Results: 2019 CQWW 160-Meter Contest

Topband During the Extended Solar Minimum Years

BY ANDY BLANK*, N2NT



The team at VO2AC, which placed #9 in the Multi-Op World category, included (from I. to r.) VE9CB, VO2AC, and VO1HP.

pattern has been emerging over the past few years. The 160-meter band is a great DX band during the solar minimum.

It seems the CW portion of the contest is capable of producing some large scores; however, the conditions on SSB in March have been sketchy at best, but with some good sunrise peaks.

While not approaching the golden year of 2009, when the band sounded like 20 meters, 2019 CW produced 29 scores over 1 million points.

The highest score of the contest was made by Dimitri, RA3CO, from CN2CO at 2.477 Meg, just edging out Jozef, OM3GI, operating from CT9ABO. The point advantage from Africa is quite evident here, but it takes some dedication to travel and set up during the winter to operate this contest.

Nowhere is that more evident than with the team from TKØC. Using a temporary 16-meter Spiderbeam Inverted 'L' with around 40 radials, and some assorted receiving antennas, the team from Slovenia won the World Multi Operator trophy. Great job by Goran, S55OO, and his fine team "Charlie."

On SSB, Max, IZ4DPV, traveled to the PJ4G contest station on Bonaire. He and station owner Noah, K2NG, operated the top Multi-op in the world at just under 600K points.

The only other stations able to break 600K on SSB were from Europe in the highly competitive Single-Op Assisted

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category. Rolandas, LY4A, had the highest score in the entire contest at 620K, with Petr, OK1BN, operating OK7K to 611K.

Many thanks again to the Bavarian Contest Club, which had 195 entries in the CQ 160 Contest. Their 28 Meg total is just below the 2018 29 Meg total, providing the main chunk of activity in Europe for the contest. As usual, the PVRC, YCCC, and FRC provided many entries from the U.S. and Contest Club Ontario is the big driver from Canada.

Congratulations to all the clubs for keeping up the activity, and thanks for the support.

CW Results

A record 2,740 logs were received for CW. Single-Op assisted and unassisted entries were about equal. Next year we will make the long overdue change to include a low-power Assisted entry as well.

The Millionaires club was well represented this year. Here is a list of all scores over 1 Meg.

CNIOCO	0.477.050	VEGET	1 100 000
	2,477,250		1,128,660
OM7M	1,210,560	4X2M	1,250,200
CT9ABO	2,452,908	E7DX	1,122,203
OK7K	1,189,800	ED8W	1,230,576
TKØC	1,840,484	EIØR	1,098,976
UA7K	1,164,114	NP2J	1,076,619
PJ2T	1,701,310	TM6M	1,065,875
	1,157,698	RL3A	1,051,762
D4C	1,663,360	OK5Z	1,045,972
	1,143,480	DM6V	1,041,228
P33W	1,551,716	DL6FBL	1,030,710
VO2AC	1,141,504	EF5Y	1,011,840
P4ØAA	1,502,439	SN7Q	1,010,850
LX7I	1,133,713	S5ØW	1,010,275
C6AGU	1,458,858		

Last year's Single-op winner, Kevin, N5DX, decided to try the highly competitive Multi-Op category this year. He was joined by his dad, K5GO; K5RM, and KM5G, operating remotely at the QTH of N2QV in New York from Arkansas. They surprised the perennial Multi-Op superstars from W2GD, and topped the field. KM3T, operating from KC1XX, reported that conditions were disturbed in the northeast the first evening. However, a great result was posted by the team at KØDI in Florida, making third place in the U.S. The VO2AC team was able to break 1 Meg for ninth place in the world as well.

North America was well represented by PJ2T, which has been operated by K8ND and W8WTS for many years, and C6AGU by AA7JV and N6MZ, who went to the warmer climates for great multi-op scores.

No 160 contest is complete without the stories from the "Briggs Brothers." The combined CW/SSB winner and Single-op U.S. winner on both modes was Peter, K3ZM. Peter reported great U.S. west coast conditions the first night.

TROPHY WINNERS AND DONORS

World Single Operator Combined SSB/CW Peter H Briggs, K3ZM Donor: Ed Parish, K1EP

World Multioperator Combined SSB/CW Andy Kazantsev, UA7K (R3FA RK7A RW7K UB7K R6KVA ops) Donor: Juan Carlos Munoz, TG9AJR

CW

SINGLE OPERATOR

World

Dimitri Kryukov,CN2CO
Donor: Bill Tippett, W4ZV- DJ8WL Memorial

U.S.A

Peter H Briggs, K3ZM

Donor: Milt Jensen, N5IA, Memorial by Arizona Outlaws Contest Club

Canada

Vladimir Milutinovic, VE3JM Donor: VE2XAA Memorial by Thor Stefansson, TF4M

U.S.A. - Zone 3 Niko Cimbur, AC6DD Donor: Bruce Butler – W6OSP Memorial

U.S.A. - Zone 4 Victor A. Kean, Jr., K1LT Donor: Steve Schmidt, K4WA

U.S.A. - Zone 5 Velimir Deric (K3JO), K1LZ Donor: Paul H. Newberry, Jr., N4PN

Africa

Luca Aliprandi (IK2NCJ), D4C Donor: James "Skip" Riba, WS9V

Asia

Pavel Kukushkin, UN9L Donor: Missouri DX/Contest Club

Europe Olivier Seizelet (F1AKK), TM6M Donor: Emir-Braco Memic, E77DX

South America Mathias Kolpe (DL4MM), P4ØAA Donor: John Rodgers, WE3C

Oceania Bill Kollenbaum, KH7B Donor: Will Angenent, K6ND European Russia Igor Avdeev, UA2FZ Donor: UA2 Contest Club

Asiatic Russia Alexey Bogomolov, RL9Y Donor: UA2 Contest Club

Japan

Masaki Okano, JH4UYB

Donor: Alabama Contest Group

North America
Daniel Flaig (K8RF), NP2J
Donor: CQ magazine – N4IN Memorial

Southern Hemisphere Tony Vieira, OA4DX Donor: Robert Kile, W7RH

World Assisted Jozef Lang (OM3GI), CT9ABO Donor: Andy Chesnokov, UA3AB

Europe Assisted Lubo Martiska (OM5ZW), OM7M Donor: DX-Hotel DM9EE

U.S.A. Assisted Dennis Egan, W1UE Donor: Akito Nagi, JA5DQH

U.S.A. Assisted – Zone 3 Riki Kline, K7NJ Donor: Larry Pace, N7DD

U.S.A Assisted – Zone 4 Jerry Rosalius, WB9Z Donor: Pete Michaelis, N8TR

Assisted – Zone 5 Curtis W. Rose, N2ZX Donor: Potomac Valley Radio Club

World Low Power Ashraf Chaabane (KF5EYY), 3V8SF Donor: Akito Nagi, JA5DQH

U.S.A. Low Power Mark Bailey, KD4D Donor: Rich Kennedy, N4ESS

Asia – Low Power Mamuka Kordzakhia, 4L2M Donor: Robert Kile, W7RH

Europe Low Power
Emir Tubic, E740
Donor: Petr Ourednik, OK1RP – DL1RK Memorial

Canada Low Power Ron Schwartz, VE3VN Donor: Contest Club Ontario

World QRP Peter Voelpel, DJ7WW Donor: Wayne Mills, N7NG

U.S.A. QRP Marty Ray, N9SE Donor: Bob Raymond, WA1Z

U.S.A. QRP - Zone 4 Gregory Poel, W8GP Donor: K9JWV Memorial by Dale Putnam, WC7S

Europe QRP
Milan Stejskal (OK1IF), OL4W
Donor: Peter Voelpel D 17WW

Donor: Peter Voelpel, DJ7WW

MULTI-OPERATOR

World Goran Andric (S5500), TKØC (S53F, S53RM, S5500, S57AL, S57C, S57NAW ops) Donor: Hugh Valentine, N4RJ

U.S.A.
Kevin Stockton, N5DX
(K5RM, K5GO, KM5G, N5DX ops)
Donor: WØCD Memorial – K8GG W8UVZ

Europe Petr Clupny, OK7K (OK1BN, OK1DWP, OK1GK, OK1NS ops) Donor: Bob Evans, K5WA

ZONE 16 Vladimir Aksenov, UA7K (R3FA, RK7A, RW7K, UB7K ops) Donor: Vladimir Lesnichy, R7LV

ASIA Arthur Avrunin, 4X2M (4X4DZ, 4Z4AK, 4Z5LA, 4X6FR, UZ5DX, UT5EL, UT5ECZ, UA9CDC, LY5W ops)

Donor: Nodir Tursoon-Zadeh, EY8MM

U.S.A - Zone 3 Lee Finkel, NA7TB (KY7M, NA2U ops) Donor: Tom Whitted, N7GP

SSB
SINGLE OPERATOR
World

Peter H Briggs, K3ZM
Donor: Nodir Tursoon-Zadeh, EY8MM

Notably missing was the VY2ZM superstation from Prince Edward Island in Canada.

Jeff was in Svalbard this weekend, and rented JW5E for one night. What he didn't count on was the aurora in the sky at the same time (see photos). Jeff operated 15 hours on Saturday night, making just 51 hard fought contacts. Now that is dedication.

Mark, KD4D, repeated his 2018 win from the U.S.; of course, operating from the W3LPL superstation helped a bit. N7IR from the west coast managed to break 100K points in Low Power and improve on last year's second-place finish. In Canada, VE3VN, VE3VSM, and VE3YT were all bunched in the 230-260K range in low power.

Thanks to all the trophy donors, it is greatly appreciated. There were multiple repeat winners from 2018 this year: UA2FZ, JH4UYB, AC6DD, W1UE, VE3VN, KD4D, W8GP,

ED8W, KH7XS, K2PM, VE3MGY, E77Y, LY4A, 4X2M, OK7K, P4ØAA. Congratulations to all!

Around the World

There were lots of guest ops in the hugely popular Singleop Assisted category (over 1,166 logs submitted) and there were 16 stations to make over 800K points.

CT9ABO	2,452,908	VE3NE	983,196
OM7M	1,210,560	VA2WA	964,348
LX7I	1,133,713	SN2M	949,960
P33W	1,551,716	G5W	920,734
VE3EJ	1,128,660	XE2X	865,920
P4ØAA	1,502,439	UA2FZ	845,250
DL6FBL	1,030,710	G3TXF	834,176
	1.010.850	9A3TR	817.530

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U.S.A. Steven Sussman, W3BGN Donor: W4PZV/W4SVO Memorial by Rick Dougherty, NQ4I

> Canada Yuri Onipko, VE3DZ Donor: Tom Haavisto, VE3CX

U.S.A. – Zone 3 Leon Madziarski, NJ6P Donor: Nate Moreschi, N4YDU

U.S.A. – Zone 4 David Jorgensen, WD5COV Donor: Alabama Contest Group

U.S.A. – Zone 5 John Slusser, WF2W Donor: Brent Scott, WR5O

Africa
Manuel Angel Martin Brito (EA8DO), ED8W
Donor: Carl Henson, WB4ZNH

Hudaverdi Gunes, TA70M

Donor: CQ 160 Contest Committee

Europe Dmytro Pavlik (UZ5DX), CU4DX Donor: James "Skip" Riba, WS9V

European Russia Sergey Chebotarev, RW1F Donor: UA2 Contest Club

Asiatic Russia Mikhail S. Ilyashenko, RA9Y Donor: Steven "Sid" Caesar, NH7C

North America Stan Stockton, ZF9CW Donor: CQ magazine – K2EEK Memorial

South America Victor Manuel Cuesta Gutierrez (YV4DYJ), YW4V

Donor: John Rodgers, WE3C

Oceania Bill Kollenbaum (K4XS), KH7XS Donor: Steve "Sid" Caesar - NH7C

Southern Hemisphere Dave Sullivan, ZL2OK Donor: John Rogers, WE3C

World Assisted Rolandas Jokubauskas, LY4A Donor: Ray Sokola, K9RS Europe Assisted
Petr Clupny (OK1BN), OK7K
Donor: Curtis Rose, N2ZX

U.S.A. Assisted Bryan Bydal, W5MX Donor: Pete Michaelis, N8TR

U.S.A. Assisted – Zone 4 Peter Madsen, K2PM Donor: Pete Michaelis, N8TR

World Low Power Emir Tubic, E740 Donor: Chuck Dietz, W5PR

U.S.A. Low Power George Verciuc, W8CO Donor: Tim Duffy, K3LR

Europe Low Power Olivier Seizelet (F1AKK), TM6M Donor: Contest Club Ontario

Canada Low Power Brian Campbell, VE3MGY Donor: Rudy Bakalov, N2WQ

World QRP Maksim Kesic, E77Y Donor: John Rodgers, WE3C

MULTI-OPERATOR
World
Massimo Cortesi, PJ4G
(IZ4DPV, K2NG ops)
Donor: Southeastern DX Club

U.S.A.

Bob Schenck (N2OO), N2CW (K2GMT, K2RET, K8PT, KS3F, KZ2I, N2HM, N2HYG, N2OO, W2CG, W2NO, WN9Q, WS2C ops)

Donor: Jerry Rosalius, WB9Z

Europe Andy Kazantsev, UA7K (R6KVA, RW7K, UB7K ops) Donor: South Jersey DX Assocation, N2CW

> Zone 3 SRRCC, K7JR (K7MK, K7ZO, NK7U ops) Donor: Paulo, PV8DX

OM3GI, RA3AUU, DL4MM, OM5ZW, DL3BPC, SP7GIQ, and VE3NE all made the top 10 as guests. Harry, RA3AUU, reported less than stellar conditions from Cyprus at P33W. Mathias, DL4MM, operating from P4ØAA., spent some days trudging through the vegetation to erect Beverage antennas. Igor, UA2FZ, kept up his trophy winning streak with a cool 845K.

For purposes of this contest and for the last time this year, Low Power and High Power scores are listed together by tradition. A further breakdown can be found on CQ160.com using our datasorting tool. The multi-op team at 4X2M edged out last year's winner, HG8DX, by less than 100K after log checking. Once again, the advantage of continental scoring is evident as points are higher for intercontinental QSOs.

Ash, KF5EYY, operated 3V8SF to the top low-power score in the world. Ash reported great conditions to the U.S. at sunrise, allowing him to get some juicy multipliers.

And what can we say about the QRP gang? It takes a certain amount of intestinal fortitude to stick it out on Topband with 5 watts or less. All of the following stations have broken 100K



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QRP, congratulations to all: DJ7WW, OL4W, E77Y, YL2QN, OL9R, EE3X, and SEØX.

There is also quite a bit of activity from Zone 16 in this contest. In Russia, you cannot quite make the biggest scores due to the point structure. However, some great scores were made by R8WF, UA9BA, UX1UA, and R7KR. In LP, EU1AA and R7KR had a good battle as well. In Zone 15, HG5D and 9A2AJ were first and second, respectively. Zone 14 was taken by TM6M by quite a margin, with the top three filling up as follows:

TM6M	1,065,875
GM5X	809,970
HBØ/DL5SE	599,250

SSB Results

There were 1,223 logs submitted for SSB, down slightly from 2018; with Single-Op Low Power and Single-Op Assisted almost exactly equal as the most popular. The conditions were very favorable this year with some great openings. Check out what the Single-Op World winner Peter, K3ZM, had to say about the propagation:

"Conditions were not bad here. No troublesome QRN, and signal levels were normal. Except that there was an absolutely fantastic period on Friday evening, about sunrise in the Middle East, when signal levels rose to an impossibly high level. I got called by 4LØG, who said I was 'booming.' A moment later, I got called by 9K2HN, who was S9 + 15 dB on the meter! I have never heard the Middle East that loud on 20 meters."

On the other hand, UZ5DX operating at CU4DX for second place in Singleop in the world, reported bad QRN levels on the first night.

Single Op

Since K3ZM was able to win the world trophy, that opened up the U.S. trophy to long time Topbander Steve, W3BGN. Congratulations to Bravo Golf November! The top five were:

K3ZM 453,130)
W3BGN 296,088	3
WF2W 249,369	9
W1XX226,080)
W1EQO	õ

In the rest of the world, there was some nice competition all above 300K:

noc competition an above	JOOUIN.
CU4DX	353,662
ZF9CW	337,269
ES5RW	333 760

ZF2AM.								. 324,412
EW6W.								. 324,000
15JVA								. 318,032

Congratulations to Stan, ZF9CW, who said this about the contest and outlasted his fellow Cayman Islander John ZF2AM: "8 hours into the contest, I had a total of 250 contacts, was bored and couldn't stay awake. Saturday, I put my top-loading wires up higher, put down another dozen radials and came back to announce to my wife that I was loaded for bear and not a quitter, promising to

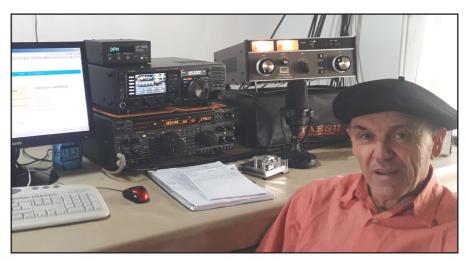
at least stay on the radio until the sun was up in Europe."

For Canada, where the 5-point VE to U.S. advantage is evident, the top 3 rounded out:

VE3DZ	 304,113
VE3PN	 231,312
VE3CKO	 210,160



TKØC took first place in CW Multi-Op in the world. The team was comprised of S57AL, S53F, S53RM, and S57C. (Photo by S55OO)



Here is Mario, LU8DPM, whose favorite band is 160 meters. But it's really hard to work stations from Argentina in February (South American summer). Thanks to Mario for his hard work.

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2019 CQWW 160M CONTEST TOP SCORES

		Zone 15		/ULTI-OPERATOR W	IVE	ORP		LOW POWER W	ΛΙΕ
CW	нсьп)60		AC1,1		*E77Y	45 020	*VE3MGY	
USA		J47		X8		*DK2L0		*W8CO	
K3ZM7	0 1,000	O46		D8		*SQ2NNN		*VA3AC	
K1LZ7		A46		<u>.</u>		*UR5VAA		*W4ZA0	
K1BX6		43		T6		*UT5E0X		*W1LJD	
K1DG5		RU40		M6	74,625 *	*UR5FE0	17,344	*N8XTH	
AA1K5	85,242 *HGØ	íR38	3,640 K3LF	₹6	570,824 *	*R2FI	16,016	*AJ3T	
K1KI5	75,592 SP2LI	NW37	2,172 N1LI	V6	31,800 *	*W8GP	13,904	*KS3D	
K1LT5		CLB32)J5		*SP1FPG		*KP4KE/W4	
NA8V5	03,274 OH2Y	L28	8,402 W5N	1X4	78,077 *	*DD9WG	11,252	*WK9U	41,085
K5ZD4	71.856								
W4CB4		Zone 16		ASSISTED WORLI)	DX		QRP W/VE	
		A47	8.392 +CT9	9ABO2,4	52,908 c	CU4DX	353 662	**W8GP	13 904
VE		40		3W1,5		YF9CW		**W7BAK	
VE3JM7		AA18		JAA1,5		S5RW		**K8ZT	
VE3AT7		U17		7M1,2	140 FCO -	'F2AM		**VE6EX	
VE3PN4		W17		'I1,1		W6W		**N80Q	
*VE3VN2	69 110 *R7K	R16	.,	BEJ1,1	00.000	5JVA		**K3TW	
VE6BBP2		V16		6FBL1,0)J7WW		**W1TW	1 000
*VE3VSM2		Y16	0,0	7Q1,0	140'0E0	RW1F		**W9QL	200
*VE3YT2		16	L,001	BNE	100,100				
VE3KZ1		K15		2WA	04040	E740		**AC6YY **KK7VL	
VE3KP1	00,000 ITTO	N13	7,070		5	SQ10D	137,430	NN/ VL	105
*VE3XL1	41 636			ASSISTED W/VE					
V LUAL	· ·	Russia	+\/F3	BEJ1,1	28 660	Zone 14		MULTI-OPERATOR V	
Zone 3		40	3,310 NE	BNE	183 196 U	CU4DX		PJ4G	
		A28	δ, I δ U	2WA	164,348 D	J7WW		N2CW	
AC6DD1	JANA UNUG	M22	.ა, ioა _{.\/⊏} ვ	BRZ6	,04,040 _*	TM6M		UA7K	496,254
*N7IR1	00'000 11/11	R16	4,920	UE5	000,040	35Q		HB9CA	
K7CW1	OT COO INAM	LQ/MM16	4,010 N/R	9Z	00,702 04,836 C	T2ITR	73,101	HG8DX	.465,888
W7YAQ1	01,602 R7NV	V16	3,374		104,030	DLØNG	55.169	SN8B	
W6AYC	/4,514 pg77	16	U UU3 +INZ	ZX5	102,770 n	L4RCE	49 960	K1LZ	
N6BT	72,829 *RT3I	K15	7 876 +VE	BCX5	101,120 *	G2X	48 624	OK4C	
*W6JTI		F15		VT4	100,Z10 *	PE2JMR		W1NA	
K7RL	65,076 RM1Т	T13		VW		ЛI1ERL		N2CEI	
K4XU	61,841	•	-,			/// LICE	40,000	142021	000,001
VA7ST	59,201	LOW POWER		SSB		7 45		MILL TI ODEDATOD	WAL
		World			_	Zone 15		MULTI-OPERATOR	
Zone 4	*2\/00	SF66	4 830	USA		S5RW		N2CW	
VE3JM7		D46		Л		5JVA		K1LZ	
VE3AT7	N1 /15 L/40			GN2	96,088 *	E740	173,250	W1NA	
K1LT5		A46		W2	.49,369 S	Q10D	157,450	N2CEI	
NA8V5		ÍR38	J'OOO WIX	X2		.Y4T		ND8DX	281,688
VE3PN4	25 505 INZU	CLB32		Q02	21,076 *	LY4L		AB8M	
NR5M2	on one "UK/	Y27	/, IU4 A Г 4 Т	·1	78.728 L	Y2BVB	104,569	WG3J	
KØEJ2	60 568 ND4	D27		COV1	77,030 0)M7RU	92,664	NE3F	
*VE3VN2	60 110 LT41	L27		Г1		K7YTT		KØ00	
K2CUB2	51 100	VN26	9,110 K370)1		OM5WW	85,095	W9VW	66,396
K9ZO2		BFN26		S1					
1020	01,100				,	Zone 16			ı n
								ACCICIEN WAR	
ORP		LOW POWER W/VE		VF	F		324 000	ASSISTED WOR	
**D.17W/W 2	กร ๑⁊ก *KD4	LOW POWER W/VE D27		VE 17 3	E 804 113 R	:W6W	324,000	+LY4A	620,400
**DJ7WW2	00,070		2,332 VE3[)Z3	804,113 R	:W6W RW1F	258,712	+LY4A +0K7K	620,400 611,252
**DJ7WW2 **OL4W1	86,480 *VE3\	D27 VN26	2,332 VE3I 9,110 VE3I)Z3 PN2	304,113 R 231,312 U	:W6W RW1F JX1UA	258,712 151,776	+LY4A +OK7K +KV4FZ	620,400 611,252 362,637
**DJ7WW	86,480 *VE3\ 76,680 *VE3\	D27 VN26 VSM22	2,332 VE3E 9,110 VE3E 9,401 VE3E	DZ	304,113 R 231,312 U 210,160 E	W6W RW1F JX1UA W8R	258,712 151,776 83,181	+LY4A +OK7K +KV4FZ +S57DX	620,400 611,252 362,637 350,973
**DJ7WW	86,480 *VE3\ 76,680 *VE3\ 62,848 *VE3\	D	2,332 VE3I 9,110 VE3I 9,401 VE3I 8,960 *VE3	DZ	304,113 R 231,312 U 210,160 E 71,006 *	W6W RW1F JX1UA W8R UT1AN	258,712 151,776 83,181 81,196	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ	620,400 611,252 362,637 350,973 319,226
**DJ7WW	86,480 *VE3\ 76,680 *VE3\ 62,848 *VE3\ 53,552 *WB8	D	2,332 VE3I 9,110 VE3I 9,401 VE3I 8,960 *VE3 7,122 VE6I	DZ	304,113 R 331,312 U 10,160 E 71,006 * 17,120 R	W6W	258,712 151,776 83,181 81,196 53,162	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530	620,400 611,252 362,637 350,973 319,226 309,680
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **EE3X 1	86,480 *VE3\) 76,680 *VE3\) 62,848 *VE3\) 53,552 *WB8\) 12,860 *W9X	D	2,332 VE3I 9,110 VE3F 9,401 VE3G 8,960 *VE3 7,122 VE6F 0,134 VE3F	07	804,113 R 231,312 U 210,160 E 71,006 * 17,120 R .81,339 *	W6W	258,712 151,776 83,181 81,196 53,162 49,751	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S53O +MIØSLE	620,400 611,252 362,637 350,973 319,226 309,680 278,124
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **0L9R 1 **EE3X 1 **SEØX 1	86,480 *VE3\) 76,680 *VE3\) 62,848 *VE3\) 53,552 *WB8\) 12,860 *W9\) 09,933 *WØU	D	2,332 VE3I 9,110 VE3I 9,401 VE3G 8,960 *VE3 7,122 VE6I 0,134 VE3I 4,791 *VA3	DZ	804,113 R 231,312 U 210,160 E 71,006 * 17,120 R 81,339 *	EW6W	258,712 151,776 83,181 81,196 53,162 49,751	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX	620,400 611,252 362,637 350,973 319,226 309,680 278,124 265,434
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL20N 1 **OL9R 1 **E83X 1 **SEØX 1 **S53AR	86,480 *VE3\) 76,680 *VE3\) 62,848 *VE3\) 53,552 *WB8\) 12,860 *W9\) 09,933 *WØ\] 95,350 *WB8	D	2,332 VE3I 9,110 VE3I 9,401 VE3G 8,960 *VE3 7,122 VE6E 0,134 VE3H 4,791 *VA3 6,890 VE3H	DZ	804,113 R 8131,312 U 10,160 E 71,006 * 17,120 R 81,339 * 78,120 R 42,930 R	EW6W	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL20N 1 **0L9R 1 **EE3X 1 **SEØX 1 **S53AR **N9SE	86,480 *VE3\) 76,680 *VE3\) 62,848 *VE3\) 53,552 *WB8\) 12,860 *W9X\) 09,933 *W9X\) 95,350 *WB8\) 92,105 *VE3\)	D	2,332 VE3I 9,110 VE3F 9,401 VE3G 8,960 *VE5 7,122 VE6F 0,134 VE3F 4,791 *VA 6,890 VE3F 1,636 VE2F	77	804,113 R 8131,312 U 10,160 E 71,006 * 17,120 R 81,339 * .78,120 R .42,930 R .40,911 *	EW6W	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL20N 1 **OL9R 1 **E83X 1 **SEØX 1 **S53AR	86,480 *VE3\) 76,680 *VE3\) 62,848 *VE3\) 53,552 *WB8\) 12,860 *W9X\) 09,933 *W9X\) 95,350 *WB8\) 92,105 *VE3\)	D	2,332 VE3I 9,110 VE3F 9,401 VE3G 8,960 *VE5 7,122 VE6F 0,134 VE3F 4,791 *VA 6,890 VE3F 1,636 VE2F	DZ	804,113 R 8131,312 U 10,160 E 71,006 * 17,120 R 81,339 * .78,120 R .42,930 R .40,911 *	EW6W	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **EE3X 1 **SEØX 1 **S53AR **N9SE **SP310E	86,480 *VE3\) 76,680 *VE3\) 62,848 *VE3\) 53,552 *WB8\) 12,860 *W9X\) 09,933 *W9X\) 95,350 *WB8\) 92,105 *VE3\)	D	2,332 VE3I 9,110 VE3F 9,401 VE3G 8,960 *VE5 7,122 VE6F 0,134 VE3F 4,791 *VA 6,890 VE3F 1,636 VE2F	DZ	04,113 R 31,312 U 110,160 E 71,006 * 171,120 R .81,339 * .78,120 R .42,930 R .40,911 * .34,528	EW6W	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S53O +MIØSLE +OK1JDX +DK6WL +UR5AS	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL20N 1 **OL9R 1 **SEØX 1 **SEØX 1 **SSJAR **N9SE **SP3I0E	86,480 *VE3' 76,680 *VE3' 62,848 *VE3' 53,552 *WB8 12,860 *W99 19,933 *WØ0 19,933 *WB8 195,350 *VE3' 75,856 *K1EI	D	2,332 VE3I 9,110 VE3R 9,401 VE3R 9,401 VE3R 7,122 VE6I 0,134 VE3R 4,791 *VA3 6,890 VE3R 1,636 VE2R 7,060 *VE2R	77	04,113 R 131,312 U 110,160 E 71,006 * 17,120 R 81,339 * 78,120 R 42,930 R 40,911 * 34,528	W6W W1F JX1UA W8R UT1AN RT9S UR5TM RZ3MM RA1TDP RK6AQP Russia	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/V +W5MX	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2ON 1 **OL9R 1 **EE3X 1 **SEØX 1 **SEØX 1 **SEØX 1 **SSSAR **N9SE **SP3IOE DX CN2CO 2,4	86,480 *VE3' 76,680 *VE3' 62,848 *VE3' 53,552 *WB6 12,860 *W90, 99,333 *WØl 95,350 *VE3' 75,856 *K1El	D	2,332 VE3I 9,110 VE3I 9,401 VE3G 8,960 *VE3 7,122 VE6I 0,134 VE3I 4,791 *VA4 6,890 VE3I 1,636 VE2I 7,060 *VE2	77	04,113 R 131,312 U 110,160 E 71,006 * 17,120 R 81,339 * 7,78,120 R 42,930 R 442,930 R 40,911 * 34,528	W6W	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED WA +W5MX +K2PM	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E .230,018 .206,890
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2ON 1 **OL9R 1 **EE3X 1 **SEØX 1 **SEØX 1 **S53AR **N9SE **SP3IOE DX CN2CO 2,4 D4C 1,6	86,480 *VE3' 76,680 *VE3' 62,848 *VS3' 53,552 *WB8 12,860 *W9X 09,933 *W06 99,330 *WB8 95,350 *WB8 77,856 *K1EI 77,250 **N9:63,360 **W8	D	2,332 VE3I 9,110 VE3I 9,401 VE3I 9,401 VE3I 7,122 VE6I 0,134 VE3I 4,791 *VAZ 6,890 VE3I 1,636 VE2I 7,060 *VE2I 2,105 NJ6I 2,037 N7AI	DZ	04,113 R 131,312 U 110,160 E 71,006 * 17,120 R 81,339 * 17,78,120 R 42,930 R 442,930 R 442,930 R 55,650 R 32,968 R	RW6W	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/V +W5MX	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E .230,018 .206,890
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL20N 1 **OL9R 1 **SEØX 1 **SEØX 1 **S53AR **N9SE **SP3I0E DX CN2CO 2,4 D4C 1,6 ED8W 1,2	86,480 *VE3' 76,680 *VE3' 62,848 *VS3' 53,552 *WB8 12,860 *W9X 09,933 *WØØ 99,330 *WB8 92,105 *VE3' 77,856 *K1EI 77,250 **N99 63,360 **W8 30,676 **K4'	D	2,332 VE3I 9,110 VE33 9,401 VE33 9,401 VE36 7,122 VE36 0,134 VE34 4,791 *VA36 6,890 VE34 7,060 *VE2 2,105 NJ66 2,037 N7A1 6,980 K7CV	DZ	104,113 R 131,312 U 110,160 E 71,006 * 17,120 R 81,339 * .78,120 R 42,930 R 440,911 * 34,528 R .55,650 R .32,968 R .29,590 R	RW6W RW1F JX1UA W8R UT1AN RT9S UR5TM RZ3MM RA1TDP RK6AQP Russia RW1F RT9S RZ3MM RW1F RX1T9S R	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .264,060 .258,488 .206,890 .278,124 .259,434 .258,488
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL20N 1 **OL9R 1 **OL9R 1 **SEØX 1 **SEØX 1 **SEØX 2 **SSAR 2 **N9SE 2 **SP3I0E DX CN2CO 2,4 D4C 1,6 ED8W 1,2 NP2J 1,0	86,480 *VE3' 76,680 *VE3' 62,848 *VE3' 53,552 *WB8 12,860 *W9X 99,933 *WØB 99,350 *VE3' 775,856 *K1EI 77,250 **N93 63,360 **W8 30,576 *K4 76,619 **W6	D 27 VN 26 VSM 22 YT 22 SJUI 17 CT 16 J0 15 WKQ 14 XL 14 P 13	2,332 VE3I 9,110 VE3I 9,401 VE3G 8,960 *VE2 7,122 VE6I 0,134 VE3I 4,791 *VA3 6,890 VE3I 1,636 VE2I 7,060 *VE2 2,105 NJ6I 2,037 N7AI 6,980 K7C 5,776 N6B	DZ	104,113 R 131,312 U 10,160 * 171,006 * 17,120 R 181,339 * 78,120 R 42,930 R 442,930 R 442,930 R 55,650 R 32,968 R 32,9590 R 23,430 *	RW6W RW1F JX1UA W8R UT11AN TT9S UR5TM RA1TDP RK6AQP Russia RW1F RT9S RX3MM RA1TDP RK6AQP RK6AQP	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 39,368	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED WA +W5MX +K2PM +K3WW +W3LL +N4RV	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E .230,018 .206,890 .193,533 .193,452 .183,870
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2ON 1 **OL9R 1 **SEØX 1 **SEØX 1 **SEØX 1 **SSJAR **N9SE **SP3IOE DX CN2CO 2,4 D4C 1,6 ED8W 1,2 NP2J 1,0 TM6M 1,0	86,480 *VE3' 76,680 *VE3' 62,848 *VE3' 53,552 *WB8 95,350 *WB8 92,105 *VE3' 77,250 **NE9 63,360 *WS 30,576 **K4' 76,619 **WS 65,875 *K8	D	2,332 VE3I 9,110 VE3I 9,401 VE3G 8,960 *VE: 7,122 VE6I 0,134 VE3I 4,791 *VA: 6,890 VE3I 1,636 VE2I 7,060 *VE2I 2,105 NJ6I 2,037 N7AI 6,980 K7C: N6B 3,814 VE7I	DZ	104,113 R 131,312 U 110,160 E 71,006 * 17,120 R 81,339 * 17,78,120 R 42,930 R 42,930 R 44,931 * 34,528 R 55,650 R 32,968 R 22,959 R 23,430 *	RW6W RW1F JX1UA W8R UT11AN TT9S UR5TM RA1TDP RK6AQP Russia RW1F RT9S RX3MM RA1TDP RK6AQP RK6AQP	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 39,368	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED WA +W5MX +K2PM +K3WW +W3LL +N4RV	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E .230,018 .206,890 .193,533 .193,452 .183,870
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2ON 1 **OL9R 1 **EE3X 1 **SEØX 1 **DX CN2CO 2,4 D4C 1,6 ED8W 1,2 NP2J 1,0 TM6M 1,0 EA8/EA4BQ 9	86,480 *VE3' 76,680 *VE3' 62,848 *VS3' 53,552 *WB8 12,860 *W9X 09,933 *W06 99,3350 *WB8 95,350 *WB8 27,250 *K1EI 77,250 *N99 63,360 **K4 476,619 *W6 66,875 *K8 49,725 **N89	D	2,332 VE3I 9,110 VE3I 9,401 VE3I 9,401 VE3I 9,401 VE3I 7,122 VE6I 0,134 VE3I 4,791 *VAZ 6,890 VE3I 1,636 VE2I 7,060 *VE2I 2,105 NJ6I 2,037 N7AI 6,980 K7CI 5,776 NGB 3,814 VE7I 9,376 NGAI	DZ	104,113 R 131,312 U 110,160 E 71,006 * 17,120 R 17,120 R 17,120 R 17,120 R 142,930 R 142,930 R 144,930 R 144,931 * 155,650 R 132,968 R 129,590 R 123,430 * 18,438 R 16,023 *	RW6W	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 36,176 39,368	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/V +W5MX +K2PM +K3WW +W3LL +N4RV +VE3CX +WX4G	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .266,4060 .258,488 .206,890 .193,533 .193,452 .183,870 .172,590
**DJ7WW 2 **0L4W 1 **E77Y 1 **OL9R 1 **OL9R 1 **EE3X 1 **SEØX 1 **SEØX 1 **SFØR 1 **SFØR 1 **SFØR 1 **SFØR 1 **N9SE 1 **SPØR 1 **	86,480 *VE3' 76,680 *VE3' 62,848 *VS3' 53,552 *WB8 12,860 *W9X 09,933 *WØI 95,350 *WB8 92,105 *VE3' 77,250 *K1EI 77,250 **N9: 63,360 **W48 30,576 **K4' 76,619 *W76,619 49,725 **N84,09,970 **W84,09,970 **W84,09,970	D	2,332 VE3I 9,110 VE39 9,401 VE36 9,401 VE36 7,122 VE6 0,134 VE36 4,791 *VA: 6,890 VE36 1,636 VE27 7,060 *VE2 2,105 NJ66 2,037 N7A: 6,980 K7C: 5,776 N6B: 3,814 VE71 9,376 N6A: 9,845 N7R	DZ	104,113 R 131,312 U 110,160 E 71,006 * 17,120 R .81,339 * .70,120 R .42,930 R .40,911 * .34,528 R .55,650 R .32,968 R .29,590 R .23,430 * .18,438 * .18,438 *	RW6W RW1F JX1UA W8R UT1AN RT9S UR5TM RZ3MM RA1TDP RK6AQP Russia RW1F RT9S RZ3MM RZ3MM RA1TDP RK6AQP RUSSia	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 53,162 47,150 43,880 39,368 36,176 35,820 34,560	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S53O +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW +W3LL +N4RV +V43CX +WX4G +WX4G	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E .230,018 .206,890 .193,532 .183,870 .172,590 .143,726
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **OL9R 1 **SEØX 1 **SEØX 1 **SEØX 1 **SEØX 1 **SSAR 2 **N9SE 2 **SP3IOE DX CN2CO 2,4 D4C 1,6 ED8W 1,2 NP2J 1,0 TM6M 1,0 EA8/EA4BQ 9 GM5X 8 KH7B 7	86,480 *VE3' 76,680 *VE3' 76,680 *VE3' 62,848 *VS3' 53,552 *WB8 12,860 *W9X 09,933 *WØI 95,350 *VE3' 77,856 *K1EI 77,250 **N93 63,360 **W8 30,576 **K4' 76,619 **WC 65,875 *K94' 77,250 **N93' 063,760 **W8 07,292 **N90 07,292	D. 27 VN. 26 VSM	2,332 VE3I 9,110 VE3I 9,401 VE3G 8,960 *VE2 7,122 VE6I 0,134 VE3I 4,791 *VAG 6,890 VE3I 1,636 VE2I 7,060 *VE2I 2,105 NJ6I 2,037 N7AI 6,980 K7C 5,776 N6B 3,814 VE7I 9,376 N6AB 9,376 N6AB 9,845 N7R 9,737 K7IU	77	104,113 R 131,312 U 110,160 E 71,006 * 17,120 R 81,339 * 78,120 R 42,930 R 442,930 R 442,930 R 45,55,650 R 32,9590 R 23,430 * 16,023 * 16,023 * 11,100 R 11,100 R 11,100 R 12,100 R 13,100 R 14,100 R 15,100 R 16,100	RW6W RW1F JX1UA W8R UT11AN RT9S UR5TM RA1TDP RK6AQP Russia RW1F RT9S RX3MM RA1TDP RK6AQP RC5Z RW7M JA9BA UA1CUR	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 39,368 36,176 35,820 34,560 27,900	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/V +W5MX +K2PM +K3WW +W3LL +N4RV +VE3CX +WX4G	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E .230,018 .206,890 .193,532 .183,870 .172,590 .143,726
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **OL9R 1 **SEØX 1 **SEØX 1 **SEØX 1 **SEØX 1 **SSSAR 1 **N9SE 1 **SP3IOE	86,480 *VE3' 76,680 *VE3' 76,680 *VE3' 62,848 *VE3' 53,552 *WB8 12,860 *W9X 09,933 *W08 92,105 *VE3' 75,856 *K1EI 77,250 **N93 63,360 **W8 30,576 **W4 49,725 **N4, 09,970 **N9 86,428 **NX	D	2,332 VE3I 9,110 VE39 9,401 VE36 8,960 *VE2 7,122 VE6I 0,134 VE34 4,791 *VA3 6,890 VE31 1,636 VE2I 7,060 *VE2 2,105 NJ6I 2,037 N7AI 6,980 K7C 3,814 VE7I 9,376 N6A 9,845 N7R 9,737 K7IU 7,940 N7G	77	104,113 R 131,312 U 110,160 E 71,006 * 17,120 R 81,339 * 17,78,120 R 42,930 R 44,931 * 34,528 R 55,650 R 32,968 R 32,968 R 29,590 R 23,430 * 18,438 R 16,023 * 15,700 U 15,080 * 14,504 *	RW6W RW1F JX1UA W8R UT11AN RT9S UR5TM RA1TDP RK6AQP Russia RW1F RT9S RX3MM RA1TDP RK6AQP RC5Z RW7M JA9BA UA1CUR	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 39,368 36,176 35,820 34,560 27,900	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/A +W5MX +K2PM +K3WW +W3LL +W4RV +V4RV +V4RV +V4RV +V4RV +V5BCX +W5PR +KC4NX	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .141,017 .141,017
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **OL9R 1 **SEØX 1 **SEØX 1 **SEØX 1 **SEØX 1 **SSAR 1 **N9SE 1 **SP3IOE DX CN2CO 2,4 D4C 1,6 ED8W 1,2 NP2J 1,0 TM6M 1,0 EA8/EA4BQ 9 GM5X 8 KH7B 7	86,480 *VE3' 76,680 *VE3' 76,680 *VE3' 62,848 *VE3' 53,552 *WB8 12,860 *W9X 09,933 *W08 92,105 *VE3' 75,856 *K1EI 77,250 **N93 63,360 **W8 30,576 **W4 49,725 **N4, 09,970 **N9 86,428 **NX	D. 27 VN. 26 VSM	2,332 VE3I 9,110 VE39 9,401 VE36 8,960 *VE2 7,122 VE6I 0,134 VE34 4,791 *VA3 6,890 VE31 1,636 VE2I 7,060 *VE2 2,105 NJ6I 2,037 N7AI 6,980 K7C 3,814 VE7I 9,376 N6A 9,845 N7R 9,737 K7IU 7,940 N7G	77	104,113 R 131,312 U 110,160 E 71,006 * 17,120 R 81,339 * 17,78,120 R 42,930 R 44,931 * 34,528 R 55,650 R 32,968 R 32,968 R 29,590 R 23,430 * 18,438 R 16,023 * 15,700 U 15,080 * 14,504 *	RW6W RW1F JX1UA W8R UT1AN RT9S UR5TM RZ3MM RA1TDP RK6AQP Russia RW1F RT9S RZ3MM RZ3MM RA1TDP RK6AQP RUSSia	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 39,368 36,176 35,820 34,560 27,900	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S53O +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW +W3LL +N4RV +V43CX +WX4G +WX4G	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .141,017 .141,017
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **OL9R 1 **SE3X 1 **SE3X 1 **S53AR **N9SE **SP3IOE DX CN2CO 2,4 D4C 1,6 ED8W 1,2 NP2J 1,0 TM6M 1,0 EA8/EA4BQ 9 GM5X 8 KH7B 7 UN9L 6 *3V8SF 6	\$86,480 *VE3' 76,680 *VE3' 76,680 *VE3' 62,848 *VS3' 53,552 *WB8 12,860 *W9X 09,933 *WØB 95,350 *WB8 92,105 *VE3' 77,250 **N9: 63,360 **K1EI 77,250 **N9: 63,360 **K4' 76,619 *VE3' 76,619 **W8 90,725 **N4. 49,725 **N5. 49,725 **N5. 40,725	D	2,332 VE3I 9,110 VE39 9,401 VE36 9,401 VE36 7,122 VE66 0,134 VE34 4,791 *VA: 6,890 VE31 1,636 VE21 7,060 *VE2 2,105 NJ66 2,037 N7AI 6,980 K7CI 5,776 N6B 3,814 VE7I 9,376 N6A 9,845 N7R 9,737 K7IU 7,940 N7G 5,624 W7N	DZ	104,113 R 131,312 U 110,160 E 71,006 * 17,120 R 81,339 * 17,78,120 R 42,930 R 44,931 * 34,528 R 55,650 R 32,968 R 32,968 R 29,590 R 23,430 * 18,438 R 16,023 * 15,700 U 15,080 * 14,504 *	RW6W RW1F JX1UA W8R		+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/A +W5MX +K2PM +K3WW +W3LL +W4RV +V4RV +V4RV +V4RV +V4RV +V5BCX +W5PR +KC4NX	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .144,017 .141,017
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **SEØX 1 **DX CN2CO 2,4 D4C 1,6 ED8W 1,2 NP2J 1,0 TM6M 1,0 EA8/EA4BQ 9 GM5X 8 KH7B 7 UN9L 6 *3V8SF 6	*VE3' 76,680 *VE3' 76,680 *VE3' 76,680 *VE3' 52,852 *WB8 12,860 *W9X 09,933 *WØI 99,335 *VE3' 77,250 **NE3' 77,250 **NE3' 77,250 **NE3' 77,250 **W8 30,576 **W4 76,619 **W6 65,875 **N4 76,619 **W6 65,875 **N4 90,725 **N4 90,970 **N4 90	D	2,332 VE3I 9,110 VE3I 9,401 VE3G 8,960 *VE2 7,122 VE6I 0,134 VE3I 4,791 *VAC 6,890 VE3I 1,636 VE2I 7,060 *VE2I 2,105 NJ6I 2,037 N7AI 6,980 K7C 5,776 N6B 3,814 VE7I 9,376 N6A 9,376 N6A 9,376 N7AI 9,376 N7AI 9,376 N7AI 9,376 N7AI 9,377 K7IU 7,940 N7G 5,624 W7M	77	104,113 R 131,312 U 110,160 * 171,006 * 17,120 R 181,339 * 17,78,120 R 142,930 R 142,930 R 142,930 R 142,930 R 155,650 R 132,959 R 129,590 R 18,438 R 16,023 * 18,138 R 15,700 U 15,080 * 14,504 * 13,392	RW6W RW1F JX1UA	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 39,368 39,368 39,368 39,368 34,560 35,820 25,218	+LY4A +OK7K +KV4FZ +S57DX +B9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW +W3LL +N4RV +V23CX +W4FX +W5PR +K4WX4G +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K64NX +W2DAN	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .144,017 .141,017
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **SEØX 1 **S	\$86,480 *VE3\) 76,680 *VE3\) 76,680 *VE3\) 62,848 *VE3\) 53,552 *WB8 12,860 *W9\) 09,933 *W0\(\text{I}\) 92,105 *VE3\) 77,250 *K1EI 77,250 **N9\(\text{63}\) 63,360 **W4\(\text{84}\) 30,576 **W4\(\text{49}\) 77,6619 **W6\(\text{65}\) 86,428 **NX\(\text{64}\) 64,830 **VE3\) MU 65,875 TK\(\text{C}\)	D. 27 VN 26 VN 26 VSM 22 YT 22 SJUI 17 CT 16 JO 15 SWKQ 14 KXL 14 P 13 QRP W/VE SE 9 GGP 6 TO 4 44 XX 3 ZT 3 AX 2 DCC 11 UR 1 JUTI-OPERATOR WOI JILTI-OPERATOR WOI 1,84	2,332 VE3I 9,110 VE3I 9,1110 VE3I 8,960 *VE3I 7,122 VE6I 0,134 VE3I 4,791 *VA3I 6,890 VE3I 1,636 VE2I 7,060 *VE2I 2,105 NJ6I 2,037 N7AI 6,980 K7CV 5,776 N6B 3,814 VE7I 9,376 N6A 9,845 N7R 9,376 N6A 9,845 N7R 9,376 N6A 9,845 N7R 9,376 N6A 9,737 K7IU 7,940 W7N 8LD 0,484 VE3I	77	104,113 R 131,312 U 10,160 E 71,006 * 17,120 R 17,120 R 17,120 R 17,120 R 142,930 R 142,930 R 142,930 R 144,931 * 155,650 R 132,968 R 129,590 R 123,430 * 15,700 U 15,080 * 15,080 * 14,504 * 15,080 * 16,023 * 15,080 * 16,023 * 16,023 * 16,023 * 16,023 * 17,000 V 18,000 V 18,000 V 19,000 V 10,000	RW6W	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 39,368 39,368 39,368 39,368 39,368 39,368 39,368 39,368 39,368	+LY4A +OK7K +KV4FZ +S57DX +HB9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/V +W5MX +K2PM +K3WW +W3LL +N4RV +VE3CX +WX4G +W5PR +KC4NX +KC4NX +W2DAN	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .141,017 .141,017
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **SE3X 1 **SE9X 1 **SE9X 1 **SE3X 1 **SE9X 1 **SE9X 1 **M9SE 1 **SP3IOE 1 CN2CO 2,4 D4C 1,6 ED8W 1,2 NP2J 1,0 TM6M 1,0 EA8/EA4BQ 9 GM5X 8 KH7B 7 UN9L 6 *3V8SF 6 Zone 14 TM6M 1,0 GM5X 8	\$86,480 *VE3' 76,680 *VE3' 76,680 *VE3' 62,848 *VS3' 53,552 *WB8 12,860 *W9X 09,933 *W08 99,350 *WB8 99,350 *VE3' 75,856 *K1EI 77,250 *N99 63,360 **K4 43,725 *W8 49,725 *W8 49,725 *W8 64,830 **VE3' MU 65,875 *W8 66,875 TKØC 09,970 PJZT.	D	2,332 VE3I 9,110 VE39 9,401 VE38 8,960 *VE5 7,122 VE6I 0,134 VE31 4,791 *VA5 6,890 VE31 1,636 VE2I 7,060 *VE2 2,105 NJ6I 2,037 N7AI 6,980 K7C 3,814 VE7I 9,376 N6AB 9,845 N7R 9,376 N6A 9,845 N7R 7,940 N7G 5,624 W7N RLD 0,484 VE3I 1,310 VE3I	DZ	104,113 R 131,312 U 110,160 E 171,006 E 171,006 E 17,120 R 17,120 R 142,930 R 142,930 R 142,930 R 142,930 R 142,930 R 143,528 R 15,5650 R 123,430 * 15,700 R 115,080 *	RW6W RW1F JX1UA JX1UA JX1UA JX1UA JX1UA JX1UA JX1UA RT9S JUR5TM RX3MM RX3MM RX1TDP RK6AQP RUSSIA RW1F RXT9S RZ3MM RX1TDP RK6AQP RUSSIA RX1TDP RK6AQP RX1TDP RK6AQP RX2MM RX1TDP RW7M JA9BA JUA1CUR RA9AU LOW POWER WC E74O VE3MGY	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 36,176 35,820 36,176 35,820 27,900 25,218	+LY4A +OK7K +KV4FZ +S57DX +B9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW +W3LL +N4RV +V23CX +W4FX +W5PR +K4WX4G +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K64NX +W2DAN	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .141,017 .141,017
**DJ7WW 2 **0L4W 1 **E7YY 1 **YL2QN 1 **OL9R 1 **OL9R 1 **SE3X 1 **SE3X 1 **S53AR 2 **N9SE 2 **SP3IOE DX CN2CO 2,4 D4C 1,6 ED8W 1,2 NP2J 1,0 TM6M 1,0 EA8/EA4BQ 9 GM5X 8 KH7B 7 UN9L 6 *3V8SF 6 Zone 14 TM6M 1,0 GM5X 8 HBØ/DL5SE 5	\$86,480 *VE3' 76,680 *VE3' 76,680 *VE3' 62,848 *VS3' 53,552 *WB8 12,860 *W9X 09,933 *WØB 99,3530 *WB8 992,105 *VE3' 77,250 **N9: 63,360 **K1Ei 77,250 **N9: 63,360 **K4' 776,619 *W76,619 *W76,619 *W76,619 *W86,428 *W86 49,725 **N4,409,970 *W96,970 *W96,428 *W86,428 *W86 64,830 **VE: ###################################	D	2,332 VE3I 9,110 VE39 9,401 VE36 9,401 VE36 9,401 VE36 7,122 VE66 0,134 VE34 4,791 *VA36 6,890 VE34 1,636 VE27 7,060 *VE4 2,105 NJ66 2,037 N7A 6,980 K7C 5,776 N6B 3,814 VE71 9,376 N6A 9,845 N7R 9,376 N7A 9,376 N7A 1,040 N7G 5,624 W7N RLD 0,484 VE3I 1,310 VE3I 8,858 VE30	DZ	104,113 R 131,312 U 110,160 * 171,006 * 17,120 R 181,339 * 17,8120 R 142,930 R 142,930 R 143,528 R 155,650 R 132,9590 R 132,958 R 123,430 R 18,438 R 16,023 * 115,700 U 15,080 * 14,504 * 133,392 R 104,113 * 104,113 * 131,312 * 110,160 *	RW6W RW1F JX1UA W8R	258,712151,77683,18181,19653,16249,75147,15043,88039,368258,71253,16247,15043,88039,36836,17635,82034,56027,90025,218	+LY4A +OK7K +KV4FZ +S57DX +B9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW +W3LL +N4RV +V23CX +W4FX +W5PR +K4WX4G +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K64NX +W2DAN	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .144,017 .141,017
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **OL9R 1 **SEØX 1 **S	\$86,480 *VE3' 76,680 *VE3' 76,680 *VE3' 52,880 *W9X 09,933 *WØB 92,105 *VE3' 77,250 **N9: 63,360 **K1Ei 77,250 **N9: 63,360 **K4' 76,619 *W9X 09,970 **W9 07,292 **N9: 64,830 **VE3' MU 65,875 **N4: 09,970 **N9: 65,875 **N4: 09,970 **W9 07,292 **N9: 64,830 **VE3' MU 65,875 **N4: 09,970 **N9: 65,875 **N4: 09,970 **N9: 66,875 **N4: 06,875 **N4: 07,292 **N9: 08,33,565 **N9:	D	2,332 VE3I 9,110 VE39 9,1401 VE36 8,960 *VE7 7,122 VE66 0,134 VE31 4,791 *VA6 6,890 VE37 1,636 VE21 7,060 *VE2 2,105 NJ66 2,037 N7A6 5,776 N6B 3,814 VE71 9,376 N6A 9,376 N6A 9,737 K7IU 7,940 N7G 5,624 W7N RLD 0,484 VE3I 1,310 VE3I 1,310 VE3I 1,310 VE3I 0,200 WD5	DZ	104,113 R 131,312 U 110,160 * 171,006 * 171,120 R 181,339 * 17,781,120 R 142,930 R 142,930 R 140,911 * 134,528 * 155,650 R 132,968 R 129,590 R 18,438 R 16,023 * 15,700 U 15,080 * 144,504 * 133,392 * 104,113 * 131,312 * 107,7030 *	RW6W RW1F JX1UA		+LY4A +OK7K +KV4FZ +S57DX +B9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW +W3LL +N4RV +V23CX +W4FX +W5PR +K4WX4G +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K64NX +W2DAN	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .144,017 .141,017
**DJ7WW 2 **0L4W 1 **E7YY 1 **YL2QN 1 **OL9R 1 **OL9R 1 **SE3X 1 **SE3X 1 **S53AR 2 **N9SE 2 **SP3IOE DX CN2CO 2,4 D4C 1,6 ED8W 1,2 NP2J 1,0 TM6M 1,0 EA8/EA4BQ 9 GM5X 8 KH7B 7 UN9L 6 *3V8SF 6 Zone 14 TM6M 1,0 GM5X 8 HBØ/DL5SE 5	\$86,480 *VE3' 76,680 *VE3' 76,680 *VE3' 52,880 *W9X 09,933 *WØB 92,105 *VE3' 77,250 **N9: 63,360 **K1Ei 77,250 **N9: 63,360 **K4' 76,619 *W9X 09,970 **W9 07,292 **N9: 64,830 **VE3' MU 65,875 **N4: 09,970 **N9: 65,875 **N4: 09,970 **W9 07,292 **N9: 64,830 **VE3' MU 65,875 **N4: 09,970 **N9: 65,875 **N4: 09,970 **N9: 66,875 **N4: 06,875 **N4: 07,292 **N9: 08,33,565 **N9:	D	2,332 VE3I 9,110 VE3I 9,1110 VE3I 8,960 *VE3I 7,122 VE6I 0,134 VE3I 4,791 *VA3I 6,890 VE3I 1,636 VE2I 7,060 *VE2I 2,105 NJ6I 2,037 N7AI 6,980 K7CV 5,776 N6B 3,814 VE7I 9,376 N6A 9,845 N7R 9,376 N6A 9,845 N7R 9,376 N6A 9,737 K7IU 7,940 N7G 5,624 W7N RLD 0,484 VE3I 1,310 VE3I 8,858 VE3I 0,200 WD5 9,800 *VE3I	DZ	104,113 R 131,312 U 10,160 E 71,006 * 17,120 R 17,120 R 17,120 R 17,120 R 17,120 R 17,120 R 10,100 R 10,1	RW6W RW1F JX1UA JX1UA JX1UA JX1UA JX1UA JX1UA JX1UA RT9S JUR5TM RZ3MM RA1TDP RK6AQP Russia RW1F RT9S RZ3MM RA1TDP RK6AQP JX1UA RA1TDP RK6AQP RW7M JA9BA JA9B	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 39,368 39,368 39,368 39,368 39,368 39,368 39,368 39,368 31,760 	+LY4A +OK7K +KV4FZ +S57DX +B9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW +W3LL +N4RV +V23CX +W4FX +W5PR +K4WX4G +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K64NX +W2DAN	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .141,017 .141,017
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **SE3X 1 **SE6X 1 **S	\$86,480 *VE3' 76,680 *VE3' 76,680 *VE3' 62,848 *VE3' 53,552 *WB8 12,860 *W9X 09,933 *W08 95,350 *WB8 95,350 *WB8 77,250 *K1EI 77,250 **N9 63,360 **K4 77,250 **W8 30,576 **K4 77,6619 *W0 65,875 **N8 09,970 **W9 07,292 *W9 07,292 *W	D	2,332 VE3I 9,110 VE3I 9,1110 VE3I 8,960 *VE3I 7,122 VE6I 0,134 VE3I 4,791 *VA3I 6,890 VE3I 1,636 VE2I 7,060 *VE2I 2,105 NJ6I 2,037 N7AI 6,980 K7CV 5,776 N6B 3,814 VE7I 9,376 N6A 9,845 N7R 9,376 N6A 9,845 N7R 9,376 N6A 9,737 K7IU 7,940 N7G 5,624 W7N RLD 0,484 VE3I 1,310 VE3I 8,858 VE3I 0,200 WD5 9,800 *VE3I	DZ	104,113 R 131,312 U 110,160 * 171,006 * 171,120 R 181,339 * 178,120 R 142,930 R 142,930 R 143,528 R 155,650 R 133,2968 R 129,590 R 134,528 R 16,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 116,023 * 117,000 * 171,006 * 171,006 * 171,006 *	RW6W RW1F JX1UA W8R UT1AN RT9S UR5TM RAT1DP RK6AQP RUSSIA RW1F RT9S RZ3MM RA1TDP RK6AQP RUSSIA RZ3MM RA1TDP RK6AQP RC5Z RW7M JA9BA UA1CUR RA9AU LOW POWER WC E740 VE3MGY TM6M LY4L W8CO OM5WW	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 39,368 36,176 35,820 34,560 27,900 25,218 25,218	+LY4A +OK7K +KV4FZ +S57DX +B9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW +W3LL +N4RV +V23CX +W4FX +W5PR +K4WX4G +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K64NX +W2DAN	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .144,017 .141,017
**DJ7WW 2 **OL4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **SEØX 1 **S	\$86,480 *VE3' 76,680 *VE3' 76,680 *VE3' 62,848 *VE3' 53,552 *WB8 12,860 *W9X 09,933 *W08 95,350 *WB8 95,350 *WB8 77,250 *K1EI 77,250 **N9 63,360 **K4 77,250 **W8 30,576 **K4 77,6619 *W0 65,875 **N8 09,970 **W9 07,292 *W9 07,292 *W	D	2,332 VE3I 9,110 VE3I 9,1110 VE3I 8,960 *VE2I 7,122 VE6I 0,134 VE3I 6,890 VE3I 1,636 VE2I 7,060 *VE2I 2,105 NJ6I 2,037 N7AI 6,980 K7C 5,776 N6B 3,814 VE7I 9,376 NFA 9,376 NFA 9,377 K7IU 7,940 N7G 5,624 W7M RLD 0,484 VE3I 8,858 VE3I 0,200 WD5 9,800 *VE2I 1,310 VE3I 8,858 VE3I 0,200 WD5 9,800 *VE3I 1,310 VE3I 8,858 VE3I 0,200 WD5 9,800 *VE5I 1,310 VE3I 8,858 VE3I 0,200 WD5 9,800 NAB 1,310 VE3I 8,858 VE3I 0,200 WD5 9,800 NAB 1,310 VE3I 8,858 VE3I 0,200 WD5 9,800 NAB 1,310 VE3I 8,310 VE3I 8,31	DZ	104,113 R 131,312 U 110,160 * 171,006 * 17,120 R 181,339 * 17,78,120 R 142,930 R 142,930 R 142,930 R 143,528 R 155,650 R 132,9590 R 123,430 R 18,438 R 16,023 * 115,700 U 15,080 * 14,504 * 13,392 R 104,113 * 131,312 * 101,160 * 177,030 * 171,006 * 177,030 * 171,006 * 167,360 * 125,375 *	RW6W RW1F JX1UA W8R	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 39,368 36,176 35,820 34,560 27,900 25,218 25,218 34,660 27,900 25,218 25,218 34,660 27,900 25,218 34,660 27,900 25,218 34,660 27,900 25,218 34,660 27,900 25,218	+LY4A +OK7K +KV4FZ +S57DX +B9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW +W3LL +N4RV +V23CX +W4FX +W5PR +K4WX4G +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K64NX +W2DAN	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .144,017 .141,017
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **YL2QN 1 **OL9R 1 **SEØX 1 **SEØX 1 **SEØX 1 **SEØX 1 **SSJAR 1 **N9SE 1 **SP3IOE	\$86,480 *VE3' 76,680 *VE3' 76,680 *VE3' 62,848 *VS3' 53,552 *WB8 12,860 *W9X 09,933 *WØB 99,3530 *WB8 92,105 *VE3' 77,250 **N9: 63,360 **W8 30,576 **M4' 76,619 **W6 65,875 **N4,49,725 **N4,49,725 **N4,49,725 **N4,49,725 **N4,49,725 **N4,49,725 **N4,49,725 **N4,49,725 **N4,97,292 **N6,4830 **VE3 65,875 *N4,49,725 **N4,97,292 **N6,4830 **VE3 66,875 *N4,49,725 **N4,49,725 **N4,49,725 **N4,49,725 **N4,97,292 **N6,4830 **VE3 66,875 *TKØC 09,970 *PJ2T. 09,970 *PJ2T. 38,490 *MC,484 *MC	D	2,332 VE3I 9,110 VE3I 9,1110 VE3I 8,960 *VEI 7,122 VE6I 0,134 VE3I 4,791 *VAC 6,890 VE3I 1,636 VE2I 7,060 *VE2 2,105 NJ6I 2,037 N7AI 5,776 N6B 3,814 VE7I 9,376 N6A 9,845 N7R 9,737 K7IU 7,940 N7G 5,624 W7N RLD 0,484 VE3I 1,310 VE3I 0,200 WD5 9,800 *VES 4,114 KØT 7,698 NA8 3,480 VE6I	DZ	104,113 R 131,312 U 110,160 * 171,006 * 17,120 R 181,339 * 17,78,120 R 142,930 R 142,930 R 142,930 R 155,650 R 155,6	RW6W RW1F JX1UA LW8R UT1AN LT19S UR5TM RA1TDP RK6AQP RUSSIA RW1F RT9S RX23MM RA1TDP RK6AQP RC5Z RW7M JA9BA LUA1CUR RA9AU LOW POWER WC E740 VE3MGY TM6M LY4L W8C0 OM5WW UUT1AN LV11A LW11B	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 258,712 53,162 47,150 43,880 39,368 39,368 39,368 39,368 39,368 25,218 25,218 25,218 25,218	+LY4A +OK7K +KV4FZ +S57DX +B9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW +W3LL +N4RV +V23CX +W4FX +W5PR +K4WX4G +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K64NX +W2DAN	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .144,017 .141,017
**DJ7WW 2 **0L4W 1 **E7YY 1 **YL2QN 1 **OL9R 1 **OL9R 1 **SE3X 1 **SE3X 1 **S53AR 2 **N9SE 2 **SP3IOE DX CN2CO 2,4 D4C 1,6 ED8W 1,2 NP2J 1,0 TM6M 1,0 EA8/EA4BQ 9 GM5X 8 KH7B 7 UN9L 6 *3V8SF 6 Zone 14 TM6M 1,0 GM5X 8 HBØ/DL5SE 5 F5VMN 3 OU2! 3 GM4Z 3 G4DRS 2	\$86,480 *VE3' 76,680 *VE3' 76,680 *VE3' 62,848 *VS3' 53,552 *WB8 12,860 *W9X 09,933 *WØB 99,3530 *WB8 92,105 *VE3' 77,250 **N9: 63,360 **W8 30,576 **M4' 76,619 **W6 65,875 **N4,49,725 **N4,49,725 **N4,49,725 **N4,49,725 **N4,49,725 **N4,49,725 **N4,49,725 **N4,49,725 **N4,97,292 **N6,4830 **VE3 65,875 *N4,49,725 **N4,97,292 **N6,4830 **VE3 66,875 *N4,49,725 **N4,49,725 **N4,49,725 **N4,49,725 **N4,97,292 **N6,4830 **VE3 66,875 *TKØC 09,970 *PJ2T. 09,970 *PJ2T. 38,490 *MC,484 *MC	D	2,332 VE3I 9,110 VE3I 9,1110 VE3I 8,960 *VE3I 7,122 VE6I 0,134 VE3I 4,791 *VA3I 6,890 VE3I 1,636 VE2I 7,060 *VE2I 2,105 NJ6I 2,037 N7AI 6,980 K7CV 5,776 N6B 3,814 VE7I 9,376 N6A 9,845 N7R 9,376 N6A 9,845 N7R 9,376 N6A 9,845 N7R 9,376 N6A 1,310 VE3I 8,858 VE3I 0,200 WD5 9,800 4VE3I 1,310 VE3I 8,858 VE3I 1,310 VE3I 3,3480 VE3I 4,114 KØTT 7,698 NA8I 3,480 VE6I 1,504 *W8	DZ	104,113 R 131,312 U 110,160 E 171,006 E 171,006 E 17,120 R 181,339 * 17,78,120 R 142,930 R 142,930 R 142,930 R 143,528 R 155,650 R 132,968 R 123,430 E 123,430 E 141,504 E 151,5080 E 141,504 E 131,312 E 101,160 E 177,030 E 177,030 E 177,030 E 177,030 E 177,030 E 177,030 E 171,100 E 171,120 E 171,120 E 171,120 E 171,120 E 171,120 E	RW6W RW1F JX1UA JX1UA JX1UA JX1UA JX1UA JX1UA JX1UA RT9S JUR5TM RZ3MM RA1TDP RK6AQP Russia RW1F RT9S RZ3MM RA1TDP RK6AQP JX1UA RA1TDP RK6AQP RW7M JA9BA JA9BA JA9BA JA9BA JUA1CUR RA9AU LOW POWER WC E740 VE3MGY TM6M JY44L W8CO OM5WW UT1AN JX1UA J	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 39,368 39,368 39,368 39,368 39,368 39,368 39,368 39,368 31,250 41,1006 27,900 25,218 25,218	+LY4A +OK7K +KV4FZ +S57DX +B9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW +W3LL +N4RV +V23CX +W4FX +W5PR +K4WX4G +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K64NX +W2DAN	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .144,017 .141,017
**DJ7WW 2 **0L4W 1 **E77Y 1 **YL2QN 1 **OL9R 1 **YL2QN 1 **OL9R 1 **SEØX 1 **SEØX 1 **SEØX 1 **SEØX 1 **SSJAR 1 **N9SE 1 **SP3IOE	\$6,480 *VE3\) 76,680 *VE3\) 76,680 *VE3\) 62,848 *VE3\) 53,552 *WB8 12,860 *W9\) 09,933 *W0\) 99,5350 *WB8 92,105 *VE3\) 77,250 *K1EI 77,250 *N9\) 63,360 **W8 30,576 *K1EI 77,250 **N9\) 63,360 **W8 30,576 *K4\) 49,725 *N4 09,720 **W9 07,720 *	D	2,332 VE3I 9,110 VE3I 9,1110 VE3I 8,960 *VE3I 7,122 VE6I 0,134 VE3I 4,791 *VA3I 6,890 VE3I 1,636 VE2I 7,060 *VE2I 2,105 NJ6I 2,037 N7AI 6,980 K7CV 5,776 N6B 3,814 VE7I 9,376 N6A 9,845 N7R 9,376 N6A 9,845 N7R 9,376 N6A 9,845 N7R 9,376 N6A 1,310 VE3I 8,858 VE3I 0,200 WD5 9,800 4VE3I 1,310 VE3I 8,858 VE3I 1,310 VE3I 3,3480 VE3I 4,114 KØTT 7,698 NA8I 3,480 VE6I 1,504 *W8	DZ	104,113 R 131,312 U 110,160 E 171,006 E 171,006 E 17,120 R 181,339 * 17,78,120 R 142,930 R 142,930 R 142,930 R 143,528 R 155,650 R 132,968 R 123,430 E 123,430 E 141,504 E 151,5080 E 141,504 E 131,312 E 101,160 E 177,030 E 177,030 E 177,030 E 177,030 E 177,030 E 177,030 E 171,100 E 171,120 E 171,120 E 171,120 E 171,120 E 171,120 E	RW6W RW1F JX1UA LW8R UT1AN LT19S UR5TM RA1TDP RK6AQP RUSSIA RW1F RT9S RX23MM RA1TDP RK6AQP RC5Z RW7M JA9BA LUA1CUR RA9AU LOW POWER WC E740 VE3MGY TM6M LY4L W8C0 OM5WW UUT1AN LV11A LW11B	258,712 151,776 83,181 81,196 53,162 49,751 47,150 43,880 39,368 39,368 39,368 39,368 39,368 39,368 39,368 39,368 39,368 31,250 41,1006 27,900 25,218 25,218	+LY4A +OK7K +KV4FZ +S57DX +B9ØCXZ +S530 +MIØSLE +OK1JDX +DK6WL +UR5AS ASSISTED W/N +W5MX +K2PM +K3WW +W3LL +N4RV +V23CX +W4FX +W5PR +K4WX4G +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K4WX+Y4C +W5PR +K64NX +W2DAN	.620,400 .611,252 .362,637 .350,973 .319,226 .309,680 .278,124 .265,434 .264,060 .258,488 E E .230,018 .206,890 .193,533 .193,452 .183,870 .172,590 .143,726 .144,017 .141,017

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Dan, K8RF, steered contest station NP2J to a fourth-place finish in Single-Op CW in the world with a cool 1.1 million points.

In Zone 4, where being in the center of activity is a big help, we had some nice competition with David, WD5COV, continuing his streak as the top scorer:

WD5COV	177,030
KØTT	167,360
NA8V	125,375
WØNO	105,151
WN8HCV	103,464
WD5R	

 If you think QRP is bad on CW, try it on 160 SSB. Good

 Luck! These guys have some great stamina and patience:

 E77Y
 .45,920

 DK2LO
 .28,584

 SQ2NNN
 .20,636

 UR5VAA
 .20,243

 UT5EOX
 .17,763

 R2FI
 .16,016

 UR5FEO
 .17,344

 W8GP
 .13,904

2019 CQWW 160M CONTEST CLUB SCORES

(Minimum of 3 three entries required for listing)

		,	,	07	
SCORE	#ENTRIES	CLUB	SCORE	#ENTRIES	CLUB
28,359,407		BAVARIAN CONTEST CLUB	537,466	15	SOUTH EAST CONTEST CLUB
13,928,109		POTOMAC VALLEY RADIO CLUB	525,296	6	WORLD WIDE YOUNG CONTESTERS
12,050,036		FRANKFORD RADIO CLUB	519,707	9	NIAGARA FRONTIER RADIOSPORT
9,782,217	96	YANKEE CLIPPER CONTEST CLUB	517,242	5	RIO DX GROUP
9,069,507	53	CONTEST CLUB ONTARIO	500,830	8	ORCA DX AND CONTEST CLUB
	78		494,660	9	
8,236,620		UKRAINIAN CONTEST CLUB		3	RUSSIAN CW CLUB
7,604,145	59	RHEIN RUHR DX ASSOCIATION	488,160		SAUDI CONTEST GROUP
6,301,799	11	BELOKRANJEC CONTEST CLUB	486,295	6	CSM TIMISOARA
5,681,483	27	ITALIAN CONTEST CLUB	467,940	9	KANSAS CITY CONTEST CLUB
5,366,485	35	RUSSIAN CONTEST CLUB	433,610	12	WILLAMETTE VALLEY DX CLUB
5,113,114	88	SOCIETY OF MIDWEST CONTESTERS	408,361	12	WESTERN WASHINGTON DX CLUB
4,984,868	38	KAUNAS UNIVERSITY OF TECHNOLOGY RADIO	396,486	20	SOUTHERN CALIFORNIA CONTEST CLUB
		CLUB	390,753	5	GEORGIA CONTEST GROUP
4,715,934	23	MAD RIVER RADIO CLUB	371,396	10	MOTHER LODE DX & CONTEST CLUB
4,204,706	13	CROATIAN CONTEST CLUB	361,276	6	BLACK SEA CONTEST CLUB
4,198,182	12	SLOVENIA CONTEST CLUB	357,963	7	BIG SKY CONTESTERS
4,174,973	34	SP DX CLUB	352,111	7	THRACIAN ROSE CLUB
3,668,066	23	CONTEST CLUB FINLAND	350,287	14	CAROLINA DX ASSOCIATION
3,126,026	27	FLORIDA CONTEST GROUP	348,624	3	SP5PPK
2,765,943	45	ARIZONA OUTLAWS CONTEST CLUB	262,959	5	DEEP DIXIE CONTEST CLUB
2,479,649	14	EA CONTEST CLUB	254,142	5	NORTH TEXAS CONTEST CLUB
2,361,939	13	LATVIAN CONTEST CLUB	243,869	7	BRISTOL (TN/VA) ARC
2,346,860	10	HUNGARIAN DX CLUB	236,731	4	BAY AREA DXERS
2,220,330	41	MINNESOTA WIRELESS ASSN	220,323	4	SPANDAU DXERS
2,192,930	15	BELARUS CONTEST CLUB	215,605	3	NORTH CAROLINA DX AND CONTEST CLUB
2,127,734	9	URAL CONTEST GROUP	193,385	3	VLADIMIR RADIO CLUB
2,028,077	8	UA2 CONTEST CLUB	192,099	9	YO DX CLUB
1,900,212	13	VYTAUTAS MAGNUS UNIVERSITY RADIO CLUB	191,119	4	UR-QRP-CLUB
1,829,627	23	TENNESSEE CONTEST GROUP	185,786	3	GERMAN DX FOUNDATION
1,739,950	3	LZ CONTEST TEAM	173,031	5	PORTAGE COUNTY AMATEUR RADIO SERVICE
1,739,956	8	MARITIME CONTEST CLUB	167,647	4	LA-DX-GROUP
1,633,570	10	CONTEST CLUB SERBIA	142,459	3	CSM CRAIOVA
1,586,461	12	DANISH DX GROUP	141,025	6	SHENANDOAH VALLEY WIRELESS ASSOCIATION
1,513,248	15	HUDSON VALLEY CONTESTERS AND DXERS	134,482	3	SARATOVSKAYA OBLAST RADIO CLUB
	7	GIPANIS CONTEST GROUP	120,729	8	SWAMP FOX CONTEST GROUP
1,378,088	17	NORTH COAST CONTESTERS	116,780	4	CENTRAL SIBERIA DX CLUB
1,313,424	12		116,780	3	
1,273,821	6	KENTUCKY CONTEST GROUP			LKK LVIV SHORTWAVE CLUB
1,164,681		CONTEST GROUP DU QUEBEC	83,999	5	HILLTOP TRANSMITTING ASSOCIATION
1,154,996	7	ALRS ST PETERSBURG	73,092	5	RU-QRP
1,092,539	11	CHILTERN DX CLUB	72,822	3	DONBASS CONTEST CLUB
1,084,161	3	FLORIDA WEAK SIGNAL GROUP	67,296	4	ROCHESTER DX ASSOCIATION
1,025,125	30	NORTHERN CALIFORNIA CONTEST CLUB	57,896	5	KIROVOGRAD REGION RADIO CLUB
955,812	11	CTRI CONTEST GROUP	49,216	3	ARKTIKA
922,041	3	BOSNIA AND HERZEGOVINA CONTEST CLUB	48,367	6	SPOKANE DX ASSOCIATION
835,673	28	DEUTSCH AMATEUR RADIO CLUB	47,350	4	IVANOVO DX CLUB
832,134	12	CENTRAL TEXAS DX AND CONTEST CLUB	46,591	3	METRO DX CLUB
810,388	14	GRAND MESA CONTESTERS OF COLORADO	44,030	4	BERGEN AMATEUR RADIOASSOCIATION
741,068	9	VERON	42,655	5	ARAUCARIA DX GROUP
740,993	14	DFW CONTEST GROUP	16,652	3	NEW PROVIDENCE ARC
689,649	3	S59ACP	14,796	3	WEST PARK RADIOPS
668,032	11	ALABAMA CONTEST GROUP	10,422	3	SERPUKHOV RADIO CLUB
661,753	5	LITHUANIAN CONTEST GROUP	9,835	3	KHARKIV REGIONAL AMATEUR RADIO SOCIETY
650,875	6	OK1KQJ CONTEST CLUB	9,108	3	VLADIMIR CONTEST CLUB
610,063	4	NRRL	7,606	3	CS PANDURII TARGU - RADIOAMATOR
607,980	5	TEXAS DX SOCIETY	1,092	4	YB LAND DX CLUB
563,985	4	SOUTH URAL CONTEST CLUB	170	9	ORARI LOKAL KEDIRI
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Why did K1ZM work only 50 stations from JW? Check out the beautiful aurora in the night sky. Great for tourists, not so great for radio.

In Europe's Zone 14, DJ7WW reported good conditions only the first night. With only four scores over 100K, one of them was made by TM6M in Low Power.

CU4DX	353,662
	272,571
	123,964
G5Q	100,260

There was a nice competition in Zone 15 with Rein, ES5RW, operating from Tonno, ES5TV's, superstation.

"Decent first night propagation enabled me to log the best number of states in this contest so far, the second night was tough."

ES5RW......333,760 I5JVA.....318,032

From Russia and Zone 16 we have all over 100K:

EW6W	324,000
RW1F	258,712
UX1UA	151,776
With UA2FZ at 169	9,408 in Single Op
Assisted.	

The most popular category - Single-Op Assisted with 403 entries - had a nice assortment of stations over 300K and two stations from the US. over 200K.

Rolandas, LY4A, reported:

"Thanks for all callers. We had great Friday night propagation."

LY4A	620,400
OK7K	
S57DX	350,973
KV4FZ	362,637
HB9ØCXZ	319,226

S53O	309,680
W5MX	230,018
K2PM	206,890

Single Op LP World scores over 100K were:

7010.	
E740	173,250
VE3MGY	171,006
TM6M	123,964
LY4L	121,662
W8CO	112,962

Special mention to Brian, VE3MGY, for his repeat win in Canada Low Power. By far the most intense competition was in Multi-op. The boys from N2CW reported the following:

"Operating from our awesome SJDXA club station on Barnegat Bay in Southern New Jersey that we share with W2GD! Great overall conditions."

The top stations all over PJ4G	599,676 515,250 496,254 466,146 465,888 416,970
OK4C W1NA	377,118
N2CEILZ5R	338,661
OL1R PJ4DX	

A Note About Sportsmanship

There were few complaints this time about disruption to FT8 operation. There

were numerous complaints about power abuse. It is nearly impossible to monitor power levels; this is supposed to be on the honor system.

Also, there were some complaints about frequency encroachment. The appropriate stations were contacted and made aware of the situation.

Remember, if you abuse the rules, you are not only cheating others but cheating yourself. This year, as in the past, we did reclassify some stations based on RBN analysis.

Since RBN is not definitive, we felt disqualification was not warranted. But in the future, we may not be as lenient. As technology improves, it will be easier to identify outliers.

In closing, I want to offer a special thanks to those whose invaluable contributions make the contest a success, including N6TR (log checking), K1DG (trophies), and K5ZD (webmaster).

Certificates for everyone are available for printing on our website at CQ160.com. If anyone would like a Log Checking Report, send an email to me at <director@CQ160.com>. Please specify which mode you are asking for and the callsign used. Trophies will be mailed shortly. Thanks to all for participating and see you in 2020. Remember, all CQ contests have a 5-day deadline for submitting logs. Check out the rules on CQ160.com for the latest information. There will be some added categories in 2020, stay tuned for details. - 73, Andy, N2NT

Director, CQ160 Contest

(Scores on page 102)