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# W6VIO Calling

# JPL

Jet Propulsion Laboratory Amateur Radio Club

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## Field Day 2010

By Merv MacMedan, N6NO

Every year, 24 hours during the last full weekend in June hams and ham clubs across the US and Canada get on the air to test their ability to communicate under simulated emergency operating conditions. It is as much a test of antenna and rig savvy as it is of operating ability and proficiency. The JPL and Caltech Amateur Radio Clubs have joined forces in this event for decades, as it benefits JPL, Caltech, our community and ourselves. This year was no exception.

Each year we set up portable equipment in the field and make as many contacts as possible with other stations, using no power from commercial mains. Making sure the equipment works, and making sure the operators are trained in how to use it, are prime. A second objective is to attract and train new operators so they will be ready if called upon in a real emergency.

This year, field day (for us) ran from 11am on June 26 to 11am on June 27. It is both a contest of sorts (although there are no winners, plaques, trophies, or certificates) and a test of emergency preparedness. Operators learn how to use unfamiliar equipment under non-optimum conditions and compare their progress against previous years' efforts or they compete against local clubs, using the scores which are published in QST, the Amateur Radio magazine. The evaluations afterward give a good measure of station and operator performance.

Most years our two clubs have set up a joint operation at Mt. Gleason in the Angeles National Forest. In fact, we hold a 5-year permit to use the site. This year, the access roads were partly closed due to washouts and mudslides, and the Forest Service told us we could not stay at our usual mountaintop. So, Plan B went into effect, which was to operate from the Caltech campus using the

impressive W6UE antenna farm. This is still a valuable exercise because that station is part of Caltech's Emergency Operations Plan. In a real emergency it would support long distance communications for campus officials that short-range, VHF radios could not reach. This year we entered the contest in Class 3E: "Home (Fixed) Station operating on 100% emergency power".



Plan B: Operate from the comfortable studios of W6UE in the Winnett Student Center on the Caltech campus.

Past events were always led by JPL club members, but this year JPL club's President, Mark Schaefer, agreed that since we would be operating from Caltech, it would be fitting to have a Caltech club member lead the effort. (He also admitted he couldn't find a JPLer with time available to do it!) The "stuckee" was Matt Campbell, KI6KGE, from the Caltech club. Matt was appointed chairman, and even though he had limited experience with the contest itself, he knew the campus and the station well. Besides, he could call upon plenty of help for this specific contest from several experienced participants.



Chairman Matt Campbell, KI6KGE, making arrangements.

Although preparations started a month before the contest, Murphy (a fellow who ALWAYS visits us on Field Days) called Matt out of town for the first three weeks. He planned to return a week prior to the event for final preparations, so in the interim Merv MacMedan, N6NO, wound up filling in as "Deputy Stuckee". Rumor has it that Merv was heard mumbling, "Suddenly finding yourself stranded and alone must be an expected part of field day training."

Merv's most important assignment was to get operators. He wrote an enthusiastic announcement to everyone on the JPL and Caltech e-mail lists. Recipients must have thought "somebody else" would do it, because responses were sparse. A better way to get volunteers, Merv thought, was to ask them. Personally.

Merv's strategy for a good score in this event was to have three stations running all the time, always with an operator in the chair making contacts. No matter the operator's speed, keep the position active! An unoccupied chair drops the rate fast, so plenty of operators were necessary. One of Merv's disgustingly trite sayings is "Many hands make light work", but it's true - if you can get them!

An early volunteer was Walt Mushagian, K6DNS. He had done the food and catering arrangements for several previous events and was glad to make arrangements once again. We had gourmet sandwiches for lunch, pizza for dinner. He also arranged for the club to pick up the tab, a welcome perk. This way, the operators could minimize time-outs for breaks. It worked out well.

Another early volunteer was Kate Hutton, K6HTN. Since she works on campus, she placed an announcement in Caltech Today (the Caltech Calendar), announcing the operation well in advance. It explained its purpose, and invited visitors to learn about ham radio. This counted as "media publicity", good for 100 bonus points.

To get more operators, bribery was not out of the question. Merv invited Brian Stapleton, KW6J, an experienced phone contest operator with a compelling voice and mike presence. Brian (ex-W6LZP) had worked at JPL many years ago but is now retired and busy building a house in Arizona. Brian was delighted to make the trip in from Arizona to help, which was greatly appreciated. Merv arranged for him and his XYL Mimi, WA6CWR, to stay Saturday night at The Athenaeum, the Caltech faculty club. Mimi was able to go museum-visiting in Pasadena while Brian operated, and when the bands got quiet at night, Brian was able to walk the few steps from the radio room to his hotel room on campus for a convenient nap. It worked out well.



Mimi, WA6CWR, inspects the plumbing above.



Stacked monobanders. Mimi doesn't think you could get away with this in Corona del Mar.

On the other hand, Dave Hodge, N6AN, lives nearby. He is an avid contester and longtime user of W6UE. He dropped by for several shifts which helped a lot. In addition to working high speed HF CW, he likes 6 meters and surprised us by making quite a few field day contacts on that band.

Just before the contest, Merv learned that Stan, N7YQ, would be in town and could drop by for a few hours of operating. Stan had worked at JPL but retired to Carson City, NV. He had come to LA for his grand-daughter's high school graduation and gave us some much needed help on CW before driving back to Nevada.



L-R: Stan, N7YQ; Dave, N6AN; Brian, KW6J; Matt, KI6KGE; Derek, AA8YP

The JPL club president, Mark Schaefer, WB6CIA, contributed a number of welcome hours of wee-hour operating time even though he had been on an overnight Boy

Scout hiking/camping trip with his son which he could not postpone. Mark somehow can still operate CW even when asleep in the chair. Or so it seemed.

Merv invited Ken Manatt, KD6CMO, to come Saturday afternoon with his solar panel, charge controller and battery to make some contacts with an "alternate power" source. Ken has done this each year for several years, so he knows the game. Fortunately the morning cloud cover had cleared out when he arrived. He quietly worked the required solar-panel-powered QSOs which earned us another 100 bonus points.



KD6CMO's solar panel, controller and battery outdoors.



KD6CMO and his rig operating as W6VIO indoors.



This is where the generator sleeps. Its battery is trickle charged by a solar panel to always be ready for a wake-up call.

Paul Brewer, KI6CQ, a Caltech alumnus, was an unexpected bonus; a mike was shoved in front of his mouth and he was put to work making contacts without a moment's loss. Paul dropped by twice and operated the VHF station.

Another unexpected pleasure was Bill Pickett, KF6WCX. Bill runs the antenna test range at JPL and came by to check out our operation. Even though he is seldom on the air, he made quite a few field day QSOs for us. Bill is a longtime friend of the JPL club; most of our W6VIO antennas are located on the "mesa" above JPL where his antenna range is, and the club coexists there with his good graces.

Derek Lewis, AA8YP, a member of the JPL club, had come by with the intent of working his Dad back in Michigan from our station. Unfortunately a severe lightning/wind storm was raging at the time at his Dad's QTH and his Dad had disconnected his antennas and even his computers. (Murphy REALLY gets around on field day!) We introduced Derek to Field Day operating, and with a little encouragement he worked a bunch of stations for us on HF phone.

With the exception of laptop networking, preparing the station went fairly smoothly because the station had been well maintained primarily by Mike Tope, W4EF. In particular, Mike had installed the N1MM logging program in each of three laptops and configured them for our operation. (Mike was unable to operate this year, although he was able to do the log analysis and submit the club's entry to ARRL.)

Merv MacMedan, N6NO, spent a lot of time in the CW chair, pursuing double points. In the field day scoring system, CW contacts are worth twice what phone contacts are worth, so stressing CW helps get a better score. He felt we would have a good shot at winning top place in the nation this year if we made a greater proportion of CW contacts. Unfortunately that top spot does not look likely now.



The generator is brought out of hibernation and fired up. (L-R: Matt, KI6KGE; Brian, KW6J; Walt, K6DNS)

Merv also copied the W1AW field day CW bulletin (as he has done for years) for another 100-point bonus. He also volunteered to originate the traditional message to the Section Manager (reporting the club's activity and number of participants) as he has also done many times in the past, but with all the other activities going on, that assignment was forgotten. Our easy 100-point bonus was lost. How embarrassing!

With the exception of laptop networking, preparing the station went fairly smoothly because the station had been well maintained primarily by Mike Tope, W4EF. The 6 KW Honda generator was brought out from hibernation in its den, it awoke to its annual oil and filter change by Matt, Walt and Merv, and on opening day it played just fine.

Murphy struck a day before the event when we needed to set up a network to tie together three logging laptops using the N1MM logging program. Although many operators were still not familiar with it, the N1MM logger program had been used last year at Mt. Gleason and was chosen because it was believed to have a good networking capability. Although there were problems last year, it was thought those problems were caused by the use of a wireless network. This time, since the laptops were all located a short distance apart, it was decided to use a wired network instead.

Networking ties the computers together for several reasons. First, each laptop keeps the entire log for the event, not just its own contacts, so if one laptop crashes the complete log is still safe in the other two computers. Second, when a new operator sits down and tries to work a station that someone else (at another position/laptop) already worked, it will flag it immediately

as a “dupe” and alert the operator not to bother calling, saving much time. This cannot be done if we used individual, non-networked computers. Third, when a station has been worked on other bands or modes (possibly at other computer positions) the screen will show that station’s details (class and section) so it doesn’t have to be checked or validated again during the later contact.

It turns out that setting up the N1MM network did not go smoothly. In particular, the network was not very stable and it frequently crashed. Matt is a computer expert and felt that the proprietary networking protocol in N1MM was poorly written and was not standard. With each initialization, it took some 10-15 minutes for the three computers to find each other, shake hands, and start communicating. After several hours Matt and Dave Hodge, N6AN, got the system running in a stable mode. To their credit, it ran throughout the contest with only one crash and even then the computers were quickly synchronized using a new technique they discovered.

So, how did we do?

The bottom line is that we made 1311 total contacts, and with multipliers and bonuses our total score was 4858. Is that good or bad? Well, until the other reports are published (in December) we can only compare our performance with last year’s scores in the same class (3E). So, if last year is anything like this year, we managed first place in California again and placed about 4th nationwide. Not as good as we had hoped, but not bad for having a high noise level and being on the west coast, far away from the hotbed of action of the east coast.

Although preliminary until it is officially submitted, here is the detailed breakdown by band and mode as pulled off the laptop by Mike, W4EF:

Band	CW	Phone	Total	Points
80 M	52	64	116	168
40 M	327	48	375	702
20 M	264	137	401	665
15 M	85	187	272	357
10 M	36	0	36	72
6 M	29	75	104	133
2 M	0	7	7	7
<b>Totals:</b>	<b>793</b>	<b>518</b>	<b>1311</b>	<b>2104</b>

#### BONUS POINTS

100% Emergency Power (thanks W6UE)	300
Natural Power QSOs (thanks KD6CMO)	100
Publicity (thanks K6HTN)	100
ARRL Bulletin (thanks N6NO)	100
Message origination (no thanks N6NO)	0
Web Submittal (thanks W4EF)	50
<b>TOTAL BONUS POINTS</b>	<b>650</b>

Preliminary Score:  $2104 \times 2 + 650 =$  **4858 points**

It is also interesting to compare our scores over the past ten years. This corresponds roughly to half a solar sunspot cycle. We are at a solar minimum now, and we had a double-hump maximum in 2000 and 2001 so that should give us an idea of overall performance through a range of sunspots. But remember that sunspots affect us all, so the relative score is a more useful measure than the absolute value:

#### W6VIO/W6UE FIELD DAY PERFORMANCE

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Location	Mt.Gleason -----> CIT Mt.G CIT										
Class	3A	6A	4A	2A	2A	2A	2A	4A	3E	2A	3E
QSOs	3618	3539	3007	2887	2819	2789	3193	2035	904	1883	1311
Points	11316	11816	9384	9158	9322	8990	10350	6276	3604	6156	4858
Nat'l Rank in Class	5	3	7	8	12	12	8	12	6	51	*
Calif Rank in Class	1	2	1	2	3	1	1	1	1	7	*

\* = 2010 rankings to be determined in December 2010 QST.

N6NO 2010-06-29

One thing this shows us is that we have done considerably better on the mountain than at Caltech. A couple of explanations come to mind.

First, an unobstructed mountaintop location provides a better transmitted signal than one in a valley surrounded by mountains. Secondly, and probably most significant, there are no utilities or other common noise sources at Mt. Gleason. Clearly, we have superior reception there.

In fact, the broadband noise level at Caltech has been unacceptable for the past year or more: we measured it at S9+15dB on 80 meters. In addition we were battered by a random intermittent noise such as machinery or noise that an experiment might make. It was a killer on 40 and 20 meters during the contest.

Although we have excellent antennas and put out a good signal at Caltech, the reception sucks. We have to track down these noise sources as soon as possible and try to mitigate the noise. Only then will we get our competitive contest and DX superstation back.

Matt appreciates the contributions of those who answered our call. Some came to operate, but others toiled behind the scenes to make this a successful attempt. We are indebted to the following:

#### Operators:

Paul Brewer, KI6CQ  
 Stan Brokl, N7YQ  
 Matt Campbell, KI6KGE  
 David Hodge, N6AN  
 Derek Lewis, AA8YP  
 Merv MacMedan, N6NO  
 Ken Manatt, KD6CMO  
 Walt Mushagian, K6DNS  
 William Pickett, KF6WCX  
 Mark Schaefer, WB6CIA  
 Brian Stapleton, KW6J  
 Mary Stapleton, WA6CWR

#### Contributors behind the scenes:

Kate Hutton, K6HTN  
 Rob Smith, W6GRV (trustee of W6VIO)  
 Mike Tope, W4EF  
 Bill Wood, W6FXJ

#### Visitors - thanks for stopping by:

Anon E. Mous and 2 kids  
 Big Voonie  
 Alison Johnson  
 Heather Campbell  
 Alex Schaefer  
 Robert Schaefer

We missed quite a few of the regular field day participants that used to be attracted primarily by the camping experience on Mt. Gleason, and a number of old timers who have retired, moved away, or who have discovered other pastimes that have gained a higher priority in their lives. We hope they will join us next year.

Oh yes, I almost forgot. Special kudos to Bill Wood, W6FXJ, the editor of this newsletter. He put it out while recovering from a hip replacement. He reminds me the surgery was on his hip, not his brain or hands, so doing the newsletter was a piece of cake. Thanks a million, Bill. Get well soon.

## K2BSA at the 100<sup>th</sup> Anniversary of the BSA National Jamboree

By Mark Schaefer WB6CIA

On August 2<sup>nd</sup> my son Alex and I spent the day at the National Jamboree for the Boy Scouts of America at Fort AP Hill near Washington DC. This is a big 10 day event for Boy scouts from all over the country with visitors from around the world. This was a special Jamboree since it is the 100<sup>th</sup> Anniversary of Scouting in America.

We were 18 scouts and 10 adults from Troop 333 of South Pasadena on a Grand Tour of the DC area. Visiting on the day fee provided us with a map and 2 minutes of

orientation, then we were on our own to venture through about dozen square miles of BSA adventures.

From the web I learned that there was a ham station, K2BSA, at the Jamboree. For the 100<sup>th</sup> Anniversary of Scouting the BSA revived the Signaling Merit Badge. This Merit Badge requires learning Morse Code and Semaphores and is only offered in 2010. I am the Merit Badge Councilor for Signaling in the LA area. So far in all of LA there are 2 scouts interested in signaling and only one interested in Radio (including Alex) so visiting the station could hopefully drum up some interest in our Troop.

However the K2BSA station or Ham Booth was not on the map! Undaunted I attempted to contact K2BSA on their 2mtr and 440 repeaters. I could hear them fine but they had considerable trouble hearing me. It never occurred to the operators to provide their location while conversing with scouts.

So we wandered around for half a day viewing scouts selling patches and living out of hundreds of tents. There were all sorts of activities available only to those invitees who paid the several thousand bucks for the 10 day event.

Unable to hop a bus that would just take us around the grounds, we managed to find someone who had a possible lead on the K2BSA QTH, "Just take this road for 2.5 miles and I think it's somewhere up there". Since it was a nice sunny day (99F/99%) my son and I headed out monitoring the repeaters and unfortunately leaving the rest of the troop behind.

Trekking by many an interesting booth for the various Armed Services, Bald Eagles, and Knot Tiers, we finally managed to get full quieting into the repeater. They were able to direct us to their location since we were now in visual range. Turns out their repeater receivers were heavily desensed and they were not equipped to adjust their cans in the field.

The HF station was quite impressive with plenty of towers and yagis. I had hoped to use their IRLP node and check into the JPL Emergency Team Net but I was still out of range at 3PM and no one there at the time knew how to spell IRLP. They provided us with a short tour of the station, some antique equipment, and discussed what Ham Radio is about. It was good to see a large number of scouts working on VE exams and the merit badge in the tent under 99F 99% weather.

There was also a nearby NASA booth. All this good stuff was hidden at the most remote end of the Jamboree but it was well worth the hike, even if everyone else was waiting in the bus for our return. The next Jamboree will be in a new home in Virginia. I think I will have better luck making a QSO on HF here on the west coast for that one. 73 and do a good deed daily.