

Results, 1991 ARRL International EME Competition

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Contest Manager Assistant Contest Manager

The 15th ARRL International EME Competition was anything but normal. The Contest Branch received a record-breaking 184 entries, up a whopping 18% over 1989's record 156 entries. Continued advances in technology have contributed to the ease with which people can experiment with such exotic means of communications. A mixture of the newest state-of-the-art technology, a little human competitiveness and good band conditions make for an excellent contest. This, and interest in EME contesting, has helped make the ARRL International EME Competition the world's most famous EME contest! If you're interested in EME, this is the contest for you!

Scores and total QSOs this year shot up dramatically in every entry category. Hannes, OE5JFL, "bounced" his signal to the tune of 2,541,400 points for a new record, while completing 262 EME contacts. Although OE5JFL had the highest score, Dave, W5UN, led the way with the most completed EME contacts, totaling 338 QSOs (all on 144 MHz). This was a high-scoring contest. Seven single-op and one multiop stations topped 1,000,000 points. This contest accounted for 10,077 EME contacts.

Hannes, OE5JFL, has stayed at the top of the single-operator, multiband score listings for the past four years. His record score of 2.5 megs will be hard to beat in the years to come. A 10-meter dish and a stack of high-power transverters paved the way for 262 QSOs. SMØPYP, with a 7.6-meter dish and a 6-Yagi 2-meter array, and SM2CEW, with a nearly identical setup, each scored more than a million points and finished within 50k points of each other, in second and third place, respectively.

Eighty-one single operators gave 2 meters a try this year, with W5UN and his Mighty Big Array leading the way with 1.8 million points. His 338 QSOs included three new DXCC countries—a bonus for Dave, who holds the only 2-meter DXCC certificate. Three other 2-meter ops topped the million-point mark: KB8RQ, whose 24-Yagi array managed 250 contacts and 1.3 million points; SM5FRH, following closely at 1.2 megs with his home-brew 24-Yagi array;



SMØPYP is second only to OE5JFL in the single-operator, multiband category. Paul uses this 7.6-meter dish for 432-2304 MHz.

and DL8DAT, with 219 QSOs and just more than a million points.

The 1296-MHz single-operator category had one of the closest finishes, with only three QSOs separating the top three finishers. SM6CKU, finishing in first place, beat last year's winning score by more than 30,000 points. He scored 110k points and completed 50 QSOs for the win. Karl, DL9EBL, and his home-brew 12-meter dish finished in second place with 105k points and 49 QSOs. Bob, K9KFR, was third with 94k points and 47 QSOs. He used a 24-foot home-brew dish.

We received only two entries in this year's single-operator 2304-MHz category. Paul, W4HHK, finished first with seven QSOs and seven multipliers (using the same 18-foot home-brew dish with which he made the first amateur 2304-MHz EME QSO in 1970!). Dave, KD5RO, was second with four QSOs and four multipliers.

The guys at WBØTEM were the only multiops to break the million-point barrier. They scored 1.4 megs to win first-place multioperator, multiband. The five-op

team heated Marc's 32-foot home-brew dish with 8877s on three bands, for a total of 190 QSOs. The French team at F1ELL tallied 150 QSOs and 58 multipliers for a second-place, 870k finish, while K2UYH was third with 466k.



Japanese multioperator 432-MHz team JL1ZCG tunes for contacts.

Retired Moonbounce Pioneer Jack DeWitt, N4CBC

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How many of you remember hearing on the radio or reading on the front page of the newspaper that the US Army had bounced a radar signal off the moon? The date of the announcement was January 25, 1946. The feat had been accomplished two weeks earlier on January 10, but the people in charge wanted to verify their results before making a major news release.

This remarkable accomplishment was done by the Signal Corps under the direction of Lt Col John H. DeWitt Jr, a former ham and broadcast engineer. Prior to this, it wasn't known whether radio waves could penetrate the ionosphere. Under a Pentagon directive to investigate means of detecting ballistic missiles that might be launched against the US, Project Diana was born—so named for Diana, the mythical virgin goddess of the moon.

Let's back up a few years and look at the credentials of Mr DeWitt. He spent his boyhood years building radio sets in Nashville, Tennessee. He received his first ham call sign, 5FV (Tennessee was in the fifth district at that time), in 1921. In 1922, when Jack was 16, he built and operated Nashville's first broadcasting station, WDAA, running 15 watts. A few years later he helped install the transmitter for WSM, a pioneering station famous for its Grand Ole Opry broadcasts. DeWitt built radio stations until 1929, when he went to work for Bell Labs in New York, where he became interested in astronomy, particularly the moon.

In 1932, he returned to Nashville to become Chief

Engineer of WSM and its new 50-kW transmitter. He and his brother Ward built a 12-inch reflecting telescope. In 1935, he attempted to receive noise from the Milky Way, but failed. By 1940, he had improved his equipment and was getting successful measurements from the central galaxy. On May 20-21, 1940, DeWitt tried unsuccessfully to obtain reflections from the moon. He was using an 80-watt, 138-MHz transmitter, a rhombic antenna with 14 dB gain and a receiver with 1- μ V sensitivity. He wrote in his notes that the losses added up and the received signal was too weak to be detectable.

By 1942, DeWitt was a recognized authority on broadcasting and radio. He joined the Army's Electronics Branch as a consultant and found himself in uniform, assigned to Evans Signal Laboratory at Belmar, New Jersey. On August 29, 1944, he became director and a lieutenant colonel three months later.

Project Diana required radar equipment considerably different than that being used for terrestrial work at the time. The transmitter, receiver and antenna were extensively modified. The frequency used was approximately 112 MHz, with 3 kW of power. The antenna was 64 dipoles in an 8 x 8 configuration and movable in azimuth only. It was aimed at the rising moon out across the Atlantic Ocean.

Today, DeWitt is mostly retired. He holds a General class license with the call sign N4CBC, although he's presently inactive. In a recent letter to me, he stated, "It would be fun to get into EME, but at my age (86), I'll have to pass up this pleasure."

The multioperator, 144-MHz category boasts 10 entries. The two-man Italian team at I2FAK easily took first place. Giorgi's home-brew station and 16-Yagi array were good for 206 QSOs and 927k points. In second place was N8AM, with 51 QSOs and 147k, and in third was DK5LA, with 90k points and 36 QSOs.

Of the four entries in the multioperator, 432-MHz category, OH6DD took top honors completing 123 QSOs and 38 multipliers with the help of a huge 55-foot dish. In second was F1FHI and the gang with 118

QSOs and 38 multipliers. The Japanese team at JLIZCG was third with 92 QSOs and 32 multipliers.

In the multioperator, 1296-MHz category, we received only four entries. WD5AGO finished first with 41 QSOs and 86k points, HB9BM was second with 33 QSOs and 42.9k points, and WB0DRL was third with 42.5k points.

OK1KIR was the only entrant in the

multioperator, 2304-MHz category. The ops there completed eight QSOs and eight multipliers.

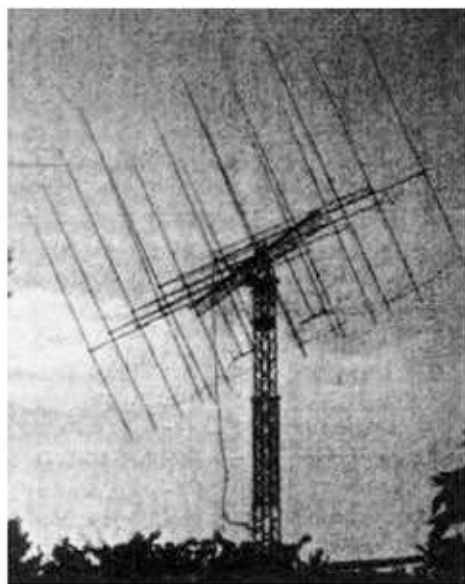
Thanks for sending the great photos with your logs. Get ready for this year's International EME Competition, October 17-18 and November 14-15, 1992. Thanks to Contest Assistant Anne Jaworski for her help in preparing the results.

SOAPBOX

Weather was a disaster the second weekend. We also had equipment problems (K2UYH). Good stuff! Good conditions and a great turnout. It will be hard



Tom, N8AM, uses a straight key. This multiop 144-MHz entry netted 51 QSOs and 29 multipliers.

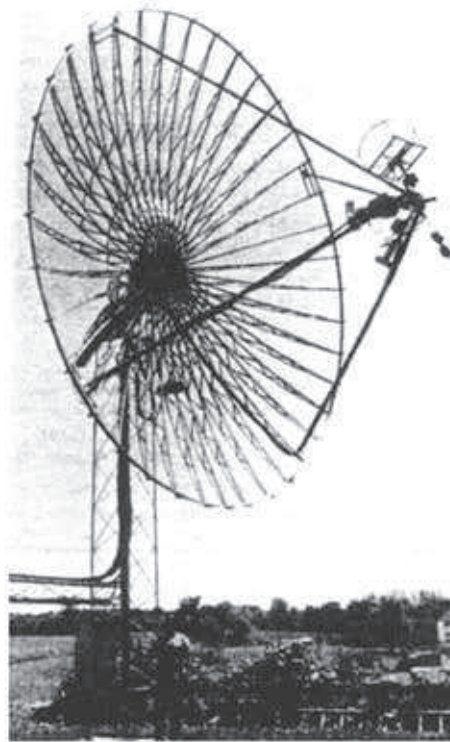


Multioperator station I2FAK used this 16-Yagi array to capture first place on 144 MHz and make 206 QSOs and 45 multipliers.



Manuel, CX9BT, with his 144-MHz EME station. He uses a Kenwood TR-751A and two 4CX250B final tubes for 800 watts output.

opping this year's contest on 1296 MHz (WD5AGO). Conditions were quite poor on 2 meters for us. Murphy got us on 1296 MHz—first the pump for the water-cooled amp failed. The replacement pump delivered much higher water pressure, resulting in a major water leak in the amp. Once that was repaired, the elevation control for the dish went out (W7XU). We doubled our antenna size and tripled our score from last year. Great contest! (N8AM). The first 100 QSOs came easily, then Murphy came. The PC aiming our dish was 3° off for several hours. Just before the second weekend, the worst snowstorm in years hit our area. The dish survived, but the rotator system was badly damaged. Repairs were hampered by the electricity being out for several days (OH6DD). I enjoyed my new antenna array very much. There were poor conditions during the first weekend, but much better for the second weekend (12FAK). Many thanks for another fine contest! (DJ8QL). Great contest this year! I operated all moon hours and was never bored (SM3AKW). It was a great contest with plenty of activity (VK5MC). A tenfold improvement over last year with my new dishes—the more aluminum in the air, the better! (N21QU). Conditions on 2 meters were poor. On 432 MHz, I experienced good conditions and on 1296 MHz there were excellent conditions. The higher-than-usual activity on 1296 helped me improve my score by 400k over last year (OE5JFL). I found conditions below normal on the second weekend (OZ4MM). Thanks for the contest. See you next year with more antennas (IK1FJI). The contest was, as usual, a great challenge and much fun! I especially enjoyed the QSOs with the low-power and single-Yagi stations. The QRM in the bottom 20 kHz of 144 MHz is getting more fierce every year (W5UN). I found conditions unstable both weekends. Activity was low (HB9CRQ). My amplifier blew six minutes into the contest. I thought that only happened to guys named Murphy!



K9KFR used this dish on 1296 MHz for a third-place finish. Bob completed 47 QSOs and 20 multipliers.

(K9BCT). Nice competition (CX9BT). The first weekend was great. There were 40 mi/h winds the second weekend. The highlight of the contest was working PJ7/W6JKV and FK1TK for my 96th country (KB8RQ). I was pleased to make my first EME QSO with W5UN at moonrise using a chimney-mounted 12-element Yagi and a 400-watt brick (AJ6T). Last year, I was an SWL in the EME Contest. This year I made one QSO! I'll do even better next year (KH6O). Conditions were definitely up and down, with excessive noise, cross polarization, and ionospheric disturbance much of the time (AF1T). There were many stations on during the contest (JA9BOH). I was surprised to work 42 stations with my small antenna array! (SM5DCX). Conditions were normal with a few good openings. A mini-blizzard came through Friday night, shutting down my operations. Despite all, I enjoyed every contact (W0HP). My score hardly compares with the "big guns," but shatters my old score. My new antenna must be working (W8WN). This was my first time on EME, enjoyed it very much (WJ0G). My high spots were working ZS6ALE and UA9FAD for new continents. Many of my QSOs were a struggle and required many fills. Thanks to all who persisted. I'll have a better receiver next year (WB4WTC). For a while, everyone was crowded into the bottom 15 kHz of the band, making it sound like 20 meters, with W5UN once again the "big gun" on the band (W4IY). Lots of activity, good conditions and I fell asleep at the key both nights on both weekends! (K3EAV). Our first attempt on 1296 MHz on the first weekend was unsuccessful, which was traced to a dead preamp. The weather cooperated nicely both weekends, allowing us to point the dish with a sighting tube. Dish pointing was a two-man job (K0R1). This was our best score ever, even though we lost our 432 amp. We had poor conditions on 2 meters for most of the contest (KB0HH).

Scores

Each line score lists call sign, score, stations heard, stations worked, multipliers and band (A = 50 MHz, B = 144 MHz, C = 222 MHz, D = 432 MHz, 9 = 902 MHz, E = 1296 MHz, F = 2304 MHz).

Single Operator, Multiband		OH2DG		43,200 16 12 D		PE1DAB		32,200 23 14 B		ISTDJ		79,800 38 21 D																		
OE5JFL	2,541,400 82 35 B																													
	131 40 D																													
	49 22 E																													
SM8PYP	1,078,000 10 9 B																													
	95 34 D																													
	42 20 E																													
	7 7 F																													
SM2CEW	1,028,100 70 33 B																													
	87 28 D																													
	12 8 E																													
SM3AKW	755,200 22 16 B																													
	68 31 D																													
	28 17 E																													
OZ4MM	690,000 113 34 B																													
	25 18 E																													
G3LTF	649,000 9 9 B																													
	64 30 D																													
	37 20 E																													
W7HAH	575,000 88 34 B																													
	27 16 D																													
K4QIF	477,300 84 30 D																													
	27 13 E																													
F2TU	475,000 53 26 D																													
	37 19 E																													
	5 5 F																													
W7FN	432,000 31 23 B																													
	59 25 D																													
PA3DZL	390,600 70 29 B																													
	23 13 D																													
N21QU	323,700 83 26 D																													
	20 13 E																													
UA9FAD	310,800 46 25 B																													
	28 16 D																													
F8CQJ	308,000 8 7 B																													
	82 27 D																													
VE1BVL	270,600 21 17 B																													
	45 24 D																													
R8SLGX	258,400 5 4 B																													
	71 30 D																													
W8KJY	150,000 35 21 D																													
	15 9 E																													
IN3HER	147,000 18 9 D																													
	30 18 E																													
	3 3 F																													
WA4QFS	117,000 34 18 D																													
	11 8 E																													
OH5IY	106,600 40 25 B																													
	1 1 D																													
DJ8QL	68,200 16 13 D																													
	15 9 E																													
OH2DG	43,200 16 12 D																													
	8 6 E																													
VK5MC	39,900 3 3 B																													
	14 12 D																													
	4 4 E																													
4X1F	14,000 2 2 B																													
	12 8 D																													
Single Operator, 144 MHz				PE1DAB				32,200 23 14 B				ISTDJ				79,800 38 21 D														
	1,825,200 338 54 B																													
	1,325,000 250 53 B																													
	1,219,200 254 48 B																													
	1,007,400 219 46 B																													
	789,800 168 47 B																													
	731,000 170 43 B																													
	667,800 159 42 B																													
	614,900 143 43 B																													
	467,400 123 38 B																													
	455,100 123 37 B																													
	448,900 109 41 B																													
	436,000 109 40 B																													
	406,600 107 38 B																													
	282,200 83 34 B																													
	282,200 83 34 B																													
	255,200 68 29 B																													
	255,000 65 30 B																													
	220,400 76 29 B																													
	200,100 69 29 B																													
	188,500 65 29 B																													
	182,000 65 28 B																													
	179,800 62 29 B																													
	159,000 53 30 B																													
	148,500 56 27 B																													
	120,000 48 25 B																													
	105,000 42 25 B																													
	98,400 41 24 B																													
	96,600 42 23 B																													
	96,600 42 23 B																													
	94,600 43 22 B																													
	94,600 43 22 B																													
	84,600 34 19 B																													
	83,000 30 21 B																													