

Communications Report – Feb, 2019 Mission (8 March, 2019) (abbreviated)

Preface

There are other reports and documents that describe, in detail, the general IHS (International Health Services) mission including the medical care provided, etc. This report will focus on the communications support we gave with details about each team site. I will mention a few general observations and then I will pass on information from those at each team location. At the end are some brief ideas and recommendations to help improve future success in radio connections with each other and with RMS stations.

General

All IHS team sites are within a distance of 300 miles or less to each other. We relied predominantly on 40 meters for Voice Net operations and occasional Winlink Peer-to-Peer connections.

As in recent years, we experienced relatively poor HF propagation between our team sites. This mostly due to ionospheric conditions but at some sites, local interference added to the problem. Because of this we can make the general statement that we had less success at making connections with “local” Winlink RMS stations than what we were hoping for. Preliminary info (below) will show we may have some ways to improve this situation a little at some locations but for Winlink operations we very likely will have to continue the use of reliable RMS stations, such as N5TW and N4SER. Those observations and a few recommendations are at the end of this report.

Also note the attached Team Map which shows relative locations and topography of each team location in Honduras.

PLP (Puerto Lempira) Admin team site... (EK85cg)... Robert Littler, W9DSR, Dragon modem (P4), G5RV (full size) antenna

(PLP is next to a lagoon and the Caribbean to the east. It is in an area that is very flat for 50+ miles. Station location is in close proximity to several local buildings having high electrical noise... solar inverter installations, poorly installed cell towers, etc.)

Robert’s report, 8 March (abbreviated):

** Snapshot of Winlink activities:

140 Winlink messages sent

240 Winlink messages received

Approximately 85% through N5TW evenly divided between 40 and 20 meters throughout the day/evening - very few on 17 meters (glad it was there)

Approximately 10% through N4SER 60/40% split between 40/20 meters throughout the day.

Approximately 5% though YN1SN evenly split between 80 and 40 meters in the morning hours

There was one day (2/20?) that HF radio contacts where almost impossible to make/maintain.

No other Central American stations were reachable through the local QRN. Several attempts made per day. There was one stalled handshake with HR0COP.

** Snapshot of SSB activities:

I received reports of "readable/ usable" from IHS stations who had time to listen. I heard one station "weak/unusable" during the testing period. QRN was absurdly high most days.

Robert Littler

Rus Rus clinic team site... (EK74sr)... Gordon Murray, VE3JSJ/HR8, Dragon modem (P4), End Fed Dipole (65 foot) antenna.

(Rus Rus is in an area that is very flat. Station location is in a village that has a 10Kwatt diesel generator about a ¼ mile away. It is in a "quiet" area for radio ops)

Gordon's preliminary reports:

** 8 March

More than 97% of my Winlink contacts were via N5TW. 14/18/21 MHz during the day, and 7 MHz early morning and evening/night. 14/18MHz were the more consistent frequencies for connections during the day.

143 Winlink messages received, and 116 sent. Approx. 50% of messages sent/received were 'personal' for Team Members.

I tried connecting to ALL the Central American Gateways twice every afternoon when propagation showed "good" on 7 MHz, and twice every evening/night when 3.5 MHz showed open. My only success was with YN1SN in Managua, Nicaragua which yielded about 10 good PACTOR 4 connections in the mid afternoon around 15:00 local. My antenna tuned on 80m, but no connections were ever made on 80M to any Gateways.

** 22 February

PACTOR 4 worked well on 7064.5 from 14:30 to 17:30 this afternoon (Friday). No successful connects to any other "local" gateways. YN1SN is located 188NM away in Managua, Nicaragua. Gordon, VE3JSJ/HR8

** 23 February

Very good PACTOR 4 connections to YN1SN in Managua, Nicaragua, late afternoon, around 4-5:30 pm... (on 40 meters). Otherwise N5TW is the most consistent. Gordon, VE3JSJ/HR8

** 25 February (detailed report)

End fed dipole, 65 feet long, horizontal at about 18 feet.

50 watts RF from Yaesu 857D + LDG Z-11 Pro II autotuner

DRAGON 7400 SCS modem

Local P4 contacts with YN1SN on 40m, mid afternoon to early evening.

My antenna tunes 80m, but no connections achieved with any local station.

One mid afternoon contacts with HI8COE, and with HR0COP on 40m

As in previous years, N5TW provides most consistent service, 14 & 18 MHz daytime,
7MHz evening and mornings
Gordon VE3JSJ/HR8

Lisangnipura clinic team site... (EK85cx)... Larry Foster, KC0JON/HR8, Dragon
modem (P4), End Fed Dipole (130 foot) antenna

*(Lisangnipura is in an area that is very flat. Station location is in a rural village. The
team used an (IHS) Honda 5Kwatt inverter generator setting near the radio station. It is
in a "quiet" area for radio ops)*

Larry's Reports:

** 24 February

John, I was able to get on Winlink any time of the day by using:

N5TW @ 10148.000
N5TW @ 14110.000
N5TW @ 18107.000
N5TW @ 3596.000
N5TW @ 7102.000
YN1SN @ 7064.500
HR0COP @ 7064.300

While I was not able to reach HR0COP AND YN1SN all time, they were strong when I
did. Also they were P4.

I had a 130 foot end fed antenna orientated east west.

Larry

** 25 February

John, At 15:36 I started checking on what frequencies Winlink would work.

I tried the following:

N5TW 80 meters - nothing
N5TW 20 meters - good
HR0COP 40 meters Coyamaguela Honduras - good
VN1SN 40 meters Managua Nicaragua - good

N5TW 20 meters is available most any time.

VN1SN & HR0COP are better in the afternoon.

Larry, KC0JON/HR8

** 26 February (detailed report)

John,

Winlink operation usually worked any time of day at Lisangnipura.

Unable to establish reliable 2 meters communication on the PLP repeater. I tried my
Yeasu FT-7800 and my Icom IC-7100. I tried my brand new 50 ft RG-8x coax. I made
sure the driven elements on the yagi antenna were the correct length. The antenna was
mounted for vertical polarization. I wish I had an antenna analyzer.

My HF End fed antenna was attached to the top of the pole. The antenna ran from the top of the pole (20 ft elevation) to a tree to the west (10 ft elevation). Antenna length 130 ft. The advantage of the end fed antenna was that the coax ran on the side of the building instead out in the field where people and animals are a problem. A 50 ft. coax works great from the radio to the antenna.

Larry

Gracias Area clinic team ... (EK54ro)... Steve Posner, KX5SP/HR6, Dragon modem (P4), End Fed Dipole (52 foot) antenna

(Gracias and the surrounding villages are in a very mountainous area.)

Steve's Reports:

** 23 February

I've connected to YN1SN once with signals too weak to send traffic. I tried all the new Central American gateways on multiple bands with no success. However, I have no trouble getting into N5TW- always dependable.

I should say at base camp (we're a traveling team visiting different villages each day) we are in a terrible HF location surrounded by mountains.

Steve KX5SP/HR6

** 25 February

I conducted some requested radio trials.

At 8pm I tried to connect to all 4 Central America gateways on 40 mtrs and 80 mtrs with NO SUCCESS. I WAS able to connect with N5TW and a couple of other 5-land stations with weak sigs not as strong as N5TW.

From approx 1:30pm to 2 we tried voice contact from Gracias, Lempira to PLP (W9DSR) On all freqs. On 40 mtrs I heard Robert 5x6 to 5x7 but he was unable to hear me essentially. He could barely hear me in the noise- not enough for any intelligence to get through.

I should have prefaced this with I can't really imagine a worse HF location than I'm in, Surrounded by mountains with one mountain rising right along side my antenna location blocking the path to the HR0 gateway which I had high hopes of using. All my NVIS tricks couldn't get me through that path. Fortunately thanks to Tom's super station I've been able to connect day & night on 40 mtrs early morning and evening, 20 mtrs during the day.

73, Steve KX5SP/HR6

Patuca River clinic team ... (EK75qd)... Bill Roussel, K5TAS/HR8, PTCII Pro modem (4.1r firmware), G5RV Jr and Squirt HF antennas

(Patuca River team in Wampusirpi and the surrounding villages are in a very mountainous area)

Bill's Reports:

** 24 February

Hi John, I have sent you two files. The main one is a summary of my connections and traffic passed. Note the dates on the summary are GMT dates.

Bill, K5TAS

Below is a portion of the main file. The attachment has the entire .xls file with important detailed information. (K5TASsum2019)

	Connects	Sent	Received	No Connect
N5TW	65	66	77	22
N4SER	12	15	12	19
HR0COP	11	10	5	10
YN1SN	1		1	1
Totals	89	91	95	52

Summation

From my observations, we need to look closely at each of the below factors that affected each IHS station in its ability to connect with RMS stations, especially the new ones in Central America where NVIS properties are involved. This is in consideration of what each station was doing this year to make good connections to RMS stations. It also considers the improvements in those stations, of their gear and antenna setups from what we used just a year or two ago at the same sites.

The first ones are no surprise but some are lesser understood and are items to look at...

1. Local area propagation conditions (sun spot cycle, etc)
2. Geographical (distances, nearby terrain)
3. Antenna type, length, configuration, and RF power applied
4. Modem type and firmware installed (robustness of firmware algorithms plus P3 vs. P4 performance considerations)

It was no surprise that our Voice Net had similar problems of poor communications between our IHS teams' radio locations. Items 1 through 3 above directly affect the voice communications in much the same way as they did our "local" Winlink operations.

If there are any added comments from the radio folks who went that can add helpful information to this report, certainly pass them on to all of us.

If there are any other comments or questions, let me know them as well.

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