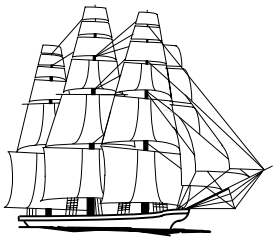
Yankee Clipper



Contest Club

# Contest Cookbook

## 1999 - 2000

## Introduction

Doug Scribner - K1ZO

Welcome to the 1999 - 2000 Edition of the YCCC Contest Cookbook

And what an issue this is! Our list of contributors reads like a Top Ten box…and I don't mean the kind that switches antennas. Returning to share their expertise are K1ZM, K5ZD, K1ZR and AD1C. Also welcome back to K1KI, who returns to give us a look forward at 10 meters and a look back at CQWW CW '98.

Newcomers this year include W1RZF who also publishes this issue, W1MK, W1WEF and WA1ZYX. I know you all join me in welcoming them and thanking them for their contributions.

A couple of "outsiders" provided material for the lead-off article. Thanks to Fred – K3ZO and Dave – K8CC for graciously allowing me to reprint their recent posts to the CQ Contest Reflector.

Last but not least thanks to Dean – N6BV for continuing to provide us with the superb propagation charts. Although his points go to NCCC, not YCCC, we know where his heart is.

So there you have it. Now go out and put all of this knowledge to good use!

In other words…KICK BUTT!

## - In This Issue -

# Contest Planning: Thoughts From Two Masters

(The following recently appeared on the CQ Contest Reflector and is reprinted here with permission of the authors. Our thanks to Fred – K3ZO and Dave – K8CC for sharing their words of wisdom. – K1ZO)

## Part I

Fred Laun – K3ZO

***"You should have a reason for everything you do."***

Now that the CQWW SSB is just a little over a month away, the thought occurred to me to write a few lines about planning.

For many of us it's good enough to get on and just have fun in the contest. This means that you get on when you want and operate as long as you want and quit when it stops being fun

For those who are seriously hoping to improve their scores, however, there is no substitute for careful planning.

After some of the post-contest stories I have written, I have received private e-mails from folks in propagationally-challenged areas saying, in essence: "What you've written is all fine and good, but out here where I live there is just no way I can run up a decent score."

I have replied with my stock first reply: "All right. Tell me what your operating plan was for the contest and I'll try to help you work out a better one." About half the respondents come back with: "WHAT operating plan?"

Ladies and gentlemen, the cardinal underlying principle for serious contest operating is: YOU KNOW EXACTLY WHY YOU'RE DOING EVERYTHING YOU DO.

I'm a little tired of reading on this reflector how the log checking has become too stringent; how the rules need to be changed "so that the contest is fair"; how one's location is so hopeless that there is no hope of having any fun in the contest, etc. etc.

How many of the writers of messages which fall into the above categories have ever drawn up a complete plan for the contest in question before the contest starts? Yes, conditions can change suddenly and you may have to improvise, but you should have a plan for that too.

There are pieces on the contesting.com Web site by people such as Randy, K5ZD which lay aspects of contesting out in much more detail than I will here, but in general, before the contest starts you should ask yourself the following questions and have the answers in your head if not formally on paper: (Obviously these are questions a North American operator would ask. Some of the questions might be different for stations in other parts of the world.)

*What band will I start on? Why?*

*What band shall I try next? Why?*

*How low should I allow my ten-minute rate to get before I decide to change bands?*

*About what time should I plan to hit each band and why?*

*How much time and when should I plan to take time off the first night so I am fresh for the European run Saturday morning?*

*What signs will tell me that propagation is deteriorating and what should I do about it?*

*How do I vary my pile-up technique depending on what the operator I'm calling is doing?*

*How many times should I call in a pile-up before going on to the next pile-up?*

*What signs tell me that it's time to stop S&Ping and that instead it might be possible to get a run going?*

*At what times on each band should I look for multipliers in Africa? South America? Oceania?*

*When do I take time off on the second night?*

*If a particular antenna, rotor, or piece of gear fails, how do I work around it?*

There is no set answer for any of the above questions, because the answer will be different depending on one's category, antenna system, age and location. But if you're serious about score, all of these questions should be asked and answered ahead of time to the best of your ability.

I'm sure others can suggest questions I haven't put in here.

*(See Planning – p. 3)*

*(Planning from p. 2)*

I would offer only one suggestion. It pays to look carefully at the bands for about a week before the contest to help you plan your operating pattern. It's much better to observe for yourself than to try to make IONCAP or VOACAP or George Jacobs' column do the job for you. If you can't be on certain hours because you're at work or school, check out the packetcluster when you get home each day to see what people in your area were working at what times on what bands.

Good luck then! And no complaining later if you didn't do any planning!

# Part II

Dave Pruett – K8CC

The recent note about contest planning from Fred, K3ZO was right on, and I'd like to add a few comments that add to, or embellish what he wrote.

Fairly early in my contest career, I was somewhat surprised to learn that there were patterns to propagation and activity in DX contests. Up to that point, I had simply sat at the radio and worked whatever I was presented with. This is the difference between the casual contester, who simply sits down and operates, and the serious contester who has a plan to take maximum advantage of likely conditions and activity.

The first question to answer for a given contest is whether you plan to operate full or part time. Even a part time effort can be "serious" if it is executed with a plan to maximize the score rather than simply spending a few hours in the operating chair. I'm not saying the latter can't be fun or should not be undertaken, but you'll like learn a lot more (and make more points) by preparing and operating to a plan.

In most contests other than a Sprint or NAQP, fatigue can or will become a factor. The point at which it does varies between individuals, and there are techniques to improve your physical conditioning or to better accommodate fatigue. The longer the contest, the more important it becomes to manage fatigue. You still may reach a point where you have to reach down inside and just "push through", but this is a lot easier if you have a plan.

If you're planning a multi-op effort, there are more options for dealing with fatigue. The trick is to schedule a crew that has ENOUGH people so that nobody gets burned out, but you don't want TOO MANY operators so that people are standing around with nothing to do. With a multi-op, the activity plan is simple - there is no excuse for not working everything. In the major DX contests (CQWW, ARRL) there are no off times so whenever the single-op is away from the radio it's hurting the score - the key is to MINIMIZE THE DAMAGE.

For the single op, the key to planning your effort is to categorize the different forms of activity and band openings, and then attack the bands on the basis of priority. Do what is important, and DON'T SWEAT THE SMALL STUFF. If you're playing DXer on some band when there is rate to be had on another, you're likely to be losing the contest. The key to single-op planning is to be ready to capitalize on the good times, and simply cope with the bad times. The corollary to "don't sweat the small stuff" is DON'T MISS ANYTHING EASY. This means spending enough time on a band to work all of the "easy" multipliers, but don't spend so much time that another (more important) activity is overlooked. Part of this is knowing who the "big" or "relatively local" stations are, and not missing them on any possible bands.

As an example, here is Michigan the single op typically must think like an East Coaster - that is, RUN EUROPE WHENEVER POSSIBLE. Our openings don't last as long, and the signals aren't as strong, but this still has proven to be the best strategy for us. Openings to Japan have to be anticipated, but the quality of the opening will determine whether this is more productive than pursuing Europe on a lower band. At all other times, the W8 single-op is playing DXer so activity patterns will be dictated by band conditions and the size of his or her station. In general, the slowest times are the middle of the afternoon and the middle of the night, so these are the best times (or to look at it another way, the least bad) times to take a break or get some sleep.

One tip for abbreviated sleeping is to always plan to sleep in multiples of 90 minutes. Some years ago this was written up in the YCCC newsletter that your body sleeps in 90 minute cycles, where it goes down into deep sleep then comes back up to shallow sleep. It's a lot easier to wake up from shallow sleep. The first time I tried this was at Dayton after a late night hospitality suite tour. It works!

Again, all of this requires a plan. Experienced DX contesters have this ingrained into their brains - its called EXPERIENCE. Whether you're going to do a 48 hour full gonzo effort, or 12 hours sandwiched in between family responsibilities, having a plan will likely result in more points per hour in the chair, and that's what we're all after.

# Getting Started In CW Contests

Art Holmes – W1RZF

If you , like myself, are not a crackerjack CW operator, then you have several choices when the CQWW CW and ARRL DX CW contests roll around:

1)Take the easy way out and don't get on. You can always come up with some reason why you could not get on.

2) Get on and be intimidated by those guys going so fast you can't possibly copy them and quit in frustration in an hour or two. Now you're convinced that phone is the only way to go.

3) Get on with the idea that you are going to develop your skills, have a good time and don't worry about the high speed jocks you can't copy. You will be surprised; you can contribute 250k to 500k points to the club while you learn. Here is how:

**Prior to the contest**

1)Practice with RUFZ program which sends call signs faster and faster until you fail

2) Install CT with the Master database and packet. Practice using them!

3) Visit an experienced YCCC op. They can help you get started

**During the contest**

1) Operate Single Operator Assisted (SOA)

2) Maximize your usage of the packet spots. Check with the master database before entering as there are some bad spots. You can average 60 qsos per hour on Saturday and Sunday afternoon. You will be surprised how much easier it is to copy the station when you know what he is sending.

3) Don't put up spots yourself. Wait until you have more experience.

3) Work the stations high in the band that are going slower. Don't worry if you have to hear the call several times before you get it ( use the master database) . As the contest goes on you will improve.

4) Call CQ high in the band at a speed that is comfortable for you. Most stations will slow down to your speed. Program a function key to send QRS.

5) As your skill develops, move away from the packet spots as they will be slowing you down. You will really be surprised how easy it is to get 250k points for the club, and the next time it will be even easier. Before you know it you will be getting scores over 1 million points and having fun doing it. Remember Rome was not built in a day, but you have to start building. Why not now?

# Topband

Jeff Briggs - K1ZM

Since we are essentially at the top of the current solar maximum, 160M will be a tougher band this time around - in CQWW Phone especially. Signal levels will likely be weaker than during a sunspot minimum (due to increased absorption) and activity levels can be expected to be down.

Still, 160M should not be overlooked as it can nonetheless provide a wealth of multipliers - both to single-ops and multis equally. My expectations for this season for Topband are as follows:

| Contest | Single Ops | Multis |
|---|---|---|
| CQWW Phone | 20 Mults | 35 Mults |
| CQWW CW | 25 Mults | 45 Mults |
| ARRL CW | 35 Mults | 60 Mults |
| ARRL Phone | 25 Mults | 50 Mults |

These numbers assume reasonable openings to Europe at least one night and at least an inverted L transmit antenna and a KW amplifier. The very well equipped multi-op entries may exceed these totals given good conditions to Europe - especially for the two CW modes.

I plan on checking 160m at about 03z for the first time and then hourly thereafter on the hour. Around 05z-07z is the time to make hay into Europe (if there is an opening). Once Europe goes into daylight, then there will still be the Caribbean multi-op expeditions to work and they will get stronger around 08-09z.

The key thing to remember about 160M as a single-op is not to stay longer than about 5-7 minutes each trip to the band - unless it is prime time into Europe and the band is hot! Quick ins and outs are the order of the day. Keep coming back on the hour and don't forget to work a KH6 for Zone 31 around East Coast sunrise.

The problem of course here is that 160m competes with 20M runs into Europe and maybe even 15M at sunrise - so don't get caught in a 160m pileup into the Pacific when you could be running Europeans at 100 per hour on either 20 or 15M!

*(See Topband – p. 5)*

*(Topband from p. 4)*

As always, the DX on 160 hangs out from about 1.820Mhz - 1.860Mhz. Much of Europe will be worked between 1.830-1.850 but be sure to tune above this range for the odd station who may be trying to get out from under the EU wall of QRM. One of my best SSB runs ever on 160M occurred at 1.877Mhz - so you never know.

Good hunting and Kick Butt!

# 80 Meters CW

Robye Lahlum - W1MK

### *Working Europe in CQWW*

As others have correctly said before, the best strategy for this band is to work Europe, work Europe, and work more Europe. In CQWW, the Europeans tend to work each other a lot on this band for 2-point contacts but they are very happy to work US stations for a 3-point contact. The problem is to find a clear frequency to call CQ on; a clear frequency in Europe that is. Unfortunately, any time a European station settles in on your run frequency in CQWW; it's most likely time to give some thought to moving. Fair or not, that is the way it is. So move when necessary, do a little S&P and try to find a new frequency to CQ on. When you're looking for a run frequency, concern yourself with how you might sound in Europe. I like to use the lower 10/20 kHz but others such as N2RM tend to do very well using frequencies as high as 3550 kHz. There are often a few multipliers that drop in around 3550 kHz, especially in the final hours of the contest.

### *Consider your readability and strength in Europe, and adjust your operating style accordingly.*

While many European stations operate at high wpm (the contest is like SS to them with a couple thousand strong nearby stations to work), I suggest sending a little slower. The path to Europe usually has dispersion on it and limited Signal/Noise, and no matter how big you think you are, you are just a moderate signal in Europe. When doing S/P, I recommend sending your call twice if the station you are calling is a little weak. It is a little slower but it may however be faster in the long run to get the call right the first time, and if there is a collision you have a better chance of getting through. If the station comes back and asks for your call again, I recommend at this point you always send your call twice. I know that flies in the face of conventional wisdom but my experience has been that this has been an effective approach for this band.

### *The most productive operating hours*

Early in the evening, the Europeans often can't hear you, but you hear them just fine, but as time goes on they copy you better. For the northeast I believe the most productive times are around 2330-0130Z and again around 0600Z in CQWW. I suspect you could do very well between 0200-0600Z if many European operators did not catch some sleep then, and I think you could do great between 2100-2330Z if conditions were better to Europe during that period. Europe slows down a lot by 0830Z in CQWW, and it is time to look elsewhere for QSOs. Unfortunately by this time most of eastern South America is already past sunrise and the sun is quickly moving across the remaining part of the continent. At this point (0830-1130Z), the technique is mostly Search/Search and more Search interrupted by a CQ every few minutes or so. We in the northeast are now on the very bottom of the food chain and we need to be there as early as possible in the pile-ups. The CT bandmap helps a lot in the search mode but many of the DX stations move a bit, so you have to keep it up to date.

You might keep an ear on the likes of W3LPL, KC1XX, or K3LR from time to time. If you hear them calling or working someone during the slow hours, chances are it is a new mult. If it is a station they moved from another band, you may be able to pick up an easy one with some timely tailending. Even during the morning hours (0830-1130Z), when S&P seems best, I do a little CQing every five minutes or so. In about one out of 100 CQs, someone actually answers me! I work them and let them have the frequency, as they are generally a new mult, which attracts a crowd

### *ARRL contest*

ARRL is in many ways a much different contest. Call CQ a lot more, and don't give up your frequency to a European easily just because he wants to call CQ on your run frequency. The band opens to Europe about 2200Z and is about over by 0630Z, and the best times are 0000-0130Z and around 0500Z. Don't worry about South America when Europe is open. There is lots of time to work South America after Europe shuts down. The European activity level on this band for ARRL is tremendous, however after Europe shuts down things can really get slow, especially on Sunday morning.

# 75 Meters Phone

Jeff Briggs – K1ZM

75 phone is a totally different animal from 80CW and must be approached with a PLAN. There will be wall to wall QRM in Europe the first night so unless you have a rock crusher signal like W1KM or W1MK, don't get fooled into calling LOUD Europeans between 3750-3800 the first night. Concentrate INSTEAD on answering the LOUDER Eu stations that will be CQing BELOW 3750 and listening QSX above 3800. This means you will work them split and they will announce where they are listening (just like on 40M phone). Pickings will be best from 0400z-0730Z each morning - and competition will be less severe the SECOND morning (eg: Saturday night our time). IF you have a KW and at least a 70 foot inverted vee, you should try your hand at CQing above 3830 from 0600-0730z. Find a clear listening spot down below 3750 (even to as low as 3600Khz) and see if you can get a 75 phone run going into Europe. You may be surprised with what you can work. If you hear stations calling on your QSX frequency that appear out of synch with your calls and at ODD times, then someone else is probably listening on the same frequency as you are down below - and you had better find a new listening frequency. It happens a lot on 80 - it is part of the game! When 75 SSB dies into EU, head to 40M to work the remainder of the sunrise opening into EU there for another hour. Also check 20m to see if it has opened to Europe. If not, then look out to ZL/KH6 and VK plus South America until 20M opens around 10Z. Also do a lot of band changing between 40m and 80m to optimize your multiplier total during this period. Band changes at 15 minute intervals will yield a very large multiplier on BOTH 40 and 80 if you discipline yourself to do so.

# 40 Meters

Randall A. Thompson - K5ZD

Forty meters is probably my favorite contesting band. It offers worldwide propagation throughout the sunspot cycle. Openings are every bit as good as 20m, although often not as long. And when one end of the path is at sunrise or sunset, anything is possible!

There's just one little problem... the rest of the world also uses the band for commercial broadcasting. Throw in a mismatch between our allocations on Phone and it also becomes one of the most challenging bands. Unfortunately, many people hurt their contest scores by letting the band intimidate them. Since Phone and CW have completely different "personalities", I will discuss them separately.

### *Phone*

Success and effort on forty-meter phone is critical for building a winning multiplier total. The propagation in late October is usually excellent, but the split frequency operation and broadcast QRM make it difficult to generate big QSO totals except for those with large antennas. It will test your ability to tune and react rather than just sit and call CQ.

Expect propagation to Europe from the start of the contest until 08Z. Look for the loud Caribbean stations all night and certainly after 06Z. The early morning hours are often very slow with a few loud KH6, VK, and ZL stations to call. Be happy if you work one or two JA stations just to get the multiplier. The band opens to Europe again about 22Z or 23Z. If you are going to have a chance to call CQ and get answers, the 23Z hour is usually one of the best.

Here are a few additional tips that will help your Phone score:

- Get a computer controlled radio! Working split is easy when you just have to type in the frequency the DX is saying and then call.
- Make it easy for the DX station to recognize you. I always say the call of the DX station once when I am calling. With many stations listening on the same frequency, this will help them lock in on you. Send both calls when you give the exchange as well. This will help prevent costly Not-In-Log QSOs.
- Make sure you know who you are working. This seems obvious, but there are many bad packet spots that list the wrong call or the wrong split frequencies so be careful.
- Tune slowly and listen carefully. With so little room, stations are often stacked 2 or 3 deep. Since QSOs may take longer in all the QRM, you are more likely to tune across a needed multiplier while he is listening, or while covered up by a loud Italian!

*(See 40 Meters – p. 7)*

*(40 Meters from p. 6)*

- Don't be afraid to call CQ. Pay attention to the frequencies the Europeans are listening on. If you hear one of them clear, try a few CQs listening down. It's tempting to listen down very low in the band to find a clear spot. But many Europeans respect the IARU recommended phone allocation and will not call you below 7040. I have had my best luck CQing early (2200-0000z) and late (after 0700z). CQing is often the only way to get some of the "second tier" multipliers which don't ever call CQ themselves.
- Don't forget to listen up above 7150. A quick scan of the band will sometimes uncover a South American or VK station working transceive. And if all of the bands fold during a solar storm, try 40 meters transceive and beg for VE QSOs (in CQ WW they are worth 2 points each!).
- Finally, remember to be sure and work a few USA stations for the country multiplier, and zone 03, 04, and 05 for the zone multipliers! Do this even if you have to move one of the locals to 40m during the day.

### *CW*

In a CW DX contest, 40 meters is a 'volume' band with two solid opportunities each day for rich European runs. For a single-op, or multi-single, 40m should get serious consideration as the band to start the contest. With some luck, we will have excellent propagation for the first hour or more. At this point in the cycle we have a good chance for the MUF to stay above 7 MHz for most of the evening. Don't forget to scan for multipliers from the rest of the world on a regular basis.

As the sun comes up across Europe the band really quiets down and some good runs can be expected from around 0600z to 0930z. It is amazing how late the UK stations will come in after their sunrise. After this time, it's back to multiplier hunting.

At our sunrise, the band offers a short opening to JA. Sometimes direct path, but more often via skew path beaming west. After sunrise, long path possibilities exist to VS6, YB0, DU, and the rest of Southeast Asia. The multi-multis and multi-singles will love it, but the competitive single op should keep an eye on 20m for more productive action.

The real advantage for New Englanders occurs in the afternoon well before sunset. European QSOs are possible as early as 1900z, but the real action gets underway during the 21z hour. This is still well before our sunset, but the band has lengthened out in Europe so that all they can hear is loud W1s calling CQ. We have an "exclusive" into Europe for awhile and this is the time to secure a good run frequency.

Don't forget to check for long path openings at our sunset. The CQ WW CW often has workable JAs and other Asians mixed in among the loud Europeans and Ws calling CQ. This is also the place to find those zone 24, 26 and 29 multipliers, but you have to listen hard as they are often very weak compared to the loud USA and Europeans calling CQ.

The big guns always seem to work their way into the bottom 10 kHz of the band. Don't forget about the upper ranges. It's a lot easier to hear, and be heard, if you pick a CQing frequency up above 7030, plus, when tuning for multipliers, check all the way up to 7070. I found a number of juicy multipliers last year above 7050 (that's the only place many low power DXpeditions can get a spot).

Good luck in your 40-meter contesting efforts this season. Anyone with a 2-element Yagi should be able to take full advantage of the above tips. With less antenna, plan on working a little harder, but with an equally positive impact on your score.

## 20 Meters

Jack Schuster – W1WEF

Before getting specific regarding 20M, let's review some of the tried and true steps toward kicking Butt! Here's a checklist:

1. Tell your family NOW when the contests will be this season; CQWW SSB Oct 30-31, CQWW CW Nov 27-28. If necessary, buy them tickets to Disney World.
2. Start checking out your station well before the last minute. Run full power on all bands, turn antennas in all directions with the computer running the contest software you expect to use. Be sure you can enter data in the computer while your rig is transmitting. Make sure the antenna is pointing where you think it is. Walk the Beverage and fix it! (do this again shortly before the contest!)
3. Check out the second radio setup whether as backup or an active radio. Run the backup amplifier that hasn't been turned on for a year.
4. If you plan to use packet, make sure you have it working reliably while operating , not just listening.

*(See 20 Meters – p. 8)*

*(20 Meters from p. 7)*

5. Read your notes from last year…see what you said you would do differently to improve your score.
6. Read the RULES for this year!
7. Load the latest country and master.dat lists…USE Super Check Partial!
8. Look at the NG3K web page and DX bulletins to get familiar with this years DX peditions. Be aware of YCCC expeditions (eg 4M1X, PJ1B, J3A, 4M1X, KH7R, 4M1X, etc) as you not only help your own score but the club score even more.
9. Read last year's results to help yourself get psyched. Review your old logs.
10. Label your keyboard so in the heat of battle and weariness you don't have to rely on your memory which key is which.
11. Study Dean's propagation charts elsewhere in the cookbook to get an idea where to be when.
12. Try to get more sleep than normal the whole week before the contest, and if possible a few hours before it starts!.
13. Set your computer clock to WWV and have fun. Push yourself to meet your goal and operate as long as you possibly can!

Now for twenty meters: 20 will be open around the clock this year. From band conditions observed in early September, not as good as expected in this part of the cycle, 20 will possibly be the real money winner again over 15 and ten, producing more Qs and mults. However last year on both modes there were plenty of Qs to be had on the 10 and 15, so let's hope for the best.

As Jeff K1ZM points out, 20 can be a goldmine of mults in the beginning of the contest . I find it useful sometimes to scan the band for the half hour before the contest and note where the DX is establishing their frequencies, and then go there and work them at the start. This can be a good use for those 100 memories in your radio if you can figure out how to use them. That brings up another point…get familiar with your radio if you haven't been using it much since the last contest! For example, you may have forgotten that your MP remembers the last mode and sideband and frequency you were on the last time you used it, and if you push the band button once it remembers one set of parameters, push the same band button again and it remembers another set ! Life was so much simpler when I had a 930S!

Don't forget to beam South and pick up those So Americans and Caribbean mults. One thing I've found useful is to make a small chart, QSL card sized, with a column for calls of those loud expedition stations and six more columns to check off bands worked. More than once I've missed a P40W on a band because I thought I had already worked him, and didn't feel like typing his call in yet another time to check! On the first lines of the chart write 4M1X, J3A, PJ1B (or is it PJ9B? …I'm not sure) etc,… hopefully we will be well aware of the club's DXpeditioners in advance!

Dave, K1ZZ, Jeff, K1ZM and Greg, W1KM remind us that this year there will likely be a 20M opening at Eu Sunrise. Check 20 at 0700Z for an opening with a W1 advantage. Work as many as you can until they drop off again, either S&Ping or running if it's good enough.

Around 10Z or possibly a bit earlier, we will again hear loud Europeans. Catch them early while we again have the advantage, and before 15 wakes up which may not be far behind. If you can't find a spot to run low in the band go up high…above 14300 on SSB and above 050 on CW. When 15 or 10 opens to Europe go there and work all you can, no matter how good 20 is.

Go back to 20 once an hour around the clock to search for mults…easier to say than do as I hate to leave a good run and that's been my downfall more than once! This is where a second radio can pay off, allowing you to tune other bands while CQing.

In the afternoon, after 15 has closed, go back to 20 and run. Look for a JA opening around our sunset. Check 20 long-path to Asia on a 220 degree heading just before and after our sunrise and look for YB0, 9M,
V85 types. Look over the pole at 1400Z to 1600 Z for zone 24 and 26. Keep that beam spinning, keep the propagation charts in front of you and nab those mults!

Greg mentioned that KH6 is always hard for him to find on 20, but that those with packet will have no trouble. Looking at last year's logs, I see I found KH7R among a bunch of Caribbeans in the first hour.

# 15 Meters

Shane Mattson - K1ZR

If you are one of those stations that run low power (100w or less) with a tribander you can still produce great rates on 15 during the peak opening to EU. During peak hours everyone should be focusing on Qs, Qs, Qs and more Qs. If you're a smaller station, the best place to run is above 21.350 on Phone and above 21.035 on CW. If you're going to operate down around 21205 or 21005 be prepared to compete with the big multi- multis like KC1XX, N2RM, K3LR, W3LPL, KB1SO/W1GQ, etc....sound like fun? It's not…

*(See 15 Meters – p. 9)*

*(15 Meters from p. 8)*

At the start of the contest look for SA, JA, Deep Asia and Pacific openings. While running on 40, 80, or 160 keep popping needed mults and Qs on 15 looking for long path and skew paths to different areas between 03:30-08:30z. Openings to EU typically start between 11:00 and 12:00z during the fall and winter months. At the start of the opening look for juicy multipliers to the north. If you are running stacked Yagis take 5-10 minutes every hour or so and point one antenna north. While running EU on one VFO, look for juicy mults like HS, 3W8, DU, HL, P29 and YB on the other VFO (or radio). If you only have one antenna for 15, break away from your EU run for a few minutes, point your antenna 345 degrees then start scanning for mults from the bottom of the band. While scanning, work everything you hear calling CQ to help keep the rate up. By doing this every hour or so, your multiplier total on 15 will drastically improve. Keep checking that second radio or VFO for openings on 10 as well as needed Qs and multipliers on 20. Remember that every minute you spend operating should be focused on working more Qs and new multipliers.

At around 16:00z really look at your rate meter! If you feel as if your rate to EU is losing its consistency then it's time to move to 20. Keep checking 15 in the afternoon for multipliers from Asia and Africa. At our sunset it's pretty much (Note: PRETTY much) a repeat cycle of conditions as previously mentioned. Use the propagation charts included in this issue of the cookbook to get a feel of how 15 will play this year.

Never miss an opportunity to work a new multiplier on this band. Prevent yourself from saying, "I'll wait until Saturday night to get 'em". Work them NOW! Try to work every multiplier you hear the first night to insure the QSO in the log. Don't bank on the rare multiplier being there the second night! The winners are the ones that focus on working multipliers that show up for a few minutes as casual operators. Look when others aren't normally looking. Who would think of leaving a current run rate of 170+/hr to go look for multipliers? Take a chance and go for it!

# 10 Meters

Tom Frenaye – K1KI

Last year's 10m section had notes to follow <u>if</u> ten meters opened to Europe, this year you can be pretty sure it will be open both days.

The band should open during the 11z hour to Africa and South America, opening to Europe shortly afterwards, and stay open until 01z with Central America and South Pacific signals at the end. Single ops should alternate between 10 and 15m during daylight hours, and 20m after 17z.

**The general "rules of thumb" to follow are:**

1) **Concentrate on the highest band that is open to Europe.**
2) **Don't count on the second day being better.**

In CQWW SSB 10m should be open to Europe from 11-19Z. You may find 15m has better signals during much of that time but remember there is a lot more room to spread out and hear the weak signals on 10m. During the next few years you may want to move up to 28.7 or so during peak openings! Watch for long path openings to the southeast around 12-14z to DU HS JA VR2. From 21-00z watch for JA and other Asia and western Pacific stations. From the northeast, Zones 1-2-18-40 will be the hardest to work, but the others should be workable if you're in the right place at the right time.

In CQWW CW the openings to Europe (and Japan) will probably be shorter by an hour or so as the sun is farther to the south. Peak hours to Europe should be 13-17z, and to Japan the peak should be around 22z. If conditions are good, don't hesitate to go above 28100 to find a clear spot. Interestingly, zones 1 and 2 should be easier than on SSB, while Zones hardest to work will be 18-19-23-24-27-40.

For the ARRL DX Contests in February and March, the solar flux should be even higher, so we really may be close to the sunspot peak. If so, you may find your 10m QSO totals could end up higher than your 15m totals!

The ARRL DX CW weekend conditions will be similar to CQWW CW. In the world-works-W/VE format there are not as many country multipliers to work as in CQWW, so be especially careful to catch as many as you can. QSO totals can exceed those during CQWW though! By far the biggest volume of QSOs will be from Europe – don't miss the peak hours!

In early March, the ARRL DX SSB contest is the one of the "big four" contests that is closest to the solar equinox. With the sun nearer to the equator, openings to northern Europe are not as good, but southern Europe (CT EA I) should be loud from 12-19z. There may still be a long path opening in the 12-16z timeframe to southeast Asia and JA, but you won't find much volume. Multi-ops will find there are a surprising number of South Americans to work on SSB, so try out some of your Spanish during the afternoon. Many concentrate around 28325 and 28900. Single ops won't want to stick around except to work the common multipliers, the other bands will be open to Europe!

# TNC Refresher

Joel Huntley – WA1ZYX

As we get ready for another contest season, perhaps it's time to make sure your packet equipment is operating to its full potential. This stuff is a wonderful asset to have available, especially for those of us that have packet interfaced with computer radio control. Nothing is more frustrating than to get repeatedly dumped from the Cluster in the heat of a major contest, or a minor one for that matter.

During contests, the cluster nodes get very busy. I can attest to that from watching how many stations use my NEDA node cluster access port, NHDX. It's not uncommon to see in excess of 15 stations coming through this node. None of them get dumped though, and you know why? It's because it's a link frequency and it doesn't suffer from HTS or Hidden Transmitter Syndrome which is prevalent on a user port.

HTS is when there are users on a frequency that CAN NOT hear each other, thereby causing packet collisions and retries. Collisions happen when two stations attempt to send data at the same time, which is VERY common on a DX-Cluster, especially when acknowledging a spot. Your TNC won't attempt to send data when there's traffic already on the frequency, but when it's time to acknowledge the spot, you could be trying to "ACK" it at the same time as somebody else. This happens because more than likely, you can't hear all the stations on the node frequency, whereas the node can. Think of the node as a digital repeater. It works well usually because of its location.

There are ways to minimize collisions, some of which are very easily accomplished. All that is involved is optimizing a few TNC commands. The best way of course is to just plain and simply have a killer signal into your local cluster or access point. You also want to be a good neighbor too. Meaning that you don't want your TNC to be too aggressive. If it is, you could unknowingly cause others to get dumped out.

Some of the TNC commands that you can optimize are:

Packet TNC settings and recommendations;

**BEACON** = OFF Make certain this command is set to OFF!! There is NO purpose in adding junk traffic on an already busy frequency. Trust me, if you're logged into the cluster, WE KNOW YOU'RE THERE!

**PERSIST** = TNC's aggressiveness. High value will cause TNC to be more aggressive.

**PERSIST**: Used in conjunction with the **SLOTTIME** command (see below) to provide less clutter on a busy packet frequency. If you have these commands available in your TNC, set **DWAIT** to 0 and set these commands for use. Note: On some TNCs, such as the PK-232 and Tiny-IIs, you have another command that determines whether you use **DWAIT** or **PERSIST**/**SLOTTIME**. It's the **PPERSIST** command (with 2 Ps). Set it ON to use **PERSIST**/**SLOTTIME**; set it OFF to use **DWAIT**. If you have the option, use the **PPERSIST** command set to ON.

**PERSIST** specifies a threshold value for a random-number attempt to transmit. The value ranges from 0 to 255. 0 signifies a 1/256th chance of transmitting every **SLOTTIME**; 255 allows the TNC to key the transmitter every **SLOTTIME**. Start with a setting of 127 and work your way down from there.

**SLOTTIME**: This command determines the time interval the TNC waits between generating random numbers to see if it can transmit. This random number generation and the value of **PERSIST** work together to provide smoother operation on a busy packet frequency. The **SLOTTIME** value may be set from 0 to 255. Try a setting of 3 and go up from there.

**DWAIT**: Used to avoid collisions, **DWAIT** is the number of time units the TNC will wait after last hearing data on the channel before it transmits. **DWAIT** set to 16 seems to work well.

**CD SOFTWARE** = Carrier Detect Software
KAMs and KPCs use this command. Some other TNCs need an "Open Squelch" adapter installed with the modem chip (3105). If you have this option, set it this way, and run your radio squelch wide open. Let the TNC determine when it detects valid data and not rely on the squelch action of the radio to determine when it's okay to transmit. This quite often will speed up an "ACK". This will also help in minimizing garbage and random noise from keeping your TNC thinking there's incoming data.

**FRACK**: Determines how long your TNC will wait for an acknowledgement before resending a packet. It shouldn't be set too low, or you'll simply clutter up the frequency, yet it shouldn't be too high, or you'll spend too much time waiting. **FRACK** set at 3 seems to work well. (Note: this command is superseded by the Persist/Slottime commands.)

*(See TNC – p. 11)*

*(TNC from p. 10)*

**TXDELAY n**: This parameter tells the TNC how long to wait before sending data after it has keyed the transmitter. All transmitters need some start up time to put a signal on the air. Some need more, some need less. Synthesized radios and radios with mechanical relays need more time, while crystal controlled radios and radios with diode switching require less time. External amplifiers usually require additional delay. Experiment to determine the best value for your particular radio. **TXDELAY** can also be useful to compensate for slow AGC recovery or squelch release times at the distant station. If your radio is reasonably fast, a TXD of 30 is pretty good. 30 – 35 is acceptable.

Try your hardest to avoid using an "HT" with a rubber duck next to your computer. More than likely, your computer and monitor will cause so much RFI to the HT, that you'll never get any data out, or in… If you must go this route, at least use an external antenna. Otherwise, try to put as much distance between them as you can.

I also can't stress enough to make sure you use decent cables. Both from the radio to the TNC and from the TNC to the computer. Plenty of shielding everywhere.

What are you using for a radio anyway? If you primarily use your packet equipment on just one or two frequencies, it may very well be worth your while to get some kind of surplus commercial radio. Motorola or GE, stuff with "real" front ends, and helical resonators. This stuff is readily available for good prices and make fantastic packet radios.

Don't wait until the night of or the day before a contest to make sure everything plays. Fire up your logging program and log in to the cluster and do some operating before hand. If you find a problem, you'll have time to deal with it, not to mention getting used to those seldom used commands in the various logging programs.

Most of all, have fun, get on, operate and KB!!!

# Single-Operator Assisted

Jim Reisert - AD1C

The single-operator assisted (or unlimited) category is perhaps the most overlooked category in the YCCC. It's hard to understand, because no other single-operator category gives you access to so much camaraderie and so many ways to make points! Besides the multi-op categories, in which other category can you operate with 300 people all helping each other? On packet, there are lots of people to TALK to when the going gets slow just after EU sunrise.

In the SOA category, your goal should be to maximize your score, the same as in all the other categories. The twist is that while you are working stations at a good clip on your run frequency, packet spots are taunting you into giving it up! Finding the proper balance between running and chasing packet spots is the secret to this category. No one has the definitive answer, but stations like K1ZM, KI1G, K3WW and N3RR certainly are doing something right. They even occasionally beat the winning Single-Op station, a feat that should not be as rare as it is (except when K1AR is operating).

First, some essentials for the SOA station:

1. Computer logging, tied into PacketCluser. CT and other software will filter multipliers through your log, showing you only the ones you need. No more searching for that mult sheet! You do not actually have to be connected to PacketCluster as long as you can monitor the spots. Of course, it helps to be able to announce spots too!

2. Computer-controlled radio. It's tremendous how fast you can work packet spots and return to your run frequency when you only have to hit a couple of key strokes and not turn a dial. An amplifier like the Alpha 87A, automatic antenna switching and a computer-controller rotor may mean you never have to leave the keyboard! Of course, none of this is necessary, but it all helps.

3. Awareness of the value of a multiplier to your score. Two important metrics here, both of which are available on your logging screen: QSOs per Mult, and Minutes per Mult. QSOs per Mult indicates the number of equivalent QSOs you have to work to attain the same point gain as a single multiplier. This should be based on your FINAL score, not necessarily your real-time score. For example, in the beginning of a contest, multipliers are worth less because you have so few QSOs to "multiply them against. At the end of the contest, however, they are worth much more. In CQWW, if your final score is 2000 QSOs and 500 multipliers, then a multiplier is worth 4 QSOs, and this should be the number use to make the decision. It's amazing how many people start off a contest by picking multipliers off of packet, when if they were running instead, the multipliers would call THEM.

The other measure is Minutes per Mult. This is a measure of how much TIME a multiplier is worth (how long you should stay in the pileup). In other words, if you work the mult in that many minutes, it is the same score increase as running at your current rate for the same number of minutes. In many cases, you can work the multiplier faster than this, but in many cases you can't. That leads to...

*(See SOA – p. 12)*

*(SOA from p. 11)*

4. An understanding of the capabilities of your station and knowledge about the stations putting out the spots. For example, you're calling CQ on 15 meters on Saturday morning and KC1XX spots E21CJN on 10 meters. Should you chase the spot? How well do you get out into that part of the world? Where is Matt located compared to you? What kind of antenna is Matt using? Is he single or multi-op? In CQWW, multi-ops (and especially M/M) have lots more time to tune around and spot stations, or to kill time sitting in packet pileups. And remember, everyone sees the same spots at more or less the same time. Can you work it before the big guns do? If not, you may have lost 15 minutes of valuable run time.

5. Patience, patience, patience. It's hard to resist going after every spot you need. If it's one of the big DXpeditions, like PJ9B or 5V7A, chances are they will be around all weekend, and will be spotted again. If it's Sunday afternoon and the first TG9 of the weekend has been spotted, chances are there will be a lot of big guns in the pileup first, but you might get lucky. Remember, if you're running at a good rate, you can make the same score increase by working QSOs. Work the multipliers that are spotted on your run band, and keep a mental list of the number spotted on other bands. They may indicate time to switch bands. Work a few multipliers on the new band, then find a run frequency, more may call in.

6. Practice, practice, practice. If you're using a computer controlled radio (your are, aren't you?), you should be able to move around keys like CTRL->, ALT-F4 and ALT-F5 like they are second nature. Practicing on a laptop computer at work Friday afternoon isn't the same as sitting in front of a real radio pulling real spots off of a real Packet-Cluster. Practice grabbing spots in the morning or at night when you're just tuning around the bands, then return to your tuning frequency. Watch out for those ICOM radios, if you were in SPLIT mode on your run frequency, CT will return you to TRANSCEIVE mode when you return from the packet spot. It's the radio's fault, not the software. Just be aware of it so you're not calling CQ in the European phone band in October!

Now some dos and don'ts to make your life a little easier:

DO verify the callsign of the station you're working. S52PK and 5C8N are not real callsigns. Don't log them that way. You will be penalized MORE by having a busted call in your log than if you had not worked it at all (yes, there are penalties for wrong answers). Always HEAR the callsign that the DX station is signing and log it correctly.

DON'T solicit help on packet during the contest. Don't ask what a station's callsign was that you just worked, or whether GJ has been spotted on 10 meters recently. Don't spot yourself on packet with a comment like "WORK ME". This is forbidden by the rules.

DO learn how to put out spots correctly, especially when operating SPLIT. For the most part, your radio hookup and logging software will facilitate this. However, there are still those pesky ICOM radios. Make sure to type QSX then the transmit frequency into the spot's COMMENT field so the spot looks something like the following:

DX JY9QJ 7048 QSX 7216

Remember to include the word QSX, otherwise other stations who pick up the spot from packet may not have both VFOs set correctly.

DON'T forget to search and pounce yourself! Not everything gets spotted, and it's always easier to work the rare multipliers when you're the only one calling. When you finally work it, put out the spot, then sit back and listen for a few seconds to the chaos that ensues. Smile to yourself, then move on.

DO put out lots of spots, it helps all the multi-op stations in the club. If you have a fairly high QSO total, and you tune across even a new station you haven't worked, put it out! Chances are someone else may need it too! It can get REAL slow at the multi-ops on Sunday afternoon.

DON'T claim you operated Single Op if you even used just ONE packet spot. You're either Single-Op Assisted or Multi-Op. It's unfair to the people who are operating without assistance. The log checkers can detect this kind of cheating nowadays.

DO read the DX bulletins and various contest and DX reflectors the week before the contest. Know who's going to be on, what category they're in, and assess your chances of working them ahead of time. Then when they are spotted during the contest, you will already be prepared to make the decision to pass or play. There's no need to work P40V in the first 5 minutes of the weekend, but if you read that IV3TAN/IG9 is mono-band 40M and you see it spotted on 15, go for it! Remember, the DX single-ops and multi-singles can sometimes be hard to work on all 6 bands, especially those in Zone 8. They only need to work the USA 3 times to get zones 3, 4 and 5, so they won't run the USA very much if there are higher-point QSOs or other multipliers to be had. This can be especially true on 160 and 80 meters, or on bands like 15 when the conditions are very good and everyone is on 10 meters all weekend.

*(See SOA – p. 13)*

*(SOA from p. 12)*

Some closing notes:

In general, CW run frequencies are easier to come by than frequencies on phone, so spend a little more time on CW chasing packet spots, and a little less on phone.

Remember to run as much as possible. When the rate starts to drop, it might be a good time to work a few multipliers from packet, or start tuning the band looking for your own.

There is no bad time to run, but there are bad times to be multiplying. In the morning, when 20 or 15 (maybe even 10!) is open to Europe, you should be running as much as possible, not chasing packet spots. In the afternoon when 20 has slowed down, but 40 hasn't opened yet, it's a better time to work multipliers. If you only have a limited numbers of hours to operate, definitely use packet to maximize your score, but don't forget that if your QSO total is low, there won't be a lot of points to multiply!

In 1998, I finished 2nd place in W1-land with just a 35' high G5RV and an R7 vertical. Where were the rest of you with your tri-banders and 160/80/40 wire antennas? The FRC has continually used their participation in the SOA category to beat YCCC, and 1997/98 was no exception. This year MAKE it be our turn!

# Anatomy Of A Contest:

# CQWW CW '98

Data and Comments by Tom Frenaye – K1KI

*(Ain't technology grand! Take one contest logging program, add computer literate HF radios and dump the data into your favorite spreadsheet. Hit the calculate button – graph the results – Voila!*

*Dave – K1HT in a recent Scuttlebutt article asked "Where Did All The Points Go?" In this case it's "Where Did All The Points Come From?"*

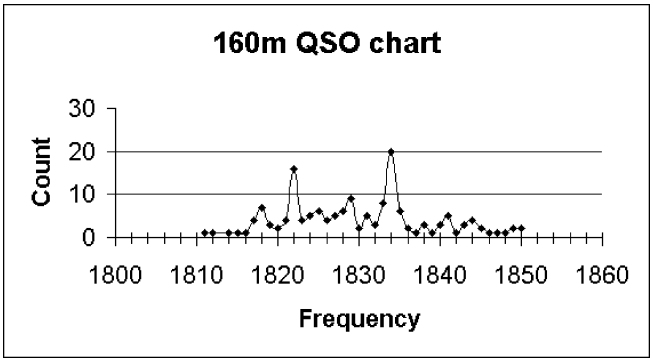
*The following is a look at what frequencies produced what Qs at the K1KI Multi-Op during CQWW CW '98.*

*And in case you forgot…here's what the bottom line looked like:*

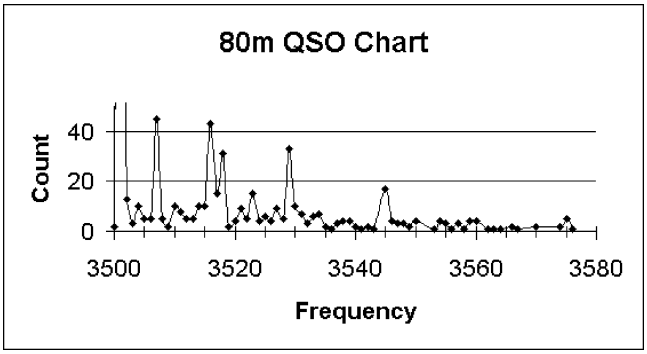
| ***QSOs*** | ***Zones*** | ***DX*** | ***Total*** |
|---|---|---|---|
| ***7523*** | ***191*** | ***733*** | ***20,097,924*** |

*(Ops. - K1KI K1CC KM1P W1RM W2XX W1NT N2YHK)*

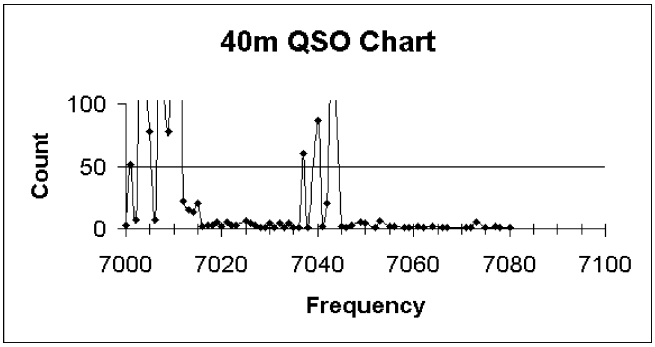
*Great Job Guys! – K1ZO)*




**156 Qs -** CQing was not productive! Lots of S&P.



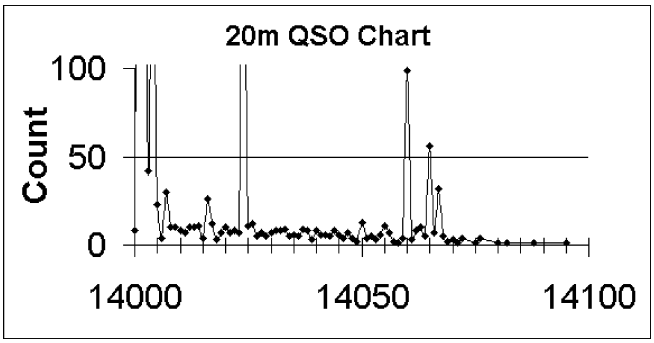

**841 Qs -** The 80m op really liked the low end, seemed to work well (thanks 4-square). My personal preference is to spend time in several parts of the band, especially 3535-3545 for at least an hour each night during prime Eu run time.



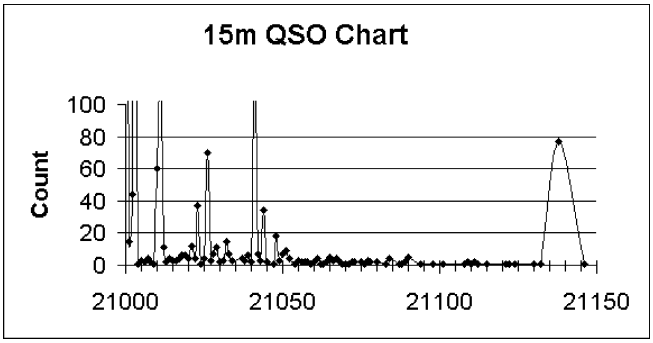

**1758 Qs -** Again, seems like too many QSOs in the crowded part of the band, but it paid off. Also think we should have spent more time above 7035. Being below 7020 usually means having a beam at 75' or more.

*(See CQWW '98 – p. 14)*

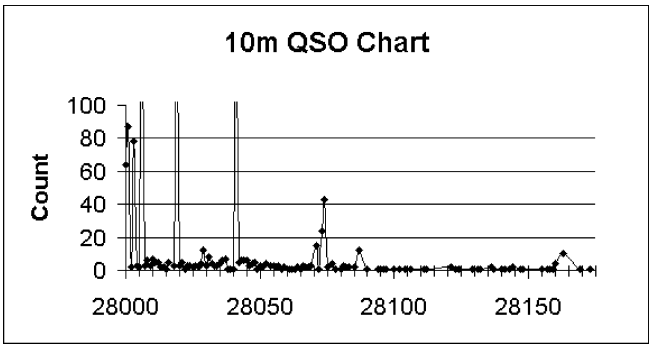
*(CQWW '98 From p. 13)*




**1955 Qs -** It's obvious we CQed in just a couple of places and stayed there a long time because the runs were good. We did get some good volume higher in the band as well.




**1875 Qs -** Notice none of the run freqs were on freqs that are a multiple of 5. Good run on 21138 even! Remember that CQing with only one QSO every two or three minutes often beats S&P activity.




**1181 Qs -** A surprising amount of activity above 28100 but no big runs. An equal amount of time spent S&P and running, with running producing most of the QSOs when the band was open to Eu.

# Propagation Charts

Dean Straw – N6BV

*(The final four pages of this issue contain the "summary" propagation charts for CQWW - October & November - and ARRL DX - February & March. The charts are printed full-page and back-to-back for convenient use. The full set of charts for 160 - 10 and all 40 Zones are available in the Members Only section of the YCCC Web-site. - K1ZO)*

## About The Charts

The tables list predicted signal strengths in S-units. I have divided the world up into seven geographic areas, as follows:

- EU = Europe; zones 14, 15, 16, 20 and 40
- FE = Far East; zones 19, 24, 25, 26 and 28
- SA = Central/South America/Caribbean; zones 7, 8, 9, 10, 11, 12 and 13
- AF = Africa; zones 33, 34, 35, 36, 37, 38 and 39
- AS = Central and South Asia; zones 17, 18, 21, 22 and 23
- OC = Oceania; zones 27, 29, 30, 31 and 32
- NA = North America; zones 1, 2, 3, 4, 5 and 6.

As usual, the predictions were done using *IONCAP*, and they assume undisturbed geomagnetic conditions. The antennas used at each end of all circuits represent typical good-sized contest stations: 100-foot high dipoles on 80 and 40 meters, a 3-element Yagi at 100 feet on 20 meters, and 4-element Yagis at 60 feet for 15 and 10 meters. The transmitter power at each end of the circuit is assumed to be 1500 W. I am assuming that an S-meter is relatively generous at 4 dB/S-unit. Scale the results for different types of antennas or transmitting power levels according to the following rules of thumb:

- Subtract 2 S units for a dipole instead of a Yagi at the same height
- Subtract 3 S units for a dipole at 50 feet instead of a Yagi at 100 feet
- Subtract 1 S unit for a dipole at 50 feet instead of a dipole at 100 feet
- Subtract 3 S units for 100 W instead of 1500 W
- Subtract 6 S units for 5 W instead of 1500 W

# October 1999 – YCCC - for SSN = Very High Sigs in S-Units. By N6BV - ARRL.

| | 80 Meters | | | | | | | 40 Meters | | | | | | | 20 Meters | | | | | | | 15 Meters | | | | | | | 10 Meters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UTC | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | UTC |
| 0 | 9 | - | 9+ | 9 | 7 | - | 9+ | 9+ | 4 | 9+ | 9+ | 9 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 8 | 9+ | - | 9 | 9+ | 8 | 8 | 9 | 9+ | - | 1 | 9 | - | 6 | 8 | 9 | 0 |
| 1 | 9 | - | 9+ | 9+ | 7 | - | 9+ | 9+ | 1 | 9+ | 9+ | 9 | 1 | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 9 | 9+ | - | 7 | 9+ | 2 | 5 | 9+ | 9 | - | - | 8 | - | - | 7 | 9 | 1 |
| 2 | 9 | - | 9+ | 9+ | 7 | - | 9+ | 9+ | 1 | 9+ | 9+ | 9 | 5 | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 9+ | 9+ | - | 5 | 9+ | 4 | 5 | 9 | 9+ | - | - | - | - | - | - | 2 | 2 |
| 3 | 9+ | - | 9+ | 9+ | - | - | 9+ | 9+ | 2 | 9+ | 9+ | 8 | 8 | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 9+ | 9+ | - | 2 | 9+ | 7 | 2 | 6 | 8 | - | - | 1 | - | - | - | 2 | 3 |
| 4 | 9+ | - | 9+ | 9+ | - | 6 | 9+ | 9+ | 2 | 9+ | 9+ | 8 | 9 | 9+ | 5 | 8 | 9+ | 9+ | 9 | 9+ | 9+ | - | 1 | 9+ | 9 | 1 | - | 4 | - | - | 1 | 5 | - | - | 2 | 4 |
| 5 | 9+ | - | 9+ | 9+ | - | 8 | 9+ | 9+ | 4 | 9+ | 9+ | 5 | 9 | 9+ | 4 | 8 | 9+ | 9+ | 9 | 9+ | 9 | - | - | 9+ | 8 | - | - | 8 | - | - | 2 | - | - | - | 2 | 5 |
| 6 | 9+ | - | 9+ | 9+ | - | 8 | 9+ | 9+ | 6 | 9+ | 9+ | 5 | 9+ | 9+ | 6 | 9 | 9+ | 9 | 9 | 9+ | 9 | - | - | 9+ | 4 | - | - | 7 | - | - | 2 | - | - | - | 2 | 6 |
| 7 | 9 | - | 9+ | 9 | - | 9 | 9+ | 9+ | 8 | 9+ | 9+ | 5 | 9+ | 9+ | 3 | 9 | 9+ | 9 | 7 | 9+ | 9 | - | - | 8 | - | - | - | 8 | - | - | - | - | - | - | 2 | 7 |
| 8 | 8 | 5 | 9+ | 7 | - | 9 | 9+ | 9 | 8 | 9+ | 9+ | 5 | 9+ | 9+ | 6 | 9 | 9+ | 9+ | 5 | 9+ | 9+ | - | - | 1 | - | - | - | 2 | - | - | - | - | - | - | 2 | 8 |
| 9 | 5 | 6 | 9+ | 4 | - | 8 | 9+ | 9 | 8 | 9+ | 9 | 6 | 9+ | 9+ | 9 | 6 | 9+ | 9+ | 5 | 9+ | 9+ | - | - | - | 2 | - | - | 1 | - | - | - | - | - | - | 2 | 9 |
| 10 | 1 | 6 | 9+ | - | - | 8 | 9+ | 7 | 9 | 9+ | 6 | 6 | 9+ | 9+ | 9+ | 7 | 9+ | 9+ | 8 | 8 | 9+ | 7 | - | 8 | 9+ | 4 | - | - | - | - | - | 5 | - | - | 2 | 10 |
| 11 | - | 6 | 9 | - | - | 9 | 9+ | 5 | 8 | 9+ | 2 | 5 | 9 | 9+ | 9+ | 9 | 9+ | 9 | 9 | 8 | 9+ | 9+ | 5* | 9+ | 9+ | 8 | 4* | - | 6 | - | 9 | 9 | 5 | - | 2 | 11 |
| 12 | - | - | 5 | - | - | 1 | 9+ | 1 | 8 | 9 | - | 5 | 9 | 9+ | 9 | 9 | 9+ | 9 | 9 | 9+ | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 4* | 9 | 8 | 7* | 9+ | 9+ | 9 | 6* | 2 | 12 |
| 13 | - | - | - | - | - | - | 9+ | - | 6 | 7 | - | 2 | 8 | 9+ | 9 | 9 | 9+ | 8 | 9 | 9+ | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 7* | 9+ | 9+ | 9 | 5* | 9 | 13 |
| 14 | - | - | - | - | - | - | 9 | - | 4 | 1 | - | 1 | 5 | 9+ | 9 | 9 | 9+ | 7 | 9 | 9 | 9+ | 9+ | 9 | 9+ | 9 | 9 | 9+ | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 6 | 7 | 14 |
| 15 | - | - | - | - | - | - | 7 | - | 1 | - | - | - | 1 | 9+ | 9 | 8 | 9 | 7 | 8 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9 | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 7 | 7 | 15 |
| 16 | - | - | - | - | - | - | 5 | - | - | - | - | - | - | 9+ | 9 | 7 | 9 | 8 | 8 | 8 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 8 | 6 | 16 |
| 17 | - | - | - | - | - | - | 5 | 1 | - | - | - | - | - | 9+ | 9 | 7 | 9 | 9 | 8 | 7 | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 6 | 9 | 5 | 17 |
| 18 | - | - | - | - | - | - | 6 | 4 | - | - | 2 | 1 | - | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 8 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9 | 9+ | 9 | 9 | 9+ | 9+ | 1 | 9 | 7 | 18 |
| 19 | - | - | - | - | - | - | 9 | 6 | 1 | 4 | 5 | 3 | - | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 8 | 9+ | 9+ | 9 | 9+ | 9+ | 8 | 9 | 9+ | 2 | 9 | 9+ | 9+ | - | 9 | 8 | 19 |
| 20 | 2 | - | - | 1 | - | - | 9+ | 8 | 2 | 9 | 8 | 5 | - | 9+ | 9+ | 8 | 9+ | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 9+ | 9+ | 8 | 9 | 9+ | - | 7 | 9+ | 9+ | - | 9 | 7 | 20 |
| 21 | 4 | - | 5 | 5 | - | - | 9+ | 9 | 3 | 9+ | 9 | 8 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 8 | 9+ | 4 | 9 | 9+ | 9+ | 6 | 9 | 9+ | - | 7 | 9+ | 9+ | - | 9 | 9 | 21 |
| 22 | 6 | - | 9 | 8 | 1 | - | 9+ | 9 | 5 | 9+ | 9+ | 8 | 1* | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 9 | 9+ | - | 9 | 9+ | 9+ | 7 | 9 | 9+ | - | 9 | 9+ | 8 | - | 9 | 6 | 22 |
| 23 | 8 | - | 9+ | 9 | 7 | - | 9+ | 9+ | 4 | 9+ | 9+ | 8 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 8 | 9+ | - | 9+ | 9+ | 9 | 9 | 9 | 9+ | - | 8 | 9+ | 1* | 3 | 9 | 5 | 23 |
| | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | |

***** 160-meter signal strengths can be estimated using 80-meter numbers, minus 3 S-units.

# November 1999 – YCCC - for SSN = Very High Sigs in S-Units. By N6BV - ARRL.

| | 80 Meters | | | | | | | 40 Meters | | | | | | | 20 Meters | | | | | | | 15 Meters | | | | | | | 10 Meters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UTC | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | UTC |
| 0 | 9 | - | 9+ | 9 | 8 | - | 9+ | 9+ | 4 | 9+ | 9+ | 9 | - | 9+ | 5 | 9 | 9+ | 9+ | 9+ | 9 | 9+ | - | 8 | 9+ | 5 | 7 | 9 | 9+ | - | - | 9 | - | - | 8 | 9 | 0 |
| 1 | 9 | - | 9+ | 9+ | 7 | - | 9+ | 9+ | 3 | 9+ | 9+ | 9 | 2 | 9+ | 5 | 9 | 9+ | 9+ | 9+ | 9+ | 9+ | - | 5 | 9+ | 1 | 3 | 9+ | 8 | - | - | 3 | - | - | 4 | 7 | 1 |
| 2 | 9 | - | 9+ | 9+ | 6 | - | 9+ | 9+ | 3 | 9+ | 9+ | 9 | 6 | 9+ | 5 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | - | 1 | 9 | - | 6 | 9 | 9+ | - | - | - | - | - | - | 2 | 2 |
| 3 | 9 | - | 9+ | 9+ | 1 | 1 | 9+ | 9+ | 3 | 9+ | 9+ | 8 | 8 | 9+ | 7 | 8 | 9+ | 9+ | 9+ | 9+ | 9+ | - | - | 9 | - | - | 2 | 7 | - | - | - | - | - | - | 2 | 3 |
| 4 | 9 | - | 9+ | 9+ | - | 7 | 9+ | 9+ | 4 | 9+ | 9+ | 8 | 9 | 9+ | 3 | 9 | 9+ | 9+ | 9 | 9+ | 9 | - | - | 8 | 3 | - | - | 6 | - | - | - | - | - | - | 2 | 4 |
| 5 | 9+ | - | 9+ | 9+ | - | 8 | 9+ | 9+ | 5 | 9+ | 9+ | 7 | 9 | 9+ | 1 | 9 | 9+ | 9+ | 9 | 9+ | 9 | - | - | 8 | 4 | 1 | - | 4 | - | - | - | - | - | - | 2 | 5 |
| 6 | 9+ | - | 9+ | 9+ | - | 8 | 9+ | 9 | 7 | 9+ | 9+ | 7 | 9+ | 9+ | 2 | 9 | 9+ | 7 | 9+ | 9+ | 9 | - | - | 8 | - | - | - | 3 | - | - | - | - | - | - | 2 | 6 |
| 7 | 9+ | - | 9+ | 9 | - | 8 | 9+ | 9+ | 8 | 9+ | 9+ | 7 | 9+ | 9+ | 2 | 9+ | 9+ | 7 | 9 | 9+ | 9 | - | - | 5 | - | - | - | 5 | - | - | - | - | - | - | 2 | 7 |
| 8 | 9 | 6 | 9+ | 8 | - | 8 | 9+ | 9+ | 8 | 9+ | 9+ | 7 | 9+ | 9+ | 1 | 9 | 9+ | 8 | 8 | 9+ | 9 | - | - | - | - | - | - | 2 | - | - | - | - | - | - | 2 | 8 |
| 9 | 7 | 7 | 9+ | 5 | 1 | 9 | 9+ | 9 | 8 | 9+ | 9 | 8 | 9+ | 9+ | 9 | 8 | 9+ | 9+ | 4 | 9+ | 9+ | - | - | - | 1 | - | - | - | - | - | - | - | - | - | 2 | 9 |
| 10 | 4 | 7 | 9+ | 1 | 1 | 9 | 9+ | 8 | 9 | 9+ | 7 | 7 | 9+ | 9+ | 9+ | 3 | 9+ | 9+ | 7 | 8 | 9+ | 4 | - | 6 | 9 | 1 | - | - | - | - | - | 3 | - | - | 2 | 10 |
| 11 | - | 8 | 9+ | - | 2 | 9 | 9+ | 7 | 9 | 9+ | 3 | 7 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 6 | 9+ | 9 | 2* | 9+ | 9+ | 9 | 3* | - | 2 | - | 8 | 9 | 2 | - | 2 | 11 |
| 12 | - | - | 7 | - | - | 9 | 9+ | 5 | 8 | 9+ | - | 6 | 9 | 9+ | 9+ | 9 | 9+ | 9 | 9 | 9 | 9+ | 9+ | 7 | 9+ | 9+ | 9 | 3* | 8 | 8 | 5* | 9+ | 9 | 9 | 6* | 2 | 12 |
| 13 | - | - | - | - | - | 1 | 9+ | 2 | 8 | 8 | - | 5 | 8 | 9+ | 9 | 9 | 9+ | 9 | 9 | 9+ | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 9 | 9+ | 9+ | 7* | 9+ | 9 | 9 | 5* | 9 | 13 |
| 14 | - | - | - | - | - | - | 9+ | 1 | 6 | 3 | - | 3 | 7 | 9+ | 9+ | 8 | 9+ | 8 | 9 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 9 | 9 | 14 |
| 15 | - | - | - | - | - | - | 9 | 1 | 3 | - | - | 2 | 2 | 9+ | 9 | 8 | 9 | 8 | 8 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 7 | 9+ | 15 |
| 16 | - | - | - | - | - | - | 7 | 2 | 2 | - | - | 1 | - | 9+ | 9+ | 8 | 9 | 9 | 8 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 4 | 9 | 9+ | 16 |
| 17 | - | - | - | - | - | - | 7 | 4 | 2 | - | 2 | 2 | - | 9+ | 9+ | 8 | 9 | 9+ | 9 | 8 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9 | 9+ | 9+ | 8 | 9+ | 9+ | 2* | 9 | 9+ | 17 |
| 18 | - | - | - | - | - | - | 8 | 5 | 3 | - | 5 | 3 | - | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 8 | 9+ | 9+ | 9 | 9+ | 9+ | 8 | 9 | 9+ | 5 | 9 | 9+ | 9+ | - | 9 | 9+ | 18 |
| 19 | 1 | - | - | 1 | - | - | 9 | 8 | 3 | 5 | 7 | 5 | - | 9+ | 9+ | 8 | 9+ | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 2 | 9+ | 9+ | - | 8 | 9+ | 9+ | - | 9+ | 9+ | 19 |
| 20 | 4 | - | - | 4 | - | - | 9+ | 9 | 5 | 9 | 9 | 7 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 8 | 9+ | - | 9+ | 9+ | 9+ | 4 | 9 | 9+ | - | 6 | 9+ | 9+ | - | 9 | 9+ | 20 |
| 21 | 7 | - | 8 | 7 | - | - | 9+ | 9 | 6 | 9+ | 9 | 8 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9 | 9+ | - | 9 | 9+ | 9+ | 6 | 9+ | 9+ | - | 5 | 9+ | 9+ | - | 9 | 9+ | 21 |
| 22 | 8 | - | 9+ | 9 | 5 | - | 9+ | 9+ | 6 | 9+ | 9+ | 9 | 2 | 9+ | 7 | 9+ | 9+ | 9+ | 9+ | 9 | 9+ | - | 9+ | 9+ | 9+ | 4 | 9 | 9+ | - | 9 | 9+ | 7 | - | 9 | 9+ | 22 |
| 23 | 9 | - | 9+ | 9 | 7 | - | 9+ | 9+ | 5 | 9+ | 9+ | 9 | - | 9+ | 3 | 9+ | 9+ | 9+ | 9 | 9 | 9+ | - | 9 | 9+ | 9 | 2 | 9 | 9+ | - | 4 | 9+ | 1* | - | 9 | 2 | 23 |
| | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | |

***** 160-meter signal strengths can be estimated using 80-meter numbers, minus 3 S-units.

# February 2000 – YCCC - for SSN = Very High Sigs in S-Units. By N6BV - ARRL.

| | 80 Meters | | | | | | | 40 Meters | | | | | | | 20 Meters | | | | | | | 15 Meters | | | | | | | 10 Meters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UTC | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | UTC |
| 0 | 9 | - | 9+ | 9+ | 7 | - | 9+ | 9+ | 5 | 9+ | 9+ | 9 | - | 9+ | 7 | 9 | 9+ | 9+ | 9+ | 8 | 9+ | - | 9+ | 9+ | 8 | 8 | 9+ | 9+ | - | 2 | 9+ | - | 1 | 9 | 2 | 0 |
| 1 | 9 | - | 9+ | 9+ | 7 | - | 9+ | 9+ | 2 | 9+ | 9+ | 9 | 1 | 9+ | 4 | 9 | 9+ | 9+ | 9+ | 9 | 9+ | - | 8 | 9+ | - | 4 | 9+ | 9+ | - | - | 8 | - | - | 9 | 9 | 1 |
| 2 | 9 | - | 9+ | 9+ | 7 | - | 9+ | 9+ | 2 | 9+ | 9+ | 9 | 5 | 9+ | 5 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | - | 4 | 9 | - | 3 | 9+ | 9 | - | - | - | - | - | 1 | 2 | 2 |
| 3 | 9 | - | 9+ | 9+ | 1 | 1 | 9+ | 9+ | 2 | 9+ | 9+ | 9 | 8 | 9+ | 6 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | - | 1 | 9 | 1 | - | 7 | 8 | - | - | - | - | - | - | 2 | 3 |
| 4 | 9+ | - | 9+ | 9+ | - | 6 | 9+ | 9+ | 3 | 9+ | 9+ | 8 | 9 | 9+ | 1 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | - | - | 8 | 2 | - | - | 5 | - | - | - | - | - | - | 2 | 4 |
| 5 | 9+ | - | 9+ | 9+ | - | 7 | 9+ | 9+ | 4 | 9+ | 9+ | 6 | 9 | 9+ | - | 9 | 9+ | 9+ | 9 | 9 | 9+ | - | - | 6 | - | - | - | - | - | - | - | - | - | - | 2 | 5 |
| 6 | 9+ | - | 9+ | 9+ | - | 8 | 9+ | 9+ | 7 | 9+ | 9+ | 5 | 9+ | 9+ | - | 9 | 9+ | 8 | 9 | 9 | 9+ | - | - | 5 | - | - | - | - | - | - | - | - | - | - | 2 | 6 |
| 7 | 9+ | - | 9+ | 9+ | - | 8 | 9+ | 9 | 8 | 9+ | 9+ | 6 | 9+ | 9+ | 2 | 9 | 9+ | 5 | 8 | 9+ | 9+ | - | - | 6 | - | - | - | 1 | - | - | - | - | - | - | 2 | 7 |
| 8 | 8 | 5 | 9+ | 8 | - | 9 | 9+ | 9+ | 8 | 9+ | 9+ | 7 | 9+ | 9+ | - | 8 | 9+ | 3 | 8 | 9+ | 9 | - | - | 5 | - | - | - | 6 | - | - | - | - | - | - | 2 | 8 |
| 9 | 7 | 7 | 9+ | 5 | - | 8 | 9+ | 9 | 8 | 9+ | 9 | 7 | 9+ | 9+ | 4 | 6 | 9+ | 8 | 2 | 9+ | 9+ | - | - | 1 | - | - | - | 4 | - | - | - | - | - | - | 2 | 9 |
| 10 | 3 | 7 | 9+ | 1 | 1 | 8 | 9+ | 8 | 9 | 9+ | 7 | 7 | 9+ | 9+ | 9 | 1 | 9+ | 9+ | 6 | 9 | 9+ | - | - | 3 | 5 | - | - | - | - | - | - | - | - | - | 2 | 10 |
| 11 | - | 7 | 9+ | - | 1 | 9 | 9+ | 7 | 9 | 9+ | 3 | 6 | 9 | 9+ | 9+ | 7 | 9+ | 9+ | 9 | 1* | 9+ | 8 | 2* | 9+ | 9+ | 5 | 1* | - | - | - | 1 | 7 | - | - | 2 | 11 |
| 12 | - | - | 7 | - | - | 8 | 9+ | 4 | 8 | 9+ | - | 6 | 9 | 9+ | 9+ | 9 | 9+ | 9 | 9+ | 8 | 9 | 9+ | 8* | 9+ | 9+ | 9 | 5* | - | 6 | 4* | 9+ | 9 | 6 | 2* | 2 | 12 |
| 13 | - | - | - | - | - | 1 | 9+ | 1 | 8 | 8 | - | 4 | 8 | 9+ | 9+ | 9 | 9+ | 8 | 9 | 9+ | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 3* | 3 | 8 | 6* | 9+ | 9+ | 9+ | 6* | 2 | 13 |
| 14 | - | - | - | - | - | - | 9+ | - | 5 | 2 | - | 3 | 7 | 9+ | 9 | 9 | 9+ | 7 | 9 | 9 | 9+ | 9+ | 9+ | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 6 | 9+ | 9+ | 9+ | 4* | 1 | 14 |
| 15 | - | - | - | - | - | - | 8 | - | 4 | - | - | 2 | 2 | 9+ | 9 | 8 | 9 | 7 | 9 | 9 | 9+ | 9+ | 9+ | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 7 | 9+ | 9+ | 9+ | 5 | 8 | 15 |
| 16 | - | - | - | - | - | - | 6 | - | 1 | - | - | 1 | - | 9+ | 9 | 8 | 9 | 9 | 8 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 7 | 7 | 9 | 16 |
| 17 | - | - | - | - | - | - | 5 | 2 | 1 | - | - | 1 | - | 9+ | 9+ | 8 | 9 | 9 | 9 | 8 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | 1* | 8 | 8 | 17 |
| 18 | - | - | - | - | - | - | 7 | 5 | 1 | - | 2 | 2 | - | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 7 | 9+ | 9+ | 9 | 9+ | 9+ | 8 | 9 | 9+ | 8 | 9 | 9+ | 9+ | 1* | 9+ | 9+ | 18 |
| 19 | - | - | - | - | - | - | 9 | 7 | 2 | 4 | 6 | 4 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 8 | 9+ | 9+ | 9 | 9+ | 9+ | 2 | 9 | 9+ | - | 8 | 9+ | 9+ | 1* | 9+ | 6 | 19 |
| 20 | 3 | - | - | 2 | - | - | 9+ | 9 | 4 | 9 | 8 | 7 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 8 | 9+ | 9 | 9+ | 9+ | 9+ | 3 | 9 | 9+ | - | 4 | 9+ | 9+ | - | 9 | 9+ | 20 |
| 21 | 5 | - | 5 | 5 | 1 | - | 9+ | 9 | 5 | 9+ | 9 | 8 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 8 | 9+ | 1 | 8 | 9+ | 9+ | 4 | 9 | 9+ | - | - | 9+ | 9+ | - | 9 | 8 | 21 |
| 22 | 8 | - | 9 | 8 | 5 | - | 9+ | 9+ | 6 | 9+ | 9+ | 9 | 2 | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 9 | 9+ | - | 9+ | 9+ | 9+ | 3 | 9+ | 9+ | - | 8 | 9+ | 8 | - | 9 | 8 | 22 |
| 23 | 9 | - | 9+ | 9 | 8 | - | 9+ | 9+ | 5 | 9+ | 9+ | 9 | - | 9+ | 9 | 9+ | 9+ | 9+ | 9+ | 9 | 9+ | - | 9+ | 9+ | 9+ | 4 | 9+ | 9+ | - | 8 | 9+ | 4* | - | 9 | 4 | 23 |
| | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | |

***** 160-meter signal strengths can be estimated using 80-meter numbers, minus 3 S-units.

# March 2000 – YCCC - for SSN = Very High Sigs in S-Units. By N6BV - ARRL.

| | 80 Meters | | | | | | | 40 Meters | | | | | | | 20 Meters | | | | | | | 15 Meters | | | | | | | 10 Meters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UTC | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | UTC |
| 0 | 9 | - | 9+ | 9 | 7 | - | 9+ | 9+ | 4 | 9+ | 9+ | 9 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 7 | 9+ | - | 9 | 9+ | 9 | 7 | 9 | 9+ | - | 1 | 9+ | 1 | 3 | 8 | 9 | 0 |
| 1 | 9 | - | 9+ | 9+ | 7 | - | 9+ | 9+ | - | 9+ | 9+ | 9 | - | 9+ | 9+ | 8 | 9+ | 9+ | 9+ | 9 | 9+ | - | 7 | 9+ | 6 | 5 | 9 | 9+ | - | - | 9+ | - | - | 8 | 9+ | 1 |
| 2 | 9+ | - | 9+ | 9+ | 7 | - | 9+ | 9+ | - | 9+ | 9+ | 9 | 4 | 9+ | 9+ | 8 | 9+ | 9+ | 9+ | 9+ | 9+ | - | 2 | 9+ | 8 | 8 | 9 | 9 | - | - | 5 | - | - | 2 | 5 | 2 |
| 3 | 9+ | - | 9+ | 9+ | 1 | - | 9+ | 9+ | 1 | 9+ | 9+ | 9 | 8 | 9+ | 9 | 8 | 9+ | 9+ | 9 | 9+ | 9+ | - | - | 9+ | 5 | 1 | 9 | 9+ | - | - | 5 | - | - | - | 2 | 3 |
| 4 | 9+ | - | 9+ | 9+ | - | 5 | 9+ | 9+ | 1 | 9+ | 9+ | 8 | 9 | 9+ | 7 | 8 | 9+ | 9+ | 9 | 9+ | 9+ | - | - | 9+ | 8 | - | 2 | 8 | - | - | 4 | - | - | - | 2 | 4 |
| 5 | 9+ | - | 9+ | 9+ | - | 7 | 9+ | 9+ | 3 | 9+ | 9+ | 4 | 9 | 9+ | 6 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | - | - | 9+ | 8 | - | - | 8 | - | - | 4 | 1 | - | - | 2 | 5 |
| 6 | 9+ | - | 9+ | 9+ | - | 8 | 9+ | 9+ | 6 | 9+ | 9+ | 4 | 9+ | 9+ | 8 | 9 | 9+ | 9+ | 9 | 9+ | 9+ | - | - | 9+ | 5 | - | - | 8 | - | - | 1 | - | - | - | 2 | 6 |
| 7 | 9 | - | 9+ | 9 | - | 9 | 9+ | 9+ | 7 | 9+ | 9+ | 4 | 9+ | 9+ | 5 | 9 | 9+ | 9+ | 8 | 9+ | 9+ | - | - | 9 | - | - | - | 8 | - | - | - | - | - | - | 2 | 7 |
| 8 | 7 | - | 9+ | 8 | - | 9 | 9+ | 9 | 8 | 9+ | 9+ | 6 | 9+ | 9+ | 6 | 9 | 9+ | 9+ | 6 | 9+ | 9+ | - | - | 6 | - | - | - | 6 | - | - | - | - | - | - | 2 | 8 |
| 9 | 5 | 6 | 9+ | 5 | - | 9 | 9+ | 9 | 8 | 9+ | 9 | 6 | 9+ | 9+ | 9 | 9 | 9+ | 9+ | 6 | 9+ | 9+ | - | - | 2 | 2 | - | - | 3 | - | - | - | - | - | - | 2 | 9 |
| 10 | 1 | 6 | 9+ | - | - | 9 | 9+ | 8 | 9 | 9+ | 6 | 6 | 9+ | 9+ | 9+ | 8 | 9+ | 9+ | 8 | 9+ | 9+ | 4 | - | 7 | 9 | 2 | - | - | - | - | - | 1 | - | - | 2 | 10 |
| 11 | - | 6 | 9+ | - | - | 9 | 9+ | 5 | 8 | 9+ | 2 | 5 | 9 | 9+ | 9+ | 9 | 9+ | 9 | 9 | 9+ | 9+ | 8 | 4* | 9+ | 9+ | 6 | 4* | 2 | 1 | - | 5 | 9 | 1 | - | 2 | 11 |
| 12 | - | - | 6 | - | - | 6 | 9+ | 1 | 8 | 9+ | - | 5 | 9 | 9+ | 9 | 9 | 9+ | 9 | 9 | 9+ | 9+ | 9+ | 8* | 9+ | 9+ | 9 | 5* | 9 | 6 | 5* | 9+ | 9 | 6 | 4* | 2 | 12 |
| 13 | - | - | - | - | - | - | 9+ | - | 6 | 7 | - | 2 | 8 | 9+ | 9 | 9 | 9+ | 8 | 9 | 9+ | 9+ | 9 | 8 | 9+ | 9 | 9 | 9 | 9 | 9 | 6* | 9+ | 9+ | 8 | 6* | 9 | 13 |
| 14 | - | - | - | - | - | - | 9 | - | 4 | 1 | - | - | 5 | 9+ | 8 | 9 | 9+ | 4 | 9 | 9 | 9+ | 9+ | 9 | 9+ | 9 | 9 | 9 | 9+ | 9 | 8* | 9+ | 9+ | 9 | 5* | 1 | 14 |
| 15 | - | - | - | - | - | - | 7 | - | 1 | - | - | - | 1 | 9+ | 8 | 8 | 9 | 5 | 8 | 9 | 9+ | 9+ | 9 | 9+ | 9 | 9 | 9 | 9+ | 9 | 4 | 9+ | 9 | 9 | 5* | 2 | 15 |
| 16 | - | - | - | - | - | - | 4 | - | - | - | - | - | - | 9+ | 8 | 7 | 9 | 7 | 7 | 8 | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 9 | 9+ | 9 | 6* | 9+ | 9 | 9 | 4 | 1 | 16 |
| 17 | - | - | - | - | - | - | 2 | 1 | - | - | - | - | - | 9+ | 9 | 6 | 9 | 8 | 8 | 6 | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 9 | 9+ | 9 | 4 | 9+ | 9+ | 7 | 9 | 2 | 17 |
| 18 | - | - | - | - | - | - | 4 | 1 | - | - | - | - | - | 9+ | 9 | 7 | 9+ | 9 | 9 | 6 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9 | 9+ | 9 | 7 | 9+ | 9+ | 5 | 9 | 8 | 18 |
| 19 | - | - | - | - | - | - | 6 | 4 | - | - | 4 | 1 | - | 9+ | 9+ | 8 | 9+ | 9+ | 9 | 7 | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 9 | 9+ | 6 | 6 | 9+ | 9+ | - | 8 | 8 | 19 |
| 20 | 1 | - | - | 1 | - | - | 9 | 7 | 1 | 8 | 7 | 5 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9 | 8 | 9+ | 9+ | 9 | 9+ | 9+ | 8 | 9 | 9+ | - | 5 | 9+ | 9+ | - | 8 | 8 | 20 |
| 21 | 2 | - | 3 | 4 | - | - | 9+ | 9 | 2 | 9 | 9 | 7 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 8 | 9+ | 7 | 9 | 9+ | 9+ | 8 | 9 | 9+ | - | 5 | 9+ | 9+ | - | 8 | 1 | 21 |
| 22 | 6 | - | 9 | 7 | 1 | - | 9+ | 9 | 3 | 9+ | 9+ | 8 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 9 | 9+ | - | 9 | 9+ | 9+ | 8 | 9 | 9+ | - | 5 | 9+ | 9 | - | 8 | 1 | 22 |
| 23 | 8 | - | 9+ | 9 | 4 | - | 9+ | 9+ | 4 | 9+ | 9+ | 9 | - | 9+ | 9+ | 9 | 9+ | 9+ | 9+ | 8 | 9+ | - | 9 | 9+ | 9+ | 7 | 9 | 9+ | - | 7 | 9+ | 6 | - | 8 | 2 | 23 |
| | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | EU | FE | SA | AF | AS | OC | NA | |

***** 160-meter signal strengths can be estimated using 80-meter numbers, minus 3 S-units.