 MHz

☐ 433 - 439 MHz

Day2

MCQ Test [for sections covered in Day1

MCQ14

9. Which of the following frequency spectrum is called the 15m shortwave band allotted to radio amateurs

- ☐ 1820 -1860 MHz
- ☐ 1.820 - 1.860 MHz
- ☐ 2.100 MHz - 2.450 MHz
- ☒ 21.000 MHz - 21.450 MHz

Day2

MCQ Test [for sections covered in Day1

MCQ15

10. In India UHF & VHF bands are allowed to be used only by Restricted Grade Licence holders

☐ True

☒ False

☐ True only if 10 watts power is used

☐ True only if 25 watts power is used

Day2

MCQ Test [for sections covered in Day1

MCQ16

11. Minimum age requirement to appear for Amateur Radio Licencing Exam in India is

☐ 14 year

☒ 12 year

☐ 18 year

☐ 21 year

Day2

MCQ Test [for sections covered in Day1

MCQ17

12. Maximum power allowed to used by a Restricted Grade Licence holder in HF (High Frequency) is

- ☐ 25 Watt
- ☐ 100 Watt
- ☒ 50 Watt
- ☐ 10 Watt

Day2

Nomenclature of the Frequency and Wavelength Bands used in Amateur Radio Communication

Theory

As per the International Radio Regulations, the Radio Spectrum is subdivided into nine (9) frequency bands, which are designated by progressive whole numbers in accordance with the following table.

Day2

Frequencies as they shall be expressed considering the unit of frequency is the hertz (Hz):

Day2

- in **Kilohertz** kHz, upto and including **3000 kHz**;
- in **Megahertz** MHz, above **3 MHz**, up to and including **3000 MHz**;
- in **Gigahertz** GHz, above **3 GHz**, up to and including **3000 GHz**;
- For **bands above 3000 GHz**, i.e. centimillimetric waves, micrometric waves and decimicrometric waves, it would be appropriate to use **Terahertz THz**.

Symbols and prefixes: Hz=Hertz, k=kilo 10^3 ,
M=Mega 10^6 , G=Giga 10^9 , T=Tetra 10^{12}

Day2 Classification of Radio Frequencies				Theory
Band No	Frequency Band	Frequency Range	Wavelength (Metres)	Name Range Waves
4	VLF (Very Low Frequency)	3- 30 kHz	100000 - 10000	Myriametric (mam)
5	LF (Low Frequency)	30-300 kHz	10000-1000	Kilometric (km)
6	MF (Medium Frequency)	300-3000 kHz	1000- 100	Hectometric (hm)
7	HF (High Frequency)	3- 30 MHz	100 - 10	Decametric (dam)
8	VHF (Very High Frequency)	30-300 MHz	10- 1	Metric (m)
9	UHF (Ultra High Frequency)	300-3000 MHz	1m - 10cm	Decimetric (dm)
10	SHF (Super High Frequency)	3 - 30 GHz	10- 1 cm	Centimetric (cm)
11	EHF (Extremely High Frequency)	30 - 300 GHz	1 cm -0.1cm	Millimetric
12		300 - 3000 GHz	0.1 cm-0.01cm	Decimilimetric

ITU

1 (ELF)	2 (SLF)	3 (ULF)	4 (VLF)
5 (LF)	6 (MF)	7 (HF)	8 (VHF)
9 (UHF)	10 (SHF)	11 (EHF)	12 (THF)

EU / NATO / US ECM

A · B · C · D · E · F · G · H · I · J · K · L · M ·
N

IEEE

HF · VHF · UHF · L · S · C · X · K_u · K · K_a ·
V · W · mm



A VLF receiving antenna at Palmer Station, Antarctica, operated by Stanford University.

Very low frequency or **VLF** is the ITU designation for radio frequencies (RF) in the range of 3–30 kHz, corresponding to wavelengths from 100 to 10 km, respectively. The band is also known as the **myriameter band** or **myriameter wave** as the wavelengths range from one to ten myriameters (an obsolete metric unit equal to 10 kilometers).

“Band Number N” extends from 0.3×10^N to 3×10^N Hz,
e.g., Band No. 7 is the HF (High Frequency) band ranging from 0.3×10^7 to 3×10^7 Hz, i.e.
30000000 Hz (3 MHz) to 300000000 Hz (30 MHz)

Section B: Radio Regulations

Theory

(a) Knowledge of :-

(i) the Indian Wireless Telegraphs Rules, 1973.

(ii) The Indian Wireless Telegraphs (Amateur Service) Rules, 1978 and amendments.

b) Knowledge of ITU Radio Regulations as relating to the operation of amateur stations with particular emphasis on the following:

Item	Provision of Radio Regulation (2008 edition)
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Designation of Emission	Appendix I
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Phonetic alphabets and figure code	Appendix 14
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➡ Nomenclature of the Frequency & Wavelength	Article 2
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➡ Frequency allocation for Amateur Services	Article 5
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Interference, measures against interference & tests	Article 15
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Day2

Identification of Stations

Distress Signal, Call and Message. Transmissions

Urgency Signal, Call and Message Transmissions

Amateur Station

Call Sign series allocated to India

Article 19

Article 30, 31, 32 & 33.

Article 30, 31, 32 & 33.

Article 25

Appendix 42



(c) **Standard Frequency and Time Signals** Services in the World.

(d) The following 'Q' codes and abbreviations shall have the same meaning as assigned to them in the Convention.

QRA, QRG, QRH, QRI, QRK, QRL, QRM, QRN, QRO,
QRS, QRT, QRU, QRV, QRW, QRX, QRZ, QSA, QSB,
QSL, QSO, QSU, QSV, QSW, QSX, QSY, QSZ, QTC, QTH,
QTR, and QUM.

Station Defunct			Type of antenna(s)	Carrier power (kW)	Number of simultaneous transmissions	Period of operation		Standard frequencies used		Duration of emission		Uncertainty of frequency and time intervals (parts in 10 ¹²) (1)	Method of DUT1 indication
Call sign	Approximate location	Latitude Longitude				Days/week	Hours/day	Carrier (MHz)	Modulation (Hz)	Time signal (min)	Audio-modulation (min)		
ATA ATA	New Delhi, India	28° 34' N 77° 19' E	Horizontal folded dipole	8 (PEP)	3	7	24 (2)	5, 10, 15	1, 1 000	continuous	4/15	± 10	
BPM (3) BPM	Pucheng, China	35° 00' N 109° 31' E	Omni-directional	10-20	2	7	24 (4)	2.5, 5, 10, 15	1, 1 000	20/30 (UTC) 4/30 (UT1)	nil	± 10	Direct emission of UT1 time signal
Run by Chinese Academy of Science													
HLA	Taejon, Taedok Science Town, Republic of Korea	36° 23' N 127° 22' E	Vertical (conical monopole)	2	1	5 (5)	7 (6)	5	1	continuous	continuous	± 10	CCIR code by double pulse
IAM (7)	Roma, Italy	41° 47' N 12° 27' E	Vertical $\lambda/4$										code by double
JJY (7)	Sanwa, Sashima, Ibaraki, Japan	36° 11' N 139° 51' E	(8)					2.5, 5, 8, 10, 15	1 000 (11)	continuous	30/30	± 10	CCIR code by lengthening
LOL (7)	Buenos Aires, Argentina	34° 37' S 58° 21' W	Horizontal 3-wire folded dipole	2	3	7	5	5, 10, 15	1, 440, 1 000	continuous	3/5	± 20	CCIR code by lengthening
OMA (7)	Prague, Czech and Slovak Federal Republic	50° 07' N 14° 35' E	T	1	1	7	24	2.5	1, 1 000 (12)	15/30	4/15	± 1 000	

Standard Time Signal Frequencies:
2.5 MHz, 5 MHz, 10 MHz, 15 MHz

Station			Type of antenna(s)	Carrier power (kW)	Number of simultaneous transmissions	Period of operation		Standard frequencies used		Duration of emission		Uncertainty of frequency and time intervals (parts in 10 ¹²) (1)	Method of DUT1 indication
Call sign	Approximate location	Latitude Longitude				Days/ week	Hours/ day	Carrier (MHz)	Modulation (Hz)	Time signal (min)	Audio-modulation (min)		
RCH ⁽⁷⁾	Tashkent	41° 19' N 69° 15' E	Horizontal dipole	1	2	7	21	2.5, 5, 10	1, 10	40/60	nil	± 50	CCIR code by double pulse, additional information dUT1 (13)
RID ⁽⁷⁾	Irkutsk	52° 26' N 104° 02' E	Horizontal dipole	1 1 1	3	7	24	5.004, 10.004, 15.004	1, 10	40/60	nil	± 50	CCIR code by double pulse, additional information dUT1 (13)
RWM ⁽⁷⁾	Moscow	55° 48' N 38° 18' E	Horizontal dipole	5 5 8	3	7	24	4.996, 9.996, 14.996	1, 10	40/60	nil	± 50	CCIR code by double pulse, additional information dUT1 (13)
VNG	Llandilo, New South Wales, Australia	33° 43' S 150° 48' E	Omni-directional	10	1	7	24	5, 10, 15, 20 (14)	1, 1 000 (14)	continuous	nil	± 100	CCIR code by double pulse, additional information dUT1 (13)
WWV ⁽⁷⁾ WWV	Fort Collins, Colorado, United States	40° 41' N 105° 02' W	Vertical $\lambda/2$ dipoles	2.5-10				5, 10, 15, 20 (15)	440, 500, 600 (16)	(16)	(17)		CCIR code by double pulse, additional information on UT1 corrections
WWVH ⁽⁷⁾ WWVH	Kekaha, Kauai, Hawaii, United States	21° 59' N 159° 46' W	Vertical $\lambda/2$ dipole arrays	2.5-10	4	7	24	2.5, 5, 10, 15 (15)	1, 440, 500, 600	continuous (16)	continuous (17)	± 10	CCIR code by double pulse, additional information on UT1 corrections

Standard Time Signal Frequencies:
2.5 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz

Which one of the following is NOT a Standard Time Signal Frequency?

MCQ18

☐ 1.5 MHz

☐ 10 MHz

☐ 20 MHz

☐ 15 MHz

Which one of the following is a Standard Time
Signal Station

MCQ19

☐ XXX

☐ TTT

☐ SOS

☐ WWV

Which one of the following is a Standard Time
Signal Station

MCQ20

- ☐ SOS
- ☐ TTT
- ☐ **BPM**
- ☐ XXX

(d) The following 'Q' codes and abbreviations shall have the same meaning as assigned to them in the Convention.

QRA, QRG, QRH, QRI, QRK, QRL, QRM, QRN, QRO,
QRS, QRT, QRU, QRV, QRW, QRX, QRZ, QSA, QSB,
QSL, QSO, QSU, QSV, QSW, QSX, QSY, QSZ, QTC, QTH,
QTR, and QUM.

Q-Codes

Day3

A 'Q-code' consists of three letters starting with the letter 'Q'. **Q-codes are devised to facilitate faster communication in Morse code. Instead of sending a long sentence, the amateur radio operator can just send a combination of three letters** to represent a long sentence. If the amateur radio operator asks something to his fellow operator, then the Q-code is followed by a question mark. If the Q-code is used to represent a statement (not a question), then it is not ended with a question mark. For example, if you want to ask your friend on the air whether he is busy (Are you busy?), the Q-code will be 'QRL?'. If you want to say that you are busy, send 'QRL'. operator. Q-codes are very often used during the voice communication also.

QRA	QRU	Theory
QRG	QRV	
QRH	QRW	
QRI	QRX	Q SX
QRK	QRZ	Q SY
QRL	QSA	Q SZ
QRM	QSB	Q TC
QRN	QSL	Q TH
QRO	QSO	Q TR
QRS	QSU	Q UM
QRT	QSV	
	QSW	

Q codes mandatory for
Mariners (Sailors
who skipper small
sailboats, yachts etc)

They need to
remember
84 Q-Codes

Radio Amateurs need
to remember only
30 Q-codes

APPENDIX G

Q SIGNALS

Signal	Meaning	Signal	Meaning
QRA?	What is the name of your station?	QRA	The name of my station is . . .
QRB?	How far approximately are you from my station?	QRB	The approximate distance between our stations is . . . miles.
QRC?	By what private enterprise (or, state administration) are charges for your station settled?	QRC	The accounts for charges of my station are settled by . . .
QRD?	Where are you bound, and where are you from?	QRD	I am bound for . . . from . . .
QRE?	What is your estimated time of arrival at . . . ?	QRE	ETA at . . . is . . . hours.
QRF?	Are you returning to . . . ?	QRF	I am returning to . . .
QRG?	Will you tell me my exact frequency (or, that of . . .)?	QRG	Your exact frequency (or, that of . . .) is . . . kHz (or MHz).
QRH?	Does my frequency vary?	QRH	Your frequency varies.
QRI?	How is the tone of my transmission?	QRI	The tone of your transmission is: (1) Good. (2) Variable. (3) Bad.
QRK?	What is the readability of my signals (or, those of . . .)?	QRK	Readability is: (1) Unreadable. (2) Readable now and then. (3) Readable with difficulty. (4) Readable. (5) Perfectly readable.
QRL?	Are you busy?	QRL	I am busy (or, busy with . . .). Please do not interfere.
QRM?	Are you being interfered with?	QRM	I am being interfered with.
QRN?	Are you troubled by static?	QRN	I am troubled by static.
QRO?	Shall I increase power?	QRO	Increase power.
QRP?	Shall I decrease power?	QRP	Decrease power.
QRQ?	Shall I send faster?	QRQ	Send faster (. . . wpm).
QRR?	Are you ready for automatic operation?	QRR	I am ready for automatic operation. Send at . . . wpm.
QRS?	Shall I send more slowly?	QRS	Send more slowly.
QRT?	Shall I stop sending?	QRT	Stop sending.
QRU?	Have you anything for me?	QRU	I have nothing for you.
QRV?	Are you ready?	QRV	I am ready.
QRW?	Shall I inform . . . that you are calling him on . . . kHz?	QRW	Please inform . . . that I am calling him on . . . kHz.
QRX?	When will you call me again?	QRX	I will call you again at . . . hours.
QRY?	What is my turn?	QRY	Your turn is number . . .
QRZ?	Who is calling me?	QRZ	You are being called by . . .
QSA?	What is the strength of my signals (or, those of . . .)?	QSA	Your signals are: (1) Scarcely perceptible. (2) Weak. (3) Fairly good. (4) Good. (5) Very good.
QSB?	Are my signals fading?	QSB	Your signals are fading.
QSC?	Are you a cargo vessel?	QSC	I am a cargo vessel.
QSD?	Is my keying defective?	QSD	Your keying is defective.
QSG?	Shall I send . . . messages at a time?	QSG	Send . . . messages at a time.

Theory

Q codes mandatory for Mariners (Sailors who skipper small sailboats, yachts etc)

Signal	Meaning	Signal	Meaning
QSJ?	What is the charge to be collected per word to . . . including your internal telegraph charge?	QSJ	The charge to be collected per word to . . . including my internal charge is . . . francs.
QSK?	Can you hear me between your signals?	QSK	I can hear you between my signals.
QSL?	Can you acknowledge receipt?	QSL	I am acknowledging receipt.
QSM?	Shall I repeat the last telegram which I sent you, or some previous telegram?	QSM	Repeat the last telegram which you sent me [or, telegram(s) number(s) . . .].
QSN?	Did you hear me (or, on . . . kHz)?	QSN	I did hear you (or, on . . . kHz).
QSO?	Can you communicate with . . . direct or by relay?	QSO	I can communicate with . . . direct or by relay through . . .
QSP?	Will you relay to . . . free of charge?	QSP	I will relay to . . . free of charge.
QSQ?	Have you a doctor on board or, is . . . (name of person) on board?	QSQ	I have a doctor on board or, . . . (name of person) is on board.
QSU?	Shall I send or reply on this frequency (or, on . . . kHz) (with emissions of class . . .)?	QSU	Send or reply on this frequency (or, on . . . kHz) (with emissions of class . . .).
QSV?	Shall I send a series of V's on this frequency (or, . . . kHz)?	QSV	Send a series of V's on this frequency (or, . . . kHz).
QSW?	Will you send on this frequency (or, . . . kHz) (with emissions of class . . .)?	QSW	I am going to send on this frequency (or, . . . kHz) (with emissions of class . . .).
QSX?	Will you listen to . . . (call sign) on . . . kHz?	QSX	I am listening to . . . (call sign) on . . . kHz.
QSY?	Shall I change to transmission on another frequency?	QSY	Change to transmission on another frequency (or, on . . . kHz).
QSZ?	Shall I send each word or group more than once?	QSZ	Send each word or group twice (or, . . . times).
QTA?	Shall I cancel telegram number . . . as if it had not been sent?	QTA	Cancel telegram number . . . as if it had not been sent.
QTB?	Do you agree with my counting of words?	QTB	I do not agree, I will repeat the first letter of each word.
QTC?	How many telegrams have you to send?	QTC	I have . . . telegrams for you (or, for . . .).
QTE?	What is my TRUE bearing from you (or, What is my TRUE bearing from . . . ; or, What is the TRUE bearing of . . . from . . .)?	QTE	Your TRUE bearing from me is . . . degrees (at . . . hours) (or, Your TRUE bearing from . . . was . . . degrees at . . . hours; or, The TRUE bearing of . . . from . . . was . . . degrees at . . . hours).
QTF?	Will you give me the position of my station according to the bearings taken by the direction-finding stations which you control?	QTF	The position of your station according to the bearings taken by the direction-finding stations which I control was . . . latitude . . . longitude.
QTG?	Will you send two dashes of 10 s each followed by your call sign (repeated . . . times)?	QTG	I am going to send two dashes of 10 s each followed by my call sign (repeated . . . times).

Theory

Q codes mandatory for Mariners (Sailors who skipper small sailboats, yachts etc)

Signal	Meaning
QTH?	What is your position in latitude and longitude (or, according to any other indication)?
QTI?	What is your TRUE track?
QTI?	What is your speed?
QTK?	What is the speed of your aircraft in relation to the surface of the earth?
QTL?	What is your TRUE heading (TRUE course with no wind)?
QTN?	At what time did you depart from . . . (place)?
QTO?	Have you left dock (or, Are you airborne)?
QTP?	Are you going to enter dock (or, Are you going to alight)?
QTQ?	Can you communicate with my station by means of the International code of signals?
QTR?	What is the correct time?
QTS?	Will you send your call sign for . . . minute(s) now (or, at . . . hours) (on . . . kHz) so that your frequency may be measured?
QTU?	What are the hours during which your station is open?
QTV?	Shall I stand guard for you on the frequency of . . . kHz (from . . . to . . . hours)?
QTX?	Will you keep your station open for further communication with me until further notice (or, until . . . hours)?
QUA?	Have you news of . . . (call)?
QUB?	Can you give me, in the following order, information concerning visibility, height of clouds, and direction and velocity of ground wind at . . . (place)?
QUC?	What is the number (or other indication) of the last message you received from me [or, from . . . (call sign)]?
QUD?	Have you received the urgency signal sent by . . . (call sign)?
QUF?	Have you received the distress signal sent by . . . (call sign)?
QUG?	Will you be forced to land?
QUH?	Will you give me the present barometric pressure at sea level?

Signal	Meaning
QTH	My position is . . . latitude . . . longitude (or, according to any other indication).
QTI	My TRUE track is . . . degrees.
QTI	My speed is . . . knots.
QTK	The speed of my aircraft is . . . knots.
QTL	My TRUE heading is . . . degrees.
QTN	I departed from . . . (place) at . . . hours.
QTO	I have left dock (or, I am airborne).
QTP	I am going to enter dock (or, I am going to alight).
QTQ	I am going to communicate with your station by means of the International code of signals.
QTR	The correct time is . . . hours.
QTS	I will send my call sign for . . . minute(s) now (or, at . . . hours) (on . . . kHz) so that my frequency may be measured.
QTU	My station is open from . . . to . . . hours.
QTV	Stand guard for me on the frequency of . . . kHz (from . . . to . . . hours).
QTX	I will keep my station open for further communication with you until further notice (or, until . . . hours).
QUA	Here is news of . . . (call).
QUB	Here is the information requested . . .
QUC	The number (or other indication) of the last message I received from you [or from . . . (call sign)] is . . .
QUD	I have received the urgency signal sent by . . . (call sign).
QUF	I have received the distress signal sent by . . . (call sign).
QUG	I am forced to land immediately [or, I shall be forced to land at . . . (position or place)].
QUH	The present barometric pressure at sea level is . . . (units).

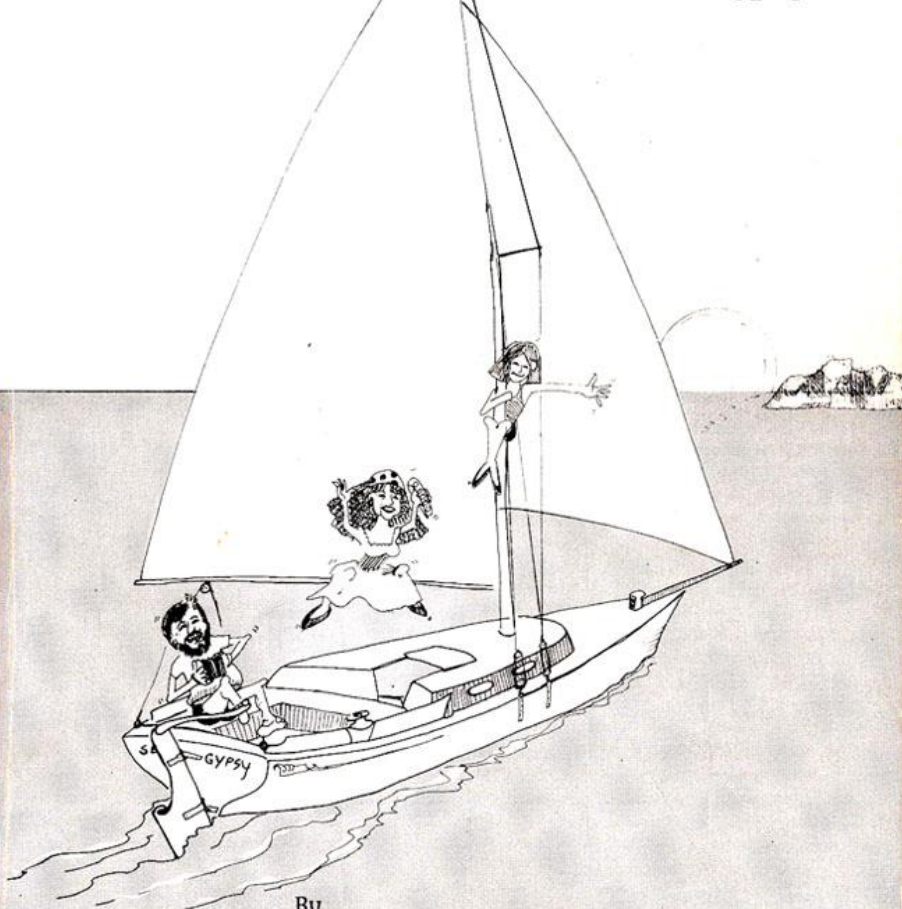
Q codes mandatory for Mariners (Sailors who skipper small sailboats, yachts etc)

Signal	Meaning	Signal	Meaning
QUI?	Are your navigation lights working?	QUI	My navigation lights are working.
QUJ?	Will you indicate the TRUE course for me to steer toward you (or, . . .) with no wind?	QUJ	The TRUE course for you to steer toward me (or, . . .) with no wind is . . . degrees at . . . hours.
QUK?	Can you tell me the condition of the sea observed at . . . (place)?	QUK	The sea at . . . (place) is
QUL?	Can you tell me the swell observed at . . . (place)?	QUL	The swell at . . . (place) is
QUM?	Is the distress traffic ended?	QUM	The distress traffic is ended.
QUN?	Will vessels in my immediate vicinity (or in the vicinity of . . . latitude . . . longitude) (or, of . . .) please indicate their position, TRUE COURSE, and speed?	QUN	My position, TRUE COURSE, and speed are . . .
QUO?	Shall I search for . . . [(1) aircraft, (2) ship, (3) survival craft] in the vicinity of . . . latitude . . . longitude (or according to any other indication)?	QUO	Please search for . . . [(1) aircraft, (2) ship, (3) survival craft] in the vicinity of . . . latitude . . . longitude (or according to any other indication).
QUP?	Will you indicate your position by . . . [(1) searchlight, (2) black-smoke trail, (3) pyrotechnic lights]?	QUP	My position is indicated by . . . [(1) searchlight, (2) black-smoke trail, (3) pyrotechnic lights].
QUQ?	Shall I train my searchlight nearly vertical on a cloud, occulting if possible, and if your aircraft is seen, deflect the beam upwind and on the water (or land) to facilitate your landing?	QUQ	Please train your searchlight on a cloud, occulting if possible, and if my aircraft is seen or heard, deflect the beam upwind and on the water (or land) to facilitate my landing.
QUR?	Have survivors . . . [(1) received survival equipment, (2) been picked up by rescue vessel, (3) been reached by ground rescue party]?	QUR	Survivors . . . [(1) are in possession of survival equipment dropped by . . . , (2) have been picked up by rescue vessel, (3) have been reached by ground rescue party].
QUS?	Have you sighted survivors or wreckage? If so, in what position?	QUS	Have sighted . . . [(1) survivors in water, (2) survivors on rafts, (3) wreckage] in position . . . latitude . . . longitude (or, according to any other indication).
QUT?	Is position of incident marked?	QUT	Position of incident is marked (by . . .).
QUU?	Shall I home ship or aircraft to my position?	QUU	Home ship or aircraft [(1) . . . (call sign) to your position by transmitting your call sign and long dashes on . . . kHz, (2) . . . (call sign) by transmitting on . . . kHz] courses to steer to reach you.

Theory

CHASING THE HORIZON

"The Life and Times of a Modern Sea Gypsy"



By
Cap'n Fatty Goodlander
author of *SEADOGS, CLOWNS & GYPSIES*

Gary Martin Goodlander
Call-sign: W2FAT

Trivia

Most of the small sailboat owners who circumnavigate are radio amateurs.

Living in sea is cheaper.

- No bills to be paid
- Foods purchased for 3-4 month
- No liability & responsibility

Rs. 1500 book got free of cost

ALOY
SAWDEE
BARUAH...

Thank you,
Carolyn

THANKS FOR ALL
THE RADIO HELP!
FAIR WINDS
+
Calm Seas!

cap'n Fatty
Cochran
Jan 2003

CHASING THE HORIZON



"The Life and Times of a Modern Sea Gypsy"

by

Gary "Cap'n Fatty" Goodlander

Trivia

Trivia



Prof. Mani, VU2ITI Kochi

Pirate ham
VP5GGX-MM

Prof. Mani (VU2ITI) with Cap'n Fatty after he repaired and reinstalled the Icom IC 710 onboard Wild Card (In the first week of February, 2003). As Carolyn wrote in her e-mail (dated February 3, 2003)-" Prof Mani did a fantastic fix and the radio is working better than ever. His friend noticed that our antenna wire wasn't attached properly - the outer cable didn't go to the ground.... So now it is much better in the higher frequencies.He also invited us to his house for a real Kerelan lunch and we are very excited to go and meet his family.

24032003/0600 Zulu/14.345 MHz/ssb/vp5ggx-mm/43/ 75° 22' East/09°53'North

25032003/0600 Z/21.250 MHz/ssb/vp5ggx-mm/58/ 75°12' East/08°38'North
Calm sea,Overcast sky, **163 miles to go to Maldives**

26032003/0600 Z/21.250 MHz/ssb/vp5ggx-mm/56/ 73°35' East/07°36' North

27032003/0610 Z/21.250 MHz/ssb/vp5ggx-mm/58/ **Anchored at Maldives**

04042003/0605 Z/21.250 MHz/ssb/vp5ggx (Would be sailing to Chagos Island at 0430 Z on 05032003)

55 MHz/vp5ggx-mm/72°53' East/**04°52' North: Middle of Maldives heading south.** Diving..collecting coconut bunches from deserted island, hundreds of color
curiously...

17042003/0600 Z/21.250 MHz/ssb/vp5ggx-mm/57/

27042003/0600 Z/21.250 MHz/ssb/vp5ggx-mm/58 qsb/72°33' East/**02°37' South 2-3 days to reach Chagos Island**

04052003/0600 Z/21.250 MHz/ssb/vp5ggx/55/72°12' East/**05°21' South** at Beddam Island (Chagos)

26052003: Cap'n Fatty and Carolyn is still anchored at the deserted island (A 'zero population' island!!) of Chagos.

02/06/2003/0600 Z/21.250 MHz/ssb/vp5ggx/44/

I talked to Cap'n Fatty & Carolyn (I heard Carolyn's voice

also! She seemed to me very joyous) on my radio. 'Cap'n Fatty told me that they had plenty of

rains and their water tanks are now full-sufficient to sail down to Madagascar. Probably

this time they are carrying 'coconuts' collected from the island (I heard Cap'n Fatty

nk 'coconut water' would be a good replacement in the event of dearth of water. Cap'n Fatty was working on the boat and told me that they are almost getting ready
of sailing towards Madagascar is June 7, 2003.

It's the People You Meet

For salt-stained sea gypsies like us, the world is a place full of wonderful wackos
BY CAP'N FATTY GOODLANDER

WE HAVE FRIENDS ALL OVER THE WORLD—both sailors and dirt dwellers—whom we've met in the most unexpected, bizarre ways. Take India. When we pulled into Kerala, our ICOM 710 SSB wasn't working. There wasn't a local dealer, and I was worried about sending it off to the States. So Carolyn contacted a local amateur radio club and asked them if any of their members might be able to fix it.

Immediately, the ham club sprang into action. They e-mailed all their national members: "Emergency! The American yacht *Wild Card* is in trouble. Their SSB radio isn't working, and they've asked us to fix it. The honor of India is at stake. We *must* help them!"

A few thousand miles away, Sandeep (VU2MUE) heard of our plight. He contacted his friend Balsun (VU2UYC) in Kuwait, who'd once met the renowned Professor Mani (VU2ITI) of Kerala.

The following day, a small fellow in a dress trotted anxiously up to *Wild Card*. "I am busy-busy," he panted. "Much work to do I have! But, for the honor of India, do you need your radio fixed tonight? Or could I bring it back to you the following day?"

I explained to him that we'd been hit by lightning, that I didn't know what was wrong with the radio, and that I didn't have any spare parts or even a schematic.

But the next day he showed up with the repaired radio, then spent the entire day tuning up my SSB rig, from grounding plane to antenna top, until *Wild Card* was transmitting louder and farther than ever.

India is a poor country. In the States, I'd've been mentally prepared to spend at least \$500 having the radio repaired.

"How much do I owe you?" I asked.

"Big price," he said, then nodded at Carolyn. "I respectfully request the honor of your company."

The following weekend, we went to his home for a traditional Kerala feast. It took him and his lovely wife a couple of days to prepare it, and it took us almost an entire day to eat it.

He turned out to be Professor T. K. Mani, a renowned

physicist, inventor of the acoustical rain gauge (it measures rainfall at sea), and one of the most intellectually stimulating people whom I've ever encountered.

Through "our friend, the Professor" we were immediately welcomed into the heart of India's scientific community. I gave lectures on marine electronics at Cochin University; we attended various weddings, fancy dinners, and exotic cultural events. In essence, because of our deepening friendship with Professor Mani, we had the time of our lives in tradition-rich India.

And the price for his labor? "No charge," he grinned. "Friends are friends, eh?"



In India, what started with fried electronics ended in a lifelong friendship with Professor T. K. Mani (left) and his circle.

World is a
Place full of
wonderful
misfits

Theory

- QRA? What is the name of your station?
- QRA The name of my station is
- QRG? Will you tell me my exact frequency (or, that of)?
- QRG Your exact frequency (or, that of) iskHz (or MHz).
- QRH? Does my frequency vary?
- QRH Your frequency varies.
- QRI? How is the tone of my transmission?
- QRI The tone of your transmission is: (1) Good. (2) Variable. (3) Bad.
- QRK? What is the readability of my signals (or, those of....)?
- QRK Readability is: (1) Unreadable. (2) Readable now and then.
(3) Readable with difficulty. (4) Readable. (5) Perfectly readable.

QRL?	Are you busy?
QRL	I am busy (or, busy with). Please do not interfere.
QRM?	Are you being interfered with?
QRM	I am being interfered with.
QRN?	Are you troubled by static noise?
QRN	I am troubled by static noise.
QRQ?	Shall I send faster?
QRQ	Send faster (.... wpm)
QRS?	Shall I send more slowly?
QRS	Send more slowly.
QRT?	Shall I stop sending?

Theory

QRT Stop sending

QRU? Have you anything for me?

QRU I have nothing for you.

QRV? Are you ready?

QRV I am ready.

QRW? Shall I inform that you are calling him onkHz?

QRW Please inform That I am calling him on kHz.

QRX? When will you call me again?

QRX I will call you again athours.

QRZ? Who is calling me?

QRZ You are being called by.

QSA? What is the strength of my signals (or those of)?

QSA Your signals are (1) Scarcely perceptible. (2) Weak. (3) Fairly good. (4) Good. (5) Very good.

Day3

Theory

QSB? Are my signals fading?

QSB Your signals are fading.

QSL? Can you acknowledge receipt?

QSL I am acknowledging receipt.

QSO? Can you communicate with direct or by relay?

QSO I can communicate with Direct or by relay through (a general conversation between two station)

QSU? Shall I send or reply on this frequency (or, onkHz)(with emissions of class...)?

QSU Send or reply on this frequency (or, on KHz) (with emissions of class).

QSV? Shall I send a series of 'V's on this frequency (or, KHz).

QSV Send a series of 'V's on this frequency (or,kHz).

QSW? Will you send on this frequency (or, ... kHz)(with emissions of class ...)?

QSW I am going to send on this frequency (or,kHz) (with emissions of class....).

Day3

Theory

QX? Will you listen to ... (call-sign) onkHz?

QX I am listening to ... (call-sign) onkHz.

QY? Shall I change my transmission to another frequency?

QY Change your transmission to another frequency.

QZ? Shall I send each word or group more than once?

QZ Send each word or group twice (or, times).

QT? How many telegrams have you to send?

QT I have telegrams for you (or, for).

QTH? What is your position in latitude and longitude (or, according to any other indication)

QTH My position is ...latitudelongitude (or, according to any other indication).

QTR? What is the correct time?

QTR The correct time ishours.

QU? Is the distress traffic ended?

QU The distress traffic is ended.

Day3

Telegraphic (Morse code) abbreviations:

AA, AB, AR, AS, BT, C, CFM, CL, CQ, DE, K, KN, NIL, OK, R, TU, VA, WA, WB.

The written examination for Restricted Grade licence is of one hour duration. The maximum number of marks is 100. Candidates must secure at least 40 per cent in each section and 50 per cent in aggregate to pass.

Abbreviations and PROcedural SIGNals for Exam

AA, AB, AR, AS, BT,
C, CFM, CL, CQ, DE,
K, KN, NIL, OK, R,
TU, VA, WA, WB

Prosign	Code Symbol	Meaning
$\overline{AA}$	-----	Start new line
$\overline{AR}$	-----	Message separator, start new message / telegram. ^{[4][1]}
$\overline{AS}$	-----	Wait ^{[4][1]}
$\overline{BT}$	-----	Start of new section ^[4] / new paragraph. ^[1]
$\overline{CT}$	-----	Start of transmission ^[4] Start of new message. ^[1]
$\overline{HH}$	-----	Error / correction ^{[4][1]}
K	---	Invitation for any station to transmit ^{[4][1]}
?	-----	Please say again ^{[4][1]}
$\overline{KN}$	-----	Invitation for named station to transmit ^[1]
$\overline{NJ}$	-----	Shift to Wabun code
$\overline{SK}$	-----	End of contact ^[1] / End of work ^[4]
$\overline{SN}$	-----	Understood. ^[1] Verified. ^[4]
$\overline{SOS}$	-----	Start of distress signal ^{[4][1]}
BK	---- ---	Break in conversation ^[1]
CL	-----	Closing down ^[1]

Theory

Day3

Abbreviations/Procedural signal asked in the Rules & Regulations Portion

Theory

- AA All After (Sometime to indicate Artificial Antenna)
- AB All Before
- AR **Over/** End of a Message to indicate the other station can transmit. **In two-way radio communication a single frequency can be utilized by a number of stations for a roundtable type of chatting/conversation. So if one station transmits, all others listen to him. By saying “OVER” in voice, the operator indicates that his message is complete and he can say: “Over to ArvindJee”. ArvindJee after completing his message may say “Over to InderjitJee”**

AS Wait. It is very frequently used in the midst of a long message exchange/conversation **when the operator has to suddenly or abruptly stop transmission**. Someone may be knocking at the door of his **Radio Room**. So if goes away from his radio without any indication in the midst of a message transmission, the other station may be confused.

BT Start of New Section or to indicate end of one sentence

C Yes

In Morse Code: Dah di Dah dit _ . _ .

A Dash (_) is called a Dah

A Dot (.) is called a Di (if it is at the end then 'Dit')

In **Voice**: C = Charlie (it is a NATO Phonetics)

So if a pilot says **"Charlie Charlie"** that means **"Yes Yes I understand everything what you transmitted "** (There is no need to repeat)

CFM (Please/pse) Confirm

CL Closed (closing down my station for now)

CQ **Seek You.** It is a **General Call to all the stations** indicating the station would repond to stations from anyone (any country or any station)

DE This is

K **Go ahead (general request)** If a station ends his transmission with 'K' (**Dah Di Dah _._**), anyone monitoring the frequency can respond back. It is an invitation to transmit **not directed to any specific station**. For example after entering my radio room, say I switched on my long distance radio set and I **did not copy the initial portion of the transmitting station but I copied the message ended with 'K'** ; So I can reply back asking with a Q-Code QRZ?
Dah Dah Di Dah Di Dah Dit Dah Dah Di Dit

KN Go ahead (directional request)
If we hear last portion of a message ending with KN, that means the station is requesting a specific station for a reply

NIL Nothing

OK All correct

R Roger (Copied OK)

TU Thank You

VA End of Work (When two stations finally signs off)

Important Q-Codes

Theory

QRL = Busy
QRM = Interfered by another station
QRN = Interference from electrical or ionospheric static noise
QRQ = Send fast
QRS = Send Slow
QRT = Closing Station
QRU = Message for You
QRV = Ready
QRX = Wait
QRZ = Who is calling
QSB = Fading
QSL = Acknowledged everything
QSO = Conversation
QSV = Send series of Vs VVV VVV VVV [Test Signal]
QSY = Change Frequency
QTC = How many Message
QTH = Location

QUM = Distress Traffic

QUM? = Is the distress traffic over?

Day 4

APPENDIX VI

DISTRESS, URGENCY AND SAFETY CODES

Distress Signal : The radio telephone distress signal consists of the word "**MAYDAY**" pronounced as the French expression 'm' alder'.

The radio telegraph distress signal consists of the group ...---... symbolized herein by **SOS** and transmitted as single signal in which the dashes are emphasized so as to be distinguished clearly from the dots.

Distress signal indicate that a ship, aircraft or other vehicle is threatened by grave and imminent danger and requests immediate assistance. **The distress call has absolute priority over all other transmissions.**

Urgency Signal : In radio telegraphy the urgency signal consists of three repetitions of the group **XXX**, sent with the letters of each group and the successive groups clearly separated from each other.

In telephony, the urgency signal consists of three repetitions of the group of words '**PAN PAN**' each word of the group pronounced as the French word "panne". The urgency signal is transmitted before the call thus indicating that the calling station has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle or the safety of a person. **The urgency signal has priority over all other transmission except distress call.**

Safety signal : It consists of the three repetitions of the group **TTT** sent with the letters of each group and the successive groups clearly separated from each other.

In telephony, it consists of three repetitions of the word '**Security**' and pronounced as "**Say-cure-ity**". It announces that the station is about to transmit a message concerning the safety or navigation or giving important meteorological warning.

Theory

SOS = Distress Signal

... — — — ...

XXX = Urgency Signal

— • • — — • • — — • • —

TTT = Safety Signal

— — —

Day 4

Q. What is a **distress call**?

A distress call is a call given from a ship, aircraft or vehicle indicating that the caller is threatened by **grave and imminent danger, which requires immediate assistance**. In **radiotelephony** transmission, the distress signal consists of the word **MAYDAY** (pronounced as the French expression '*m'aider*') spoken three times followed by the words **THIS IS** and the identification of the station seeking assistance. A distress message should be followed by the distress call.

It contains **name of the ship, aircraft or vehicle, position, type of distress and the type of assistance asked** for including any other relevant information to facilitate rescue operation.

In **radiotelegraphy**, the distress signal consists of the letters **SOS** sent in Morse Code characters **. . . _ _ _ . . . (SOS)**. All these characters should be transmitted three times as a single signal where **dashes** are to be emphasized to enable distinguish them clearly from the **dots**. A typical distress message may look like: **SOS SOS SOS CQ CQ CQ DE** followed by the call-sign.

When the distress traffic is over, the distress station should end its transmission with the Q-Code. It looks like:

DE 'call-sign' QUM VA.

Theory

Day 4

Q. What action should you take if you receive a **distress call**?

Theory

The distress call has **absolute priority** over all other transmissions. Hence it would be your utmost duty to

- listen to the distress call and stop your transmissions if you were previously occupying that frequency;
- acknowledge receipt of the distress message if the station in distress can copy your signal.
- At the same time, it would be your duty to ensure that your transmission does not interfere with transmissions of other stations, which may be better situated to render assistance.
- Even if you cannot render assistance, you should direct the attention of other stations in the nearby frequencies, because they might be in a position to render immediate assistance.
- You shall also try to inform the appropriate authorities, who might be able to conduct a rescue operation.

Day 4

Q. What is an 'Urgency Signal'?

Urgency signal is a wireless message which indicates that the calling station has a very urgent message to transmit concerning the safety of a ship/aircraft/vehicle or that of a person but the message cannot be ranked as distress message. Obviously, the urgency signal should be given priority over all other transmissions except distress call.

In radio telephony, the word **PAN** is repeated three times pronouncing it as the French word '*panne*'. Other procedures to be followed in this type of traffic is same as that in distress traffic. In radio telegraphy, the urgency signal consists of the group **XXX** (_ . . _ _ . . _ _ . . _) sent slowly three times. Letters of each group should be clearly separated from each other. The urgency signal transmitted by a ship can be addressed to a specific station. However, a coast station can transmit its urgency signal to all the ship stations after the approval of a responsible authority.

Q. What is a 'Safety Signal'?

A safety signal is a message concerned with the safety of ships/aircraft/vehicles indicating **a meteorological warning (e.g. storm)**, danger to navigation warning or other navigational-aid message. **Safety Signal is an important message because a delay in its transmission or reception can bring a disaster.**

In radio telephony, safety signal consists of the word '**SECURITY**' pronounced as **'say-cure-ity'**.

In radio telegraphy, it consists of the three repetitions of the group **TTT** (_ _ _) sent slowly followed by the station call-sign. Letters of each successive group should be clearly separated from each other.

Which one of the following gets absolute priority over all other signals?

MCQ21

☐ TTT

☐ XXX

☐ SOS

☐ VVV

Which one of the following Signal is related to Meteorological Warning, Danger to Navigation, or Navigational Aid Message?

MCQ22

☐ QRV

☐ AS

☐ TTT

☐ SOS

Which one of the following Signal is related to the Safety of a Person, Ship, Vehicle or Aircraft?

MCQ23

☐ QTH

☐ SOS

☐ XXX

☐ TTT

A Safety Signal is pronounced as

MCQ24

- ☐ MAYDAY
- ☐ Say-Cure-It
- ☐ Panne
- ☐ Save My Soul

Which one of the following is an Urgency Signal?

MCQ25

- ☐ An urgent message concerning the safety of a ship/aircraft/vehicle or person
- ☐ Message concerned with safety of ships/aircraft/vehicles indicating a meteorological warning
- ☐ A message indicating the caller is threatened by grave and imminent danger, which requires immediate assistance

Phonetics

<u>Letter</u>	<u>Word used as phonetics</u>	<u>Spoken as</u>
A	Alpha	AL FAH
B	Bravo	BRAH VOH
C	Charlie	CHAR LEE
D	Delta	DELL TAH
E	Echo	ECK OH
F	Foxtrot	FOKS TROT
G	Golf	GOLF
H	Hotel	HOH TELL
I	India	IN DEE AH
J	Juliet	JEW LEE ETT
K	Kilo	KEY LOH
L	Lima	LEE MAH
M	Mike	MIKE
N	November	NO VEM BER
O	Oscar	OSS CAH
P	Papa	PAH PAH
Q	Quebec	KEH BECK
R	Romeo	ROW ME OH
S	Sierra	SEE AIR RAH
T	Tango	TAN GO
U	Uniform	YOU NEE FORM
V	Victor	VIK TAH
W	Whiskey	WISS KEY
X	X-ray	ECKS RAY
Y	Yankee	YANK KEY
Z	Zulu	ZOO LOO

Theory

Day 4

Phonetics used against figures or marks

<u>Figure or mark</u>	<u>Word used as phonetics</u>	<u>Spoken as</u>
0	NADAZERO	NAH-DAH -ZAY-ROH
1	UNAONE	OO-NAH-WUN
2	BASSOTWO	BESS-SOH-TOO
3	TERRATHREE	TAY-RAH-TREE
4	KARTEFOUR	KAY-TAY-FOWER
5	PANTAFIVE	PAN-TAH-FIVE
6	SOXISIX	SOK-SEE-SIX
7	SETTESEVEN	SAY-TAY-SEVEN
8	OKTOEIGHT	OK-TOH-AIT
9	NOVENINE	N0-VAY-NINER
Decimal point	DECIMAL	DAY-SEE-MAL
Full stop	STOP	STOP