

17-Meter Morning Long Path

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Over the years in this column I've covered 10-Meter long path (the March 1999 and March 2012 columns), 15-Meter long path (the January 2000 and March 2010 columns) and 20-Meter long path (the October 2002 column). This month's column adds the 17-Meter band to the long path discussions.

What brought this up was the ARRL Centennial stations – W1AW/x. From July 22 through July 29, stations in Indiana signed W1AW/9. My wife Vicky AE9YL and I participated in this effort, along with several locals coming over to help out. We had a great time, and were honored to use the W1AW call.

Figuring out when to operate was fairly simple – pin down our available times and then check to see if anyone else had that time slot reserved. The 7-day period was broken up into two-hour time slots throughout each day, and each time slot was further broken up by band and mode. That's a lot of slots to fill!

Since daytime maximum useable frequencies (MUFs) in the northern hemisphere are less during the summer months than the winter months, I figured that the higher bands (15-Meters, 12-Meters and 10-Meters) would be kind of iffy unless sporadic E was present. Thus we decided to emphasize 17-Meter Phone in the 8:00 AM to 10:00 AM time slot, specifically looking for Southeast Asia via long path. Figure 1 summarizes the predictions from K9LA to Japan for July 2014 on 17-Meters from 1200 UTC to 1400 UTC.

UTC	Local	Median MUF	MUFday	Sig Pwr	Sig Str
1200	8:00 AM	21.8 MHz	0.76	-99 dBm	S4
1300	9:00 AM	23.3 MHz	0.85	-101 dBm	S3
1400	10:00 AM	23.0 MHz	0.84	-105 dBm	S3

Figure 1 – VOACAP Predictions

The third column in Figure 1 is the predicted median MUF during July 2014. In other words, the frequency indicated for this K9LA to Japan long path should be open on at least half the days of the month of July. With 18.1 MHz (17-Meters) being less than the median MUF, this 17-Meter long path should be open on more than half the days of the month. Indeed, the MUFday parameter (fourth column) says 17-Meters should be open on 23 to 26 days during the month depending on the time. That's pretty good odds that we'd have QSOs with Japanese stations and other Southeast Asia stations.

The signal powers in dBm (the fifth column) are translated into S-units assuming S9 equal -73 dBm and one S-unit is 5 dB. The resulting signal strengths (last column) are also median values. So the Southeast Asia stations won't be real strong, but they should be workable. For the record, I assumed 1000 Watts and an antenna on each end at reasonable height with 14 dBi gain (about 6 dB over a dipole at the same height).

To round out our understanding of this path, Figure 2 shows the big picture using the mapping feature from W6ELProp.

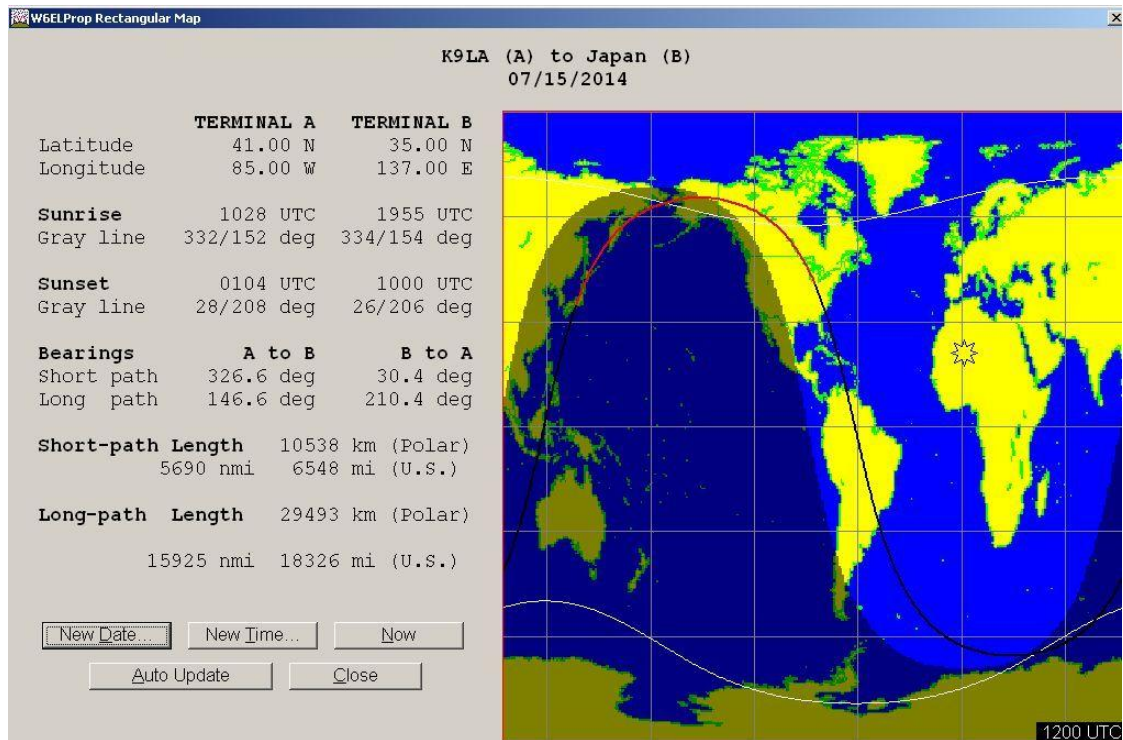


Figure 2 – The Big Picture

The long path is the black line, and it goes over the Caribbean, South America, almost touches Antarctica, comes up along the west coast of Australia, goes over the South China Sea and finally into Japan. At 1200 UTC, my end of the path is past sunrise (about an hour and a half, in fact), assuring that the MUF is high enough. The other end is in darkness, but not too far past sunset – about two hours. Thankfully recombination of electrons and positive ions at F2 region altitudes is much slower than the ionization process. This means the MUF decreases very gradually after sunset.

So how'd we do as W1AW/9 in the 8:00 AM to 10:00 AM time slot on 17-Meter Phone with the antenna pointed southeast? We did very well. We worked a total of 117 Japanese stations and 4 YB stations. Indeed, their signal strengths weren't spectacular, but they were very Q5 here.

We worked at least three Japanese stations on each of the days we were on. See Figure 3 for the breakdown by day of the Japanese stations and Indonesian stations worked on 17-Meters during the 8:00 AM to 10:00 AM time slot.

Day	JA	YB
July 23	not on	not on
July 24	20	3

July 25	3	0
July 26	not on	not on
July 27	66	1
July 28	6	0
July 29	22	1

Figure 3 – Daily Breakdown

Note that we weren't on the first day (July 23) as we were coming back from the ARRL Centennial in Hartford, CT. Also note that we didn't operate on 17-Meters on July 26. (I don't recall why we didn't).

The take-away from this month's column is three-fold. First, 17-Meters is somewhat immune from solar cycle variation (as is 20-Meters). Second, those on the East Coast and in the Midwest should look for long path to the southeast in the morning hours during the summer (looking forward, that means check out the summer of 2015). Third, the West Coast should have long path openings on 17-Meters to Europe and the Mideast in the late evening hours during the summer.