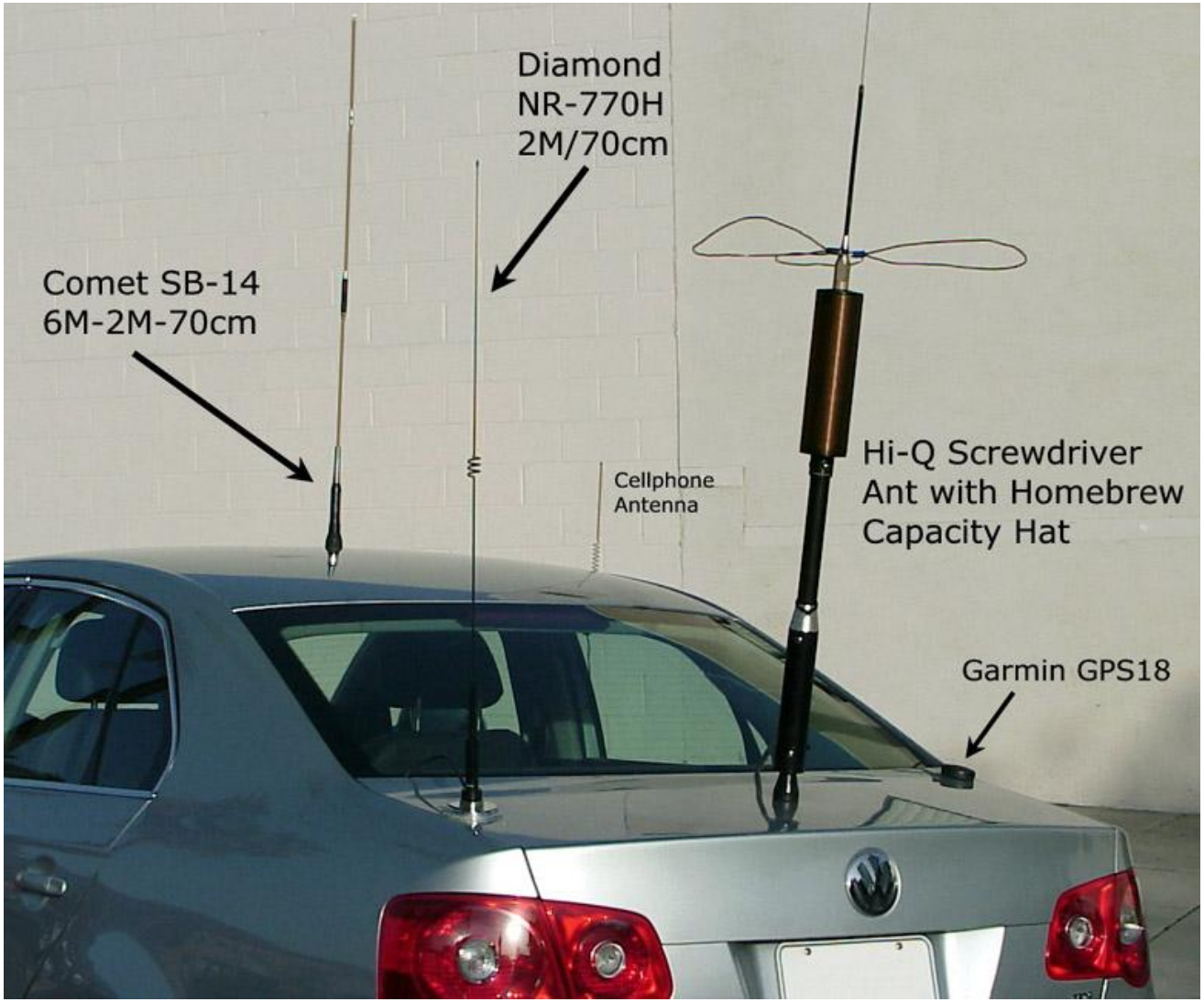
High Frequency – Tips and Hints



High Frequency – Tips and Hints

General Social Practices

- **Tolerance** - not all hams necessarily share your opinions. Understand there are other people with different opinions on any given subject. Be tolerant.

High Frequency – Tips and Hints

General Social Practices

- **Tolerance**
- **Politeness –** never use rude language or abusive words on the bands. Keep yourself under control at all times.

High Frequency – Tips and Hints

General Social Practices

- **Tolerance**
- **Politeness**
- **Comprehension** - please understand that not everyone is smart, professional or an expert. If you want to do something about it, act positively (how can I help, how can I correct, how can I teach).

High Frequency – Tips and Hints

Language

- Learn different phrases in French, Spanish, German, Russian….nothing complex, but a greeting or signing phrase always goes a long way towards generating goodwill.
- 7 3 or 73. Originally a sign off 7 (Best) 3 (Regards). Morphed to 73.
- DO NOT USE 73s.

High Frequency – Tips and Hints

Language

- Q code – Avoid over use on phone – plain language is more than sufficient for most situations.
- Q codes that work on phone – QRM, QRN, QRT.
- Q codes to avoid – QSY, QSL, QRV, QRZ and QTH.

High Frequency – Tips and Hints

Language

- Use the one and only International Spelling Alphabet – Whiskey One Quebec Golf November.
- Use of “fun” menomics - When One Quietly Goes Nuts (W1QGN) – is fine when talking to friends on the radio, that same menomic would confuse a Japanese or Romanian amateur.

High Frequency – Tips and Hints

Types of reporting schemes

- RS: Readability 1-5 and Strength 1-9 (Phone)
- RST: RS and Tone 1-9 (CW)
- RSQ: RS and Quality 1-9 (PSK, RTTY)
- RSV: RS and V (Video/Image Quality) (S/FSTV)

High Frequency – Tips and Hints

Basic Definitions

Propagation: The movement of a wave through a medium.

Gain: The ratio of the power output to the power input of the amplifier in dB.

Attenuation: Loss of signal in transmission through a filter, usually referring to signal amplitude or signal power.

Band Reject Filter: A filter that rejects one band of frequencies and passes both higher and lower frequencies. *Sometimes called a notch filter*.

High Frequency – Tips and Hints

Basic Definitions

Band Pass Filter: A filter that passes one band of frequencies and rejects both higher and lower frequencies.

Highpass Filter: Passes high frequencies and rejects low frequencies.

Lowpass Filter: Rejects high frequencies and passes low frequencies.

Doppler Shift: change in the apparent frequency of a wave as observer and source move toward or away from each other

High Frequency – Tips and Hints

Basic Definitions

Variable-frequency oscillator (VFO): An oscillator used in receivers and transmitters to change a tuned circuit using capacitors and inductors to vary the frequency.

Wavelength: The distance a radio wave travels in one RF cycle. The wavelength relates to frequency. Higher frequencies have shorter wavelengths. Shorter/Higher – Higher/Shorter

Troposphere: The region in Earth's atmosphere just above the Earth's surface and below the ionosphere.

High Frequency – Tips and Hints

Basic Definitions

Tropospheric bending: When radio waves are bent in the troposphere, they return to Earth farther away than the visible horizon.

Tropospheric ducting: A type of VHF propagation that can occur when warm air overruns cold air (a temperature inversion).

Sky-wave propagation: The means by which radio waves travel through the ionosphere and back to Earth. Sometimes called skip.

High Frequency – Tips and Hints

Basic Definitions

Resonant frequency - The desired operating frequency of a tuned circuit. In an antenna, the resonant frequency is one where the feed-point impedance contains only resistance.

Parasitic beam antenna: Another name for the beam or Yagi antenna.

Parasitic element: Part of a directive antenna that derives energy from mutual coupling with the driven element. Parasitic elements are not connected directly to the feed line.

Radio Horizon: Horizon (miles) equals the square root of 2 divided by the height (feet).

High Frequency – Tips and Hints

The Non-boring Stuff

Ground

What you didn't want to know but I'm going to tell you anyway.

High Frequency – Tips and Hints

The Non-boring Stuff

One of the most overused and misunderstood words in electronics is "ground"

Types

An actual connection to mother earth. Some common earth connections include the steel structure of a building, a buried conductive water pipe, etc. The primary function of this earth (ground) connection is lightning protection.

High Frequency – Tips and Hints

The Non-boring Stuff

One of the most overused and misunderstood words in electronics is "ground"

Types

A second common use of the word "ground" (or "earth") is a third conductor that is part of the power system wiring that should never carry current (except in the case of a fault) but connects the conductive enclosures of equipment to a common point within the power system.

High Frequency – Tips and Hints

The Non-boring Stuff

One of the most overused and misunderstood words in electronics is "ground"

Types

A third use of the word "ground" is to describe "circuit common" or "circuit reference" within equipment. Circuit common should nearly always be connected to the power supply reference, and to the shielding enclosure of the equipment.

High Frequency – Tips and Hints

The Non-boring Stuff

One of the most overused and misunderstood words in electronics is "ground"

Types

A fourth use of the word "ground" is the "return" for an unbalanced antenna like a vertical or long wire. In this application, the antenna needs some conductor to be a low impedance "sink" for the antenna current. The radials for an elevated or ground-mounted vertical antenna for example.

High Frequency – Tips and Hints

The Non-boring Stuff

I have sixty one buttons on my radio and I only know what ten of them do.

High Frequency – Tips and Hints

The Non-boring Stuff

RF Gain Control - Don't leave this set on 100% all the time... Instead try reducing it a bit, as this will allow for a better signal to noise ratio. Also use the Gain control in conjunction with the attenuator.

Attenuator / Preamp: For 20m but more for 15 and 10m – when you find a weak signal, turn the Preamp on as it should provide a bit of extra gain before your front end and improve the signal to noise ratio. On 40, 80, and 160, try turning on the attenuator if you find a weak station, and then turn up you audio gain. This has often makes signals much clearer.

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The Non-boring Stuff

Automatic Gain Control (AGC): Slow AGC is great for your 75m net when everyone is running 1.5kw, but when trying to pull out a weak signal the Fast setting is always a better option, as it turns your receiver sensitivity up.

High Frequency – Tips and Hints

The Non-boring Stuff

Filter width: If you have adjustable filter width, take advantage of it. Narrow up your receiver. 3.0khz width is great for strong signals, but 2.4 or even 1.8 may be needed to pull that station out of the noise. If there is an adjacent station this may help remove that interference.

High Frequency – Tips and Hints

The Non-boring Stuff

Filter width: Use of CW filters for other than CW is a great way to pull signals out in digital modes – PSK, RTTY, etc. Normally, 500 Hz filter setting will really make a huge difference in the ability to pull out weak digital signals. 300 Hz filters for really strong signals help clear out the “trash” on the incoming signal, but caution is recommended – it doesn't work all the time.

High Frequency – Tips and Hints

The Non-boring Stuff

RF Gain Control: Don't leave this set on 100% all the time... Instead try reducing it a bit, as this will allow for a better signal to noise ratio. Under “normal” operating, keep the RF gain at about half its max for comfortable reception. Only use RF gain for weak signals OR low signal to high noise conditions.

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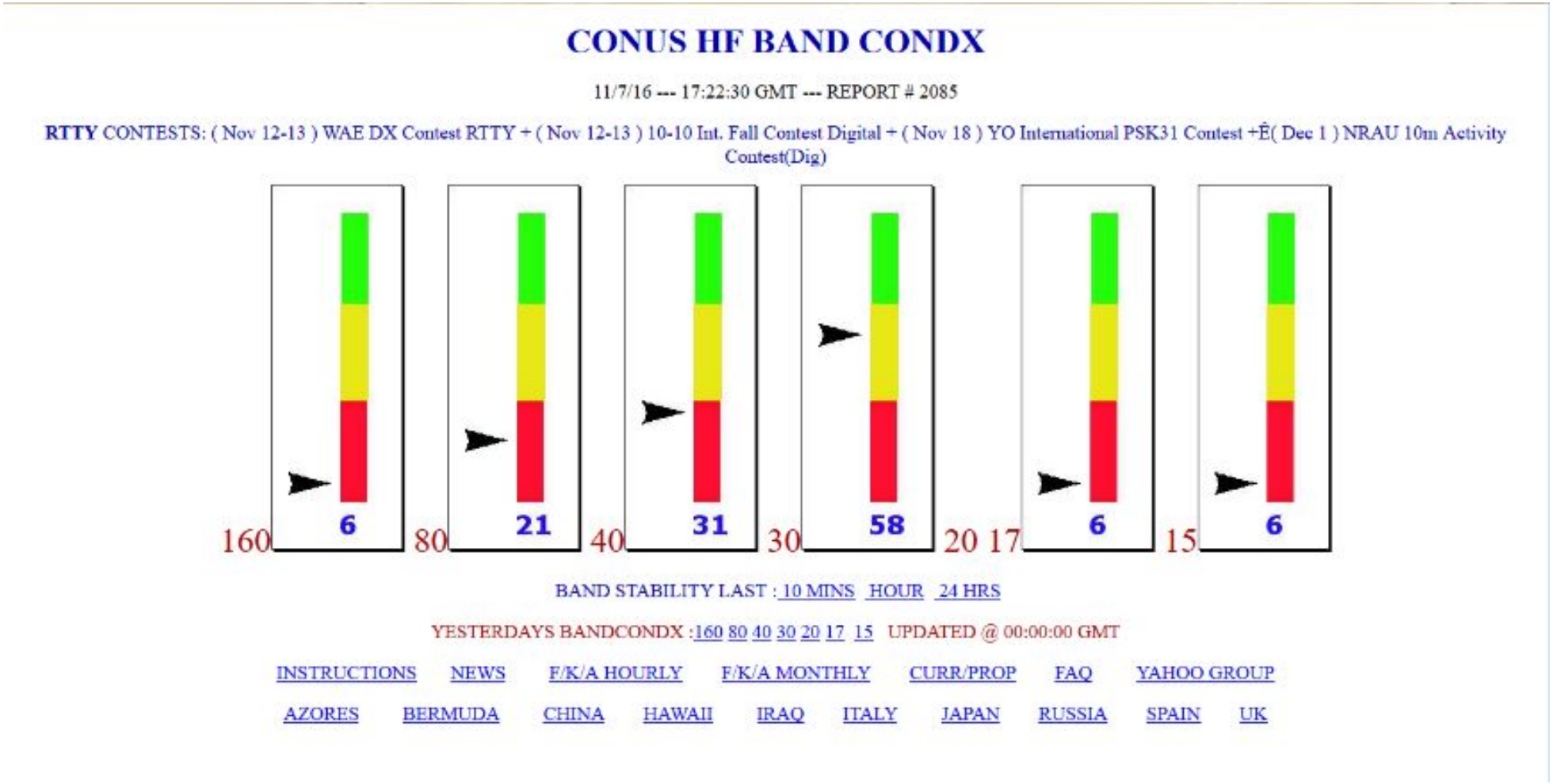
Band Conditions - http://bandconditions.com/



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Other band and operating conditions URLs

Propagation predictions

http://www.voacap.com/

http://www.dxmaps.com/spots/map.php

http:www.dxinfocentre.com/tropo_eur.html

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Logging Software

http://www.xmlog.com

http:www.dxlabsuite.com/

http://www.n1mm.hamdoc.com

https://writelog.com

http://www.n3fjp.com

http://www.qsl.net/w3km **(Genlog)**

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Spotting sites

http://www.dxsummit.fi/#/

http://www.dxwatch.com/

https://dxheat.com/dxc/

https://www.qrz.com/dxcluster

Spotting software

VE7CC Cluster

Telenet

http://www.ng3k.com/misc/cluster.html

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Spotting (weak signal)

http://dev.wsprnet.org/drupal/

http://pskreporter.info/

Beacons

http://www.keele.ac.uk/depts/por/28.htm

http://www.qsl.net/pa1are/software.html

http://www.coaa.co.uk/beaconsee.htm

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Other Amateur Radio Resources

American Radio Relay League

W5YI

Radio Society of Great Britain

Deutschland Amateur Radio Club

Northern California DX Association

National Contest Journal

CQ Magazine

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Amateur Radio Award Programs

National Parks On The Air (NPOTA)

World Wide Flora/Fauna in Amateur Radio

Summits On The Air

Islands On The Air

US Islands

Amateur Radio Lighthouse Society

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Amateur Radio Award Programs

Worked All Continents

Worked All Europe

US County Hunting

Grid hunting

High Frequency – Tips and Hints

The whole point is that you can do just about anything you want in Amateur Radio as a hobby – Public Events, building equipment, contesting, outdoors operating – just about anything you can think up, there is an amateur radio group that supports it. And it's all on HF.